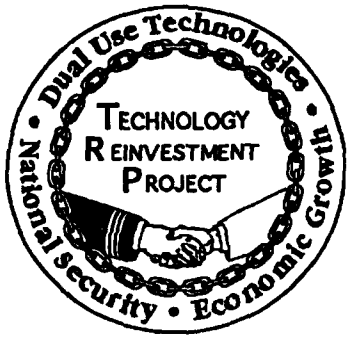
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WHITE HOUSE

TECHNOLOGY REINVESTMENT PROJECT

BRIEFING

AND

TRANSCRIPTS

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PREFACE

This book arises from the White House Technology Reinvestment Project (TRP) Briefings given in New York City, Detroit, Orlando, Dallas and Los Angeles respectively during the week of 12 - 16 April 1993. The TRP is comprised of representatives from the following five agencies, Department of Defense (DOD), National Institute of Standards and Technology (NIST), Department of Energy (DOE), National Aeronautics and Space Administration (NASA) and the National Science Foundation (NSF). Although this is a multi-governmental agency effort, the funding and management of this effort is the responsibility of DOD's Advanced Research Projects Agency (ARPA). The conferences were held to give the TRP representatives the opportunity to discuss and answer questions on both the programmatic and funding aspects of this new National effort called the TRP.

This book is comprised of the presentation charts used and transcripts taken during the conferences. The question and answer sessions are included in their entirety, but only the New York City speaker/presenter transcripts are included in this book. I took the liberty of adding only this one to eliminate redundancy and reduce manuscript cost. Obviously, the New York City Conference was selected from the five available due to President Clinton's satellite transmitted televideo address to this conference. Also, to provide the public with this information in a timely manner, very little editing has been performed on these transcribed documents.

An additional section has been added to the beginning of this book entitled, "Typical Questions and Answers Regarding the Technology Reinvestment Project (TRP)". If any confusion or discrepancy is discovered or read into answers given at the five regional conferences, refer to this section (pages iii - viii) as it is the overriding document.

The Technology Reinvestment Project Office would like to offer our thanks to all participants that helped in establishing and conducting the five regional conferences that are listed above. In addition, our special thanks goes out to Dijon Boulware and Gary Coleman for converting all of the transcripts into a single comprehensive camera-ready copy with such professionalism and good humor.

Richard Flake
TRP

Typical Questions and Answers Regarding the Technology Reinvestment Project (TRP)

The following is a compilation of typical questions that have been asked of the TRP over the last six weeks. They have been grouped into the following categories:

General Participation
Federal Participation
Foreign Participation
Program Execution
Legal/Contractual
Source Selection
Matching Funds and In-Kind Contribution
Manufacturing Education and Training
Technology Deployment
Technology Development

General Participation

What is the difference between an eligible proposer and a proposal participant?
An "eligible proposer" is a type of entity designated by statute as a required member of a proposal team; designation varies by statutory Program. A proposal participant is an entity other than an eligible proposer that *may* be included as a member of a proposal team. It should be recognized that the term "eligible proposer" is a euphemism for those entities whose participation is required in a particular Program. Once these participation requirements have been met, any other entities may participate.

How can a university or community college participate in TRP?
Some of the statutory Programs require the participation of an institution of higher education, which includes universities and community colleges. (See Table 2 in the TRP Proposal Information Package (PIP).) In addition, such institutions may be proposal participants in any of the other statutory Programs, as a source of technical expertise and resources.

How can a State or local government agency participate in the TRP?
There are three statutory Programs in which State and local government agencies may be eligible proposers (Regional Alliance Assistance Program, Manufacturing Extension Programs, and Defense Dual-Use Assistance Extension Program). In addition, these agencies may be proposal participants in any of the other statutory Programs. They are also an important source of matching funds.

May only defense dependent companies participate?
No. Any company may participate.

Can an existing partnership be the basis for a TRP proposal?
Yes. For many laboratories/plants there are excellent partnerships already succeeding. These can be the basis for expanded partnerships that could be funded by TRP. Technology Development Activity Area Proposers should be aware that TRP is more interested in pre-competitive consortia as compared to partnerships between a Federal laboratory and a single firm. Proposers should also be aware that non-Federal funds used to satisfy matching requirements of some other Federal program cannot be also used to satisfy TRP matching requirements.

Federal Participation

How can Federal laboratories participate in the TRP?
Federal laboratory participation may include funds and technical resources, such as personnel, equipment, and facilities. Under some of the statutory Programs the value of a Federal laboratory's contributions will be counted in the government's cost share and will have to be matched by non-Federal participants. In order to

avoid matching by non-Federal participants, the resources contributed by the Federal laboratories may be part of an associated agreement separate and distinct from the TRP proposal. In these circumstances, the separate agreement with the Federal laboratory should be outlined as an ancillary project in the TRP technical proposal, but should not be included in the TRP cost proposal.

What are neutral dollars/resources?
Neutral dollars and resources are those that neither are required to be matched by non-Federal participants nor may be counted as match against TRP funds. Whether or not funds or resources are neutral is determined by statute. As discussed in the previous question, in those cases in which Federal resources would not be neutral, they can be made neutral by having these resources incorporated in an associated agreement or arrangement which is separate from the TRP agreement.

Can TRP fund Federal laboratories?
Yes.

What technical resources are available at Federal laboratories?
There are a number of sources for this information. See Appendix D of the PIP for examples. You may also call our 1-800 DUAL USE number and get a copy of the Technical Points of Contact list. This list includes a number of names for each of the eleven Technology Focus Areas.

Foreign Participation

May a U.S. company with foreign production facilities be an eligible proposer?
Yes. Refer to the definition of an eligible firm in 10 U.S.C. § 2491(9), which is reprinted in Appendix F of the PIP.

May foreign organizations participate?
Yes. However, you must consider that your proposal will be evaluated in part on the pervasive impact it will have on the U.S. economy.

Can foreign organizations contribute funds/resources?
Yes. There are no restrictions on the provision of funds and resources from any foreign organization. However, evaluation of a proposer's commitment will be partially based upon the amount of its own financial commitment to the non-Federal cost sharing requirements.

Can the products of a project be marketed overseas?
Yes, subject to appropriate export laws.

Program Execution

Do teams have to be fully formed when proposals are submitted?
No. Some teams will submit proposals with their teams fully formed and some will submit proposals with teams at various stages of forming. However, the bare minimum statutorily required participants must be in place when the proposal is submitted and the entire team will have to be in place during final award negotiations. Issues, such as intellectual property rights and funding schedules, will have to be resolved by the time an agreement is signed.

Will this Program be continued in FY 94?
The eight statutory Programs are permanent legislation. Neither the level of funding nor the allocation among Programs has been decided for the TRP for next year.

May we submit associated proposals (for example: one under Technology Development, one under Technology Deployment)?
Yes. But each set of associated proposals requires an explanation of how the proposals are related and the advantages of combining them. Each proposal in the set must be directed to a single Activity and a single statutory Program.

Do all proposals require teams?
Most of the statutory Programs require two or more eligible proposers. In general, included in the rationale for teams or consortia are that they (1) allow participants to leverage their resources with others, (2) permit small companies to gain access to advanced technology or resources not otherwise available, (3) provide an environment for technology suppliers and users to forge closer relationships than are fashioned in the typical customer-vendor relationship, and (4) can provide excellent environments for standards-setting activities.

What are the reporting requirements?
The reporting requirements for each Activity Area are different. They are set out in Appendix A.

Can a proposal be submitted which contains classified information?
Yes. The TRP has made provisions to receive classified proposals.

How do you meet the defense emphasis requirement?
A proposal which adequately addresses all of the selection criteria meets the defense emphasis requirement.

What duration or period of performance should I propose?
Proposals for Technology Development should be for 12 to 24 months, with 12 to 24 month options. Proposals for Technology Deployment should be for 12 months, with 12 month options. Proposals for Manufacturing Education and Training are generally for a 36 month period, with the exception of Manufacturing Engineering Education Coalition proposals which should be for a 24 month period. Options for Manufacturing Education and Training vary; see Appendix A for specific details. Proposers may include as many options as they feel necessary to complete the statement of work, within the limitations imposed by each Program statute. However, options are not required.

Will funds be allocated to the various agencies for execution?
ARPA has execution authority for expenditure of FY 93 funds appropriated for the eight statutory Programs. However, ARPA may delegate this authority to the other agencies. Assignment of selected proposals to agencies will be made during the source selection process.

Legal/Contractual

What is a partnership?
A "partnership" must include all eligible proposers as defined by statute. It does not require formation of a legal entity or formal joint venture. Entering into a collaboration agreement is sufficient.

Can you give us an example of a consortium?
One example of a consortium is the Ceramic Fiber Consortium. Seven competing gas-turbine engine manufacturers, representing a significant portion of that industry, formed a partnership, co-funded by ARPA, NASA, and the Air Force, to develop an entirely new class of materials for use in gas-turbine engines. The consortium is funding the companies that will become its members' future supplier base. They are building the industry through this partnership. In this example, the consortium is concentrating on technology that is three to five years away from productization, thereby avoiding competitive issues which may intensify as technology nears productization.

What does an agreement consist of?
An agreement will be shorter and simpler than a typical government procurement contract and will generally be less restrictive. It will contain, among others, the following provisions: program/funding schedule, a statement of goals and objectives, the term of the agreement, termination provisions, management and program structure, program management planning process, agreement administration, obligations and payments, dispute/limitations of damages provisions, reporting requirements, intellectual property rights, and a statement of work.

What is a separate legal entity? Do subsidiaries count?
Teams consisting of related business entities are permitted. However, where these entities are proposed as eligible proposers their relationship will be closely examined during the evaluation process to determine whether they actually constitute separate legal entities and whether there is common management control. If there is common management control, then the entities will not be considered separate firms, even though they may be separate legal entities. The proposal should clarify the management control relationship of such firms and this issue will be addressed during final negotiations.

Will Cooperative Research and Development Agreements (CRADAs) be used to award TRP projects?
No. However, they may be used under a TRP project as a mechanism to provide funds from non-Federal participants to Federal laboratories or to facilitate technology transfer between Federal laboratories and non-Federal participants. CRADAs may also be used where the Federal laboratory participation is part of an associated agreement separate and distinct from the TRP proposal. CRADAs will not be used to transfer TRP funds to any TRP project.

What kind of accounting practices must be used?
You may use any commercial standard accounting practices meeting Generally Accepted Accounting Practices (GAAP). Organizations that are accustomed to

doing business with the Government may elect either to use commercial accounting practices or their existing accounting practices set up in accordance with Federal Acquisition Regulation requirements.

Is the TRP subject to the Federal Acquisition Regulation (FAR)?
The FAR applies to the acquisition of supplies and services through procurement contracts. The purpose of the TRP is *not* to procure supplies or services, but rather to facilitate research and development activities. Thus, the preferred TRP funding instruments will be cooperative agreements or "other transactions," which are not subject to the FAR. However, the SBIR Program will be competed under the FAR under a separate solicitation.

Does the Government intend to maintain intellectual property rights in products or processes developed under the TRP?
The Government anticipates no instances in which it will maintain intellectual property rights, other than government purpose license rights (GPLR) and "march in" rights. The Government's GPLR rights are subject to negotiation. However, the Government will maintain march in rights in every instance. March in rights allow the Government to assert rights in intellectual property that is not commercialized within a period of time after completion of the agreement. Government laboratories who are participants may have other intellectual property requirements for their portion of the work.

Source Selection

How many awards will be made?
No decisions have been made concerning the number of awards for each Activity. Awards will be made at the level of effort desired by the government until the funds in each statutory Program have been obligated. The examples in Appendix A, which list nominal award size, are purely illustrative.

Will proposals be rejected due to minor technical errors or misunderstandings of TRP requirements?
No. However, proposals determined to be technically infeasible or technically unattractive for other reasons based upon published evaluation criteria will be rejected.

Are the selection criteria equally weighted?
Yes. However, the selection criteria differ between Activity Areas.

How will proposals be selected?
All five agencies will participate in proposal evaluation. The specific evaluation process and who is participating in the evaluation process is source selection sensitive.

Is there any preference that would be given to proposals involving defense contractors versus those which involve only commercial companies?
There are some advantages to defense firms that arise from the nature of certain Activities. For example, Spin-Off Transitioning Activities would be a logical opportunity for defense firms in particular.

Do traditional contractors from the participating agencies have an advantage over newcomers?
No.

May individuals that appear on the technical point of contact list propose or participate in the evaluation of proposals?
Yes. The TRP has procedures in place to avoid actual or reasonably perceived conflicts of interest. These procedures incorporate standard government-wide regulations governing ethics of government employees.

Matching Funds and In-Kind Contributions

Will the valuation of cost share above 50% be a plus?
Yes. The selection criteria in all Activity Areas favor proposals with larger commitments by non-Federal participants.

May Independent Research & Development (IR&D) funds be used to match TRP funds?
Yes. The costs of IR&D efforts that are relevant to the proposal may be included as cost sharing. If the TRP funding instrument is a cooperative agreement or other transaction, the costs of these activities remain eligible to be reimbursed as IR&D to the same extent as if there had been no government support.

Can unclaimed overhead and General and Administrative (G&A) costs be counted towards matching funds?
Yes. G&A and overhead can be allowed as matching funds to the extent that each is directly relevant to the proposed Activity. However, the quality of fund matching will be a discriminant under the selection criteria for all three Activity Areas and proposals structured to avoid overhead costs and burdening cash pass-throughs will generally be more competitive.

Can fee received under a cost reimbursable contract be counted toward matching funds?
Yes. However, note that a waiver of a "customary fee" proposed as part of the cost sharing in a TRP proposal is not acceptable.

How will contributed proprietary technology be valued?
Intellectual property that is proprietary technology may constitute a technology transfer activity and be evaluated as an in-kind contribution. A fair and reasonable value for the proprietary technology should be stated in the cost proposal, along with the method used for valuation. The value ultimately placed on the contributed proprietary technology will be agreed upon during negotiations.

May funds expended prior to award be counted as matching funds?
Costs which were incurred prior to award date will not be recognized as matching funds. However, pre-award expenditures may result in the creation of proprietary technology or the acquisition of property or goods whose use has value which may be contributed to a project.

Can you provide an example of the different types of in-kind contributions?
Guidelines were provided in Section G.2 of Appendix G of the PIP. However, these were not entirely clear and are corrected in the Solicitation and in this answer. In particular, the purchase cost or depreciated cost of new or previously purchased equipment as described in paragraph III(a)(5) of that Section will only be allowed for small businesses. In all other cases pro-rated, fair rental value is the appropriate valuation method. That Section also points out that compensated personnel services, technology transfer activities, and the value of land and buildings may be included. Some of these issues are referred to in other questions and answers. OMB Circular A-110, Attachment E, provides guidance which is generally applicable. Offerors are cautioned that this is a competitive program and that the relevance, certainty and substantiality of in-kind contributions play a role in the selection criteria.

Is there a competitive advantage to having more cash as opposed to in-kind?
Cash is a very strong form of match. Quality of match is part of the selection criteria for all of the Activity Areas.

Can I get credit for "sunk costs?"
No. There will be no credit for sunk costs. However prior investments generally result in the creation of proprietary technologies, items, or processes whose value may be contributed to a project as explained above.

Can a proposal be fully funded using Federal Funds?
Yes, in some statutory Programs this is possible. However, the attractiveness of a proposal will be partially based on the magnitude of the non-Federal participants' contribution.

Manufacturing Education and Training

Does education and training only apply to two statutory Programs?
No. Technology Deployment activities may include education and training as described in Appendix A.

Technology Deployment

Is "Manufacturing Technology Center" (MTC) a generic term or only applied to NIST?
MTCs, Manufacturing Extension Programs (MEP), State Technology Extension Programs (STEP), Manufacturing Outreach Centers (MOC), National Technology Transfer Centers (NTTC), etc., all have similar objectives in deploying technology. These centers often approach the problem differently, but in general the acronyms have been used interchangeably. However, NIST has specific programs for MTC, MEP, STEP, and MOC. NASA has an existing NTTC Program. DOE has existing programs for Energy Analysis and Diagnostic Centers and State Energy Technology Deployment Programs.

Since Technology Deployment Activities are designed to assist small manufacturing firms, how can a small manufacturing firm generate enough matching funds and in-kind contributions to propose?
The deployment activities that would be provided should be targeted at small and medium-size manufacturing firms. However, participants and sources of matching funds can include anyone, including State and local governments.

Will activities that promote the commercialization or sale of a product or process be funded by the TRP?
Assistance of this sort is to be provided by successful proposers in the Technology Deployment Activity Area.

Technology Development

Are Technology Focus Areas exclusive?
No. The Technology Focus Areas which appear in the PIP will, in the opinion of the TRP, have pervasive impact on U.S. competitiveness. Since this Program is idea driven, the TRP is open to Technology Focus Areas which do not appear in the PIP. However, it is the responsibility of the proposer to make a convincing argument for their impact on competitiveness.

How much basic research is allowed?
Technology Development proposals that involve only basic research or include final product development, beyond the stage of product prototype/feasibility demonstration, will be regarded as out of scope. However, a limited amount of basic research needed to address fundamental problems may be included in Technology Development proposals when appropriate.

Why can't a university propose in Technology Development?
Pursuant to statutory requirements, universities are generally not eligible proposers in Technology Development Activity Areas. However, universities may be included as proposal participants.

WHITE HOUSE

TECHNOLOGY REINVESTMENT PROJECT
BRIEFINGS

OPERATION RESTORE JOBS

April 12, 1993
OPENING REMARKS

RICHARD MUNSON: Good afternoon. I'm sorry for the delay. I'm Dick Munson, Director of the Northeast-Midwest Institute and allow me to formally welcome you to this White House briefing on the Technology Reinvestment Project.

Our purpose today is quite simple. It's to try and explain and to answer your questions in as much detail as we can regarding the $471 million in grants that are available from the technology portion of the Defense Reinvestment Conversion and Transition Act of 1992. The Northeast, as you well know, can benefit greatly from efforts to enhance technology development and deployment. I would argue that the Northeast with its skilled work force, its premier research institutions and its history of entrepreneurialship can also be the leader in trying to ensure the success of this major new federal initiative.

I therefore hope, representing a regional group, that all of you in this audience can take full advantage of today's events as well as the program itself.

Today's schedule is straight forward. We will have to be doing a little bit of tinkering. We are having an address from the President of the United States at approximately 1:00 o'clock so we will be a bit flexible as that is sent here by satellite.

Before introducing the administration officials, let me just recognize a couple of individuals. Rod Nichols is the President of the New York Academy of Sciences. The New York Academy of Sciences is serving as the local host for today's event. Dr. Nichols.

We're also honored to have two members of congress; Representative Donald Payne, a Democrat from New Jersey, and Representative Ben Gilman, a Republican from New York. We're pleased very much that you could both be with us today.

Let me begin by introducing Hazel O'Leary, who, as I had mentioned at an earlier press conference, is extremely well qualified to be discussing technology development and deployment issues. As the Secretary of the United States Department of Energy, she oversees this nation's premier research laboratories.

In her previous job at Northern State's Power she also oversaw programs that had that utility help provide their industrial customers with modern technologies that help enhance their productivity and efficiency.

Would you please give a warm welcome to Energy Secretary Hazel O'Leary. (Applause.)

HAZEL O'LEARY: Well good afternoon. I'm in a very awkward position. I stand between you and the President of the United States and the real information with respect to how you're going to maximize opportunities for your companies or your states or your institutions in looking at a rich pool of funds that will be available for transfer. It's not lost on me that I'm not the main course, but let me try to at least set the stage here.

I know that you didn't come in such short notice because you expected to hear from me, and not even because of the delightful opportunity to hear from the President of the United States of America. But rather you've come to figure out how it is that this very rich pool of funds spread among these five agencies might be available to you to maximize opportunities in your business or in your research work.

The breakout session later will provide that opportunity and I think the message I'd like to leave with you is not the message I was instructed to give you, which is the vision of our conversion from our national security

posture of yesterday into the future of tomorrow where we see using these technologies to become more competitive and perhaps most importantly to you, to generate jobs to replace those that will likely be lost in defense conversion.

I want to focus you on the process that ought to take place here today. One, I need to compliment the people from ARPA who have pulled together in this red book a very complex setting out of authorities and responsibilities under the umbrella that we call the Technology Reinvestment Project. The very setting out of each program mandated for each department indicates to me how complex the work is to be done.

The effort of this afternoon, working with you, those who have the biggest stake in what we attempt to do, though not as big as our nation or the workers who work with you, is to try and make some sense of how we run a program, supported by five agencies with eight missions and do it in a way that makes sense to you, a way that causes you to file as few sheets of paper as possible, to change down as many, as few phone numbers as possible and to understand almost at the first turn who it is you should be dealing with to try and get your opportunity reviewed. That is a very big mission for this afternoon in a room of these many people.

The thing that strikes me as shocking is that I understand clearly there will be as large groups in each of the four cities that we're attempting to visit. So it occurs to me that the work to be done in partnership, you with the representatives of the government, is more important than any message I could deliver.

What I do want to leave you with, rumor on the streets notwithstanding, is that this is a new government, a new style of government, that says we will work together to deliver this project in a way that makes sense to you and not to the government agencies involved. None of us is attempting to outdo and outreach the other. What we'd like to find out from you is what's the best way to take information from you so that your opportunity for funding under this umbrella program will not only be enhanced but you will further know who you should be dealing with when the day is finished.

I think that is the goal for this afternoon. If we can accomplish this, then maybe you will truly understand that the Clinton administration represents teamwork and we want you to be a part of the team.

I think this is a new way of doing business, even that we come to you and say to you, We want to hear from you how we best run this program. The opportunities are enormous, the opportunities I'd have to speak to before sitting down.

Number one, to keep you in business. Number two, to provide jobs for citizens in this country; and perhaps most importantly, to stimulate our economy by producing things that can be sold outside of the United States as well as within.

I'm delighted to be with you today and I really understand that the work gets done after we stop talking. Thank you. (Applause.)

RICHARD MUNSON: I'm only smiling because when you're dealing with satellite feeds you need to be flexible, so I hope you accept that, and actually the next speaker who doesn't know he's about to be the next speaker is flexible as well.

We're honored today to also have a series of senior officials from several of the Northeastern states to present their observations about the project and opportunities it presents for businesses, universities and industries throughout the Northeast.

Representing the state of New York is Brad Johnson, who is a counselor to the Governor and also serves as the co-chair of the Governor's Defense Advisory Panel. Brad, please if you would.

BRAD JOHNSON: Thank you. On behalf of Governor Cuomo and his entire adminstration I want to welcome

you all to New York City and this important conference. We're very excited about it as I'm sure all of you are. In fact, walking around the hotel this morning I got the sense of energy and excitement and anticipation that gave me the sense we're at the high technology gold rush of the 1990's, and we have a reason to be excited.

For the first time since 1987 when defense spending began to decline, we now have a federal partner working with us to find successful uses of our defense capacity. We greatly appreciate and welcome to have federal support, our thanks to Congressman Gilman and Congressman Payne and Gary Ackerman and Jack Reed who were here earlier, for passing the bill last year, and especially President Clinton for his leadership.

We also deeply appreciate the federal officials who've come here today to talk to you about the program. Having worked with many of them over the last several months I can tell you they are fully committed, highly intelligent, very effective public servants. We are extremely impressed with them. I can assure you'll be given a fair and full hearing of all of your applications and when the day is over you'll all feel that this program was run superbly as it has been so far.

We have had a program in New York for about two years now, working with defense industries and universities on diversification and we've learned a few things from that process from all of you.

We've learned first that diversification and industrial modernization sometimes are inseparable. We've learned that the best role for government is as a catalyst to help you implement your strategies and we've also learned that although there are a lot of elements to successful diversification, high technology, financial assistance, technical assistance, the key ingredient is innovation.

It's the innovation that you bring to work every day, whether you're on the plant floor or in the corporate board room and it's this innovation that this program was designed to mature and move forward.

We are confident that with the federal support that we've seen to date and the support that we expect to see in the following years from President Clinton, that this will be a successful endeavor for all of you. Good luck and thanks for coming.

(Applause.)

RICHARD MUNSON: Representing the state of Connecticut we're honored to have the Commissioner of the Department of Economic Development. Would you please welcome Joseph McGee.

(Applause.)

JOSEPH MCGEE: I feel like the Wizard of Oz is looking over my shoulder. Thank you very much for having us here.

I'd like to make my comments a little bit on what the state of Connecticut has faced in the area of defense conversion and diversion, and what we'll call new product development. This is not going to be an easy task.

And one of the key ingredients we've found, and I'm not so concerned about our federal partners, is the collaboration we will have with our industrial partners and I think it's a very real issue that has to be addressed about how we collaborate and how we form strategic alliances in the private sector and how that is done with state and federal officials.

I don't think this is going to be as easy as we all think and I'll give you one example. Here you have the state of Connecticut, which is as Rhode Island in the Northeast, taking the biggest hit per capita in defense cutbacks. We put out a survey to our subcontractor base, our defense subcontractor base, two years ago, mailed out to all of them. We got a response of about eight percent. As the cutbacks became more serious and became very clear that they were real, we surveyed again a year later and we got about a 60 percent response.

But what was surprising to us is while many of our subcontractors were under 50 percent defense dependent we still had 25 percent that were 75 to 90 percent defense dependent.
Now the issue here I think that it raises is, look, you've got to be almost brain dead not to have made some steps here and that I think is an enormous concern. What are the technologies and the skills with those particularly smaller subcontractors that make up the bulk of the employment base in terms of diversifying? And we have found there's an awful lot of hand holding, technical assistance, market studies, this is not going to be easy.
I think the approach that's being used is excellent but there's an awful lot of work that's going to have to be done in the trenches which is very, very basic industrial development, and I think while I applaud this initiative and we've very, very supportive of it, there's a lot of work to be done, particularly with the smaller subs and I think they need special, special attention. Thank you very much. (Applause.)

RICHARD MUNSON: Representing the state of Rhode Island, we're pleased to have the Director of the Department of Economic Development, would you welcome please Joseph Paolino.

JOSEPH PAOLINO: We're here today to talk about reinvestment, conversion and transition opportunities, but what do those words really mean?
To too many people they're just buzzwords that don't have a clearly defined meaning, buzzwords which denote more governmental studies and more academic theories. It is time to change and move beyond the planning and studying stages and into the action stages. It is time to secure our own destiny and time to create new high tech growth oriented jobs and a new industrial policy for our people. In fact it's time to put people first.
How realistic is it to expect companies like Electric Boat, which builds navy submarines to convert and manufacture new products for new markets? How realistic is it to expect that other defense companies will have the ability to invest in converting. Is conversion, in fact, a viable option for defense manufacturers?
Electric Boat's parent company, General Dynamics, said publicly that they don't believe in conversion. In fact they recently gave stockholders a dividend payout of over $600 million instead of reinvesting that money into the company to retool it and to make it capable of producing nondefense products, like airplane hulls and harbor tunnel tubes. If companies are not willing to reinvest in themselves, then people are going to wonder why government is.
We need to sit down with General Dynamics, McDonald Douglas, Raytheon and other defense dependent companies and find out what areas they are willing to get involved in. These corporations need to take a leadership role in defining this country's economic future and they need to realize that industrial policy is more than building subs and military aircraft.
It is critical that we develop public-private partnerships between government and business to help ease the transition between defense and nondefense work. The main work force at Electric Boat should be retrained for other areas of manufacturing and the engineer should also be retrained so that they can apply their skills towards new technologies and industries, like software, biotechnology and oceanography. We need to be sure that we concentrate on investing in people and in long-term benefits, not just short-term growth spurts. And again we need to get major corporations to take a stand on this issue and invest in themselves and their workers.
Without added training and support services for displaced workers, many jobs will be lost permanently. A Business Week article from April of last year pointed out that current conversion efforts would at best offset

25 to 30 percent of lost defense contracts, far too little to make up for the number of jobs expected to be lost by 1995.

Coping with the effect of these imminent cutbacks on Rhode Island's economy will require the development of new technologies and the promotional growth in those industries most likely to employ skills offered by dislocated defense workers.

In the state of Rhode Island, we are changing our ways and putting people first. This entire conference is a part of the change that's taking place in our country and the transition that all of us collectively have to take if we want to move this nation, our states, our industries into the 21st century.

Let me state that what we have done is reached out, we've had studies done on our state. We've hired the Fantes Corporation to do an in-depth analysis of what our state needs to do in order to go forward, and it pretty much complemented what we already thought ourselves; software, telecommunications oceanography, life sciences, areas of investment that this administration is now talking about, the kind of changes that we need to take if we want to move ourselves forward. That access coupled with aggressive programs and financing has to take place if we want to get on to tomorrow.

Our state recently invested in a biotech company. We realized that the only way we could get them in Rhode Island was to put together a financing package for them, and let me say that we put together about a $35 billion financing program and we only got 200 jobs out of it, but we didn't do it for those 200 jobs.

We did it because we wanted to get the industry into our state and reintroduce Rhode Island as a state that did not believe in dead brain policies of the past but new innovative ways for the future. Biotech was one of those ways and because of that we are now making some headway, but we need to continue; partnerships like this that our government is now giving us, is giving us the ability to put together partnerships that we need to do.

Rhode Island is a seaside location. We're currently involved in developing a viable oceanographic industry in our state; with the help of the University of Rhode Island's world renown Graduate School of Oceanography we are identifying firms which could benefit from the university's top research and development facilities and transfer it via technologies into commercial products and application.

In fact as means of fostering new technology driven partnerships the State of Rhode Island in cooperation with the URI Graduate School of Oceanography and the National Science Foundation are creating the Ocean Technology Center to bring together academia, government and the private sector to provide these defense companies with the research capabilities to convert their products to commercial applications.

The Center, through the many participating labs, including Naval Underwater, Warfor Center, EPA and the National Oceanographic and Atmospheric Adminstration, all housed in Rhode Island, will help create new start-up firms. We believe that this Center will serve as a key tool to further developing the ocean's industry in Rhode Island.

Rhode Island has come a long way in developing the kind of support infrastructure required by today's industries, but we have a long way to go. In order to accomplish our goal of saving jobs and successfully changing from a defense dependent economy to a technological oriented, diversified economy, Rhode Island will need added support from the federal government to provide resources and support services to the business community and more importantly to the work force.

My friends, we all have to change if we want to move forward and I think with your help, with the government's help,

Rhode Island is prepared to meet their challenge. Thank you very much. (Applause.)

RICHARD MUNSON: Thank you very much. I did not meet ahead of time. Is Secretary MacDougal here from the state of Vermont? He is. Allow me to introduce him. I'm sorry I didn't meet you before.

Representing the Vermont Agency of Development and Community Affairs, would you please welcome Frank MacDougal.

FRANK MACDOUGAL: In typical Calvin Coolidge fashion I'll be very brief. This is the first time that the Secretary of Commerce in Vermont has had a chance to be a warm-up act for the President of the United States so we're very excited about that.

I think we bring a rural perspective to this issue and there's three things that I'd like to mention about Vermont's feeling towards this issue.

One is that we're significantly impacted. When you think of Vermont I think you think of Ben and Jerry's Ice Cream and ski slopes and a rural pristine countryside and that's all true. But we have been very, very decimated by the defense cuts. Now with me today is Ken Linstra who manages our GE facility, now Vermont Marietta facility, in Burlington.

The second point is that we're already working hard. The group that we've assembled is working on these issues and looking very much forward to working with this process.

And, thirdly, is we welcome the opportunity. I'm usually a pretty good public speaker but I think I'm a little intimidated by the seal. We look forward to the opportunity and we intend to be a rural model of how to convert and provide some jobs. Thank you.

(Applause.)

RICHARD MUNSON: Warm-up, nothing. This is filler. [Laughter.]

Two things on the agenda in that spirit of filler. After the President does deliver his remarks, we'll get to hear presentations from the ARPA people and some of the other folks associated with the Technology Reinvestment Project. We'll have a fair amount of time in this room to deal with your questions.

We're going to at about 3:15 need to break and at the break we're actually going to need to have all of you leave this room. There will be coffee and refreshments outside. But we need to break down this room and basically cut it in half because we're going to have three different breakout sessions.

As you will notice, the technology development breakout session will be here in Imperial Ballroom A, the manufacturing, education and training will be on the opposite side in Imperial Ballroom B, and also on this floor the technology deployment will be in the Royal Ballroom just out this door and around the side.

Let me also point out if you did not notice this in small type at the bottom of the agenda, there will be available a complete transcript of this meeting and the discussions that do exist in each of the breakout sessions, so if you're not able to bounce around between sessions you'll be able to get a sense as to what was going on. You'll notice that there are phone numbers for the National Technical Information Service as well as for the Defense Technical Information Center.

There is a charge and I must admit I don't know what that charge is yet for those publications, but do use the reference number that is down here.

Let me also now introduce, who will introduce the President of the United States, Dr. Jack Gibbons, who I think has a unique understanding of both the scientific and the policy issues associated with technology development and deployment and manufacturing education.

Dr. Gibbons has for many years served as the director of the Congressional Office of Technology Assessment and he has been recently appointed by President Bill Clinton to be the Assistant to the President for science

and technology. Would you please give a warm welcome to Dr. Jack Gibbons. (Applause.)

DR. JOHN GIBBONS: Godot is arriving in jus a few minutes. So my job is to try to say something sensible in that period of time without repeating the important messages you heard from my predecessors here.

I think if I have just a moment, incidentally, I'm glad the room was full because with about 30 watts per person we're warming up a little bit and I appreciate that heat.

As you know, the President is very much concerned about turning our face toward investment and partnership, two themes, I think, that pervade the messages that we are receiving in terms of what it takes to get from here to where we want to be, which is a nation transformed by a dominance of a Cold War world environment to a nation that again dominates the manufacturing sector, has strong export markets and capitalizes on the extraordinary capability we have in this country for invention and innovation.

It appears in the way he wants to transform our research and development in the federal government from defense dominated to more of a balance between civil and military, to better access between the public and private sectors in our treasure house of research and facilities and resources in our federal laboratories.

New partnerships, new consortia that build on the Sematex and the Battery consortium and other things in which public interests and private interests are now aligned in an activist mode to try to achieve those aims for which both public and private interests can be well identified.

We want to set some good seed ground. We want to have access to Secretary O'Leary's laboratories so that they can work in full partnership with industrial partners, with money on the table on both sides, so that the game is kept not only honest but productive.

To create policy such as making permanent the research and experimentation tax credits so that private sector ventures have a better chance to plan ahead and make those investments, focus on small business where the new jobs emerge, and that is such an important element it seems to me in our working relationship between the federal and state governments, because I think we all know that like politics, industrial development is all local. We can only supply the help that we hope will be able to do it, but it has to come local. Extension services, the same way. The development of human resources, the same way. All our investments in our future in which we can have new partnerships.

Today you're witnessing five federal agencies working together as a unit team and this is not the usual situation in past times in government. It's most refreshing to see this happen.

Today you witness also a government that is trying to streamline itself. I know, for example, I came to the White House expecting two jobs and I now have four. But that's okay. Work and streamlining has to begin at home, not somewhere else.

And I'd hope that in the process of the work being led by the Vice President in making government more efficient and more user friendly that we'll see some transformations occur in our own operations over the coming months in which we make our investments accordingly.

We are here today both to be with you and to participate and to try to let you know what sorts of resources we have that we want to become more intimately available to you.

We also are here to listen because there's so much to learn from where the real action is, namely somewhere on the other side of the Potomac River.

Now let me ask just, if you'll pardon me for just a moment, is there any message about time? One minute. I don't have time to tell my joke, maybe I can do that later.

How do you introduce a President when you haven't introduced him before to such an extraordinary audience? Well his biography and his name are certainly well known to all of us and therefore it seemed to me that I should simply report on some personal observations about this extraordinary person and I'll give you three features of the person who is about to appear before you.

First, in my observation, I characterize him with energy and stamina. It is extraordinary. It is not only his youth. It's something more deeply buried in his soul that makes him such an extraordinary energetic person full of stamina. It is a contagious process.

The second observation I would make about the President is he's possessed with a knowledge that is richly mixed with wisdom, a broad substantive involvement in the things that he's about. This appeared to me first when I was interviewed by him in December in which he expressed his concern about the whole process of defense conversion and the restoration of our national economy. I was most impressed by that and have been impressed with it daily ever since.

The third observation I would make is a person who is full of both compassion and deep caring for people, concerned not only for this generation, but for generations to come, so you see in a lot of his programs not just what can we do today, tomorrow, next year, this decade, but what can we lay in place now that provides the seeds for the future of our society.

So I take great privilege and also joy to introduce my boss, our most extraordinary leader, President Bill Clinton. Thank you.

(Applause.)

PRES. WILLIAM CLINTON: Hello. I want to welcome you to the first of five White House briefings in the Technology Reinvestment Project, a key part of my defense reinvestment and conversion initiative.

I'd like to thank the organizations that are hosting this even, the Northeast-Midwest Institute and the New York Academy of Sciences, as well as the ten states that are participating.

You're in good hands today with Energy Secretary Hazel O'Leary and our science advisor, Jack Gibbons. They're here to kick off the event. A superb team led by Gary Denman, the Director of the Advanced Research Project's Agency or ARPA, and Fred Burnthal, Acting Director of the National Foundation, will fully brief you on the Technology Reinvestment Project and answer all your questions.

With the collapse of the former Soviet Union and the end of the Cold War, we've been undertaking substantial cuts in defense expenditures and they will continue, while still maintaining a flexible and effective military force. Now we can turn our attention to other national needs, but the adjustment to lower defense spending is still painful for many communities and workers and firms. An estimated 60 percent of the total loss in defense related jobs between 1991 and 1997 will occur in only ten states. Those of you here today represent communities and companies that face the challenges of moving to a civilian economy.

Defense conversion is one of my highest priorities. It's one of the reasons I ran for President in 1992. We simply must act to ease the pain of defense downsizing while capturing the great potential that defense workers and firms offer to meet pressing national economic needs, and we have to do it quickly.

Last month I announced a $20 billion five-year initiative to reinvest in workers, communities and companies harmed by cuts in military spending. The plan provides immediate help for hard hit defense workers and communities, as well as long-term investment in our nation's industrial technology infrastructure.

The reinvestment and conversion initiative will rededicate $375 million this year alone to helping defense workers and miliary personnel hurt by cuts. They'll receive job training.

employment services and transition assistance to help them put their skills to work in a new setting.

We're also targeting assistance to communities that are hard hit by defense draw down. Through programs in the Department of Commerce and the Department of Defense that provide grants and revolving loans we're helping these communities identify new sources of economic strength that will create new jobs. These defense workers and the communities will succeed in adapting only if we have an expanding industrial base. The Technology Reinvestment Project, a key component of my conversion plan, will play a vital role in helping defense companies adjust and compete.

I've given this project another name, Operation Restore Jobs, to signify its ultimate mission, namely to expand high quality employment opportunities and to enhance demonstrably our nation's competitive.

This project has generated enormous interest in the four weeks since I've announced it at a Westinghouse plant outside Baltimore. More than 8,000 people have called our 1-800 DUALUSE hotline. Many of you who've placed those calls are here today. Others plan to attend one of the briefs to be held later this week in Detroit, Orlando, Dallas and Los Angeles.

As this enthusiastic response demonstrates, the Technology Reinvestment Project marks a new way of doing business. First it begins a new partnership between government and industry aimed at making American companies more competitive. Industry make take the lead and share the cost, but in return the federal government will directly support commercial technology through industry consortia, regional technology alliances and other collaborative activities.

This approach rejects the reliance on defense spin-offs that has been the core of the federal government technology strategy for more than 40 years. It recognizes that in the years ahead a growing number of defense needs can be met most efficiently by commercial products and commercial technology.

Second, the Technology Reinvestment Project marks a new partnership between the federal and state governments. The states have pioneered programs to apply technology to industrial needs and these programs often provide the most effective way to help smaller defense firms adjust and compete in commercial markets.

By supporting industry led consortia through this project we'll nurture technologies with the potential to become commercial products and processes within five years.

By funding regional technology alliances, we'll encourage companies in defense dependent regions to share information and technology in order to develop new products and new markets.

By supporting innovative manufacturing extension programs run by states and universities we'll help small defense firms make the transition to commercial production.

The Technology Reinvestment Project will provide matching funds for efforts such as New York's Defense Diversification Program which has worked closely with more than 100 small and medium sized defense firms just in the last two years.

For example, the EDO Corporation, which some of you visited this morning in Queens, makes anti-submarine warfare and aircraft armament. With help from the state's diversification program, this company is moving into the market for natural gas fueling stations. New York is also working with defense dependent regions, particularly Long Island and the southern tier, to develop regional strategies for diversification and economic growth.

Our past experience with defense conversion yields two lessons. The first is that the process of defense conversion can be improved by

government policies designed to help companies and workers make the transition in new forms of production. The Technology Reinvestment Project, Operation Restore Jobs, is a model of how that can work.

Lesson two is a conversion proceeds more smoothly if the domestic economy is growing rapidly. That's why it's so important for congress to enact my whole economic program, including the stimulus package which will help put Americans back to work and provide the kind of short-term boost that New York and New England so desperately need. If you want this program to go forward, if you believe in the need for conversion, I need your help.

While congress has passed the broad outlines of our economic program, it will be considering the specifics in the next couple of weeks and if you've been following the filibuster in the Senate you know that just a few people can stop action on important economic legislation by talking and talking and talking.

You've got to remind them that they can save jobs, indeed create new jobs, if they're just save their breath. Stop playing politics and start responding to the needs of the American people for a change.

My mission is simple and straight forward. I want to create a healthy economic climate for all Americans and all businesses in all regions. I want to create a program of economic conversion for your businesses. I believe in jobs, I believe in the private sector, and I believe in you.

Thank you for attending this conference and thank you for your work in creating profits, products and opportunities for our economy and our people.

(Applause.)

RICHARD MUNSON: I promised my staff I would not wave at the screen. Let's get down to the heart of the discussion today. To provide an overview of the program we're honored to have Dr. Gary Denman who is perhaps the best qualified to do this. He is the Chairman of the Board that oversees the Technology Reinvestment Project. He was also appointed in March to be the Director of the Advanced Research Projects Agency, which you probably know as the principal agency within the Department of Defense for research, development and demonstration of concepts, devices and systems that provide highly advanced military capabilities.

He will be joined by a team of his colleagues which he will introduce in the course of his overview and then we'll open it up for your questions and dialogue about we altogether can work on this partnership to try and advance the goals that the President just outlined. Dr. Denman, would you please welcome Dr. Denman.

(Applause.)

DR. GARY DENMAN: Well as they say, that's pretty tough act to follow. I'm very pleased that Congressman Donald Payne from New Jersey and Ben Gelman from New York took their time to be here today and particularly that Secretary O'Leary and Jack Gibbons took their time to be with us today and I know they had to leave and I very much sincerely appreciate their taking the time to do this.

I'm more appreciative of the fact that all of you took your time, and I know it's precious to you, to come and listen to this program today and I hope, sincerely hope that we fulfill your expectations in terms of passing on information and answering as many questions as possible relative to the Technology Reinvestment Project.

As you've heard from the previous speakers there is real excitement in this project chaired by both the White House and by Congress, and I think those are two pretty good teams to have on your side, and I hope that excitement in those two organizations, as well as the technical agencies involved in this project, will generate excitement in you as well.

Let me first speak briefly to the Defense Department perspective on this and then turn to the broader questions here of all the agencies that are involved.

Despite the end of the Cold War and the end of the Soviet Union as a massive and well organized force, the world still remains a reasonably dangerous place. Secretary Aspin has spoken on this many times and he defines four threats to our nation in this current time.

The first of those is the diplomatic security deriving from regional conflict and terrorism. And I think as we see what's going on in the world today that needs no further explanation.

Second is the physical threat to our security caused by the proliferation of weapons of mass destruction and particularly nuclear weapons, and he sometimes calls this the new nuclear threat.

The third threat is the potential failure of reform in the former Soviet Union and again the headlines every day speak to that particular issue.

And the fourth and the primary reason we're here, as a threat defined by Secretary Aspin, and that is the threat to our economic security by our apparently diminished ability to compete in worldwide markets.

I believe as President Clinton has just described, he put that particular issue first rather than last. Obviously economic growth is top priority.

In the past technology has always been recognized as a key defense asset, whether that's an enabler for the specific use of force as a counter-measure or as a force multiplier.

Today technology is even more important in different ways. The success of the military today keenly hinges on the speed, precision, acquisition and use of information, the counter-referral that may pop up anywhere in the world in and among civilians and in and among neutrals, with unknown and even irrational intentions.

Thus, it is natural for our strategy of the future to depend critically on our creation and use of new advanced technology to meet these objectives.

Today the introduction of advanced technology into military must be done in a very different way from the past. That different way is caused by significantly reduced defense budgets. We in defense must find ways to manage the cost of new high tech weapons and I think two approaches may work. First, we must focus on affordable manufacturing and management processes to go along with these new high tech products and, second, I believe we must leverage the commercial products sector to gain the benefits of larger markets.

And that really brings me to the topic that we're here for today, that is an aggressive focus in a large part of our total program at ARPA on dual use technology, that is technology that can not only feed the military needs but also potentially create new commercial products.

We're also here specifically to talk about the Technology Reinvestment Project which is a large portion of the total program at ARPA and other agencies focused on dual use technology.

This dual use technology strategy now brings with it the need also for close collaboration between various government agencies and I think when you leave here today you will have a full sense of the extent of that collaboration.

I view the broad topic of defense conversion has four facets that are very important. The first is the diversification of our defense industry from defense to commercial products to preserve and create high quality jobs. Basically industry leaders will have to sort this one out. I don't believe the government can do it for them nor should it.

Second is the integration of defense and commercial production facilities into a flexible unit that is capable of meeting demands of those customers,

and I believe that is also a major challenge to the private sector, but one that we can also assist in as we invest in technologies.

Third is the deployment of technology to and from commercial industries to fully leverage our investment dollar and clearly we are here to talk about that today.

And then finally we must develop new dual use technologies, those that are needed to maintain our superiority of our military, which the American people demand, while at the same time that have commercial viability and yield low cost competitive products.

In a speech President Clinton referred to that he gave at Westinghouse on March 11th he announced a total program defense reinvestment and conversion that addressed all of these facets.

The immediate conversion package includes the four areas of new investments totaling 1.7 billion in worker training and adjustment investments in hard hit communities, conversion opportunities and new civilian technology investment and the development of the dual use technology in commercial and miliary integration.

The DoD has involved in all of these and Secretary Aspin is building a team to assure that these programs are fully coordinated.

Today, however, we wish to talk about only one of these four areas, the technology reinvestment project. It involves about $500 million, which will be invested this year with subsequent investments of nearly that magnitude in coming years that will be invested in technology development and technology deployment.

That's what the red program book information package is all about and the rest of the today's presentations are all about.

This project is in collaboration with five agencies that others have said that whose seal appear on the front cover of the report; that's the Department of Defense, Department of Energy, Department of Commerce, National Science Foundation and the National Aeronautics and Space Administration.

I had the privilege as the Director of ARPA to be the chairman of the, essentially the board of directors of this project that oversees it's execution and I'm really pleased to report to you that this process is working extraordinarily well.

I think what we are trying to do will require major changes and all of these changes will not be pleasant. We in the DoD must change both in policy, particularly those that relate to how we acquire our equipment, and in program, that is in the way we invest the dollars that we have.

I think the Defense Industry will also have to make changes, not just in size and structure, but also in complexion and complexity. We must both learn to do business in completely new and unfamiliar ways and we must begin that change now.

Our objective in coming here is to explain the program in as much detail as we can. It is very different from anything we have done before and in some ways it's also very complex.

We put a lot of time into the red book and we hope it has been useful and we hope we can answer further questions that you may have.

I would like to get to the red meat of this now and begin with an overview of the overall project. To give you that overview I've asked Lee Buchanan to do this. Lee has two jobs. His day job is one of my office directors at ARPA and for the past few months he has also in addition to that job managed this project, and Lee used to be 6'6". It is my pleasure to introduce Lee Buchanan. (Applause.)



WHITE HOUSE

TECHNOLOGY REINVESTMENT PROJECT

BRIEFING

TECHNOLOGY REINVESTMENT PROJECT

Introduction

- Technology Reinvestment
- Overview of Technology Reinvestment Project (TRP)
  - TRP description
  - Planned procurement activities
- Proposal Information Package
  - Funding statutes
  - Technology activities
  - How to prepare for the solicitation
    - Who is eligible
    - What are funding/cost share requirements
    - Mechanics
    - Expected activities during pre-solicitation phase

TECHNOLOGY REINVESTMENT PROJECT

Technology Reinvestment—What It Is

Technology Reinvestment to:

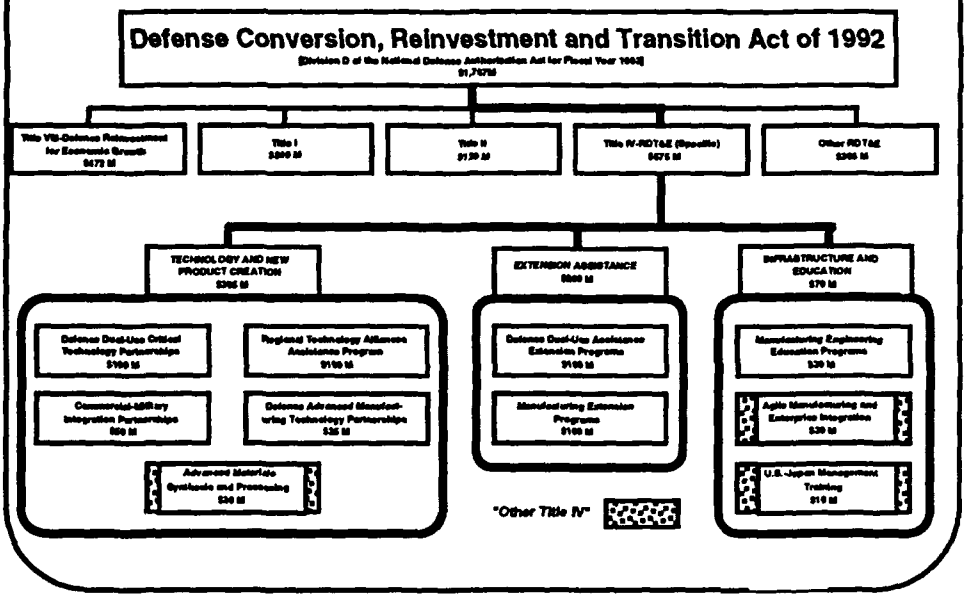
(1) Focus on turning technologies into products/processes

(2) Create jobs in the long term

- Diversification from defense to commercial products
- Integration of defense and commercial production facilities
- Deployment of technology to and from commercial industries
- Development of dual-use technologies

TECHNOLOGY REINVESTMENT PROJECT

Defense Conversion, Reinvestment and Transition



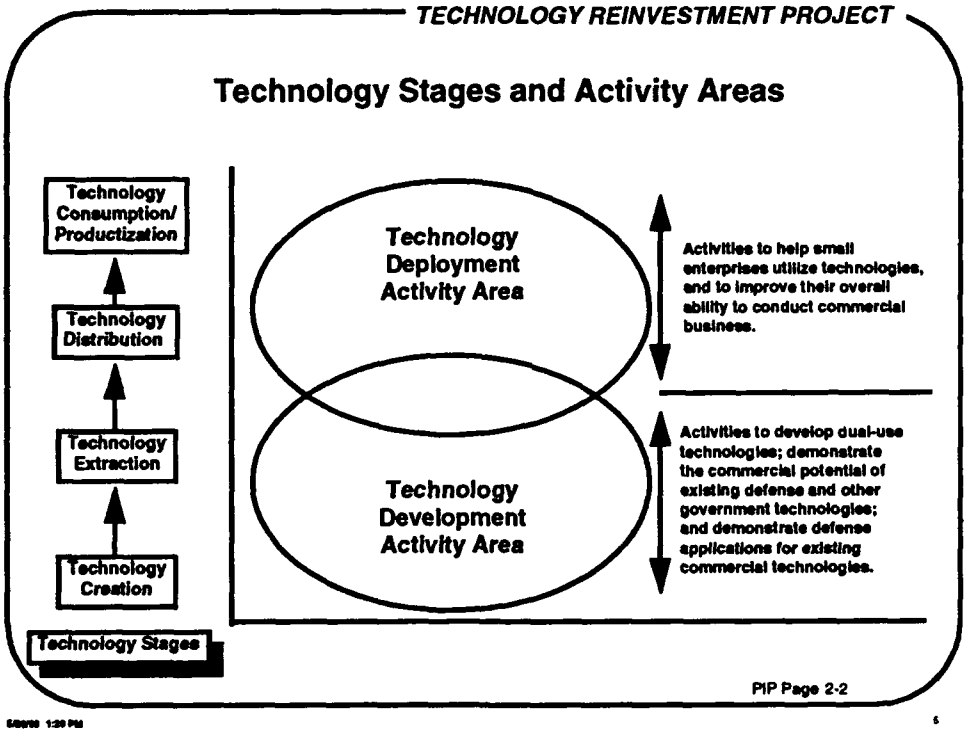
TECHNOLOGY REINVESTMENT PROJECT

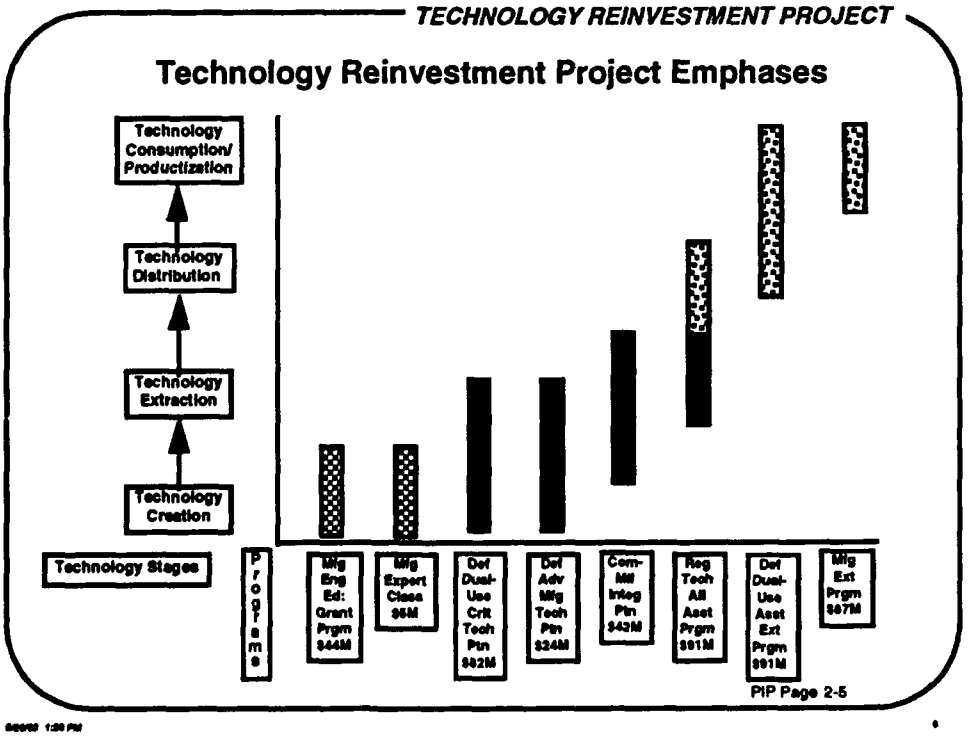
Fiscal Year 1993 Title IV Appropriations for TRP Programs ($ millions)

Defense Dual-Use Critical Technology Partnerships	$81.9
Commercial-Military Integration Partnerships	42.1
Regional Technology Alliances Assistance Program	90.5
Defense Advanced Manufacturing Technology Partnerships	23.5
Manufacturing Extension Programs	87.4
Defense Dual-Use Assistance Extension Program	90.8
Manufacturing Engineering Education: Grant Program	43.6*
Manufacturing Experts in the Classroom	4.6
Small Business Innovative Research Program	7.2
Total	$471.6

*Includes $20.1M of FY 1992 Funds

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TECHNOLOGY REINVESTMENT PROJECT
Technology Stages and Activity Areas
Technology Consumption/ Productization
Technology Distribution
Technology Extraction
Technology Creation
Technology Stages
Technology Deployment Activity Area
Technology Development Activity Area
Activities to help small enterprises utilize technologies, and to improve their overall ability to conduct commercial business.
Activities to develop dual-use technologies; demonstrate the commercial potential of existing defense and other government technologies; and demonstrate defense applications for existing commercial technologies.
PIP Page 2-2


TECHNOLOGY REINVESTMENT PROJECT
Technology Reinvestment Project Emphases
Technology Consumption/ Productization
Technology Distribution
Technology Extraction
Technology Creation
Technology Stages
Programs
Mfg Eng Ed: Grant Prgm $44M
Mfg Expert Class $6M
Def Dual-Use Crit Tech Ptn $62M
Def Adv Mfg Tech Ptn $24M
Com-Mil Integ Ptn $42M
Reg Tech All Asset Prgm $91M
Def Dual-Use Asset Ext Prgm $91M
Mfg Ext Prgm $67M
PIP Page 2-5

Common Requirements

Statutory requirements common to all programs

(1) All programs require competitive award

(2) All contain participation and organizational requirements

(3) All (except SBIR) require cost sharing of at least fifty percent (50%)

(4) Defense emphasis–10 U.S.C. § 2501

Technology Reinvestment Project

Mission

To stimulate the transition to a growing, integrated, national industrial capability which provides the most advanced, affordable military systems and the most competitive commercial products.

Strategy

Invest Defense Conversion, Title IV funds in activities which stimulate the

1) Development of technologies which enable new products and processes
2) Deployment of existing technology into commercial and military products and processes
3) Integration of military and commercial research and production activities

PIP Page 2-1

Technology Reinvestment Activities

- Defense Technology Conversion Council (DTCC) established December 16, 1992
  - Department of Defense (Advanced Research Projects Agency and Military Departments)
  - Department of Energy (Defense Programs)
  - National Science Foundation
  - Department of Commerce (National Institute of Standards and Technology)
  - National Aeronautics and Space Administration
- A single joint competition is planned for the issuance of a formal solicitation
- Evaluation, ranking, and selection of proposals will be conducted jointly
- Distributed execution

PIP Page 1-2, 2-1

Activity Areas

- Technology Development
  - Spin-Off Transitioning (activities that demonstrate commercial viability and have already been developed for defense purposes)
  - Dual-Use Development (activities that are applicable to commercial and defense)
  - Spin-On Promotion (activities that demonstrate defense applicability and have already been developed for commercial purposes)
- Technology Deployment
  - Manufacturing Extension Service Providers (outreach)
  - Extension Enabling Services (services to integrate service providers and technical sources)
  - Alternative Deployment Pilot Projects (in-reach)
  - Technology Access Services (brokering, "yellow pages", etc.)

PIP Page 2-1, 2-4

TECHNOLOGY REINVESTMENT PROJECT

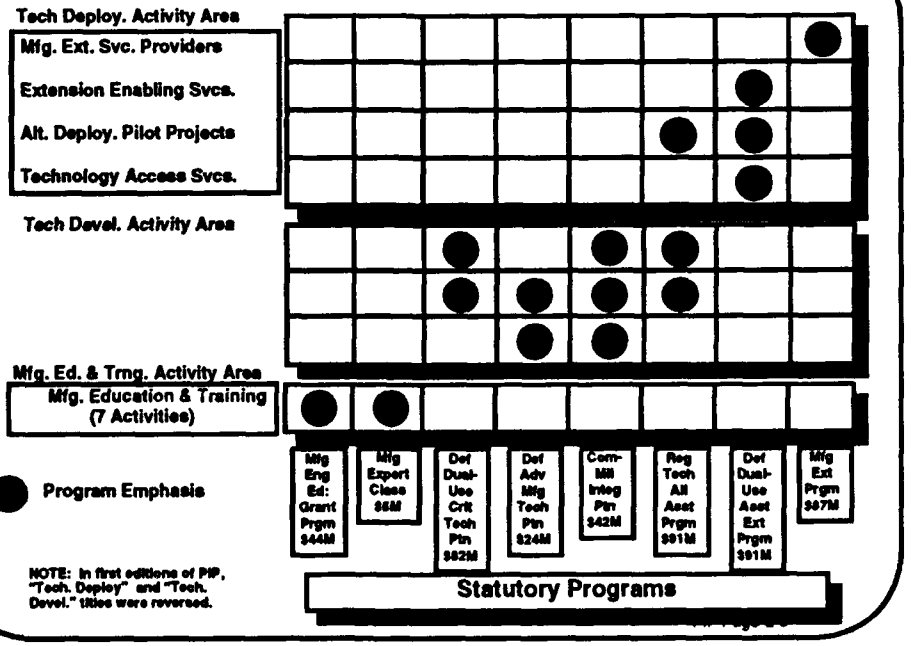
Activity Areas
(continued)

- **Manufacturing Education and Training**
  - **Engineering education in manufacturing across the curriculum**
  - **Practice-oriented master's degree programs**
  - **Retraining the manufacturing work force**
  - **Educational traineeships for defense industry engineers**
  - **Manufacturing engineering education coalition**
  - **Supplementary education awards to ongoing centers and coalitions devoted to manufacturing**
  - **Individual/group innovations in manufacturing engineering education**

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TECHNOLOGY REINVESTMENT PROJECT

Activities by Statutory Program

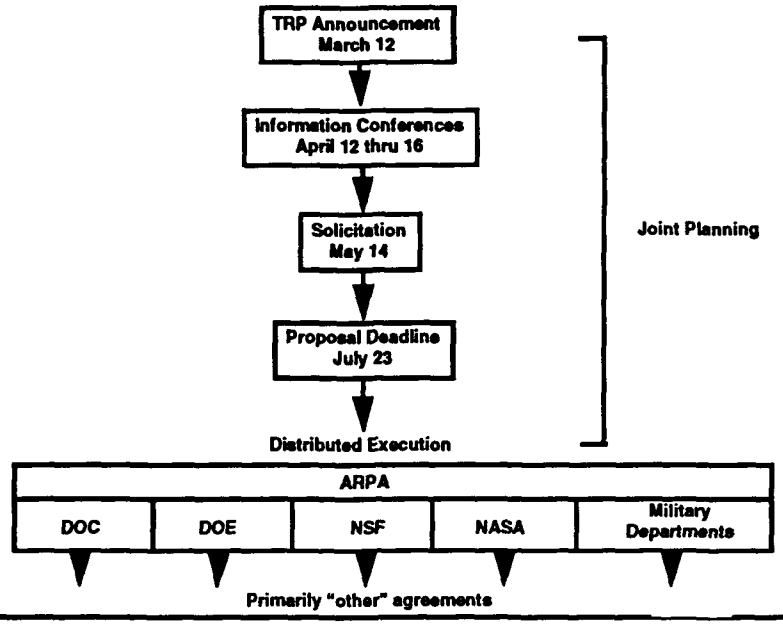


NOTE: In first editions of PIP, "Tech. Deploy" and "Tech. Devel." titles were reversed.

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TECHNOLOGY REINVESTMENT PROJECT

Joint Agency Program



TECHNOLOGY REINVESTMENT PROJECT

Existing Programs Related to the Technology Reinvestment Project

- Advanced Research Projects Agency
- National Institute of Standards and Technology
- Department of Energy
- Department of Defense Laboratories
- Federal Laboratory Consortium for Technology Transfer (FLC)
- National Technology Transfer Network
- National Science Foundation
- National Aeronautics and Space Administration

PIP Page D-1, D-18

Concepts Common Across All Programs

Potential Participants

- The TRP has provisions for participation by a wide range of business or other organizations including:
  - Firms (particularly manufacturing and small businesses)
  - Nonprofit research corporations established by firms
  - Federal agencies, laboratories, and industrial facilities
  - State and local government agencies
  - Existing manufacturing extension programs
  - Institutions of higher education
- Specific participation/role is defined for each program by its statute
  - In general, statutes define what kind of entities MUST be involved
  - No statutory restrictions on what kind of entities MAY be involved

PIP Page 2-8

TECHNOLOGY REINVESTMENT PROJECT

Cost Sharing

- All programs have cost sharing (match) requirements of either 50% or 50%, 60%, 70%
- Match can include:
  - Cash
    - Can come from participants or third parties
    - May include IR&D under some circumstances
    - Includes license fees, royalties, fees for services
  - In-kind contributions
    - Compensated services of personnel
    - Value of equipment, land, buildings
    - Technology transfer activities
- Advance agreements on cost-treatment of in-kind contributions are encouraged
- Cost records must be kept in accordance with generally accepted accounting practices
- Government share is cash provided, not technical assistance

PIP Page 6-1, 6-3

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TECHNOLOGY REINVESTMENT PROJECT

Funding/Cost Sharing Principles

- Cash must not be included as contributions if included for other federally assisted programs
- In-kind contributions may include matching funds from non-DoD sources, if statutes permit
- IR&D may be included
  - If using a cooperative agreement or other transaction, and
  - If proposal would have been allowed as contractor IR&D had there been no cooperative agreement or other transaction
- The cost of technology transfer may be included subject to mutually agreed evaluation during contract negotiation
- In-kind value of equipment and software may either be the purchase cost or the depreciation during the period of contribution. Depreciation method shall be the method used internally by the contributing organization. The value shall be prorated according to the share of its total use on the proposed project.

PIP Page C-1, C-3

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Funding/Cost Sharing Principles (continued)

- **In-kind contribution of space shall not exceed the fair rental value and shall be prorated according to the share of its total use on the proposed project**
- **Profits and fees generated on Government contracts may be included as cash contributions**

PIP Page C-1, C-3

Summary of Funding Instruments

- **(Procurement) Contracts**
  - **Acquire supplies and services**
  - **Not to advance state of the art, improve technology base, or demonstrate feasibility of a new technology**
- **Grants**
  - **Transfer something of value to support and stimulate R&D**
  - **When the degree of involvement of the Government agency is not substantial**
- **Cooperative Agreements**
  - **Transfer something of value to support and stimulate R&D**
  - **Degree of involvement of the Government agency is substantial**
  - **These are not CRADAs**
- **"Other Transactions"**
  - **Any transaction that is not a contract, grant, or cooperative agreement**
  - **Includes, but not limited to, coordinated research, consortia, joint funding arrangements, bailment agreements, reimbursable arrangements, etc.**

PIP Page E-1

TECHNOLOGY REINVESTMENT PROJECT

Intellectual Property Rights

- General Policy
  - Government should avoid acquiring rights if that will impede commercialization
  - Restrict foreign access to technology
  - Encourage broad exposure to technology among consortium partners
- Patent rights
  - Contracts, grants, and cooperative agreements
  - "Other transactions"
- Rights in other intellectual property

PIP Page G-1

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TECHNOLOGY REINVESTMENT PROJECT

Patent Rights
Contracts, Grants, and Cooperative Agreements

- Firm or organization can elect to retain ownership of inventions properly disclosed to the Government unless:
  - Not located in the U.S. or under control of a foreign government
  - Government retention of title necessary to national security
- Government has "march-in" rights if invention not commercialized in a reasonable time (e.g., five years)
- Government retains license for Government purposes

PIP Page G-1

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TECHNOLOGY REINVESTMENT PROJECT

Patent Rights
"Other Transactions"

- No formal statutory rules apply
- Rights to be structured through negotiation to best serve the national security objectives of 10 U.S.C. § 2501

PIP Page G-1

TECHNOLOGY REINVESTMENT PROJECT

Rights in Other Intellectual Property

- Copyrights, trademarks, trade secrets
- Appropriate subject for negotiation in agreements
- Treatment will be extremely flexible to serve purposes of the programs and national security objectives of 10 U.S.C. § 2501

PIP Page G-1

Historically Black Colleges and Universities (HBCU) and Minority Institutions (MI)

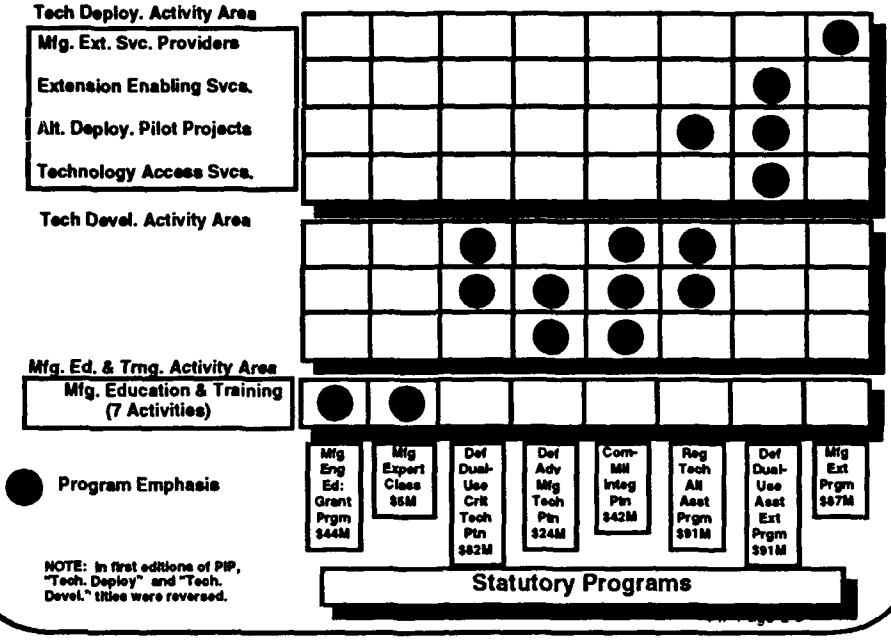
- Encouraged to participate in all programs for which they are eligible
- Preference for award given to those proposals which include HBCUs and MIs as participants over those which do not include HBCUs and MIs in cases where the evaluation is substantially equal

PIP Page G-3

Planning for Proposals

TECHNOLOGY REINVESTMENT PROJECT

Activities by Statutory Program



NOTE: In first editions of PIP, "Tech. Deploy" and "Tech. Devel." titles were reversed.

TECHNOLOGY REINVESTMENT PROJECT

Program Participant Requirements
Entities That MUST Be Included

- **Defense dual-use critical technology partnerships**
  - **Two or more eligible firms OR A nonprofit research corporation established by two or more eligible firms**
- **Defense advanced manufacturing technology partnerships**
  - **Two or more eligible firms OR A nonprofit research corporation established by two or more eligible firms**
- **Commercial-military integration partnerships**
  - **One or more eligible firms OR One or more nonprofit research corporations established by two or more eligible firms**
- **Regional technology alliances assistance program**
  - **One or more eligible firms in the region served by the alliance AND ONE OF FOLLOWING:**
    - **Agency of State or local government or**
    - **Nonprofit organization of two or more States or local governments or**
    - **Membership organization in which a State or local government is a member or**
    - **Institution of higher education designated by a State or local government**

TECHNOLOGY REINVESTMENT PROJECT

Program Participant Requirements
Entities That MUST Be Included
(continued)

- Manufacturing extension programs
  - A manufacturing extension program of:
    - Region(s) or
    - State(s) or
    - Local government(s) or
    - Private, nonprofit organization(s)
- Defense dual-use assistance extension program
  - A program to assist defense dependant firms sponsored by:
    - Federal Government or
    - Regional entity(ies) or
    - State(s) or
    - Local government(s) or
    - Private entity(ies) and nonprofit organization(s)
- Manufacturing engineering education: grant program
  - Institutions of higher education OR consortia of such institutions
- Manufacturing experts in the classroom
  - Institutions of higher education

TECHNOLOGY REINVESTMENT PROJECT

Entity Types and Programs in Which They Must Be Included

- Institutions of higher education
  - Manufacturing experts in the classroom
  - Manufacturing engineering education: grant program
  - Regional technology alliances assistance program
- Two or more eligible firms OR a nonprofit research corporation established by two or more eligible firms
  - Defense dual-use critical technology partnerships
  - Defense advanced manufacturing technology partnerships
- One or more eligible firms
  - Commercial-military integration partnerships
  - Regional technology alliances assistance program
- Nonprofit organization of two or more States or local governments
  - Regional technology alliances assistance program
- Membership organization in which a State or local government is a member
  - Regional technology alliances assistance program

Entity Types and Programs in Which They Must Be Included (continued)

- Program to assist defense-dependent businesses sponsored by: Federal Government or Regional entity or State government agency or Local government or Private entity or nonprofit organization
  - Defense dual-use assistance extension program
- Manufacturing extension program of: Region(s) or State(s) or Local government(s) or Private, nonprofit organization(s)
  - Manufacturing extension programs
- State government agency
  - Regional technology alliances assistance program
- Local government agency
  - Regional technology alliances assistance program
- Government-owned and operated industrial facility
  - None required in any program, but may participate in all programs
- Federal laboratory
  - None required in any program, but may participate in all programs

Proposal Executive Summary

The first five (5) pages of the planned technical proposal format will be an executive summary of the entire technical proposal.

- The executive summary will be evaluated based on its merit BEFORE the remainder of the technical proposal is reviewed.
- The executive summary will be extremely influential in the early identification of high interest proposals.

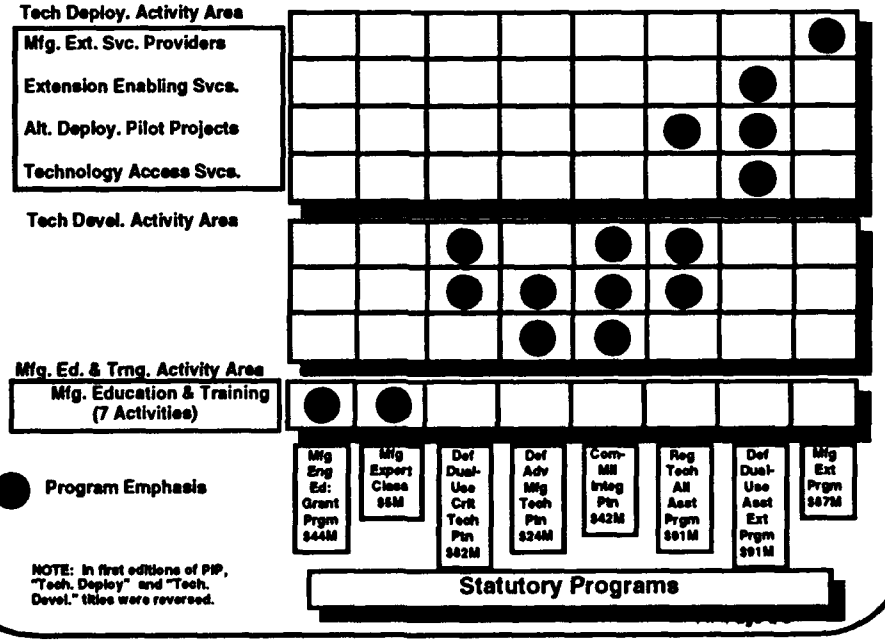
PIP Page 3-1

Associated Proposals

In some cases a proposer may have multiple ideas that span several activities and/or statutory programs. The solicitation will describe how proposers may link individual proposals together into "associated proposals."

PIP Page 3-1

Activities by Statutory Program



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Obtaining Copies of PIP

Request mailing of a single copy of the Program Information Package by:

- **calling 1-800-DUAL-USE (1-800-382-5873) Monday through Friday from 8:00 a.m. to 7:00 p.m., EST**
- **faxing (703-461-2372) addressed to Technology Reinvestment Project, PA#93-21**
- **electronic mailing: Internet address pa93-21@darpa.mil**

Solicitation will be available by the same method once it is published.

DR. H. LEE BUCHANAN: Thank you, Gary.

Well you're down to me. I am always told that it's best to know what the audience is there to expect to hear. I tried to predict what that was and I came up with two things: Where's the money and how do I get it? That's what I intend to do now.

As Gary pointed out, the cover of the red book, so-called red book, has five seals down the left-hand side. Those five seals are of the five departments that comprise our group. We have representatives of those five here on the stage with us; as we have been trying to deploy this program in a completely collaborative sense I brought them here to share in the pleasure and you're going to have your chance to ask all of them and me questions as we go along.

I'd like to introduce now, I can't see in which order they're seated, but Michael Long from the Department of Energy; Robert Norwood from NASA; Joe Bordogna from the National Science Foundation; Richard Dunn, our general counsel at ARPA; Phil Nanzetta from the National Institute of Standards and Technology; and also John Gudas from NIST as well.

Everybody will have their own impression and their own ideas of what defense conversion is. This is what is in our minds. We are trying to focus on the objective of creating products, turning technologies into those products. That is the ultimate measure of our success. And of course with that comes the job that goes into the production of these products.

But the jobs aspect will be in the long term for this part of the program. We are trying to diversify defense into commercial products and we have our self-interest in doing this.

In previous years there have been, as you are well aware, both the defense and a commercial industrial base. The Department of Defense has financed its own industrial base for quite a long time. We can't do that any more. But yet we must have a defense so in order to buy our products, to buy our materials, we will have to have them available from commercial sources at commercial prices from an industrial base that's flexible enough to allow that to happen.

So first of all we must integrate the defense and civilian industrial facilities. We must deploy those technologies from the laboratories into people who can distribute it and finally into the hands of those that can turn them into products.

And furthermore for those technologies that have both applicability to commercial and defense products we must endeavor to form a partnership to make sure that those technologies receive special attention.

Let me give you a little background so you'll know what we're talking about today and what we're not talking about. In the fiscal year 1993 Appropriation and Authorization Act there was an amount of money in the amount of about $1.7 billion under something called Defense Conversion Reinvestment and Transition Act of 1992. That act had a number of titles. This discussion will be only about those programs contained in Title IV. The other titles include programs that are more oriented towards the base closure issue, the unification issue and will be discussed later but not at this meeting. I don't mean to demean their importance in the overall scheme of things, but for those of you who came with expectations of getting more information on those programs you may be disappointed. In that event please see us afterwards and we'll tell you where to go.

Under Title IV there were 11 programs appropriated for a total amount of $575 million. The red book that you have in front of you describes the competition for eight of those in a total amount of roughly $500 million. They are all in the area of technology, research and development, small "r", capital "D". These are the amounts of moneys that go with each program. They differ

from the amount that appear in the Appropriations Act for several reasons. First of all congress did supply a reduction in its own programs before the appropriation was completed. We have furthermore removed the SBIR part of each program although we have kept it in the major program down below. There were some other reductions.

After all that is done, this would be the amount of money that will be available for the competition described in the red book.

You should know that particularly the program in defense, advanced manufacturing technology partnerships; no, I'm sorry, manufacturing education, engineering education contains some money that was left over from fiscal year 1992, so that amount is up some from what the '93 appropriation would have declared.

Now in looking at these programs, and reading the legislation, the first impression that you get is that all of these programs fall into two large categories. This chart tries to depict the separation of those two categories and along the vertical axis you see a very simplified notion of the way technology is born, is created, is extracted from its creation, is distributed in various networks and ultimately comes to use in products.

If one views the programs in this appropriation in that light, you see that there are two large classes. First of all, those that have to do with technology creation or technology development. This is research but more development activities for maturing technologies, for bringing technologies out of the laboratory while doing development on them.

The second category is under the area of deployment and I use deployment rather than the other name of technology transfer mostly because deployment to me represents something that tech transfer does not. Tech transfer to me connotes something far more simple than happens in actual practice. Tech transfer is not like a baton that is handed from person to person. It is in fact a very complicated body contact sport. That's why we're going to use deployment here to denote all those activities involved in extraction, distribution and eventually incorporation of the technology into a product.

Now this makes a second point and that is that the technology development activities should be seen as standing farther away from the point of sale than the technology deployment activities. You will find that most of these programs are not encouraging proposals that do final product development in the sense of marketing surveys, in the sense of final packaging and that sort of thing.

We will be developing technologies to the point that they reveal themselves as commercially viable but at that point it would be presumed that it's the responsibility of the industrial concern to take it farther.

On the other hand, every one of these programs is emphatic of a product in mind and that will mean new partnerships are required by those entities that normally are concerned with technology creation only, and I'm talking about the national laboratories, universities and some R&D firms.

There will be in the technology development discussion a little later a discussion of the criteria for selection and 25 percent of that criteria for selection will be the extent to which the offeror can convince us that he or she is committed to the ultimate productization of a development once that development has shown itself successful. Very different than the programs that you may be used to, a very different way of doing business.

Technology deployment, on the other hand, is specifically concerned with technology, taking technologies out of the places where it's created and putting it into the hand of somebody that's going to turn it into a product. It is very close to the product development side of things and you'll

see that reflected as we go through this in some detail.

As I mentioned, there are eight programs that appeared in the appropriation. The programs are different, they have different emphasis, they have different conditions, they have different requirements. But by and large they are more alike than they are different and if one were to plot those programs in a sense that they span the technology evolution activities, they would come out roughly like this.

Now when we saw this chart for the first time, we at ARPA, two things became apparent. First of all, we noticed that no program on that chart spans the entire distance from the bottom, technology creation, to the top, ultimate productization, but in aggregate they all did and that prompted us to conclude that the most prudent course, not the most painless, but the most prudent course was to execute these programs in aggregate, as a unit, rather than separately.

But when one saw the aggregate program it was pretty clear that ARPA's expertise was insufficient alone, so that prompted the second major decision and that was to invite the other agencies that you see at the table to join with us in a collaborative pursuit of all these programs together, and to our knowledge that has not been done before and represents a new mode of thinking. That's good because I'm asking you to think about things in a new way as we go along. We're all in this together and I think we'll all profit by it.

I said they were more common than they were different. There are four features that are common to all eight programs. First of all, all of them *require competitive awards.* They did not require competition under the same solicitation but that's the way we're executing the program. There will be a solicitation for proposals to appear in mid-May. The proposals will be due in mid-July. We are not yet into a competitive, a solicitation environment and that's important. I'll talk about that in a minute.

Second of all, all the programs, all the legislative programs, require certain structural entities. There are certain people that must be included in each proposal. It differs from program to program. Some, for instance, require partnerships, two or more eligible firms. Some require a state or local agency to provide sponsorship. Some are directed specifically at institutions of higher learning to include community colleges. All have some requirements and it will be to your advantage to study those in some detail.

Third, and very important is the notion that all of these programs require cost sharing. All of them require cost sharing in excess of 50 percent. Some are more onerous. Some require 50 percent the first year, 60 percent the second year, 70 percent the third, fourth and fifth year. All require that cost sharing be of non-DoD money. Most of them require that the cost sharing be with nonfederal money; state money, local money and private investment.

And finally, all of the programs require that proposals demonstrate relevance, true relevance to defense objectives. Now frankly of the four requirements that I've mentioned, this is probably the least restrictive since of the Defense Department defense in the future I know of very little that will be of no relevance. So that one should not be of any major concern.

Seeing these programs, having decided to execute them as a unit, having decided to invite other agencies to the table, we did form the Technology Reinvestment Project and our first meeting was just before Christmas of 1992.

We began to craft this mission for ourselves and we agonized over each word because we first of all didn't want to promise something we couldn't deliver but we wanted to promise enough that it stress the current way of doing business.

We wanted to stimulate the transition to a growing integrated national industrial capacity, a single industrial capacity, for the purpose of providing the most advanced affordable military systems and the most competitive products and we believe in most cases you do both of those in the same way at the same time.

The strategy for doing this was to identify those funds that were in the fiscal year 1993 appropriation, to use those funds as investments in the two areas of development, the creation of new technologies, and deployment, the placement of those new technologies into products, and ultimately in this in the long run, to provide for an avenue by which the commercial sector and the military and the defense sector can be merged together. That was the strategy, that was the mission.

With that in mind, as I mentioned, we came and formed the Defense Technology Conversion Council. There is an MOU that establishes an understanding between these five folks. It is chaired by the Director of ARPA and it includes the Directors of National Science Foundation, the Director of NIST, Associate Administrator of NASA and the Assistant Secretary of Energy for Defense Programs.

We do plan, we have done now a joint competition for the issuance of a formal solicitation in mid-May. This will truly be a collaborative joint activity. We did not take the money divide up the pie, send it to the various agencies and step back. There will be a single integrated approach. There will be an integration of the; there was an integrated concocting of strategy. We wrote the red book as a joint entity. There will be a joint solicitation of proposals, there will be a joint evaluation and selection of those proposals, and finally there will be a distributed execution where proposals and activities will be affiliated with the various agencies involved in the collaboration for distributed execution always with a single purpose in mind.

This is the counter-culture part of the whole program. This is where the sociology and the fun really begins. Now I've talked about the program so far and I've used that word in a very specific way because those programs that are described in legislation should be viewed as giving you the restrictions and the conditions for the proposals that you're preparing.

I'm now going to talk about the activities. The activities are those things that we would like to see you propose to us in these proposals. They fall in three areas. First of all, technology development won't surprise you. Second of all, technology deployment. And third, manufacturing engineering education. Let me talk about each of those in some slight detail now and I'm going to invite you to come to the breakout section, one for each of these, to hear in more detail what these activities are.

Technology development. First of all we are soliciting proposals for activities that transition spin-off technologies. Those are technologies originally developed for defense that we would now develop in the direction of a commercial product as far as it would take to establish commercial viability of that product, again, stopping short of the point of sale.

Spin-on promotion would be the converse. These would be proposals that would develop a technology originally intended for a commercial product in the direction of a defense product to the point that it would demonstrate viability as a defense product. It would then be the responsibility of a service agent to contain that development into a weapons system.

And third and probably most common, most popular of all, would be dual use technologies. These would be the technologies, most of them at the component level, that have equal or comparable appeal to defense and commercial markets.

Now this is where much of ARPA's previous work has lagged because the

kinds of technologies we have been developing for many years at the component level, and I'm talking about basic materials technologies, semiconductor technologies, battery technologies, fuel cells and so forth, are equally applicable at some point to both defense and commercial efforts. The difference now is actually twofold. First of all we recognize that a commercial market is crucial for the ability of defense to acquire these technologies. We can't pay for it by ourselves. And second of all we realize that these technologies have to be husbanded by us a little farther than they normally would have been. Otherwise they don't ever get developed fully enough.

Under deployment there are four activities that are of importance. The first one is probably most familiar to you since there are extension programs now in use. In fact the President has described a vision in which several hundred of these manufacturing extensions would lie all across the country. Much of the funding appropriated here would be to extend the funding of the best of those rather than try to generate replicative or duplicative programs that would compete.

Crucial here will be to show that a program is consistent with a state or regional plan and is coordinated with other programs within that region or with other regions.

As the number of these centers grow, communication among them becomes crucial. Currently communication is typically done with a telephone or fax machine but that's because the number of centers is reasonably low. As the centers grow to several hundred, telephones and fax machines won't scale to be an effective communicating medium. So the second activity has meant that establishing those technologies and to some extent methodologies that will be required in order that the extension system function in a scaled-up way.

Technology access services, down at the bottom, refers to those activities which will directly seek to extract technologies out of the producers, out of universities, out of national laboratories, out of small R&D companies, in a way that they can be passed to others for distribution via the extension programs.

Again, these are activities some of which are known but there's so much room for new ideas that we want to solicit those things explicitly.

And, finally, we are aware, we became aware in our investigations before the solicitation was published, that there's lots of fertile ground for new and improved ways for the deployment of technology.

So the third topic there, the last that I will describe, is specifically involved with determining what those new ideas are and doing pilot projects that would demonstrate the efficacy of those ideas in a real world environment.

It can be viewed perhaps as a none of the above topic, but the difference will be that in these cases the proposer will be required to demonstrate to us that you understand what is important and that there be a measure, a metric of performance, that you can grade yourself by at the end of the day.

The third category is manufacturing, engineering and education; manufacturing education and training. These programs are largely concerned with the raising of manufacturing science to the level, the graduate level and undergraduate level that would be equivalent to other sciences. We do not have a very robust manufacturing educational program in this country and these programs would go after establishing just that.

They are specifically directed at institutions of higher learning, four-year colleges and two-year college programs. They have to be cost shared at 50 percent and they must significantly involve industry. You can see some of the activities here that are specifically dedicated to bringing engineering talent into the classroom

involving manufacturing people along with students, teaching students actually how to manufacture things in a real and scientific way.

This is going to be a very important program and one that we've needed for quite some time in our colleges and universities where the main educational objective, and I'm a product of it, is currently to obtain higher degrees until you get to a Ph.D. and then go back into the university to teach. These will be programs that would really educate people to perform, something we desperately need at the moment.

This matrix represents the key chart in the whole book. For those of you that are writing proposals this is what you will stare at most I hope. You will see the eight programs lined up along the bottom from left to right. You will see the activities that I've just talked about lined up from bottom to top on the left. This is an attempt to focus your idea through an activity into a program. The process would be first of all to determine what it is you want to do, what idea is it you want to exploit. Find an activity consistent with that idea, that establishes a row. Move in that row until you find the red dot and that will guide you towards the program. Now in most cases we have tried to provide you a number of programs from which to choose, given that your circumstance may fit better into one program than another. The programs are better designed to do that in the technology development ideas than in the deployment ideas. Where there is only a single dot, then the choice of program will be easy.

Now as I mentioned the requirements for each of these programs is outlined in Appendix B. We have tried to make that appendix as much a plain language description of the law as we possibly can. The activities are outlined in Appendix A and we've tried to make that as rich with examples as we can. Do not regard the examples as restrictive. They're meant to be subjective. And the idea here is not to constrain or confine anybody but simply to give you an idea of the scope and the extent that these activities and these programs have.

If you don't find your favorite idea in one of the examples that doesn't mean that you can't propose it. If you do find a restriction in one of the programs that means at some point we'll have to negotiate it. Unfortunately the restrictions occur in law, the activities do not.

Now we're going to be as flexible as we can in the negotiation of these contracts, of these efforts, but the law is quite specific in many cases and their flexibility will be somewhat inhibited.

This describes the way in which we're doing business. I told you that we came together the middle of December to form the Technology Reinvestment Project. A number of us are full time on this project. We have a separate space that we occupy, a separate place in the city. We are manned by donated people from each of the five agencies. There are about 15 full-time folks, there are about 35 part-time folks that are really working in a very close collaboration. That's been going on now since before Christmas.

During that time we put together the strategy, we put together the program plan and we wrote the solicitation that's in front of you.

The solicitation -- We wrote the program package in front of you. The solicitation will be issued, we're currently planning to issue that on the 14th of May. Why delay? We are delaying precisely so that we can have meetings just like this. As soon as we issue a solicitation then our ability to interact with you will be inhibited by law. We wanted to forestay that inhibition. So we provided a period of time between now and May the 14th where we can get out and without endangering anybody's interest can work with you very closely to understand these programs, to put together teams, to make sure those

teams address the requirements of the red book and so forth.
ARPA has actually been in the business of putting together these partnerships for quite some time. You may remember that we had precompetitive consortia in fiscal year 1992. We had partnerships in 1991. It was my expectation at that time that the difficulty was going to be in sitting down at a table and to have an interaction with a team of industrial partners that resulted in a conclusion. That turned out not to be the problem at all. The problem was to get various industrial people from various companies in the same room to talk to one another. The discussion between the government and that team was very easy compared to that. These teams are painful to put together. They require active participation, they require a lot of effort. And so we're allowing ourselves that time in which to perform that kind of service.
Now when the solicitation is issued on May the 14th what is most likely is that it will refer back to the red book, you recall that's the one that says across the top of every page, This is not a solicitation, and say, Well it is. There will be some correction of errors but frankly what you see in that book is what you should be planning for and all of the conditions and all of the examples should be very accurate.
There will be about 60 days in which you'll have time to prepare your proposals and all the proposals will come due on or about the 23rd of July. So at that time all the proposals will be on the end of my desk at the TRP and the team, still a team, will begin the evaluation process. I expect lots of proposals.
The process will be consuming. We hope to have some early announcement of awards or winners by the beginning of October. Clearly we will not have all of them chosen by that time but we want to get as many awards out as we can.
When the awards are selected, then and only then will there be an affiliation of award to an agency, and as you see here, efforts will be given to agencies to manage in concert with ARPA at each instance.
Now for those of you that understand what ARPA does now, this is similar to the agents system that we now employ and the value of that system is that by managing the contract together with a sister service we can begin to urge that technology to become incorporated into that service's R&D program. That similar aim is at work here because many of these technologies will have at least as much relevance to the various departments here as it does ARPA. But not until the end will the division be made. That's a very important feature of this whole entity.
Appendix D, I believe, is a very thick appendix that discusses the dual use like programs that we could assemble for your information and edification that are currently going on. It is not to imply by any stretch of the imagination that those programs are somehow subsumed into the TRP process. But there you may start to get information, there are lots of phone numbers of people that you can call and begin to work with and I would begin to work with those people now, not later. These teams and these proposals are very difficult to put together, so don't put it off until the last minute.
In addition, I believe this is true, I hope it's true or I'm going to be stormed up here, there is a separate handout that has in it a whole bunch of names, about 200 names, of individuals at the five agencies and the services for technology focus areas. I'll be discussion more about them in this afternoon's breakout session.
Furthermore, in the back of that handout are yet more names for regional contacts that you can call in your local area, and we've tried to list all of the tech transfer offices of all the laboratories within the federal system. They're going to be key to putting together proposals that include federal laboratories.

There are numerous legal implications and ramifications that we poor physicists don't understand, so I would like Rick Dunn to come up and explain some elements of cost sharing, some elements of intellectual property and some of the elements that further restrict proposals.

RICK DUNN: Thank you, Lee. It's a pleasure to be here today on this first of the regional meetings describing the Technology Reinvestment Project. Your booklet has a couple of tables in it that describe the requirements for participants in the various programs. The thing that I would like to point out to you is the first sub-bullet under the second bullet. The statutes define what the bare minimum requirement for any particular program is.

If you look at the table, Table 2, I think it's called, on page 2-8 of the program information package, it's the table that has a lot of little black dots on it. What we have tried to describe there is that second; the first sub-bullet of the second bullet, what the bare minimum requirement is. For example, in critical technology dual use partnerships, the requirement is for two or more eligible firms or a nonprofit research corporation established by two or more eligible firms.

Who may participate in a critical technology dual use partnership? Well there's no restriction. There is a requirement that at least two eligible firms or a nonprofit research corporation established by two or more eligible firms be included in a dual use critical technology partnership.

So that's what we're trying to say. We've used the term, eligible proposers. That term is not used in the statute. It's our attempt to convey to you that the proposal that comes in must have committed to it at least the minimum statutory requirement. That's what we're trying to get across. And these are some of the various types of organizations that are mentioned in the statute but quite frankly there is no exclusion in the statute. So it's a matter of what are the goals of your particular project, who do you need in there, where are the resources to be found, that's what determines what should go into your alliance or your partnership so long as you have the must be involved entities there.

Lee told you in his overview that there's cost sharing requirements for each of these programs and that's certainly true and I'm sure that many of you are thankful to congress for having authorized and appropriated these various programs, but one of the things congress did is they gave us six separate statutory formulations of cost sharing among the eight programs. We have tried to capture in the appendix to the program information package what those cost sharing requirements are but we've done it in only a very approximate manner, and this might sound shocking to you, that we would do it in an approximate manner, but let me tell you that our plan is not to disqualify any proposal as it comes in because of some slight variation from the statutory scheme in cost sharing.

Cost sharing is important. You need to pay attention to it. I'm going to talk about some of the details. We are not going to make it, in the procurement jargon, we're not going to make it an issue of responsiveness. Get your proposal in. If it's a good idea, if it's highly thought of, we will negotiate and get to a legal cost sharing regime before the award is actually made. Again, I'm not trying to suggest to you not to be concerned about cost sharing, but I do want to tell you it's not going to be go, no go decision on the front end of your proposal evaluation.

Some of the programs, such as commercial military integration partnerships, have very onerous cost sharing requirements, such as the ones you see up there, 50, 60, 70, 70, 70. Most of the programs require some sort of 50 percent cost sharing.

The way that cost sharing is stated, I suggested to you, is in different language. The effects of it are not

identical in all cases but roughly speaking industry and those financiers that industry can ally along with it must put up approximately half of the project cost.

If your partnership, if your alliance has state support, has foundation support, even though the state or the foundation may not be a party to your partnership, that money counts on industry side of the ledger, counts on the nonfederal side of the ledger, all third party money, all nonfederal government third party money.

In kind contributions are allowed. In some of the programs, most of the programs, as a matter of fact, all of the nonfederal, all of the non-DoD contributions can be in kind.

Now does that mean that a proposal that has 100 percent in kind contributions offered is going to be considered as highly as a proposal that has 100 percent or a high degree of cash, and I think the answer's no, and one of the reasons for that is the fourth evaluation factor in technology development program is commitment to productization and to the extent that firms are not prepared to put cash on the barrel head, I think that's going to indicate less of a commitment than otherwise would be the case.

However, we feel it's absolutely necessary to authorize in kind contributions for, among reasons, that small and medium sized businesses would have a very difficult time participating in this program at all if this were not authorized and so it clearly is and small and medium sized businesses that offer in kind contributions are going to see that they will be granted a certain amount of leeway.

What do we mean by in kind contributions? Well quite frankly we mean pretty common sensical ideas. If you have a facility or equipment that you're dedicating to the project, the fair rental value of that will be counted. If you're not dedicating a facility entirely to the project but some percentage of it, then a percentage of the lease value or the fair rental value of that facility, the actual personnel costs that are dedicated to the project. One of the more difficult areas that we're exploring in this particular project; and by the way, those concepts, the concepts that we intend to use are pretty much those that are outlined in Office of Management and Budget Circular A1-10. As I said, they're basically common sense rules and if you want to look for written guidelines someplace that are a little big longer than what we've laid out in the back of the program information package you can refer to A1-10. We're not going to follow it slavishly, but it gives you a good outline of what is a common sense approach.

Now there's another factor. Two issues here we're breaking somewhat new ground on. One is the in kind contribution of technology transfer activities. What in the world is that? By that we mean the commitment of proprietary technology to a partnership or to an alliance. How do you value that? Let me just give you some suggestions and then tell you sort of the practical answer as well.

If the very purpose of a partnership or of an alliance is to commercialize some proprietary technology, for example, a systems producer, a systems developer wants to enhance the capability of his supplier base and he has some proprietary technology that's directly relevant to the activities that go on at the factory floor among his suppliers, if he takes that technology through, and as I said, the purpose of the partnership is to convey that technology to his supplier base to enhance their productivity and efficiency which obviously benefits that systems guy in either improved product, improved quality or reduced cost. That's great.

It also raises the capability of those suppliers for whomever else they happen to work for. We would view that kind of a technology transfer activity, and excuse me, let me say one other thing, and the particular

technology is not elsewhere being used by its owner, so he has totally dedicated it to use in this particular project and its effect is to raise up the capabilities of his supplier base, both to his benefit and to the benefit of anybody else who happens to do business with those suppliers.

Now we would view that kind of technology transfer activity as one that had a pervasive impact and was dedicated to this specific project. There is a case where an argument could be made for very close to 100 percent of the sunk cost of those kind of activities being recognized.

Now if the technology transfer activities are merely incidental to a project, if they're not totally dedicated to a project, if their value at all is uncertain, then we would be unable to recognize a large percentage of the sunk cost of those activities for cost sharing.

Now you can sit there and say, Well, gee, those guidelines aren't very clear, and I understand they're not clear, and the way we intend to address that issue is in your proposal you are going to tell us what your rationale for valuing technology transfer activities is at all and it will be a subject for up front negotiations and we will come to an agreement ahead of time as to what the appropriate value of those activities should be, and once we award a funding agreement there's not going to be any doubt thereafter as to what those in kind contributions will be valued and they won't be called into question later.

Independent research and development costs. This is also something of a new area. In the federal acquisition regulation there is a cost principle in part 31 on IR&D. What we're talking about here, those of you who are defense contractors know what IR&D is, it's those projects that you engage in to enhance your capability which your costs are later reimbursed by the federal government because there's deemed to be a general benefit. Those of you who are not defense contractors don't have your independent research and development costs treated like that. Well the very definition of independent research and development costs precludes work that is pursued under the statement of work of a procurement contract or a grant, and I'm using those words very specifically, from also being reimbursed as independent research and development costs.

We intend to use award instruments that are authorized in the cost principle, allow industry collaborations supported by government nonetheless to have industry costs treated as IR&D and I'll get into that in a little more detail.

Let me also mention that any accounting requirements will be generally accepted accounting practices and if you currently do not have an accounting system that is subject to federal standards you need not put one in place in order to participate in this program.

The key words in IR&D are cooperative agreements and other transactions. Now these particular words happen to show up in a statute applicable to ARPA and they also show up in the cost principle that I just mentioned and for those of you that care that's FAR 31.205-18(e). It was promulgated on 24 September 1992.

If the award instrument is an ARPA agreement the industry cost share is eligible for treatment as IR&D which means in part it may be reimbursed by the federal government at a later date and that reimbursement is not going to render it ineligible for cost sharing.

I've talked about technology transfer activities and in kind contributions. The last bullet needs some clarification. In kind value of equipment and software again will generally be the fair rental value that I mention; in the case of small businesses there may be occasion where they acquire goods or have acquired goods right before the initiation of the project, which are dedicated to the project, and in some

instances, in the case of a small business, we may recognize the full purchase price of that equipment as in kind contribution.
Statutes in one case require us to fully recognize the contributions of small businesses and this is one of the techniques that we're doing to comply with the statute.
The second bullet up there is nothing very profound. It just says that if you have a government contract and you earn some profit on it, it's your money and obviously it's eligible to be considered as in kind contribution.
The funding instruments that may be available, what I'm describing here is ARPA's legal authorities; the legal authorities of all of the government agencies involved are not identical but in certain instances they're quite similar to what ARPA is doing. In other instances they're rethinking the kinds of things they can do and in some cases I suspect they may be seeking legislative authority to be able to deal with industry on the same way that ARPA has, and they may very well receive that authority before the 1st of October and therefore the discussion I'm about to give you may be applicable to all of the agencies.
First of all, it's very clear that the purpose of a procurement contract, that a procurement contract is used as an instrument when the primary purpose of the transaction is the acquisition of goods and services for the direct benefit of the federal government. Now while I cannot absolutely predict that there may not be some deal in this whole project that will slip in that has that as its primary purpose, if you heard the overview, you've heard what the thrust of this is all about, it's not the acquisition of goods and services for the direct benefit of the federal government. Therefore, it is highly unlikely that any procurement contracts are going to be awarded during the course of this project. Grants under DoD policy are issued only to universities and nonprofit organizations and those that know the grant tradition it's sort of a hands off, send money to the university to pursue a statement of work, review it after a year or so, see how it's coming along. It's very unlikely that that sort of hands off activity is going to be involved in any of these projects. This is going to be a collaborative effort.
Cooperative agreements are rather similar to grants except active involvement of the government is anticipated and from ARPA's point of view that active involvement means actual participation in a technical sense and ARPA seldom if ever does that.
Therefore if a procurement contract is not appropriate in ARPA's case oftentimes we end up with an other transaction, and an other transaction is significant not only because IR&D can be used in cost sharing but also there basically have been no rules written specifically to deal with other transactions.
I've noted under bullet three that the cooperative agreements we're talking about are not, quote, cooperative research and development agreement, unquote, under the Technology Transfer Act. However, I don't want to let you assume that there may not be CRADA's involved in these programs. It may be that some of the government laboratories involved in this program, in order to collaborate with industry, will say that they have to issue CRADA's and it may be that you will have an ARPA funding instrument and another instrument with a government laboratory. It's not a very elegant way to do business but government is still in the process of reinventing itself and doesn't necessarily know how to do all this in a very elegant fashion.
One of the other implications of other transactions is that the statute that normally applies the allocation of intellectual property rights under government sponsored R&D is not applicable. Now the standard allocation of intellectual property rights, by the way, is not very onerous.

It allows commercial firms, those who perform research for the government, to retain title to patents.
However, the government by law retains a government purpose license right and that government purpose right allows the government to engage in competitive procurement for exactly the technology that was developed.
That allocation of intellectual property, of patent rights works fine in most instances to facilitate commercialization. The other problem is that I use the adjective, most. There are some cases where either it's a problem or industry perceives it to be a problem and in this project we do not intend to remake industry in government's image. We intend to come out and meet industry on its own terms to the extent the law allows us to do that and allow industry to retain its own accounting practices, allow industry to allocate intellectual property rights, to retain them as trade secrets if need be in order to effectively commercialize technology. We expect that the government will be able to take advantage of these technology developments by purchasing them as goods in an integrated commercial military marketplace where economies of scale and market forces make their prices reasonable.
I've just gone over this. In addition to what I've said about patent rights and other intellectual property rights, in almost every instance we will retain some form of a march-in right which says that if the project is unsuccessful we will retain the right, the government will retain the right to go in and try to pick up the pieces and salvage whatever technology there is in the form of patent license or data rights, whatever there may be, and move on and work with it in the future. However, if the project is successful and components, materials or products are actually commercialized, in some instances we don't feel that the government will have to retain any rights at all. In other cases we'll use that standard allocation of intellectual property rights that I suggested.
The key feature here is that in those instances when we're dealing with a; as many of you know or those of you who care, there are many segments of American industry where they choose not to patent their inventions. For various reasons they consider patenting inventions not to be the most effective way to protect and exploit their intellectual property and therefore they retain them under state law as a trade secret, and this is one of the innovations that we have engaged in in the last couple of years where we have basically allowed industry to do that, whereas the standard government patent clause restricts industry from being able to retain its inventions as a trade secret and forces them either to patent the technology within a certain period of time or give up that right to the government, and we're not going to force industry into that choice if it makes sense for them to handle their intellectual property rights in a different fashion.
Finally, I want to talk a little bit about historically black colleges and universities and minority institutions. This is our policy in that regard. We basically have a tie breaker rule which says if proposals come in that are substantially equally attractive, roughly similar capabilities, and one of them has involved as one of the partners or in the alliance a historically black college or university or minority institution, we're going to use that to break the tie and make the award to the partnership that includes that institution.
Now we hope that this will encourage a large number of those of you who are thinking to propose to include such institutions in your proposals. We are convinced through our own experience at ARPA that while some of these historically black colleges and universities don't have the greatest investments in plant and high technology equipment in their laboratories, there nonetheless are

kernels of excellence to be found throughout these institutions and these institutions need to be harnessed with other universities as well as industries that have technological capabilities and there is a synergism that can grow up through this that we're convinced can be to the aid both of both institutions and to any partners who are willing to take the time and effort to go out and find those kernels of excellence that exist in those institutions. Thanks a lot.

(Applause.)

DR. H. LEE BUCHANAN: When was the last time you heard a lawyer talk about doing things via common sense? We got from the philosophical to the very practical in almost no time, so let me accelerate things. How do you prepare proposals? I'm going to go back to this chart as you map. You heard Rick say and it deserves reiteration, we are after those things that make sense. Do not be confined by self-imposed notions of what's acceptable and what's not acceptable. These things are all cost shared and we're assuming that you're in it with your own self-interests in mind. We're looking for you to convince us where your self-interest intersects with our own.

Don't disregard the restrictions because ultimately they'll have to be negotiated, but don't let that inhibit you from thinking of things that make sense to propose, and then find an activity that is closest to it and from that activity find a program that is most tolerant of your own circumstance.

As Rick mentioned, there are certain requirements on who must participate and beyond the satisfaction of those minimal requirements anybody else can participate, whether you're a national av or a nonprofit or a state or local association or whatever, I mean do what makes sense.

This view graph breaks down, this chart breaks down the various requirements for participation under the various programs. It appears also in your red book in Appendix B and should be studied. All of the eight are different.

The proposals when they are solicited will have these features. The proposal will have an executive summary and a body and a statement of work, and by that we mean like a page of a statement of work, what it is you're going to do, and a final page that shows where in the proposal you have addressed the selection criteria. As I've pointed out, the selection criteria are in Appendix A and they differ between the three classes of program.

The cost proposal has no page limit but should show the proposed cost by statement of work task, the cost to the government and where the difference comes from. This is the fun sharing feature of things.

I cannot tell you and overestimate the importance of the executive summary of these proposals. Proposals will be 35 pages, five pages will be allowed for the executive summary. The executive summary is important. We expect to get thousands of proposals. It is very likely the executive summary will make the difference between a good idea appreciated and a good idea overlooked. I mean it's always important in a program like this where a number of proposals are in evidence. It is even more important in a program like this where we are soliciting a wide array of ideas to compare one against the other.

Many of you will have ideas that combine a number of activities and that is to be praised. There will be a process by which activities, dots if you will, can be associated in a larger program. Essentially it will involve writing separate proposals, two dots, when those dots are in different programs, and then showing us how they are interrelated. Interrelated proposals will be more attractive than standalone proposals, so it is to your advantage to do that. But because the programs have different requirements, each piece will have to satisfy the requirements in each

particular program and that's the point of the process for associated proposals. For instance, an association might be made among dual use development and an alternate deployment project, in which case part of the development can come in commercial military integration partnerships with one set of requirements, and another part could come in an adjacent program, the Regional Technology Alliances Program.

In that case where you're actually proposing to do a technology development and a subsequent deployment you would tell us that but there would be a separate standalone proposal to each dot and it may be that you win an award with one and not another. But each will gain strength by association with the other.

Most of you, all of you, should have a copy of the program information package. For those of you that want more, the 1-800-DUALUSE number is operational. I will tell you that that number has been the cause of a great source of entertainment for many of us. The idea for that number was hatched about a week or ten days before the President made his speech. At 3:00 o'clock in the morning I tried the number and sure enough it was not in use, so the next morning I called AT&T and I said I'd like the number and they said, Well, no, we can't do that. It's not in use, but the company that turned it in only did it 30 days ago and we have a policy of not reissuing it for 90 days, so call us again in 60 days and we'll let you know. I indicated I really couldn't wait 60 days and could I get an exemption. Well no, no, we can't give you an exemption. It's a matter of policy, you know.

Well being from the government I knew something about policy so I said, Well, that's fine. Now where in AT&T is policy made? And I was told that it was at the vice president level. So I said, Well fine. Give me the name of your vice president and I'll have my vice president call your vice president. There was a long pause at the other end of the phone and then I was asked just exactly what was an ARPA again. And when I was explaining what an ARPA was, that it was a separate agency, I was asked, Well and so who is your vice president? And I indicated that was a fellow name Al Gore. There's another long pause at the other end. Well, I was told, I'll get back to you in 15 or 20 minutes, and they did, and I had the 1-800 number.

We gave that 800 number to the team that accompanied Mr. Clinton up to Westinghouse on March the 11th and it was to be put, many of you saw the CNN rebroadcast, it was put under his face as he was talking about the red book, but, and this is a dual use joke by the way, it goes across administrations, they misspelled dual use, and spelled it d-u-e-l use. Something about errant e's that seems to pervade these administrations.

Well it turns out there's a fellow in Texas who has 1-800-DUELUSE who is not at all happy about receiving the thousands of phone calls that he got.

I'm going to stop now and open this up to questions. This is not an easy program to understand. It incorporates a lot of various regulations, it's going to require a lot of explanation. We're here today to answer your questions.

I want to close though under some very, with some very specific comments. This is a collaborative execution that is very different and we know it's very different and it's considerable departure from our own sociology.

You heard Rick Dunn describe something called agreements. It would be my hope that we issue no grants and no contracts in this program except where they made sense. We would hope to issue everything as an agreement for all of the beneficial reasons that you heard. That it allows R&D, that it does not require DCA audit, that it's a very quick and streamlined process, that there's not a many month waiting period. For all those reasons, agreements are the preferred vehicle.

We are conducting, however, consistent with the award of a contract or a grant in the event that it makes sense.

Second of all, or third of all, you see the difference here that we are focusing on dual use industry and what is new is, of course, that the existence of a commercial product that has a defense relevance is now regarded as beneficial and a thing to be sought. That is a very new idea for us.

Finally, I cannot overestimate, we are looking for things that make sense. Do not self-constrict your own thinking. Tell us what makes sense to us. Tell us what serves your best interests in your proposal. We'll work it out. We're here to do that.

OVERVIEW, QUESTIONS AND ANSWERS

NEW YORK REGIONAL BRIEFING AT THE SHERATON NEW YORK HOTEL AND TOWERS, MONDAY, APRIL 12, 1993.

SPEAKER: I represent a Department of Defense laboratory, government owned, government operated, and we're certainly interested in participating in some of these programs. Obviously it would be in partnership with industrial consortia. The question is relative to the funding criteria. We will not be in a position to directly participate in putting up cash or capital. However, we certainly have in kind services we can contribute. The question that will concern us and our partners is how will those contributions be judged relative to your criteria of government versus nongovernment contributions?

DR. H. LEE BUCHANAN: That's a question we get a lot. Frankly I don't imagine that very much of this money will end up paying for federal jobs. This program is very much an industrially oriented program, but by the same token we fully recognize and having worked in a national laboratory I'm especially sensitive to the fact that therein lies a tremendous reservoir of technical opportunity that we need to exploit.

So I would recommend you reconsider Rick's language there. In fact these programs will require half at least of non-DoD cost sharing. Any in kind representation that you bring to the table that is derived from DoD monies is not non-DoD cost sharing, so it couldn't be counted. That's the bad news.

The good news is whatever you bring to the table from inside your laboratory will not have to be cost shared by someone else that plays with you. So that's a neutral pot of money that will not require cost share and therefore would make you attractive as a team mate to someone else.

SPEAKER: Thank you.

SPEAKER: The question is what if any are the time constraints that are imposed upon this funding?

DR. H. LEE BUCHANAN: In terms of period of performance or in terms of the fiscal year budget?

SPEAKER: The period of performance.

DR. LEE BUCHANAN: The question concerns how should you write your proposals in a period of performance. Frankly this was a dilemma early on. You know that the money that was appropriated in FY92 was done so under the budget agreement, I believe, of 1986, the so-called fire walls. It was put in the Department of Defense largely because of those fire walls and there is no guarantee that; *** there is certainly a guarantee, you heard the man say a moment ago that these programs will certainly be continued, but we don't know quite where it will be within the executive branch.

So the dilemma was we start a few things and we fully fund them for a long period of time with certainty or we start a lot of things and we conduct a program in a way that would allow those out-year due bills to be paid regardless of where the money ended up.

We elected to do the second. So proposals in the technology development area should be written for an 18 to 24-month period of performance with 18 to 24-month options included in the proposal that we will negotiate at the time of award. Proposals in the technology deployment area should be written for a one-year period of performance with subsequent one-year options to be negotiated at the time of the award. We may choose to execute one, two or none of the options with this year's appropriation. We may choose to execute the core award out of this year's appropriation and an option out of some other appropriation from this year or next year, but we're asking for that flexibility.

So while projects can have a term longer than one or two years, we're asking that the proposals be offered in one and two-year increments so that we can get the money into the hands of people that can use it and not let it sit in banks.

SPEAKER: My second question is how soon can we copies of Rick Dunn's agreements?
DR. LEE BUCHANAN: I was sort of under the impression we had them now, but if not, we can certainly make that available to you.

SPEAKER: (Inaudible.) Can you make it cheaper and easier to do business with the government? (Applause.)
DR. H. LEE BUCHANAN: Part of the pain of changing our spots will be to reform our own acquisition regulations. We know that, we all know that. Unfortunately that's not my own purview but you can be assured that a large part of my boss's boss's time is going to be spent on that.
What we're trying to do here is to make it as locally painless as possible. That's why we are trying to conduct this entire procurement outside the federal acquisition regulations, even outside the Defense acquisition regulations. That is the whole point of it. And we're trying to set a precedent by which the rest of the department and the rest of the government can follow suit. Wish us well.

SPEAKER: A question way back here in the back. You probably can't see me from up there. I have a question for Mr. Dunn. In dual use development proposals, will his office attempt to manage the general counsels from the various five agencies in attempting to come up with commercially respectable terms for licensing government patents that might be incidental to the proposal?
RICK DUNN: No. [Laughter.]

SPEAKER: Therefore there are no standardized approaches in licensing government (inaudible.)
RICK DUNN: There are standards. There's not a government-wide standard which is probably what you're referring to. I mentioned in my talk that we were not finished reinventing government yet and that most assuredly is the case.
For a number of years I was active in trying to establish our agreements authority so that we could do business in a manner that was not subject to the federal acquisition regulation and the Defense acquisition law, statute, the Armed Services Procurement Act.
I thought that we had gotten pretty close to that as far as ARPA is concerned and then we started entering into partnerships and consortia in which we tried to get the expertise of government labs involved jointly with industry and I found out that basically the question that you're asking, the patent system, is a whole additional morass that the government has created.
I recognize the issue that you're raising, the concern that you have. I'm also familiar with the statistics on government licensing of its patents and for those of you that are not aware, they are abysmal. There's a very, very large number of patents owned by the federal government. I think the Department of Defense alone has about 30,000 patents. We license less than five percent of those and we generate a very small amount of income and yet for some reason it seems very, very difficult for industry to deal with this. So other than state explicitly the problem that I think you're addressing and other than trying to act like ARPA and show people that you don't have to do things today like you've done them, that's about the extent of our suasion.
DR. GARY DENMAN: Let me add to that, that where we run into situations of conflicting rules and regulations between agencies we intend to write the agreements using ARPA rules and then transfer that agreement to the

other agency. So I think we can minimize some of that kind of problem.

SPEAKER: (Inaudible.)
DR. LEE BUCHANAN: I think there is a discussion. The key word is eligible and I think an eligible firm is, unless I'm mistaken, Rick, I think an eligible firm is assumed to be a for profit or at least intended for profit. That's my understanding.

SPEAKER: (Inaudible.)
DR. LEE BUCHANAN: Recall I mentioned that the SBIR program was;*** you know that all federal acquisition money is taxed at a rate of 1-1/2 percent this year, the SBIR program. We had a choice there of taking that 1-1/2 percent and competing it as the, together with the entire DoD offering. We chose not to do that.
The SBIR part of this program will be competed as a part of this program, so there will be an SBIR offering, when the solicitation is offered on May the 14th that is separate from the solicitations of any of the other departments, it will be a TRP SBIR offering. This year it will be all phase ones. In subsequent years we would include phase twos and unlike other SPBIR programs, phase threes would be from this program. So you now have a place to go after phase threes that you never had before.

SPEAKER: (Inaudible.)
DR. LEE BUCHANAN: I'll let our DOE rep speak to that, Bob Norwood.
MICHAEL LONG: This is Michael Long from DOE. The answer is that the Office of Defense Programs was selected to administer the activities within the department. It's not by any means to say that any activity has to be limited to defense programs. Any entity within the department is open for participation in the program.

SPEAKER: I have a question. You talked a lot about manufacturing product on the factory floor. I want to know if you also include in that product such as better information systems, communications systems, video processing, things like that? That's my first question.
DR. H. LEE BUCHANAN: If you stay for the technology development breakout you will hear a discussion of the 28 areas of emphasis. One of those is information infrastructure and encompasses all of those things.

SPEAKER: And where do I get the best information about the military downsizing, unemployment, where it exists (inaudible)?
LEE BUCHANAN: You want facts and figures concerning how many people are out of work and so forth?
SPEAKER: Due to the defense downsizing.
DR. LEE BUCHANAN: I think that would be the purview of the Economic Development Agency within DoD. I thought I had a phone number for that but I don't. Steve Wax is here at this side of the room. He'll be able to give you that, he's standing right next to you, he'll be able to give you that. Another question?
DR. STEVE WAX: Do you want the number?
LEE BUCHANAN: Yes, why don't you say it out loud?
DR. STEVE WAX: 703-695-1800.
LEE BUCHANAN: EDA; OEA.

SPEAKER: The red book makes a (inaudible) point about consulting with respect to (inaudible) your proposal prior to May 14. Are you going to have a list of who are the responsible people in the several areas that are outlined?
DR. LEE BUCHANAN: Is that not a part of your package today?
SPEAKER: You list the organizational heads but obviously we're not going to be visiting those individuals.
DR. LEE BUCHANAN: Was there not a separate handout that discusses the 28 technical areas and the regional areas and all that? There's hundreds of numbers there. There are 200

numbers for the technology development alone and another 50 or 60 for the regional coordination.

SPEAKER: (Inaudible.)
DR. PHILIP NANZETTA: NOA is a part of the Department of Commerce and as such we would welcome working with them as a participant in the project.

SPEAKER: (Inaudible) a firm or a consortium of firms receive foreign investment money to make up its cost share?
DR. LEE BUCHANAN: I know of no prohibition on that. The only reason I can imagine that a foreign firm would want to do that is if they had some expectation that they were going to share in the ownership of the technology itself and that would be discouraged.

SPEAKER: You set an example for all of us for your cooperation and your openness now but come May 14th when we erase the (inaudible) that says this is not a solicitation, how will you be answering questions, will there be bidders conferences and how will the general answers to those questions be made public?
DR. LEE BUCHANAN: We will all be available to answer factual questions. What we will have to stop doing is going out in and amongst you and forming teams and actively pushing folks together. This will be no more restrictive than a normal broad agency announcement. But I mean this kind of an activity where we're trying to evangelize everybody we can find, both with fact and enthusiasm will probably have to dissipate after May the 14th. There will be no shortage of people to answer questions.

SPEAKER: Dr. Buchanan, you indicated that a proposal should be submitted in two phases, the first to cover the 18 to 24-month period and an optional phase of a similar period of time. Particularly the (inaudible) use area, considering the fact that there is a 50 percent matching support required from industry and this could be affected by how many tasks go into the phase A or the phase B portion, has any thought be given as to what might be a normal, nominal or average level of support for each of the programs involved?
LEE BUCHANAN: No. Whatever makes sense. We're not out to divide this into little pigeon holes. I mean if you want to bid a program that is the entire amount of one of the legislative programs you may do it. I will warn you that it had better be better than every other proposal I get. But the amount of money that you cull out should make sense for what it is you're trying to do rather than be prescribed by us somehow.

SPEAKER: The same proposal may fit in several of those categories. What do you do in that case, just note that or do you make separate proposals? Those expert categories I mean.
DR. H. LEE BUCHANAN: As I say we're going to look at these proposals for those things that are appealing from an activity point of view and frankly if a proposal comes in that's forced to fit into one category and we see a vacancy or a better fit in another category, if it's high enough on our list, we're going to come back to you and say, Hey, why don't you move it or why don't you change your conditions that we can apply it to something else? Those dots are again not meant to be prescriptive. They're meant to be suggestive. We're trying to get the proposals into places that are reasonably connected. So you need not apply the same proposal to every dot.

SPEAKER: You have no rough idea yet of how many awards you intend to make?
DR. H. LEE BUCHANAN: No projections.

SPEAKER: I have a question about the small business (inaudible). Is

there any flexibility in terms of that 500 person standard?
LEE BUCHANAN: Well I think the 500 person standard is the one appropriate to SBIR specifically and since that's the program that we're nominally competing here, that would have to be the standard that survives.

SPEAKER: Dr. Buchanan, will (inaudible) government agencies outside of DTCC be used in the evaluation process of proposals and if they will be, somebody like DOT, how will that be accomplished?
DR. H. LEE BUCHANAN: The question is who's going to evaluate the proposals specifically in the federal government. There will be outside evaluators. Clearly this will be a mammoth job and the few of us in the TRP will not be able to evaluate all proposals. We will try to recruit first of all those people within the federal government so there is no obvious real or perceived conflict of interest. We will try to recruit also people from nonprofits to help in that as well.

Where you want your proposal only read by government people, mark it government only and that will be honored. Where we don't see that, we may use folks that have signed an agreement not to disclose or an agreement not to compete to evaluate. But we're going to try to have mostly federal employees in a proposal evaluation role, but yes, they can be from any agency we can find, including those that are not on the TRP.
SPEAKER: It would be okay (inaudible) suggest evaluation (inaudible) within the proposal?
DR. H. LEE BUCHANAN: Sure. If there is someone that understands particularly the value of what you're doing that would be ideal.
SPEAKER: Thank you.

DR. H. LEE BUCHANAN: There's a question down here.
SPEAKER: What about selection?
DR. H. LEE BUCHANAN: What about selection?
SPEAKER: You talked about reviewing but how will you select the successful awards?
LEE BUCHANAN: The question is how will proposals be selected? I'm not sure I understand what you mean. There is an evaluation, a set of evaluation criteria in Appendix A for all these programs. That will be the explicit basis upon which every proposal is judged.
SPEAKER: Who does the selection?
DR. H. LEE BUCHANAN: Who is the selecting official? This gentleman right here, Dr. Denman. Now he has 2,000 very close friends.

SPEAKER: (Inaudible.) I want to ask you a question and make a request. The question is in those charts is there any substantial material not in the (inaudible), but I wasn't sure if there was any substantive material there that is not (inaudible).
The request is the agenda speaks of a full transcript being available mid-May. Is it possible we could get at least your charts, yours and Mr. Dunn's charts and perhaps a transcript sooner than that and to whom do we apply?
DR. H. LEE BUCHANAN: The question is can you get the charts that we've provided today. What I'm going to ask you to do is to contact our hosts for this meeting today, for reproductions of those charts, and we will leave a copy here for them to distribute.

SPEAKER: I'm a representative of small business and I have a two-part question, first a general and the second has to do with the SBIR. The general question is have the funds we've been discussing today been committed and they are available for the program or the program is on an as, (inaudible) funds are allocated or (inaudible) allocated basis?
DR. H. LEE BUCHANAN: The question is are the funds for this program committed.

SPEAKER: Are they available for the program.
LEE BUCHANAN: Committed means something very specific and if the funds were committed we wouldn't be here today since that would constitute an award. If you mean is this money real, you bet. It's real money.
RICK DUNN: It's all been allocated to ARPA at this point in time.
DR. H. LEE BUCHANAN: We have the money. It's in big boxes down in the [Laughter.]

SPEAKER: The second part of my question has to do with the SBIR, according to the program, and with the emphasis on commercialization is there any effort being made towards matching the timeliness of the review procedure with the timeliness required for the commercial marketplace? That is if the (inaudible) review process tends to be rather lengthy whereas new developments, you want to act on them as quickly as possible. Have you given any thought to that problem?

DR. H. LEE BUCHANAN: I mean we're moving as fast as we can. I mentioned that we're going to try to identify proposals for award as early as the beginning of October. Now if we are able to use agreements, then the process of getting money to you should be very, very rapid. I mean I'm not looking at a six to nine-month period here. But we are closing this down for nothing. So we're already moving as fast as we can, hope to move faster would be better, but I honestly don't know how I could do it.

SPEAKER: (Inaudible.) I have a question regarding contributions. Number one, does prior investment count as a contribution?
DR. H. LEE BUCHANAN: I'm going to refer that to Rick Dunn.
RICK DUNN: If you're talking about an accounting exercise, no. If you're talking prior investment in the, considered an in kind contribution, for example, the technology transfer activity the way I described, then yes, that could be recognized.
SPEAKER: (Inaudible) IR&D program?
RICK DUNN: A prior IR&D program that actually resulted in something and is not to be transferred to other members of a partnership or an alliance could be valued the way that I suggested during my talk.

SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: The question is does engineering overhead count as contribution. My understanding of the law is it would count as, and that is something that you pay for that is pursuant to the program and it could well be a part of your cost share.

SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: In some cases you might think that we're going to make some determination on cost share and after that all dollars are regarded as the same. That's not the case. In other words if somebody comes to the table and says, Boy, we're in for 50 percent and here it is, cash on the barrel head, now that's always going to be more attractive than somebody else that has some various division. So it is a comparative process, and you should go in knowing that.
RICK DUNN: Lee, may I try to add to that a little bit? I hope to dispel a confusion. Could that overhead be considered? The answer is yes. However, let me tell you, we are trying to redo the way government does business. In ARPA we have run the critical technology dual use partnership program for a couple of years now and we are not in a mode of doing business as usual.
These are cost shared programs and we're trying to look for ways of avoiding loading on government dollars that goes down to perform research. We want more bang for the buck and in some of the partnerships that we've been involved in forming up to now what we have is industry

grouping together, putting their money into a pot, along with the government's money, where it goes out and actually is use to fund performers and one instance performers who will be the new supplier base of a new class of materials for the partnership, for example, and there's no loading at all on any of those dollars.
They flow through an integrating subcontractor who is paid fees for services and to the maximum extent possible every government dollar goes into research and development, not to pay overhead. That's the new model of business that we're looking for.
So when we say, yes, what you're suggesting could be considered a cost share, we are interested in getting the maximum bang for the buck and payoff and I'm sure you're interested in that as well.

SPEAKER: Subsidiaries, are they counted as (inaudible)? Have a company with six subsidiary corporations, do two or more of those constitute a partnership or not?
RICK DUNN: I would think that would be a matter of whether they actually constituted a legal entity.
SPEAKER: A separate legal entity.
RICK DUNN: Separate legal entities under common control?
SPEAKER: (Inaudible) under a management corporation.
RICK DUNN: They might. Well I can't say it any more specifically than that. You know, if we're in SBIR we have specific rules of what constitutes a small business and if there's common control it would not be considered a small business. If there's no common control the fact that there is some link, you call them subsidiaries, that terminology brings to mind common control which would say they would not be eligible but if you're saying there's merely a management structure above them, then I would say, well, we'd have to see what that looks like and it might.

DR. H. LEE BUCHANAN: Let me get one more question before the breakout period.

SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: The question is IR&D contributions, if they're allowed by agreement when would they begin to accrue it. It depends on the deal. If you are going at risk on a proposal by spending your own IR&D, then you have to recognize that you're at risk. Clearly our intention is put a dollar into a venture every time you put a dollar into the venture and the venture starts when we declare an award.

SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: What I said was my understanding of the term, eligible firm, was a generally for profit situation. There are certain programs that are soliciting proposals from not for profits and from state agencies. They do not all do that.

SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: The question is do universities play a major role? My answer is that universities, government owned, government operated, national labs, are all invited to be as major a player as they can provided non-DoD funds are brought as match.

SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: The question is how does software get treated. If you have a piece of software that needs only boxing and shrink wrapping, that's probably too close. If you have a piece of software that would require additional development towards some commercial aim, and you don't know whether it's going to have commercial viability or not, that sounds like it's within bounds to me.
Let me conclude with the following admonition. There is a lot of misconception around about this program. We have tried to explain and we'll continue in the afternoon to

explain what it is. What it is not is probably as important. It is not a foaming of the runway for a crash landing of the Defense Department. That's not what this program is about. It should not be regarded as the place to call when the military base in your area is closed. There are other places to go.

It should not be regarded as an extension of unemployment benefits, although that may well be how it's used. It should not be a way to compensate for reduced budgets in basic research that has no real product affiliation. In the same way it should not be regarded as government venture capital in the final product of an item. It is not, for instance, to finance the retooling for national labs and government owned, government operated installations to do business, to do a different kind of business for profit.

In short, it is not a way to do business as usual. It is to effect real and profound change. We hope that you'll join with us in this. We are trying our best to be as helpful to you as we possibly can. Come back for the breakout sessions and we'll get into the real detail. Thank you very much.

DETROIT REGIONAL BRIEFING AT THE WESTIN HOTEL RENAISSANCE CENTER, TUESDAY, APRIL 13, 1993.

QUESTIONER: One of the questions that our industrial partners have brought up has to do with the protection of proprietary rights. And the things that Rick Dunn mentioned were not articulated as such in the red booklet. Can you provide such assurances for our partners that you will treat proprietary rights very kindly, because you emphasized that this would be on small and large needs. So, a lot of ground work has been done in developing processes, and the industries won't have these protected.

MR. DUNN: I need to clarify the question. Is the question related to the government's agreement to protect intellectual property that you are delivering as part of the effort, or our willingness to allow you to agree to something to protect your own?

QUESTIONER: The government's agreement to protect those rights. And there was some fuzzies on the comments that were made.

MR. DUNN: Let me try to get the fuzzies out of it. If the award instrument is an ARPA agreement under the authority that I cited we have, we are writing on a clean slate as far as the allocation of intellectual property rights is concerned. There are no preconceived statutory rules that apply. Therefore, that area will be a subject of negotiation between the government and the industry partnership. We demonstrated in those overheads that we would be driven primarily on the goals of the Technology Reinvestment Project from our perspective. And we are interested here in not just doing research, but seeing products and processes pushed very far towards actual application and deployment. So, it is our thought to do the maximum that we can to allow that to happen. Now, I am not saying, in every case, that we have decided that we will give away all rights. It is a subject of negotiations which could be up to the government giving away its rights if it makes sense for the government to acquire no rights. I want you to realize the limitations of what I have just said. And I'm talking, specifically, if ARPA is the agency that awards the instrument, and if the instrument is another transaction. If it is an agreement. One of the things that's happened -- let me not suggest to you that government has been reinvented overnight. The reinvention of government is going on right now. And there are patent attorneys in the other government agencies who are furiously scratching their head at the current moment, trying to understand what the dickens it is ARPA is doing. And the process goes on. And I think there's a lot of

thinking that's going forward. I can't tell you that if the executing agent of one of these agreements is in NASA or the Department of Energy, that you're going to get the same attitude that we have been exercising in ARPA during the last couple of years that we've been doing these partnership agreements and using our other transactions authority. But I think the trend is clearly in that direction. And the industry will find a far more open and accepting attitude towards its interest under this project than it may have had experience of in the past.

QUESTIONER: Okay. But that's an area that I
think you'll have to clarify up front because some of these companies do not want to spend the time beforehand to write a proposal, and then during negotiations be turned down.
MR. DUNN: I think I can speak in the area of the four technology development programs. Even if those programs were going to be handed off to another agency, if an issue arises of that type, an ARPA agreement will be negotiated, and we will hand off the negotiated agreement as well as the money to the other agencies, with the provisions already negotiated through a NASA industry. That position, by the way, is in our own self-interest. And the whole point of this is to form an industrial base that can provide us products. If we're standing in the way from commercialization of those products, then that denies us the very thing we're after. So, it makes really no sense. Let me answer a question that you did not ask, but may be in the minds of others, having to do with the extent to which we will protect your proposal as a proprietary thing. Now, obviously, government employees are bound to do that by law under penalty of something I don't want to think about. There will be people who may be called upon to evaluate these proposals as technical experts who are not federal employees. And each of them will be required to sign a nondisclosure agreement with the government. We will not be signing nondisclosure agreements with each individual proposer, however. That would be several thousand agreements that we just can't accept. But they will be protected as proprietary information throughout.

QUESTIONER: What would be the level allowed for indirect cost?
MR. DUNN: I can't tell you that. But I can tell you what our experience has been in the past, and what not doing business as usual means. And in our two years of doing the precompetitive consortia, the program that's now called Critical Technology Dual-Use Partnership, we have done everything we can to get indirect costs out of the way. These are all cost-shared programs. We're trying to get the maximum bang for the buck. We're trying to get dollars actually involved in technology developments. And having said that, I realize that universities and nonprofits have particular problems in that they don't have ways of avoiding those overhead shortages. They are potentially allowable and can be included in the cost share. But let me just tell you, our inclination is to structure programs so as to reduce the amount of dollars that go into overhead expenses and get dollars down into doing research and development products and processes.

QUESTIONER: I have first a procedural question. Would the slides that supported Mr. Dunn's and Mr. Jennings' information be made available?
MR. DUNN: If you'll read the bottom of your agenda, it tells you how to get those.

QUESTIONER: Thank you. And secondly, Section G of the red book speaks about advance agreements. With whom in the government does the proposer negotiate the advance agreements suggested therein?

MR. DUNN: Well, once a proposal is accepted for funding, and an agency is selected as the implementor, that would be the agency with whom you end up negotiating for an advance agreement.
QUESTIONER: So that means your advance agreement is submitted with your proposal?
MR. DUNN: No. Advance agreements may sound more profound than what they really are. It's merely an issue that some of these --evaluation of in-kind contributions, evaluation of technological transfer activities -- there's a variety of things which you will see there is no regulatory override. It's not clear exactly how they're going to operate. And in the absence of having a regulation to point to, all that we're saying is, we'll get together and decide before we go off into this project, before we award the funding instrument, what the rules are going to be. It's just a way of saying that's open to negotiation, and we're going to decide upon it ahead of time, and then move forward.

QUESTIONER: So the advance agreement is more along the lines of in the cost section of the proposal. The team should be submitting their proposed, if I may use that word, cost sharing, and that will become effectively the advance agreement, or at least the offers?
MR. DUNN: It's absolutely your position on how you want cost treated. How you want in-kind contribution valued. If you want to put some rationale in there, that's absolutely welcome, and that's what we'll operate with.

QUESTIONER: There's a proposal limit of 35 pages. What about associated proposals?
DR. BUCHANAN: Thirty-five pages per dot.

QUESTIONER: I noticed in looking at the array of dots that there doesn't appear to be a place to take technology that was developed in the front end and deploy it in the back end. The back end deployment things all sound like deployment in general kinds of things, not deployment in specifics. Is there a mechanism in here somewhere where you can do deployment of a technology developed in an earlier phase under the technology development dots?
MR. GUDAS: As I understand your question, you're asking is a proposal welcome which would have a component of technology development and a component of deployment; is that correct?
QUESTIONER: Yes, as perhaps a second phase, that would be a deployment phase.
MR. GUDAS: Okay. I see a time constant here that begins to worry me a little bit. If indeed it is a short-term proposal for technology development to be followed by a deployment activity. you could choose to string together two proposals. And indeed John Jennings pointed out that we are encouraging proposals that link the dots, if you will. If the time constant prevented that, we can't do anything about that.

QUESTIONER: Time's not a problem. The problem I noticed, and I'm not sure if I understood it correctly, was that there did not appear to be any dot associated with deploying a particular product. The deployments all sounded like setting up a mechanism for deployment in general.
MR. GUDAS: Okay. I've got you. I didn't get your question right. Deployment is, as I understand it, and, Phil, you might have to correct me, is the deployment of technology out of federal labs or out of organizations into the marketplace for small and medium-sized manufacturers, and that sort of thing. When we talk about deployment of a specific technology, we're really talking about commercialization or productization. That's a different aspect. That is addressed exquisitely in the valuation criteria for the technology development phase or the technology development element of this program. Lee has said on this trip,

and I'l: try to use his words, "we aren't going to shrink-wrap the developments." In other words, this program, if it gets into specific product development, we'll stop short of funding that. It's going to fund that research that's necessary to open up the opportunity for product development. But it's not intended ever to take you over the hump of putting your box and your wrapper around the technology and putting it specifically in the marketplace. That's the rule of the commercial sector.

QUESTIONER: Would you please take a moment to explain this Figure 3 of the red book which is Programs as a Function of Technology Stages?
DR. BUCHANAN: It was one of the view graphs?
QUESTIONER: It was one of the view graphs you showed.
DR. BUCHANAN: Figure 3?
QUESTIONER: That's right.
DR. BUCHANAN: I'll probably never be able to get back to it. This was only a notional attempt to communicate the fact that while each program has a certain definite focus and applicability in the full scheme of things, none of the programs went all the way from the bottom to the top. In other words, there was no single program that would be all things to technology development from its birth to its ultimate incorporation.
QUESTIONER: But isn't the objective to take a technology from developing to commercialization?
DR. BUCHANAN: Precisely the reason we chose to execute all the programs as a unit. So, together, this entire program, which consists of the eight statutory programs, will do that.

QUESTIONER: The question is our friend, the chart, that we want to be our friend. Clearly, it seems -- I'd be surprised if you dispute it -- that certain projects could fall into several columns without having to link dots. Just a given dot may fall into several programs. Some of them have more money than others. What's your recommendation to us? Can we rely on the reviewers, say -- I anticipate that that means that one applies for a mandated program. That we're going after money in a certain column. But if one program falls out, out of money, overused, and yet a proposal would work in another column, what does that do to the proposal?
DR. BUCHANAN: We're going to do whatever makes sense. In other words, if we found a very compelling proposal that is in a column that's out of money, or is in the wrong column for some reason, we're going to try to put it in the right column. We're going to do that in a negotiation with you at the other end. This is not a cookie-cutter program. I mean, we are not going to go through and try to reduce ourselves from 10,000 proposals to 500 proposals by finding nits. Do you ever get those things from Publisher's Clearing House where you have to cut out all the little deals and paste them to the... That is not this program. All right. If you miss a stamp, you're not disqualified. Really.

QUESTIONER: We're a not-for-profit consortia that are comprised of a lot of for-profit companies. We're concerned with the use of the A133 audit regulations in the use of the for-profit companies. Could you please explain how you plan to handle that area?
MR. DUNN: What is it you're concerned about?
QUESTIONER: We're concerned about the audit requirements. Everything we've been led to believe tell us that the 1B circular A133 audit requirements for nonprofits will apply to all of these agreements. Many of these agreements will include nonprofits as well as for-profits, entirely different auditor arenas. Could you please tell us how you intend to handle this type of audit environment?
MR. DUNN: Well, we're not going to handle it. The question is: How does it impact you to be under an agreement that's not to expressly invoke A133 or

any other applicable cost principal. I mean, to the extent that you have an ongoing relationship with a government audit agency and have to track your costs, well, that's your responsibility to do that. In most instances in the technology development area, these are not going to be cost-reimbursement type activities. Our experience to date with the Critical Technology Dual-Use Partnership program has been that all of the funding arrangements have been one of milestone billings, or technical milestones, or payable events through which the industry team, including nonprofits on occasion, have had to pass in order to earn their share of the dollars. And if, because of who you are and what your relationships are, you have to keep track or account of your funds in a certain way, I mean, we can't relieve you from that. All I'm saying is, there will be no additional requirements levied as a result of entering into an agreement with ARPA.

QUESTIONER: Will it be possible for us to submit pre-proposals to any of the individuals listed on the many lists that we have received to get early feedback, prior to the actual due date of the proposals?
DR. BUCHANAN: There are no restrictions of any kind on anything that you do between now and May the 14th. Please do it before then. On May the 14th, we enter our real solicitation, and then we'll have to stick by it. I mean, telephones work, pre-proposals work, white papers work, everything works. That's the whole point of this period of interaction.

QUESTIONER: We have a consortium for a number of companies now. And this thing is very appropriate to the right proposal. I had envisioned originally a proposal from CMU with these people acting as subcontractors. If we do that, then we have certain overheads associated with that. I guess it's still not clear to me how the funds would flow. Could the companies be paid directly for their parts of the activities, or how would this work? What makes sense?
DR. BUCHANAN: Well, if you're trying to minimize overhead, it would make sense to pay them directly. Then put your proposal that way.
MR. DUNN: If I may expand on that answer a little bit. Quite frankly, we have been, again, in the Critical Technology Dual-Use Partnership arena, we have been confronted with that situation, either a nonprofit or in a case, for example, MCC, a profit-making company. Or a university comes in and they want to propose exactly the relationship that you suggest. And in most instances, our response to them is "turn that upside down." Have the agreement be with the industry group and ARPA, and let the university be a subcontractor to the industry group, and get paid on a fee-for-service basis.
DR. BUCHANAN: As a way to minimize overhead.

QUESTIONER: What are the drivers behind the Technology Reinvestment Project as national security? Would someone comment with regard to foreign ownership of American companies in terms of being a proposer or being a participant so that we can determine how best to structure a team so that it doesn't get disqualified?
DR. NORWOOD: I'll say there are three parts, a three-part answer to your question. First of all, the Department of Commerce is the final arbiter of what is a U.S. firm and what is not a U.S. firm. They have rules set up that define those conditions. Secondly, if you propose against any one of the dots in your friendly chart, you must meet certain requirements. So, presumably, there will be a U.S. firm as required in each proposal as you choose to fulfill your partnership requirements. And lastly, in one of the charts that we mentioned, there was an element of evaluation,

that is, pervasive impact. And, clearly, the intent of this program is to generate the economic well-being and jobs of U.S. citizens and U.S. companies. So, with those three things in mind, you are free to include, once the minimum requirements have been met, any firm or company in your proposal or among your partners. But those three things should be kept in mind. That the important thing is the economic well-being of the United States and its companies. So, within those constraints, you're free to form a partnership as you choose.

QUESTIONER: I understand the idea of bringing forward a product, but only to the prototype stage and not to full product development to bring it to commercialization. But under the idea of dual-use, especially for a single-firm proposal, how does the government intend to procure for themselves items that are developed or deployed under these R & D programs?
DR. BUCHANAN: If I understand your question correctly, you're asking about particularly spin-on types of activities or dual-use activities that would result in a defense product?
QUESTIONER: Yes, in a defense product. And then ultimately a defense procurement. How would the defense procurement part of it work after the development?
DR. BUCHANAN: In the traditional apparatus that is currently set up outside of this program.

QUESTIONER: It's kind of two questions. In the Technology Focus Areas, there's eleven suggested areas. Is there any plan, as far as how the budget should be allocated in those areas, based on a propelling nature of the proposal? Or are any of them high in priority, and has any more been added since you wrote this up, due to the interactions that we've had since that time?
DR. BUCHANAN: You're going to hear from Mike Long in just a minute at a breakout. Let me ask him to answer this question now and then stay tuned.
MR. LONG: There has not been an allocation of funding against the technology focus areas at all. The only allocations are against the programs which were shown on the ball chart. That list is not intended to be exclusive of other good ideas. As been mentioned before, this is an idea-driven program. So if you have a good idea that doesn't fit precisely in one of those focus areas, you should have a good justification why it's a compelling idea, and submit it as a proposal.

QUESTIONER: I have a cost sharing question from a small business perspective. For the past four years I've been initiating a very high-tech project. We have a design. We have a plan of action. We have an academic partner. We have momentum. I've past a number of due diligence reviews. I don't have any money. Here's my question: Over the past five years, I had an established consulting rate. Is it necessary that a check be written for my services in order to qualify for cost sharing? In other words, may I work for free and count my billing rate per hour as my contribution towards cost sharing?
DR. BUCHANAN: I think the answer is almost certainly yes. Now, if you pay yourself $7,000 an hour, we're likely to question that. So the question of reasonability -- or I want a job.
QUESTIONER: No. I hope this is a legitimate question. I have an established billing rate that has been effective the past five years.
DR. BUCHANAN: I seem to recall a chart that said, under in-kind contributions, that talks about paid employment. I forget the exact wording -- compensated personnel. Let me now break this off into the various breakout sessions. Oh, I'm sorry. Steve Wax.
DR. WAX: Let me just remind you, there are three breakout sessions, and I have the rooms and also the directions. Technology Development

and SBIR are done together right here in the Columbus Room. Breakout B, Technology Development, is in the Cartier Room, which is to your right. I'm sorry, Deployment. I'm sorry, Technology Deployment. And Manufacturing Education and Training is in the Mackinac Room upstairs. It's one level up. Exit to the elevators. Left from the elevators. And there should be signs in front of each one for this. It will be in approximately about a half an hour. Maybe about twenty minutes to a half an hour break, and then we'll begin those sessions. Thank you.

ORLANDO REGIONAL BRIEFING AT THE HYATT ORLANDO HOTEL, WEDNESDAY, APRIL 14, 1993.

GENTLEMAN FROM AUDIENCE: My question is: What is an eligible firm and what does the statement in this thing say that you're looking for companies with less than 500 head count have to do with eligibilities.
DR. BUCHANAN: Let me direct that to John. As I understood it, the question is: what is an eligible firm and what does all of that mean and John Gudas was going to answer it.
GENTLEMAN FROM AUDIENCE: Yeah. With the exception of SBIR, what does the statement in here about firms must have less than 500 people --
MR. GUDAS: I think we're getting signals that we shouldn't answer that question, but I'll go ahead and do it courageously. (laughter.)
MR. GUDAS: I believe you mentioned the SBIR. That deals with the SBIR definition.
GENTLEMAN FROM AUDIENCE: No, I said with the exception of SBIR, what does "less than 500" have to do with eligibility?
MR. GUDAS: As I understand it, nothing at all. Nothing.
GENTLEMAN FROM AUDIENCE: So in other words, if there's a defense manufacturing firm, no matter how large, they can participate in this, correct?
MR. GUDAS: The answer is yes.
DR. BUCHANAN: Eligible firm and SBIR are two entirely separate concepts.
MR. GUDAS: I would like to broaden that a bit and say if there's any firm. If there's any firm, they're eligible to participate, not just defense manufacturing.
DR. BUCHANAN: Question on the far right?

MR. GALL: Jim Gall, Amherst Research Corporation. Quick question first. It can be yes or no. On this associated proposal, you cover three dots or whatever. Can you get part of it funded or does it have to be all or nothing?
DR. BUCHANAN: Tom?
DR. STARKE: On the three dots, the associated proposals, if the associated proposals can stand alone -- if they are stronger together but indeed they are self-contained elements -- I believe individually parts of it may, in fact, be funded. However, if the associated proposals are such that it's clearly one of them will not stand alone, it won't be funded alone. Again, I go back to what rick dunn said earlier. The emphasis here is on common sense in terms of how things will be interpreted in trying to minimize the number of rules that are put forward.
DR. BUCHANAN: Okay. Down here?

MAN FROM AUDIENCE: Okay. On that focus areas, the training and education part, you list digital libraries and the authoring languages. I'm sure you're looking for other worthy ideas in there but your POC's are listed the same way. In fact, you're limiting that area. Can you comment on that?
DR. BUCHANAN: Well, the subjects of the entire breakout session after this will be on those technology areas. We'll go through each of those in detail. If you don't mind, let me table that until then.
MAN FROM AUDIENCE: (unintelligible), University of Central Florida. On the associated proposals,

are each of those a separate proposal with its own page count or is it only one 35-page?
DR. BUCHANAN: Mike?
MR. LONG: No, the intent is to have individual proposals, per dot, and you're limited to 35 pages in each proposal and then you have to indicate within that proposal how these things are associated.
DR. BUCHANAN: 35 pages per dot. Next?

MR. BELLIS: Yes. Michael Bellis [phonetic], Anderson Consulting. Developing a quality proposal takes a significant amount of effort and in the past when I've developed proposals, it's been for paa or rip where I had a very good idea of the amount of money that was available, the specific subject areas, the past of the program, who would be evaluating it. From what I've seen so far right now, I fear I would be sending proposals to a black hole where the subject areas are very broad, the description of whether or not money is available is very large. How can -- what is the best way that I can find more information and get more feedback so I know ahead of time what kind of chance I would have and whether it's worth the investment to creating a proposal?
DR. BUCHANAN: Well, look, there was no attempt to segregate areas for the reason that we did not want to artificially constrain any proposal. So it's good news and bad news. We do not want you to propose into a basket. This is not a rule-driven program. If you're looking for constraints, you're not going to find them except where they exist in the law. Propose what makes sense. If a small proposal makes sense for what you want to do, propose a small one. If a big one makes sense, propose a big one. Those evaluating the proposal, it will be a joint effort among all five agencies. You'll have government people reading those proposals and there will be non-government people reading those. They will all sign non-disclosure agreements. But if you're looking for limits you will not find them.
MR. DUNN: Lee, I think you can add to that. I'm sorry if this makes it more difficult to psych out the government's intent, because there isn't a single evaluation panel, there isn't a single agency, there's not one guy you can hit on and get, ahead of time, an idea of what the government is looking for. We're looking for the best ideas available and almost by the way this thing is constructed, we can't determine ahead of time and we haven't determined ahead of time what those best ideas are. We've given you just broad areas. So the bad news is for those of you that are excellent at psyching out the government intent and have psychology degrees and know how to work your government contacts, he ain't there. For those of you who want to be sure you're going to get fair treatment and that there's going to be a broad view, look at all outstanding proposals, that's what's going to happen.
MAN: Actually, that was what I'm looking for, because in my experience, if you at, for example, BAA's, the description in most baa is very broad, but in my experience when those baa's come out, the people who put them out actually have very specific things in mind and if you don't know what they have in mind you don't have a chance. So this is not like a BAA and we really do have -- it's based on quality and we really do have a chance?
MR. DUNN: You bet.
DR. BUCHANAN: Phil, did you want to add something?
MR. NANZETTA: If you want to look to the kinds of thinking which was behind what was written, look at the examples written out in detail. Not in the sense that they are constraints at all, but that they are illustrations of the kind of things which were in the thought patterns of the people who were putting this together. That might give some guidance for scaling activities or helping define that. But

they should definitely not be considered as constraints either.

DR. BUCHANAN: Let me go to the gentleman back here.

MR. JEETS: Yes, my name is Bennett Jeets [phonetic], I'm with command control out of Atlanta. I have a comment and two questions. The first comment was dealing with the first question you had regarding 500 people. I believe there is some emphasis, if I heard correctly, on manufacturing firms and small businesses and 500 is the SBA's definition for small business, so how that fits is question one. My questions are: Is there any guidance with regard to the monetary size of the given proposals and the second question is there any guidance with regard to who should be prime, the companies, the non-profits, or the state institutions?

DR. BUCHANAN: You missed it. There is no monetary segregation of funds. And you shouldn't be thinking of a prime-sub relationship. That's not the model here. This is a partnership relationship. Go ahead.

MR. JENNINGS: If I could comment on that, I was discussing this with someone in the hallway before. In setting up your partnership among firms and universities, whatever, you should set up your partnership in a way that works best for you. If it results in the most quality-efficient proposal; if it makes sense; if it's a peaceful, workable arrangement among the members of your proposal team, then that is the arrangement you should go for. Go for the arrangement that works best for you, creates the highest quality, most effective and efficient proposal.

DR. BUCHANAN: We're assuming in all of these proposals -- and if you get sort of nothing else in this discussion, please walk away with this -- that you're going to have half of your assets on the table at the same time we have our half. We're assuming you're proposing this program out of your own self-interest, not to collect a 6 or 8 percent fee, but your own strategic interest. We will review these proposals from our own self-interests, those that we declared here. But we're assuming you're out for your own self-interest; that is, don't force yourself into some structure that you think is pleasing for us. Whatever needs to work for you because you're going to be the ultimate recipient of this. Right here up front?

MR. HUDSON: Chris Hudson with Automation Intelligence. It's a question for Rick Dunn, a two-part question, having to do with allowable cost sharing and in-kind. And as a small business, I can certainly confirm it becomes very, very difficult for us to match on a 50-50 basis. So my first question on in-kind allowability, our company, in the past, has taken product development contracts, commercial contracts where we deliver a product but we retain the background technology and the rights to the generic tools that we may develop as a component of that particular contract. It's not really a deliverable. So my question is if we can correctly assign the value of that contribution, is that potential in-kind portion of our 50 percent?

MR. DUNN: If you retain title to proprietary technology even though it was in pursuit of a commercial deveopment program, it is potentially the subject of being evaluated as a technology transfer activity. Assuming it moves someplace during the course of the partnership and is actually put into use. Then along the lines I described as a technology transfer, it sounds to me like that would potentially qualify. And as I said, we don't have firm rules as to what money value is going to be assigned to that, but we look to you to proffer in your funding proposal your rationale as to why you would assign any particular value to it and we would consider that and if it seems reasonable to us we may do it.

MR. HUDSON: So the key is if this background proprietary technology tools or whatever can be shown as a part our proposal to involve technology transfer to others, then it would qualify?
MR. DUNN: Yes.
DR. BUCHANAN: The same would be true, for instance, to physical property to which you obtain title in the course of a government contract. If you have physical property -- a piece of machinery --to which you have the title, that too would be -- the fair lease value of that would be offered.
MR. HUDSON: That's sort of a variation on the second part of my question which was a little more complicated. We have also participated in past joint developments under the previous cooperative pre-competitive research legislation several years back where we matched as much as we could on some of the development on that. This was through a consortium effort that had a series of fundings, both private, state, government, it was a mixed individual members and mixed bag. But we also then did developments on that where we did contribute like pure engineering labor, rates, and so on and the question is, is that potentially allowable if indeed the same justification, the effort that we had that we got title to that as a result of that would somehow be put in this program.
MR. DUNN: Was there federal government funding involved in any of those?
MR. HUDSON: As a portion, indirectly, yes, through, for example, Med-Tech. Activities.
MR. DUNN: I would say that if the government already has license rights in that technology as a result of that previously-funded effort, I don't see -- we're not going to pay for something we already have a license for.
MR. HUDSON: I was thinking more not of the total amount, but the matching funding that we've previously gone into before. I understand the rationale. So if we don't have any proprietary rights left, then it would most likely be disallowed?
MR. DUNN: That is correct. The gentleman in the back, please.

MR. BIRD: Tom Bird, [unintelligible]. I'm somewhat puzzled by your choice of the term "manufacturing." I'm not sure i know exactly what you mean, particularly in the manufacturing education portion. Does that imply that you will not consider proposals addressed to firms in other sectors such as systems integration, software, and other services within the defense sector, and does that also imply that you will not consider proposals addressed at other functions within the organization such as marketing, finance, technology, and human resources and all of the things that would actually change the culture required to make it better?

DR. BUCHANAN: I'm going to ask Bruce to start. I think Phil is going to have something to say on that too.
DR. KRAMER: I think we would look at many of those areas as supporting technologies for the manufacturing enterprise and I think that the best way to write the proposal would be to write it as such. That these are enabling areas which support manufacturing enterprise that are important. Particularly the areas of management of technology, technology interpretation, technology forecasting, it tends to help companies redirect their activities to open new markets.
MR. BIRD: Excuse me, did you say manufacturing enterprise zones?
DR. KRAMER: No, no. Managing the manufacturing enterprise. All of these things would be considered as enabling technologies that are needed. So I think it would be.
DR. BUCHANAN: Phil, did you want to add to that?
MR. NANZETTA: No.
DR. BUCHANAN: Up here the at the front, please?

DR. BUCHANAN: You're going to have to move up to the microphone. We can't understand you.

GENTLEMAN FROM AUDIENCE: The question is when defining the institution for higher education, are you referring to colleges, universities, or only institutions with graduate programs?

DR. KRAMER: No, it would include all colleges and universities and two-year schools and community colleges as well. We're particularly interested in seeing proposals in areas where four-year universities might team up with two-year schools. Two-year schools have certain strengths the university may not have in the say same way the university my have certain strengths and you can bring those two together to make something that's more than the sum of the parts.

MAN: Obvious institutions can team up together. And one of the other things I wanted to ask, somebody also mentioned about the associated proposals. You got two or three different ideas, when you put out a proposal applicable for three or four different disciplines, how does that proposal rank in terms of high or low? Because our experience has been when you're trying to put a cooperate together, for some reason people think this may belong to another group, the other group doesn't -- you know what i'm saying? There's confusion back --

DR. KRAMER: I think the common sense answer is the right one here. I would not force proposals together to become associated that do not make sense. If they go together and it's a compelling case that the combination is a stronger proposal than individual ones, then by all means do it. I think there's an inherent advantage to putting in associated proposals that are well-motivated since it's likely we'll get fewer number of well- motivated associate proposals. So those proposals will tend to stand out. But if it doesn't make sense there's no sense to do it.

DR. BUCHANAN: Move to the lady in the rear, please?

MS. HARWELL: Yes, I'm Christine Harwell [phonetic], University of Miami. Can you give me a little better feel for what you mean by "basic research," because I get the feeling from reading the program plan here that you are definitely not looking for basic research ideas.

DR. BUCHANAN: Bob?

DR. NORWOOD: Yes. Basically, we are looking for those things that are demonstrable from the viewpoint of getting a product or a process that has to do with getting a product to market. To develop it, to improve the manufacturability of it, and to demonstrate that, in fact, it works. I don't know if you're familiar with DoD parlance, but the type of effort that we're looking for is generally in the 6.3 area. Rather than the 6.1 basic research. We're not planning to consider those things where you're inventing something new. Rather than superconductivity, that you have to have hyperconductivity. That's not the type of thing.

DR. BUCHANAN: Let me amplify that a little bit. You're going to hear this afternoon at the technology development breakout that, in fact, 25% of the selection will be the extent to which the proposer has a commitment to productize a successful result. Therefore, a simple paper in a journal -- or even a complex paper in a journal -- would not be likely to satisfy that criteria. Let me go to the far right again.

MR. ENGLISH: I'm Bill English, I'm from [unintelligible] Corporation, which was formerly control data. My question is twofold: What is the role of the states in this initial effort? A lot of emphasis has been placed on regional cooperation without a lot of definition to that. The second question is what is the amount of money funded for '93 and what is proposed for next year?

DR. BUCHANAN: John, do you want to take that one or do you want me to? Let me just -- the answer to your last question, the '93 money, is that which you saw on the screen, 471.2 million dollars. That's the amount of money for '93. It's appropriated; it's available for award. In 1994, it's a little less clear because I don't have yet all of the proposals from the various agencies in this area. I can speak from the point of view of DoD. We have $377 million in our proposed budget. There's a while between now and the appropriation, so that could all change. Now, your first question about what the role was of the states, obviously in some of these programs, they will be direct proposers to these programs. State agencies will be proposers. In many cases, the states will furnish funds as fund match. They will be provided as funds.
MR. ENGLISH: You don't see a role for them other than proposers in this initial effort?
DR. BUCHANAN: I can't think of another role.
MR. ENGLISH: Okay.

GENTLEMAN FROM AUDIENCE: Could I just ask a related question to that? Jim [unintelligible], Applications International Corporation. What level of commitment are you looking for in terms of regional and state funds at the time this proposal is submitted? Are you looking for full commitment with a dollar value or looking at those being work?
DR. BUCHANAN: A greater commitment than others that won't be selected. (laughter.)
DR. BUCHANAN: I didn't mean that in exactly the flippant way that I mentioned it. We were actually approached by the governors of the various states and those governors asked they be given veto authority on any proposal that proposed state funds. They wanted to be able to designate those proposals they favored over those proposals that they did not. That was simply unwieldy. There is no required certification process for state and local contributions. We're going to assume that if you say you have state money you do, all throughout the proposal process until we get to the end and then for those that are selected we're going to scrutinize it very closely and if it ain't there it ain't there.
MAN: That sounds like a commitment. Thank you.
DR. BUCHANAN: Down here.

MR. WOLF: Richard wolf from the university of florida. I have a question regarding matching of funds. For -- i understand that grants and contracts with the federal government are not eligible for this and matching funds that were required by the contracts are not eligible either, but what about the case in which you have a center and there are membership dues -- these are not required matching funds by the government but are required for center membership -- are those eligible or some portion of those eligible for matching funds?
DR. BUCHANAN: Tom, do you want to take that?
DR. STARKE: Yeah. I would be glad to. The principle is yes, if those funds are not already matched against an existing federal program and they are non-federal funds, they are eligible for match. But remember, going beyond being eligible, when you put a program together, those funds have to be directly applied to the success of that program and what your management team is that's going to lead that program must have control over those funds and be using them to achieve the success of the program.
MR. WOLF: Thank you.
DR. BUCHANAN: Those funds that you offer as matched should be used in match. This is not a drill of gathering up non-federal funds and sort of reshaping the piles. Sir?

MR. STICKLEY: There was a discussion this morning in one of the sessions -- oh, martin stickley, university of central florida. There was

discussion this morning about some states or even the federal government wanting one proposal per state. Is that still so? Is that deep down or can you elaborate on what was meant by that?
DR. BUCHANAN: Which session was this?
MR. STICKLEY: There was some discussion, hallway discussion, and even implications in letters to the state of florida that there was one proposal per state.
DR. BUCHANAN: Not by us. If I'm guilty of creating that misperception, let me uncreate it now. I would love to have one proposal to each program that incorporated all of the 50 states in a single effort. That would make life really easy. Is it likely? No. We're not looking for one proposal. And if I implied that to anybody I apologize. We're looking for however many we get. Right now -- I would say on the other hand, if I were in a state government I would probably want to discourage lots of proposals from my state that would compete one against the other in a collusive way.
MR. NANZETTA: May I comment? It's clear we don't want to constrain one proposal per state, either in breaking proposals down to the state level or aggregating them up to the state level. But what we do want to do is ensure there is good coordination in the state with activities which already exist and there's good coordination in the state among those activities which are making proposals. One of the selection criteria in the deployment area requires looking at that coordination. But there's no requirement whatsoever that the result will be a single thing.
DR. BUCHANAN: Sir?

GENTLEMAN FROM AUDIENCE: [Unintelligible] University of Technology. One question. Or two questions. These technology areas, the 11 technology areas, you break out the technical contents and so on quite well. There's no equivalent break out for either extension or for the education side of the house. Who are we supposed to talk to --
DR. BUCHANAN: But there were lots of examples. That's the point.
MAN: we aren't going to have any specific people to talk to then?
DR. BUCHANAN: Well, there are hundreds of phone numbers we've given you on the -- in the hand out.
MAN: Yeah, but I mean it does not break out as I see you break out very clearly in the technology areas, but when you get out into, let's say, manufacturing education, there's no contact. There's no person to contact. I mean that could include all 11 technology areas. What I'm saying is in that area and also the extension area there is no call-out of contact people that we're supposed to get in touch with to get questions answered.
DR. BUCHANAN: That means you should call Phil Nanzetta.
MR. NANZETTA: If you look at the numbers listed under NIST, those -- the ones under Phil Nanzetta and so forth, are all appropriate for technology deployment areas.
MAN: How about the education side of the house?
DR. BUCHANAN: There are equivalent numbers for education, all five agencies. There are equivalent numbers at all five agencies.
MAN: It's a little hard to tell which ones get attached to which.
DR. BUCHANAN: And I told you there is no attachment until the very end. So it would be inappropriate to do that now.
MAN: Okay. Second question: on the alliances, as a program you talk about timeframes as long as six years and you've mentioned asking for cost proposals or basically proposals for two. How do we play it? Do you want six or do you want a detailed two and a, you know, a less detailed four?
DR. KRAMER: Want me to take that one?
DR. BUCHANAN: Go ahead.
DR. KRAMER: I think what we want is pretty much what we asked for. We would like a detailed two-year proposal

with a suggestion of what the two years might be. That probably would be the subject of additional information after the two years to determine the six.
MAN: Thank you.
MR. NANZETTA: Can we keep on that question for a second? There's certain telephone numbers which are identified by specific technology areas in that list. There are others which are listed under the heading of "regional" or something like that, which are not specifically technology-oriented. Those would be the ones you want to call where you're talking deployment area.
MR. JENNINGS: Those are for all the agencies. In addition today out on the podium there was a handout nasa runs a series of technology transfer centers that are sort of in the deployment areas. If you want to talk to some of them talk to some of them, if you think those would be good, it is available.
DR. STARKE: Also during the deployment session this afternoon, what we've been doing all week in the other cities is, in fact, giving out additional numbers at the deployment sessions. Furthermore, if you have questions in specific areas, we do have the 1-800 DUAL USE. You can use that for questions as well as getting your names on the list. There are e-mail addresses in the red book. There are lots of channels for getting your questions in and getting responses. Trying, you know, if they really don't work, come back and tell us they're not working. But give a shot at the numbers you have.
DR. BUCHANAN: Let me get one for down here.

MR. CARSON: Tim Carson, Harris Corporation. My question is about the amount of documentation that you expect during the execution of the programs. Do you think like a quarterly report, an annual audit type reporting, is that basically all you're looking for in terms of documentation?
MR. DUNN: Yes.
MR. CARSON: I'm a government contractor. I'm used to supplying quite a bit more than that.
DR. BUCHANAN: We're looking for a product. We're looking for a situation in which an effort -- this is not deliverable to the government. We're in this as a partnership. Ultimately what we want to get out of the is a marketplace that's equipped to sell us stuff. A bunch of paperwork doesn't help do that. So don't do it. One more question before we break for the subdivision. Here in front.

MR. SCHWARTZ: I'm Bill Schwartz from Schwartz Fiber Optics. I have a question about I.R.& D. Just clarification. I'm nc exactly clear. I don't operate under a cooperative [unintelligible] because I'm a small business but I am audited by the government. Would my I.R.& D. Programs apply as in-kind?
MR. DUNN: It's not your I.R.& D. Programs that apply. It's your contributions that apply. Your funds are cost shared. The project that you're awarded, you're awarded [unintelligible] transaction, the funds that you expend from your company revenues on that project are not ineligible to be considered I.R.& D. Merely because you have joint government funding or merely because you're collaborating with other industry partners, assuming those funds would otherwise be treated as I.R.& D.
DR. BUCHANAN: Before we break, let me try to close this. This will be the last time we'll be together. Hope what's coming across is that if you do anything, do not constrain yourself into some self-imposed box here. This is a very new way of doing business. We hope that you will exploit it. We hope that what will end up is something of value to us both. I know there are many of you that thought you knew how to do business with the government in the past and I'm sorry to tell you that ain't how we're going to do business in this program. So you

should not be regarding this program as extensions of unemployment benefits; you should not be regarding this program as a way to convert national laboratories necessarily into commercial facilities, but use it to your advantage in whatever way makes sense to you and propose it. They're going to divide this room into three sections and they need us out of here to do that. I would ask we reconvene at 3:35 for the breakout sessions. Thank you very much.

DALLAS REGIONAL BRIEFING AT THE CENTRAL DALLAS RADISSON HOTEL, THURSDAY APRIL 15, 1993.

THE SPEAKER: My name is Eddie Castello. I'm a marketing rep and I just moved back here from Washington D.C. after having spent there years as a lobbyist and a marketing rep. One of the questions that I have is I'm sure that --
DR. BUCHANAN: What's the difference in a lobbyist and a marketing rep?
THE SPEAKER: You'll understand when I ask my question. As a lobbyist, especially the people on the beltway you obviously lobby for your special interest that pay your, cut your paycheck, but you said that the proposals will be evaluated by Government people, representatives from the different agencies. Do you have a provision whereby the beltway bandits have not already found out who's going to do the evaluation and have already started their lobbying and marketing activities on their behalf? I live out here now so I'm concerned about that.
DR. BUCHANAN: Perspective is everything, isn't it? We don't know who the evaluators are going to be yet either. There is no list available. Secret or nonsecret it's not been established yet. Other questions? Right here.

THE SPEAKER: Hello, Lee, my name is a Shaun Starke. I'm with STC. This was a great book by the way. I couldn't put it down.
DR. BUCHANAN: And I'm from the Government and I'm here to help you.
THE SPEAKER: On Page 2-3 of the Technology Deployment section Item 1 says manufacturing extension services are activities which target small businesses. If you turn to your little table here on Page 2-8 you see that single and two or more firms are not eligible proposers under that program. Can you explain that?
MR NANZETTA: Yes. Manufacturing extension service providers are third parties who provide services to the small companies, so the proposers for that would typically be nonprofit as indicated on the chart. They would be proposing to form organizations and functions and structures which provided services to the ultimate client firms for small, median size companies. The proposers would not typically be small, median size companies.
DR. BUCHANAN: Let's see is there a mike in the back here? No. Middle here?

THE SPEAKER: My name is Julie Sanford. I'm from the University of Texas at El Paso, and I want to address the point about there being no restriction on participants. El Paso has been the largest metropolitan area on the U.S./Mexico border and given the NAPTA and the environmental problems that we face we're wondering about partners that might be higher education institutions in Mexico or industry in Mexico.
DR. BUCHANAN: Bruce Kramer I'll give that to you.
DR. KRAMER: I'll hand that one off to Rick.
MR DUNN: There are no restrictions. It's not a responsiveness, this issue. It's not a you don't pass the threshold issue. However if you, for example in the development section if you look at the criteria, the selection criteria there is one called pervasive impact.

There's one called commitment to productization. The words that need to be filled in, and I guess we should say this right now, pervasive impact means pervasive impact on the U.S. economy. Commitment to productization means commitment to productization in the United States. Now, if there's a positive impact on the Mexican economy, if there is productization in Mexico that's just fine; but you have the burden to show that there's also going to be pervasive impact on the U.S. economy and there's going to be productization and production in the United States.
THE SPEAKER: Thank you.
DR. BUCHANAN: Let me also add that while nobody is prohibited or even discouraged from participating no one is exempted from cost sharing either. Sir.

THE SPEAKER: My name is John Propeck and I'm with a company called Oceaneering Space Systems and I'd like to have identified what the release date for the SBIR as related to this program is and what the funding level may be as they seem to vary from agency to agency.
DR. BUCHANAN: May the 14th and $7.2 million, as the book indicates.
THE SPEAKER: But with respect to the phases, Phase I level of funding for awards and Phase II as well.
DR. BUCHANAN: Yes, the book calls out for $100K for Phase 1. Typically, Phase II awards are $750K; is that right? $350k? Okay, yes, but there will only be Phase I awards at this time.
THE SPEAKER: Thank you.
DR. BUCHANAN: Sir.

THE SPEAKER: Martin Dresser, *Science Applications International.* If you have a program or proposed effort which fits under more than one statutory program but is not under the definition of the associated programs in a sense that it would be identical, would those be submitted as separate proposals to each of the separate programs?
DR. BUCHANAN: John, why don't you take that one.
MR JENNINGS: I'm not sure if I exactly understand what you mean by they're not exact. They don't need to be identical if they're associated proposals. Let me make that a little clearer. If you have three things that you'd like to, three elements that would fit under three different dots on Figure 4, propose each of those elements on each dot -- and you get 35 pages per dot by the way. So you get 35 pages per dot. Does that clarify it?
THE SPEAKER: No. What I'm talking about is a particular effort. It happens to fit equally well under several different statutory programs. Should you submit one to each program?
DR. BUCHANAN: Choose one.
MR JENNINGS: Yes, choose one, the best one for you.
THE SPEAKER: Is it mandatory you only submit one?
DR. BUCHANAN: You can submit as many as you want. I mean there are not going to be separate people reading these. If they're identical proposals we're going to, you know, recognize them as identical.
THE SPEAKER: Okay, thank you.
DR. BUCHANAN: Sir.

THE SPEAKER: I'm (unintelligible) from Texas A&M University. My question refers to Figure 2 and 3 in the red book that is on manufacturing education. Well according to Figure 3 the manufacturing and engineering education will be comprised mainly by technology creation; whereas, the description on Page 2-4 of the proceeding page gives various aspects as practice oriented master's degree programs and retraining the manufacturing work force and so on, which in my view falls under the category of the technology development and deployment. So I feel that the bar could be extended further to color the entire four aspects of the technology stages as far as the manufacturing education is concerned because I feel that here is an excellent

opportunity for the young engineers to learn about this brand new development. So I feel that probably a program, teaching program involving all the four would be very useful indeed.

DR. BUCHANAN: Bruce.

MR KRAMER: Yes, I think that's a good point and I certainly agree with you. I think we could make a very strong argument for spreading that program across all four areas. As a practical matter though that complicates the review process a great deal and so what we decided to do is keep all the education and training oriented proposals under one big old dot in figure 4, but we'll be looking for those aspects in the proposals. It's undeniable that there's a large technology transfer of components in the educational process. That's a big part of what education is about.

THE SPEAKER: So am I to take it that proposals which are more involved with technology and creation would have a better chance as far as the manufacturing education is concerned?

MR KRAMER: No, that's certainly not the case. I think the proposal that will have the best chance are the ones that have an integrated approach to addressing all of the issues involved with educating good manufacturing engineers, and part of that is giving them the tools that they need to carry out into industry and bring them to industry. So I would not ignore any technology stage. We want your good ideas. We don't want you to psycho-analyze this document. We'd like you to take the tools and the research that you have and put it in the best possible proposal.

THE SPEAKER: Thank you.

DR. BUCHANAN: Don't be bound by any of the declarations you see here. Particularly that chart (figure 3) is really inconsequential when it comes to submission of proposals. It was meant as illustration as to what we're looking for in general terms. It really doesn't have anything to do with what comes later. Yes, sir.

THE SPEAKER: My name is Bob Dulles from Martindale Research Corporation here in the metroplex area. In Appendix A there are listed a number of technology focus areas. I gather from the tone of this that you really mean it when you say these topics are not exclusive. I would like before I put together a big proposal effort to really know that that's the case. I note, for example, high performance computing, intelligence computing is not really listed there but you do list elsewhere CSTO, for example, is one of your organizations that is related to this and that would tend to indicate that proposals in that area would be welcomed.

DR. BUCHANAN: Well, it is certainly true and I'll say this again, we'll say this again in the break-out. Those areas are not exclusive. However, you should know that those areas are the areas known to us both to be areas of influential technology and dual-use sense and areas where there exists good ideas. Therefore if you propose one of those areas you won't have to show, you won't have to suffer the burden of convincing us that those technologies are important. If you bid into another technology area you will have to share the burden of demonstrating why that technology area is compelling. You know, I'll sort of belabor the point here and tell you that the way those things were concocted was that we requested proposals, many proposals from the five various agencies for dual-use like activities and when those came in we began to push them into piles that were similar and we pushed those piles into piles and those piles into piles. At the end of the day we had eleven big piles and a whole bunch of little bitty piles. We took the little bitty piles and pushed them on the floor and the eleven big piles are what you see right here. So it was derivative from the bottoms up. It was not inductive from

the top down and that was the basis for it. Over here.

THE SPEAKER: Mike Dial, Titon. As you are aware the National labs have several different kinds of colors of money. How do you count their participation in the match?
DR. BUCHANAN: Tom Starke.
DR. STARKE: The National labs money that comes from the Department of Energy is appropriated in the Department of Energy's line item. It's a Federal fund. All programs that specify non-Federal funds, which are seven of the eight programs, do not However, neither do they penalize you from the sense that if you get a DOE program working in parallel with you that says, hey, we're developing this technology, we could be part of your partnership even though we've got our own money, you don't have to match that money that the DOE is already spending. So that's what we call saying that money is neutral.
DR. BUCHANAN: Yes, let me reiterate that. I think that was -- he said it correctly and this is an area in which there's a lot of confusion, and it goes across areas so let me repeat what he said. National lab money, grant money that goes into universities from Federal sources, grant money that comes from the Federal Government to state sources does not get laundered by virtue of its going through one of those entities. It's still Federal money and for those programs that require non-Federal fund sharing it won't count. For those programs that require non-DOD fund sharing it may. Now, let me hasten to add that you will see explicitly in the areas of technology development and implicitly in other areas that each of these proposals will be judged on their pervasive impact to the economy. It's going to be very difficult to write a proposal funded half by DOD funds and half by DOE funds and show productization, show pervasive impact to the economy; not impossible but it's going to be very difficult. All right, I think functionally you will not see -- I mean this is a matter of consequence. I think you will not see very much money going into the preservation of Federal or federally sponsored jobs. All right. That does not mean that there is not terrific advantage to be gained from a Federal laboratory or a university or without a fund match to participation under their own auspices because that will establish relationships with industry that will be very useful in the out years even to the extent that it will provide maybe a reason for their existence. So I don't want to minimize the importance of that kind of relationship, but you should not regard this as a program that is going to perpetuate National laboratories and federally funded things in the interim during the downturn by a supplement from this program. This is supposed to be an industry led program. Was that clearer? This question is going to come up three or four times today guaranteed. May I have the rear microphone please. The lady in red.

THE SPEAKER: My name is Gail Channel I'm with Texas Instruments and I have two questions. First I'd like to know you mentioned the difficulty in corporations and the various entities forming teams. What level of teaming agreements or collaborative agreements do you expect to see in place at the time proposals are submitted? Do you expect to see full-blown teaming or collaboration agreements or just a letter of intent to go in with the proposals so that you'll know that we intend to do something?
DR. BUCHANAN: I'm going to ask John Gudas to answer that.
MR. GUDAS: Clearly we'll receive a full spectrum. In the Department of Commerce's ATP Program (a program very similar to the Technology Reinvestment Project), some teams submit proposals with their teams fully formed, some submit proposals with teams at various stages of forming. Clearly the team will have to be in place during final negotiations. The

cooperative agreement and other arrangements, such as intellectual property agreements, will have to be in place at the time the instrument is negotiated for the winning proposal. That's the limit. So to the extent that your team could be formed during the proposal phase is to your advantage. Better team forms have better proposals and have better arrangements of their intellectual property, but we're not requiring for that to be complete at the time of the proposal. That's going to be required at the time the instrument is effective.

THE SPEAKER: My second question pertains to consistency between and among the five agencies and the execution and the administration of their assigned agreement. If we are so fortunate to win one which then was assigned to ARPA and another one that might be assigned to NIST, can we expect similar execution and administration procedures?

DR. BUCHANAN: Should you expect that? I mean the point is we're going to choose the executing mechanism, and frankly we're going to choose the executing agency to make sense. Where it makes sense for two efforts to be executed in the same way, we will. This is a goal-oriented program. So the idea will be that these efforts will be selected for their appeal as a unit and the executing agency will be executing them to the benefit of even other programs by other agencies and where it happens that an instrument is good for one and good for another, then they will be used the same, but where it makes sense not to do that we're prepared not to do that.

MR. DUNN: Let me -- I inferred from your question that there were differences among the agencies, and that's absolutely correct with respect to legal authority and with respect to the interpretation of their legal authority. Let me suggest to you that -- have we used the term reinventing government yet? We have to say that a couple of times.

DR. BUCHANAN: You're down three.

MR. DUNN: The reinvention of government is going on real-time and there's a lot of thinking going on right now in NASA, in the Department of Commerce, the Department of Energy, and I think the National Science Foundation pretty well knows how to deal with universities, but in those other big agencies that have, those other agencies that have had big systems programs and big systems mentalities, I think that there's, as I said, a lot of thinking going on right now that this is really something different and maybe all the old standbys and the old rules don't apply. And we basically have between now and 15 September for there to be some substantial movements, and I think this is the occasion of that happening, and I'm really optimistic that you're going to find positively motivated and common sense approaches in whatever agency administers your agreement.

DR. BUCHANAN: Yes, let me reiterate that. We've given four of these meetings now in four separate cities and I'm beginning to see a pattern. Almost everybody came in the room this morning and heard the notables talk about change and talk about a new way of doing business and frankly you weren't very convinced. About this time in every presentation people begin to look at each other and either do this or they do this (gestures), and you're beginning to realize that there are really new mechanisms on the table here and you're really doing yourself a disservice if you constrict your own thinking beyond what is a good thing to do. Don't do that. Is there someone waiting at the mike at the rear? Yes, next up.

THE SPEAKER: Andy Megan I'm with the Texas General Land Office. I just would like to ask you in the spirit of this partnership building to provide a list of those people who are here today so that we can start or continue the networking efforts after we leave here, because I know there are a lot of

good projects and I'm working on some but I'd like to look for potential partners that are here today who have been educated up to this level.
DR. BUCHANAN: I wish I could do that and I can't and it's my fault and the reason is because I didn't tell all of you when you called the 1-800 number the first time that I was going to publish the list and since I didn't the Privacy Act prevents me from doing that, and I apologize and I would have done it differently. Yes, sir.

THE SPEAKER: I have a question that deals with -- let me introduce myself. I'm Ron Suppora from the New Mexico Economic Development Department and in the area of solicitation and deployment there's reference made to if a state plan exists for technology transfer the proposer must demonstrate compliance with that plan. How do you intend to handle the way that proposers would demonstrate their compliance?
MR. NANZETTA: There are a variety of ways. One of the ways would be to get some kind of certification from the state. There are other ways. There's no requirement in the proposal process that any particular means be used to do that. The proposer needs to figure out how to demonstrate that that's the case. Another way to do it might be to describe in the proposal the activities that are going on in the state and explain how the proposal fits in with what's going on in the state. We intentionally avoided a requirement of certification from anybody, but that would be a potential way if the proposer wanted to do it.
DR. BUCHANAN: Okay, over here.

THE SPEAKER: My name is Israel Galboni, GAG Corporation in Houston. A previous questioner wanted to know how receptive you would be to a proposal that deviated somewhat from the suggested technology that is published in the red book. I thought that you discouraged him, and one area that is not mentioned at all is software, software engineering and that is a fairly big size opportunity for the entire country. Why is that not included if interest in size of market is required?
DR. BUCHANAN: Mike Long from DOE.
MR. LONG: Software is included, software development and large scale software included in the published activity. There's no intent to discourage good ideas. This is an idea driven program and if you have a good idea that doesn't match up exactly with any of the eleven areas it should be submitted and you should make a compelling case as to why this is important. So, no, you shouldn't be discouraged if it doesn't appear in the 28 different items in Appendix A.
DR. BUCHANAN: Yes, as a matter of fact software development methods, tools and environments is explicitly called out on Page A-2 at the top of the page. Now, to -- let me hasten to add that we normally get a lot of questions like this. Why didn't you include blank. Well, it's because blank didn't result in one of the eleven piles that had lots of good ideas. It not because blank wasn't important or blank wasn't of interest. Environmental clean-up for instance, very important, very significant. It's because when we pushed together all those proposals there was no good ideas. Lots of good intentions but no good ideas. That's the criteria. In the middle, please.

THE SPEAKER: Good afternoon. Mike Clark with SI Diamond out of Houston. We're a small business, publicly traded and we will probably submit under the technology development activity area but we would like to, we would like to make ourselves available as a client or a partner under the deployment activities to those that would propose that, and I understand from what you said earlier that you're not going to be a matchmaker but is there some way that we can get our name into the pool?
DR. BUCHANAN: I think you just did. Back here.

THE SPEAKER: Tom Cunningham, Honeywell, I have a cost share question. A lot of good technology development is performed using very expensive equipment that has already been fully depreciated. Can such equipment be used for cost sharing purposes under the notion of fair rental value with some other mechanism?
DR. BUCHANAN: Yes. Over on the right side.

THE SPEAKER: The new administration -- my name by the way is Bob Walters with Intec here in Dallas and the new administration is very pro renewable energy systems. We're involved in renewable energy systems. I was talking to Secretary O'Leary last week and she thought that some of these funds would be allocated to renewable energy work. I can't find that type of wording in the document. Is it implied someplace where I'm not looking?
DR. BUCHANAN: We have a topic in there called alternative energy sources.
THE SPEAKER: That was for transportation only.
DR. BUCHANAN: If you have an alternative energy that is appropriate for transportation that would certainly qualify.
THE SPEAKER: That's the only category though.
DR. BUCHANAN: Well, if you have a good idea, propose it.
THE SPEAKER: Okay. Well we do but we hate to put a lot of effort into it and putting a team together and me going into --
DR. BUCHANAN: As I say you may propose any technical area that you think is important. If you propose one outside of the 28 called out explicitly in the book, the burden will be on you to convince us that it is a pervasive impact thing to do. We're looking for an economically pervasive impact.
THE SPEAKER: (unintelligible)
DR. BUCHANAN: Then you should put those in your proposal as part of your convincing case.
THE SPEAKER: Okay, thank you.
DR. BUCHANAN: I'll take two more in here because we have to move into the break-out sessions.

THE SPEAKER: Sherrill Sanders from Northrop Corporation. The value you're putting on cash versus in-kind contributions results in confusion as to the difference between a cash contribution and compensation, compensated services of a full-time or part-time employee since cash has to be converted into either materials or compensated labor.
DR. BUCHANAN: Rick, you want to take that. I mean my point was that the quality of your matching portfolio is an issue. It is not the case that it is separate to be merely satisfied by a number of dollars. So propose to us what you're going to offer. If someone comes in and offers a more appealing package either by offering greater cost sharing or more readily attainable cost sharing -- the issue between dollars for professional services and dollars on -- you know, that's --
THE SPEAKER: No, the issue was that you stated that cash is better than in-kind.
DR. BUCHANAN: Right.
THE SPEAKER: But we pay all our employees and that is under your in-kind contribution, and therefore it is not clear as to the value -- what is a cash contribution?
DR. BUCHANAN: It's money. You bring money to the table. I mean I...
THE SPEAKER: No, you're not giving a good definition.
MR. DUNN: Let me give you an example of a cash contribution. It's when you take money out of your bank account and you put it in another bank account to be spent on something, and one of the ways of establishing these collaborative programs is for companies to get together and sponsor

research elsewhere that they pay for and we also help to pay for. That's a cash contribution.

THE SPEAKER: Well, that sort of contravenes one of the purposes of the exemptions that you're granting to IR&D and it is a confusing factor. Similarly, I think that you're confusing us when you say don't worry about the DCAA. I think you will find that the cost accounting standards for burdening and project cost sharing of overhead will apply irrespective of the DCAA not being directly involved in these cost sharing operations.

MR. DUNN: Don't worry about the DCAA. What we said is we will accept generally accepted accounting standards. If you're a non-defense firm we're not going to require you to be remade in the Government's image. If you're a defense firm and the only way you know how to do business is according to DCAA rules, we're not going to require you to change that either.

DR. BUCHANAN: One last question over here.

THE SPEAKER: Thank you. My name is Bill Strane and I'm from John Crane out of Tulsa, Oklahoma. We're quite interested in learning more about material science and the structure manufacturing aspect as listed on Page A-3. However as we begin to search out the materials that are available and have been researched in a variety of laboratories that are government owned and government run by the nation, we're concerned about how to best utilize our time to find out who is doing what research in what laboratory. Is there a data base available and how do we facilitate finding out what's going on in those laboratories?

DR. BUCHANAN: Well, there are a number of data bases. The Federal Laboratory Consortium is one large one. The number is in your book. We have provided a number of names for each of the 28 technical areas, eight or nine each. We've listed all the numbers of all the laboratories in the red book in Appendix D and there's lots of numbers there.

THE SPEAKER: So the focus is to start calling numbers and asking questions?

DR. BUCHANAN: You bet.

MR. GUDAS: Let me offer something maybe Lee wasn't aware of. There's been a recent report by the fix-it committee for advanced materials and that list explicitly describes each agency's advanced materials research and that report, if you got it, could target you a bit closer to your particular interest.

THE SPEAKER: I'm sorry that report again was?

MR. GUDAS: It's a fix-it report on advance materials. Advance materials is a processing program. It's fiscal year '94 or '93 budget planning document.

DR. BUCHANAN: Before we break I would like to point out former Congresswoman Joan Horn is here on the stage with us now. She is a member of the Pentagon team that is overseeing the execution of all those other titles that I said I wasn't going to talk about. I wanted you to see what she looked like and those questions that you need to ask about those other programs can be asked by her.

DR. BUCHANAN: It's time to break now. We've got about half an hour before we begin the separate sessions. (Session concluded at 3:15)

LOS ANGELES REGIONAL BRIEFING AT THE BILTMORE HOTEL, FRIDAY, APRIL 16, 1993.

AUDIENCE: I'm from (inaudible).Two quick questions. Is there any preference that would be given to assisting defense contractors versus those which are assisting civilian companies or civilians owners?

DR. BUCHANAN: Mike, why don't you take that. Mike Long.
MR. LONG: If you notice, the purpose of this program is to move to a dual-use activity regime. And because of that, I think we will not be giving a preference to either. So it's strictly a proposal pending review.
MR. DUNN: If you look -- There is a little more to it than that, I guess. If you look at the commercial-military integration partnerships, that is strongly tilted towards the spin-off-type activities which would favor a defense firm. And then you already heard my discussion of IR&D and costsharing. I think that is one of the big differences of the program where defense contractors have an advantage.

THE AUDIENCE: Second question, which is where there a lot of possibilities for different projects, do you have any guidance as to whether we should be very narrow and focused as to opposed broader, given that there may be a number of different possible proposals?
DR. BUCHANAN: John Gudas for this.
MR. GUDAS: Our guidance is to look at the evaluation criteria. There are technical criteria. And there are what are commercial factors criteria. That is what's new in this particular solicitation. So when I examine that question I would answer it by saying where is going to be the argument with the broadest commercial impact. That should be your focus. Because that's going to be a major element of the evaluation. So I would recoddle that together. You would be advised in a well-oversubscribed program to make that a very strong element of your proposal.
DR. BUCHANAN: I would urge you to look -- in the technology development, in particular, one of the criteria of selection has to do with pervasive impact to both the American economy and whatever to market you're serving. A focused proposal well could have a more pervasive impact than a broad one, or vice versa, but that will be the measure we use. In the front here.

THE AUDIENCE: I represent BART, Bay Area Rapid Transmit. We see ourselves --
THE REPORTER: Excuse me, I couldn't --
DR. BUCHANAN: Would you repeat your name, please.
THE AUDIENCE: My name is Victoria Maringberg. I represent BART, Bay Area Rapid Transit District. We see ourselves as users of technologies that have been developed by the defense industry. One example is advanced control technologies. Do we initiate a proposal? Do we go to suppliers of controlled technology? Do they come to us? How do we get a partnership going?
DR. BUCHANAN: John Jennings from NASA?
MR. JENNINGS: You're probably familiar with the people who are supplying this to you. In general, this program is counting upon the entrepreneural activity of everyone here in this room. So what I would suggest if you have some firm out there that are supplying this technology, get them on the phone. Contact them. Ask them, "Do you know about this program?" Ask them, "Do you think this might be something valuable to particpate in?" Maybe we should put a proposal together. Maybe we can help you do it. Maybe we can put in some funds ourselves. Go ahead and call them. We would encourage you to put together the teams and the arrangements that work best for you in whatever way that is.

THE AUDIENCE: We're used to going through the RFP. We've never been in a situation where we could handpick someone to do a project with. So how do we handle our usual --
MR. DUNN: Remember, you probably, in this instance, won't been buying anything initially. Let me give you an example of one of the the partnerships

we've already created. We got seven gas-turbin engine manufacturers together for the entire industry. We're co-funding with them a program to develop an entirely new class of materials for use in gas-turbin engines. Maybe in your case it's a whole new way of doing control technology. They are funding the companies that will become their future supplier base. And they are building the industry through this program. That's the role that they have sought out. And again, they're not -- they're sponsoring the research and creating that tech base. That is one way you can structure a program.
THE AUDIENCE: Are those seven parties competitors to each other?
MR. DUNN: They are all competitors. I'm talking about (inaudible) GE among them. These programs, you can't do everything. You have to find the things you can do together in creating enabling technologies. The whole industry base of enabling technologies is one of the things you can do together.

THE AUDIENCE: I have one last question related to all of this. You said something about your program can take you through proving the viability of a technology, but not to the point of actually having it ready for sale. Can you -- am I understanding that?
DR. BUCHANAN: There's a lot that happens between the time a technology is productizable and the time it's actually offered for sale. There's marketing that has to be done, there's final testing, packaging, all kinds of things that go into the actual productization, which would not be a subject of this program. This would be the technology-development kinds of things. May we go back to the rear microphone, please.

THE AUDIENCE: My name is Bob Sergeant. I'm with Universal (inaudible) in San Diego. We've identified some of the projects being one of the national laboratories where we were interested in pursuing a CRADA. With regard to a small business it's very difficult sometimes to come up with a contribution in kind. And we were curious if funding through this project could possibly be worked cooperatively with a CRADA? Is this something that has to be totally independent of CRADA or pursued in parallel with CRADA?
DR. BUCHANAN: Bruce Kramer, why don't you take this one?
DR. KRAMER: I see no reason why the proposal could not be pursued in cooperation with the existing CRADA, as long as the contribution towards the CRADA was not double counted as contribution towards this project.
THE AUDIENCE: Okay. So the contributions that are identified CRADA, plus this program, are two independent contributions. You have to put up a dollar for one, you have to put put up a dollar for another, and ultimately, two dollars for two independent programs?
DR. KRAMER: Correct.
DR. BUCHANAN: As long as one of those dollars is not Federal. I mean CRADA may be the ideal mechanism by which a partnership is able to get money to a national laboratory. I mean, that is an ideal mechaninism for doing that. But, to my mind, a CRADA is not a mechanism to in any way change the requirement for cost sharing. Over here, please.

THE AUDIENCE: Miles Stuart from Irvine Census Corporation. Having been in a successful transitionary technology (inaudible) developed by Darva, a large commerical computer company, our questions are two that relate to this. One, will this computer company not have its books audited? Two, is recognition of current technology transfer monies and current resources also countable in your in-kind investment?
DR. BUCHANAN: Rick, I think that is your territory.
MR. DUNN: The first question had to do with auditing? We will have some

provision in any agreement that says you will keep the records and will be able to look at them. In our other transactions authority to date the only audits that have taken place have taken place with the commercial accounting firms. What was the other part of the question? The other part of the question is right now there is technology-transfer activity, equipment, et cetera, that is going to back and forth between the parties. Is that activity already ongoing capable of being counted as part of your in-kind --

DR. KRAMER: No. ***

DR. BUCHANAN: The rear mic, please.

THE AUDIENCE: My name is Martin Sullivan. Barry & Associates. Two questions. Number one, it seems to me that technology deployment proposals are not acceptable to large businesses; is that correct?

DR. BUCHANAN: What kind of proposals?

THE AUDIENCE: Deployment. It seems to be restricted to small business.

DR. BUCHANAN: No. I know of no such restriction. I mean, the deployment activities, the services that would be provided are given preference to small and medium-size manufacturing firms. But the performers can be anybody, including State and local governments.

THE AUDIENCE: One other question. In the technology deployment category there are categories like materials. Under materials you seem to be limiting yourself to composites in metal forming. Would you not receive proposals in material sciences or materials technology from other than those two small portions of materials?

DR. BUCHANAN: Are you talking technology development?

THE AUDIENCE: Yes. Technology development.

DR. BUCHANAN: That list is not exclusive. But the list is certainly emphatic. So if you choose to propose something on that list that is not there, then the burden will be on you to convince us it's a really good thing to do.

May I have the rear microphone, please.

THE AUDIENCE: My name is Charles (inaudible). I represent myself. And my question is for an individual, is it necessary to have partners before you can be considered?

DR. BUCHANAN: John Gudas, would you take that, please.

MR. GUDAS: There is one funding category where you can come in as as an individual proposer -- and I've been on the road so long my mind has been scrambled -- I believe it's the commerical-integration partnership. And in that case, a single firm can qualify. That's the good news. You then have to look at the criteria for funding. And the funding, the cost-share gross from 50 percent to 70 percent in the out year. But yes, in that one category, commercial-military partnership, one or more eligible firm is available. This is also true for regional technology alliances and systems program.

THE AUDIENCE: There is a requirement of cost sharing. For example, you have ideas and you don't have any funding. Is it possibility to get the government's help, as in SBIR, for the programs?

MR. GUDAS: You're asking is an SBIR available for the technology development activities? The answer is no. SBIR will be computed separate if there is no (inaudible) for you. The SBIR mechanism is also intended in this program to provide a haven for development activities. In that case, no cost share is required. Money's set at the time, 7.2 million available in that category, that will be computed (inaudible) with this announcement under the standard SBIR rules.***

THE AUDIENCE: The other part of my question is when you have a system

that is almost ready for prototyping, but not quite ready, is what you called finished product is that considered development or deployment?
DR. BUCHANAN: It's considered out of the scope of this program.
THE AUDIENCE: Thank you.
DR. BUCHANAN: Yes.

THE AUDIENCE: John Brousell with Cal Start. And I was wondering if you could talk about the importance of applying as consortium beyond just one or two coalliance. And also if you could talk about the consortia as multiple proposals, if it's best to try to put them into one associated proposal, or to have several.
DR. BUCHANAN: John, why don't you take that.
JOHN GUDAS: The real test is when you look at bringing in extra members to your team, do they make your team stronger? If they do, then bring them in. If they are, put your proposals together as an associate proposal, makes all the proposals stronger is a whole. If it's for a compelling case, do that. If they don't, then don't do that. There is no particular reference that you can say, without looking at the substance of the proposal. The real point is what is the substance, what is the most -- how can you make the most competitive proposal? That is where you should be asking yourselves whether it's three firms, or four firms, or associated, or not really. It won't overcome anything like what the substance is.
A SPEAKER: I'm worried. This has come up over and over again, so I'l' put myself on the stand here. I think it's not healthy to try to (inaudible) that question. I think you have to realize there are 1200 of you in this room today, and countless others throughout the country. This is going to be a very well-oversubscribed program. I think you should go to the heart of what the evaluation factor's about. Do what John Jennings says, put together the proposal which is strongest on its own feet, not try to game where it can be gamed on other criteria. That won't work on an oversubscribed program.
DR. BUCHANAN: We've given you the selection criteria. You have them in your hands now. You won't find any surprises on May 14th. So you know what we think is important. The number of proposers is not there.
THE AUDIENCE: Burt (inaudible), (inaudible) & Associates in Palo Alto, California. We do research and development in electronics, and we have a (inaudible) with a Canadian company. So I'm wondering to what extent a Canadian company would be eligible to participate, and generally about foreign countries participating?
DR. BUCHANAN: Mike Long, would you pick that up.
MR. LONG: I'll give it a shot. Rick, jump in whenever you feel is necessary. As mentioned a second or two ago, there are certain criteria. And for development, one of them is pervasive impact, which means how does this solve the U.S. economy? How are jobs created in the U.S.? They would be eligible to participate, because anybody, as was mentioned also, is allowed to participate in the program. But you have to take a hard look at the criteria and see if you really have a strong case by using somebody that lives out of the country.
THE COURT: The rear microphone.

THE AUDIENCE: My name is Wayne Martin, Martin & Associates. My question is can a sequential or loose association of consultants that aren't together permanently be considered a consortium for this project?
DR. BUCHANAN: The requirement is on "firm." Now what constitutes a firm? I don't know. Maybe you would like --
MR. DUNN: Let me answer the question this way: A loose association of firms or other entities that does not work together on an affirmative basis most assuredly qualifies as a partnership under the various programs contributing. We require no

particular form of organization. Most companies we have found do not enter, do not create research and development corporations, they do not enter into formal legal partnerships, they do not form legal joint ventures, just enter into a collaboration agreement. They don't even have to do that. We have an ability to execute a funding instrument with multiple parties. That, in fact, cannot be the only legally binding instrument executing a partnership.

THE AUDIENCE: Thank you. Sir, I'm Don (inaudible) From Texas Tech University. I have a few parts to my question. One, we're trying to do -- we've got quite a bit of momentum on collaboration with Russians, particularly. So one question is does any component of the proposal include international --
MR. DUNN: Yes, it can.
DR. BUCHANAN: Now, it won't disqualify the proposal. But recall what we said earlier, the criteria for selection is a pervasive impact on the U.S. economy. No other economy has an affect on the criteria for selection. So unless that collaboration has a local or beneficial effect, then -- probably not attractive.

THE AUDIENCE: On the in-kind matching, it says that we team up with a company and they're -- and they're using some IR&D money, or some other kind of money, can that contribution, in terms of cash value, be counted at the burning overhead rate?
DR. BUCHANAN: John?
MR. GUDAS: I would love to say that is the original question.
DR. BUCHANAN: This occupied most of our flight from Los Angeles to Dallas.
MR. GUDAS: Let me say again, in a program of this scope where we're intending to essentially energize the economic sector, it is not our intention to place funding into overhead burdens. As much as we can we're intending to avoid that. So yes, you can do that. Will you compete well against proposals that are forcing the R&D into the -- execution of the R&D into the hands of the researcher? Probably not as well. But surely you can take that tact. It is our intention to put as much of the R&D dollars into the hands of those who are conducting the research as possible.
DR. BUCHANAN: The quality of the fund match is an issue here. And it is not simply acceptable or nonacceptable. The quality will be an issue. So you should make it of the highest quality that you can. One more question before we get to our Breakout Session.

question pertaining to money; the other one probably pertaining to money. The first one is you mentioned several times 500 million dollars allocated for this program. Has any of that been spent?
DR. BUCHANAN: No.
THE AUDIENCE: Okay. Next question, then, is the plan to spend all the money before FY '93 ends in September?
DR. BUCHANAN: Well, I wish. I mean, the plan is to spend the money and get it into the hands of people who are going to use it as quickly as possible. That means I'm not saving back anything for next year.
THE AUDIENCE: There is a scenario that says there will be some money not committed in --
DR. BUCHANAN: Look, we had a choice. And the choice was we had to regard this as FY '93 money. And the opportunity to follow along is dependent on Congressional action in the Fall. The choice was either to fully fund proposals for many years, in which case you would have a lot of money sitting in the bank, nobody would benefit from it. The other scenario would be as we've done, is to ask for proposals with many options which would will be negotiated at the time of award. Those options can be executed either out of this

appropriation or some future appropriation. Okay?

THE AUDIENCE: One final question or comment. In-kind support, we've had several questions here. I had a few. I'll defer them. I wonder if you could either generally just give us your opinion, or give us an example of various types of in-kind support, or perhaps better, if your group had put out a guideline of what is considered in-kind support.

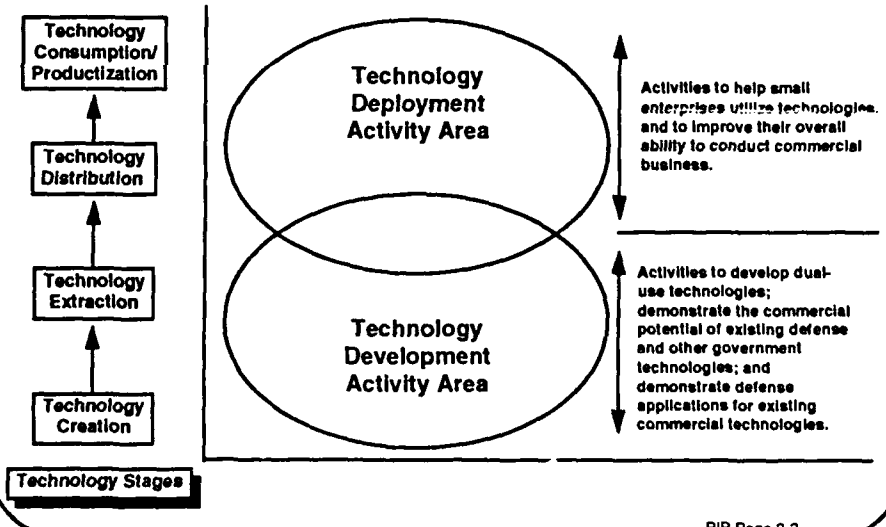
DR. BUCHANAN: I'm not going to publish rules. We'll give some examples, but we'll not get in the rule business. Written materials are available at the registration desk for those who do not have them. There is no way we can anticipate all the kinds of things you might want to offer as cost sharing or in-kind. If you have something you want to bring to the table, bring it to the table and we'll negotiate. That is the idea.

TECHNOLOGY REINVESTMENT PROJECT

Technology Development

TECHNOLOGY REINVESTMENT PROJECT

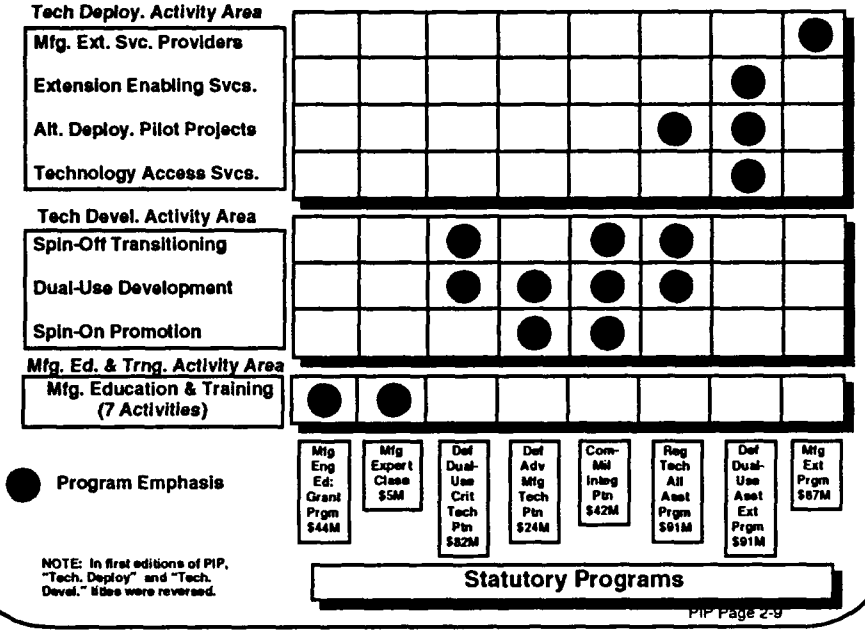
Technology Stages and Activity Areas



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TECHNOLOGY REINVESTMENT PROJECT

Activities by Statutory Program



NOTE: In first editions of PIP, "Tech. Deploy" and "Tech. Devel." titles were reversed.

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TECHNOLOGY REINVESTMENT PROJECT

Technology Development

Technology Development activities deal with the creation of new product and process technologies and exploration of their potential for commercial and/or defense applications. Proposals that involve either basic research OR final product development beyond the stage of product prototype/feasibility demonstration will be regarded as out of scope.

Proposals will fall into one of three activities:

(1) Spin-Off Transitioning activities are those that demonstrate non-defense commercial viability of technologies already developed for defense purposes

(2) Dual-Use Development activities are those that develop commercially viable technologies that have both defense and non-defense uses

(3) Spin-On Promotion activities are those that demonstrate the defense utility of existing non-defense commercially viable technologies

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Technology Development Focus Areas

- Information Infrastructure
- Electronics Design and Manufacturing
- Mechanical Design and Manufacturing
- Materials/Structures Manufacturing
- Health Care Technology
- Training/Instruction Technology
- Environment Technology
- Aeronautical Technologies
- Vehicle Technology
- Shipbuilding Industrial Infrastructure
- Advanced Battery Technology

These topics are not to be considered exclusive; the Government will entertain ideas in other areas.

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Technology Focus Areas

(1) Information Infrastructure

- Network Architecture
- Wireless Communications
- Software Design Development Methods, Tools and Environments
- Heterogeneous Data Bases

(2) Electronics Design and Manufacturing

- Process Control for Electronics Manufacturing
- Multi-Chip Integration
- Optoelectronic Module Technologies and Manufacturing

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Technology Focus Areas (continued)

(3) Mechanical Design and Manufacturing
- Integrated Design Systems
- Precision Machine Tools and Robotics
- Optical Components Manufacturing
- Precision Laser Machining

(4) Materials/Structures Manufacturing
- Advanced Composites
- Innovative Forming Technologies

(5) Health Care Technology
- Health Care Information Systems
- Trauma Care

PIP Page A-1–A-6

Technology Focus Areas (continued)

(6) Training/Instruction Technology
- Digital Libraries
- Authoring Tools

(7) Environment Technology
- Environmentally Conscious Electronic Systems Manufacturing
- Environmental Monitors

(8) Aeronautical Technologies
- Propulsion/Engine Technologies
- Fly-By-Light
- Structures
- Aircraft Design

PIP Page A-1–A-6

Technology Focus Areas (continued)

(9) Vehicle Technology

- Alternate Power Sources
- Sensors and Electronics for Vehicle Systems
- Vehicle Integration

(10) Shipbuilding Industrial Infrastructure

(11) Advanced Battery Technology

PIP Page A-1–A-6

Technology Development Planned Selection Criteria

Each proposal must address these selection criteria which are grouped into four equally weighted categories:

(1) Scientific and Technical Merit

(2) Technical Approach and Management Planning

(3) Pervasive Impact

- Benefits to defense capabilities and enhancement of U.S. industrial base

(4) Commitment to Productization

- Commercial sustainability
- Evidence of previous related effectiveness
- Appropriateness of skills and partners/ participants

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Development Activities
Statutory Restrictions

- Defense Dual-Use Critical Technology Partnerships
  - Requires two or more "eligible firms" or a nonprofit research corporation established by two or more eligible firms
  - Funding: $81.9M, 50% match required
  - DoD can provide technical assistance
- Defense Advanced Manufacturing Technology Partnerships
  - Requires two or more "eligible firms" or a nonprofit research corporation established by two or more eligible firms
  - Funding: $23.5M, 50% match required
  - DoD can provide technical assistance

PIP Page B-1, B-3

Development Activities
Statutory Restrictions
(continued)

- Commercial-Military Integration Partnerships
  - Requires one or more "eligible firms" or a nonprofit research corporation established by two or more eligible firms
  - Funding: $42.1M, 50%, 60%, 70%, 70%, 70% match required
  - DoD can provide technical assistance (included in the 50%, 40%, 30% maximum Federal contribution)
- Regional Technology Alliances Assistance Program
  - Requires one or more eligible firms located in the region and sponsorship by State or local government
  - Funding: $90.5M, 50% match required
  - DoD can provide technical assistance

PIP Page B-1, B-2

DEVELOPMENT ACTIVITIES STATUTORY RESTRICTIONS

	FUNDING	REQUIRED PARTCIPANTS	MATCHING FUNDS	DoD TECHNICAL ASSISTANCE
Critical Technology Partnerships Defense Dual-Use	$81.9M	2 or more eligible firms or non-profit corp setup by eligible firms	50%	Yes
Defense Advanced Manufacturing Technology Partnerships	$23.5M	2 or more eligible firms or non-profit corp setup by eligible firms	50%	Yes
Commercial-Military Integration Partnerships	$42.1M	1 or more eligible firms or non-profit corp setup by eligible firms	50% / 60% 70% / 70%	Yes (incl. in Fed. Contribution)
Regional Technology Alliances Assistance Program	$90.5M	1 or more eligible firms in a region and state or local gov't sponsorship	50%	Yes

WHITE HOUSE

TECHNOLOGY REINVESTMENT PROJECT BRIEFINGS

OPERATION RESTORE JOBS

BREAKOUT A: TECHNOLOGY DEVELOPMENT

DR. H. LEE BUCHANAN: As promised, this is the Technology Development Breakout. I'm sure there's going to be a lot of people going back and forth to the three breakouts. This is primarily an opportunity to ask questions. There are a couple of things that I'd like to get out first.

There was a question at the end of the general session about where and if people could obtain copies of the view graphs and I made the blunder of volunteering my host as the disburser of that. I have been advised of my blunder.

We're going to have all of those view graphs available from NTIS early next week. We're going to deliver it to them by disk. As previously advertised that early version of the view graphs will not be accompanied by text and prose. It will later be accompanied. Original plan was to publish the view graphs as well as the transcript at the end of the entire week of meetings.

What we're going to do now is to make the view graphs available as soon as we can get a disk over there and the transcripts will be appended as they become available. So by early next week you should be able to get all of the view graphs including the ones that I didn't present via NTIS. DTIC will also have a copy but that will take a little longer. NTIS is your first and quickest avenue. I don't have it with me, I'm sorry.

I'd like to introduce Ms. Joan Horn, former Congresswoman Joan Horn from Missouri. She is shortly to become one of the folks that you heard Gary Denman talk about as the critical team that has as its concern the entire Defense Conversion, Big D, Big C program, the 1.7 billion, rather than the smaller Technology Reinvestment Project.

I wanted you to get introduced to her so that you will know where to go in the case that you have questions that are out of scope of the TRP. Joan.

JOAN HORN: Thanks you. It's wonderful that so many of you have stayed with this so long and I'm delighted to be here also. This is just one additional proof of the priority of this effort is the fact that I have been brought over to the Department of Defense to chair the effort there, to coordinate, to facilitate, to outreach, to help amongst the programs. I'm not going to run any of the programs, I'm not going to tell anybody who runs a program how to run the program, but we are going to try to take all the people programs and make them work with the community program and make them all work with the technology programs that you're interested in today. Today we're dealing with technology programs.

In some of your questions that have come up, in some of your comments to all of us as we have been standing around, so many of you, what can we do about this, what can we do about that, what are you going to do about that. Please help us. Realize that this is a new way of doing business for the Department of Defense especially. We want to do it. We want to help you. We want to work with you. We want to mostly help you work with each other because there's only so many of us and most of us are in Washington. When we're out of here we want you to have local contact. We want you to know more about each other.

In addition to those view graphs I will make the commitment that we need to share an attendance list of everyone that's here so that you can continue to find each other because this is, let's put this in context, folks. We're talking about less than half a billion dollars in a multi-trillion dollar economy. As President Bill Clinton said, We're

talking about $20 billion over five years in what's the economy size over five years.
This is only a part of the government wanting to say we're in partnership with you, we want to help you but we can nudge you along with this relatively small amount of money.
So what you're going to be doing amongst yourselves, with your local institutions, with your higher education, with local economic development, with the state, with your local communities is going to be very important and the sum total of all that will probably be much more than we can all do, but help us out and here's what I will give you the opportunity to do.
I will be around, if you have a business card, if you want to jot down, or a bigger piece of paper, a question, a suggestion, we want them. What can we do to get out of your way and to help you?
Now we know about reforming acquisition, we know about reforming intellectual property rights legislation, we do know, but the horror stories that each of you have, as they have affected each of your businesses, we need details and we need to know specifics. So it would be of help, if any of you will take the time to do it on a business card or a piece of paper. I can't promise we'll respond to all of you. We might try to get something back out. It will help us to acquire the information we need to help you. We need to reform acquisition, we need to do things about intellectual property rights, the cost controls of Department of Defense, all those things will be very helpful if you will do it for us.
And we appreciate that very much, we appreciate your being there and believe me, we're in the government but we really are here to help you. Thank you.
(Applause.)
DR. H. LEE BUCHANAN: Thank you, Joan, very much. I think you're beginning to hear the theme come across that we're trying to move as fast as we can and we're trying to be responsive.
There is no regional meeting to be conducted in Washington, D.C. This is not a Washington, D.C. program, although we sort of all live there. We're trying to come to where you are and we need that help and I would certainly second that plea.
Let me move directly into the technology development kinds of activities. You heard them described last time as spin-on, spin-off and dual use. I want to spend some time talking about the technology areas themselves, the 11 main topics and the 28 subtopics, as those topics for which we have the greatest interest.
We are now talking about the lower oval here. Recall discussion that this is farther away from the point of sale than the technology deployment areas would be and the test, the successful end result would be to establish viability of a technology either towards a commercial or a defense product.
If you look now at the master chart for this program you see that the programs, the legislative programs that are affected here are four; defense, dual use, critical technology, partnerships. That is the program most similar to things that ARPA has done in the past two years. That is probably the one most similar of the four to the ATP program.
There is the defense advanced manufacturing technology partnerships. Those are partnerships very much like dual use partnerships, but where the emphasis is on the development of manufacturing and process technologies rather than product technologies.
The third program is the commercial military integration partnerships. These are programs that generally imply vertical joining of companies rather than horizontal partnerships, a vertical joining being a supplier, vendor relationship that is vertical along the path of product development rather than precompetitive joint

ventures.
And finally the defense technology alliances where we're trying there to form alliances in a regional sense among companies with like and similar technical interests.
Recall I discussed the three activities of spin-ons, spin-off and dual use development, all three of them developing technologies to the point of establishing viability. Viability could well mean a brass board, it could mean a prototype, it could mean a demonstration. It does not mean a technical report. A technical report as a deliverable will likely be of limited interest in this program.
The point here is that we are looking neither for basic research that yields not, that does not yield a product viable technology nor are we looking for final product development.
Here are the 11 areas that you find in the red book and they will be described in some detail in the view graphs that follow. They are not exclusive but you should recognize that these are programs that have particular -- Inter-agency cooperation, this is wonderful. That means that Bob Norwood has to drink it now that you've brought it to me.
This should not be taken as an exclusive list. It is certainly an indicative list and I described I think at some length how, I guess I didn't, I did that this morning. It might help for me to discuss the way in which these technologies were derived.
There is a list of technologies in the legislation which is not this one, so please don't be confused. Early in the program we solicited from the participating agencies ideas, those ideas being ideas for dual use developments that would yield technologies that were of interest to the agencies submitting them.
I got about 678 different entries and then we went through this process of aggregating submissions with other submissions until we finally ended up with 11 big piles and a whole bunch of little small piles and we pushed the small piles on the floor and the 11 big piles are the ones that you see here. Now those big piles actually come in smaller piles, each one, and those number 28 that you see in the following view graphs.
Someone at the last session asked about information infrastructure. That is specifically the subject of the first focus area where we're worried about the network architecture, particularly a very wide band with fiber networks, wireless communications which refers here mostly to infrared and RF at short range. Software design development methods, these would be CAD/CAM tools that are specific to information infrastructure. And interoperable data bases, data bases that could be shared at a distance and accessible even by non homogeneous systems.
And number two is the electronics design and manufacturing, obviously the idea here is to emphasize microelectronics and you will see that much of what is being discussed here is process controlled and the inference that you'll find in the red book is towards modular manufacturing techniques that are scalable to both small lots and larger lots.
Multi-chip integration is the technology of integration of bare chips, that is chips without packaging, onto a larger substra, to form larger applications, specific integrated circuits or A-6, for aggregation into even larger systems.
And finally is the idea of opto-electronic module technologies, specifically we're talking about interfaces and we're talking about the manufacture of opto-electronic components at lower cost.
I'll move to number three, the mechanical design and manufacturing topics. Here we are interested in integrated design systems, which would be the integration from both ones and zeros at the design level all the way to free form fabrication techniques. We're interested in precision machine tools, very precise trivological tools and robotics.

Optical components, manufacturing. This is related to the previous opto-electronics except that optical components really here means glass lenses crucial to most military systems. And finally precision laser machining. This really is an inherently spin-off technology, of course, lasers having been a focus, no pun intended, focus of military R&D for quite some time, now finding great utility in manufacturing systems, particularly in the automobile industry.

Materials and structures manufacturing. There is not much emphasis in these technology focus areas on the synthesis of new materials. The emphasis is, however, in processes which would make existing materials much more affordable and what I have in mind here is particularly composite materials that are very labor intensive to lay up, both polymer, metal matrix and ceramic matrix composites are among them.

Innovative forming technologies refers to techniques such as stereo lithography by which individual items can be formed in a number of innovative ways using laser centering, using techniques by which one item can be made without a dye from merely the design information.

Health care technology is a very big field. We would not intend to span all of health care. The National Institutes of Health does that just fine, except in a few areas that we think warrant our immediate attention and those two are first health care information systems, you may know it as medical informatics. It is, for instance, the recognition that a health care worker, a physician, is really an information worker and the extent to which that information worker can be provided with information from a distance or stored locally from a single health record would make him much more efficient.

I'm astounded to realize that the health care industry in this country is worth about $800 billion, about 25 percent of that is record keeping and overhead and now all of a sudden we're talking about the entire DoD budget. There's a way to cut costs.

Trauma care really represents our attempt to bring new technologies into both the battlefield and the trauma care arena, where action at a distance, remote tele-presence, providing of service in remote areas of the country can all be provided through advanced technologies and information.

The military has had great success in training and instruction technologies, particularly in the fields of simulation. Simulation played a very important part in the preparation of our services for Desert Storm and we would seek to apply those technologies in a spin-off way into our classrooms, our universities, K through 12 and so forth. Here we're really interested in digital libraries whereby access is provided to a large number of people and ways in which the software can be authored rapidly and at minimum cost.

Environmental technology appears here. It is not to be regarded though as a clean-up effort. It is to be regarded as the technologies that go to two areas. First of all, the so-called green manufacturing, that is to develop manufacturing processes which are themselves environmentally benign but that would replace processes that are environmentally offensive. Second of all would be to employ current sensors paid for by the DoD in a way that we could use them to monitor the environment in situ. That would be the second major emphasis in the environments.

Aeronautical technologies is a little more diffuse. It is largely the idea of fly by light. That is the control of aerodynamic structure and control services using opto- and photoelectronics rather than wires. But it includes engine technologies, propulsion technologies, which could themselves be materials related, as would be structures. The main emphasis of the structures part of this is in smart structures, that is structures

that not only sense their local environment but are actuated to compensate for some feature of that environment.
And finally the area of aircraft design, which is largely the applications of large capabilities in scientific computing to do aerodynamics, Navy Stokes equation.
Vehicle technology was really derived from an early interest on anti-avoidance sonar and radar. It would involve the intelligent highway concept and under vehicle integration would be an on board sensor suite that would coordinate all the functions of a vehicle locally as well.
Shipbuilding industrial infrastructure is a harder one to describe. Really what we're after there is not the building of new ships but the developing of new technologies that would ultimately find their way into ships; double hull designs, new CAD/CAM tools, precision machining that would enable us to become, us as a country to become more competitive in a dwindling, at least to us, shipbuilding market.
And finally in advanced battery technology, there we are primarily concerned with batteries that you can hold in your hand as opposed to the batteries that were called out under vehicle technology. These would be portable energy sources. That would include small fuel cells that would look and feel and act like batteries.
That program is both a desire to solicit proposals for new battery types as well as new ways to manufacture existing battery types that don't use environmentally offensive materials and processes.
How will these be judged? There are four criteria for selection that are called out in the red book. A few of them are expected and they will all four be viewed with equal weight.
First will be obviously the scientific and technical merit of a proposal. Does it violate the third law of thermodynamics? Does it require the invention of perpetual motion? Or does it require that we furnish you an optanium?
Second would be the technical approach in management planning. What the red book says is we're going to be very tolerant of high risk, but we are not very tolerant of high technical risk, we're not very tolerant of high management risk. This particular criteria is your opportunity to demonstrate your knowledge of where the risk areas are and to describe those things that you're going to do to mitigate those risks when and if they actually appear.
Number three is a little more atypical, pervasive impact, and you should hear that as an attempt from our point of view to allow you to convince us that there really is a pervasive market. This is a question of who cares? We are really interested in developing those technologies that are going to end up as products. This is not a technology demonstration or a technology muscle flexing exercise and this is where we would expect for you to tell us that, yes, somebody will care in the end and this will actually result in a technology that gets productized.
We're going to ask you to commit to productization somehow and the somehow is really your choosing, but a fourth criteria for selection will be the extent to which it is obvious to us that you or somebody known to you is going to take the successful results of an investigation and actually do something with it.
Clearly only in that event does either the Department of Defense or industry find benefit and that would be a full 25 percent of our evaluation criteria.
The view graphs that follow are a summary of the requirements of the four statutory restrictions. Two or more eligible firms are required for both the defense dual use critical technology partnerships and the advanced technology partnerships and a 50 percent match is required for both of them.
This bullet that says DoD can provide

technical assistance refers to the fact discussed at the end of the last session that says that if a DoD lab wants to come into an activity and put its own money to an activity or a proposal it may do so without requiring that its investment be matched by non-DoD money as well. So there's now three classes of money that are called out in the law; my money, which is TRP money; your money, which is industry and state money; and now federal lab money which is neutral and requires neither a match from me or from you. So that's really the primary mechanism by which the federal laboratories, national laboratories, can become a part of these proposals.

There are similar restrictions in the commercial, military integration partnerships and the regional technology alliances. In all cases DoD can provide technical assistance. In the one case, the commercial, military partnerships, of course, the cost share increases as a function of time. In the one case of commercial, military; in both of these cases one more eligible firms is allowed except that there are conditions on when that one can submit a proposal.

This next view graph is another attempt to try to depict the restrictions on these programs in yet another way. I hope we try to make them consistent clearly but if there is some doubt, of course, you are clearly referred back to Appendix B and ultimately to the law and we will be doing that as we read proposals.

Now as Rick mentioned, when proposals come in, it would be our intention to regard any proposal as perfectly valid as claimed. In other words, if a proposal claims that it has satisfied cost sharing, we're going to assume that it does. If a proposal claims that it is a partnership of two or more eligible firms, where eligible is specifically called out in the law, we're going to assume that it does.

We're going to look first at the activity to be proposed, its benefit to the DoD and to industry and make a judgment first on the basis of the ultimate objectives of the proposal.

Then we would seek, then and only then we would seek to verify that all of the conditions are met. That may very well our coming back to you saying that we have trouble with one condition or another.

We do not intend to throw proposals out on a cookie cutter basis because they fail to pass some threshold test for either cost sharing or organization.

Let me quickly mention the SBIR program. I mentioned a minute ago that it was not our intention to excise this program from the TRP and to include it in the major SBIR offering. That is the case.

We would issue a solicitation for SBIR proposals at the same time that we issue a solicitation for everything else, May the 14th. So now there are two solicitations out there for SBIR. All the same rules and regulations apply. Nevertheless since they are mandated in law, we would only be issuing phase ones this year, with phase twos next year. The phase ones would be, this year allowed to be $75,000.00. Phase twos are I think now three-quarters of a million dollars.

The proposals will be solicited against the 11 technical areas I just went through or the 28 technical subareas. So you will not see a separate topic for each of those 11 areas. The SBIR announcement will simply say, Those technical areas are now the topics for SBIR's in which we would like to see proposals.

And I did mention that cost sharing is not required for these SBIR proposals and I did mention that out-year TRP activities in phase three could be referred back into the TRP program in the our-years which I think is going to represent a nice benefit to those that survive the process.

These are the standard conditions for small business innovative research eligibility. There should be no difference in these conditions and the conditions that you find in the larger programs, certainly no additional

features or restrictions, and the phase three opportunity is in addition the traditional program.
These proposals will be selected first for their relevance to the TRP mission and program and then the relevant proposals will be used and evaluated to the typical requirements that all SBIR phase one proposals are subjected to.
Now with that and hopefully I've stimulated some thinking along the areas of technology development, I would like, because I know there are many questions, I would like to open it up for questions for as long as there is interest and in order that you would meet the people from the other agencies, I've asked them to be present here as well and I would ask them to take your questions sort of in order because I want you to get to know them as integral parts of this program.

BREAKOUT A: TECHNOLOGY DEVELOPMENT

NEW YORK REGONAL BREIFING GIVEN AT THE SHERATON NEW YORK HOTEL AND TOWERS, MONDAY, APRIL 12, 1993.

SPEAKER: If I could ask quickly that the 28 program areas outlined you said are different from the law. Does that mean that they've replaced what was in the law or how did you arrive at those 28?
JOHN GUDAS: The 28 were arrived at by a process that Lee has described as one of soliciting concepts from the various agencies in the Department of Defense and essentially lumping and grouping to a point where those were judged to have the most relevance and have the most common coverage through our mission. Does that answer your question?
SPEAKER: There were some that were in the law that aren't mentioned in that 28.
DR. H. LEE BUCHANAN: Everything in the law is in the 28. We checked.

SPEAKER: I had a question on follow-up, I had a question from the earlier session. (Inaudible) and you had suggested that if people had, I don't want to use the word, preferred reviewers, but people that they knew were interested in the technology they should at least mention that in the proposal. I was wondering whether that was what you meant as far as work should be brought up and how it should be brought up in the proposal.
I had another question which talked about partnering. (Inaudible)
DR. H. LEE BUCHANAN: Let me refer that to Bob. I believe Bob Norwood is sitting next to John Gudas there from NASA.
DR. ROBERT NORWOOD: In answer to the second part of your question, we expect that your partnering activities encouraged by those government agencies that are represented here will proceed at flying speed, at 100 percent. Clearly after the 14th the TRP members will be only in a responsive mode and not in an active mode to generate, to help you generate your partnerships. So I would encourage you to take full advantage at this time to generate all the partnership combinations that you think would be applicable with the government as well as with industry, as well as with nonprofits and universities and proceed from there.

SPEAKER: (Inaudible) the concepts would be brought forth by the contractor, or the proposers, to various government entities (inaudible) government entities that will then say, Gee, we've got a concept from Company A and a concept from Company B, it sounds similar. Is the government then going to try to put together Company A and Company B and go forward with that type of partnership? Is that something you'd expect Company A to know about Company B?
DR. ROBERT NORWOOD: Both are perfectly applicable. In some cases those government agencies are labs that happen to have a particular expertise in an area I would expect them and we have asked them to be very active in going out and trying to build partnerships among companies and with companies and industries and universities.
Earlier this morning Rick Dunn mentioned one of the partnerships where I think ARPA had actively tried to bring the gas turbine companies together to form a partnership to work on common technology problems. So I see no reason why that process shouldn't be continued here.

SPEAKER: (Inaudible.) The second question, the other one was about if we know people in the government who have a keen interest in technology, how are they supposed to (inaudible) forward, I guess, in this process.
JOHN GUDAS: There will be an attempt to find expert evaluators for

every proposal. Clearly that's embedded in the heart of this and these five agencies have access to experts in all the other agencies and there's pretty broad coverage within these five agencies.
If indeed you feel that a proposal should be guided to an agency for review, that is you're providing guidance to us, saying do you know that NIH has expertise in this area, Lee has emphasized, and I'd like to go on top of that, is that advice is well accepted in a proposal, but we're going to find reviewers for those proposals within the agencies whether you tell us or not. We could use your help if indeed you think it's worth offering.
DR. H. LEE BUCHANAN: Don't count on special technical knowledge of somebody else in the government to arise. I mean the burden is going to be on you and your proposal to show us why it's such a great idea.
Let's take one from over here.

SPEAKER: I've heard several interpretations of why (inaudible) Regional Technology Alliance. Would you mind giving us examples?
DR. H. LEE BUCHANAN: Mike, that's yours.
MICHAEL LONG: This would include a cooperative joining of agencies or state agencies, city, groups within a particular region, not necessarily counties within the state, but a more broadly based group which would join together to either provide assistance or information to various industries and I think our focus is going to be on the smaller industries within a particular region.
SPEAKER: Is it limited to those regions that have an area of expertise or can Company A and Company B (inaudible) fit together for a particular project they might be interested in that really isn't specific to that region per se?
MICHAEL LONG: I think it's been mentioned a couple of times that we're trying to be as open as possible in all possibilities. I think the justification has to be structured in such a way that it makes sense, and it's a good thing to do and there will be some benefit from it.
DR. H. LEE BUCHANAN: Great. Let's start over here.

SPEAKER: Will a proposal that has more (inaudible) funding match or a more diversified team have any advantage?
DR. H. LEE BUCHANAN: John?
JOHN GUDAS: One of the evaluation criteria is commitment to commercialization so clearly a proposal that has a larger match will score higher or will receive a higher evaluation for 25 percent of the factor.

SPEAKER: If I (inaudible) a proposal for $5 million. You like the technology but you say that's too much money to match, (inaudible) expected to come back and say, (inaudible)?
JOHN GUDAS: As Lee has pointed out throughout the day, this program intends to be flexible. I would think that I wouldn't want to throw away the integrity of your proposal. I'd warn you against that. I'm reminded of a rule in Indiana where I grew up is hungry pigs get fed and greedy pigs get slaughtered. So I would write an accurate proposal and intend to negotiate if required around the fringes but not expect a massive restructuring at the point where the final instrument is being negotiated. Does that answer your question?
SPEAKER: It does but accuracy sometimes can be (inaudible).
JOHN GUDAS: And, again, we will be reasonable and we'll scale with the rule of reasonability in mind. So again it's stated again we are not in the process of throwing you out on tricks. What we're going to do is try to do what's reasonable for the objectives of the program.
DR. H. LEE BUCHANAN: This is not going to be like Publishers Clearing House where you have to, you know, all those little things you have to cut out and paste on, and if you don't get the

right one on you get thrown out. This is not one of those.
I grew up in Tennessee, not in Indiana, and we always used to say the early bird catches the worm and the early worm gets eaten.

SPEAKER: I assume you're going to have getting together the primary and secondary partners at an early stage, presumably one company is probably going to be the leader, bringing the other one along. Where they have separate kind of costing set up is there some place where you can get an answer (inaudible)?
DR. H. LEE BUCHANAN: I'm not sure I understand the question.
SPEAKER: If you have two partners, two different companies, a dual use, (inaudible) your proposal is costing, each company has a different costing set-up, how can we bring one proposal together with two separate accounting (inaudible)?
DR. H. LEE BUCHANAN: Is the question how do two companies work together that have never worked together before?
SPEAKER: This would be.
DR. ROBERT NORWOOD: The companies within the context of the broad agreements that we've proposed, it's up to the partners, those companies to work out their agreement. We don't intend to, from the top, specify costing rules or get involved in a lot of detail that's considered overhead and burden some accounting rules.
So within the agreements of the partnership, the partner is going to have to work out the details of their proposal, and that would be viewed in toto by the review committee.
DR. H. LEE BUCHANAN: I think Bob said it just right. Let me put it more crassly. We're going to reward entrepreneurship and innovation.

SPEAKER: One other thing. Is there more than one proposal allowed on completely different concepts from one company?
DR. H. LEE BUCHANAN: Certainly. Over here.

SPEAKER: Two questions on foreign involvement. U.S. space companies with foreign subsidiaries, does that have to be discussed in the proposal (inaudible)?
DR. H. LEE BUCHANAN: U.S. space companies?
SPEAKER: No. U.S. companies, for example, an automotive company that has a foreign subsidiary, how do we handle the issue of transfer of technology to foreign competitors?
DR. H. LEE BUCHANAN: Rick Dunn is not here, is he? He is here. And the answer is?
RICK DUNN: This is a U.S. based company with foreign subsidiaries. That needs to be identified in the proposal. The purpose of this program fundamentally in terms of development in the United States, we recognize that there exists cross-licensing agreements and the like and in some industries that's standard fare. Quite frankly if you read the standard patent clause in a government contract you will find provision called preference for U.S. industry which in essence says you have to produce in the United States first, you have to license in the United States first, and if you can't do that, then you have to come and ask permission and only then can you go off shore. That policy has existed in law and in government contracts for many, many years and nobody's keeping house.
In this program we will be keeping house but essentially that same policy, we're looking to see the technology exploited in the United States, either primarily or first. Proposals that do something other than that, it seems to me that in the section, that part three of the selection criteria, pervasive impact, the proposal's going to be rated down because pervasive impact means pervasive impact on the U.S. economy.

SPEAKER: If the work leads to a commercial product, say software, that you're going to wan't to market, how

are you going to handle marketing software and just restricting the United States? We don't do that when we market software so I don't understand --

DR. H. LEE BUCHANAN: (Interposing.) This was a question that come up earlier and let me restate it. The question involves the difference between selling products off shore and selling technologies off shore. Is that the basic?

SPEAKER: Technology here is say a piece of shrink wrap software that comes out of a consortium, are they going to be restricted to not selling in foreign countries?

DR. H. LEE BUCHANAN: I can't imagine.

SPEAKER: (Inaudible.)

DR. H. LEE BUCHANAN: But that would not be an imposition by us.

RICK DUNN: The short answer is no. However, anything that is done in these agreements is going to be subject to the normal Export Administration Act, ICAR.

DR. H. LEE BUCHANAN: Let me just amplify this and it's a question that comes up often concerning eligible firms. If you read the red book there's a long discourse on who is an eligible firm and a foreign owned firm may be an eligible firm in the event that it meets certain conclusions.

If you send us a proposal and you say you're an eligible firm, you are and we're just going to guarantee until we get to the end and we've made a decision to fund you and then we'll look at it more closely.

The law further states that the final determination of eligibility is by the Secretary of Commerce and the Secretary of Commerce has indicated that he sort of doesn't want to make that determination on every offering. He'd like to do it at the end, so that's the way we're going to handle it.

Let's go up here.

SPEAKER: Can you go through it one more time on the national labs. Suppose, for example, you have a CRADA with the national lab and you include the CRADA as part of your proposal. (Inaudible.)

DR. H. LEE BUCHANAN: I'm not sure CRADA has any relevance to this discussion at all. We don't use them as a part of this procurement package.

SPEAKER: If I understood you correctly, the national labs (inaudible). Now do you have to match that (inaudible) government, will the TRP match that? (Inaudible.)

DR. H. LEE BUCHANAN: Mike?

MICHAEL LONG: I'm not exactly clear on which point you're trying to get at.

SPEAKER: I'm unclear if the national labs is part of the proposal that you (inaudible).

MICHAEL LONG: Funded by whom?

SPEAKER: Funded by their sponsoring agency. What has to be matched or does it have to be matched?

DR. H. LEE BUCHANAN: Nothing. They do work funded by their sponsoring agency and nothing has to be matched.

SPEAKER: And if it's funded by a program, then you're funding it?

DR. H. LEE BUCHANAN: And it needs to be matched dollar for dollar, at least.

SPEAKER: Thank you.

DR. H. LEE BUCHANAN: Here?

SPEAKER: I have a two-part question. Just as background, I come from (inaudible). The question is in the whole scheme of (inaudible) investment (inaudible) left out (inaudible).

JOHN GUDAS: I'd like to disagree with your conclusion. Cost sharing is a very sobering and leveling effect in the program. What we're doing here is saying let's develop technologies, for example, the dual use is an area, that have potential commercial and military applications but we're going after risky targets and indeed that's the measure of whether industry is behind it or not, their interest in the cost sharing, and that was the intent of congress. Clearly this program will

anticipate and we'll see roles of universities who are contributing elements of that technology.
I think the real question is one of leadership and it's going to be clearly industrially led in this program. So the universities are going to, as everybody else is needing to learn how to deal, the universities are going to have to deal with their client base in a manner which their client base is willing to then develop the matching funds.
But there's no mechanism where the university is precluded and our experience is that the universities will probably be very strong players, but it will be an industry leadership.
DR. H. LEE BUCHANAN: I'll have to reiterate that because it's very important. This question comes up a lot, only it's fill in the blank. I mean the criticism is, Gee, your program seems to have eliminated "blank", and the blank is universities, the blank is national laboratories, the blank is GOCO's, the blank is small and medium sized business, the blank is; maybe the problem is that all of these programs require cost sharing in law. We did not apply that to these programs ourselves. That having been said, what I would offer to you is this is an opportunity not to perpetuate the status quo but to do business in a new way and I would urge you to take advantage of that opportunity.

SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: Before May the 14th, you bet. That's why I gave you all of the telephone numbers. Over here?

SPEAKER: Yes. I had found something in the red book that caught my interest. There's an appendix that tells us by my account the last few years (inaudible) has established 14 precompetitive technology consortium and as I read descriptions of those consortium it seems that there are (inaudible) matched (inaudible) 28 technology areas that are the body of this program. And I'm wondering if it's correct that ARPA indeed has pulled together competitive bidders who are several steps ahead of everybody here (inaudible)?
DR. H. LEE BUCHANAN: I'm not sure of what I'm being accused.
SPEAKER: I'd like to put it another way. Are these consortia in an especially good position competitively to gain funding from this program?
DR. H. LEE BUCHANAN: The existing consortia?
SPEAKER: The ones that are called precompetitive technology consortia, in the red book.
DR. H. LEE BUCHANAN: So you're worried that this is wired somehow?
SPEAKER: No, not that it's wired but they'll get 60 or 70 or 85 percent of the money because they (inaudible) exactly the interest of the government officials (inaudible) and they have already gotten back all of the legal documentation and business arrangements that everybody else in this room (inaudible) will have to (inaudible) to establish.
(Applause.)
DR. H. LEE BUCHANAN: What would you have me do?
SPEAKER: I haven't set the policy. I am concerned about whether they are in an exceptional situation, whether some special provision or position should be made regarding those entities. It just seems they've got a long way (inaudible).
DR. H. LEE BUCHANAN: There is no way I can legislate against good organization. Now to the extent a company or group of companies finds itself well organized because they've been well organized in the past I can hardly penalize them for that. I mean I can assure you that these technology areas were not picked out by ARPA for the purpose of perpetuating existing consortia. I mean that could not absolutely be further from the truth. Now I'll tell you another observation and that is that there is some information to be gathered by comparing all the various critical technology lists around. Now I don't

know how many of them you've seen, there must be five or six of them around that have been established in various and sundry ways, and by and large they're all identical, and I think that's because any assessment of critical technologies or interesting technologies all boils down to the stuff we know well.
Now if you're worried, and frankly this is also an apt criticism for people in the deployment area, and I hear the complaint often, that, Gee, those states that have been most recently to the precipice are very well organized and they're going to write better proposals than we are because we're not organized. Probably, as I say, short of sort of penalizing good organization, I'm not sure what I'd do about that.
JOHN GUDAS: But I do think, Lee, that you ought to emphasize, that you ought to say no to the question. At one point there will be a level playing field here. This is part of this meeting is to make a point that this field is going to be leveled. There are evaluation criteria, we've published them. There are weights for those, we've published them. And I think it's incumbent upon you and your colleagues to trust the document and maybe trust these five agencies to level that field and give everybody equal access.
I'd just like to draw your attention to the fact that in the Advanced Technology Program in the Department of Commerce there's been over 1,000 proposals, mainly from joint ventures, again, under cost sharing. So there are other programs out there that are getting companies to think together and to work together. And, Let me start over here.

SPEAKER: Over the past few years the medical (inaudible) industries has been faced with a regulatory environment of (inaudible) delays. It's inhibited the development of any new (inaudible), the creation of any new jobs. In this program if you were to see some (inaudible) technology in the medical devices area, (inaudible) since one of your objectives is (inaudible).
DR. H. LEE BUCHANAN: I don't know that any of us have any sway over FDA. They are not a signatory to the MOU. We have no obligation on them to regard this development as better than any other. I doubt it.
SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: I don't think we would ever presume to predict speed or lack of speed in the approval of something at that point. I mean that's clearly going to be the province of you, the developer, and the environment you know best of all.
SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: I mean there is not any evaluation criteria that tends to compensate for bureaucratic lethargy.

SPEAKER: (Inaudible) vehicle technology would be interpreted to mean technology associated with (inaudible), and does it include or could it include multi-carriers, cargo ships, that sort of technology? (Inaudible.)
DR. H. LEE BUCHANAN: Well frankly in my mind were vehicles that crawled along on the ground. There is a shipbuilding program that would --

Miscellaneous Question
SPEAKER: (Interposing, inaudible.) So there is some ambiguity and potentially a somewhat narrow perspective there (inaudible).
DR. H. LEE BUCHANAN: Well let me not tell you now. Let me go back and make sure that when the solicitation is announced that does become clear.
SPEAKER: (Inaudible.)

SPEAKER: Has any thought been given or mechanism devised that will allow federal lab, national lab to be used by one contractor as a partner and by another as an evaluator? It seems you can get into a situation where you have somebody evaluating a proposal from Company X and at the same time their partner (inaudible) something similar with Company Y. Is

there any mechanism (inaudible) to deal with that?
DR. H. LEE BUCHANAN: Mike, how about taking that one?
MICHAEL LONG: Procedures are being prepared to eliminate that sort of thing. Individuals will have to sign on disclosures or they won't be allowed to evaluate proposals in a particular area where there is interest or they have an association with a similar proposal. So steps are being taken to eliminate that problem.
SPEAKER: Thank you.

SPEAKER: I represent a U.S. company that's owned by a Canadian company. (Inaudible) but I assume I can also be a participant on a team. The question I have is can Canadian government funding be considered part of the cost sharing in this regard?
DR. H. LEE BUCHANAN: Now that's a new one. I don't know. Rick, the question is can other than U.S. federal money, in this case particularly Canadian money, be used to cost share for U.S. federal money?
RICK DUNN: Third party contributions can be considered the industry share. The answer that you gave to an earlier question concerning why would there be foreign investment in a particular transaction was apropos. Now if out of the generosity of their hearts they want to contribute the money of industry share, that's fine. If they want to do that and take the technology off shore to be exploited --
SPEAKER: (Inaudible.)
RICK DUNN: I think you're going to find a Canadian company is eligible, I guess I shouldn't speak for the Department of Commerce, but I think you're not going to find a pot hole with the Canadian company --

SPEAKER: Are there going to be any federal match making services between the participants (inaudible) or any other entities, and, b, when will that attendees list that Joan Horn said we'd all get a copy of be available?
DR. H. LEE BUCHANAN: The attendees list is a problem because it's against the law. The Freedom of Information Act is likely going to inhibit that, especially since we've not collected an attendance list here. I'm going to look into that. I'm sorry it became a confusion. To the extent we can do that I will. I'm not quite sure how at the moment because I wasn't prepared for the question, so the answer is I don't know.
In the question of match making, this meeting right here is part of our match making activity. I mean recall you are here to meet each other as well as us. There is not a formal match maker service.
DR. ROBERT NORWOOD: Let me add to that. You mentioned, as I heard your question, the National Technology Transfer Center (NTTC). I will say that the other affiliated organizations, the other Regional Tech Transfer Center (NTTC), people at each of those agencies or organizations have been trained to help generate the partnerships not only between and among companies but also with government should that be appropriate. So, yes, things like NTTC and other RTTC's are involved in the process and you can rely on them to help.
DR. H. LEE BUCHANAN: Is there a question over here?

SPEAKER: We have a team in mind that involves small businesses (inaudible). Would it be feasible, and you mentioned this morning about using multiple (inaudible), could the small business partners request money as small businesses that would not require matching funds as part of a team that would provide an overall (inaudible)?
DR. H. LEE BUCHANAN: Up to 75K, as an SBIR of phase one and in subsequent years if there was a phase two.
SPEAKER: (Inaudible) could they each request 75K?

DR. H. LEE BUCHANAN: Yeah, I mean these would be typical SBIR proposals. They would just be executed under TRP.

SPEAKER: I'd like to ask about potential support for technology areas whose (inaudible) would support a critical segment of the DoD industrial base but which product is not necessarily utilized, would not typically be utilized by the DoD, so in a sense it's dual use (inaudible).
DR. H. LEE BUCHANAN: Let me see if I understand the question. You're asking whether R&D that is not specific to a product will be of as much interest as product related R&D in this program?
SPEAKER: I'm thinking that the product to be produced will be of commercial use but not necessarily be utilized by the DoD. It's production, however, (inaudible) utilize critical DoD industrial base segment.
DR. H. LEE BUCHANAN: I guess I would be more comfortable with a specific. Do you have a situation in mind?
SPEAKER: This is a product that would utilize shipbuilding skills (inaudible) industrial base segment but a product which would not be utilized by the DoD in direct application.
JOHN GUDAS: One of the categories in the technology development area is spin-off. It's intended to blanket those things that have no military application.
SPEAKER: (Inaudible.)
JOHN GUDAS: The spin-off is just that. It's to get it out into the commercial sector after it's gestation under DoD funding.
SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: I thought I heard you saying something different. That you would like to do a development effort which would in itself exercise an infrastructure and thereby make that infrastructure available to us on demand, even though the ultimate product of that endeavor wouldn't be a DoD product. That goes to pervasive impact. I mean if it really is that pervasive, then it sounds like it fits to me.
Let me just parenthetically add what we have tried to do with this program is write a book with as many, I mean there's two ways you can do this. You can write a book with all the things in it you can do and if it's not in there you can't do it. Or you can write a book with all the things in it you can't do and if it's not in there then have a nice day. That latter approach is the one we're trying to take. So that's why I keep urging you to, I mean I know of nowhere in the book that would prohibit that, so, yeah, if you can make a case for it, let's do it.

SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: I don't recall anything in the red book that would call out cars specifically so I'm going to have to tell you that, yeah, it would include everything.

SPEAKER: Twice you have referred to the limit on SBIR's being $75,000.00. In C-1, Appendix C, you say not to exceed 100,000 (inaudible) guideline. Are you diminishing that up to 100K threshold?
DR. H. LEE BUCHANAN: I think I'm making an error. Where is John Ablard, is he in here?
RICK DUNN: John's right here but the statutory limit is 100,000; the policy guide is a $75,000.00 award and that can be waived since it's an ARPA policy.
DR. H. LEE BUCHANAN: But our book says 100K so I presume 100K.
RICK DUNN: 100K is the statutory phase one limit and our rule of thumb, the ARPA policy is 75,000, so the statement is not incorrect but it needed elaboration.
DR. H. LEE BUCHANAN: So the answer is, I think the answer is I was in error when I committed TRP to 75K. I was okay when I committed ARPA to 75K. And now that I have my TRP hat on I beg your pardon, it's 100K if that's what it says in the red book.
Where are we, back here?

SPEAKER: (Inaudible.) My question is will you also consider sensors that help an airplane navigate, for example, in particular sensors that help an airplane navigate in poor visibility conditions when approaching an airport?
DR. H. LEE BUCHANAN: Bob Norwood from NASA is living in that area.
DR. ROBERT NORWOOD: Yes. Certainly sensor technology, aircraft controls, collision avoidance, those types of technologies are included under the broad category of fly by light and those things in aeronautics, so there's nothing to preclude you from proposing it.
SPEAKER: I have one other quick question. In the information infrastructure in the red book it mentioned microwave and radio basis for communication. It does not mention laser communication. (Inaudible) laser would still be an interesting part of information infrastructure (inaudible).
DR. H. LEE BUCHANAN: Read lasers, then drop to electronics.
Yes, sir, over here?
SPEAKER: You went very quickly through the environmental (inaudible). I thought perhaps you gave a very narrow definition. If you look at page 84, it (inaudible) a very, very broad definition, including (inaudible) maritime vehicles, air, ground and so forth. Could you just restate that?
DR. H. LEE BUCHANAN: Well I defer to that book. That will be the rule. Again, we're trying to broaden these things. I was trying to give a single example so that you could get a flavor of what these areas were.
SPEAKER: Thank you.
SPEAKER: (Inaudible.)
MICHAEL LONG: The department is a member of this team, for this particular effort. There are other activities within the department that would address that kind of activity. That was not the focus of what we're here for today.
DR. H. LEE BUCHANAN: Is the question why aren't we doing synfuels?
SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: Well, look, I agree with your frustration. Let me just say the following two things. First of all, you recall that I described this list of technologies as derivative and the absence of any technology on this list really reflects lack of good ideas, specific ideas, for how to do these things, when we call for proposals. If you've got a good idea, send it in, not an intention, an idea.
Sir?

SPEAKER: I just want to register a concern about level playing field (inaudible). Under this program the United States did not invest in (inaudible). So it seems to me it's not a level playing field, if another government invested (inaudible). From discussions I've had with some people I understand that this is not decided and with free trade agreements coming up (inaudible) have not yet decided how to handle investments from the Canadian government to support the (inaudible) program, is that right?
DR. H. LEE BUCHANAN: I don't know that any of us ever looked at the Canadian investment as a particular problem. These proposals will be judged based on their pervasive impact on the U.S. economy. If somebody can convince us that a Canadian investment will have a pervasive impact on this economy beyond what the same investment would be from some other source, then I would be silly not to consider it. Twenty-five percent is pervasive impact on our economy.
SPEAKER: I understand that but when we're putting our groups together we don't have a nation behind us to help match our cost share, help contribute our cost share. The Canadian government itself is investing in the cost sharing part of your program. (Inaudible) so the

companies and their groups don't have to put up anything and it's not a level playing field. That's all I want to say.

SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: The problem with the attendance list is that people who called in were not informed that their name was going to be distributed outside of our rolls. I could go and get permission from each of them but I'm not sure how I do that now. How do you want to handle that, Rick?
RICK DUNN: We in the federal government can't do that because we're precluded by statute without having first had permission from them which we didn't do. At the close of this meeting I will know what the laws of New York are. If they want to do that, and the rules are applicable to them, I would defer to them and their rules.
SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: Yes, it does, but I'm not prepared to compile that list once the box is full of business cards. At 6:00 o'clock I turn into a pumpkin.
Yes, sir?

SPEAKER: (Inaudible.) When you send in a proposal in response, do you have to specify which area, which statutory program you're applying under?
DR. ROBERT NORWOOD: Yes.
SPEAKER: Suppose you qualify in more than one? Take the dual use investment, there are four possibilities of qualifying. If you qualify in two? I'm looking at this chart here, in the middle box, technical development activity area, second one down, dual use development. You can qualify under the $82 million program, the $24 million program and so on (inaudible).
JOHN GUDAS: Each of these has different eligibility characteristics. Again, as it was pointed out to you I guess it was this afternoon --
SPEAKER: (Interposing) dual use and where it says, spin-on promotion type of project.

JOHN GUDAS: I think you need to determine where you want to position yours. In other words where's the funding, where's the most funding, is a thing you might ask. What are the specific eligibility criteria, can you meet the specific eligibility criteria? We're asking you to pick one. We're also reserving the right, if you will, to, if it doesn't fit we're not going to throw it out. If it maybe would fit better elsewhere and make it more competitive we'll negotiate a movement of that with you. But, yes, we are asking you to read through this to make a selection because this is very important that you understand the differences in funding, the differences in eligibility.
SPEAKER: (Inaudible) I could qualify in two areas so we'll pick one.
JOHN GUDAS: I think then you put your stake in the ground.
DR. ROBERT NORWOOD: You propose from the viewpoint of a column on that chart you referred to rather than a row.
SPEAKER: I'm sorry, I didn't hear you.
DR. ROBERT NORWOOD: Your proposal that you send in must be aligned with one of the columns in there. Now it can also be dual use, spin-on, spin-off, but when you propose it you should propose within one of the programs, statutory programs that represent the columns.

SPEAKER: Another question I have is when you're selecting a university joining your program, does it have to be one of the universities that was spoken about, like the established black university or a minority university? Or in the case of NASA would it have to be one of the CCCD universities?
DR. ROBERT NORWOOD: No.
SPEAKER: (Inaudible) university?
DR. ROBERT NORWOOD: Yes.

DR. ROBERT NORWOOD: My last question (inaudible) if you're interested and want to apply, do we

wait for you to send out a solicitation or do we write you a proposal or what is the first step? I'm not clear on that.
DR. H. LEE BUCHANAN: If you wait for me to send out a solicitation before you're deciding what you want to propose you've waited too long.
SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: I think the same is true in the SBIR program.
JOHN GUDAS: Lee, the question is really what's a mechanism for this gentleman and others to receive the actual solicitation on May 14th.
DR. H. LEE BUCHANAN: Oh, I'm sorry. The solicitation will appear, as far as we know now, both in the Commerce Business Daily and in the Federal Register. Our intention, however, is that it represent little surprise over the book you have in your hands. You have, I believe, in your hand everything that you need to start forming the teams or the relationship or whatever is going to be required in deciding what you want to do.

SPEAKER: Regarding participation, assuming you meet mandatory eligibly requirements and assuming you've got the right (inaudible), all other things being equal, does it matter how many more participants, less participants?
MICHAEL LONG: I think the key is you have to put together, and I think the term's been used earlier, a package, a good package. If it makes sense for you to carry out your proposed work, to have more participants, than that's what you should have. I don't think there's going to be extra credit for having a lot of people if it doesn't make good sense.
DR. H. LEE BUCHANAN: Over here.
SPEAKER: The question's to Bob Norwood. (Inaudible.)
DR. ROBERT NORWOOD: Not at all. If in the launch vehicle arena you feel there is something worthy of being proposed, propose it and we'll take a look at it.
SPEAKER: (Inaudible) is there an EPA (inaudible) as well?
DR. H. LEE BUCHANAN: Not yet. They may join the program as we move on but they're not yet part of the DTTC which does not mean that we would not entertain proposals relevant to them just as we mentioned a minute ago for Department of Transportation and others.
Let me take this opportunity to make this statement that because we've declared these 28 areas there is no guarantee that we're going to fund something in all 28 areas.
Sir?

SPEAKER: In the military applications for dual use (inaudible), yet it may have to take certain exceptions to the perceived infrastructure requirement (inaudible). Is there any advice on how; would it be an advantage to have (inaudible) sponsor (inaudible)?
DR. H. LEE BUCHANAN: Well clearly if your proposal is a spin-on; you're asking whether a spin-on proposal that has certain administrative risk will suffer by virtue of that administrative risk?
SPEAKER: I don't know if I would call it administration. I'm talking about 100 percent inspection as opposed to something (inaudible).
DR. H. LEE BUCHANAN: Well I personally would include a discussion of that type in the section that discusses the management plan, since part of the resolution to that difficulty would be a change in our process which is more a management technique than it is a development, a technical technique.
I mean if you in your proposal can show pervasive impact to a military system, you're going to get a lot of sympathy from us to any administrative requirement that would inhibit that.
SPEAKER: So I can assume I can take credit for that change (inaudible).
DR. H. LEE BUCHANAN: Yeah, and show us that you at least know about it, so that we can know about it and know

that that's part of the risk that's inherent in this proposal.
RICK DUNN: If I could chime in on this one with just a little factual background. I don't know if you're aware of this or not but ARPA in its own systems development project involving, for example, satellites and launch vehicles has in fact been developing systems that have no military specifications in them and we transitioned them to military use. I assume that they actually work. So we do that in our own development program and that may give you some hint as the approach to take.
DR. H. LEE BUCHANAN: You've got a question here?

SPEAKER: Will the SBIR (inaudible) be lumped in with the other (inaudible) in the review process?
DR. H. LEE BUCHANAN: I think the answer is there will be a separate SBIR proposal evaluation team whose job it is to compare SBIR's proposals --

SPEAKER: One last question. Will this be an annual thing here, will this be biannual, if you know the future?
DR. H. LEE BUCHANAN: This meeting or --
SPEAKER: No, this process of coming in with funds once a year (inaudible) or twice a year (inaudible).
DR. H. LEE BUCHANAN: That is not a secret, that's a mystery. I really don't know.

SPEAKER: During the course of the meeting, the questions and answers, I've become confused about the 28 technologies. Is it required that the proposal fit within one of the 28 technologies (inaudible) focus areas or is it better if it does or (inaudible)?
DR. H. LEE BUCHANAN: The 28 critical, I mean we derive the 28 technologies based on the methodology I explained. What you gain by proposing to one of those 28 is our instant acceptance that those are important technologies. If you want to propose another one, do so. The burden is on you to convince us that it is as important as the others. and propose a good idea.
I mean recall those 28 were gathered based on the acceptance of good ideas, not a prediction of their ultimate influence in anybody's set of systems.

SPEAKER: The company is currently developing a particular type of compulsion engine with another company under DoD funding and we think that this engine may have potential commercial application. Would it be possible to obtain current funding under this program or does that present a conflict?
DR. H. LEE BUCHANAN: As long as it's cost shared with non-DoD dollars, there's no prohibition on doing that.
SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: The question was he has an ongoing program to develop an engine, right. And you want to use; and I'm presuming that has a scope of work and you have schedules and milestones indicative with the funding that you have, and I'm presuming that what you would propose is an extension to that, that is new tasks and to perform new work, and to the extent that those new tasks and that new work regarded things that were cost shared and qualified under all the, you know, other things, then because it is an extrapolation of an existent funding program should not disallow that proposal.
SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: The question is can this be started simultaneously. They would have to be separable activities for which we could identify non-federal funding sources. But it strikes me that because the work is being done on the same engine would never preclude severable statements of work. You would be able to tell me that our money is going to fund this work and your money is going to augment my money in a cost sharing way and the result would be as predicted.

SPEAKER: (Inaudible) funding is set aside for higher risk innovative research, is that your view of the SBIR set-aside in your program?
DR. H. LEE BUCHANAN: The issue of SBIR was one that resulted from our recognition that because of the cost sharing requirements, small businesses, very small businesses, even medium sized businesses, were at a disadvantage and so we sought to remedy that disadvantage by allowing them to participate in ways that did not require the cost sharing and we did that, we were able to do that only thus far by removing the SBIR program and executing it separately from the other eight but within the TRP and that also provides you entree into the TRP program of future years by virtue of your participation in phase one and phase two. But the technical risk is as all of them are.
SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: Not higher risk than the normal SBIR program.
SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: There's been no restriction on risk on any of those programs.
SPEAKER: One suggestion on the SBIR funding method by which you pay your small businesses, it varies from agency to agency, and I don't know if you (inaudible) established that, but I know I've got a lot (inaudible) getting progress payments in some of the DoD SBIR (inaudible).
DR. H. LEE BUCHANAN: Well which agency would you like us to emulate and we'll look into it? NASA?
SPEAKER: National Institute of Health.
DR. H. LEE BUCHANAN: NIH and NASA both have good systems. Let us look into that.
SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: Thank you. That's helpful.
Over here?

SPEAKER: (Inaudible.) I'm wondering why in some cases you allow one firm to be eligible and in other cases you require two.
DR. H. LEE BUCHANAN: You being congress?
SPEAKER: You being congress (inaudible).
DR. H. LEE BUCHANAN: Haven't a clue. Sorry, too hard.

SPEAKER: I would first like to commend you and the Clinton administration on taking this large initiative to provide jobs for U.S. engineers and I would also like to commend you for holding this meeting here. I'm concerned about one area though and I do not speak for my corporation, but what will prevent the U.S. company, after (inaudible) OPEC develop a U.S. product, from taking that product and making it in Malaysia and not providing U.S. jobs. That's number one.
Number two, I think one of the (inaudible) that I've had for a number of years is that I've heard a lot of talk about participation of the universities, that roughly 80 to 90 percent of the graduate students at universities are in fact not U.S. citizens, that are brought over from overseas, not providing opportunities for U.S. citizens (inaudible). And I think that you need to consider providing those restrictions.

I think everybody's talked about removing restrictions and I'm really glad about the restrictions that you are removing, but I am concerned about the future of U.S. engineering and the U.S. economy and I think some area of restrictions should be put in to make sure the jobs will remain in this country and that the U.S. companies won't ship them overseas, with this new opto-electric (inaudible) that you developed in some factory overseas. And the same for U.S. students, giving them the same opportunities that have not been afforded them and I think they need (inaudible) and that you would use them in your criteria. I think the areas of unemployment in

our urban centers, etc., really demand that these monies be used primarily and should be part of the selection criteria.

DR. H. LEE BUCHANAN: John, you're most intimate with the ATP program. Do you address that kind of issue at all in ATP?

JOHN GUDAS: The first point on moving manufacturing abroad, if you take a look at what an eligible company is, they may come in, but to do the research and to do the manufacturing, subsequent manufacturing in this country. That's part of being an eligible company and that's going to be part of the evaluation criteria. It's surely going to hit in two places, (a) eligibility and (b) commitment. There is nothing to preclude ultimately the movement off shore, but right up front eligibility is set by the commitment to conduct the research and do the manufacturing in this country.

The second point we don't address at all and I'd like to address it right now.

DR. H. LEE BUCHANAN: We will almost certainly be asked by congress what changes we would want to see. I am not a legislator. I would defer to Congresswoman Horn here in many of these areas, but clearly if you have ideas as to how we could restrict, properly restrict the flow of technology without undue burden to folks, you know, that would fall victim to that kind of restriction, please let me know.

JOHN GUDAS: The Advanced Technology Program experience suggests that this program will have an awful lot of mail to answer in the way of impact so there's going to be another wing of this TRP office that opens once the first wave of proposals are funded. They're going to begin looking at impact and I think there's a different move afoot that says, hey, it's important to do that research and do that manufacturing in this country and we are going to measure impact. Congress will demand it.

DR. H. LEE BUCHANAN: Rick?

RICK DUNN: -- In every agreement we've entered into we have had a clause on -- U.S. industry and factory. In addition to that we've had something called foreign access to technology clause which says that you may not exclusively license off shore and that we retain a veto from that, and in addition to that, you may not divest the relevant part of the country to off-shore firms without consulting with us and gaining our permission --

DR. H. LEE BUCHANAN: The gentleman behind Rick?

SPEAKER: I wanted to ask for clarification to an answer that I thought I heard to the previous question about regional alliances. I thought I heard that there was an emphasis (inaudible) smaller industries. If I didn't hear that, then forget the question. If I did hear that, I wonder whether that was meant small businesses or what the intent was there. I forget who gave that answer.

DR. H. LEE BUCHANAN: I think it was Mike.

MICHAEL LONG: Yeah, I did and I did say small manufacturing entities, those sorts of things. I believe that was one of the intents of this program was to reach out and energize those large numbers of small manufacturers and businesses throughout the country. There was a view graph presented in another briefing that showed how the defense industry is distributed around the country and in those small businesses that support the defense industry it's sort of overlaid right on top, so that's one of the focus area. Lee, you may want to add to that.

SPEAKER: I'm just wondering if you technically meant small businesses rather than small industries (inaudible).

MICHAEL LONG: Five hundred or less is I think what we're using; 500 people or less.

SPEAKER: (Inaudible.)

DR. H. LEE BUCHANAN: The Regional Technologies Alliances to my understanding was the result of or was

inspired by notions like you find in Michael Porter's book in which he observes that critical masses among companies can form and flourish where those critical masses occur, so this program would be to try to actively form those critical masses where they're not spontaneously obvious.
SPEAKER: Thank you very much.
DR. H. LEE BUCHANAN: Here?

SPEAKER: (Inaudible) I'm wondering to what extent a quality proposal would address the issues of marketing and manufacturing of products and how that would be funded (inaudible)?
DR. H. LEE BUCHANAN: It goes to commitment to productize and funded by someone else.
SPEAKER: It's a matter of demonstrating a commitment to actually manufacture the product. It doesn't require a complete detailed plan?
DR. H. LEE BUCHANAN: No, but the extent to which that commitment is clear will be to your advantage.
SPEAKER: Somewhat related question. Would the sale of the prototypes that would result from the program (inaudible) prototypes qualify for matching funds?
DR. H. LEE BUCHANAN: Give me a concrete example.
SPEAKER: As stated in the red book, one of the objectives of the Technology (inaudible) Programs is the creation of (inaudible) models or prototypes and (inaudible) to raise money by getting third parties who might be interested in buying a prototype and advancing the money.
DR. H. LEE BUCHANAN: Oh, I see. So you're going to build, you're going to propose to build a widget and you're going to build that widget under the presumption that there is a customer for the widget and the customer has already signed to buy the widget at a fixed price and that would; yeah, sure.
SPEAKER: That would qualify?
DR. H. LEE BUCHANAN: It would certainly qualify. I mean it would have to be looked at with a certain amount of risk because we don't know obviously that the; we don't know that the development will actually lead to a working prototype and we don't know that the prototype will actually qualify, but sure.

SPEAKER: Just one last very short question. Earlier I thought I heard someone say that (inaudible) technology related to hazardous waste clean-up (inaudible) addressed under the TRP.
DR. H. LEE BUCHANAN: It is not called out as a specific technology, that is correct.
SPEAKER: (Inaudible) acceptable proposal.
DR. H. LEE BUCHANAN: Anything is acceptable. The burden will be on you to convince us of its pervasive impact.

SPEAKER: (Inaudible) year after year, research after research, duplication after duplication. (Inaudible.)
DR. H. LEE BUCHANAN: Well I hope as a result of this program we will get nonduplicative technologies proposed that really are new.

SPEAKER: (Inaudible)
JOHN GUDAS: I had a conversation during the break with one of the attendees. The key point in any joint venture consortium is going to be the treatment of intellectual property between the parties. This was discussed earlier. There is not a requirement for equal matching of funds, but you'll find out practically the barrier to the existence of a successful joint venture is going to be the treatment of intellectual property. So if that's addressed straight up, that is first, then indeed you'll see a joint venture come together much smoother.
SPEAKER: That's internal (inaudible). Let's say we negotiate --
JOHN GUDAS: But that's not something that you'll get help from us on. That's something that you need to solve.

SPEAKER: What I'm saying is in order to respond to the auditing requirements, the reporting requirements, etc. --
DR. H. LEE BUCHANAN: What reporting requirements? The whole point of this is we're going to use agreements authority which has none of those. We are not within the FAR, we are not within the DEFAR. This is not a contract nor is it a grant nor is it a CRADA. There are no rules.
JOHN GUDAS: And he's mad.
SPEAKER: (Inaudible.)
JOHN GUDAS: I think the key thing that you need to assume is that we're going to do what's reasonable. You need to put together your team, solve your intellectual property problems and the auditing, the review of the progress is going to be done different than you're used to.
SPEAKER: Where would I find a more precise definition of what you mean by agreement?
DR. H. LEE BUCHANAN: It's in the book. Appendix E is it? The description of agreements authority.
SPEAKER: That would be F.
DR. H. LEE BUCHANAN: Here?

SPEAKER: There was an earlier discussion about participating in more than one proposal and the desirability of writing a statement about the linkages. I guess my question is would that statement on linkages for multiple proposals be a standalone separate document or included as a part of each of the proposals?
DR. ROBERT NORWOOD: I would suggest that you include a description of your linkages in each one because each proposal will be looked at separately. So depending upon how the process or evaluation is conducted it would be useful to have that information in each one so we can relate one to the other. So unless it's getting too lengthy I would suggest you include all relevant, all information that you think is relevant to the submission of a proposal in each one.

SPEAKER: Regarding this question that you answered a couple of times on the in kind contributions of federal laboratories, if matching criteria relate only to DoD funds, is it appropriate to use in kind contributions of an agency other than, a laboratory other than DoD, let's say DOE has a source of participating funds?
DR. H. LEE BUCHANAN: Yeah, sort of. The law allows for non, in some programs, non-DoD funds to be used to fund an effort. Now the question is one of pervasive impact. If the impact of a program is merely or principally to preserve federal jobs, not very attractive. What's the pervasive impact? Who's going to productize and on what basis?
JOHN GUDAS: And what's your commitment to productization?

SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: Well no, if there is an appropriation in FY94 then we'll know that in October.

SPEAKER: (Inaudible.)
DR. H. LEE BUCHANAN: If the SBIR pot is really only 1-1/2 percent of the FY94 program, then you're exactly right. However, and this is not certain, but we are looking into the transferring in of SBIR funds from external to TRP to bolster the Small Business Innovative Research Program from outside, and at least in the DoD, and I'll let the other agencies speak for themselves, all of our SBIR topics, even in the major solicitation, have a dual use requirement on them. Is that true, you guys always did, right, although not dual use.
Go ahead.

SPEAKER: (Inaudible.) Would you just elaborate on no ships versus shipyards, products (inaudible).
DR. H. LEE BUCHANAN: I'm not sure how much of a ship you can buy for $15 million.
SPEAKER: I agree (inaudible).

DR. H. LEE BUCHANAN: Well the shipbuilding topic was based on a couple of realizations. First of all it was based on the recognition by the DoD that we were the preeminent supporter of shipyard activities within the continental United States and when we quit buying ships at the current rate, then that's going to suffer.
Second of all, it was based on our impression that there is a worldwide market for commercial ships which is currently not being well subscribed by U.S. shipbuilding industry.
So the supposition was that was a technological problem instead of an economic problem, that really we could build as good a ship, as good commercial ships as anybody else, and that some technological development could allow us to get back into the ballgame. So there is the opportunity for something good to happen that we're providing.
Frankly I think the hard one is that here you have an industry that is strapped and their ability to come up with the cost share is perhaps more difficult than others and that one's a pretty tight one.
SPEAKER: (Inaudible.)
JOHN GUDAS: That's a very good question. Such topics as advanced welding technology, advanced joining methods, inspection procedures for automated or semi-automated welding, you can go as far afield as to look at the topic of high strength alloy steels for ship construction, electric drive, modern propulsion, modern guidance systems. This is in there because the industry has indeed been totally dominated by military demand and hence we've become noncompetitive.
So when you peel apart issues of competition, you peel apart things that relate to efficiency, of production, of even design of propulsion systems that are going to be in this next huge generation of commercial buys.
Actually the first wave is coming on shore now.
So all those technologies I think ranging from propulsion to steel to joining to things that relate to shipyard practice are fair game and they're intended to be fair game.

SPEAKER: (Inaudible) proposal that addresses a fairly highly regulated industry and a regulatory infrastructure isn't in place to address this new technology. The question is to what extent will the administrative risk associated with that impact my chances for success?
DR. H. LEE BUCHANAN: It's hard to tell without knowing the specifics. Clearly if you are proposing something which requires an amendment to the constitution it's going to be awkward.
SPEAKER: (Inaudible.) It's a new technology for civil aviation.
DR. H. LEE BUCHANAN: Let me give you a less flippant example and it's one that comes up a lot, radiation treatment of food, where the FDA does not currently allow and has not since 1952 allowed food stuffs except for certain herbs and spices to be irradiated for the purpose of sterilization.
There you would have to consider a somewhat long founded prohibition as not a high recommendation for radiation process unless the proposer can say, Well radiation of food is not very acceptable because of the following bad stuff and we are going to remedy that.
I mean where there is an administrative risk or an administrative inhibition, please show us how we can go about mitigating that so we can properly judge your proposal.
SPEAKER: I was just going to say in this case it's not a long standing prohibition. It's the new technology not yet considered, sort of on the horizon and therefore maybe given support by the congress (inaudible) agency five years from realization and given its nonsupport ten years or more.
DR. H. LEE BUCHANAN: If it's a compelling idea let's see if we can change that.
SPEAKER: Thank you.

JOHN GUDAS: You're talking yourself out of doing it and what Lee is saying don't go, don't wrap yourself so tight around what can occur, particularly in a future regulatory issue like this. Focus on the technology and on its commercialization.

SPEAKER: How are you going to guard against showing favoritism for one or two companies within an industry compared to all the other companies within in that industry? In other words how are you going to avoid having the taxpayers (inaudible). For example, I want to install a new manufacturing process for a plant and it involves buying machine tools, setting up a line and so forth. I'm going to pay half the cost, I'm asking you to pay the other half. That technological edge then becomes a competitive edge compared to the other companies in the same industry. Are you really going to do that kind of thing (inaudible).

DR. H. LEE BUCHANAN: I've already said I'm not going to be in the business of cost sharing a retooling of your shop floor. That's got to be up to you. I will be in the business of helping you develop a new manufacturing process but I'm not in the business of simply cost sharing a recapitalization. Now in the former case where you're going to develop a new manufacturing process, you do have a technological edge that you've earned so you should have a technological edge.

SPEAKER: In developing a new manufacturing process, however, the end result is going to be an analysis for a technical report, there's going to be some paperwork document that designs that new manufacturing process and analyzes it and so forth, yet earlier on if I understood that you're not interested in reports.

DR. H. LEE BUCHANAN: I'm accepting a report. If a report is the only thing that comes out of an effort then that's that a very compelling, pervasive impact. If what comes out of the effort is a new manufacturing process that happens to be described in a report that could very well be pervasive either because it provides a product not yet available or it makes a current product affordable by a reduction in cost.

SPEAKER: In the same vein now how about a new design, a design for an innovative product or an innovative approach to producing an existing product (inaudible)?

DR. H. LEE BUCHANAN: Perfectly allowable provided you, the burden is now on you to show me pervasive impact.

SPEAKER: In other words the end product (inaudible).

DR. H. LEE BUCHANAN: If you have an idea for a design for an aircraft that gives twice the gas mileage with half the wing area, that sounds great and the work would be to show the feasibility of that.

SPEAKER: (Inaudible.)

DR. H. LEE BUCHANAN: The way the technology development proposals are set up one of the criteria for selection is technical excellence. I mean if you want to come up with next year's TQM that may be out of bounds since I don't know how that fits under technical areas but again if you show me pervasive impact then I'm willing to be entertained.

SPEAKER: What I'm driving at specifically is it's absolutely essential in my industry which is shipbuilding that we enter into the international building marketplace. (Inaudible) there are a number of nautical and government imposed and regulatory impediments that keep us from even getting our foot in the door in that marketplace (inaudible) be able to sell, but even if we had equal technology and equal productivity compared to the requirements.

DR. H. LEE BUCHANAN: Well this is primarily a technology development program. If what you want to do is an analysis of legislative history or

legislative options that probably is going to be out of scope.
SPEAKER: (Inaudible) the congresswoman there. I'm sorry I didn't get her name.
DR. H. LEE BUCHANAN: Joan Horn.
SPEAKER: And what's the name of her program and would it include analysis of business and financial regulatory (inaudible)?
DR. H. LEE BUCHANAN: Most of those programs are community assistance. They're aids to specific communities that are being downsized and hurt because of it. The answer is I don't know. Give her a call.
RICK DUNN: Dr. Buchanan, it's bewitching hour.
DR. H. LEE BUCHANAN: Thank you very much for those of you who survived.

DETROIT REGIONAL BRIEFING AT THE WESTIN HOTEL RENAISSANCE CENTER, TUESDAY, APRIL 13, 1993.

QUESTIONER: With regard to the commercialization aspect of the proposals, what mechanisms might, or what thought have you given to assuring compliance with a proposed plan? That is, following through, or the contractors' proposal following through with the plan? How will that be monitored? And are there any penalties for failure, let's say?
MR. GUDAS: Your question has two parts. It's how are we going to follow up commercialization, and will there be a commercialization police force? The latter is no. The commercialization plan is meant to weigh an important element of this selection. That is, how large is your potential market? How pervasive is it? How many or how broadly can you spread a technology, and how are you going to do it? Clearly, this program is not going to develop, and does not have as a goal to develop commercial products. So what the individual agencies' advantage to these programs will do, we're to try to work with you to keep you on track to execute your program. Indeed, commercialization will often come late in the program or after the program. And there is going to be no formal mechanism to force you to execute your commercialization plan. I think, again, if you're putting up half the money, that it will be to your benefit to execute it. But there will be no mechanism to, for example, terminate a program because you are clearly not executing it. By that time, the program would be over. Did that answer your question?
QUESTIONER: Yes, sir.

QUESTIONER: One of the speakers in the first session mentioned, prior to the proposal date, that we could call and get information from you folks. Can I interpret that you also will help in acting as a clearing house for industrial partnerships?
DR. NORWOOD: Yes.
QUESTIONER: Good answer.
DR. NORWOOD: As a matter of fact, in the list of contacts that you have, a lot of those government agents of the various labs are centers throughout the five agencies that are represented here. Their responsibility is to help generate those partnerships where they have perhaps special knowledge about technologies that are available across a particular industry or business sector. So, the government is supposed to act as a catalyst to help the process of getting partnerships and quality proposals written.
DR. BUCHANAN: Just let me emphasize that he said it just right. We're supposed to be acting as a catalyst, and we intend to do just that. Not a clearing house. This is not a dating service. So please don't call us up on Tuesday and say I'm faxing you a description of my business and I'll call back Thursday for my partner. We clearly can't do that. But to the extent we can, we can point you in the right direction.
MR. LONG: And some of that effort is what you've seen already, the list of contacts and regional contact. There's

also an Appendix D in your book which lists programs being undertaken by the various departments that you may be able to work with. So, we've done a lot to aid you in that area.

QUESTIONER: With respect to the Small Business Innovative Research solicitations, will a fee or profit be allowable as the DoDs are, and will the awards be up to the maximum amount of $100,000?
DR. BUCHANAN: Yes. That's what it says in the book. I have erroneously previously said that it would be $75,000, but that's not correct. That is an ARPA number. The number we intend to use here is $100,000. And all the SBIR rules apply in this program as other programs. They're all the same.

QUESTIONER: I have a question about what constitutes an eligible proposer for the dual-use critical program. If you have industry as subcontractors, and have two or more of those, even though you're a university, can you write the proposal?
MR. DUNN: The term "eligible proposer" is not a statutory term. The idea that we're trying to get across on the chart -- on Table 2 on page 2-A is that those two eligible firms have got to be committed to the proposal. If they authorize you acting as their agent to submit a proposal in which they are a partner, yes, you can do that. However, if you are again suggesting that you act as a prime, and those two eligible firms be a sub, that just doesn't sound like a very engaging relationship to me. I'd suggest you rethink it.

QUESTIONER: How would a proposal reflect in the spin-off activity in support of another federal agency that's not a member of the five agencies be received?
MR. LONG: I think it would be received just like any other proposal where we're looking for good ideas. To repeat something that may have been said or was said earlier, this is an idea-driven activity. And because there may be focuses on the work of another agency, does not preclude its acceptance in this program.

QUESTIONER: If you have a program such as the defense dual-use critical technology partnerships that requires fifty percent nonfederal funding, if a national lab, DOE national lab is involved in the program, then their support is federal funding by definition, I think.
MR. LONG: Yes.

QUESTIONER: And therefore, there would be that much less federal money available for industrial partners; is that right?
DR. BUCHANAN: No.
QUESTIONER: What?
DR. BUCHANAN: No.
QUESTIONER: Amplify, please.
DR. BUCHANAN: Visualize three pots of money: my pot, your pot, and their pot. My pot requires a dollar-for-dollar match from your pot. Their pot doesn't require a dollar-for-dollar match at all. Whatever they bring to the table out of their hide will not require fund-matching. What I bring to the table will.
QUESTIONER: So, when you say nonfederal funding, you mean nonfederal funding on TRP? You don't count the fact that DOE is putting money into the national lab pot as subtracting from the federal dollars available?
DR. BUCHANAN: Let's imagine a deal in which you see a technology within a national laboratory. You see a technology within a national laboratory that will make a great product. But this particular national laboratory is not interested in generating a factory or a process to produce it, and you do. And you propose to me the deal that you are going to bring $2 million to the table, and you want me to bring $2 million to the table, and you're going to somehow convince this national lab to bring their four or five million to the table to pay themselves to do work in the

direction of this technology. That's fine.

QUESTIONER: It was indicated earlier today that this formal solicitation would have instructions on how to link multiple activities, provide integrated solutions for technology reinvestment, et cetera, et cetera. And then it said something about each dot gets thirty-five pages. It seems to me, if the formal solicitation makes this clear, are you going to make it clear that if I touch ten dots I could submit a 350-page proposal? I mean, obviously, you need to clarify that or the abuse of that is going to get amazing. Secondly, what's the chances that mainline agency activities, including ARPA, are going to have more of their budgets forced into this activity?

DR. BUCHANAN: I guess you really meant the pejorative term; have their budgets forced into this activity? It depends on where you're sitting. Yes, I honestly don't know. I mean, it would depend upon the perception of those that would do the forcing as to the success of what we've done, and I think the jury is still out.

MS. HORN: Let me try to handle the politics of that a little bit. On the science committee on which I served, there has been a big push to get the Department of Defense and Energy and other departments to move toward dual-use, a lot of what ARPA has already done. SEMATECH, they can tell you the whole list, has already went to dual-use. So, the more emphasis on dual-use, absolutely, they have still got to do the military research; defense-related research that nobody else wants. It has no dual-use applications. It's still going to be a very, very important part of our national defense. So that will still be done. What the share will be? The science committees will have a lot to say about that. And they're going to want a very -- I would be willing to bet they will look for a very incremental kind of shift to where the balance is a little different than it is now. But that there still will continue to be a lot of defense on research.

QUESTIONER: What about the first question? Can you throw some facts on the subject matter here.

MR. DUNN: You're talking of having more of their budget encumbered in the way this program is. And I guess I'm slightly bemused by that question since the percentage of our budget this year, that is not encumbered in this way, compared to our budget three years ago, is 200%.

MR. LONG: The first part of your question, or your first question about the dots. There should be a proposal for each dot that stands on its own. And then there should be a statement within the proposal indicating how this proposal links with other proposals and forms an integrated program. I think ARPA is going to reserve the option to take any particular proposal and fund it or match it with other proposals. So, it should stand on its own.

DR. BUCHANAN: Well, I guess what I'm telling people -- I mean, you're worried about the abuse of the 35-page limit. What I'm telling people is that, per dot, I mean, you can submit a proposal of whatever length you want. I'm going to read the first thirty-five pages, so...

QUESTIONER: I'm concerned about the issue of deliverables in the case reports. Will there be reports required? And if so, what will the confidentiality of those reports be?

DR. BUCHANAN: Well, the reports are intellectual property. And the discussion this morning revolved around intellectual property that would most likely be granted entirely to you, except from some conditions in which the government has walking rights. So, clearly, they would be -- I mean, it's just common sense, and I guess it bears repeating, that we're in this for our own self-interest, we, the government. You have an investment, nontrivial fifty percent at least

invested in this for your own self-interest. It happens that our self-interest coincides, otherwise the proposal wouldn't have been funded. So, it only makes sense that I'm going to help you commercialize whatever it is you come up with. And I'm going to do little, I hope, to inhibit that. And to try to march in and make your proprietary information available to others is certainly an inhibition.

MR. DUNN: Let me just tell you some history of what we've actually done in the last couple of years on that issue is that if it makes sense to do so, the deliverable is a very summary document, very general in nature. And oftentimes in these critical technology dual-use partnerships, the way we set up the information flow is to have government people come out and see what's going on and get briefed and hear it, and not necessarily take paper home to ARPA where it becomes an agency record subject to the Freedom of Information Act. We will set up a communication medium that's adequate to the particular project that serves the government's interest and serves your interest. And we don't want to have to respond to the Freedom of Information request and have a lot of proprietary information sitting on our premises that we don't need.

QUESTIONER: If we could turn back to that topic you just left over on the SBIR area. Out-year TRP activities are a natural SBIR Phase III follow-on. What does that mean?

MR. DUNN: Phase III of SBIR is, in the past, until recent amendments, was explicitly a commercialization phase with no government funding. Under some recent amendments, they can be a commercialization phase "either in the commercial sector or by productizing something that the government is interested in." I think what that means is that if you go through Phase I, the concept phase, Phase II, the development phase, and you're doing things that are relevant to the TRP program, probably you're going to find some ongoing TRP activity which you can take that SBIR program and affiliate with and join in to a partnership, or find a natural alliance. We hope that that's the result. That you won't just be trying to commercialize in a vacuum. But that there will actually be other people out there working on similar things to end up in conjunction with the work you're doing.

DR. BUCHANAN: We realize, quite definitely, that these cost sharing requirements represent a burden on small and medium-sized businesses. We realize, furthermore, that those businesses are the great source of jobs that we are looking for. So we sought actively a way to incorporate small businesses into the program, consistent with the law. And the way we were able to do that was to withhold to the program, the SBIR funds, for Phase I that would lead to next year of Phase II, and ultimately to Phase III proposals that we can now keep within the program as a topic of a federal funding interest. That is a feature not found in any other SBIR program I know, and I hope it works to your advantage.

QUESTIONER: I have a question on the matching funds. I have some funding from the EPA who set up a Center of Excellence at the university. I'm wondering if a portion of this funding can be used as matching funds?

DR. BUCHANAN: In some programs it says that non-DoD dollars can be used as cost sharing. Legally, you're right. So I won't dispute that. Now it's come down to the criteria for selection that says that this thing must have pervasive impact, and there be some commitment to productizing. And I would ask you then, in a proposal funded exclusively by the government, which you propose, "Who is going to furnish this commitment to productize, and what is the pervasive impact on the economy?" It will be tough.

QUESTIONER: Well, there's also a provision that the university have two industrial partners; correct? Wouldn't that be able to...
DR. BUCHANAN: For them to enter into cost sharing, as well?

QUESTIONER: Well, could they enter cost sharing --
DR. BUCHANAN: Well, a pledge to commercialize, with no money in back of it, will clearly be less compelling than some company that puts upfront investment in a proposal. You are going to be in competition with others that have that kind of a compelling case.

QUESTIONER: I'd like you to bring out the slide again with the red bullets, if you can, because I think we need to talk about it just a little bit. I thought I knew the difference between dual-use, spin-on, and spin-off. But after looking at these definitions, I'm not so sure that I do, and I think it would be good to comment on it to make sure we have a clear impression of what we mean by that. Now, I think the verbiage that you have in the narrative discussion, the description of those three bullets, you indicate spin-off technology is a kind where the technology is viable in the defense sector, meaning I suppose it's already released on an affiliated product. We take that and then make some use of that in converse. The other, for example, the spin-on is where the technology is already released in converse, and we use that in some military application. Now, dual-use appears to be in kind of a grey area now. What stage must the technology be in? What should be its primary motivator? Should it be something intended for, let's say, develop for commercial applications, used for the military, or vice versa? And I'd like for you to comment on that. That's all of my question. I'm sorry for the long explaination. I had to lay it out. And then secondly, I think a comment was made with regard to go ahead and submit a proposal and we'll see which one of the red dots it fits into. Presumably, if we have made a mistake, there would be some restrictions on, I guess, how far ARPA could move a proposal around because of the teaming arrangements. So, I guess I'm asking, once you submit that proposal and have your team structured, then you are probably committed to stay within the red dot?
MR. GUDAS: Let me answer your question on dual-use first. As I understand, your question is, how should you tilt the dual-use, towards spin-on or spin-off? And I would put the question right back to you and say examine the selection criteria. About half of the selection criteria are based upon the factors related to its commercialization in a pervasive impact. And about half are based upon military effectiveness. I think what you need to do is to ask the question, how much do I know about both of those, and if it's dual-use, to argue potential for both of those. There is going to be no magic bullet or magic equation that we can give you that's going to say what content must you have. I think a dual-use could have, as example, an enormous commercial impact and a small military impact, and just the inverse of that could be true. And, again, it's up to you to think it through, to peer into the future as best you can and to make the arguments within the page limit provided. Regarding your second point -- would you repeat your second point, because I lost it.

QUESTIONER: I think I still have it. I think a comment was made earlier, for example, if we go ahead and submit a proposal --
MR. GUDAS: Okay, I've got it.
QUESTIONER: Okay. Very well.
MR. GUDAS: You pulled it back. I'd like to clear that point up a little bit. I think it's important for you to do just what you said. That is, to target the row and target the column to put together your proposal and your proposing

team. What we've said, and maybe flippedly and unintentionally, was that this is a goal-driven program. If indeed -- because the money is different in each of these columns, if indeed we have an idea that really has value, and it's really going to meet the goals of the program, which you're promoting competitiveness, and it happens to be in a column where it's not eligible for funding or in fact where it's not proper, or maybe the funding isn't available, we would consider with you, the proposing organizations, the opportunity to move it to a point where it can be funded. I try to teach my teenage kids, unsuccessful, I might add, that no is always an answer. And you may reject no. But at least, what we're saying to you is that we're not going to push you off the stage because of placement, or because of the exigencies of that particular ranking of that proposal. If it's really good technology and we're interested, we're going to try to come to closure such that it can be funded. So, in that sense, I think what we're saying is pick a row, pick a column. Don't let us do it. But in a limit where indeed the technology is going to prove to meet our goals. We are not going to be original doctrinaire. We are going to try to meet the goals of the program as best we can. Does that answer your question?

QUESTIONER: Yes. But let me follow up with one. Are we making a distinction between the maturity and the technology when we go to dual-use, as opposed to -- let's say, for example, I may have some technology that I believe is spin-on capable. And I guess then the question is: Is it commercially viable, meaning, it's released for production versus maybe technology that I've been developing for a commercial application, but now I see a dual-use. I'm not so sure on how to position that. What would be the best way to position that?

MR. GUDAS: I don't think you have to position that. I think you have to argue -- again, I'll try to go back to my point. I think you want to argue the pervasive impact of that technology.

QUESTIONER: Okay. I understand that.

MR. GUDAS: And then the selection panel will peer at that, will evaluate versus all the others, and indeed make that selection for you.

DR. BUCHANAN: I may add that that third category, Pervasive Impact, in short words really means who cares? Who is going to care about this technology when your proposed activity is successful? Largely, that means, who's your customer? If your customer is a commercial entity, then it's probably spin-off. If the commercial is of defense entity, then it's probably spin-on. If you have two customers, then that's probably dual-use. If you have no customers, you don't have pervasive impact.

QUESTIONER: Could you define a little bit more carefully your term of acceptable firms in light of recent changes and restructurings and buyouts. It's conceivable that a defense company could be associated with a commercial company. And yet, in concert, they would make a very good consortia for one of these programs. Is that going to reduce the eligibility, or is there some other criteria, for example, that got independent stocks so they're two different companies? They operate under two separate environments.

DR. NORWOOD: Well, I think the term is eligible rather than acceptable. And it's more or less up to the partnerships what firms they would like to have as members of that particular team or that partnership, given the constraints of the requirement of each one of the red dots up there. So, the eligible firms, and there is a definition in the back, I think it's in Section G, that talks about eligible firms. But for the most part, we're trying to be free, or at least unrestricted, unnecessarily unrestricted, in terms of what firms you want to use in your partnership.

So, it's more or less up to you. There are certain conditions that have been set forth. I think they are described in the back. But you can prepare your partnership pretty much as you choose, given the eligibility requirements as defined by each of the dots.

QUESTIONER: There might be a number of reasons why somebody would not propose to put together a proposal this year. Will there be another window of opportunity next year for new projects?
DR. BUCHANAN: I hope so, but there's no way of assuring that now. I mean, it's going to be a function of the FY '94 budget activity. Now, that's precisely why we are asking that proposals be proposed in the way I described, at 12 to 24 month periods with options. The options would allow us to continue proposals as well as initiate proposals from the start. But there's no guarantee of that.

QUESTIONER: Contractors like us who are defense contractors will have a problem with the free form agreements that you're talking about. Especially within our contract organizations. In trying to understand exactly what you mean, would it be possible for us to get some paradigms of what you're looking at?
MR. DUNN: We don't have any paradigms for agreements. We have some thoughts, however. And if it's a problem for you as a defense contractor to deal with us with an agreement, then that's your paradigm and your culture that is the problem. We handcraft every one of these, and we have dealt with defense contractors who have resisted us heartily from doing things in a new and different way. And we have dealt with defense contractors who have absolutely embraced the idea of doing things in a new and different way. If the only way you know how to do business is a prime subcontractor relationship on a cost reimbursable basis with everything defined in advanced, then we're probably not talking about an agreement. And more than that, we're probably not talking about this program. If you're open to new ideas, a lot of this is just capable of being negotiated. And the rethinking process needs to start now. What I'm telling you is, there are no standard terms and conditions. Goals are important. Therefore, we have to set out very clearly what the goals are being we're not going to have the same kind of oversight, the same kind of DCAA chasing all the dollars, which means that you have to sit down and understand how industry can agree, and how government and industry can agree together. It's a whole new world. And if your company is not prepared to come up and start rethinking the way it does business, then it's going to be very difficult.
QUESTIONER: I'm not suggesting that we can't comply. I'm just wondering how I can communicate back to our contracts organization exactly what you said in a concrete form?
MR. DUNN: The first way you start is by saying there are no rules. And you'll have to repeat that a number of times.
DR. BUCHANAN: I think you guys are beginning to understand the profound difference that this program is offering in the way we do business. I will give you an example of my own several years ago as one of the first agreements that came up. We were doing business with a small company. We negotiated an agreement in four days, with two lawyers in the room, on five pieces of paper, for $16 million, and they were paid a few weeks thereafter. There are no rules. It really works. And all your faces are going "naw."
QUESTIONER: Well, I suppose we can get copies of these agreements that you executed through the Freedom of Information Act?
DR. BUCHANAN: But they're all different. They won't help you. Each

one is a handcrafted deal that is appropriate to the idea on the table.
QUESTIONER: But at least it will help us change our guidelines.
DR. BUCHANAN: You've gotta have rules, eh?

QUESTIONER: We've been talking to a number of government labs who would like to join our partnership. One of their concerns is what they are legally allowed to formally commit to on our program. For example, how much can they help an industrial contractor win a contract? How, in writing our proposal, would we indicate government lab partners? Do we need them to sign something? And if so, what?
MR. DUNN: If they are an important part of the deal, and government lab involvement obviously can be very different. I mean, if you're talking about, gee, I want to go use a couple of test chambers at the laboratory, and sometime, you know, in the first six months of this deal they're going to be available to me and I'll be able to do that on a cost reimbursable basis, I mean, no, I don't think you need much more than to say in the proposals we surveyed the laboratory and we expect to have those test chambers available. If, on the other hand, you have a fundamental problem or a basic research component, and that laboratory is the expert in the nation, and you're not going to be able to adequately deal with that component unless that laboratory is tied into the transaction, I think you need to demonstrate a commitment in a fairly significant fashion from the laboratory. And in the past, that has included the laboratories signing proposals.

QUESTIONER: I have a question about the SBIR. You mentioned the activity areas for the TRP, or the three areas mentioned here, spin-off, spin-on, and dual-use. Then you also mentioned for the SBIR the first criterion is relevance to TRP. So, does that imply that it should also fall into one of these three categories, SBIR? Is that what relevance means? And the second question is about, let's say you applied to the TRP and SBIR. Can you put the same proposal to another funding organization also or not?
MR. GUDAS: I think you crossed wires on the first question. The SBIR announcement is going to go out, and it's going to contain eleven technical focus areas. Otherwise, it's going to be standard RMS SBIR. There will be no changes. And spin-off, spin-on isn't going to impact that. In other words, what we've supplied is: a) funding; and b) the technical areas for a major Phase I SBIR initiative. All right? The answer to your second question is short. I would hope that you would tell the other agency that that's what you did.
QUESTIONER: So you're saying that you don't have to really be tied into one of these three for SBIR?
MR. GUDAS: The SBIR mechanism, as it was shown to you, is not different than the normal SBIR mechanism. What it is, what we've done is, a) supply money; and b) eleven focus areas to which you will be asked to propose.

QUESTIONER: Perhaps it would be illuminating for those of us who don't fully understand the requirement for two industrial partners. If you could explain the goal or purpose or reasoning behind having that requirement?
DR. BUCHANAN: You're asking me to somehow comment on why Congress does what it does. That's a statutory requirement. Frankly, it has several effects. And those several effects may have well been in the minds of the members when they voted it. First of all, it very definitely involves the proposer in the ultimate success of the proposal in a way that assures that that proposer is not merely in the business of performing R & D on which they deliver something to the government and scrape of six to eight percent profit. Second of all, it presumes that

the technology that is being researched will stay at a precompetitive level, under the assumption that once the technology becomes competitive, then the partnership will dissipate. Then there will be no partnership, and then you're in a product development mode. Third is, cynically speaking, is a very effective weapon against earmarking. And that's a device that the sponsors of this bill sought to use. So, those are three effects of the partnership. I don't know what fraction of the three or whether there's a fourth that you want to bring up.

QUESTIONER: It just sounds like it's not one of the things I imagined it might be, which is to assume that one of those is commercial and the other is a military. And therefore you're forcing a transfer --

DR. BUCHANAN: No. No. The general philosophy -- I mean, we can't say what's in Congress' mind. But why do we do business in consortia at all? Why have there been 350 consortia registered under the National Cooperative Research Act since 1984? I mean, isn't it silly to add two, three, four, five people together? Why is there a SEMATECH? Why is there an MCC? The reason is, because there are some areas where industry can collaborate, and maybe you can think of what these are: enabling technologies, developing standards, demonstrating whether or not there's a roadblock in the technology. These are things that everybody in the industry has to have done. They don't gain you a competitive advantage. If you do them together, you leverage off the money of your partners, you don't have to invest as much yourself to demonstrate these enabling technologies, and it's cheaper. The amount of capital applied is less. And, as I said, there are perfect venues for certain kinds of collaborations, but not for all kinds of collaborations. Why has the whole semiconductor industry got together for joint research? What has been the affect of that? I don't know if you've seen the figures on market share of the United States produced semiconductors. I'm not saying they're the direct and absolute result of SEMATECH, but they're very, very impressive. And I don't think that kind of investment going on individually would have had the impact that it did on SEMATECH. That's some of the philosophy that we have. There's a dearth of capital, so we might as well leverage industry dollars among itself, as well as leverage industry and government dollars in order to address some of these technology problems. I guess I could blab on further. But, I mean, there is a little bit of rationale that may have been in Congress' mind when it set out these programs in this fashion.

QUESTIONER: In your answer, do I understand that there's a new requirement that I wasn't aware of that it has to be pre-emergent technology to be in that category?

DR. BUCHANAN: That's the effect only that I mentioned. I mean, it's a --

QUESTIONER: It's not a requirement, then? It's something that can fall out of this, but it's not a requirement?

DR. BUCHANAN: I don't know how to define precompetitive anyway. I mean, ultimately, the effect is that you will end up on this side of the point of sale in the way that that bubble chart tended to -- that oval chart tended to depict.

QUESTIONER: Maybe if I ask a more specific example, maybe that will help clarify. Let's say I have a commercial partner with whom I'm never going to in my career be competitive because I've worked solely on the military side, but we have a technology of mutual interest. In essence, it will always be precompetitive. I'm not sure how, or whether I'm precluded from pursuing that in this. If I develop it too far, can I not pursuit it because it's not precompetitive anymore?

MR. GUDAS: Let me answer that from a Department of Commerce experience perspective. Precompetitive is really limited by the inability of you to have a true collaboration with another company. That's the real limit where indeed you both would go into the marketplace or both become uncomfortable sharing the key information. That's when precompetitive stops, and commercial or competitive starts. And I think you hold the answer to that. Clearly, in this program, we're not going to do shrink-wrapping of products, and we're not going to do extremely basic research. So we're going to do those things that are in between. And there's a lot of grey area there. But when you set competitive limits as we've seen it occur in the Department of Commerce programs, they're really self-limited by the ability for partners to truly collaborate with each other. And when you approach the marketplace and you have to split off and go your own routes or choose to, you'll set that limit yourself.

QUESTIONER: So if we don't have a problem in that regard, then in your program, we'll also not have a problem with it?

DR. BUCHANAN: Well, if it's not a product development, sure. If it is product development, you'll have a problem with this program.

QUESTIONER: My question is, how is an FFRDC expected to meet the fifty percent cost sharing requirement of the program? Is it expected?

DR. BUCHANAN: Yes, by teaming up with somebody that is funded by nonfederal dollars.

QUESTIONER: Well, if they provide fifty percent of their total part of the program, and we have three organizations, one of which will be an FFRDC, they're willing to go fifty percent, let's say, of their expenses, of their total part of the program, there's still a part that's a totally government supported facility has to try to get the money back to the government?

DR. BUCHANAN: Practically speaking, this is practically speaking, I can imagine that very few of these dollars will flow into FFRDCs -- and of the TRP dollars -- will flow into FFRDCs and federal and service laboratories. Now, I'm not eliminating the deal that says that XYZ Corp couldn't come to Lincoln and be so enticed with a technology that you have developed that it would be willing to put money into Lincoln Lab in order to bring that to market. That may well happen; and, frankly, I hope it does. But you should not -- "you," meaning FFRDCs and DoD laboratories and federal laboratories, should not look at this program as a way to preserve federal jobs. That ain't the point. This is an industrially-based, industrially-led program. Let me tell you, if you're not aware of this, Lincoln Laboratory is a party to an ARPA partnership. And in entering into that partnership, we have also prevailed upon the Air Force to abandon their normal requirement that all funds that go to Lincoln Laboratory flow through the sponsoring Air Force contract. The Lincoln Laboratory is receiving funds directly from the partnership.

QUESTIONER: I've got a question about when the funds are going to be available. You talked about setting up the budget so that there's a 12-month or a 24-month-plus optional period. Then you also answered someone's question about whether there would be another round in fiscal '94, and that depended upon what happened with the budget. If we make a proposal for a piece of that $500 million, are we only -- is that $500 million going to be spent only in the first 12 months. Or are we going to have some money that's approved for our funding held for a two- or a three- or a four-year period? Are those optional periods optional depending upon your budget as well as ours?

DR. BUCHANAN: The reason we're asking for options is so that we can fund subsequent options of a core

proposal out of this program, out of other DoD funds, out of commerce funds, out of NASA funds, of any subsequent appropriation. We had two choices. One choice would be to take this money, which was appropriated under the firewalls, knowing little about where the money would end up next year, and play it safe. Whereby, we would fund just a few things for a long period of time. Or the other option in which we started a lot of things, and funded them for a short period of time, believing that President Clinton's plan will emerge and the money will appear and be available from someplace. Now, the former option puts money in the bank for a long time and it's not available for anybody's use. The latter option gets the money into use, and that's the one we opted for. So there is some risk involved. You're right. You may get to a point where your proposal is funded for the first 12 to 24 month period, and a subsequent option is not exercised.

QUESTIONER: It is possible that there will be funding for a 24 month period if that's an award? I mean, it won't be cut after 12 months?
DR. BUCHANAN: Well, in the red book under Technology Development we have asked that proposals be for an initial 12 to 24 month period, with subsequent options of each 12 to 24 months. In the Technology Deployment side, we are asking for 12 month proposals with 12 month options.

QUESTIONER: There's a whole class of products for which the federal and state governments are still the primary customers. For instance, the federal highway system, IVHS in the future, air traffic control system, et cetera, et cetera. If I put together a consortia that comes up with a better concrete for the federal highway system, does that meet your definition of commercialization?
MR. GUDAS: I think you want to look at pervasive impact. What's the size, scope, and impact of your technology? You also want to argue how are you going to get that technology out. Clearly, the use of new materials, as an example, is often driven by specifications which are, in many times, state and local government specifications. So I think the question is one of how can you describe the impact of your technology?
QUESTIONER: Well, better concrete would have a significantly pervasive impact. I'm not concerned about arguing that. I'm saying, is it a commercial product if the customer is the Colorado Department of Transportation or the Illinois Department of Transportation or the Federal Highway Administration? Is that a commercial product?
MR. GUDAS: In my opinion, you're avoiding the description of the pervasive impact. States build things through commercial entities. They specify and certify things through state agencies. I think the use of a material or use of a concept in the commercial arena has got to be described. If indeed one of your barriers is going to be specification, it would be interesting how you're going to approach that barrier. But I don't think the approval of the state or local government describes adequately the impact. I think the size of the market, the volume, the cubic, whatever, meters of concrete could be used in revitalizing an infrastructure, it is a viable argument.
QUESTIONER: Well, if I came up with a better way to put signs alongside the road that says there's an accident five miles ahead, some commercial commodity has to buy that, I understand, and sell it to the Illinois Department of Transportation. And that would be an adequate argument?
MR. GUDAS: Sure. How many signs? How many miles of roads are in Illinois? How many numbers of signs would likely be demanded? What would be the cost of these signs? How many jobs would be created in manufacturing those signs? And do

those signs point to Purdue University? That's one thing I'd like to know.

QUESTIONER: Regarding R & D as a part of the in-kind contribution, are there any limitations on the use of, prior to your R & D, where it's in direct support of the proposer's program?
DR. BUCHANAN: This is the subcost question. To what extent can you -- yeah. Let me -- I'm taking a big step here because I know my lawyer is right over here. In my simple mind, and I'll let him correct me, we're not going to be in the business of allowing subcosts right now. Having said that, subcost will likely have resulted in something of value; typically, intellectual property. And you will be able to bring intellectual property to the table as an in-kind contribution. Perhaps not to the extent of your subcost, however. I mean, if you did a $10 million investment in software that resulted in a piece of software that is only worth, to this project, $500,000, then we're going to allow you $500,000. And, obviously, this is of negotiations because there's no rigorous way to do that. But we're obviously not going to be able to allow you all of your subcosts now back to 1942 in the development of concrete.

QUESTIONER: We have a partnership with several companies. Certainly, I think the area of research deals with dual-use technology, so it seems to fit the program requirements. Nevertheless, at an earlier briefing prior to this, one of the people who was there indicated, or at least gave the impression to the audience that was there, that the programs under -- that we ought not propose a program unless it gets to be of large size, large scope. Primarily, that would be what would be looked for under this program. The program that we would be able to bring to the table would be in the neighborhood of $600,000. And we were told to forget it, that that would not get over the size scope. That you were not prepared to deal with programs of that size. Is that true?
DR. BUCHANAN: There's no smallness restriction here, nor is there any largeness. I mean, it depends on the specific yield, the value of the money divided by the prediction of success here. We're not going to disqualify anybody. In general, we're not going to disqualify anybody for any reason. And least of which because your proposal is too small. Now, I will say I would urge you not to constrain yourself artificially too small. In other words, for a regional, the Regional Alliances Program, don't constrain yourself. A region is bigger than a few counties. It could well be a few states. I don't know whether the particular situation you're talking about is in development or deployment, but...

QUESTIONER: It's clearly development. But it's clearly one where the interested parties all have very vested interest in the product and in the development of that product. We don't need more partners. The scope of the program, you know, is adequate to carry out the activity. I mean, we don't need $2 million to do what needs to be done. And it looks like we do have the partners. But we were wondering whether we would be wasting both our industrial partners' time and our own time by trying to compete under this proposal?
DR. BUCHANAN: Absolutely not, no.
QUESTIONER: Well, I was saying, at that previous briefing, certainly that inference was given. So I appreciate your correcting it.
DR. BUCHANAN: Previous briefing in this room or...
QUESTIONER: No. One of the earlier briefings on this particular program.
DR. BUCHANAN: By us?
QUESTIONER: Not by the people on the platform. But the fact is, a personnel, one of the agencies that are represented on the platform.
DR. BUCHANAN: Today?

QUESTIONER: No, not today. I said at an earlier briefing about a week ago.
DR. BUCHANAN: Forgive them.
MR. DUNN: Could we prevail upon you to jot down on a piece of paper where that briefing was and who gave that, seriously, and let us follow up on that?
DR. BUCHANAN: This is a problem, as you understand. I mean, this is all very new. We would like to prevent this kind of misconception, and there won't be anything punitive except the person will be hung.
MR. LONG: Just as a procedural matter, we have to leave very shortly to catch a bus to catch a plane to Orlando. So, there are four people left. And if you can keep your questions short and concise, we'll try to get these four, and then we'll have to hit the road.

QUESTIONER: I have two questions. The first one regarding cost sharing. Let's say I have an existing grant from industry. Am I allowed to use that for cost sharing? Or does cost sharing have to represent new money? The second question is regarding definition of minority institutions. We found in submitting proposals to various federal agencies, there seems to be no universal definition as to what a minority institution is. For example, according NSF, we are a minority institution. But according to the Army Research Office, we're not. So, I'm wondering what your definition is?
MR. DUNN: Well, I don't know whether you are or whether you aren't. I don't have a definition for you that I can hand to you today. And I guess what that tells us is when the solicitation comes out, we will be explicit about that in the appendix where that policy is laid out. Could you help with where the area of ambiguity lies?

QUESTIONER: Well, just in the -- for example, in the percentage of minority students: according to NSF, we have enough. But according to the Army, we don't. I'm just wondering what your definition is?
MR. DUNN: Well, we'll have to come up with a definition, sure enough. I guess we will.
DR. BUCHANAN: You know, I'm tempted to say, and so I will. Let's assume you are, and send us a proposal. And if we get to that point, then we'll negotiate that.
QUESTIONER: The reason I ask is, I think it's part of Appendix G, it stated quite clearly that minority institutions will be given preference.
DR. BUCHANAN: It states clearly that in the case where two proposals are identical, there will be preference shown for HBCUs and MIs. So let's assume that you are an HBCU and an MI. Are you then telling me that in the case that you do not qualify, you would not be a useful performer on that proposal?
QUESTIONER: Well, no. I'm just wondering what, for this program, what the definition of a minority institution is, because we have run into problems with different federal agencies.
MR. DUNN: Do you have a large number of minority students at your institution?
QUESTIONER: Again, according to NSF, we have enough. But according to the Army, we don't. So, I'm just wondering.
MR. DUNN: Do you have a large number of minority students?
QUESTIONER: Yes.
MR. DUNN: I think you're a minority institution.
QUESTIONER: So be it. The first question, please? Was there an answer for that?
MR. LONG: I think you might have to repeat it. Okay?

QUESTIONER: Let's say I have an existing grant from industry. Am I allowed to use that for cost sharing, or does cost sharing have to represent new money?
MR. DUNN: You mean you have an existing grant from industry that you

will be receiving funds from as the project proceeds?
QUESTIONER: Yes.
MR. DUNN: That's a third-party source. That's good industry cost sharing.
DR. BUCHANAN: Well, there is some confusion here that is --particularly from yesterday. If you have an industrial grant for activity A, and you are in performance of activity A, but you want to propose to me activity B, I will not allow you to cost share from money that's going into activity A.
QUESTIONER: Oh, no. I'm talking about the same activity.
DR. BUCHANAN: Well, then the New York people had something different in mind. Innovations has its limits, but...

QUESTIONER: The SBIR part of the solicitation that will come out, will you be following the typical format for proposals that SBIR uses, or will it fall back on the proposal format in front of the book for the main program?
DR. BUCHANAN: No. The standard SBIR format. That, we're not allowed to do much with that.

QUESTIONER: We're considering a teaming arrangement that would involve the requirement to develop and test equipment. Not as a product, but to test the processes being developed. That probably would be best done in government facilities. Now, I take it that it's possible for those facilities to contribute to the program. But we're in a situation where they're broke. Now, it's tough enough to get industrial match for work to be carried out in industry. And even tougher, I think, to get industrial match for things to be carried out in DoD labs. Do you have a suggestion on -- I guess, one, how to get around that problem? Two, you've stated that we can deal with government folks up until the 14th of May. In a circumstance like this, would we be permitted to continue working with those agencies, and potentially, project managers who could fund work like that later in the cycle?
DR. BUCHANAN: Sure, but at the possibility that those people will be excluded from the proposal evaluation process.

QUESTIONER: So, then, what you're saying is, that if we're confident that the program manager we're dealing with is not going to be in the evaluation process, we can deal with it?
DR. BUCHANAN: Yes. We're not exempting the entirety of the federal government. Obviously, what we're trying to do is to prevent any appearance of conflict of interest. And if there is any appearance, whether the conflict exists, we're going to have to go in the direction of preventing that.

QUESTIONER: Help me just with a yes or no answer. If we made a proposal and ask for exemption for match on monies to be spent in a DoD facility, acceptable or unacceptable?
DR. BUCHANAN: I don't know of any way to provide an exemption. And believe me, we've looked.
QUESTIONER: That's fine. Thank you.

QUESTIONER: If, in looking at the criteria, and we decide that the category is really more deployment than technology development, are we still looking at the Technology Focus Areas for the emphasis of the proposal?
MR. LONG: There are different focus areas.
QUESTIONER: Right. But if Information Infrastructure is really the main area we're looking at, but in deployment or implementation, or something like that on a prototype basis, would that be deployment or is that development, and do we still look at it from that standpoint?
DR. BUCHANAN: I don't know the specifics of your proposal, but let me just make some up. Let's say you had in your mind that you had a particular architecture for a very high wide band

with fiber optic communication system. And it requires some innovation, some development, and new fiber optic interfaces, and new switches and so forth, but you want to demonstrate that -- the efficacy of that system by wiring together all the national laboratories and have that information shared. I'd put it into proposals and join them.
MR. LONG: Thank you very much for attending and your participation. All of your questions help us fine tune this whole process.
Good Luck

ORLANDO REGIONAL BRIEFING AT THE HYATT ORLANDO HOTEL, WEDNESDAY, APRIL 14, 1993.

QUESTIONER: With regard to the commercialization aspect of the proposals, what mechanisms might, or what thought have you given to assuring compliance with a proposed plan? That is, following through, or the contractors' proposal following through with the plan? How will that be monitored? And are there any penalties for failure, let's say?
MR. GUDAS: Your question has two parts. It's how are we going to follow up commercialization, and will there be a commercialization police force? The latter is no. The commercialization plan is meant to weigh an important element of this selection. That is, how large is your potential market? How pervasive is it? How many or how broadly can you spread a technology, and how are you going to do it? Clearly, this program is not going to develop, and does not have as a goal to develop commercial products. So what the individual agencies' advantage to these programs will do, we're to try to work with you to keep you on track to execute your program. Indeed, commercialization will often come late in the program or after the program. And there is going to be no formal mechanism to force you to execute your commercialization plan. I think, again, if you're putting up half the money, that it will be to your benefit to execute it. But there will be no mechanism to, for example, terminate a program because you are clearly not executing it. By that time, the program would be over. Did that answer your question?
QUESTIONER: Yes, sir.

QUESTIONER: One of the speakers in the first session mentioned, prior to the proposal date, that we could call and get information from you folks. Can I interpret that you also will help in acting as a clearing house for industrial partnerships?
DR. NORWOOD: Yes.
QUESTIONER: Good answer.
DR. NORWOOD: As a matter of fact, in the list of contacts that you have, a lot of those government agents of the various labs are centers throughout the five agencies that are represented here. Their responsibility is to help generate those partnerships where they have perhaps special knowledge about technologies that are available across a particular industry or business sector. So, the government is supposed to act as a catalyst to help the process of getting partnerships and quality proposals written.
DR. BUCHANAN: Just let me emphasize that he said it just right. We're supposed to be acting as a catalyst, and we intend to do just that. Not a clearing house. This is not a dating service. So please don't call us up on Tuesday and say I'm faxing you a description of my business and I'll call back Thursday for my partner. We clearly can't do that. But to the extent we can, we can point you in the right direction.
MR. LONG: And some of that effort is what you've seen already, the list of contacts and regional contact. There's also an Appendix D in your book which lists programs being undertaken by the various departments that you may be able to work with. So, we've done a lot to aid you in that area.

QUESTIONER: With respect to the Small Business Innovative Research solicitations, will a fee or profit be allowable as the DoDs are, and will the awards be up to the maximum amount of $100,000?
DR. BUCHANAN: Yes. That's what it says in the book. I have erroneously previously said that it would be $75,000, but that's not correct. That is an ARPA number. The number we intend to use here is $100,000. And all the SBIR rules apply in this program as other programs. They're all the same.

QUESTIONER: I have a question about what constitutes an eligible proposer for the dual-use critical program. If you have industry as subcontractors, and have two or more of those, even though you're a university, can you write the proposal?
MR. DUNN: The term "eligible proposer" is not a statutory term. The idea that we're trying to get across on the chart -- on Table 2 on page 2-A is that those two eligible firms have got to be committed to the proposal. If they authorize you acting as their agent to submit a proposal in which they are a partner, yes, you can do that. However, if you are again suggesting that you act as a prime, and those two eligible firms be a sub, that just doesn't sound like a very engaging relationship to me. I'd suggest you rethink it.

QUESTIONER: How would a proposal reflect in the spin-off activity in support of another federal agency that's not a member of the five agencies be received?
MR. LONG: I think it would be received just like any other proposal where we're looking for good ideas. To repeat something that may have been said or was said earlier, this is an idea-driven activity. And because there may be focuses on the work of another agency, does not preclude its acceptance in this program.

QUESTIONER: If you have a program such as the defense dual-use critical technology partnerships that requires fifty percent nonfederal funding, if a national lab, DOE national lab is involved in the program, then their support is federal funding by definition, I think.
MR. LONG: Yes.

QUESTIONER: And therefore, there would be that much less federal money available for industrial partners; is that right?
DR. BUCHANAN: No.
QUESTIONER: What?
DR. BUCHANAN: No.
QUESTIONER: Amplify, please.
DR. BUCHANAN: Visualize three pots of money: my pot, your pot, and their pot. My pot requires a dollar-for-dollar match from your pot. Their pot doesn't require a dollar-for-dollar match at all. Whatever they bring to the table out of their hide will not require fund-matching. What I bring to the table will.
QUESTIONER: So, when you say nonfederal funding, you mean nonfederal funding on TRP? You don't count the fact that DOE is putting money into the national lab pot as subtracting from the federal dollars available?
DR. BUCHANAN: Let's imagine a deal in which you see a technology within a national laboratory. You see a technology within a national laboratory that will make a great product. But this particular national laboratory is not interested in generating a factory or a process to produce it, and you do. And you propose to me the deal that you are going to bring $2 million to the table, and you want me to bring $2 million to the table, and you're going to somehow convince this national lab to bring their four or five million to the table to pay themselves to do work in the direction of this technology. That's fine.

QUESTIONER: It was indicated earlier today that this formal solicitation would have instructions on how to link

multiple activities, provide integrated solutions for technology reinvestment, et cetera, et cetera. And then it said something about each dot gets thirty-five pages. It seems to me, if the formal solicitation makes this clear, are you going to make it clear that if I touch ten dots I could submit a 350-page proposal? I mean, obviously, you need to clarify that or the abuse of that is going to get amazing. Secondly, what's the chances that mainline agency activities, including ARPA, are going to have more of their budgets forced into this activity?

DR. BUCHANAN: I guess you really meant the pejorative term; have their budgets forced into this activity? It depends on where you're sitting. Yes, I honestly don't know. I mean, it would depend upon the perception of those that would do the forcing as to the success of what we've done, and I think the jury is still out.

MS. HORN: Let me try to handle the politics of that a little bit. On the science committee on which I served, there has been a big push to get the Department of Defense and Energy and other departments to move toward dual-use, a lot of what ARPA has already done. SEMATECH, they can tell you the whole list, has already went to dual-use. So, the more emphasis on dual-use, absolutely, they have still got to do the military research; defense-related research that nobody else wants. It has no dual-use applications. It's still going to be a very, very important part of our national defense. So that will still be done. What the share will be? The science committees will have a lot to say about that. And they're going to want a very -- I would be willing to bet they will look for a very incremental kind of shift to where the balance is a little different than it is now. But that there still will continue to be a lot of defense on research.

QUESTIONER: What about the first question? Can you throw some facts on the subject matter here.

MR. DUNN: You're talking of having more of their budget encumbered in the way this program is. And I guess I'm slightly bemused by that question since the percentage of our budget this year, that is not encumbered in this way, compared to our budget three years ago, is 200%.

MR. LONG: The first part of your question, or your first question about the dots. There should be a proposal for each dot that stands on its own. And then there should be a statement within the proposal indicating how this proposal links with other proposals and forms an integrated program. I think ARPA is going to reserve the option to take any particular proposal and fund it or match it with other proposals. So, it should stand on its own.

DR. BUCHANAN: Well, I guess what I'm telling people -- I mean, you're worried about the abuse of the 35-page limit. What I'm telling people is that, per dot, I mean, you can submit a proposal of whatever length you want. I'm going to read the first thirty-five pages, so...

QUESTIONER: I'm concerned about the issue of deliverables in the case reports. Will there be reports required? And if so, what will the confidentiality of those reports be?

DR. BUCHANAN: Well, the reports are intellectual property. And the discussion this morning revolved around intellectual property that would most likely be granted entirely to you, except from some conditions in which the government has walking rights. So, clearly, they would be -- I mean, it's just common sense, and I guess it bears repeating, that we're in this for our own self-interest, we, the government. You have an investment, nontrivial fifty percent at least invested in this for your own self-interest. It happens that our self-interest coincides, otherwise the proposal wouldn't have been funded. So, it only makes sense that I'm going to help you commercialize whatever it

is you come up with. And I'm going to do little, I hope, to inhibit that. And to try to march in and make your proprietary information available to others is certainly an inhibition.

MR. DUNN: Let me just tell you some history of what we've actually done in the last couple of years on that issue is that if it makes sense to do so, the deliverable is a very summary document, very general in nature. And oftentimes in these critical technology dual-use partnerships, the way we set up the information flow is to have government people come out and see what's going on and get briefed and hear it, and not necessarily take paper home to ARPA where it becomes an agency record subject to the Freedom of Information Act. We will set up a communication medium that's adequate to the particular project that serves the government's interest and serves your interest. And we don't want to have to respond to the Freedom of Information request and have a lot of proprietary information sitting on our premises that we don't need.

QUESTIONER: If we could turn back to that topic you just left over on the SBIR area. Out-year TRP activities are a natural SBIR Phase III follow-on. What does that mean?

MR. DUNN: Phase III of SBIR is, in the past, until recent amendments, was explicitly a commercialization phase with no government funding. Under some recent amendments, they can be a commercialization phase "either in the commercial sector or by productizing something that the government is interested in." I think what that means is that if you go through Phase I, the concept phase, Phase II, the development phase, and you're doing things that are relevant to the TRP program, probably you're going to find some ongoing TRP activity which you can take that SBIR program and affiliate with and join in to a partnership, or find a natural alliance. We hope that that's the result. That you won't just be trying to commercialize in a vacuum. But that there will actually be other people out there working on similar things to end up in conjunction with the work you're doing.

DR. BUCHANAN: We realize, quite definitely, that these cost sharing requirements represent a burden on small and medium-sized businesses. We realize, furthermore, that those businesses are the great source of jobs that we are looking for. So we sought actively a way to incorporate small businesses into the program, consistent with the law. And the way we were able to do that was to withhold to the program, the SBIR funds, for Phase I that would lead to next year of Phase II, and ultimately to Phase III proposals that we can now keep within the program as a topic of a federal funding interest. That is a feature not found in any other SBIR program I know, and I hope it works to your advantage.

QUESTIONER: I have a question on the matching funds. I have some funding from the EPA who set up a Center of Excellence at the university. I'm wondering if a portion of this funding can be used as matching funds?

DR. BUCHANAN: In some programs it says that non-DoD dollars can be used as cost sharing. Legally, you're right. So I won't dispute that. Now it's come down to the criteria for selection that says that this thing must have pervasive impact, and there be some commitment to productizing. And I would ask you then, in a proposal funded exclusively by the government, which you propose, "Who is going to furnish this commitment to productize, and what is the pervasive impact on the economy?" It will be tough.

QUESTIONER: Well, there's also a provision that the university have two industrial partners; correct? Wouldn't that be able to...

DR. BUCHANAN: For them to enter into cost sharing, as well?

QUESTIONER: Well, could they enter cost sharing --
DR. BUCHANAN: Well, a pledge to commercialize, with no money in back of it, will clearly be less compelling than some company that puts upfront investment in a proposal. You are going to be in competition with others that have that kind of a compelling case.

QUESTIONER: I'd like you to bring out the slide again with the red bullets, if you can, because I think we need to talk about it just a little bit. I thought I knew the difference between dual-use, spin-on, and spin-off. But after looking at these definitions, I'm not so sure that I do, and I think it would be good to comment on it to make sure we have a clear impression of what we mean by that. Now, I think the verbiage that you have in the narrative discussion, the description of those three bullets, you indicate spin-off technology is a kind where the technology is viable in the defense sector, meaning I suppose it's already released on an affiliated product. We take that and then make some use of that in converse. The other, for example, the spin-on is where the technology is already released in converse, and we use that in some military application. Now, dual-use appears to be in kind of a grey area now. What stage must the technology be in? What should be its primary motivator? Should it be something intended for, let's say, develop for commercial applications, used for the military, or vice versa? And I'd like for you to comment on that. That's all of my question. I'm sorry for the long explaination. I had to lay it out. And then secondly, I think a comment was made with regard to go ahead and submit a proposal and we'll see which one of the red dots it fits into. Presumably, if we have made a mistake, there would be some restrictions on, I guess, how far ARPA could move a proposal around because of the teaming arrangements. So, I guess I'm asking, once you submit that proposal and have your team structured, then you are probably committed to stay within the red dot?
MR. GUDAS: Let me answer your question on dual-use first. As I understand, your question is, how should you tilt the dual-use, towards spin-on or spin-off? And I would put the question right back to you and say examine the selection criteria. About half of the selection criteria are based upon the factors related to its commercialization in a pervasive impact. And about half are based upon military effectiveness. I think what you need to do is to ask the question, how much do I know about both of those, and if it's dual-use, to argue potential for both of those. There is going to be no magic bullet or magic equation that we can give you that's going to say what content must you have. I think a dual-use could have, as example, an enormous commercial impact and a small military impact, and just the inverse of that could be true. And, again, it's up to you to think it through, to peer into the future as best you can and to make the arguments within the page limit provided. Regarding your second point -- would you repeat your second point, because I lost it.

QUESTIONER: I think I still have it. I think a comment was made earlier, for example, if we go ahead and submit a proposal --
MR. GUDAS: Okay, I've got it.
QUESTIONER: Okay. Very well.
MR. GUDAS: You pulled it back. I'd like to clear that point up a little bit. I think it's important for you to do just what you said. That is, to target the row and target the column to put together your proposal and your proposing team. What we've said, and maybe flippedly and unintentionally, was that this is a goal-driven program. If indeed -- because the money is different in each of these columns, if indeed we have an idea that really has value, and it's really going to meet the

goals of the program, which you're promoting competitiveness, and it happens to be in a column where it's not eligible for funding or in fact where it's not proper, or maybe the funding isn't available, we would consider with you, the proposing organizations, the opportunity to move it to a point where it can be funded. I try to teach my teenage kids, unsuccessful, I might add, that no is always an answer. And you may reject no. But at least, what we're saying to you is that we're not going to push you off the stage because of placement, or because of the exigencies of that particular ranking of that proposal. If it's really good technology and we're interested, we're going to try to come to closure such that it can be funded. So, in that sense, I think what we're saying is pick a row, pick a column. Don't let us do it. But in a limit where indeed the technology is going to prove to meet our goals. We are not going to be original doctrinaire. We are going to try to meet the goals of the program as best we can. Does that answer your question?

QUESTIONER: Yes. But let me follow up with one. Are we making a distinction between the maturity and the technology when we go to dual-use, as opposed to -- let's say, for example, I may have some technology that I believe is spin-on capable. And I guess then the question is: Is it commercially viable, meaning, it's released for production versus maybe technology that I've been developing for a commercial application, but now I see a dual-use. I'm not so sure on how to position that. What would be the best way to position that?

MR. GUDAS: I don't think you have to position that. I think you have to argue -- again, I'll try to go back to my point. I think you want to argue the pervasive impact of that technology.

QUESTIONER: Okay. I understand that.

MR. GUDAS: And then the selection panel will peer at that, will evaluate versus all the others, and indeed make that selection for you.

DR. BUCHANAN: I may add that that third category, Pervasive Impact, in short words really means who cares? Who is going to care about this technology when your proposed activity is successful? Largely, that means, who's your customer? If your customer is a commercial entity, then it's probably spin-off. If the commercial is of defense entity, then it's probably spin-on. If you have two customers, then that's probably dual-use. If you have no customers, you don't have pervasive impact.

QUESTIONER: Could you define a little bit more carefully your term of acceptable firms in light of recent changes and restructurings and buyouts. It's conceivable that a defense company could be associated with a commercial company. And yet, in concert, they would make a very good consortia for one of these programs. Is that going to reduce the eligibility, or is there some other criteria, for example, that got independent stocks so they're two different companies? They operate under two separate environments.

DR. NORWOOD: Well, I think the term is eligible rather than acceptable. And it's more or less up to the partnerships what firms they would like to have as members of that particular team or that partnership, given the constraints of the requirement of each one of the red dots up there. So, the eligible firms, and there is a definition in the back, I think it's in Section G, that talks about eligible firms. But for the most part, we're trying to be free, or at least unrestricted, unnecessarily unrestricted, in terms of what firms you want to use in your partnership. So, it's more or less up to you. There are certain conditions that have been set forth. I think they are described in the back. But you can prepare your partnership pretty much as you choose, given the eligibility

requirements as defined by each of the dots.

QUESTIONER: There might be a number of reasons why somebody would not propose to put together a proposal this year. Will there be another window of opportunity next year for new projects?
DR. BUCHANAN: I hope so, but there's no way of assuring that now. I mean, it's going to be a function of the FY '94 budget activity. Now, that's precisely why we are asking that proposals be proposed in the way I described, at 12 to 24 month periods with options. The options would allow us to continue proposals as well as initiate proposals from the start. But there's no guarantee of that.

QUESTIONER: Contractors like us who are defense contractors will have a problem with the free form agreements that you're talking about. Especially within our contract organizations. In trying to understand exactly what you mean, would it be possible for us to get some paradigms of what you're looking at?
MR. DUNN: We don't have any paradigms for agreements. We have some thoughts, however. And if it's a problem for you as a defense contractor to deal with us with an agreement, then that's your paradigm and your culture that is the problem. We handcraft every one of these, and we have dealt with defense contractors who have resisted us heartily from doing things in a new and different way. And we have dealt with defense contractors who have absolutely embraced the idea of doing things in a new and different way. If the only way you know how to do business is a prime subcontractor relationship on a cost reimbursable basis with everything defined in advanced, then we're probably not talking about an agreement. And more than that, we're probably not talking about this program. If you're open to new ideas, a lot of this is just capable of being negotiated. And the rethinking process needs to start now. What I'm telling you is, there are no standard terms and conditions. Goals are important. Therefore, we have to set out very clearly what the goals are being we're not going to have the same kind of oversight, the same kind of DCAA chasing all the dollars, which means that you have to sit down and understand how industry can agree, and how government and industry can agree together. It's a whole new world. And if your company is not prepared to come up and start rethinking the way it does business, then it's going to be very difficult.
QUESTIONER: I'm not suggesting that we can't comply. I'm just wondering how I can communicate back to our contracts organization exactly what you said in a concrete form?
MR. DUNN: The first way you start is by saying there are no rules. And you'll have to repeat that a number of times.
DR. BUCHANAN: I think you guys are beginning to understand the profound difference that this program is offering in the way we do business. I will give you an example of my own several years ago as one of the first agreements that came up. We were doing business with a small company. We negotiated an agreement in four days, with two lawyers in the room, on five pieces of paper, for $16 million, and they were paid a few weeks thereafter. There are no rules. It really works. And all your faces are going "naw."
QUESTIONER: Well, I suppose we can get copies of these agreements that you executed through the Freedom of Information Act?
DR. BUCHANAN: But they're all different. They won't help you. Each one is a handcrafted deal that is appropriate to the idea on the table.
QUESTIONER: But at least it will help us change our guidelines.
DR. BUCHANAN: You've gotta have rules, eh?

QUESTIONER: We've been talking to a number of government labs who would like to join our partnership. One of their concerns is what they are legally allowed to formally commit to on our program. For example, how much can they help an industrial contractor win a contract? How, in writing our proposal, would we indicate government lab partners? Do we need them to sign something? And if so, what?

MR. DUNN: If they are an important part of the deal, and government lab involvement obviously can be very different. I mean, if you're talking about, gee, I want to go use a couple of test chambers at the laboratory, and sometime, you know, in the first six months of this deal they're going to be available to me and I'll be able to do that on a cost reimbursable basis, I mean, no, I don't think you need much more than to say in the proposals we surveyed the laboratory and we expect to have those test chambers available. If, on the other hand, you have a fundamental problem or a basic research component, and that laboratory is the expert in the nation, and you're not going to be able to adequately deal with that component unless that laboratory is tied into the transaction, I think you need to demonstrate a commitment in a fairly significant fashion from the laboratory. And in the past, that has included the laboratories signing proposals.

QUESTIONER: I have a question about the SBIR. You mentioned the activity areas for the TRP, or the three areas mentioned here, spin-off, spin-on, and dual-use. Then you also mentioned for the SBIR the first criterion is relevance to TRP. So, does that imply that it should also fall into one of these three categories, SBIR? Is that what relevance means? And the second question is about, let's say you applied to the TRP and SBIR. Can you put the same proposal to another funding organization also or not?

MR. GUDAS: I think you crossed wires on the first question. The SBIR announcement is going to go out, and it's going to contain eleven technical focus areas. Otherwise, it's going to be standard RMS SBIR. There will be no changes. And spin-off, spin-on isn't going to impact that. In other words, what we've supplied is: a) funding; and b) the technical areas for a major Phase I SBIR initiative. All right? The answer to your second question is short. I would hope that you would tell the other agency that that's what you did.

QUESTIONER: So you're saying that you don't have to really be tied into one of these three for SBIR?

MR. GUDAS: The SBIR mechanism, as it was shown to you, is not different than the normal SBIR mechanism. What it is, what we've done is, a) supply money; and b) eleven focus areas to which you will be asked to propose.

QUESTIONER: Perhaps it would be illuminating for those of us who don't fully understand the requirement for two industrial partners. If you could explain the goal or purpose or reasoning behind having that requirement?

DR. BUCHANAN: You're asking me to somehow comment on why Congress does what it does. That's a statutory requirement. Frankly, it has several effects. And those several effects may have well been in the minds of the members when they voted it. First of all, it very definitely involves the proposer in the ultimate success of the proposal in a way that assures that that proposer is not merely in the business of performing R & D on which they deliver something to the government and scrape of six to eight percent profit. Second of all, it presumes that the technology that is being researched will stay at a precompetitive level, under the assumption that once the technology becomes competitive, then the partnership will dissipate. Then there will be no partnership, and then

you're in a product development mode. Third is, cynically speaking, is a very effective weapon against earmarking. And that's a device that the sponsors of this bill sought to use. So, those are three effects of the partnership. I don't know what fraction of the three or whether there's a fourth that you want to bring up.

QUESTIONER: It just sounds like it's not one of the things I imagined it might be, which is to assume that one of those is commercial and the other is a military. And therefore you're forcing a transfer --
DR. BUCHANAN: No. No. The general philosophy -- I mean, we can't say what's in Congress' mind. But why do we do business in consortia at all? Why have there been 350 consortia registered under the National Cooperative Research Act since 1984? I mean, isn't it silly to add two, three, four, five people together? Why is there a SEMATECH? Why is there an MCC? The reason is, because there are some areas where industry can collaborate, and maybe you can think of what these are: enabling technologies, developing standards, demonstrating whether or not there's a roadblock in the technology. These are things that everybody in the industry has to have done. They don't gain you a competitive advantage. If you do them together, you leverage off the money of your partners, you don't have to invest as much yourself to demonstrate these enabling technologies, and it's cheaper. The amount of capital applied is less. And, as I said, there are perfect venues for certain kinds of collaborations, but not for all kinds of collaborations. Why has the whole semiconductor industry got together for joint research? What has been the affect of that? I don't know if you've seen the figures on market share of the United States produced semiconductors. I'm not saying they're the direct and absolute result of SEMATECH, but they're very, very impressive. And I don't think that kind of investment going on individually would have had the impact that it did on SEMATECH. That's some of the philosophy that we have. There's a dearth of capital, so we might as well leverage industry dollars among itself, as well as leverage industry and government dollars in order to address some of these technology problems. I guess I could blab on further. But, I mean, there is a little bit of rationale that may have been in Congress' mind when it set out these programs in this fashion.

QUESTIONER: In your answer, do I understand that there's a new requirement that I wasn't aware of that it has to be pre-emergent technology to be in that category?
DR. BUCHANAN: That's the effect only that I mentioned. I mean, it's a --
QUESTIONER: It's not a requirement, then? It's something that can fall out of this, but it's not a requirement?
DR. BUCHANAN: I don't know how to define precompetitive anyway. I mean, ultimately, the effect is that you will end up on this side of the point of sale in the way that that bubble chart tended to -- that oval chart tended to depict.

QUESTIONER: Maybe if I ask a more specific example, maybe that will help clarify. Let's say I have a commercial partner with whom I'm never going to in my career be competitive because I've worked solely on the military side, but we have a technology of mutual interest. In essence, it will always be precompetitive. I'm not sure how, or whether I'm precluded from pursuing that in this. If I develop it too far, can I not pursuit it because it's not precompetitive anymore?
MR. GUDAS: Let me answer that from a Department of Commerce experience perspective. Precompetitive is really limited by the inability of you to have a true collaboration with another company. That's the real limit where indeed you both would go into the marketplace or both become

uncomfortable sharing the key information. That's when precompetitive stops, and commercial or competitive starts. And I think you hold the answer to that. Clearly, in this program, we're not going to do shrink-wrapping of products, and we're not going to do extremely basic research. So we're going to do those things that are in between. And there's a lot of grey area there. But when you set competitive limits as we've seen it occur in the Department of Commerce programs, they're really self-limited by the ability for partners to truly collaborate with each other. And when you approach the marketplace and you have to split off and go your own routes or choose to, you'll set that limit yourself.

QUESTIONER: So if we don't have a problem in that regard, then in your program, we'll also not have a problem with it?

DR. BUCHANAN: Well, if it's not a product development, sure. If it is product development, you'll have a problem with this program.

QUESTIONER: My question is, how is an FFRDC expected to meet the fifty percent cost sharing requirement of the program? Is it expected?

DR. BUCHANAN: Yes, by teaming up with somebody that is funded by nonfederal dollars.

QUESTIONER: Well, if they provide fifty percent of their total part of the program, and we have three organizations, one of which will be an FFRDC, they're willing to go fifty percent, let's say, of their expenses, of their total part of the program, there's still a part that's a totally government supported facility has to try to get the money back to the government?

DR. BUCHANAN: Practically speaking, this is practically speaking, I can imagine that very few of these dollars will flow into FFRDCs -- and of the TRP dollars -- will flow into FFRDCs and federal and service laboratories. Now, I'm not eliminating the deal that says that XYZ Corp couldn't come to Lincoln and be so enticed with a technology that you have developed that it would be willing to put money into Lincoln Lab in order to bring that to market. That may well happen; and, frankly, I hope it does. But you should not -- "you," meaning FFRDCs and DoD laboratories and federal laboratories, should not look at this program as a way to preserve federal jobs. That ain't the point. This is an industrially-based, industrially-led program. Let me tell you, if you're not aware of this, Lincoln Laboratory is a party to an ARPA partnership. And in entering into that partnership, we have also prevailed upon the Air Force to abandon their normal requirement that all funds that go to Lincoln Laboratory flow through the sponsoring Air Force contract. The Lincoln Laboratory is receiving funds directly from the partnership.

QUESTIONER: I've got a question about when the funds are going to be available. You talked about setting up the budget so that there's a 12-month or a 24-month-plus optional period. Then you also answered someone's question about whether there would be another round in fiscal '94, and that depended upon what happened with the budget. If we make a proposal for a piece of that $500 million, are we only -- is that $500 million going to be spent only in the first 12 months. Or are we going to have some money that's approved for our funding held for a two- or a three- or a four-year period? Are those optional periods optional depending upon your budget as well as ours?

DR. BUCHANAN: The reason we're asking for options is so that we can fund subsequent options of a core proposal out of this program, out of other DoD funds, out of commerce funds, out of NASA funds, of any subsequent appropriation. We had two choices. One choice would be to take this money, which was appropriated under the firewalls, knowing little about where the money would end up

next year, and play it safe. Whereby, we would fund just a few things for a long period of time. Or the other option in which we started a lot of things, and funded them for a short period of time, believing that President Clinton's plan will emerge and the money will appear and be available from someplace. Now, the former option puts money in the bank for a long time and it's not available for anybody's use. The latter option gets the money into use, and that's the one we opted for. So there is some risk involved. You're right. You may get to a point where your proposal is funded for the first 12 to 24 month period, and a subsequent option is not exercised.

QUESTIONER: It is possible that there will be funding for a 24 month period if that's an award? I mean, it won't be cut after 12 months?
DR. BUCHANAN: Well, in the red book under Technology Development we have asked that proposals be for an initial 12 to 24 month period, with subsequent options of each 12 to 24 months. In the Technology Deployment side, we are asking for 12 month proposals with 12 month options.

QUESTIONER: There's a whole class of products for which the federal and state governments are still the primary customers. For instance, the federal highway system, IVHS in the future, air traffic control system, et cetera, et cetera. If I put together a consortia that comes up with a better concrete for the federal highway system, does that meet your definition of commercialization?
MR. GUDAS: I think you want to look at pervasive impact. What's the size, scope, and impact of your technology? You also want to argue how are you going to get that technology out. Clearly, the use of new materials, as an example, is often driven by specifications which are, in many times, state and local government specifications. So I think the question is one of how can you describe the impact of your technology?
QUESTIONER: Well, better concrete would have a significantly pervasive impact. I'm not concerned about arguing that. I'm saying, is it a commercial product if the customer is the Colorado Department of Transportation or the Illinois Department of Transportation or the Federal Highway Administration? Is that a commercial product?
MR. GUDAS: In my opinion, you're avoiding the description of the pervasive impact. States build things through commercial entities. They specify and certify things through state agencies. I think the use of a material or use of a concept in the commercial arena has got to be described. If indeed one of your barriers is going to be specification, it would be interesting how you're going to approach that barrier. But I don't think the approval of the state or local government describes adequately the impact. I think the size of the market, the volume, the cubic, whatever, meters of concrete could be used in revitalizing an infrastructure, it is a viable argument.
QUESTIONER: Well, if I came up with a better way to put signs alongside the road that says there's an accident five miles ahead, some commercial commodity has to buy that, I understand, and sell it to the Illinois Department of Transportation. And that would be an adequate argument?
MR. GUDAS: Sure. How many signs? How many miles of roads are in Illinois? How many numbers of signs would likely be demanded? What would be the cost of these signs? How many jobs would be created in manufacturing those signs? And do those signs point to Purdue University? That's one thing I'd like to know.

QUESTIONER: Regarding R & D as a part of the in-kind contribution, are there any limitations on the use of, prior to your R & D, where it's in direct support of the proposer's program?

DR. BUCHANAN: This is the sunkcost question. To what extent can you -- yeah. Let me -- I'm taking a big step here because I know my lawyer is right over here. In my simple mind, and I'll let him correct me, we're not going to be in the business of allowing sunkcosts right now. Having said that, sunkcost will likely have resulted in something of value; typically, intellectual property. And you will be able to bring intellectual property to the table as an in-kind contribution. Perhaps not to the extent of your subcost, however. I mean, if you did a $10 million investment in software that resulted in a piece of software that is only worth, to this project, $500,000, then we're going to allow you $500,000. And, obviously, this is of negotiations because there's no rigorous way to do that. But we're obviously not going to be able to allow you all of your sunkcosts now back to 1942 in the development of concrete.

QUESTIONER: We have a partnership with several companies. Certainly, I think the area of research deals with dual-use technology, so it seems to fit the program requirements. Nevertheless, at an earlier briefing prior to this, one of the people who was there indicated, or at least gave the impression to the audience that was there, that the programs under -- that we ought not propose a program unless it gets to be of large size, large scope. Primarily, that would be what would be looked for under this program. The program that we would be able to bring to the table would be in the neighborhood of $600,000. And we were told to forget it, that that would not get over the size scope. That you were not prepared to deal with programs of that size. Is that true?
DR. BUCHANAN: There's no smallness restriction here, nor is there any largeness. I mean, it depends on the specific yield, the value of the money divided by the prediction of success here. We're not going to disqualify anybody. In general, we're not going to disqualify anybody for any reason. And least of which because your proposal is too small. Now, I will say I would urge you not to constrain yourself artificially too small. In other words, for a regional, the Regional Alliances Program, don't constrain yourself. A region is bigger than a few counties. It could well be a few states. I don't know whether the particular situation you're talking about is in development or deployment, but...

QUESTIONER: It's clearly development. But it's clearly one where the interested parties all have very vested interest in the product and in the development of that product. We don't need more partners. The scope of the program, you know, is adequate to carry out the activity. I mean, we don't need $2 million to do what needs to be done. And it looks like we do have the partners. But we were wondering whether we would be wasting both our industrial partners' time and our own time by trying to compete under this proposal?
DR. BUCHANAN: Absolutely not, no.
QUESTIONER: Well, I was saying, at that previous briefing, certainly that inference was given. So I appreciate your correcting it.
DR. BUCHANAN: Previous briefing in this room or...
QUESTIONER: No. One of the earlier briefings on this particular program.
DR. BUCHANAN: By us?
QUESTIONER: Not by the people on the platform. But the fact is, a personnel, one of the agencies that are represented on the platform.
DR. BUCHANAN: Today?
QUESTIONER: No, not today. I said at an earlier briefing about a week ago.
DR. BUCHANAN: Forgive them.
MR. DUNN: Could we prevail upon you to jot down on a piece of paper where that briefing was and who gave that, seriously, and let us follow up on that?
DR. BUCHANAN: This is a problem, as you understand. I mean, this is all

very new. We would like to prevent this kind of misconception, and there won't be anything punitive except the person will be hung.

MR. LONG: Just as a procedural matter, we have to leave very shortly to catch a bus to catch a plane to Orlando. So, there are four people left. And if you can keep your questions short and concise, we'll try to get these four, and then we'll have to hit the road.

QUESTIONER: I have two questions. The first one regarding cost sharing. Let's say I have an existing grant from industry. Am I allowed to use that for cost sharing? Or does cost sharing have to represent new money? The second question is regarding definition of minority institutions. We found in submitting proposals to various federal agencies, there seems to be no universal definition as to what a minority institution is. For example, according NSF, we are a minority institution. But according to the Army Research Office, we're not. So, I'm wondering what your definition is?

MR. DUNN: Well, I don't know whether you are or whether you aren't. I don't have a definition for you that I can hand to you today. And I guess what that tells us is when the solicitation comes out, we will be explicit about that in the appendix where that policy is laid out. Could you help with where the area of ambiguity lies?

QUESTIONER: Well, just in the -- for example, in the percentage of minority students: according to NSF, we have enough. But according to the Army, we don't. I'm just wondering what your definition is?

MR. DUNN: Well, we'll have to come up with a definition, sure enough. I guess we will.

DR. BUCHANAN: You know, I'm tempted to say, and so I will. Let's assume you are, and send us a proposal. And if we get to that point, then we'll negotiate that.

QUESTIONER: The reason I ask is, I think it's part of Appendix G, it stated quite clearly that minority institutions will be given preference.

DR. BUCHANAN: It states clearly that in the case where two proposals are identical, there will be preference shown for HBCUs and MIs. So let's assume that you are an HBCU and an MI. Are you then telling me that in the case that you do not qualify, you would not be a useful performer on that proposal?

QUESTIONER: Well, no. I'm just wondering what, for this program, what the definition of a minority institution is, because we have run into problems with different federal agencies.

MR. DUNN: Do you have a large number of minority students at your institution?

QUESTIONER: Again, according to NSF, we have enough. But according to the Army, we don't. So, I'm just wondering.

MR. DUNN: Do you have a large number of minority students?

QUESTIONER: Yes.

MR. DUNN: I think you're a minority institution.

QUESTIONER: So be it. The first question, please? Was there an answer for that?

MR. LONG: I think you might have to repeat it. Okay?

QUESTIONER: Let's say I have an existing grant from industry. Am I allowed to use that for cost sharing, or does cost sharing have to represent new money?

MR. DUNN: You mean you have an existing grant from industry that you will be receiving funds from as the project proceeds?

QUESTIONER: Yes.

MR. DUNN: That's a third-party source. That's good industry cost sharing.

DR. BUCHANAN: Well, there is some confusion here that is --particularly from yesterday. If you have an industrial grant for activity A, and you are in performance of activity A, but

you want to propose to me activity B, I will not allow you to cost share from money that's going into activity A.
QUESTIONER: Oh, no. I'm talking about the same activity.
DR. BUCHANAN: Well, then the New York people had something different in mind. Innovations has its limits, but...

QUESTIONER: The SBIR part of the solicitation that will come out, will you be following the typical format for proposals that SBIR uses, or will it fall back on the proposal format in front of the book for the main program?
DR. BUCHANAN: No. The standard SBIR format. That, we're not allowed to do much with that.

QUESTIONER: We're considering a teaming arrangement that would involve the requirement to develop and test equipment. Not as a product, but to test the processes being developed. That probably would be best done in government facilities. Now, I take it that it's possible for those facilities to contribute to the program. But we're in a situation where they're broke. Now, it's tough enough to get industrial match for work to be carried out in industry. And even tougher, I think, to get industrial match for things to be carried out in DoD labs. Do you have a suggestion on -- I guess, one, how to get around that problem? Two, you've stated that we can deal with government folks up until the 14th of May. In a circumstance like this, would we be permitted to continue working with those agencies, and potentially, project managers who could fund work like that later in the cycle?
DR. BUCHANAN: Sure, but at the possibility that those people will be excluded from the proposal evaluation process.
QUESTIONER: So, then, what you're saying is, that if we're confident that the program manager we're dealing with is not going to be in the evaluation process, we can deal with it?
DR. BUCHANAN: Yes. We're not exempting the entirety of the federal government. Obviously, what we're trying to do is to prevent any appearance of conflict of interest. And if there is any appearance, whether the conflict exists, we're going to have to go in the direction of preventing that.

QUESTIONER: Help me just with a yes or no answer. If we made a proposal and ask for exemption for match on monies to be spent in a DoD facility, acceptable or unacceptable?
DR. BUCHANAN: I don't know of any way to provide an exemption. And believe me, we've looked.
QUESTIONER: That's fine. Thank you.

QUESTIONER: If, in looking at the criteria, and we decide that the category is really more deployment than technology development, are we still looking at the Technology Focus Areas for the emphasis of the proposal?
MR. LONG: There are different focus areas.
QUESTIONER: Right. But if Information Infrastructure is really the main area we're looking at, but in deployment or implementation, or something like that on a prototype basis, would that be deployment or is that development, and do we still look at it from that standpoint?
DR. BUCHANAN: I don't know the specifics of your proposal, but let me just make some up. Let's say you had in your mind that you had a particular architecture for a very high wide band with fiber optic communication system. And it requires some innovation, some development, and new fiber optic interfaces, and new switches and so forth, but you want to demonstrate that -- the efficacy of that system by wiring together all the national laboratories and have that information shared. I'd put it into proposals and join them.
MR. LONG: Thank you very much for attending and your participation. All

of your questions help us fine tune this whole process.
Good luck.

DALLAS REGIONAL BRIEFING AT THE CENTRAL DALLAS RADISSON HOTEL, THURSDAY, APRIL 15, 1993.

THE SPEAKER: My name is Gary Napp with IBM. On this particular topic though with regard to labs though as I understood it that the labs either in-kind or labor or any contribution does not count towards the proposer's matching resource.
MR GUDAS: The way to think about this is there are three classes of funding. There's funding that the TRP puts in the hands of the proposers, there's the funding that the proposers then put on the table to match and then there's neutral funding. If a DOD or DOE lab participates with you and they contribute their internal funding toward the work, it doesn't -- it isn't required to go against your required match; it's neutral, okay.
DR. BUCHANAN: But the answer to your precise question is yes. In other words, laboratory funding derived from federal budget authority will not be allowed as cost match to TRP money. I mean that's precisely what you asked but his answer was really more complete.

THE SPEAKER: My name is Casey Fox. I'm with Bio-Medical Enterprises in San Antonio. We've had the fortune to develop a relationship with NASA over the last few years. Specifically we're looking at materials that have been developed and their application to medicine. We're preparing a -- well, we're negotiating a technology exchange agreement and that's the nature of one question. If intellectual property requirements are different than what would be in the TRP program, it falls pretty much back to the standard agreement that's set up in any contract. Which agreement will supersede, the TRP or the technology exchange agreement(TEA)?
MR DUNN: Well, the TRP can't supersede anything because it's not driven by a law or a regulation. It's whatever is negotiated. If you've already struck a deal with NASA Ames that allocates intellectual property rights developed under your TEA, I think that it would not be in good faith for you to come to the TRP if you were dealing in the same area and purport to allocate intellectual property rights in a contrary manner. Now, for those of you that don't know a technical exchange agreement is a device that NASA uses under the authority, under some very broad authority that NASA has and if my recollections from my days at NASA are correct, they don't have to follow the standard allocation of intellectual property rights under a technical exchange agreement and, you know, you drove whatever bargain you drove and are living with it.
THE SPEAKER: Okay, well, we are negotiating that agreement now and this is one point of negotiation. So I'm trying to consider where do I want to lean; towards a more open agreement in the TRP and ask them to put that into our TEA or allow the TEA to stand.
MR DUNN: Yes.

THE SPEAKER: A couple of other questions. One, I'm looking for financial partners in this agreement. I'm a single firm. Most likely my financial partners will be venture capital firms or research institutions, nonprofit or universities. Specifically in the first issue would a venture capital firm that is an equity partner in my company thus make us two eligible firms?
MR. DUNN: If they are merely -- no. I mean unless they're a party to the transaction they're not a participant. I mean if all they are is your financier or the conduit through which your finances come, they are that third party source which I think we mentioned earlier today and that counts as your cash.

MR GUDAS: One more question.
THE SPEAKER: Yes. It's likely that -- they're not on board yet and it's likely our agreement could be a joint venture or partnership instead of an equity type offer. Would that then make them a second partner?
MR DUNN: Your agreement with your venture partner?
THE SPEAKER: Yes.
MR DUNN: Which is essentially a financial -- well, no, that's your agreement with them and then you'll enter into an agreement under the TRP. I mean as far as I'm concerned that's just your method of financing and if there are implications of that, what we would like to see from you is a disclosure of what that means. We want you to be up front with us. Actually, I don't know if you all have heard this but even in procurement contracts these days the Federal Government is starting to get wise to the implications of teaming arrangements and actually would like to know what you all are deciding up front before you deal with the Federal Government. So this isn't really anything earth shattering. We want to know the implications of an agreement like that. No, it's not necessarily a part of your partnership with the Government.
THE SPEAKER: Okay, last question. My colleagues at Ames --
MR GUDAS: You're not a very popular man.

THE SPEAKER: I took the mike earlier today. My colleagues at Ames in this TEA are going to be using their facilities and laboratories. Can I use them as a subcontractor and move funds to them either funds that I originate or funds that come from the TRP contribution so that their lab can be more efficient in meeting the developmental goals?
MR DUNN: As far as we are concerned the answer is absolutely yes, and this raises the question of how do Federal labs play in the program, and I don't want anyone to get the impression that there is a uniform set of rules or the fact that we say we're willing for you to do that means that any particular agency says that they can structure their deal like that. A number of these laboratories have a set of regulations dealing with industry and it's some of the problem. They don't all have the flexibility that NASA does under a Technology Exchange Agreement (TEA). So the fact we say we're willing for you to enter into that kind of deal with NASA Ames doesn't mean that a DOE lab or a DOD lab, that you're going to find the same sort of situation available.
MR GUDAS: If the money is sent to you for that subcontract that has to be matched.
THE SPEAKER: I understand.
MR GUDAS: Okay, the next question, the next very patient gentleman. I want to make a point here. There's two possible end points for this meeting. One is when there are no more questions and the other is when 5:30 comes and we will work to whichever comes first.

THE SPEAKER: David Wallace with (unintelligible) Labs Technology. I have structural questions only. Matching fund time frame that NIST's Advanced Technology Program (ATP) matches on a quarterly basis, what's the TRP going to do?
MR GUDAS: This is, as I understand it, is going to be a point of negotiation. I can't imagine it being on board on a one year basis.
THE SPEAKER: But it's going to be on a case by case?
MR GUDAS: Yes.
DR. BUCHANAN: It will be whatever deal you propose to us. Propose what you want to do.
THE SPEAKER: There's no structure.
DR. BUCHANAN: And know that if you propose that we fully finance the first 15 years and you're going to fully finance the next year that likely will be not competitive.
MR DUNN: There's a very clear answer in commercial military

integration partnerships because if you look at the statute it says 50, 60, 70, 70, 70. Clearly you have to match on at least a yearly basis to comply with the statute. In most of these programs we're only talking about 18 to 24 month program, so probably it going to be yearly.

THE SPEAKER: If you have an intellectual property you want to count as matching, the value of that as matching funds under the description of sunk cost. In the earlier meeting part of that was paid for with Federal dollars, part of it paid for --
MR DUNN: I don't think you're problem is the funds matching. If part of it was paid for with Federal dollars probably the Government already has royalty free paid up license rights. If it's not true then if you own the intellectual property and this is true, this is true of intellectual property, this true of equipment sitting on your floor, if you're a university or a nonprofit and you've got a Government contract, the Government bought you something but vested title in you, we're not going beyond the title of that property.

THE SPEAKER: Okay, last question. Time frame between Phase I and Phase II, do you have an estimate for SBIR?
DR. BUCHANAN: As quickly as you can get it in, just like in the regular program, six months.
MR GUDAS: SBIR is run exactly like all other --
DR. BUCHANAN: No difference.
MR GUDAS: -- SBIRs. All we're doing is segregating the funding and putting the technology focus and putting it out under this announcement. Everything else you'll see exactly the same.

DR. BUCHANAN: Let me, while the next guy is coming up, let me restate, and I hope in as accurate a way possible the sunk cost argument again but in a way that is at least more understandable to me and therefore you can take your choice. Per se we're not going to give you credit for sunk cost at all. However sunk cost generally results in intellectual property which you can bring to the table and will be valued as per its value to the venture being proposed. Let's say you devoted $10 million to the writing of a piece of software and it didn't work. Then it's worth nothing. Let's say you took that $10 million and develop a piece of software and it did work but its worth to the program you're proposing is only $500,000. Then you're going to get $500,000 worth of credit for it. But sunk cost without result in intellectual property is of no interest and is of no value to these. Sunk cost where it results in something of value will be given the value that it has to this project. Have I just confused everybody?
MR GUDAS: Let me use Lee's comment there to talk about the implications of this. We've been to four cities so far, literally thousands of people. There have been 50,000 of those red books delivered. This is going to be a massively over subscribed program which means that the selection criteria before that you saw today in technology creation are all going to be very competitive and if somebody doesn't hit one of those four and hit it well, I don't think you can realistically believe in your chances. Again I want you to understand this. When the questions come around the fringes and that sort of thing, really ask yourself how do I appear in a very fair, very rational, very disciplined publicly defined selection criteria in an overly subscribed program, and I think that will lend a note of realism to your assessment. I would hope that you would take that. In the advanced technology program we've seen the very same thing, and those who nibble around the edges or who may try to gain this as we said earlier don't did well, and I think the same experience will apply here. So we're encouraging you to look at all four of those selection criteria, particularly those that are nontraditional, the commercial base

factors, get serious about those, put a good deal of effort into those and you'll give yourself a chance. End of sermon, next question.

THE SPEAKER: (Unintelligible) from Shell Oil Company in Houston. We are creating quite a bit of momentum to try to meet the deadlines for your proposal, and it will be a waste to have to wait a few months, three to six months before you can actually start a project. How do you look at funding done under a project proposal but already started before you have actually accepted the proposal for funding? Does that impede the funding afterwards or would you count every effort made under that proposal after it's been submitted?
MR DUNN: We're not going to recognize for cost sharing costs that are incurred prior to the award date. Now, if you're -- just like the sunk cost question, if your efforts have actually resulted in something, if you have actually created intellectual property -- which is unlikely in a few months -- or if you have acquired personal property, goods, and they have some value to them and they're being contributed to the program then your early funding may result in in-kind contributions that are valued and included in the cost sharing.

THE SPEAKER: Rama Rau (unintelligible) Services. My question is if a TRP proposal qualifies as a SBIR would it become considered in both?
MR GUDAS: No.
DR. BUCHANAN: No, submit to one or the other, because the requirements of the proposal are different. We said that the SBIR proposal is being conducted under SBIR rules. I believe the page count there is 25. I believe there's a certain format that has to be in place and it looks like an SBIR proposal. If something comes in looks like an SBIR, it's going to be an SBIR proposal.
THE SPEAKER: Can you submit two proposals then?
DR. BUCHANAN: Sure, as many as you want.

THE SPEAKER: Marshall Banker, Scientific Applications. The discussion earlier indicated that the technology development would be taken pretty much through a prototype or a grass port or some sort of phase. The history has been we invent technology, the Japanese commercialize it, invest in it and then we lose it. Is there going to be any connectivity either within this program or subsequent year programs to pilot production or large scale production, you know, industrial assistant?
DR. BUCHANAN: 25 percent of the selection criteria for every proposal will be your commitment to productize. If you have no commitment or capability to productize, you won't show well.
MR GUDAS: Again I'd like to emphasize that point here that 25 percent requires you to state how you're going to reach the commercial market. It doesn't state that you must reach the commercial market. It states that you need to tell the selecting panel how you intend to move this technology out; that is, the potential teaming arrangements, licensing, that sort of thing. In other words, you need to think that through.
THE SPEAKER: Okay, for example, just to take one further case, I mean you could be in the commercial market in a niche where you're producing say a couple of thousand a month and then you could be in the commercial market where you're making a million a month.
DR. BUCHANAN: That goes to pervasive impact.
THE SPEAKER: Right.
DR. BUCHANAN: I mean you're going to have to show pervasive impact. A couple of thousand a month doesn't sound very pervasive.
MR GUDAS: Unless of course they're super computers or --
DR. BUCHANAN: Space stations.

MR GUDAS: We've been together a long time.

THE SPEAKER: Wayne McCloud, North Texas R&D Corporation. If you would, discuss a little further the SBIR program. In the answer given to the last question is the same evaluation criteria going to be used?
DR. BUCHANAN: Everything is exactly the same except the date of solicitation, which in our case will be the 14th of May.
MR GUDAS: In other words, the SBIR criteria will apply.
DR. BUCHANAN: Right.
THE SPEAKER: But you're going to evaluate it based on proposal.
DR. BUCHANAN: SBIR criteria. Everything is exactly the same except for the date of evaluation and the address to which you send it.
MR GUDAS: All we've done is deliver 7.2 million to SBIR competition and it has its own starting date.
MR DUNN: You don't look up the *topics in the* DOD general SBIR book. The topics are the topics that you saw up there on the screen.
THE SPEAKER: Are you going to require as part of that SBIR the dual-use in the teaming and all of that?
DR. BUCHANAN: No, everything is exactly as the traditional SBIR program. No other rules apply.
MR GUDAS: Everybody raise their hands in the air. I promise that I understand that SBIR is not different.
DR. BUCHANAN: We don't mean to be flippant here. Obviously the reason we want to do this separately is to attract small and medium size businesses into the TRP program and to grow a whole host of proposals that make their way from Phase I to Phase II and ultimately -- this is the big deal -- into Phase IIIs within the TRP program. That's why we're doing all of this. It's to give the small businesses for the first time an avenue to a Phase III proposal.
MR GUDAS: And the advantage of a process they know well. The SBIR process will not be changed for this. Okay next question.

THE SPEAKER: Rod Balkey, Bell Helicopter. We're focusing on the technology development area and I understand from this morning's session that if you have two elements of technology that complement each other you can submit two separate proposals under that. Is it also possible to submit associate proposals, one under technology development, one under technology deployment?
MR GUDAS: Yes.
MR. LONG: You can do that but in your summary section you should show or somewhere within the proposal show how all of these proposals are related and how the combination of the three gives you a better product, but they should be in the individual proposals pointed to each one of those dots.
THE SPEAKER: Now, on the time phasing in the deployment logically it would fall after the development. Is that acceptable?
MR DUNN: I think we may be mixing apples and oranges. In technology development a logical consequence is productization which may be another way of saying deployment. The deployment programs that we're talking about here remember are things like manufacturing, extension assistance and access to technology. They're really things that are sort of different than developing technologies up the R&D chain towards productization. So I'm not sure that the deployment that you're talking about deploying the fruits of your technology development as a single product is the same emphasis as the deployment part of the TRP program.
THE SPEAKER: Okay. Now, can you couple with these associate proposals an SBIR proposal?
DR. BUCHANAN: You could. I don't know that it would make any difference. I mean the SBIR program is so separate and self-contained that I don't know that -- I mean Phase IIs are dependent on Phase Is. The only possible thing I could imagine that you

were going to do is say -- well, I can't imagine how that would --
THE SPEAKER: They would be evaluated separately then?
DR. BUCHANAN: Yes. The SBIR will be definitely evaluated according to SBIR rules.
THE SPEAKER: Okay, thank you.
MR GUDAS: Next question, please.

THE SPEAKER: George Muller, IBM. On Page G-2 discussing in-kind contributions from Federal agencies other than DOD to projects and those programs that have matching requirements in terms of DOD funds. Could you explain that with an example? It's item No. 2 under guidelines in the middle of the page, in-kind contributions from Federal agencies other than DOD. Right in the middle of the page.
MR DUNN: The question revolves around this word. "The following principles apply guidelines: In-kind contributions may include in-kind contributions from Federal agencies other than DOD to projects in those programs whose authorizing statute states matching requirements in terms of DOD funds rather than Federal funds." And I think the confusion may arise because I think it was stated, I think Tom Starke stated in answer to a question in the general session that all laboratory contributions were neutral. Is that the genesis?
THE SPEAKER: That's part of it. I was trying to look at an example where I have a project, I put a proposal in and in that proposal I am working with a lab and trying to determine if my working with the lab qualifies for in-kind contribution.
DR. BUCHANAN: Let's say you come to a laboratory and you say laboratory you've got some neat technology. I'd like to turn it into a product or I'd like to develop it in the direction of a product to establish its viability. That total effort is going to cost some money and you propose that money to the TRP, and you put down a million dollars of non-DOD money and the TRP will put down a million dollars and the lab is interested enough in playing with you that it says, okay, I'm in for a million-two of in-kind. I'm not going require you to match that lab's million as well as my million. That lab's million is neutral. My million has got to be matched by your million.
THE SPEAKER: But where does in-kind contribution count then from a Federal lab?
DR. BUCHANAN: It is within the law that DOE money could be used to match DOD or TRP money. It is in the law. You may propose to do that. My statement this morning was it's difficult for me to imagine how such a situation could satisfy the further criteria for selection that there be both pervasive impact on the economy and a commitment to productize given that the labs can't productize anything. That's the caveat.

THE SPEAKER: Okay, two more. The one just following that. I didn't quite follow this morning the IR&D discussion.
MR DUNN: The basic point is that the definition of IR&D, that is to say Independent Research & Development costs which can be reimbursed through overhead charges on Government cost reimbursement contracts. The definition of what those are excludes work that is covered by the statement of work on contract. Okay, that's the basic principle. It says that the Federal Government is funding something that you may put your money -- if you have a cost type completion contract with the Federal Government and it's a million dollar contract and you get to a million dollars and you're not done and in order to deliver it you put in $250,000 of your own money, you cover the overrun cost, those funds are not eligible to be treated as IR&D, okay, and if you put them into your IR&D account and they get reimbursed by the Government you go to jail, okay. We can write a statement of work under an agreement where we

contribute half the money and you contribute half the money and you can allocate your half of the money to your IR&D account and it can be reimbursed by the Government.

THE SPEAKER: Last question, once we get beyond today and the solicitation comes out, how do we get answers to questions like this and once the solicitation comes out to the time of proposal how do we get answer to questions?
MR GUDAS: There's several avenues. The most straightforward avenue is to, in my opinion is to track down one of the technical experts who are identified in the package of lists that you have and chase down an answer. The alternative is the 800 dual-use number. If you call that number, they will direct you to an individual who can answer your question. What we're encouraging you to do is to use these lists effectively and you'll develop relationships with the people. Everybody on those pieces of paper has been fully trained in TRP and in legislation and in execution and is prepared to answer your questions or to chase it down to get an answer.

THE SPEAKER: Ken Sullivan, Microcraft, Inc. My question is directed at the gentleman from NASA over there, aeronautical technologies. If we develop a propulsion system do we have to have, to tie a vehicle to it? Can we just -- we have some ideas for a propulsion system. Do we have to take it as far as tying a vehicle to it? Can we submit it without a vehicle?
DR. NORWOOD: I don't think there's any requirement to assign it to a particular vehicle. The research programs that we have in NASA and aeronautics have several different technology development components to it and to the extent that we're looking -- what we're trying to do is get the technology to market or to a stage that allows it to be easily marketed so it can fit in a vehicle, a vehicle that could exist now.

THE SPEAKER: We can put it in a phase down, downstream make that Phase II or something like that?
DR. BUCHANAN: All of a sudden I'm nervous you're talking about the SBIR program. Is that what you're talking about?
DR. NORWOOD: No. You mean by phase, the second phase of it is to put it in a new vehicle --
THE SPEAKER: Right.
DR. NORWOOD: -- an F22.
THE SPEAKER: Right.
DR. NORWOOD: Well again if you look in the criteria, the evaluation criteria, clearly one of them is commitment to get it commercialized, and so we're going to have to look at that as well as pervasive impact. So the answer to the question specifically is no, you don't have to relate it to a particular vehicle. On the other hand the other two, the second -- excuse me, third and fourth criteria are going to have to have a good --
THE SPEAKER: Have an intent?
DR. NORWOOD: Yes.
THE SPEAKER: Okay
MR DUNN: In other words, not just an intent. You have to have a good story about how you're going to have a pervasive impact. If you develop an engine and you don't know what you're going to do with it, it's kind of hard to convince us that there's a pervasive impact and if you don't know where you're going to go with it, your story about how you're going to productize it is going to be a little bit thin too.
DR. BUCHANAN: And let me emphasize that we've been a little cavalier about our use of term of productization and commercialization. We try to use productization to imply specifically that we're looking for a product, not necessarily always a commercial product. For instance, on a spin-on situation that would be a defense product, not a commercial product. Although a commercial product is clearly a spin-off. Just so it doesn't confuse anybody.

THE SPEAKER: Dan Grossman, McDonald Douglas. I understand how DOD functions neutrally but if we were to get in a commercial military integration partnership with a Air Force or Navy depot would that also be considered?
DR. BUCHANAN: You cannot use Federal dollars as cost share.
THE SPEAKER: But that would be still neutral, would it not?
MR DUNN: No. If you saw the matrix grid when Bob was putting his slides up in the statute on commercial -- commercial military integration is different. It has very steep funds share and it also says if you get help from a DOD lab the value of that is included in the Government share. So those are the most onerous cost sharing requirements in the whole, among the whole eight programs. But also note that a single firm can -- the partnership doesn't have to have anybody other than one guy. So if you have something that you're planning to go do right now on your own buck, you could come in under commercial military integration and get 50, 40, 30 percent of that paid for by the government, if you can demonstrate the four criteria for selection.
THE SPEAKER: Okay. Under dual-use advance technology -- critical technology dual-use would the depot funds be considered like funds?
MR DUNN: Funds. You mean funds flowing across the interface to you?
THE SPEAKER: Any contribution that they would make to you.
MR DUNN: No, tell me funds or in-kind contribution.
THE SPEAKER: In-kind contribution.
MR DUNN: Neutral.
THE SPEAKER: It only says DOD laboratories. It doesn't mention any other DOD.
DR. BUCHANAN: But it's all Federal funds though.
THE SPEAKER: Okay, but it would be neutral?
DR. BUCHANAN: It would be neutral.

MR GUDAS: You have 15 more minutes. We'll try to shorten our answers.

THE SPEAKER: Ed (unintelligible) with ARCO continuing the same line of issue with national labs let's presume that -- and I think you may have just answered this. Let's just presume that the national lab contributes nothing but some technical oversight, some information they've already developed; is that sufficient for a partnership?
MR GUDAS: The firms that must be in the -- to meet this statutory requirements are commercial firms.
THE SPEAKER: Right, but I'm saying a commercial firm with one national lab.
MR GUDAS: Two commercials firms.
DR. BUCHANAN: An eligible firm cannot be a national lab. There's no way I can -- through any machination -- I mean they would like that, but I can't ever regard a national lab as an eligible firm, regardless of whether it's in-kind or cash.
MR DUNN: No. The mix that you have just presented us with does not qualify for any of the four technology development programs.

THE SPEAKER: Okay, I misunderstood that. Let's presume that we want to fund something through the national lab in addition to some technology that they're already working on. That funding, could we do that funding under something other than CRADA?
DR. BUCHANAN: You're going to send money to a national lab?
THE SPEAKER: Right.
DR. BUCHANAN: The way to do that is through CRADA.
THE SPEAKER: Is that the only way to do it?
DR. BUCHANAN: This is a national lab in the sense of DOE?
THE SPEAKER: Yes or DOD like --
DR. BUCHANAN: First, does this have anything to do with TRP?
THE SPEAKER: Yes, it would be part of the TRP program.

MR DUNN: Then you can send it through our funding vehicle.
DR. BUCHANAN: Right.
THE SPEAKER: Okay, thank you.
MR GUDAS: Yes.

THE SPEAKER: John Gully, University of Texas. There's a program here in Texas called the Texas Advanced Technology Program that provides funding and the due date for proposals for it is the middle of July, and they have kind of the same time frame as you do is the point, and they are interested in cost sharing their program with your program. Can you turn in a proposal to TRP where the cost sharing is contingent upon winning both?
DR. BUCHANAN: Sure. Now if you don't win then if we select you we don't fund you.
THE SPEAKER: Right. Would you communicate during the process or would you both do it assuming you're going to win both?
DR. BUCHANAN: Whatever you tell me in your proposal, if you tell me you're an eligible firm, if you tell me you've got fund matching, I'm going to believe you until you get selected and then I'm going to look close, and at that point I'm going to come back here and say did you win? And if you say no, I say bye, or get the money from someplace else. I mean I'm not going to foreclose it.
MR DUNN: And the other problem you have is if their award date is sometime way out in the future, I'm not sure how long we're going to wait either.
THE SPEAKER: Okay. I think they're about the same.

THE SPEAKER: Cliff Drummond from Parker. About how much -- do we have a lot of flexibility for the length of the programs we might propose to you, sort of running from 12 months to 60 months?
DR. BUCHANAN: You can propose for as long as you want, as long as the proposal captures first a 12 to 24 month period and then subsequent periods of 12 to 24 months a piece, and you can propose infinitum. It will all be options to be exercised or not exercised by later appropriation.
THE SPEAKER: What is the length of the commitment of the Government to the TRP program?
DR. BUCHANAN: 12 to 24 months.
THE SPEAKER: No, the program in terms of request to the Congress. How long will TRP as an initiative of the Defense Department be here?
MR DUNN: All of the eight statutes are permanent legislation.
THE SPEAKER: That's right. They're in last year's --
MR DUNN: They're in the U.S. code book. They're there. They're not likely to get repealed any time soon. In addition to that we heard -- I'm not sure which of the capitol officials said it, but there is reason to believe that a large, that the technology development programs will be in the President's budget next year at a substantial -- Lee, I guess you have a better feel for this.
THE SPEAKER: Well, the '94 request is already on the Hill, right?
DR. BUCHANAN: The '94 request is on the Hill. There was no money requested out of the DOD budget specifically for any of these programs. There was a lump sum in the Secretary of Defense' request of $377 million for dual-use technology development efforts, but it was not done program by program. I don't think there is a request on the Hill from any of the five agencies for specific program funds.
THE SPEAKER: What does that mean then? If there's not a request on the Hill for '94 for what now you're spending about 470 or so million out of '93 dollars.
DR. BUCHANAN: I don't know. I mean, we have requested money for dual-use technology development efforts. It would be up to the Secretary of all of the five agencies how those funds when appropriated get applied to these options.

THE SPEAKER: I'm confused. The bills are on the Hill. The request has gone forward to the President.
MR DUNN: First of all if you're talking about follow on funding for an award that you receive under this year's TRP, I think what I heard Lee said is that there's money for dual-use technology work and the program that you were awarded could, if you had the options built into it, could be awarded with the whatever --
DR. BUCHANAN: Oh, maybe this helps. It is not required that your option, any of the subsequent options be funded out of any of the programs here. It can be funded out of any appropriation. That's the whole reason we're asking for proposals in that way.
THE SPEAKER: Well, I'm just a little concerned about how far in the future the request from the administration will be there if there's already, with respect to '94, some uncertainty as to whether the request for these programs has gone to the Hill when the budget went up two or three weeks ago or am I not understanding something.
MR DUNN: The eight statutory programs are just statutory restrictions.
THE SPEAKER: They define a program.
MR DUNN: They define a program, and this year there was money associated with them. Now, what there is an administration request for money in the same general area that these programs, these statutory programs exist and as of this moment there's not a direct association between those moneys and these programs and if you're asking will there be funding for things that were like -- for either actual things that are awarded under TRP or similar things in the future, I think the fact that there's 300 -- I forget the number -- $349 million.
DR. BUCHANAN: $377 million.
MR DUNN: -- $377 million in the President's budget for dual-use technology partnership, and I don't speak for anybody else but I infer from that there's money available for these kinds of programs. Either those awarded this year or similar type programs in the future.
DR. BUCHANAN: Watch for the appropriation to see how they're appropriated.
MR GUDAS: There's clearly some uncertainty. So what is new. Are there any other questions? We had some folks here that were raising their hands.
DR. BUCHANAN: They left. They're all getting tired.

THE SPEAKER: I've got a question here. Traditionally -- Chris Hanson from Wright Laboratory, Wright Patterson Air Force Base. I'm concerned with the issue of accountability concerning the value of the dollars invested by the Government. What system is set up to ensure a return on the government's vested interest as far as...
DR. BUCHANAN: Same system as all our programs. We'll have measurable milestones, we'll have performance metrics --
THE SPEAKER: Well, my understanding is there's no formal contract. It's some kind of an arrangement. What kind of legal tools do you have to leverage against non-performance?
MR GUDAS: Let me address this point. Again drawing from the Department of Commerce experience in managing programs that are similar commercial focus joint funded. There is a natural drive here for the companies who participate in this to watch their own progress very closely because they're putting up half the funding, so that's step one. Step 2, the management will be sent to one of the five participating agencies. There will be a program manager assigned from that agency and an ARPA program manager. Those individuals will set up performance milestones and will be tracking the progress. So in our experience in the Department of Commerce a program that fails is more

likely to have its plug pulled by its own company because they're investing half the money.
MR DUNN: Let me answer your question. Are you from Wright Labs?
THE SPEAKER: Correct.
MR DUNN: We have a partnership in our '92 program involving NASA, Lewis and Wright labs, and in fact the partnership was the inspiration of Wright Labs. They basically formed it and handed it to us and when we were drafting the agreement I wanted to put in a veto provision in the management structure so that the Government could keep industry from doing things that industry wanted; and the director of material, Vince Russo said, Rick, don't do that. He said we've got the smartest guys in the country pulled together to do this thing. If they can't figure out how to do it, we in the Government sure as hell don't know how. He just had the first meeting of that group whether the Government people went down to see what industry was doing. I was on a video conference six weeks or so ago and after it was over Vince got on the screen and he said, Rick, I want to tell you. I just went down to Orlando. We had our first meeting of the consortium and he said they did everything right. We didn't have to say a word. It's a new way of doing business

THE SPEAKER: Bruce Parks from Textron Specialty Materials. I'm a little confused between the NIST ATPs and this technology development in terms of how far you take the technology. In the ATPs it was characterized as pre competitive but in this one we talk about products and I wonder if you could help me there.
MR GUDAS: I think, in my own opinion having worked in both either program will support the development of products. I think there's almost an exact match at the end point of both programs.
DR. BUCHANAN: You know, the fact that you're talking about teams and partnerships almost assures that in most cases because technology development that's going on among competitors when it's a horizontal partnership you'll see that partnership, you know, disintegrate the instant that technology becomes competitive and each guy, you know, tucks it under his or her coat and runs off and tries to do it. So there's a self limiting aspect to a partnership and we're urging partnerships here. I think the ATP is not strictly along partnership lines but the intent is the same. But what is different here is we're talking about dual-use where you need both the military and a commercial affiliation and ATP is, of course, not necessarily dual-use.
MR GUDAS: Are there any other questions? We'd like to thank you for your patience. You've been a wonderful group.

LOS ANGELES REGIONAL BRIEFING AT THE BILTMORE HOTEL, FRIDAY, APRIL 16, 1993.

We're going to go to the question-and-answer period again. And so if you'll line up the microphones, we'll try to maintain some order and get as many of your questions answered as we can, with the limited amount of time that is available to us.
Mr. Lee Buchanan has rejoined us.
MR. GUDAS: Can I just remind everybody we drop dead at 5:30. So if you will compress your questions, and the time right now is very important. So let's move this very aggressively.
THE AUDIENCE: Can you speak up we can hardly hear back here.
MR. LONG: All of us?
THE AUDIENCE: You.
MR. LONG: Well, I guess you can go back and start with slide number one. I don't know what's wrong with the mic. It seems to be cutting in and out. I'm in the same position each time. I think I am. But we'll try to do better here. Let's start with the first microphone on my left.

THE AUDIENCE: John Brosell with CalStart. A couple of times in the presentation today you encouraged us to be creative, that there aren't too many rules here. I was wondering in regards to the technology development focus areas, you outlined some specific technologies. If we have others that are not specifically mentioned, can we apply those as well?
MR. LONG: Yes, you should. I don't think there was any intent to make it absolutely exclusive. Those are the areas that we recognize as areas that needed work. If you choose to do something else, if you have an outstanding idea in another area, they would surely be welcome. One thing you have to do is tell us why it's important. Why it should be included among the things that were already listed.
DR. BUCHANAN: Maybe it would help for you to understand how those technologic focus areas were derived. This did not come down from any tablet. What happened was early on in the process, I asked the group of the five agencies to give us, based from the entire field of participants, give us proposals for activities that were dual-use related. They thought they were going to get them funded, so they wrote up a lot of these things.
MR. LONG: Now you're getting his side of the scoop, I didn't give you that detail --
DR. BUCHANAN: And when they all came in I got 678 different ideas. So we put them all on the table and began to push them into associated piles, pushed the piles into piles, and those piles into piles, and at the end of the day there were 11 big piles and a bunch of little piles. I pushed the little piles on the floor. And the big piles are the ones you see there. All right. So what you see are technology focus areas that have sort of two derived features. First of all, they're known to be influential in a dual-use way. Second of all, we know there are good ideas there. We're often asked questions like, "Why didn't blank get judged as a technology focus area, it's very important?" And the answer was, "There weren't any good ideas." If you have good idea, not a good intention -- I mean, we had a gentleman who was adamant we ought to have biofuels as an area. And my question was, "Okay, what's the good ideas in biofuels?" Well, he didn't know of any. But he we needed to have a lot of work in that area. We're asking for good ideas. If you have good ideas that aren't on that list, the burden is on you to show us why it's a good idea, and why it's influential.
THE AUDIENCE: I was talking about not only the focus areas, but the subcategories within the focus areas.
MR. LONG: Same --
DR. BUCHANAN: Same applies.
THE AUDIENCE: Okay. Thank you.
MR. LONG: Second mic.

THE AUDIENCE: Thank you. Bill Dilatory, Research Opportunities. Will the SBIR Proposal Review Committee be the same as the one for the larger TRP program proposals?
DR. BUCHANAN: I don't know.
THE AUDIENCE: I'm assuming it will be similar in makeup and that will represent the five agencies?
DR. BUCHANAN: Yes.

THE AUDIENCE: Back into the TRP program, then, it's certainly the responsibility of the proposer to pick its program, and its activity, and so forth. But do you actually designate that within the proposal?
MR. LONG: The proposal should focus on one of the dots.
THE AUDIENCE: You state such?
MR. LONG: Yes.
THE AUDIENCE: There isn't some default that you guys go through to toss it in a different barrel if you feel otherwise?
DR. BUCHANAN: No. There will be a process that will be obvious in the solicitation actually that we're working on -- what do I call them -- cover sheets, I can't call them forms, there will be cover sheets. And you'll mark which dot you're after. It probably

came out earlier, and it's worth repeating, if we get a proposal and it's against a dot, and that dot is fully subscribed, or it would be better in a different dot, we're going to come back and negotiate with you. May move you around or come back, if your cost sharing schedule can be accommodated under the dot that you proposed. We're not going to throw anybody out because they're not responsive.
THE AUDIENCE: So you're saying you'll notify the proposer of that intent or action?
DR. BUCHANAN: Right.
MR. LONG: If you have a good idea.
MR. LONG: Center mic, front.

THE AUDIENCE: I am (inaudible), University of Southern California School of Medicine. We have participated in a number of ventures with the industry in trying to apply technology to medicine. And I regret to say many of these ventures have failed on their way to market, not because they were not good ideas, but because of the gaps that fall in between the agency funding. The process gets stuck. One good example is the argon laser that took 20 years to get to the market in a reasonable form. We have many have those examples on the cue. Now, the question I'm going to ask is based on this, in the sense of Dr. Buchanan was saying so precisely, technology transfer is a whole compound of small steps and complexes. What we're trying to do is identify matching funds for those areas where there are no specific funding by any agency, and therefore trying to stimulate the continuous flow of the process that usually gets stuck in sometimes trivial processes. But that's where it dies. What would be the possibility, then, of allowing this matching funding from the university to try to cover this gap in the process?
MR. GUDAS: I guess my question is what are you proposing? If you're proposing a transfer of the technology or further development of technology, we're not really requiring you within this program to transfer it to commercialization or productization. But what we're saying is you tell us how you intend to. We're really supporting the research. My feeling, and a little bit of worry, is if indeed the focus of yours is to bump something you developed to the next step, it probably is going to have a technical content that others at higher risk might have.
THE AUDIENCE: I guess the focus wasn't to this area. Very often you have the trauma care, that's one of the areas you have outlined. You need to work with patients, or something, to prove that a good idea indeed is actually feasible (in audible). There is an area (in audible) where or (inaudible) how do you find this work involves people, involves facilities, medications and you need to somehow support, whether by recognizing the ability or by providing funding additionally --
MR. GUDAS: Again, the mechanism of the proposal is laid out for you. We're looking at 18- to 24-month increments. I don't think there's anything hidden. Quite frankly, you can't find something that isn't there. You're asking us to commit to something we can't do.
DR. BUCHANAN: I think the kind of activity you're describing, which to the extent it goes to the establishment of viability, is certainly within the scope here. And not only are university or somebody matching funds urged, they're required. What we're not going to do is worry about is putting together the pill bottle, worry about the package, pay you for the marketing, or advertising, the rest of that stuff. Whoever puts puts up the matching funding is doing it at their own self-interest. They're going to get something out of this. There's something that will be ultimately applied. We want to establish -- we want to develop that product to the point it will allow you or somebody else to put the rest of money in. That, to me, defines viability.

MR. LONG: Try to keep your questions focused and as brief as possible, because there are a lot of folks who have questions, and we again have a limited amount of time. Is there a second mic back there?
THE AUDIENCE: Yes. There is.
MR. LONG: Go ahead.

THE AUDIENCE: My name is Mark (inaudible) with Biomagnetic Technology of San Diego. Two quick questions. One, do you have an optimal award size you're looking for here, or at least a minimal award size that you're giving somebody on proposals?
MR. LONG: No.
THE AUDIENCE: The second question, then, is are you going to wait until you have all the proposals before you decide on accepting proposals, or are you going to be kind of doing it on a rolling basis before July?
DR. BUCHANAN: No. the proposal date is the 23rd of July. You know, we'll probably announce proposals selected early before we announce proposals selected later in the process. But there won't any announcement before July 23rd.
THE AUDIENCE: You will be making decisions that come in before July 23rd?
DR. BUCHANAN: I didn't say that. I said there wouldn't be any announcements before the July 23rd date.
MR. GUDAS: My experience with the advanced technology program is that proposals will arrive between 72 and zero hours before the deadline, 99 percent of them will come in. And this is exactly the experience we acticipate here. Proposals arriving a month early will not be put into an evaluation process to get ahead of the cue.
MR. LONG: First mic here.

THE AUDIENCE: Scott Andrews from TRW. I have two questions related to companies, large defense contractors teaming with other government organizations, like some of the labs. The first question is what kind of funding mechanism would you anticipate would be used to fund the labs? Would it be separate funding transfers, or would it be a subcontract from, say, me as a client to one of the labs?
DR. BUCHANAN: What makes sense?
THE AUDIENCE: I guess it's open. Second question is with regard to the same labs, how do we understand they're matching funds? I presume that some of the labs are doing work that could be considered to be comparable or related and therefore have matching associated with it. Are there any restrictions or limitations on it?
DR. NORWOOD: A number of the labs have programs that be would be consistent with the type of effort that you or anyone else might be proposing. So there are sort of two possibilities. One possibility is that the contribution of that particular lab is neutral, when looking at the TRP and partnership contribution. The other possibility, and it is only a possibility, because you have to look at the value added of having a lab actually being a member of the partnership with TRP funds matching it. You have to, in that case, be willing to show, you must show that the value added of the lab as matched by TRP, TRP funds, really gets to the issue of productization, gets to the issue of transfer and technology in a substantive way. It's part of the pervasive impact area. So labs, national labs, can participate. But you just have to show why it's an advantage, and how that participation helps your particular proposal.
MR. GUDAS: With regard to your funding mechanism, I took a long question at the break. If you take money from TRP and send it to a lab, you've got to match it. If the lab volunteers to collaborate with you on their dime, you don't have to match their dime. I couldn't get a colleague in the break to understand that point. And it's a very important point to get. In other words, if you choose to fund whatever instrument is fine, you have

to match the dollar you receive from TRP. If they choose to participate with their funding, it is neutral.
MR. LONG: Back mic, right side.

THE AUDIENCE: John Julius of HaverTech Corporation. With respect to the reviews, since this program is likely to be repeated, and therefore if nonfunded proposals might be submitted again, I'm particularly thinking of the SBIR's, I would like to ask what is the quality and extent of the critiques that will be offered to the refused proposals?
DR. BUCHANAN: Wow. You know, we're not going to be in a business of furnishing you an instant written review of these things. We just can't, with the number of proposals that will be around. We are going to try to work with you, for those that ask for a review, to tell you how it was reviewed. But do not expect a formal review statement or review from us on any of these programs.
THE AUDIENCE: I think that is a weakness at this point. You get greater strength from the cooperation over time.
MR. LONG: Right mic.

THE AUDIENCE: Dave Jacobs from (inaudible). I own a rather large business. I would like to ask a question regarding SBIR, so these two questions interlinked. One is, what are your feelings about a small business competing with a large business, and what are the rules or guidelines behind that? The second question, before you answer the first, if the small business wants into enter into phase two and has done equivalent of phase one outside of the reaches of government funding, is that that possible? And, of course, again linked with the team member who happens to be large business. Do I make myself clear?
DR. NORWOOD: Are you talking about within the SBIR program?
THE AUDIENCE: Within the SBIR program, yes.
DR. NORWOOD: On the charts that were shown there are regulations or there are rules about a small SBIR firm teaming with a large firm that puts the combination outside of the bounds of the SBIR program. So you have to be cognizant of the fact that you must be -- the resulting team must still live within the bounds of the SBIR unit. So that is the point you need to --
THE AUDIENCE: The second part of my question is can a small business enter into a phase two, or propose a phase two program, without having any prior history of funding under phase one of the SBIR program?
DR. NORWOOD: The SBIR program, TRP, Technology Reinvestment Project, will be run the same as any other SBIR programs, which means you start in phase one. If you're successful, you move to phase two.
MR. GUDAS: Would everybody put their right hand in the air and say the SBIR is not different. Please. Thank you.
MR. LONG: Yes. Back microphone.

THE AUDIENCE: Jim Lattimer with Hughes. In some weeks you're going to receive several thousand proposals. After you receive these, you're going to go through your triage, and ultimately your selection process. After you get done with these, you're going to have ten proposals that you have accepted. Presumably the sum of monies after negotiations will be equal the sum of your budget, more or less. If I now took these and made a histogram of distribution of the proposals versus the amount of money for each one, I would get some kind of distribution curve. If this were some other type of scientific data, I would like to not only know the number, which obviously you don't know at this point, but you probably have some information on some other statistics such as this. And you might even know something about the distribution curve itself, noticec whether it's decreasing, increasing, whether you

have more proposals which are small amounts of money or --
DR. BUCHANAN: The answer is I haven't a clue what the proposal of historgrams are going to look like. There are no preconceived notions of who is going to get how much money, or in what amount.
THE AUDIENCE: All right. Question number two, are you supplying us with a list of the names of people who are attending here to help us link up?
DR. BUCHANAN: I wish I could. I'll have to take responsibility for this, and I can't. The reason I can't is because when you call the 800 number, I failed to instruct the operators to tell you that that list was going to be made available to the public. To distribute it now would violate Privacy Act Rights. And I can't do it, especially with my lawyer sitting right here beside me. I apologize for that. It was my fault. Don't blame anybody else.
A MEMBER OF THE AUDIENCE: Can we waive our privacy right on the way out?
DR. BUCHANAN: No. Because I would have to have to make sure everybody on the list signs the same waiver.
A MEMBER OF THE AUDIENCE: Could we call your office and then be put on a list?
DR. BUCHANAN: I cannot distribute the list.
MR. LONG: He wants to make a new list.
DR. BUCHANAN: As a matter of course, we are making this list available to our sponsors.
MR. LONG: Right here.

THE AUDIENCE: (Inaudible) (inaudible). In your evaluation criteria, each category is weighted equally. Are they evaluated sequentially so one category would tend to wash out the (inaudible)? For example, scientific and technical merit taken first, you have to pass through that before you're evaluating the others, or is there a true composite score at the end?
MR. GUDAS: At this time, the actual methodology for the evaluation has not been promulgated. Likely, with this many proposals, it will be a composite slip.
MR. LONG: Center back.

THE AUDIENCE: Elaine Nakamori, General Atomics. I have two questions. The first question is, after the briefing session how do I get my unanswered questions answered?
MR. GUDAS: That's a good question. You know our names. I think it's a serious question. You've got to break into that list that you have. Everybody on that list has been trained, if you will, in TRP wisdom. And those people are your contacts and your sources to answer a question. And, quite frankly, if you don't get a response, keep staffing it and we'll find you an answer to the question. But you've got a list in your packet of those contacts. Those just aren't people who have heard of the technology, those are people who have been trained in the administration of this program.
THE AUDIENCE: Okay. My next question is, assuming I was successful in receiving one of these awards or arrangements, when would I receive my funds? Would I receive them all up front, or would I be reimbursed? Would I be required to report when I made the expenditures and then get reimbursed? And when would my contributions be required? And what type of reporting requirements, what type of auditing would you do?
DR. BUCHANAN: We're going to negotiate all of that upon the award. I think most situations are different. They're all different. One of the programs, in particular that requires cost sharing that is specifically by year will have to have accounting by year, at least. Whether if you require advanced payments or not, all of that will be negotiated at the time of the award. So, I mean, propose what you want to see done.
MR. LONG: Flexibility.

THE AUDIENCE: Ralph (inaudible) from (inaudible.) The item listed there, advanced batteries, what is the relationship to that category and the USABC, the Advanced Battery Consortium, which is part of the DOE operation?
DR. BUCHANAN: Batteries are a technological area; and consortium is a business area. So I am not sure I understand what you're talking about.
THE AUDIENCE: There is no connection between your category and the USABC, basically?
DR. BUCHANAN: They both have batteries in them. If you read the description, the batteries subtopic really refers to batteries. I mean batteries like hand-held portable batteries. Under vehicle technologies there are alternative power sources, or called alternative energy sources, that would involve batteries.
THE AUDIENCE: You're really talking about smaller types.
DR. BUCHANAN: Right.
MR. LONG: Right back.

THE AUDIENCE: My name is Andre Maddox from Truex Engineering. I've got a question on the dual-use. I think 50 percent is only from the defense funds. So I assume that the other 50 percent can be taken from other sources. I think there is a NASA program and authorization of about ten million dollars, they'll let you have 40 percent, while 10 percent comes from the private inidustry. Could I have a proposal where the 50 percent comes from (inaudible), the other 40 percent comes from NASA? And how could I go about doing two proposals? How do I join them together or --
MR. DUNN: If you're talking about the critical technology dual-use partnership, you're mistaken that it's a DOD match. It's a Federal match.
DR. BUCHANAN: But, in general, some of the programs do -- I mean, that is exactly right. Some of the programs do have to do with non-DOD match, correct. Which might involve a NASA or DOE match, that is true in law. You have to ask yourself the following question: There is a selection criteria, there are two selection criteria that are intimately involved with a productization of that technology. If you've got a fully federally funded program, which is what you're proposing, I would have to regard it to be a very difficult task to show any commitment to productization in that event. So you've got competitors. Okay?
THE AUDIENCE: And the second question is, as far as I can determine, the whole deployment part of the thing, the funds will be given to companies to help the companies to do business. But actually no money will go to the firms themselves. For example, Truex Engineering, when we lost the Navy contract, we built a hand-held (inaudible). And the way I see it, since we already built it, and we cannot bid for the deployment program, we're stuck in the middle. So what does the two hundred million dollars do?
DR. BUCHANAN: This is not a program to do all things for all people. We are not in the business of final product development. That was the statement we made several times. You are in a product development mode. You're in a final product development mode. That's not what we're about.
THE AUDIENCE: You're only about developing, not carrying through?
DR. BUCHANAN: That's correct.
MR. LONG: Remember the criteria, one of them is commitment to productization.
THE AUDIENCE: Seems like a waste of the other 200 million dollars in deployment.

THE AUDIENCE: My name is (inaudible). I have two questions. the first one is is there any preference going to be given to organizations who have been funded previously? Is there preference given to them in any way?
MR. GUDAS: By whom?
THE AUDIENCE: By the Federal government, DOD, or NASA, or

anybody? No preference given to anybody?
DR. NORWOOD: No.
THE AUDIENCE: Having spent many years in a university in a position of running a center, I'm curious, I notice you were discouraging foreign firms from particpating. At least I notice in on the intellectual property information. Can someone speak to that? I have some feelings on it myself relative to how you -- I mean, I think it's kind of going to be impossible to keep foreign firms from partcipating. But is there any real blanket decision made not to let them participate? Or how are you all going to handle that?
DR. BUCHANAN: It's in --the law describes in precise detail, that is repeated in the red book, who is eligible. Largely, the eligibility requirements are based on on-shore or off-shore affiliation. I mean that will serve as a prejudice against a few countries. In addition, there is the requirement that is a criteria for selection that there is a pervasive impact on the economy of this country. That will effectively make this program unattractive to other countries as well.
MR. LONG: Back mic.

THE AUDIENCE: My name is Pat Wilkes. I'm one of the founders of Dina Camp Engines. We manufactured -- we have data tested a 200-horsepower very light-weight engine. It does happen to have FAA certification. But we're interested in seeing someone put it in a some kind of a vehicle, such as the Navy is interested in small two-man submarine. But I don't have the resources to go out and find all the people that would have the capability of making such a design. So I was hoping you might have one final meeting where people could be aware that we could all come together and be prepared to exchange ideas, or whatever, and know we could match up at that time. If not, anybody who is a vehicle designer of some sort that would like to purchase our engine, I'll be in the back.
MR. LONG: Well done. You solved your own problem.
DR. BUCHANAN: The meeting was sponsored by the Western Governors Association. And I think that would be an ideal thing to suggest to them. However, anyone who wants to have another meeting on engines can do so right in the back.

THE AUDIENCE: (Inaudible) from TRW. I have a question. The first increment, can you propose options in your proposal?
MR. GUDAS: Yes. The guidance for development is 18- to 24-month increments with whatever number of options is appropriate to complete a proposal that you've developed.
THE AUDIENCE: What I mean, you can have options within the first 18 to 24 months, then a second phase. Is what I'm hearing you're asking for?
MR. GUDAS: You could propose one with 6-month options yes. I mean we're saying the target is 18 to 24 months.
THE AUDIENCE: More with regards to scope, there's not much guidance in the size of the programs. So are you --
MR. GUDAS: Zero is one. And then total amount of funding in that particular column is the other. Okay. Now, you --
DR. BUCHANAN: If You're going to do the bigger proposal, that would be really good.
MR. GUDAS: So what you need to do is to say how is my proposal going to look best against the evaluation criteria. In other words, put down on a piece of paper what you truly want to do, and that will make your proposal look good against all four criteria. Stated another way, we've been around the country and met a lot of people like you. If they don't hit all four of those bogics, all four of those evaluation criteria, they can't hope to but be competitive in an over-subscribed program. Put together a project that makes sense to you to do.

THE AUDIENCE: One other question. With regards to property that is developed as part of a TRP program, my understanding that is a negotiable subject, and that is also -- I would assume, is a subject of the evaluation. So if you're going to hold it very tight (inaudible) --
MR. GUDAS: No. The intellectual property intention of the property is promote competitiveness, in some sense, and the flexibility is the ARPA vehicle, given the program says indeed it can migrate toward the proposer. The details will be negotiated. Again, what makes sense versus our objectives, which are promoting competitiveness. And that's what we're going to do.
MR. DUNN: The most prevasive impact is by spreading the idea around and giving it to everyone. Then that is what you would propose to negotiate. If the most pervasive impact is for you to either maintain the technology as a trade secret or patent it and exploit it with goverment in the commerical markets to the maximum extent possible, that is how we would establish it.
MR. LONG: Second mic, center.

THE AUDIENCE: Charles Power, Research Partnership. My question relates to exploring teams with government agencies. Recognizing (inaudible) some of the agencies involved with the evaluation process. What degree of feedback would we expect from, for example, national labs and (inaudible) another way we would (inaudiblc) proposal and not what somebody at a national lab says?
MR. GUDAS: I would like to answer that. The selection process is going to make absolutely sure that conflicts of interest among delegating agencies are eliminated. We are not going to have the agencies internally staffing, internally advocating proposals that they propose. So we're going out of our way to make sure this will (inaudible).
THE AUDIENCE: What degree, though, of feedback will we expect without putting civil servants on the spot in asking for commitments?
MR. GUDAS: If I run a proposal for TRP, I wouldn't expect feedback until after selections were announced.
THE AUDIENCE: How do we know we are putting, let's say, something in a proposal, let's say a resrouce, that doesn't exist, that isn't utterly absurb?
MR. GUDAS: Up until the time you submit a proposal you have free access to any resource. What you don't have is free access to a, you know, to a free proposal evaluation. Once the solicitation is on the street there would be less of that going on.
DR. BUCHANAN: Are you talking about to the extent to which you're proposing use of a laboratory?
THE AUDIENCE: Yes. Use of a resource exists at a national laboratory, we wished to use that. Could we go and talk to them?
DR. BUCHANAN: Absolutely.
THE AUDIENCE: They won't give us a yes or no how much it costs?
DR. BUCHANAN: I'm assuming they could give you some answer. You shouldn't be inhibited at all from approaching them. That's precisely the reason we gave all those phone numbers as to what degree of commitment they can or cannot make.
MR. LONG: It's up to the laboratory.
DR. BUCHANAN: You will find regretably that some laboratories are self-restricted, and they limit themselves in the ability to work with companies. You'll find others that are not self-limiting. And that's a fact of life. We can't change that. But none of the limitations come from us.
MR. DUNN: I would like to say one thing about that. I don't think anybody said this. If you're reinventing government -- we have to say that once, each of these sessions, we haven't done it, not yet -- everything hasn't changed yet. Not all government laboratories are as open and forthcoming to the use of their facilities as others. And, therefore, there's no standardization in this area. And it's very much dealing with the

particular laboratory that has the facilities. Quite frankly, if you're down to the deployment area, the Federal government doesn't yet have that Yellow Pages. We don't yet have an open book that tells you all the capabilities that are out there in the laboratory system for you to explore. But the deployment part of this project is going to go a long way, I think, to doing that. And the fact we are allowing the Federal laboratories to get involved in this, I think, will force them to start rethinking their rules and their attitudes. While we may not hear it by the 14th of May, I think we'll be moving in that direction:
MR. LONG: Yes.

THE AUDIENCE: I am (inaudible) from (inaudible). Will good ideas in areas that are not on your tech focus list be evaluated on a level playing field with good ideas that are on the focus list?
DR. BUCHANAN: Absolutely. What you're asking, though, is a definition of "good." I've already explained, we've derived that list based on our belief that there were both good ideas and a compelling need, and a compelling pervasive impact to those technologies. If you choose to propose another technology, the burden is upon you to show us that pervasive impact.
THE AUDIENCE: Assuming I can show that, yes. Assuming I show you that, it is a level playing field from that point forward?
DR. BUCHANAN: Right.
THE AUDIENCE: The second question I tried to get answered earlier when the lawyer out of the room. With respect to IR&D, it is accounted differently in the commercial community than in the aerospace community. How would you level the evaluation of that type of in-kind?
MR. DUNN: Pardon me?
THE AUDIENCE: The commercial industry does not burden its overhead onto things like IR&D's the same way as the aerospace community. Therefore, their IR&D dollar gets more bank for its buck. How will you evaluate an IR&D in kind for a commercial firm versus aerospace?
MR. DUNN: We won't how will we evaluate IR&D. I'm not sure what you're asking me exactly. Are you talking about the fruits of IR&D?
THE AUDIENCE: The credit for the cash contribution. If I say I'm a commercial farmer, and I'm contributing a hundred thousand dollars of IR&D (inaudible) the same
MR. DUNN: What does "contributing" mean? Is that personnel costs and materials costs?
THE AUDIENCE: Matching funds.
MR. DUNN: What I'm saying you propose to spend to incur personnel costs and material costs in the amount of $100,000 towards the object of partnership?
THE AUDIENCE: Correct.
MR. DUNN: Then that is part of your cost sharing.
THE AUDIENCE: Will it be judged the same in a commercial firm making that proposal as it would be in aerospace firm, since the amount of work that actually occurs is differently in the two environments?
MR. DUNN: We're not judging work, we're judging cost share. The truth of the matter is, different firms have different capabilities, whether it's IR&D, or anything else. Some people will be more efficient than others. And we are unable to judge that ahead of time. We can only go on their capabilities and what we see in the proposal.
MR. GUDAS: That does feed through back to the commitment to your program. It's very positive.
MR. LONG: Back mic.

THE AUDIENCE: Earl (inaudible). S.R. International. Two questions, the first is with regard to conflict of interest. If we are working, or our firm is working, if I individually am working, on a different program that is funded by the government and has very close goals to something we've proposed to TRP, are there any

guidelines about conflict of interest, of overlap between the two programs, of things we can claim on one versus the other, cost sharing, et cetera?
MR. DUNN: I'm not sure I heard you say anything more than you're already working in a technology area that is similar to something you would propose to in the TRP; is that a correct distillation of what you said?
THE AUDIENCE: Right. Plus potential partnership relationships, and the business side of it as well?
MR. DUNN: I guess I don't perceive a conflict here yet. You have not described it to me yet.
THE AUDIENCE: Well, in terms of looking at the partners, if we were already were working with a firm on another activity, or --
MR. DUNN: Then it inures to your benefit.
THE AUDIENCE: The second question is with regard to the spin-off/spin-on and dual-use categorization. And as I understand the associated proposals, in a given program area I could propose a similar activity under a dual -- under dual-use, and perhaps an associated proposal under, say, spin-on. Looks like the first step -- the first step. Is that a correct interpretation (inaudible)?
MR. LONG: Yes, you could propose to either of
those or both of them. But you need separate proposals, each limited to 35 pages. And within the proposals you have to demonstrate or show why you feel associating those proposals gives you a better product than the individual execution of them.
THE AUDIENCE: Then the question is how do I distinguish between dual-use and spin-on, let's say. The definition seems to indicate a difference between development and demonstration, but for those of us who have done predemonstrations, that distinction is a little nebulous.
DR. BUCHANAN: The real distinction is not development or for demonstration. the question goes to viability. All right? You're trying to develop these technologies to the point that viability either as a commercial or a defense product is established. Now viability is established the moment somebody is willing to put their cash down to bring that thing to production.
THE AUDIENCE: So the distinction is the market distinction --
DR. BUCHANAN: The distinction is an investor decision. That person who will take that, productize it, will do so when it becomes viable. And you will be called to show in your proposal how you have arranged your definition of viability so that someone will be committed to productization. And if you are not in the productization business, then you will need to find somebody who is who will say, "Yep, he gets that far, I'll productize. Here is the evidence to that."
THE AUDIENCE: The ultimate market being commercial, or both?
THE AUDIENCE: I understand that part of it. What I'm looking for is distinction between dual-use technology and spin-on technology.
DR. BUCHANAN: The distinction is a spin-on technology is a development activity towards a defense product. A dual-use activity is one that has neither -- that has both commercial and a --
DR. BUCHANAN: Right.
MR. LONG: More program areas in dual-use, too --
DR. BUCHANAN: To the extent that it's important to make this distinction. I mean, the question is who is the customer? If the primary customer's military, then it's spin on. If the primary customer's commercial it's spin-off. If you can't tell, but surely somebody must be interested, it's dual use.
THE AUDIENCE: Stuart Frazer. Number one, I think I understand, but is there any weight in terms of evaluation criteria among the focus areas?
DR. BUCHANAN: No.
THE AUDIENCE: Question number two, how do you handle government-

furnished equipment, in terms of the matching accounting balance?
DR. BUCHANAN: Do you have title? If it's not yours, it's Federal.
THE AUDIENCE: Fine. Let's say you proposed to use a piece of government equipment, and the agency that owned the equipment agrees to that. Can the value of that equipment be counted neutral?
DR. BUCHANAN: It is neutral.
THE AUDIENCE: The third comment is I want to pass our compliments along to the people who wrote the red book. Because I was one of the people that went back and read the law in 1993, the Federal Authorization Act, and I found it a rather painful process. So anybody who put that document into your document deserves a round of applause.
DR. BUCHANAN: To those of us who endured the pain, thank you for the compliment.

THE AUDIENCE: My name is (inaudible). I have a question regarding points of contacts. How much of a role do these points of 25 contacts have in the selection process?
DR. NORWOOD: I don't know. I mean the selection the people on the selection team have not been identified, so it's a mystery. When they become identified, it will be a secret.
MR. LONG: Front mic there.

THE AUDIENCE: My name is Vince Wheeler. I'm an unemployed aerospace engineer. My question to you is on this small entrepreneur, (inaudible) if I were a company I would have to be a disadvantaged social (inaudible) and prove this by two years of tax returns. How liberal are you you going to interpret this small entrepreneur?
DR. BUCHANAN: Where do we accept the small business innovative research program? Where does that need to be --
THE AUDIENCE: It's not clear exactly where I'm going to seek the funding from. But if I wanted to form a partnership with a major aerospace company, would that be a problem?
DR. BUCHANAN: No.
THE AUDIENCE: Second question. You're talking about health care innovation systems.
You talk about step three of actively forming teams to work it. And the drop-dead day is May 14th. And the Hillary Commission won't have their report out. Who is working that issue with your committee. I would like to talk with them, becasue there is some new DOD technology that will probably avoid the possibility of the new tax laws. Have you heard about the value-added tax on
the news yesterday?
DR. BUCHANAN: I haven't seen the news in almost a week.
THE AUDIENCE: But what I'm trying to say is when you look at computer monitors, when you look at the computerized patient-record system, and you compare that to the computer modules, and you look at the security problems, and the data communication problems, the (inaudible) system problems, the fact is you have a lot of paperwork that needs to be converted. That is the same problems that you're facing on the DOD (inaudible) side. My question is I want to try to get two people talking here who I can talk with.
MR. GUDAS: You've done a good job of identifying that. There is a list we've given you.
THE AUDIENCE: There's nothing that deals with health care on this that I have seen.
MR. GUDAS: You must have contacts at NIH within the medical communities. Everybody is fair game. We can't supply contacts and matching funding for everybody or anybody.
DR. BUCHANAN: Wait a minute, what do you mean, there isn't anything on there about health care?
THE AUDIENCE: What I'm saying, you have a request in here for health care. You say you're taking an active role in forming the ; ams. My question is,

who do I talk to to try to accurately form this team?
DR. BUCHANAN: Do you not have a list in your packet of the 200-some-odd people's names down for every technology focus area? There are at least eight names there under health care alone.
THE AUDIENCE: Okay. Thank you.
DR. BUCHANAN: But you should not be constrained by the May 14th date. That is a date for the TRP members. You can still work after that with the people on that list to help you form your partnership, or get ideas, or whatever. You can still keep going after May 14th.
MR. LONG: Back mic.

THE AUDIENCE: My name is (inaudible). And I designed the world's first molecular carbon-based systems module. I am an originator/innovator. What I would like to know is when I present my technology, what processes should I have in place to protect this new technology? If someone decides to reinvest from the originality of this technology, how can you assure me that I am involved in the process of getting some benefits from reinvestment?
DR. NORWOOD: Repeat the last part of the question.
THE AUDIENCE: Original idea, an original technology, and if someone decides to take your technology after you submit the proposal and reinvest from your originality, is there a process in place to insure the originator is also involved and also reeps financial benefits, being the originator? In other words, if I submit my proposal and someone takes the idea and takes it one step further, what economic benefits do you get because you spent seven or eight years doing the original work?
MR. GUDAS: As far as the proposal evaluation process goes, we are doing all we possibly, humanly can to prevent leakage of your idea improperly. I mean, mechanisms that will be set up will be focused just on that problem.
DR. BUCHANAN: There are really two potential answers to your question. First of all, the potential of intellectual property is largely the province of patent laws. Of course, that would afford you some amount of protection. You may keep it as a trade secret, in which case you don't have to disclose it. Your proposal will be evaluated by the government. And to have somebody discard it as not attractive, but take that idea and go off and exploit it elsewhere is illegal. We are all bound under law, all Federal employees, to not disclose proprietary information. At ARPA there are classified programs. All the way to the top is proprietary. That is where you go to jail. So Federal employees are exceedingly sensitive to that.
MR. LONG: Back mic.
We have time for about one more.

THE AUDIENCE: My name is Gloria (inaudible). I work for a company called (inaudible). In case your sponsors either run out of or won't break the list, how did you compose the (inaudible) to the session.
DR. BUCHANAN: From the list from the 1-800 number.
THE AUDIENCE: You drew -- I mean the 1-800 -- I'm sorry. The list was compiled by 1-800?
DR. BUCHANAN: Yes. Maybe you did not preregister. Those that did preregister --
THE AUDIENCE: I didn't, no.
DR. BUCHANAN: The list is compiled from the people who preregistered from the 1-800 number.
THE AUDIENCE: You know where they drew from?
MR. GUDAS: They called the number. They opted to come here on their own.
THE AUDIENCE: How was it advertised, or something?
MR. GUDAS: The 1-800? I'm sorry?
THE AUDIENCE: I don't know anything about the 1-800 number. I asked that question. I went back to the hotel and called. No one wanted to

know the name of anybody that was coming to this meeting. I tried four different times. You had a hole there that fell through the crack.

DR. BUCHANAN: I understand. I apologize. That is the problem.

THE AUDIENCE: But the people that received letters inviting them to the meeting were compiled from lists from where?

MR. LONG: Any letters that anybody or --

DR. BUCHANAN: If you called the 1-800 number --

THE AUDIENCE: I didn't call 1-800 --

DR. BUCHANAN: If you called the 1-800 number and got a copy of the red book, you were then sent -- either you preregistered or were sent a postcard that said, "Do you intend to come to the meeting?"

THE AUDIENCE: My question is just who received it. I haven't received a letter, an invtitation to come.

DR. BUCHANAN: I don't know.

THE AUDIENCE: What I'm asking is, where is that list? There had to be a list compiled.

DR. BUCHANAN: Who is the return address on the envelope that you got?

THE AUDIENCE: Return address -- I'd have to go back to the office and look.

DR. BUCHANAN: We did not send out letters of invitation.

THE AUDIENCE: I mean, the invitation was from the White House Technology Committee, et cetera, and in case I don't have (inaudible) partnership, or so on, I thought there probably was -- these lists were probably compiled somewhere.

DR. BUCHANAN: I'm saying we did not send out letters of invitation. Therefore, I don't know where the list came from.

A MEMBER OF THE AUDIENCE: May I suggest they contact their Chamber of Commerce, State through local.

DR. BUCHANAN: The host for this meeting is the Regional Governors Association. I know they went out and made sure there was information distributed on this meeting. The host for this meeting is not the TRP.

MR. LONG: Thank you. We want to thank you for your attendance, for your very good questions.

Technology Deployment

The Technology Reinvestment Project is a Joint Implementation Project of

DOD/Advanced Research Projects Agency, Chair

DOC/National Institute of Standards and Technology

National Aeronautics and Space Administration

National Science Foundation

DOE/Defense Programs

Overview

- $472 million available
- $193 million for Technology Development*
- $224 million for Technology Deployment*
- $48 million for Manufacturing Engineering Education
- $7 million for SBIR

*estimated breakout between categories

Technology Deployment

- Disseminate existing technology for near-term commercial and defense products and processes
- Help small enterprises utilize technologies and improve their overall ability to conduct commercial business

Contrasted with —

- Creating new technologies or applying existing technologies to demonstrate viability of new products and processes

Components of Technology Deployment

Proposals will fall into one of four activities:

(1) **Manufacturing Extension Service Providers – direct, hands-on assistance for small firms in a broad range of topics, acting as fundamental agents of change**

(2) **Extension Enabling Services – activities needed to link together providers of extension services—pilot projects will be called for**

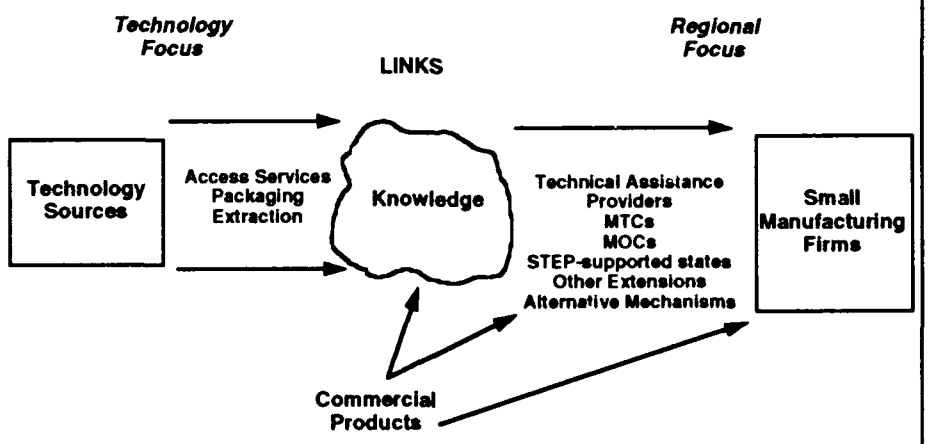
(3) **Alternative Deployment Pilot Projects – innovative modes of deployment other than extension**

(4) **Technology Access Services – activities aimed at making existing technology sources accessible to the private sector and to technical assistance providers**

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Extension Model for Technology Deployment



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Examples
Manufacturing Extension Service Providers

- Major center in a region of industrial concentration
- Small center, in a start-up role, associated with a larger organization, or free-standing
- Industrial extension with regional offices
- State-based industrial extension

Examples
Extension Enabling Services

- Training school to operate on a one-time basis in October or November for field agents of new manufacturing extension centers
- Pilot project to extract and organize access information in a national laboratory
- Pilot project to define and implement communication system between extension centers to identify sources for solutions to known problems

TECHNOLOGY REINVESTMENT PROJECT

Examples
Alternative Deployment Pilot Projects

- Supplier chain with electronic commerce
- Regional network of suppliers
- Teaching factory using excess capacity or available resources

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TECHNOLOGY REINVESTMENT PROJECT

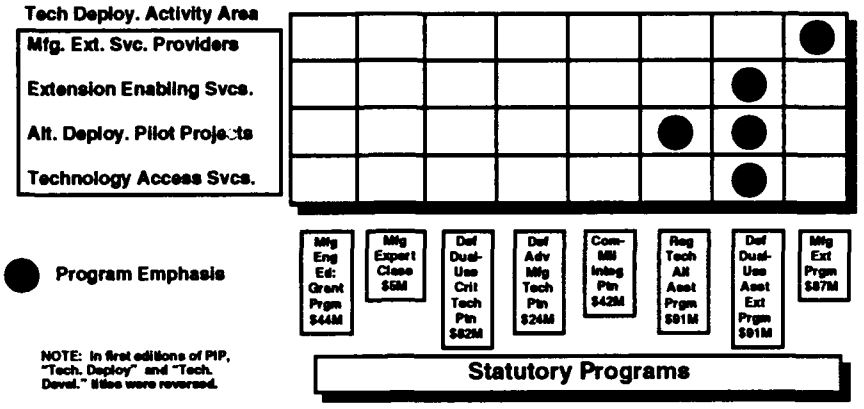
Examples
Technology Access Services

- Packaging techniques for environmentally conscious manufacturing
- Transition at the gates of a national laboratory
- Data search through national technology sources (NASA centers, NTTC)

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Deployment Activity Areas



NOTE: In first editions of PIP, "Tech. Deploy" and "Tech. Devel." titles were reversed.

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Technology Deployment—Especially Note

- Objective: to strengthen the industrial base by various means
- Operating principle: Use what's there. Don't duplicate. Don't clash.
- Match:
  - Defense dual-use assistance, match is 50%, 60%, 70% from non-defense sources
  - Others, match is 50% from non-Federal sources
  - 50% of match must be in cash when $1 million of Federal funds per year are requested
- Terms of award: Initial 1 year, increments of 1 year
- Portable proposals

Technology Deployment
Planned Selection Criteria

Each proposal must address these selection criteria which are grouped into eight equally weighted categories:

(1) Target population – beneficiary organizations

(2) Defense conversion, dual-use impacts

(3) Technology sources – access to required technology

(4) Delivery mechanisms – method to assist target population

(5) Management experience and plans

(6) Funding, budget, and cost share

(7) Accessibility of services and documentation

(8) Coordination and elimination of duplication

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Technology Deployment
Planned Special Selection Factors

- Special selection factors are provided for each Technology Deployment Activity
  - Sections A.2.2, A.2.3, A.2.4, A.2.5
- Special selection factors used to interpret general selection criteria
  - Focus
  - Clarify
- Special selection factors are not additional criteria

PIP Page A-12–A-20

You are encouraged to call on participating agencies for help in integrating your proposal with others.

CALL 1-800-DUAL-USE

BREAKOUT B: TECHNOLOGY DEPLOYMENT

DR. PHILIP NANZETTA: As you go through the day you go into more and more nuts and bolts aspects of the program. We're at the point here where we're going to first of all give you a briefing and then hopefully answer questions and have discussions related to the technology deployment part of the TRP.

What we plan for an agenda is for me to give you yet another briefing for about half an hour, followed by questions and answers for as long as this group has questions and answers and then all of us who are up here will be available in some corner of the room if you want to have more detailed one on one kinds of discussions to follow up on any of the activity then we'll be available to do that. And we can stay here all the way up to about 6:00 o'clock or a few minutes after 6:00 and shortly after that we have to hop on a bus to go off to Detroit.

So let me begin with some introductions so you'll know the people who are sitting up here and the particular areas in which you may want to talk with them at the end or you may wish to direct questions when we get to the question and answer part and I'll ask each of the people up here when they're introduced to give you a couple of minutes so you'll have a frame of reference in terms of where they come from and in what areas they may want to talk with you. After we finish the introduction then I'll do a briefing for you.

The first person in sequence to my right is Tom Starke from the Department of Energy.

DR. THOMAS STARKE: I'm Tom Starke. I represent the Department of Energy and the Department of Energy is very interested in both working with people who want to do deployment systems as well as working with existing Department of Energy deployment systems that are in place, specifically the Energy Extension Systems, which are located in all the states and territories.

We have established a point of contact for working with the Department of Energy and pursuing employment opportunities. It's a gentleman named Mr. Bill Becker, B-e-c-k-e-r. I will give you his phone number. It is area code 202-586-8252. And he is part of our Conservation and Renewable Energy Program.

I also would like to encourage you wherever possible that you can work with or use the facilities of the Department of Energy Laboratories, to feel free to engage them in any way that furthers what you're trying to accomplish. If you need additional information or reference, there's a good amount of information in the red book. If for some reason that doesn't work we have a clearing house number in the department that you can call. It is area code 202-586-5456 and that number is in the office I'm in and we'll be able to help you with any additional information you might need as regards deployment and any way the Department of Energy can assist you in putting together what may be your response to this opportunity.

DR. PHILIP NANZETTA: Thanks, Tom. Next is John Fenter from Air Force Wright Pat Laboratories in Dayton.

JOHN FENTER: I'd like to immediately introduce Bill Harris also from the Mantech operation at Wright Patterson, as am I. I'll give you our telephone number since they aren't in the red book in case you wanted to contact us. My number is area code 513-255-8589. Bill's number is 513-255-4623.

We're here with all of our capabilities from Wright Lab supporting Bill and his area of deployment. There's one area that we are particularly interested in, one of those activities, and that's the Alternative Deployment Pilot Project.

So if you have some ideas in that particular activity that's where we would like to talk to you abut help, get your ideas and help give you some of ours that we think make some sense with regards to pilots which are other than the manufacturing extension service types of activities.

Our primary interest there is dealing with prime contractors and their supplier base, the prime supplier integration activities. There's a lot goes on in those areas that we've been involved with over the years with contractors and their supplier problems and their supplier issues and their supplier quality that we'd really like to address, looking at things such as industry teaching factories, the whole business of strategy development of the prime and his supplier base for banking viable business entities and also, finally, the implementation of those technologies into better products.

Another one might be something like quality institute consortia, again taking some large contractors that have some good basis for quality methods and techniques and instituting those into their supplier base or into other commercial entities or other defense contractors as a training and capability to get that information and techniques out to many others, both on a regional and a national basis.

We're also looking at regional improvement of small manufacturers, a program that we've been involved with over the years has been called Prism and taking that concept and building on that and improving it to better define an alternate pilot approach that looks at improving the business base and the efficiency and effectivity of the small manufacturers and, again, getting those tools and techniques into the manufacturing extension service providers areas for further dissemination as those problems come up.

And there's one other that we want to try to talk to a lot of people about and that's related to something like the Franhoffer Institutes, what we're calling bridges. It's a university to industry bridge mechanism where it might be related to how do the universities develop training courses that are defined or requested by an industry led group, having the industry define what the problem is and what some of the potential solutions are, have the industry and the universities then work together to implement those and to get again the word out for training, for hands on equipment use, for state of the art activities with regards to apprenticeships for their people that might be co-located to the universities for a while for training and then brought back to the company themselves.

Lots and lots of ideas like that we're looking at as real innovative, new ways of deploying technology, so if you have some of those ideas as related to that, again, those are examples. There's other examples in the red and white book that we're also interested in and sure like to talk to you about those.

DR. PHILIP NANZETTA: Thanks, John.

Let me introduce one other person who's sitting in back of the room, John Jennings from NASA. John, the reason I'm introducing people is after the question and answer session we're going to have the government people available for smaller group 101 discussions in the various corners. If you'd stand up so people would know, and that's the NASA.

My name is Phil Nanzetta. I'm from the National Institute of Standards and Technology, NIST, and I manage the Manufacturing and Technology Centers and the State Technology Extension Program and am involved in the development of activities that are described in the Brown Ballantine bill that's being developed, if you're

familiar with that. So I have a very substantial interest in the extension portion of this, but also interest in related areas, technology access and extension enabling services in particular.

Let me correct one thing that Lee Buchanan announced from the stage and that is in terms of obtaining copies of the hand of the slides, the view graphs, please don't contact, please do not contact the Northwest—Midwest Institute which has been kind enough to host us here but which doesn't have the facilities to mail out copies of that. You can obtain those beginning next week through the National Technical Information Service, NTIS, Acquisition ADA 263000. That's the same acquisition access number and the same place from which you can obtain copies of the transcript. That's described in very small print at the bottom of the agenda. I had to put on my magnifying glasses to read it so if you need somebody to read it for you, you shouldn't feel too guilty.

That's from the National Technical Information Service starting next week sometime so please do not contact our hosts here, the Northeast—Midwest Institute.

Now let me give you about half an hour on technology deployment.

I'm sorry Bill Harris is on the end. I thought John Fenter introduced him. Bill Harris from Air Force Mantech.

Let me reemphasize, you've heard it a lot, but let me reemphasize, as with the rest of the activity, this is a joint, an interagency activity. This is an interagency activity——with a little bit of feedback ——which is being led by ARPA, it has the money and the chair, NIST and the rest of the Department of Commerce, NASA, National Science Foundation and Department of Energy, with Defense programs taking the lead but with other parts of the Department of Energy being available.

If you want to see the breakout of resources across the whole program there's a total of $472 million available in the competition that will be announced in May and approximately 193 million of that is in the technology development or the technology creation area, 224 million in the technology deployment area which is what this session is about, 48 million in manufacturing engineering education and training and 7 million in SBIR.

The division between technology development and technology deployment is approximate since if you recall looking at the bullet chart or the dot chart, there was funding for deployment and development, both out of the regional technology alliances category and there's no predetermined breakdown of money between the deployment and the development. So this number is based on a 50:50 split just for display purposes.

Technology deployment involves the dissemination of existing technology for near term or short term commercial and defense products and processes. It also involves activities which help small enterprises utilize technology to improve their overall ability to conduct commercial businesses, that is to improve their competitiveness, to improve their ability to provide jobs and to improve the quality of jobs which they are able to provide as a result of those activities; in contrast with the technology creation or development part, which is aimed at creating new technologies or applying existing technologies to demonstrate the viability of new products and new processes. It should be fairly clear the distinction between the development and the deployment.

Technology deployment activity is divided into four categories. The first of those categories is the easiest to define in a clear sort of way. It's observable. There are instances of technology extension service providers out there that you can look at. I'm sorry for moving around but I'm trying to get out of the feedback.

Manufacturing extension focuses on direct, hands on assistance for small firms covering not only technology, technology is at the core of it, but also covering everything that's necessary for a small firm to increase its level of technology and increase its competitiveness and that includes things which range from work force training to help in obtaining financing, to help in management and work flow through the facility, work force organization and all of those other issues.

Those other activities would principally be obtained through linkages with other providers of those services and not as an in—house activity that was funded through this program, but those are all critical elements in bringing about change.

The second is extension enabling services and those are the activities that are necessary to take the individual entities that make up a manufacturing system, the individual centers or field agents or service providers, and combine that into a nationwide system.

And so it represents means of communications, access to data, indexes, so that if you have a problem at one place and somebody has a solution at another place, you can find out who to talk to.

It also includes attention to training of new field agents so that at the end of this program when $87 million goes to manufacturing extension service providers, those activities ramp up, there will be a lot of new field agents. Should each place which has field agents have to decide what to do, develop a training program, start the training or should that be done in some uniform way based on. nationwide experience? The obvious answer is the latter. That's the kind of service that needs to be provided in the extension enabling services

Also uniform evaluation that can be used for bench marking the outcomes of work with client firms on a nationwide basis so that it's possible for various technical assistance providers to compare themselves and it's possible for their sponsors to compare them with the performance of other such entities across the country for purposes of strengthening and growing and improving the services that they're able to provide

Let me skip for one second.

Technology access services are aimed at making available technology which already exists in the laboratory or in some form which is not immediately or directly accessible either to small companies or to the technical assistance providers for those small companies.

For example, technology that might be in a national laboratory or in a university laboratory or technology which might be available in an industrial research laboratory. Technology access services are those activities which are aimed at making that accessible, extracting it, packaging it, distributing it, feeding it into an extension network so that extension field agents can make use of it.

And the last category is alternative deployment pilot projects which are everything else. John Fenter talked at some length about activities that might fall in the category of alternative deployment pilot projects, those which look, for example, at the industrial structure of a prime contractor and its family of suppliers and look at issues which relate to that, such as electronic communications, electronic purchasing, quality requirements, or a group of several prime contractors which draw on a common base of suppliers and rationalize the requirements which those primes place on the suppliers in terms of quality, CAD systems which they use or other requirements which differ in an almost arbitrary way from prime to prime, placing multiple expensive

requirements on the suppliers which really don't contribute to the final product.

So that plus things which we have not thought of are intended to fall in the category of Alternative Deployment Pilot Projects.

Let me with a little picture here illustration where some of these pieces fit together in our mind. This represents, you might say, the extension model for technology deployment where the small firms are the ultimate recipients of the activity, where technical assistance providers, a whole variety of technical assistance providers draw upon a common base of knowledge and draw upon a common base of commercial product to help the small firms upgrade the level of technology which they use in their own processes.

Technology sources are available in profusion but may not be directly accessible. The Technology Access Services are intended to fill the gap between those technology sources and the pool of knowledge which can be drawn upon by the technical assistance providers.

The Extension Enabling Services represent the arrows, if you wish, that flow from one to the other and also represent integrating forces among technical assistance providers. And the Alternative Deployment Pilot Projects don't show on this. Those are alternatives to this model, if you wish. Please don't take this picture any more seriously than it deserves to be taken and don't bother to put it in your proposal. It's for purposes of talking and pointing.

If you look in the red book, there are a number of examples written out in some detail in each of the deployment areas, actually each of the areas except the Extension Enabling Services.

And I think rather than go over those in detail here it would probably be better for you to read those examples, but I want to highlight for you the fact that those examples do exist, you should look at them as illustrations, if you wish, as existence proofs that there are models which fit the selection criteria. Also scaling factors which give you an idea of what we see as the right match between dollar value of funding and number of client firms addressed, plus examples that are intended to stimulate you to think about how to put together proposals which achieve the ends that you're interested in within the framework that you're working. The examples are not in any sense intended to be exclusive or limiting and if you have a proposal which does not fit with those examples you should not consider that ruled out by the fact that it doesn't fall among those examples.

This is the part of the chart that Lee Buchanan showed that relates to the technology deployment activities and it's worth reinforcing what Lee said, that this is the chart which helps to bring some order out of the complexity that exists within the red book.

If you're interested in applying to Manufacturing Extension Service providers, this chart shows that you have a relatively simple situation as far as the regulations are concerned. Manufacturing Extension Service providers correspond on a one to one basis to the statutorily defined program of Manufacturing Extension Programs. So any of the participant requirements that you need to follow fall under that legislative program.

Other three areas can fall within the Defense Dual Use assistance Extension Program and the alternative Deployment Pilot Projects can also fall in the category of Regional Technology Alliances Assistance Program. So in that one case you need to look at two columns, but in the other cases you can tell exactly which program you fit within.

Let me especially call out some important aspects. First, the objective of the deployment programs the deployment activities here, are to

strengthen the industrial base by various means, to improve the competitiveness, to improve the jobs position of small companies.

The objective is not to keep a technical assistance provider organization afloat or to help to build a state structure for the sake of building a state structure. So you need to think from the beginning about the client firms which your activity is geared towards and build your proposals starting from a conception of those client firms and how you can go about serving them.

Secondly, the Operating principle, use what's there, is very important It's reflected in the selection criteria. It will be reflected in the actual selection processes. That means don't duplicate something that's already there. If there is a technology resource available to you, make use of that and don't propose to duplicate it.

If there's a structure on the ground to provide the services that you're talking about or a part of those, then you need to figure out how you fit in with that to make a reasonable well functioning system and don't propose to duplicate something which is already It's very important that where there are state extension service structures, for example, that any proposal in the extension area tie in with that.

If you're proposing to help in the deployment of technology which is available in a national laboratory, don't make a proposal to recreate that technology yourself in your own laboratory.

In terms of match, the Defense Dual Use assistance category has a ramp up in the match, 50 percent, 60 percent and 70 percent in years one, two and three and subsequent years. But that money can be provided from any sources which are non—Department of Defense sources. So they could be provided from other Department of Energy or Department of Commerce or NASA sources, just not Department of Defense. And let me, so you can see how that applies to you .

On this chart talking about the Defense Dual Use Assistance Program. In that category there's a ramp up in the matching requirement, but on the positive side of the ledger you can draw upon any non—DOD funding to provide the match.

In the manufacturing extension and the regional technology alliances category, it's a straight 50 percent match requirement from non—federal sources so there you cannot use

Department of Commerce or Department of Energy or NASA funds as part of your match.

Third the third match point is in the deployment areas If what you're requesting is $1 million budget. That's $1 million a year of the federal part, then half of the match has to be in cash.

And that's worth talking about for a minute because that sounds like if you reflect the turn which the speakers so far have given of being cooperative and friendly and relaxed and pragmatic and oriented towards and non-hassling kinds of restrictions, why is there a requirement that you come up with cash? Because in one sense that creates a burden on you in trying to come up with a proposal which is acceptable.

However, look at the situation after you have won with a proposal and see what would make your operation the strongest. And the answer to that is to have funds which are fungible. which you can, use for the purposes that you direct those funds to, that is cash, and not in kind match which is fixed and rigid and in place that you have less ability to direct towards the objectives which you choose to direct it towards.

You'll see,first of all, that there is substantial benefit in having more cash and less in kind.

Having said that, this requirement is intended to give you as a proposer leverage in working with your states or localities or whoever you need to Obtain match from and convincing then that they need to come up with the cash that you need

This is not an arbitrarily designed proposal There is experience with manufacturing extension activities which indicates in fact that this does help squeeze cash out of states to make it available to help proposers, and, secondly, that it does result in organizations which are faster in starting up and building and more effective in delivering services because they have better control over the resources which need to be directed towards those objectives.

The terms of the award in technology deployment are one year chunks, that is make a proposal for an initial year plus whatever number of add—on years. When the award is made, it may be made for one year or it may be made for multiple years. And subsequently, in subsequent years the optional one year terms may be picked up by other agencies which are involved in this process, from other appropriators which are made available in subsequent fiscal years.

So the intent in looking at it that way is if you have portable proposals, that is proposals which can win here and which can fit within categories that will be funded at subsequent years, it should be easy, as easy as possible to make the transition to that other funding without a substantial interruption or blip or

re competition or change in the basic nature of your operation.
We've tried to work in the present situation to make it as smooth as possible in the future to move on to gather funding or if defense conversion funding within a TRP framework is available in the future to move to renewals within that funding as well. So portable proposals are something that you should keep in mind.
These are the selection criteria that will be applied in reviewing and selecting proposals and let me just quickly run through some of these.
The-target population, as I said before, the objective of the program is to help the small companies become more competitive, improve their number of jobs and improve the quality of jobs
The first thing you need to do in conceptualizing a proposal is to define the target population in your own mind and the first thing you need to do for the reviewers is define the population.
What region are they in, if it's an industrial sector oriented proposal. What is the definition of the industrial sector? How many companies are there in that category? What mix of those companies are defense suppliers, defense dependent affected by the defense draw down? What are the characteristics of the target population which make it appropriate and to which all of your delivery mechanisms will be aimed
There's a specific requirement that a significant number of defense supplier firms be impacted by your proposal For regionally oriented activities this doesn't create any serious problem since if you look at a map of all small manufacturing firms, if you draw a dot, put dots on a map at the location of all small firms, and you put dots on the map at the location of all defense supplier firms, you get the same map.The distribution is the same.
So as far as the definition of, the allow ability of a region of service, you get the same answer whether you have to serve only defense suppliers or whether you serve all small firms. However, you do need to pay attention to those services which are unique needs of firms which are affected by the defense drawback and that probably means more attention to change of product, change of management style, bringing in new technology, addressing new markets, same kinds of things that you would want to do for small firms but to a greater intensity for some of those activities or to a slightly different mix.
Technology sources. It's important that if you're an extension assistance provider that you demonstrate in the proposal that you have technology sources, either internal to your own organization or affiliated with you, partners, or linked in some way so that the technology which you need to help the small companies is accessible to you.
If your proposal is one for technology access services, then you need to demonstrate the other side of the equation, how are you going to identify and extract the technology from your rich pool of technology and make it available, how are you going to extract it and package it and identify it and category it so that it will be available for others to use?
The delivery mechanisms need to match the target population and so you need to demonstrate within the delivery mechanisms how you plan to deploy technology and how that is specifically suitable to meet the needs o~ the target population that you define.
Management experience and plans is obviously important.
Funding budget. One of the things that's included under that selection criterion is what is the realism of your projection for in kind match or cash match, since not all proposers can walk

in with a bag of kugerands and say, Here is our cash match. In many cases at this stage of development, a proposer can only say, We have a very firm commitment from the governor and we have a very firm commitment from the chairman of our appropriations committee that we will make appropriations for this purpose.

One of the things that is reviewed under the selection criterion is how realistic is the proposal for in kind, how realistic is the proposal for cash within the match.

The second thing that the reviewers need to look at is how well deployed ,how well focused are the resources in the budget towards the specific delivery mechanisms that are proposed aimed at the specific target population.

So on the income side of the ledger, how realistic is it that those resources will be available? On the expenditure side of the ledger, how well targeted are those expenditures towards the objectives that are described in the rest of the proposal? You'd be surprised sometimes how poorly matched those are in proposals.

So the services need to be accessible to everyone within the defined target population. It can't just be to members of a club or arbitrarily defined in other ways. and if what you're proposing is a pilot project then a lot of attention needs to be paid to the documentation and analysis and dissemination of the results of that pilot project.

If it's a pilot project, then the intention of it is to make information available for others to use subsequently, so the documentation is very important particularly in terms o~ the pilot projects.

And the last category reflects the operating principle that I talked about before. If it's there, use it. Don't clash with and don't duplicate. If there is a state plan for technology deployment in place, then the proposal needs to demonstrate the way in which you comply with that state plan and fit with that state plan

If you're proposing to provide certain services, you need to demonstrate in the proposal that you understand other people who are already providing related sorts of services and how you fit with them, how you're not duplicating and how you're not clashing with those services as well.

You're encouraged throughout this process, up until the time that a formal solicitation limits how much we can interact, you're encouraged to call on the participating agencies for help. If you have to get telephone numbers you can call 1—800—DUALUSE. You should have among your handouts a lengthy list of telephone numbers of people to contact

TECHNOLOGY DEPLOYMENT QUESTIONS AND ANSWERS

NEW YORK REGIONAL BRIEFING AT THE SHERATON NEW YORK HOTEL AND TOWERS, MONDAY, APRIL 12, 1993.

SPEAKER: (Inaudible.)
DR. PHILIP NANZETTA: I don't think that it's, if there's a service provider there, that they need to limit themselves and not do something that helps large companies. The legislation is specific that the objective is to help small companies. In many cases in working with small companies, one needs to work with a large company to which they are the suppliers and so there's a lot of interaction that's appropriate with large companies even though the principal target is not to work with large companies.
SPEAKER: (Inaudible.) The question I have is the fact that there seems not to be (inaudible) in the Technology Access Services and the Regional Technology Assistance Program. It seems to me that (inaudible) belong there. For example, if a university (inaudible) came together to deliver services and that special services had a strong technological base, one would expect that that intersection would be highlighted (inaudible), would it not?
DR. PHILIP NANZETTA: You're saying that could not be taken care by Alternative Deployment Pilot Project, Regional Technology Alliance intersection?
SPEAKER: Right. It's not a pilot project. It's a general service offering for (inaudible) throughout the state. They would have access to a certain level of technology that was being made by this regional center.
DR. PHILIP NANZETTA: If I understand what you're saying you can still do that under the Alternative Deployment Pilot Project
SPEAKER: Wouldn't it make more sense to do that through the Technology Access Services (inaudible)?
DR. THOMAS STARKE: Just to comment on that, if you studied the Technology Access Services Part, you'll see that that is defined and really focused on extracting the information out of sources so that information can be used by the Extension Service Providers.
JOHN FENTER: And it doesn't have to be, it could be university, it doesn't have to be, and I think that's where Phil is coming from and saying that you could tie that in to the Alternative Pilot area, it could still be Access Services, but it would be tied in with the university type of activity rather than what's defined under the Access Services, which are centers of excellence and then other activities that are already there. So I think it's a matter of reading it closely and seeing where it could best fit, but also like Lee was saying in the room this afternoon, Don't be shy about saying that that's where it belongs because we will consider an intersection there in a good proposal.

SPEAKER: (Inaudible) from State University of New York at Stony Brook. (Inaudible) have been heard to say that they feel universities could do a better job in providing Manufacturing Extension Services. Could you indicate what you think the most important improvements are that ought to be made in this round of activity?
DR. PHILIP NANZETTA: If I understand your question, the answer is management. Universities do a lot of things very, very well. Universities are structured with a value system which is oriented towards teaching research and service. They're not oriented typically towards providing direction hands on services for small companies, and so to be successful at that, in some cases an approach might be to have an associated university center which is more oriented towards that in which the values and the performance criteria and the

orientation is directed towards that kind of service for small companies. But management, management structure, management orientation, evaluation of performance, all of those are areas where universities which want to do manufacturing extension need particularly to focus their attention.

HOWARD BURKE: Howard Burke from New York State Department of Labor. The Alternative Use Committee is soemthing that has been around for years. Oftentimes labor and management together developing a process, possibly even including considering alternative product lines with input from labor and the process being towards conversion of a plant, meaning restructuring the jobs and so on. Do you see that type of process as fitting into this or is there more of a technical thing where you were juste putting the technology into this? This is more of a process of labor management and so on.

DR. PHILIP NANZETTA: At the core of the activities that we're asking for proposals is technology. Technology is at the core. Now in order to make use of the technology, absorb the technology or utilize the technology, there are a lot of supporting functions which need to be carried out, that I listed earlier, work force training and financing management and worker organization and so forth. But if you look at all of those supporting activities without the central core of technology, I think that probably does not fit the objectives of the program.

SPEAKER: Would the prices lead to the technology or do you have to have the technology first?

DR. THOMAS STARKE: The legislation is really what's driving us here and the legislation insists that these are technology programs, technology based programs, and if we understand there are a number of issues that relate to promoting the competitiveness of small and medium sized companies that relate to business practices, that relate to nontechnology based communication, team forming, the kind of thing I think you're alluding to, those are typically supported in some cases by the Small Business Administration and state organizations and this program has really been constrained by the legislation to look at things that have a significant technology element from the very beginning. So I think the answer to your question is yes, technology has to build in upfront, not come along as a result of what you do.

SPEAKER: I'd like to know a little bit more about the evidence that you're looking for for the matching contributions. Will you go into a little more detail (inaudible).

DR. PHILIP NANZETTA: I wish I could. All I can tell you is it's a shades of grey issue which ranges all the way from saying, Do you have a letter from the Governor which says, I've heard of these people and we'll probably do something in the future. That's at the very weak end of the scale and probably wouldn't be sufficient. If you have an appropriation in hand, but the check hasn't been written, that's pretty strong. If you have a bag of gold in your hand, that's very strong. There is no very sharply defined absolute requirement for what you have to do in terms of the match and I think we could define such a sharp cutoff but we don't want to because what we want to be able to do is make judgments of the realism in a way which is based on what's in the proposal, what would be based on site visit discussions and other kinds of evidence that might be brought to bear, and so it is a matter of judgment as to how realistic that it and it's a matter of creativity and how strongly you can demonstrate that you do have a firm grasp on the match. I can tell you that a likely way in which the match will be treated at the point of operation is funding will be provided on a reimbursable basis in the sense that when you spend a dollar you'll get back 50 cents and that 50 cents will have to

meet the match requirements. So if you project into the future; have lots of cash match and if it doesn't pan out you won't get very far out on the limb with that, with federal funds, and so it won't develop into a problem which nobody can back out of. But it does mean that it's a very real responsibility on your part to have the match because you need it in order to operate.

SPEAKER: (Inaudible.) But in terms of the regular program valuation becomes one of those pulls (inaudible). Do you have a set amount of a set percentage in proposals (inaudible) devoted to that or some kind of amount you should build into proposals for participation in national requirements in evaluation (inaudible)?

DR. PHILIP NANZETTA: In answer to the first question, we don't have any predetermined amount that we want to spend on proposals that do evaluations. I think in each

SPEAKER: (Interposing, inaudible.)

DR. PHILIP NANZETTA: I think in each proposal you should talk about evaluation and you should budget what to you is an appropriate level for that evaluation activity. There's no predetermined percentage level for that.

SPEAKER: And in terms of participation in nationally required evaluations, is there something that we should be building into the proposal for that?

DR. PHILIP NANZETTA: You should be planning to do that but we don't have any dollar levels or percentage levels to advise you of.

SPEAKER: (Inaudible.) The matching requirements on a multi-year proposal, how strong do those have to be in the second and third years of the extension (inaudible).

DR. PHILIP NANZETTA: I think if you have a strong commitment the first year, then the other years can be a little less defined, as they have to be in the real world, and they need to come into reality as we get close to that point, again, because the way in which this will likely be operating is on a reimbursable basis where you can't get out on a limb, and so you will share with the government maybe to a greater extent an interest in having that match in place. I think if you have it in the beginning, then we can trust that if the performance is strong and there's no catastrophe, then that should probably continue as you prove your value to the sponsoring organization.

DON O'BRIEN: Don O'Brien, Joint Technology Associates. I have a question on eligible proposals. There's a second chart in the red book which gives the eligible proposals and on the Technical Access Services, are nonprofits eligible to propose? As I read that chart it says they are.

DR. THOMAS STARKE: There's been some confusion on proposers, participants, eligible participants and people who provide assistance and that chart may not clarify what we had really intended. If you look at the law, what the law says is there are certain entities who have to participate in certain of the vertical columns or the program elements in the law. So any proposal that's put forward has got to have those organizations participating clearly as upfront full participants. Now that doesn't preclude who can write the proposal. We see the proposal as coming from a whole team and it doesn't preclude who can be on that team in addition to those additional participants. So when you look at these proposals, think of the proposal as coming from a team that includes the right organizations as set out by the law. Now you can carry this step further and say, Hey, wait a minute, one organization usually nucleates these things and draws them together. Does that organization absolutely have to be one of the ones outlined in the law? The answer is no, the law doesn't require that. Just so those are real full participants. So if you're a university group and you want to do something in

one of these areas, yeah, you could go out and get people roused by and pull a team together of the right people with the right ideas and, you know, the proposal can come off your word processor as long as it truly represents the commitment of your full team and that's just great.

SPEAKER: (Inaudible.)
DR. THOMAS STARKE: Appendix B is what describes the law and some of that may come in fact from the law itself but I believe they're well summarized in Appendix B too.
SPEAKER: (Inaudible.)
DR. PHILIP NANZETTA: Can you tell me where you're looking?
SPEAKER: I'm referring to page 2-3. (Inaudible.)
DR. PHILIP NANZETTA: What that's referring to is the figure on the previous page and that refers to the upper two boxes.

SPEAKER: (Inaudible.)
DR. PHILIP NANZETTA: There's nothing in this book or in our discussions so far which pins down a particular number that's allowable. It's possible as we go through the process of this week of talking to people that the result might be a particular number or firm guidelines in which case that would be announced in the solicitation document itself. But as of now there's no fixed number which is defined. The principle is if it's a cost which is necessary to carry out your activity, which is what indirect costs are intended to be in the first place, then that's fine. You should be funded to carry out the activity that you're proposing. If the indirect costs represents a tax by the institution, which is used to support other activities, that is if it's being loaded beyond what's required in order to carry out the activities we're talking about, then that will reduce the competitive strength of the proposal in proportion to how much it's loaded.
DR. THOMAS STARKE: There is not specific guidelines in that area to try to encourage people to do their absolute best at delivering the most value for the funding they're requesting.
SPEAKER: (Inaudible) for example, we have several programs that have been up and running, they're starting to run this year. A lot of work has gone into setting up the organization (inaudible). Would any of that be considered as part of (inaudible)?
DR. PHILIP NANZETTA: I don't think so. Nothing that's expended like that in a consumable way prior to the award of the proposal and I think Lee answered that in one meeting today. I don't know whether it was the large group meeting.
SPEAKER: (Inaudible.)
DR. PHILIP NANZETTA: I didn't mean it that way. I just mean that's how sure I am of the answer.

JOHN WORTH: I'm John Worth and I'm with the Naval (inaudible) Center, Aircraft Division, Warminster. And I'm just curious, in spite of what was said by Dr. Buchanan that these monies are not available to pay for military salaries, and civil service salaries, we have some 1300 scientists and engineers on our list (inaudible).
DR. PHILIP NANZETTA: Are you proposing that they receive funding from this program in order to carry that out?
JOHN WORTH: (Inaudible.)
DR. PHILIP NANZETTA: It's quite a weak proposal to propose that money go to pay federal employees to carry out these activities. That's been the guiding principle all along. That's not to say you can't write a proposal if you want to.
JOHN WORTH: (Inaudible.)
DR. PHILIP NANZETTA: You can make it available, you can participate. You can make the services available. The only point is is this money was intended to help industry and not to help government employees and so it's not (Inaudible.)
DR. THOMAS STARKE: Let me take a slightly different perspective. I don't want to disagree with anything Phil

said because I very much agree with it, but one of the things I think Buchanan, Dr. Buchanan also said is we're really looking for new ideas. In other words, if it's just, and I think what he was trying to get at with his comment this morning, is we just don't want to continue funding existing organizations to do a variation on what they have been doing. However, if you had a really innovative way in which a group of federal workers at a federal facility that had great technology capability could in fact put together either a Technology Access Service or joint with the state organization or a group consortium of local companies that had some really innovative features to how it would go about making the match and making the support for industry, I don't think the group wants to turn off those kind of ideas. Now you would have to understand that what Phil just said is very much true, there'd have to be something that really reached out and got people's attention in what you would propose because the intent here is to work through the states and work through small and medium sized companies to assist the conversion and development of job producing growth in the commercial sector, in that your idea would really support that, would stand up and accelerate it.

SPEAKER: (Inaudible.)
DR. THOMAS STARKE: And the extent to which you could get the matching funding and put those small companies together in something that meets the requirements here, that happens to use your facilities, one of the things Dr. Buchanan has said perhaps at other meetings and not this time is from his point of view if a group of small companies said the best way for them to be competitive was for the money to go to you, and to match what they were doing and that it was really credible and it looked like a great idea, he didn't want to tell those small companies what the best way to support them was because he was looking for them to tell the government, here's what you can really do for us. So in that context you may have some viable ideas and certainly want to encourage you to develop those with the context that it's the small companies we're trying to help.

HOWARD BURKE: Howard Burke from the State Department of Labor (inaudible). There was guarded emphasis on work force (inaudible), training literacy programs and so on. (Inaudible.) And yet we also have the other categories, manufacturing education and funding activity areas. The two programs there that are listed seem to be more high tech defense engineers and so on.
DR. PHILIP NANZETTA: There's a way to reconcile that. If you look in the description of the programs, not just the dot chart (Figure 4 of the Program Information Package), but if you look in the description of the programs, you'll see that they explicitly call out the importance of skills development, work force training and those other things, as particular activities that need to be carried in order to make the program successful, written out in the red book. So you're absolutely right that those are important and those are included.
SPEAKER: (Inaudible.)
DR. PHILIP NANZETTA: As activities which are necessary to bring about introduction of technology, yes.
JOHN FENTER: If you're tying that in with teaching factory or tying it in with improvement of a capability of a supplier group, training and, you know, application of new tools on new equipment can be all included.

JEFF SCHWARTZBERG: I have a few questions. Jeff Schwartzberg of (inaudible.) I apologize in advance, first of all, but I know this question was asked but I don't understand the answer. (Inaudible.)
DR. PHILIP NANZETTA: You shouldn't apologize. I should apologize

if you can't understand the answer. There are two ways, I think, that large companies will be enfolded by this whole process. First of all, in the process of working with small companies, most or many small companies are suppliers to large companies and if you look at the structure of supplier chains to large companies, then that is one place in which large companies will be involved, that is with respect to their suppliers, and where they will benefit competitively because of the improvement that takes place among their supplier chain and among the relationship between their suppliers and the large company itself. That's one piece of an answer. The second piece of an answer is if a technical assistance provider is funded under this, they are not prohibited from working with the large company. Their proposal, their defined target population need to focus on small companies, but once the proposal is won, once there's a region, once there's an activity, there's nothing that says you can't help that large company. It's much less likely that they will be able to help large companies because large companies have resources of their own to do some of the very same things that these provide for small companies.

DR. THOMAS STARKE: Can I add one more piece of elaboration to that? What's really driving us here is the legislation, both dual use defense extension systems and manufacturing extension technology program lines call out small companies specifically, and part of what Phil's saying is to play in those two program lines you've got to have small companies as part of what you're proposing in some rational, well integrated way. The Regional Technology Alliance Assistance Program does not contain, or at least our summary indicates it does not contain that focus on the small companies, and if you were doing something with deployment related to that, then you might be able to construct a large company solution that would fit into that one area. But where this is coming from, this isn't our decision, this was handed to us from Congress and the Regional Technology Alliance Assistance Program appears to be the only place in deployment where you can come forward with an only big company option.

SPEAKER: The second question (inaudible).

DR. PHILIP NANZETTA: What I said was it's likely to be on a cost reimbursable basis. None of that has been determined at this point in terms of details at that level probably will not be determined until the winning proposals are selected and the assignment is made to the executing agency who will actually carry out the contracting.

SPEAKER: I have a couple of questions about just proposals and packaging. In the technical proposal and cost proposal will they be evaluated separately, i.e., the technical first and then only after that a cost proposal?

DR. PHILIP NANZETTA: I have to give you an answer which is prefaced with very likely. The source selection plan has not been written and approved yet by the Technology Reinvestment Project. It is very likely that those will be reviewed together, the technical and the cost proposal, particularly in the deployment area, where there's such a tight interaction between the realism of projected in kind and cash and the way in which the resources are used, that kind of budget financial information is important, and at the same time there's less importance to holding close the information that would be contained in a financial statement. And finally since the award is not going to be made on the basis of lowest cost, it makes more sense to look at that from an integrated point of view, so it's quite

likely that those will be looked at together.

SPEAKER: (Inaudible.) I'm trying to figure out whether you want the technical proposal to stand alone on the eight selection criteria?

DR. PHILIP NANZETTA: The five-page executive summary that's a lead-in to the technical proposal should stand alone. That is going to give us the upfront overall snapshot of what you're doing and if we can't be convinced to go any further, we're not going to go any further into the technical nor the cost proposals. In almost every case the proposer would want to integrate together the technical and cost proposal to present the clearest picture of what's taking place. I don't think there will be anything which prohibits the proposer from integrating those together.

SPEAKER: (Inaudible.)

DR. PHILIP NANZETTA: I don't see that as likely, particularly in the deployment area.

SPEAKER: (Inaudible.)

DR. PHILIP NANZETTA: Well except among the selection criteria we will be looking at how expenditures match the delivery mechanism that's been described in the target population, so there's going to have to be an examination as a part of looking at the selection criteria how all that matches.

DR. THOMAS STARKE: I'd like to suggest that this is one of those topics where we are really going to benefit from your asking the question. I think it's something we need to go back and look at more clearly. As you'll notice in the red book there wasn't a great deal on how to write the proposal that's coming in the actual solicitation. This is an issue I think we need to take back to our whole team and roundly discuss as well as hear what the other cities have to say this week and I believe we will clearly address that although I can't tell you what the answer will be, as to whether it will be separate, together or whether you reference or whatever. But I think your question is something we need to take under advisement.

SPEAKER: (Inaudible.)

DR. PHILIP NANZETTA: An appendix which contains a cost proposal?

SPEAKER: No, (inaudible) instead of appendixes.

DR. PHILIP NANZETTA: The intention is to limit the statement of the proposal to 35 pages and not to have appendices which extend that beyond 35 pages, for two reasons. One, the feeling that if you have a clearly conceived proposal, then it's possible to write that within 35 pages and, secondly, because we would like to process the review as quickly as possibly, as expeditiously as possible, and if we have 250-page proposals with the information distributed among 250 pages, that's going to slow that review and implementation process down substantially.

SPEAKER: (Inaudible.)

DR. PHILIP NANZETTA: I think quite the reverse is likely in this case.

SPEAKER: (Inaudible.)

DR. PHILIP NANZETTA: I don't even know how to answer that question.

DR. THOMAS STARKE: I think the answer to that is probably yes, from what I have seen. It is anticipated, since these are agreements and the federal government will not be the only organization putting money into it, the agreement can be broken perhaps by either party either under certain conditions. That kind of detail is the kind of thing we would anticipate that would be negotiated after someone was selected for an award how you would go about terminating if one party or the other needed to terminate for some reason. We're trying to build that in up front by doing 18 to 24 month or in this case 12 month blocks of time that we believe we can commit for, but if you don't get funded for your renewal year up front, then whether you get funded again depends upon whether there are funds and you're selected for renewal and what not. We understand that the companies that might be

putting up the match may not be able to continue as far as they thought they did or the states may not have as much money as they thought they would for match and we might have to do some renegotiation. I would say that won't be covered in the solicitation. It would be anticipated that would be worked out after awards were announced and we would come to a mutually agreeable set of issues for how to handle such things.

SPEAKER: In the Act the Industrial Technology Council as defined includes Dept. of Labor as a member. It's not represented here. Is Labor part of the review process?
DR. PHILIP NANZETTA: The Council as defined in the legislation is not the same as the Defense Conversion Technology Council.
SPEAKER: (Inaudible.) The next one, the Act is pretty clear that Congress passed members of our council and the bigger council to propose changes to any federal legislation (inaudible). Is that pertaining to the TRP issues as well? For example, there are a lot of classification issues (inaudible).
DR. PHILIP NANZETTA: I think it's likely that we're operating on a fast track to implement the activities that we have here. That functions like that would be carried out after we make awards the first time around and are able to catch our breath, if there are suggestions to be made.

SPEAKER: (Inaudible.)
DR. THOMAS STARKE: As it stands right now I believe it is defined as U.S. and Canadian is not included in that definition. However, the final resolution for what is an eligible firm and is not an eligible firm will be decided by the Secretary of Commerce perhaps on a case by case basis with the guidelines that are in fact already in the law. So from the law the answer to that question is no, Canadians are not included.

SPEAKER: (Inaudible.)
DR. PHILIP NANZETTA: The Manufacturing Extension Partnership that's defined at NIST is based upon and includes the Manufacturing Technology Centers (MTCs) and the State Technology Extension Program and Manufacturing Outreach Centers. Those are described in more detail in the Brown Ballantine bill which is being developed now and then Senate Bill 4, S-4. The nationwide network is encompassing of the other activities of NIST and extension.
SPEAKER: (Inaudible.)
DR. PHILIP NANZETTA: It might be MTC's, but I would take that to be other technical assistance providers who are perhaps not receiving federal funding now, but who are carrying out that kind of function. And the point of the law, I think, is to discourage the formation of something new when there is already something in place which can simply be nourished and grown and tied in with other activities.
SPEAKER: (Inaudible.)
DR. PHILIP NANZETTA: I think you can start by looking at it from the point of view of what works for your state and where you think you can get the services that your state needs in a way which makes sense from your point of view and then proceed in that way. I don't think there's any predetermination on our part about what's the best way to go, but I think we will in reviewing the proposal see how it makes sense within the context that you define for it.

SPEAKER: (Inaudible.)
DR. PHILIP NANZETTA: No, there's nothing that would make you break that into pieces. You could put that into a single proposal. It would all fit within the Manufacturing Extension category and again it would be reviewed from the point of view of does that make sense within the context that you defined it. There's no predetermined yes or no on that. We would look just at the content of the proposal, whether it makes sense.

DR. THOMAS STARKE: I'd like to reiterate something that Phil's been imp ig all along and something Lee s very explicitly. We're looking for you to tell us what makes sense to enable you to most effectively help the small business manufacturers in your area. One of the reasons it seems so fuzzy and we're not telling you this many pages and here's what to put here and you've got to have the following colors on the outline or the folder that you submit is we're trying very hard not to project out an answer that you will give us back that might be not nearly as smart as what you could come up with if you just sat down and said what's best for us and then came forward nd proposed that. That's really, I think, the bottom line of what Phil's answer was to your questions.
DR. PHILIP NANZETTA: The only thing we're telling you is don't put it in a big thick binder with a lot of foldout pages.
Development. Would you clarify eligibility (Inaudible) for joint ventures please?
DR. THOMAS STARKE: For joint ventures in what?
JEFFREY GRAHAM: In this area, as participants (inaudible).
DR. THOMAS STARKE: Be a little more specific in your question.
JEFFREY GRAHAM: (Inaudible.)
DR. THOMAS STARKE: I believe joint ventures will be eligible and in fact if you have a joint venture that's a joint venture of several firms it may be eligible counting the several firms rather than counting it as just one entity.
JEFFREY GRAHAM: (Inaudible.)
DR. THOMAS STARKE: I think that'd have to be looked at on a case by case basis. I would not avoid proposing just because of that but I would be aware that there was a sensitivity becausc of the legislation.
JEFFREY GRAHAM: (Inaudible.)
DR. THOMAS STARKE: I think something Rick Dunn said over and over again is that we intend to be flexible and to work as much as possible with you to achieve the best product and we don't want to close out a good idea because it has a five percent participation from a Canadian company that may not be in a way that is all this advantageous to the goals of this legislation.
SPEAKER: Recognizing that this is your first presentation and you would like some input from us on how the process may be hopefully improved, from a businessman's standpoint I think you should be bounds on the amount of the award. Each company, each (inaudible), is going to have to make a commitment and is going to have to determine whether this is in their best interest to pursue this as an effort. So I would suggest that the guidance in the future be put some upper bounds that you expect to be reasonably considered in the proposal submission process. I would imagine also that in your brain storming session you probably modeled that, of the thousands of proposals you are going to have to review, that you will probably select in each program X number, and if that is the case I think again as general guidance that should be known rather than have it open ended as it is now where it's possible if I look at it very, very critically and see that (inaudible) were identified for the program of the dual use (inaudible), that conceivably we can get 182 awards and 500,000 (inaudible). And I think the industry and business community needs to know at least through some broad general guideline what is (inaudible) with the award nationally.
DR. PHILIP NANZETTA: We'll take it back and talk about it.

SPEAKER: The other thing I want to follow up on, what one other gentleman brought up, and that is it's not clear to me that how the universities that get R&D monies from the government and how the national labs can be brought into the process as a team mate of either my company or some other company and how that (inaudiblc) with respect to (inaudible).

I know there are words in here about government 50 percent matching and so forth, but I think there's enough intellectual capacity and technology available in both the universities and labs that we need to spell that out perhaps a little clearer. (Inaudible.) Those are suggestions that perhaps you can factor in the future.

DR. PHILIP NANZETTA: I appreciate that. Let me remind you what I said at the beginning. If you'd like to talk to either of us in more detail we'll stay around, stay in the corners and talk to you until we have to run and catch our bus. Thank you very much. Wait, wait, wait, wait. Last question here.

SPEAKER: (Inaudible) 50 percent in cash. Is that the whole match or is that 50 percent of the match?

DR. PHILIP NANZETTA: Fifty percent of the match. Thank you very much.

DETROIT REGIONAL BREIFING AT THE WESTIN HOTEL RECAISSANCE CENTER, TUESDAY, APRIL 13, 1993.

DR. NANZETTA: What we'd like to do next is take questions for whatever length time we have questions, and after that, if time allows, we can break up into small groups for purposes of discussion. There are microphones in the center. If you have a question, will you please go to the microphone, identify who you are and what organization you come from. We need to have a complete record of this. And then we'll try to answer your questions.

QUESTIONER: (From Naval Surface Warfare Center) On the cover of the brochure it talks about operation, restore jobs; yet in the criteria there I saw beneficiary organizations was on there. I didn't hear much of a discussion of jobs in terms of the jobs created in terms of the evaluation criteria.

DR. NANZETTA: The intention of the program is not short-term job fixes. The intention is not to count the jobs which are paid for with the funds that come under this program as you might see in other kinds of job stimulus programs. The intention is bring about fundamental change in the infra structure of manufacturing to make it more competitive and to make it support in its natural processes more jobs and jobs of higher quality. That's what the intention is.

QUESTIONER: (From the Environmental Research Institute of Michigan) The emphasis that I've heard so far has been on transferring technology and mechanisms to small and medium companies. Can you talk a little bit about the emphasis of small and medium companies as the recipients of technology as opposed to larger companies?

DR. NANZETTA: Sure. First of all, I should have just said small. I shouldn't have even said -- medium is a redundant term there, since what we're talking about is the definition of small is under 500 employees. That's required in the statutes for the two categories, Manufacturing Extension Service Providers and Defense Dual-Use Assistance Extension. It's not provided in the category for Regional Technology Alliances Assistance. The thinking behind that, I believe, is that some small firms cannot get access to some of the technology and they don't have some of the internal capacity for change that large companies have. But fundamentally it's based on the statutes.

QUESTIONER: (From the University of Illinois) You state that you don't want situations where people are clashing or duplicating. Now, until the proposals are actually submitted, it's possible that some people in the same region will be duplicating without knowing about that. How can we get around that?

DR. NANZETTA: Well, you can do it by interacting sufficiently with people who would fall in the same region that you know that somebody is putting a proposal together. That's not necessarily a perfect way to do it. If you look at the overall approach which this activity is taking, one would say that in the rare cases that happens where two people shift lanes into the same lane at the same time. We would try, during the negotiation process to bring those two proposals together. That would be a likely approach, but I don't have a sharper answer than that.
DR. STARKE: Let me take a brief shot at that. If you look at the red book, there are a number of points of contact around the country in different organizations, mostly Federal. I'd urge you to consider this in trying to figure out who else is playing in the game and go ahead and look at those numbers and give some of those people a call and try and get that information. Also, we've handed out a form in your packets. I believe it's a number of regional names from different agencies. I'd encourage you as you're trying to figure out who does what in your region, to call those numbers and to try to pump those people for information on who's doing what. They will be clearinghouses. They will have a lot of discussions on these same issues. It might be a very effective way to at least get a calibration on ongoing deployment-type activities in your area.We really want to encourage you to use these points of contact to get some of that information. Beyond that, if there is duplication or there are programs that you have no way of really finding out about, as it was said in the main presentation, almost none of these are go-no-go. It's not where you got to get all the stamps pasted in correctly. If you have an absolutely fantastic idea that just really is impressive, and you've missed one organization that does something similar that you didn't know about, my understanding is that those kinds of proposals will not be thrown out on technicalities.

QUESTIONER: (From the Waterford Arsenal) My question has to do with matching. We're a Government-owned and operated manufacturing facility. Based on your discussion of matching I tend to believe that we can't participate, but in the Red Book there's an example on teaching that would lead me to believe that we can participate. Can you clarify matching for a Government installation?
DR. NANZETTA: In none of the cases do the statutes allow using DOD Funds as part of a match. So what you should try to do in that case is team with somebody who can provide the match and who is interested in extending those services within the region or within the industrial sectors that's appropriate for that. Teaming is frequently the solution to that sort of problem.

QUESTIONER: (New) We didn't read the Defense Dual-Use Assistance Extension Program to be exclusively limited to small businesses. Did we misread that section?
DR. NANZETTA: We'll double check. I believe that it is limited to small business, but we should double check if there's any doubt about that.
QUESTIONER: (Same) Because it would appear from the Texas legislation, from the materials that are in the book, that there are some sections of 10 U.S.C.2524 that are specifically applicable to small businesses. We didn't see them all. We would appreciate your clarification.
DR. NANZETTA: We'll check.

QUESTIONER: (From the National Center for Manufacturing Sciences) What are the bench marks or norm that you would apply to each of the selection criteria for evaluation?
DR. NANZETTA: Can you be more specific?
QUESTIONER: (Same) Well, for example, like on the target population criteria, is there any particular

standard against which should be comparing the proposed --
DR. NANZETTA: In some of the examples there are numbers that are given which would give you an idea scale that would be applied in looking at it. Again, I think in the TRP project, as a whole we're trying to avoid rigid cut-offs, rigid definitions, tightly defined activities, and so the most I think you can hope for is the kind of yard stick that you'll see in the examples where there are specific numbers, dollars, number of client companies. And again, those are not absolutes, those are not the unique size that they have to be. If you use that as a scaling factor that should give you a good idea.

QUESTIONER: (New) I was looking to know how do the technology focus areas listed in the Appendix A from the book relate back to the statutory programs?
DR. NANZETTA: There are required in the statutes a certain technology focus areas. Those technology focus areas are included among the ones which are in the Red Book. The Red Book includes more focus areas than the statutes require in the minimum.

QUESTIONER: (Project Manager for Trailers for the U.S. Army)
Several manufacturers have come up to me already and asked me about me giving them equipment. Now, in the previous presentation, it stated that the Government could give equipment or something of that nature, or lend it or do anything of that nature. Because you said you can't preclude me from getting DoD dollars, but does that mean equipment?
DR. NANZETTA: There's nothing that rules out getting Defense Department dollars either. *** There's nothing that rules out getting equipment or making whatever arrangements make sense. It's only that those don't count as part of the match; neither do they count against you. So they don't count as a part of the Government's contribution where somebody has to match. They're neutral with respect to the match question.

QUESTIONER: (From Northern Illinois University)
I don't think I'm quite clear on the distinction between Manufacturing Extension Services and Extension Enabling Services on the one hand, and also the distinction between the Alternative Deployment Pilot Projects and Technology Access Services. Let me check for my understanding of the distinction between Manufacturing Extension Services and Extension Enabling Services. Extension Enabling Services concept is some group or company that does not belong to manufacturing extension, to any manufacturing extension, trying to put together the efforts of different extension services or coordinate between them.
DR. NANZETTA: There's no definition requirement in there. How it's performed, whether it's performed by teams which are a part of or separate from, it's talking about function, and the function in the Enabling Services is a function which relates to forming linkages among extension services providers making technology accessible to them, cataloguing and making available experiences of one extension service provider for another service provider to us provision of services such as training for field agents or a nationwide system for evaluation.
QUESTIONER: (Same) So this function can be performed by somebody who is funded by an extension enabling services?
DR. NANZETTA: Sure. It's a different proposal.

QUESTIONER: (Same) What about the distinction between Alternative Deployment Pilot Projects and Technology Access Services?
DR. NANZETTA: Technology Access Services are specifically intended to make available technology which

already exists, and in our starting point mental model, that would be technology in a national laboratory or a facility like that, which has a rich store of technology that may be difficult for small companies or technical system providers to access.
DR. STARKE: Certainly on that last one, the real focus that we're trying to get our hands around is there's a lot of technology that never finds itself personally with the challenge that, that technology can solve. Some of this technology that companies have developed to solve their own problems, but are never seen as a marketable project in and of itself. The whole concept of the Technology Access Services is to try to find ways to break down the barriers that companies put around things that they don't think are products but, in fact, have a great deal of value, or universities or national labs. In fact, they all do the same thing. They don't look at their technology as a product. This was intended to be an apparatus, an organization that would stimulate, making people look for the hidden gold in their own operation and helping convince them that there are other companies that could use that, either as a product one company would sell, or something that's so generic that they might give it away, because there's no reason to convert it to economic value. The fundamental concept of the Access Services is to get at the hidden technology that doesn't easily come out of the system, any one of the number of systems, and we believe that there actually has to be pro-active influence out there to try to figure out how to make that happen, and we hope there's some really innovative ideas come up for new ways of giving to that technology and making it visible.
MR. JENNINGS: It's basically hanging for the goal in the national laboratories, or where ever you may find it, and packaging it so someone else can get their hands on it. So hang for the goal and put it in a satchel and there it is.

QUESTIONER: (Same) In that proposal you have to explain there's a pattern for something, how to overcome this barrier?
DR. STARKE: Yes. That should be a very important element of what you do, is how are you going to handle those issues when they come up; how are you going to provide the technology sources with some confidence that have real value and that you're participating in whatever you propose, what kind of system.

QUESTIONER: (Same) How many other regional meetings of this sort are going to be held?
DR. NANZETTA: We're holding five this week. Just this week. New York, Detroit, Orlando, Dallas and Los Angeles.
DR. STARKE: Let me add that there are other groups that we have been talking to, and as far as the opportunity come up, we can even send one or two people out to give a briefing on this at some other meeting. We're very conscience that it cost a great deal of money to bring a large number of people together, and we're trying to leverage on existing meetings rather than creating hundreds of meetings and burning up a great deal of money if there's a more efficient way to do it.So those five are the planned ones. Let me reinforce something. Call the 1-800-DUALUSE number. That will put you on a mailing list for a whole bunch of additional information. That may not be the same as going to a meeting, but you can also call that number and ask specific questions that you might have, and somebody will get back to you or call the numbers in the handouts with your specific questions until you get somebody who can give you an answer you can understand. If you don't think you're getting good service, call the 1-800-DUALUSE and tell them you need to talk to somebody in charge because you're not getting answers you understand. We're really here because we think you know more

about what the answers are to solving problems than we do.

QUESTIONER: (New) When you were talking about selection criteria, you were talking about target population, and one of the things there when you talked about benefitting organizations, you mentioned a substantial number of defense supply firms. I understand also that this is directed towards small business. What weight does -- either the preponderance of or the lack of -- defense supply firms have as an impact on this?
DR. NANZETTA: You need to make an argument in your proposal on how you're serving a substantial number of defense supply firms. There's no up-front definition of what a substantial number is.
QUESTIONER: (Same) But it does not rule out supporting of small non-defense.
DR. NANZETTA: No. Absolutely. If you have a service which is available to, say, in a region, you should provide service broadly within that region, rather than arbitrarily restricting it to a certain group.
DR. STARKE: Could I add one thing to that. In the main session it was really stressed that the definition of defense is very, very broadly viewed here, and organizations that produce things that defense uses or defense could use in the future may well qualify as defense suppliers, unless there's just really something obvious non-defense about what you're talking about, I would not view that as a serious obstacle in having qualified defense firms.

QUESTIONER: (From Spectrolite, Madison County, Illinois)
Perhaps I'm the only one in the room that's a little confused about the eligibility of teaming requirements of the performer and participants, so let me ask specifically with my company, which is a small business primarily defense-related transitioning to the commercial marketplace. We have developed technology that has products which have been primarily been defense-related, which have become some commercial acceptance, but the technology that we've developed, it's deployment, if you will, to make it more acceptable in, of course, the marketplace, from certain standards, does an individual firm qualify or must it be teamed and have that technology relevant to a lot of people?
DR. NANZETTA: If you look in the book on page 2-8, table 2, there's a chart which gives you first an approximation of the eligibility. In that case, if you're applying in the category Defense Dual-Use Assistance Extension, a single eligible firm is all that it takes to make up a proposal, but that doesn't apply in Manufacturing Extension, that does apply in Regional Technology Alliances Assistance category.
QUESTIONER: (Same) Thank you.
DR. STARKE: You may be more interested in the development area than the deployment area, which typically deployment's looking at helping a large number of entities like small defense dependant companies and small manufacturing companies. The development is looking at much more at taking defense technology and spin-off and turn it into the commercial marketplace. Although there's another element in the deployment that I should mention, and that is this is pre competitive, so the extent to which you need to do the finishing touching on your product to deploy it in the commercial marketplace, may be beyond the scope of this program because there's a concept that using Federal dollars to fund one company to make a profit, and perhaps put somebody else out of business, is something we were very much trying to avoid. So that's where the pre competitive came from. You didn't look very closely at the Red Book and consider whether your requirement in what this program is doing here are matching sufficiently.
MR. FENTER: I'd like to just add, that sometimes there's confusion on this

because deployment is viewed in some way: Deployment is about moving technology so someone else uses it. If you're interested in making technology for your own use, you're probably more interested in technology development. So if you interested in moving technology so other people can use that technology, then that's what we're about. Is that fair?
DR. NANZETTA: Very good. Thanks.

QUESTIONER: (From Simplex Corporation) In the interest of accessibility of the whole group, are E-mail addresses available for both the panel and contact list?
DR. NANZETTA: I guess we need to get a list together. There's not an existing list of E-mail addresses.
MR. FENTER: We don't have an existing list, but, yes, we all have E-mail addresses, and we use them very actively and it would be a much better way to interact.

QUESTIONER: (From Innovative Productivity, Incorporated) I was a little disappointed when I went over the package from the standpoint that we seem to have forgotten what President Clinton has called the forgotten half of our society, and they're the people that don't go to college. In this program, from the educational prospective, what we seem to be addressing is an engineering aspect of manufacturing, and we totally neglected any training in the semi skilled or skilled trades, and I was wondering why. I may be in the wrong room. I don't want to be unfair, but it seems like they threw hard over in the other section on the training strictly in engineering.
What I was wondering, as part of the proposal we were putting together, we were looking at a training especially in skills training as one of the aspects of technology deployment. I was wondering if that would be acceptable to put a small portion of the proposal and direct it towards that and maybe orient it towards the ultimate project, a technology project portion of this?
DR. NANZETTA: Let me say a couple things, and Tom also wants to talk. There's at least two parts to that answer. One part of the answer is if you look at the services which are intended to be provided by the Manufacturing Extension Service Providers and by the others, those include the work force training aspects, which go along with the introduction of technology. So this is specifically intended not to ignore that part of the training. It doesn't include all training; it doesn't include training in general; it doesn't include basic skills training, which is unrelated to the introduction of technology. But this Technology Reinvestment Project is only a portion of the overall Defense Conversion Program which the President announced. This is a 472 million dollars of a billion and a half dollar program that was introduced, and this does not cover the full spectrum of activities that are included within the overall Defense Conversion.
DR. STARKE: What Phil said, yes, training can go into this, but training that is necessary to communicate technology to a new user or solution to the new user to train has to be part of the package. In fact, I think some of them plan to transfer technology without going into training even down to the manufacturing shop floor level where that technology might be used, may be missing part of the thing that is required to deploy technology. I would also like to address your first comment, which was that you were in the other room and they're talking about university and engineering based programs. Yes, they are, and that's totally driven by the requirements that were in the statute that created this program. They have no choice but to focus on institutions of higher education. And so, we are implementing what we were handed by Congress and it isn't a new-use deployment. We're a use extension system that training is specifically

mentioned. It could go to the manufacturing floor and we are very much trying to focus that on training that's part of the moving technology affectivity.

MR. FENTER: I'd like to say something on that. There is within the Alternative Pilot Projects there is the opportunity there to take a look at training of the people in the factories in using the industry teaching factory concept where you actually take the people off the floor and say, I have a new piece of equipment and I need you to train in this new piece of equipment and indicate we're looking for -- you know -- look at metrics, looking at uses and things like that. So there's an opportunity to develop an associative proposal, one dealing with training and education, if you will, and one actually doing the factory -- teaching the factory concept in the industry, so there's a chance to try the two together.

QUESTIONER: (From the Illinois Department of Commerce) In the Red Book you stated that the Government intends to be active in assisting in the formation of proposal teams. Can you go into that in just a little bit more detail?

DR. NANZETTA: That's part of what we're trying to do here today in bringing people together and talking and answering questions. We are also interested in sitting down with individuals or groups of people who are putting proposals together and talking about the ideas, giving feedback on those ideas and also trying to point out to one proposer what another proposer is doing that they should be interacting with.

QUESTIONER: (Same) Who would I contact or arrange a meeting of this sort that you just described?

DR. NANZETTA: There's a list of contacts which was made available at the registration.

QUESTIONER: (Same) Yes, I have that.

DR. NANZETTA: Contact the people on there that you think are appropriate in terms of either your regional interest or your technology-based interest or you agency-base interest.

QUESTIONER: (From Iowa State University) Looking at the -- going back to the discussion on the Technology Access Service, assuming the university and the National Lab are already working together to do that using, say, Department of Commerce funding and the State funding, can we use those two sources as a matching fund with this program?

DR. NANZETTA: Yes. Four things that are in the Defense Dual Use Assistance Extension category, which is where that is, you can use state money or department of commerce money as a match.

DR. STARKE: There's one thing that should be added to that, and that is whatever you are using that money for now should be an integral part of what we would be proposing in this program. So one of the things Rick Dunn, ARPA attorney, says is that you can't say I've got some money over here that qualifies doing this other thing and now I'm going to start this new thing up over here with ARPA funding; it's sort of related, but it's not really integrated. It has to be one integrated program that you've proposed if you're going to use that money as a match.

QUESTIONER: (Same) It should be an attempt to expand the program that is currently underway simply that you can address more of these types of technologies.

DR. NANZETTA: Right. That's fine.

DR. STARKE: Makes sure there's no double count.

DR. NANZETTA: I might mention that the way you make a judgement about whether something counts as a match is whether it flows through the hands of the person who's directing the project once it's implemented. Does the person who's directing the project have the control or the use of that

resource. If you have money circulating over in a loop somewhere out of the control of that person, then it doesn't. If it does flow through their hands for the implementation of that project, the it does.

QUESTIONER: (From the Environmental Research Institute of Michigan) There was a question asked in the general session about the suitability or non-suitability of indirect costs as incoming contributions for matching funds. We have here at lest half non-profit organizations. Can you address that a little further?

DR. NANZETTA: Having heard from the horses mouth in the general session, the most I can do is elaborate and not change the answer that he gave. The intent is that indirect costs are an accounting way of recording in a convenient form actual costs for the project without having to break down how much each kilowatt cost and each drop of water and how much rent you had to pay for the space. That's put into a package and accounted and then done basically on a load on salaries or something.

To the extent that the indirect cost or the overhead that's being proposed is really applicable to the project that you're carrying out, that makes a lot of sense. If you have indirect costs which are heavily related to support other activities, then that's excessive and it would probably cause a lower score on the evaluation of your proposal.

DR. STARKE: There's a principle that underlines the answer that Rick gave in the other meeting, and that is, so often the Government comes forward with a program; they describe all the rules, and they do this because the Government, of course, knows best and knows the answer. And one of the principles of this program is since other people are matching or putting up half of the money, we are assuming that there's a lot more knowledge out there on your part about what makes -- what's a sensible way to do things. The point of using these ARPA agreement authorities that allow more flexibility is so that you can come forward and propose from your business point of view, your effectiveness point of view, what makes the most sense. That's why there aren't a lot of guidelines, to give you maximum flexibility and come back and say, my organization can give the most effectiveness in this program if we can eliminate the overhead and make that as part of our cost match. That's the best way we can be effective, cost efficient and whatnot. If you have a really outstanding case that's true, you should go ahead and propose that, in that it makes sense and it meets the other criteria that Phil just mentioned. The underlying principle is you telling the Government, here's the smartest way to balance the cost or match the cost, or make this program work so that I, the guy who's putting half the money up outside the Federal Government, can win, and the Federal Government can win with me.

QUESTIONER: *** (From World Data Delivery Systems in Harper Woods.) My question concerns a cutoff date on May 14th, and what type of subsequent information exchange there will be, i.e., will there be any kind of ability to ask objective questions in terms of the proposals?

DR. NANZETTA: Yes. The only thing that happens on May 14th is the solicitations are announced. The people who are involved in the source selection process can't freely communicate and comment on proposals. You still need to be able to get answers to objective questions, and those will definitely be taken and definitely will be processed, but not in the form of advise on your individual proposal.

QUESTIONER: (From Energy Conversion Devices) I'm trying to still understand the distinction between development and deployment as it might apply to an individual firm, and one of the earlier

questioners asked that question, and I think you went a long way toward clarifying that distinction where an individual firm has some technology and wants to deploy it as a dual-use technology. My question is, is you are a firm with a commercial technology and you want to deploy it, as I would use the word, into the military or defense arena, would the same distinctions and definitions and parameters of your program apply?
DR. NANZETTA: That would be in the development category rather than deployment category, I would think.
DR. STARKE: In fact, that's specifically what's called a spin-on.
QUESTIONER: (Same) It's a spin-on issue. That was exactly the question, whether a spin-on was in the development or deployment.
DR. STARKE: Development.

QUESTIONER: (From the A. J. Bocker Company) We're an engineering consulting firm, where we help manufacturer deploy technology using assimilation software. We assimilate their environment and look at the ways that the technology can affect their operations. My question is, would the development of software to help them deploy new technology apply to development or deployment?
DR. NANZETTA: Something that might, depending on lots of more questions about detail, that might fit in Extension Enabling Services category, if it's something which would make it possible for companies or for technical systems providers to increase their range of services that they provide.
DR. STARKE: You shouldn't ignore development if you have an idea for an innovative new way to do the process, though, that's going to require some development. You could come forward with an associated proposal to meet the both, one in development and one in deployment, that would both look at your existing capability help deploy technology more efficiently while you were developing, say, even improvements on this for some new concept that would be a natural upgrading path to whatever you deployed in the first place. There's really an emphasis on trying to be creative and trying to be innovative, and every proposal doesn't have to fall on one of those red balls. You can link one up with something that doesn't have any red ball in the box, conceivably. Again, your case has to be overwhelmingly good when you go outside the path that's already been laid out.
QUESTIONER: (Same) If you link two, is there any advantage to the proposal or is there an administrative -- Is it handled administratively differently?
DR. STARKE: The instruction will cover how to do that. You just write two proposals and make reference to one another illustratively how it's going to be done. In terms of if there is an advantage, if you look at the two of them standing together, and they are much, much stronger and more persuasive than either one alone, then, yes, I would say there's an advantage.

QUESTIONER: (From Edison Industrial Systems in Toledo, Ohio) My question relates to manufacturing extension initiative within the Technology Reinvestment Project, and as it applies to the expansion of NIST's manufacturing extension partnerships, specifically into the manufacturing outreach centers and additional manufacturing technology centers. I'm a bit confused as to how the TRP fits into the subsequent competitiveness legislation that is now before the Senate and the House, and that's 4HR and 480. How is all of this going to conceivably play with an expansion of NIST's MEP?
DR. NANZETTA: I'll tell you everything it does. Things that would qualify as a proposal for an MTC or manufacturing outreach center, would generally qualify in the category of Manufacturing Extension Services Providers here. Things which are strong proposals as MTCs that are listed which would typically be strong

proposals within the selection criteria, because there's a lot of congruent between those. Procedurally nobody knows what the appropriation structure is going to be in the future. Nobody knows whether there's going to be substantial funding for defense conversion for the Defense Department in the next year and the year after that, or whether there's going to be substantial funding in the Department of Energy or the Department of Commerce for the Manufacturing Extension Partnership. So, the advise that we give is pay attention to making the proposal as portable as possible. So that you may well be funded for an initial year or two-year or three-year segment under Technology Research Project now, and roll that money over to an appropriation of a different agency in later years as it's worked out in the Administration where that funding will go in the future. Our attempt has been to make the planning and implementation and the guidance to people here as flexible and as portable as possible to avoid disruption of the system as those things are shaking out in terms of where the appropriations go.

QUESTIONER: (From Cleveland, Ohio) Under the friendly ball chart that's on page 2.9, there are three or four categories very clear on which piece of legislation you should be asking for funding under, except for the Alternative Deployment Pilot Project, and then there's two particular pieces of legislation and the match requirements are different for those two. Is there anything else in the requirements that would give guidance as to which one of those two pieces of legislation to apply under?
DR. NANZETTA: The eligible proposers are different in those two categories, so you need to see which one you're eligible to propose in. Also it's our intention, as we go through the review precess, if there are a lot of good proposals in one of those and very few good proposals in the other, to move proposals between categories where it makes sense from the point of view of match requirements and proposer eligibility, so that you're not necessarily trapped in the dot that you applied in. That can be moved, and it will be our intention, if that's appropriate, to come back and negotiate a move with the proposer.
MR. FENTER: I'd refer you to Appendix B where you try to get some details inside each one of those as to what the participants might be, or some of their objectives are in the Regional Alliance Program.

QUESTIONER: (From the Edison Industrial Systems Center in Toledo, Ohio) Have there been any funding parameters established within each of the statutory programs?
DR. NANZETTA: No. Lee Buchanan is fond of saying if somebody comes up with a super good proposal they can use up all the money in the category if it's good enough and it can win. But it better be a really good proposal. There are, in the examples, some indications would tie the size and impact to the size of dollars requested just as a guidance or scaling factors, but there's nothing which says what the size of the proposal should be.

QUESTIONER: (From Technology Corporation in Johnstown, Pennsylvania) For the purposes of the match, is the DOE Defense program monies, is that DOE's monies or --
DR. NANZETTA: That's DOE money.
DR. STARKE: That's considered DOE money that could be used as matching funds as long as the programs also match.
DR. NANZETTA: Is that all the questions?
Are there other comments from people up front who want to say anything else? Another question? Tom Starke wants to make a couple of comments before we break up.

DR. STARKE: I'd like to just mention some of questions we got from the

group yesterday that perhaps you didn't ask that would still be of interest to you. One of the questions we got was if I have a consortium, I have a team of organizations in my deployment system right now that maybe includes a canadian firm, maybe includes a foreign firm of some other type that isn't an eligible firm as defined in the Red Book, does that disqualify my proposal. And the answer to the working right now is that as long as you satisfy the statutory requirement that you have the right number of eligible participants, whatever your particular program line says, other participants you add do not necessarily negate your ability to propose; however, remembering that this program is intended to have pervasive impact and benefit to the U.S. economy and create high-quality, long-term U.S. jobs, you would have to argue very strongly that the inclusion of those other organizations in your proposal contribute to those goals, and whereas you might not be disqualified because you had, say a Canadian firm as part of your consortium deployment system, you would have to look very carefully that you would be competitive against someone that perhaps would not have a non U.S. entity in there proposal. That's a point that somebody who had excellent systems that happens to have one or two Canadian organizations. They may be able to propose and may be able to do quite well. That's probably one thing. The other question we got yesterday was how do I get paid. In other words, let me say I do this; you guys awarded me a contract; we agreed on it. The question is, well, on what basis do I get paid. You're telling me there are no rules in this and we're starting with common sense. What is the common sense concept for you getting paid. One answer is, hey, that's something that can be negotiated based on common sense when we get to the point of negotiating the agreement. Another model that has been suggested -- and this is not guaranteed or agreed -- there could be some initial payment up-front that would help get things started and then after that, things would be a cost reimbursable basis. The reason I bring that up is not to tell you that's the answer you're suppose to propose, but to encourage you to stretch your thinking as you look at how you can do this, and truly recognize that the government is very, very open to new ways of doing business and new concepts for how to do things, and it could even include the way in which the money comes to you.

DR. NANZETTA: Thank you, very much.

(Technology Deployment session concluded.)

ORLANDO REGIONAL BRIEFING AT THE HYATT ORLANDO HOTEL, WEDNESDAY, APRIL 14, 1993.

Let me start with the first gentleman at the microphone.

MR. CROUCH: My name is Denny Crouch. I work for the productivity center in Louisville. The question I had was regarding matching funds. In your verbage you said 50 percent of the funds for the total project to exceed a million dollars. On your view graph, it said a million dollars in federal funds. So that's a 200 percent change. Which is correct?

DR. STARKE: if I said that, I said it incorrectly. If more than a million dollars in federal funds is being requested, then 50 percent of the matching million dollars of non-federal funds has to be in cash. And what is meant by cash is a contribution that the management of 2 the program you're proposing controls how that money will be spent.

DR. NANZETTA: That's on a per year basis so the federal is per year.

MR. SILEO: Doug Sileo with state of Alabama. You have technology deployment. When you talk about some of the small firms -- this may be a general question not necessarily a

specific example -- but there's a lot of activities that go hand-in-hand. If you try to set up a network that allows technology transfer from a large company to the small companies and from the labs and down, there's also a natural thing to layer on that same network a business bid board, business development activities as well. Better -- not necessarily a technology function but putting people in the right connection with who's the buyer and who is the supplier. Is that considered valued or ancillary to a proposal? In other words, when you move out of the technology deployment side of it and work more with the business development side of it?

DR. STARKE: Go ahead.

DR. NANZETTA: I think not only is it allowable it's crucial. If you're trying to transfer technology to small companies there's a whole suite of things that have to go along with that that involve work force training, 22 management structure, work flow through the system, organization of the work force, access to financing. All of those things should be available in the system of trying to help the small companies. That doesn't mean that those all have to be provided directly by the proposer, but at least they have to be accessible through linkages with other people who provide access to those. But the core of it should be oriented towards transfer of the technology itself and not those other services in a free standing way.

MR. SILEO: One would assume they have to be able to deal with the technology to make a product or whatever. In other words, to get into that business you've answered then at that point all the other tools you can give them would augment your proposal.

DR. NANZETTA: Absolutely, yes.

DR. STARKE: But this program is intended predominently to help with the movement of information and knowledge in support of those companies and there are other agencies that you should be aware of and should be coordinated with your activity who do more of the business practice and other type activity. So we're not looking for a broad based here is one institution that's going to do everything and the federal government will come in and match all the money we spend 23 across the spectrum. The technology element of what we're talking about in that it affects manufacturing or other things involved with production processes and so on is the focus of this activity. Is that right?

MR. SILEO: I guess the deal is if you make those connections on a technology transfer basis they're ideal to use that same system to make it on a bid exchange, you know, a business based development as well.

DR. STARKE: Yes. And in fact we want it that to happen.

MR. FENTER: Yes. I think it's important for the overall program we're talking about is to make sure that whatever problems you need as a receiver of technology and information, we want you to get that, whether it's business or technology-oriented to be able to reduce your risk to make a product for profit. So we're really trying to make viable business entities in the long run and that's where we're at. We're not going to out helping you make the product to sell as the final product. That's your commercialization responsibility, but we do want to answer your questions and get you the right sources.

MR. ESAU: My name is Palmer Esau and i'm with Beta Analytics. We have been talking about a lot of revolutionary ways of exchanging technologies and moving things around from defense to commercial and commercial back into defense. There are numerous regulatory problems that I can see in that there are things in place to protect defense technologies, dual use technologies. We're streamlining exchange. Is there anything happening to streamline the measures that are currently in place

that are protecting technologies in the government?
DR. STARKE: Could you give me an example of the kind of measures you're referring to?
MR. ESAU: Well, licensing requirements, if you put dual use technology from a defense industry into a straight commercial industry, that's dual use. Are we going to streamline identification of that which still needs to be protected or which can be released? On the one hand we're getting the spreading of it. What else is going to be in place either to protect or to release it?
DR. STARKE: I think if you're asking about in this program, in that the licensing is something that's under the control of this program and we're not being affected by some other program that developed the technology in DOD and says how it can be disseminated, in this program we have all the flexibility to do business in a new way and we fully intend to make licensing much easier or perhaps even eliminate the need by having the government give up the proprietary data rights or the patent rights to a technology and giving it to you. If you're talking about technology that's owned by some other DOD program that might be used in what you're doing here, we have got to respect the rules and regulations that those other programs who own that data have set for it. There are discussions of other reformed and improvements under way, but at this point they are only discussions and we have to operate as if the rules are the same in those areas.
DR. STARKE: John, do you want to add to this, please?
MR. FENTER: Yes. If you were also questioning security considerations, we aren't streamlining releasing security information, but it's like a lot of the things dealing in security topics that when you have a particular application, that's where it gets classified. When it's just a technology base that you're transferring the classification usually goes away. Not always, but usually. Control with regards to full com. [phonetic] and export, I understand. I'm not involved in that but I understand they are trying to release some more lenient rules in regards to that as well.
DR. STARKE: Gentleman in the back?

MR. MCGEE: Larry McGee of Ben Franklin Technology Center in Pittsburgh. The simple question of match or timing of the match, if we all start writing proposals next week we have to put in our proposal due dates for match. I presume match would have to be expensed at the same time the cash is being requested. So for our boards and for our projections we talk about october 1st on, is it that clear of how we can start a due date in our proposals?
DR. NANZETTA: It's our aim -- we may be inundated with proposals. It's our aim to get the selection process far enough along that we can announce winners by the end of this fiscal year, which is the end of october, and then for some period of time carry out the formalizing negotiations and so forth. My guess would be from the point of announcement of the award, we could consider pre-award costs. So it's probably reasonable to plan from around the 1st of October for expenditure matching.
DR. STARKE: That's an issue you should stay tuned on because that's something actively being discussed. When it gets into contract -- or not contract -- other agreement negotiations, that's something that will have to be worked out in terms of what the real answer is going to be. It's clear many people will not have their matching funds in hand right now or two weeks from now or the 23rd of july, perhaps, when proposals are due. But you'll have to put together your best projection, your best defense that the match is real and time the match as much as possible so that it can start when your go-ahead to begin expending funds begins. There's a question that's relates which you did

not ask which is sort of related is how is the money going to come to us once we get started on the program? And again the common sense flexibility is the guideline here. We've heard such concepts as perhaps there would be an initial infusion of cash from the federal side in the program to help it get up and running and then after that it would be on a cost-matched basis that you could be reimbursed. Someone then said, "if I have to borrow money until the federal government reimburses me, do I get paid for the interest on that money I borrowed?" Those are the kind of issues we don't want to make rules on now. When we do the award negotiations they will get decided then to a mutually agreeable solution.

MR. ESAU: Thank you.

DR. STARKE: Gentleman in the front, please?

MR. HUDSON: Chris Hudson with Automation Intelligence. We're a small business and I would like to ask if I could give a possible proposed example of something and ask if that's something you're looking for sort of or not. That's the only way I can express it.

DR. STARKE: Please do.

MR. HUDSON: As a small company we specialize in one product area. We provide what we think are high performance and fairly open extensible controls and support systems for machine tools and we sell mainly to fortune 100-type guys because they're big enough to buy more than one of them. We can never really address the problem of the small guy who could use this technology. We don't know how to reach them. We can't afford to advertise to him; we can't afford to prospect for them. Would something be combined with one of these regional centers -- are you looking for something like that, something that is available and we sell it all the time to these bigger guys and I'll tell you we don't sell it at all to the small guy. We never see him. Would some kind of partnership thing that would try to bring them to the small guys -- is the program trying to do that? It's not a development thing, it's really an education. The cost of us explaining the value of it is tremendous to the small guy.

DR. NANZETTA: It's clear that if you look at it from the point of view of national security and commercial security that the base of manufacturing equipment is crucially important for the United States, that's the base of machine tools and machine tool builders, controls builders, and controls innovators like you are very important. If there are ways to use the deployment activities to strengthen that and make it possible to improve the access to small companies for sales of those, that's something that would be very strongly encouraged. As to what mechanism you use, it would fall either in the deployment pilot project category or in the technology access service category. It's not exactly what we thought about at the point that we were writing this thing, but one of the points which I think has been hammered home is that you're not constrained by only thinking those things which we thought about at the front. It's certainly an objective which we would like to find some way to accomplish and there certainly are resources out there in terms of deployment network which could help in getting that source of access, particularly to small companies that's difficult to obtain directly.

MR. HUDSON: If it's okay to ask, we would be very interested in finding anybody that would help us do that. We just don't know how to do it.

DR. STARKE: In fact, if there were an organization putting together a proposal not just to do one of those, but to do a set of those where you would take advanced technology that needed to be packaged in a special way to reach the small manufacturer who could be a beneficiary of that technology, you might be a technology source for that particular organization.

Now, for the example you just mentioned, doe and niss [phonetic] have just combined together to work with the machine tool builders organization to provide that very kind of information to small machine tool builders and if you'll see me afterwards I'll give you phone members of people you can contact who right now are trying to solve that problem and have a framework in place.

MR. HUDSON: Thank you very much.

DR. STARKE: By the way, I would like to encourage anyone else who wants to get up and throw out an example or throw out a concept, to do so, because this is exactly what we are supposeed to be doing as we're out here talking to you is helping give you some feedback on sort of what makes sense and how it could work. Gentleman in the back at the microphone?

GENTLEMAN FROM AUDIENCE: Some related questions. First of all, any of our proposals that we may put into this arrangement, are they going to be treated with some degree of confidentiality because there is a commercial risk involved in providing certain information to this government entity. Is it going to be published or not?

DR. STARKE: You are going to have -- there will be confidentiality to the information you submit. It should be marked as proprietary data, as all things the government handles that are proprietary are. Furthermore, in this program we are giving you the option if you only want federal employees to look at your proposal, you may so state on the cover and that will be respected. You should be assured, though, if there are technical experts outside the government who would be asked to evaluate your proposal should you elect to let the government use them, they will sign non-disclosure agreements and the people that will be used are typically ones that have been used in the past for this and we believe have a good track record. So nothing we are going to do within our power is going to compromise any confidentiality of anything you give us as long as it is so marked.

MAN: Understood. Another point. There is a statement made this morning earlier about -- I think Don said something the government wants to have marching rights.

DR. STARKE: Yes.

MAN: That's a very tricky thing and first of all you're very gratuitously going to give away government property, some of which you may have already licensed. Incidentally, my name is Ed Tutle, and I'm a technology transfer licensing consultant here in Orlando so I'm very much concerned about the licensed transfer of property. Nobody gives anything away for nothing. There has to be consideration, et cetera, when we build up a consortia, we come to the government say we would like to have some money to help develop this idea, we already have transferred the technologies and then all of a sudden the thing doesn't come together and the government marches in. I was wondering what happens then? Will the government decide to take possession of the intellectual properties that were transferred or is it going to be compulsory licensing? Licensing we can see. Acquisition of the rights is another matter. Can you clarify that point, please?

DR. STARKE: The answer is going to probably be no, I can't clarify that point. However, I can tell you how it will be resolved. And that is the issue of how march in and under what conditions it can be exercised and whether to license or whether to release rights to a company as part of a particular project or a consortia as part of a particular project is something that will be negotiated after the decision -- when the awards are negotiated in a business sense when these other 33 transactions are written. Those are clauses that will be in those other transactions that you and ARPA, if ARPA is writing it, will sit down and negotiate to your mutual agreement.

So you will have a shot at saying how that gets done.
MR. TUTLE: It's a walk-away proposition if we don't like the deal going in?
DR. STARKE: Absolutely.
MR. TUTLE: One last point. The government has been very good at putting out or getting patents, et cetera, but because of budgetary constraints, the government is not -- repeat not -- maintaining these patents. So many of these U.S. Government-owned patents and technology have been expired. And I'm just wondering in this technology access arrangement, is the government going to be very forthcoming about the fact some of these technologies are no longer protected and are public domain for foreignors and everybody to use. Are you familiar with that problem?
DR. STARKE: Yes, but I don't see how it affects the project here.
MR. TUTLE: If we need government technology -- some of which may be protected and some of which may not -- we don't necessarily know the status of the government-owned technology. Will the government be able to give us that information? Because if we tie a business plan around some piece of technology that we presume is being protected by the government, which indeed has not been protected because the government has not paid the maintenance fees, we need to know that. Is there a provision in this process that will assure us we'll have that information?
DR. STARKE: I think our position -- and I would have to check with Rick Dunn -- is going to be if that's an essential element for your proposal to be successful, it's incumbent on you to understand the status of that technology you're relying upon before you build a proposal around it.
MR. TUTLE: Can we get that information from you because once you put it in, we're never sure where the government is on a particular thing.
DR. STARKE: I'm going to have to defer that because I don't know what process the government has in place to be able to release that information to you. I believe there is one --
MR. TUTLE: Okay. You have my business card. I would like to know that because i have some clients that have a concern about such matters and I would appreciate knowing that, because I think a lot of people skim over the intellectual property implications and I'm very interested in the end game. **DR. STARKE:** Let me request that after you sit down you write me a note that says just what you said and give it to me as we break so I can pass that on to rick so we can get an answer and if possible we'll get that answer included in the transcript that will be published at the time this is available to everyone, so not only will you have the answer but everyone who uses the service will. Can we go to the gentleman at the front microphone?

MR. OWUSU: My name is Yaw Owusu. I'm a professor from Florida A&M and Florida State College of Engineering and my area is manufacturing and industrial engineering. My question is: There is knowledge base in the universities, but a problem is that there are no facilities where we can train and re-train people because of lack of improvement. So how is the organization going to help to establish really general facilities for equipment and work with industry to be able to train and re-train people who are coming from the army or small businesses? In other words, the budget -- will there be a budget for equipment to establish a training base in the universities?
MR. FENTER: I can start on answering that. The TRP program is not intended to buy equipment. But the idea of some of the industrial excess capacity that exists in a lot of the plants may be able to be used if it's properly defined with the local universities in the region to address the training of the people coming into

the region, addressing training of the suppliers that need to be changed from their defense products to commercial products. So it's a matter of trying to reach some partnerships with some local companies that have the state of the art equipment that's available and see how that might be able to work together.

MR. OWUSU: Would that be extended to the military bases which are being closed if they have the facilities can we transfer to the university for training purposes?

MR. FENTER: My understanding is that that's true but you have to work it with the particular base to see what they have available.

MR. OWUSU Thank you.

MR. FENTER: Yeah. That makes them a partner in the whole program so that's what they want to do.

DR. STARKE: The gentleman at the back microphone, please?

MR. WARD: I'm Mike Ward. I work with the Chamber of Commerce in Huntsville, Alabama. The first question has to do with, in the spirit of technology transfer information exchange, if a list of people who have signed up to attend and participate in this meeting can be available to the states?

DR. STARKE: My understanding right now, in the past meetings, is we were not able to make those lists available. These meetings are being sponsored by, in this case, the Southern Legislative Conference. If they have those lists and can make them available, then they can be available but that's a request that should go to the SLC rather than us because it's my understanding they control that at the moment.

MR. WARD: I talked with mat earlier and he said that information was going to be sent to ARPA, so y'all will end up with it eventually.

DR. STARKE: I will certainly pass your request on. I don't know what the answer is going to be based upon what it's going to take to do it, but we'll make sure they know that you have requested it and that the list be made available. Second question?

MR. WARD: My second question has to do with technology transfer and NASA and other facilities, in our area at least, have a very difficult time transferring technologies that they possess into the private sector. The Chamber of Commerce might be interested in setting itself up as a one stop shopping opportunity for businesses who are interested in a broad variety of technologies who did not know where to go. I'm not going to go into the details of what that might involve, but is that something that might be interesting?

MR. JENNINGS: I can't talk to people in Huntsville in particular, but in general give them a call. I think this is the sort of thing NASA in general are trying to do a better job of and if you think you would be -- they would be a better partner, give them a call.

MR. WARD: Their problems are not that they're not trying to do a good job, it's just there's a suspicion sometimes on the part of the people that, I'm from the government and I'm going to help you?

MR. JENNINGS: Yeah. I'd encourage them. Give them a call, say, "we would be interested in participating in this program with you. This is what we would like to do how do you feel about it?" I know some of the people I talked to are very interested in this program, they want to make a solid contribution. I think what I heard is they're very interested. I think you'll find acceptance and might be able to work out something.

MR. WYNN: I'm Doctor George Wynn, and I'm with the Human Resource Management Center in Tampa, Florida and thank you for inviting us to share ideas about what we think might fit into this technology deployment arena because that's basically my question. What we offer and have offered for several years is an electronic job matching system and what we think

we're proposing is transferring the software in the system either to colleges and universities or to prospective employers and a third alternative is possibly offering the service on a state, regional or national basis. We know our competition and we realize that we have a very unique software system simply because we use competency signaling and electronic portfolios of attitudes, abilities, skills, interests and so forth, beyond just the standard kind of input. We see wide applicability either for the service or the software technology with respect to deployment of skills and abilities from the defense sector to the commercial industrial side or vice versa. That's kind of as far as we've been gotten with this and so what I'm looking for is some guidance to say, "well, George, this looks pretty good," or "maybe this is the wrong avenue for you to take a look at."

DR. STARKE: You want to take a shot at that, Phil?

DR. NANZETTA: I think one of the services that we can offer you is to help you save money investing in a proposal which has a low probability of success, and that sounds to me like one that would have a low probability of fitting into the programs.

DR. STARKE: can I add something? That is, there is a lady at this meeting who you may have met, Joan Horn [phonetic], she's an ex-congresswoman from the St. Louis area and she's just joined the office of the Secretary of Defense in the defense conversion area. She is working with a program that may have other elements that will deal with this. Furthermore, there is discussion of money going to the department of labor to also support the kind of activities that you're talking about. So I think the composite answer is: this is not the best program. There may be other programs in President Clinton's defense conversion package -- which, remember is $1.7 billion, much bigger than we are -- that might be much more appropriate for the capabilities that you would like to see employed. Gentleman at the back.

MR. LIE: My name is Larry Lie, spelled L-i-e, Economic Development Resources. This is a question concerning intellectual property rights. Is there any disadvantage to a program or business plan which is centered around or has a key to it in-bound technology from another source, such as coming from the former U.S.S.R. And would the program be amenable to subsidizing or underwriting or assisting in the license or rights to acquire that technology to make the program a commercial success here in the United States?

DR. STARKE: Let me take a shot at that and then get some help from my colleagues if there's more that can be put into my knowledge on this. We fall back to the common sense principle. If this technology you're talking about bringing in could stimulate and create a new industry, could create a new way of doing business, then I think the common sense rule would say it would have a -- it would help us do what we're trying to do in competitiveness and affordable military systems. There is nothing in the rules of who are eligible or in how you can spend the money that says you could not either include a foreign participant or that you could not include payments to a foreign organization in support of licensing or bringing in some technology. However, it is upon you to make the case that this is a smashingly, overwhelmingly good thing to do to achieve the goals of this program. And then you would be evaluated on how credible those facts that you put forward were and what you claimed you could accomplish with them. So, yes, I think what you're describing is allowable, but I urge you very strongly to think from the perspective of this program, what the goals are, what congress intended, and that what you're describing, in fact, would

implement and achieve that. Is there anything you'd like to add to that?

DR. NANZETTA: I'm not sure I understand the structure you're proposing to carry out, but if you have a good strong way to access technology from foreign sources which may be specialized and may be beyond something that's available from technology sources here, that would be a very attractive starting point for putting together a structure that makes sense.

MR. LIE: I have one other question, but it's a practical one in terms of the very tight timeframe. The small businesses themselves, essentially and inherently would not have the dedicated resources to do a professional job in grant proposal writing. If they essentially meet the date deadline and meet the basic criteria that you describe in the transparency, is there an adjustment here afterwards in which they can embellish or expand or add additional information beyond the original filing date?

DR. STARKE: No. Thank you. Question in front, please?

MR. STICKLEY: Martin Stickley, University of Central Florida. We're a university group doing research and development in the area of lasers and laser optics. There's a lot of embedded technology there which probably doesn't get out the way it should. Reading your description of maybe technology access services would a program meant to, let's say, extract and define this technology and transfer it to equipment manufacturers be something which would fall under this category?

DR. STARKE: I think it would certainly fall into the category. In evaluating whether to go forward with it I would take a hard look at coming up with both what's innovative that other people could learn from and copy as well as how effective you think the approach you're going to propose would be in reaching the target population. Those are the really important things that jump out at me, but the concept you outlined, I believe, fits into what we are looking for in that area. It certainly would accomplish the goal of extracting technology packaging it and effectively communicating it.

MR. STICKLEY: I guess the final question is the difficulty in writing proposal or a cost proposal is to, for example, identify those specific technologies and recipients of those at this time. Doing that is always an evolving process and I could see we could identify several or some in the near term, but this happens in a continuum, almost in a continuous process. How would we construct our cost proposal where you're seeking participation, and say a year from now from somebody who between now and then comes to us and learns we're doing something and wants to participate?

DR. STARKE: My recommendation would be take your best shot at it both based upon historical data from similar organizations, your own experience, and how well you think you can do. You know, I fall back on the common sense principle that there aren't really going to be any firm rules to say it should be done a particular way. Phil?

DR. NANZETTA: I would like to make a comment on the first half of your question. If what you propose is to give users access to laser and electro-optics information which you have developed, that's a very narrow proposal and would probably not be strong. If what you propose, however, is to give users access to a broad base of information having to do with lasers and electro-optics from a variety of sources, that would be a much stronger proposal. And you should think about how you can use a network of contacts which you have developed in your own technical work to get access to technology in that variety of sources and draw it together and serve as a portal through which that information can flow in general. The question in the back?

MR. SMITH: Larry Smith from Pensacola, Florida. I'm a worker out of Pensacola. We're on the base closure list. There's about 3,000 people there and I'm right now spearheading an interest group to see how many workers and skilled laborers may be interested in staying in Pensacola. And the concept if there's enough there, maybe we could write a proposal to birth an industry into place. I guess there's some words in the information packets that creating new firms is something that can be done. I want to know how viable -- should we go for a large firm, small firm, any consideration to the concept of guaranteeing any type of manufacturing contracts, you know, with the ASO or DOA, whoever is buying things if you set up a quality manufacturing program and right now the people that we're using are the work force that are building these quality air force parts. Would there be anything to tie into the lifeline of this industry that wants to stay in the local area instead of moving whether wherever these defense jobs go?
DR. STARKE: The answer that was given this morning -- let me answer this in two parts because i want to build two cases out of what I think I heard in your question. In one case if it's just to come up with a viable manufacturing industry that is made from the parts of what was there before, we believe there are other parts of the defense conversion program that that is more appropriate to and this programs goals and objectives would not be strongly supported by the success of what you're describing. Now, let me build the other half of that. If the organization that you're talking about putting together would be a strong and viable contestant for the kinds of programs we've described here independent of where it had come from, that it was materially supporting the goals that were outlined in these programs here or of the development programs that are being talked about in the other breakout sessions, then yes, you probably should be coming here. But for the criteria of this program being part of a base closure exercise, it does not give you an advantage.
MR. SMITH: Okay. On the other side is there any assurance or thoughts about tying these technology bursts that we're butting out there to future contracts? You know, that we're building the industry we want to buy from and are we then actually considered we will, in fact, buy from them, from the federal government?
DR. STARKE: There's a fundamental commitment to building an industry that will be able to be bought from because it will be competitive. In terms of are there any guarantees that if you participate in this program you'll have an advantage or preferential treatment in future contract bidding, the tentative answer is no but that's not an issue that we've gone into in any detail and that kind of thing, my feeling is, would have to come out of congress because it would take almost statutory authority to give that kind of preferance. So to some extent we don't have authority to do that now. I can't say we won't have authority to do it in the future. In the front, please?

MR. ENGLISH: Bill English, Control Data. My question is this funding category, technology deployment -- and I had to decide whether to go into development or deployment and I chose deployment for one reason. We have lots of technology we would like to deploy, but it seems as if this category is more interested in process. And I think the question just before the last one finally clarified that for me and maybe I'm really confirming that that. You're more interested in proposals that will get at a technology deployment process than a specific technology deployment? Is that a fair statement?
DR. STARKE: yes, I believe it is because what is very important to us is

being able to replicate these processes that we pilot, perhaps, in this program as opposed to having one specific technology that got well deployed to a particular group. That would be nice too, but these are pilot programs, many of them. So both the process and the technology deployment success in a particular technology or geographic region would have to be combined to successfully meet the goals of the program.

MR. ENGLISH: Okay. Then let me follow up with the following question: you have specifically emphasized almost all day that the target audience are small businesses. Almost to the point where it seems like it's exclusive. Am I just hearing that wrong? Or is it right?

DR. STARKE: Let me reiterate what was said this morning. This is almost no preference in participants for small businesses in the legislation -- in the programs as it's being implemented. The small business comes out so predominently in this group because the legislation for manufacturing and parts of the legislation for dual use extension specifically indicate that small businesses should be part of the target audience that these programs are going to help. The target population. So when we keep saying "helping small business," it is the goal of the projects we're trying to launch to benefit small business and make them more effective competitors. That does not say that only small businesses should apply to do these things. A big business, as John mentioned earlier, could come forward and say, "we see the small businesses who are our suppliers as benefitting from a program we could launch," and match the funding for here and a big business could apply and win.

MR. ENGLISH: I understand. I think you misunderstood my question. My question is the target audience not the proposers. More the target. The target of a process, of a technology transfer process, seems to be directed almost exclusively at smaller businesses. That's the impression i got.

DR. STARKE: Then we want to correct that, because the goal is to target all business but not to leave small business out in the process.

MR. ENGLISH: Thank you.

DR. NANZETTA: Let me add to that. If you look at the manufacturing and service providers the legislation there calls for targeting predominently small companies. In the defense and use systems category, that's not the case. So there are different things as far as the target audience is concerned.

MS. GAINES: Janice Gaines with the international society for optical engineering. We're already in the business of bringing together researchers and applications at our meetings with exhibits and technical conferences. My question is we're currently looking at providing no cost networking services to small companies to get people talking to each other. Would we, as a singular entity, singular organization, qualify or would we need to partner with someone else to qualify for the matching funds?

DR. STARKE: It depends on which of the program line items you might be bidding to. If you look at Regional Technology Assistance, they require a firm or an entity sponsored by a state, a local government or a technical association such as the one you've just mentioned. So to qualify for that one you would have to be sponsoring some entity that was perhaps intimately involved in the deployment itself through your organization. But I think the answer is yes, almost in all cases we anticipate partnerships being more effective at accomplishing the objectives here than single organizations, although there are a few cases where single organizations can apply.

MS. GAINES: Yes, I think I'm envisioning we would be serving many, many organizations and that way partnering in a sense getting

membership dues to help support the activity.

DR. STARKE: You could frame it that way and I believe that would qualify. You would have to really look carefully at the specifics in the red book and exactly what your model was. But yes, I think the flexibility is there. Again, fall back on common sense but if it's going to help achieve the goals of the program and you frame it in a way that satisfies the legal requirements and it's going to -- it's the best proposal anybody sees, yes?

MS. GAINES: Is there one particular person I would maybe speak to on this subject?

DR. STARKE: Phil?

DR. NANZETTA: In terms of definition of eligible participants, probably the best person is Rick Dunn. If you're interested in a fine distinction. If you look at the chart on page 2-8 in the book, that gives a chart of eligible participants and I think in all the deployment categories a nonprofit organization -- which I understand I guess you are -- does qualify. A single nonprofit corporation qualifies at an eligible participant so you could come in standing alone.

MS. GAINES: Just one brief second question. If we were to provide the service internationally, that would be an excluding factor to international companies?

DR. STARKE: It would not be an excluding factor, however what we fall back on is the goals of the program are to enhance American competitiveness. If a substantial fraction of your effort went to enhance competitiveness of other countries as opposed to this country that possibly would not help you in that criteria.

MS. GAINES: If you presented such that bringing in that outside technology would assist the nation...

DR. STARKE: That would be the case you would have to make.

MS. GAINES: Thank you.

DR. STARKE: First microphone?

MR. VASQUEZ: I'm Moses Vasquez from American Composites. I got a couple questions. Number one, our company is a small company. We've been around for two years now but what we do is we have like two divisions. One of our divisions is we repair composite components for aircraft and the other division is a machine shop and we fabricate tooling and parts and other items like that. The thing I've got a question about is we don't have an engineering department. We've been fabricating parts, composite and machine parts, per drawings or per samples. Would that disqualify me from proposing writing a proposal?

DR. STARKE: No.

MR. VASQUEZ: What I'm getting at is we haven't developed anything in-house. Everything we fabricated has been per customer specs or per drawings.

DR. NANZETTA: What would you think of proposing to do is the question?

MR. VASQUEZ: Well, possibly changing some items from sheet metal or whatever to composite parts, you know, because of the weight or whatnot, as far as aircraft and possibly fabricating fittings or other items like that for aircraft use.

DR. STARKE: I would think what you would want to do is look more in the technology development area if you were talking about new processes or innovative ways of bringing that new composite technology into existing systems rather than deployment which is much more looking at a network mass motion of manufacturing knowledge from one place to another. Development would probably be more appropriate for what you're talking about doing and even there i think you would have to have something very innovative to compete well.

MR. VASQUEZ: We've used consultant engineers. Would that be a viable partnership there?

DR. STARKE: You would be welcome to, you know, whether it was

consultant engineers or other companies you would work with in the development areas to put together what your team was to achieve what you're going to propose.

DR. NANZETTA: I would say in this competition you have a very, very low chance of submitting a winning proposal in the framework you're talking about. You're better off investing your time and resources in something else.

MR. VASQUEZ: Okay.

MR. STICKLEY: Martin Stickley with one other question from the university of Central Florida. This has to do with some discussion earlier. Somebody got up and raised a question about a prime/subcontractor relationship. I think Buchanan kind of stomped on it and said no, that's not what we're talking about. But when you look at structuring a cost proposal -- and one has a state organization university as a sponsoring agency -- isn't the nature of a relationship that we will have with industry organizations, industrial organizations, be recipient of some of this technology, is it going to have to be that kind of relationship? How does one structure a cost proposal if you don't have somebody who is a recipient of government funds as a prime and others who are subcontractors?

DR. STARKE: When we've had this question earlier, the answer that came out was the other transaction agreement is sufficiently flexible that in the negotiation process you could negotiate a number of different options for how funds got disbursed. It would be possible that if you had five players and you had a pre-agreed-upon management plan for how much each player got and how the thing was going to be essentially managed arpa could conceivably write five checks. Or it could be agreed you would set some entity up that would distribute the funds to all of you. I think Lee was not so much trying to stomp on the prime/sub answer as he was trying to stomp on "I'm going to force this into my way of doing business as usual whether it is the best thing to do or not because that's the only way we've done it in the past and it has got to be best." If you remember the elaboration of the answer, what came back was, if that is the most cost-effective way, low overhead, highest quality way you can implement a program, that's probably the best thing you should propose. Next question?

MR. SPRINGFIELD: Bob Springfield from Georgia Tech. Industrial Extension Service. We envision proposing a variety of activities to expand our extension service. I was wondering if you're planning to come back at the end -- if we should be on the short list, so to speak, to negotiate for bits and pieces of that or is the proposal going to stand as written?

DR. NANZETTA: What we will likely do is go through a screening process based on proposals and then have either site visits or invite proposers into interviews. For the larger activities they're likely to be site visits and for the smaller that's likely to be invited in.

DR. STARKE: I think there's a watch word and that is the negotiations and the evaluation process could be very, very interactive, especially as it was mentioned that there would be renegotiation and flexibility in evaluating each one of the criteria and evaluating a unique concept somebody proposed. So I think one should be ready to have additional discussions, but it's not guaranteed everyone who proposes will get additional discussion in the evaluation process or site visits as Phil mentioned.

MR. SPRINGFIELD: One more question. On the emphasis on small business for manufacturing extension, is that constrained or limited to small business or is the emphasis on small business?

DR. STARKE: I didn't catch the second part of your question. Mr. Springfield: the small businesses, the manufacturing extension, is the idea

that we would serve small businesses, is that a constraint, and absolute constraint, or is that an emphasis on small business?

DR. NANZETTA: No, in defining target population and the delivering mechanisms you propose, that can be focussed on small businesses. In the same way they need to pay particular attention to defense-dependent businesses. Having put that structure in place, you should serve all companies that are appropriate whether they meet those defining restrictions or not. So in the end you're not prohibited from working with non-defense businesses and you're not prohibited from working with companies larger than 500 employees.

DR. STARKE: The point is if you put a program together that served the 100 biggest manufacturing companies in the country and that was its target population, it would not meet the requirements for the manufacturing technology extension service providers.

DR. NANZETTA: Let me say this -- and you know this -- a lot of times a way to work with small companies is to work with the suppliers to a large company to use the contacts and interactions with the large company or the issues which are involved with that large company as a meaned by which you work with the small companies as well. And particularly if you look at the alternative deployment pilot projects category you're specifically invited to come up with proposals which look at the prime contractor-supplier supplier chain structure as a way of structuring the service you provide. That's one that John and bill are particularly interested in.

DR. STARKE: I want to thank everybody for your help and your feedback. I hope the answers we've given you are helpful. Please use the phone numbers that have been handed out and we thank you very much for your participation in today's meeting.

(whereupon, at 5:05 o'clock p.M. The proceedings were concluded.)

DALLAS REGIONAL BRIEFING AT THE CENTRAL DALLAS RADISSON HOTEL, THURSDAY, APRIL 15, 1993.

THE SPEAKER: (Inaudible) Is that criteria in order of priority?

DR. NANZETTA: No. The criteria are equally related.

THE SPEAKER: Does that program come from that TAP grant that the Commerce Department gives to the university system?

DR. NANZETTA: This program did not come from a grant.

THE SPEAKER: In the technology aspect program five states were given from the Department of Commerce last year, and Missouri called (unintelligible) through the small business development center.

DR. NANZETTA: Okay. The question is did this program come from a MEP grant which was given by the Department of Commerce. The answer is no. The kinds of activities which were done there of course relates to the activity here, but this is not developed in conjunction with that.

THE SPEAKER: If it wasn't, the reason I'm asking, I was the first recipient of that grant and technology transfer that was done for me from the university system there in Missouri we have started two companies. Will that funding that was given to me, which is a little over $200,000.00 now, be counted against me as a matching fund?

DR. NANZETTA: No, it will not be counted against you.

THE SPEAKER: Can I use it as --

DR. NANZETTA: No, you can't use it.

THE SPEAKER: There's another question. We've been chasing this for about two years. The technology access program from University of Missouri at Rolla, we looked for a electropneumatic engineer and we

found one at the Harry Diamond Laboratories in Washington, D.C., Dr. Capanella. We met with this guy and he came to Kansas City. We tried to do a trade-out and there's no way, and that was with Don Myers from the National Consortium for all this mess, and it ain't going to happen. And my question is --

DR. NANZETTA: I was afraid I wasn't going to have a question to repeat.

THE SPEAKER: My question is: Is there a way to transfer money from industry to a federal lab for a specific employee? Have you guys looked at that problem for a small company to be able to access these laboratories? It's one thing to say use the labs, but it's a completely different problem to get there.

DR. NANZETTA: Let me try and make -- maybe the others will want to add to it. I don't think we've done anything in this project specifically to address that issue. However, what you see in this project in terms of the agencies working together and concentrating on something like this is also acting on all the other things which our agencies are doing and you can expect it to bring about change along those lines.

THE SPEAKER: Is there a (unintelligible)?

THE REPORTER: I cannot hear him.

DR. NANZETTA: Okay. Why don't we have people who have questions walk up right here and I'll let you use this microphone. Just line up there.

THE SPEAKER: The question was, I work for a computer company. It's more than likely we're going to be involved in multiple proposals right across the nation in the deployment of technology. I was helping to facilitate that. How would you propose, that we work that on an individual site basis, one thing, and also would it be worthwhile to impose proposal for an overall strategy? That's the question.

DR. NANZETTA: I'm not really sure that I understand what you propose to do.

THE SPEAKER: Okay. While you're talking about a network, I work for (unintelligible) Corporation and we are in the networking business. One of the things that we're working with is really working with (unintelligible) consulting on a state level and a multi-state level and we will move forward by consulting for others. We are a nationwide company, an international company. As these proposals come forward and you keep seeing things in this proposal and that proposal and that proposal, or any other company idea, how are you going to view that, on an individual site basis or what could a large corporation unfold an overall proposal in conjunction with individual proposals?

DR. NANZETTA: You're the one who has to decide how to put a proposal together.

THE SPEAKER: How would that be viewed?

DR. NANZETTA: It depends upon what the proposal proposes to do.

THE SPEAKER: Okay.

DR. NANZETTA: I think whatever you do it should be done in partnership with other people and the way in which you organize that partnership is something for you to work out.

THE SPEAKER: But what I'm saying to you is our individual partners have got state focus. We have got a state focus and we also have a national focus. Our individual state consulting partners have interest in working in Portland, Oregon. We may have an interest in deploying a nationwide strategy. That's the question. How would that be viewed in terms of which you suggest we approach that?

DR. NANZETTA: The closest that I can come to an answer is if you look at the Extension Enabling Services or the Alternative Deployment Pilot Project, where this would probably fall, in both cases what's called for are pilot projects and not for the ultimate solution on a nationwide basis. And so, if I understand what you're saying, and I'm not really sure that I do, I would

say you should focus on pilot project first.
THE SPEAKER: Okay. So the multiple pilot project. Okay. That's fine.

THE SPEAKER: Sir, I was wondering if you could give us some examples of NIST thinking about what would be examples of manufacturing outreach centers and particularly as contrasted with the NCC.
DR. NANZETTA: Probably the best thing is you look at the examples in there. In the book there are several examples which would correspond to what NIST is thinking about in terms of outreach centers and also to what the interagency working group is thinking about here. They are spelled out there.

THE SPEAKER: I have a question for John now, associated proposals.
MR. JENNINGS: Sure.
THE SPEAKER: I can envision a proposal that would provide both extension enabling services and technology access services, basically the same service, but it would accomplish goals related to both activity areas. Would that require two proposals or, since they are both funded out of -- both of those activities would be funded out of the best dual use for systems extension program, would one probably cover that?
MR. JENNINGS: I think it sounds like you might be able to just -- I wouldn't look at it from the point of view of where the funding is coming from. I would look at it from the point of view of what the ideas are. If there are two separate ideas that you really think they are more powerful if supplied together, you might put them in one proposal. If they are kind of two separate chunks that might be fairly well bunched in and of themselves, then you might break them up into two and associate them and say, you know, "We could really advocate both of these together." We're not going into the details. It's a little hard today. But don't start with the angle of we're going to fund it out of this use. That's not what we're going to use to discriminate.
THE SPEAKER: Okay. Whatever makes sense, in other words?
MR. JENNINGS: Yes, just kind of -- yes.

THE SPEAKER: I have a question about the alternative deployment provider project. I'm from Kansas with a state economic (unintelligible) agency. Our focus is on a formally organized consortium of some 21 small manufacturers in the aerospace industry, primarily Boeing contracts. And initially it's given seed money by existing Manufacturing Technology Center (MTC). I understand what you're looking at, that there is transferability. You want to document a pilot that can spread elsewhere, and the consortia seems to be attracted to that because it's a growing thing of not that many formally organized as this one is. And I guess the question, as I read those examples, there's a lot of concentration on the small suppliers with prime contractors. Their intent is to get some viability away from the prime contractor. Could you give me some feedback on the relevance of that situation?
MR FENTER: Well, I think you hit the problem on the head, you know. We're trying to get that information away from the larger companies down to the supplier level. Any relationship that can be generated from a group of small businesses or suppliers with an MTC and they bring information in is really good. I think when we're talking though about an alternative deployment pilot you're going to have to put some other innovation in on top of that to see how those companies work together with regard to sharing information or developing a business state commercial entity resulting from that activity and then you go from there from getting all that information together. But I think your idea of trying to do that is right on.

THE SPEAKER: But is the question -- Are you asking separate from the prime contractor? Because your examples seem to say --
MR FENTER: No.
THE SPEAKER: -- suppliers with prime contractors.
MR FENTER: No. I think we're very receptive to a group of small suppliers working together. You could say it as a business entity.
THE SPEAKER: They are.
MR FENTER: And do it that way. It doesn't have to be tied to a larger company, as long as you have a means of getting new technology into that set of companies.

THE SPEAKER: I'm Dr. Bob Palmer. I'm at Baylor University. (Inaudible)
MR FENTER: (Inaudible)
THE SPEAKER: Okay. One other thing. How about projects that have been classified secret over the last few years and, you know, will anything be done about technologies we know of with defense contractors that have been secret, are still secret, but they are no longer applicable? Will there be any assistance in getting into those technologies?
MR FENTER: We still have classification and we will for some time. The issue that you're talking about probably has to be taken on a case by case basis. If it's a particular program, you know, it's a particular application area, usually the technologies can be separated from the particular application, and unless there's something critical about that as related to some export limitation, it can be released and used for other applications. We just don't associate it with where it came from.
THE SPEAKER: Okay.
MR FENTER: But the fact that the program now is secret, you're going to have to go back to the originating source and ask, you know, for their approval.
THE SPEAKER: So you won't accept classified or secret proposals?
MR FENTER: No, that's incorrect.

THE SPEAKER: (Name unintelligible) from Texas A & M. We've been interested for sometime with university teaching classrooms that NCMS has been launching in that area. Is there any plan that there would be a marriage of what they have in mind to coordinate it with this program or should that be something that we take care of on an individual basis in terms of universities?
DR. NANZETTA: I think the proposals that come in are going to be reviewed on an individual basis. If a group of proposals come in linked together they will be looked at on an individual basis and judged on their individual strength and weaknesses. So it's up to you to decide whether there's a benefit in that association.
THE SPEAKER: But there's not going to be a partnership with NCMS that you're asking, because that will be up to us to partner that?
MR FENTER: That's right. We're really counting on the entrepreneurial energy of the people in this room to make the connections come together, to make the team come together to put together proposals. We know our limitations and we're counting on the things that you're good at in order to make the program good.

THE SPEAKER: I believe you've mentioned this already, but are any of the people listed on the contact sheets eligible proposers? Can they be one or the other? Like you have a lot of different agencies listed.
MR. JENNINGS: You have the people who are on the contact sheet. Generally they may be at NASA Laboratories or DOD Laboratories or whatever. Yes, those laboratories may be part of the proposal team. If a particular institution or person is on the proposal team, they won't be allowed to evaluate the proposal. (Inaudible) The real issue there is are they evaluating their proposal team. That's the only issue.

THE SPEAKER: The second question is: Is there any relationship between the technologies of interest here to that in the first session in technology deployment?
DR. NANZETTA: There is no particular technology focus of the deployment area.

THE SPEAKER: I'm Dr. Wayne Wells from University of Texas Pan American, and we're a lot of miles south of everything. In the extension service concept there's a lot of talk about small firms. How about large firms? Are they excluded from participation in the services of the extension service or how do they fit in?
DR. NANZETTA: Okay. First of all, the statement about small firms originates in the statute. It's not something which we pulled out of the air. Secondly, that does mean that in putting your proposal together you need to focus on the small and medium size companies. Once you win and you're in operation there's nothing which prevents you from serving a large company. And in many cases, by working with the large company in the proper way you can get access to a lot of the small companies which are that company's suppliers and do a lot of good for them. What it does mean is once you are in operation you can't turn your head and go work only with the large companies, which are easier to work with and provide more revenue and are easier to get access to. You do need to focus on the small companies. You do need to work principally with the small companies. And even when you're working with a large company you should focus on those small companies which are associated with it, but there's no absolute prohibition against working with the large companies.

THE SPEAKER: Second question: In terms of technologies, is there going to be a problem with using technologies that originate offshore and incorporating those into development -- into programs of proposals?
MR. JENNINGS: No. In fact, this has come up before. The goal of all these programs is to develop a industrial base of the United States. And so if you have technologies that are coming in from overseas that are to the economic benefit of the American people, then I think that's a great thing. You know, technology wherever, if you want to bring it here and put it to use here, I think that would be good.

THE SPEAKER: I'm (unintelligible) from Arkansas State University. On the examples that were used in the manufacturing extension service providers, I've got a couple of questions. One is: Was there any significance to the initials HLB and DJR? Are these programs that we don't know anything about?
DR. NANZETTA: If you actually want the story, when these examples were first written they were ABC, and then the next one was DEF and so forth. And people started looking at the ABC and they started thinking it was the Alcohol Beverage Control, and somewhere in the editorial process some editor arbitrarily changed it from ABC and DEF to these initials that were here. There's absolutely no meaning. HLB is H. Lee Buchanan and DJR is Denis J. Roark.

THE SPEAKER: Another item is an interesting comment in Example 3 on Page A-14. It talks about a facility serving 650 companies and that they lacked the operating funds; proposed federal funding of 500,000 matched by 150,000 in earned income and 350,000 in kind for facilities and equipment and salaries already paid.
DR. NANZETTA: That should be already covered or budgeted or paid out of their funds.
THE SPEAKER: I thought should we go back five years or --
DR. NANZETTA: You can't go back any. You cannot use funds or in--kind

contributions expended previous to program execution as part of your cost share. Pretty sharp reading there.

THE SPEAKER: Phil, you've talked about quality programs and you mentioned teaching criteria. To some degree there is some linkage with manufacturing educational programs but not the type that are being talked in the other breakout room, based on what I've heard you say. Now, are there any formal lines that would divide some of that up? For instance, we have some interest in some labor force training mechanisms. They are specifically directed at manufacturing. Could those be considered alternate deployment?

DR. NANZETTA: I think if you just have work force training as the proposal, then that does not fit in the criteria that we're looking at. If what you have is work force training which is an essential part of bringing technology into individual small companies, then it begins to fit within the categories we talk about. The best combination is if what you're proposing is to provide an enrichment of that training or a linkage to that training or help in the company in selecting that training, but the actual training is provided through linkages to others, such as community colleges serving as contract training activities. That's the best way to have it.

THE SPEAKER: Let me preface a remark by saying that a model, the principal model that you're using right now for the deployment of technology seems to be the same model that was used in the past except for the regulation, and I've had (inaudible) it flawed. Consequently, let me ask the question. If a major company wishes to contract for technology (unintelligible) capabilities to a number of small companies in return for services that could be negotiated and produced for a period of time, would that be considered an innovative --

DR. NANZETTA: Yes. You would propose that in the alternative deployment pilot project. That category was set up exactly for people who don't think that the other model is the best way to go or whose operations don't fit into the extension view of the world. That's the reason that that category was provided in the first place.

MR FENTER: What I would like to add though is to be careful, that we're just not going to pay for the larger company to transfer technology to this smaller company. We want that to happen, but we want probably the cost share aspect of the program to be that aspect of saying, "I want to develop my supplier base to world-class quality and I'm going to contribute my cost share to make that happen. I will provide some of my people and my training and my equipment to help do that," so you depend upon a particular strategy that you're trying to accomplish.

DR. NANZETTA: Okay. There appear to be no more questions, so your timing is perfect. We're right about at 5:00 o'clock. We're going to stay around until 5:30. If you would like to catch one of us and talk more in detail over to the side, that's great. Remember, at 5:30 we've got to vanish.

LOS ANGELES REGIONAL BRIEFING AT THE BILTMORE HOTEL, FRIDAY, APRIL 16, 1993.

JOSEPH CISNEROS: My name is Joseph Cisneros. I'm from Terapin Corporation. The question I have is: If I have a spin-off technology that applies to, for example, Department of Agriculture, Department of Transportation, how are you going to evaluate that since it seems that most of the people that are evaluating are the unconverted versus those that are wishing to be converted? Do you follow what I'm saying? For example,

this morning we talked a lot about Intelligent Vehicle Highway System (I.V.H.S.) Yet I've talked to Department of Transportation people, and they don't know anything about technology conversion going to I.V.H.S. So, for example, where is that going to be?

DR. TOM STARKE: Let me try to understand your question more clearly. Your concern is that other parts of the Federal Government which are customers for technology ala civilian technology, such as agriculture, transportation, and whatnot are unfamiliar with this program?

JOSEPH CISNEROS: Right.

DR. TOM STARKE: And you would want to be developing a product or a precompetitive technology under this program?

JOSEPH CISNEROS: Correct.

DR. TOM STARKE: That might in effect support them. And your question is?

JOSEPH CISNEROS: I don't see, for example, Department of Transportation here whereas this morning we talked a lot about I.V.H.S. Technology in California.

DR. TOM STARKE: I guess the point I'll try to make to that is Department of Transportation would be a beneficiary, but in transportation-type issues there would be beneficiary in defense energy also has transportation-type programs that involve alternative fuel sources for vehicles plus we all have several different agreements with transportation. Energy and transportation are both working on I.V.H.S. for example. So we do have some representation of the customers for that technology beyond just transportation, and we are in contact with transportation. How would their not knowing much about this affect your proposal?

JOSEPH CISNEROS: Would it behoove me to involve them in my proposal is what I'm saying? If we have contacts, if we're on I.V.H.S. panels, would that be beneficial to my proposal?

DR. TOM STARKE: Absolutely. Absolutely. The whole name of the game here is integration of as many players and as many markets as make sense in your proposal. So even though the agency you deal with may not have heard about this program, take it upon yourself and try to involve them in what you're proposing. It will make your proposal stronger.

DR. PHIL NANZETTA: Next question here

MIKE VAN BLEU: I'm Mike Van Bleu, Martling Partners. There was some discussion about the prospect of considering joint proposals or complimentary proposals addressing different bullets in the program matrix. Is there any thought to permitting complimentary proposals by different organizations addressing a single bullet but where they would have complimentary competencies and capabilities?

DR. TOM STARKE: Yes. If I understand your question, Mike, if you have several different organizations with different talents, can they all join together to propose in one of the dots in Figure 4 of the red book.

MIKE VAN BLEU: But with separate proposals, or does it have to be a subarrangement? Can you only respond as a single entity?

DR. TOM STARKE: Yes. The so-called "prime subarrangement" -- we don't really use those terms, but partnership arrangement is something that has to be worked out by the team that is making the proposal or the partners.

MIKE VAN BLEU: But there's only a single entity.

DR. TOM STARKE: Yes. We're asking for one proposal per dot. Now, a team may propose in several dots, or you may make several proposals, independent proposals, in one dot. It's not clear why that would be to your advantage, but yes. The partners make up their rules that they wish to abide by.

DR. PHIL NANZETTA: One of the things we've found in other sessions

when we had this question is we're trying to get people to work together, and it was sort of agreed that if a group of people couldn't get together and get a single proposal in on a dot that that wasn't a good sign. So we'd really like to encourage integrated proposals.

MIKE VAN BLEU: That really wasn't the intent. What I was talking about was if you have several consortia and you find that there are complimentary reasons to consider the proposals together, although they may not be that so intimately involved, that it would be prompted to respond as a single entity.

DR. TOM STARKE: You can essentially connect the dots. So if you have several dots and you want to link them together, you have to let us know though in the proposal that this proposal and this dot connects in some fashion with this proposal and so forth.

DR. PHIL NANZETTA: Next question over there.

ANDY CHING: I'm Andy Ching with FMC. The question I have is on matching funds. We have some idea as to submit more than one proposal with different teams, and what we want to offer would be in kind matching such as equipment or I.N.D. Now, if we committed that to one group, can we not commit the same thing for the other group since we don't know that at the start whether our proposal be accepted. How would you deal with that situation?

DR. PHIL NANZETTA: I think you need to just call attention in the proposal to the fact that you're making several proposals so that nobody feels you're playing games, and in the end, of course, you wouldn't be able to win more than you had matched to go along with. The main guidance here is to give good information so that the reviewers can tell what your intent is and how you're going about putting it together, and our main approach is to try to look at it from the point of view of common sense. Back there.

RON GOULD: Ron Gould from Stanford University. Appendix B specifies that a federal lab can only be part of a team if the Secretary of Defense finds that acceptable. What is that process?

DR. PHIL NANZETTA: Tom?

DR. TOM STARKE: That process -- we have more or less decided that the Secretary of Defense feels that all federal labs and federally supported labs make sense where the rest of the team putting a proposal together feels those federal labs belong in the program for some specific reason that adds value. So there is no hoop or regulation or certification to go through to team with a federal lab or a national lab. That determination has been premade that it can be done providing you can get the federal lab and your team members to agree that's the right thing to do.

DR. PHIL NANZETTA: That yields the following question. It goes on to say -- it uses the phrase "The Federal Government --" this is appendix B-1 "-- will generally provide no more than 50 percent funding."

RON GOULD: In that appendix B-1 does that mean our Department of Energy funds will not be called Federal Government funds in this proposal I have in mind?

DR. TOM STARKE: Department of Energy funds are Federal funds. They cannot be used to match against funds that come from the T.R.P. program. You would have to use non-Federal funds with the exception of I.R. & D. if you use the other agreement that Rick Dunn talked about earlier.

DR. PHIL NANZETTA: Over here.

LEN JACOBSON: Len Jacobson from Interstate Electronics. I can understand you can rate proposals technically, go through and give them a score, but how are you going to handle the different costs for these things? I can see one team putting in a proposal for a million dollars and another team putting in essentially a proposal for $20 million. How are you going to decide the value of the

technical score and the dollar amount? If one team were to bid 89 million and pick up all the -- what's so wonderful? You said we'll just do that and do nothing else. All your money will be gone. It is the same kind of problem where we allocate I.R. & D. every year. I was just wondering if you have any idea about that.

DR. TOM STARKE: If you recall, there were four evaluation criteria that were discussed in the briefing that was presented upstairs. One of those criteria is called "Pervasive Impact." Within the confines or within the bounds of that particular element is the opportunity for each proposal team to describe the impact that their effort will have on the ultimate goal of providing a more robust industrial base and providing jobs. If following your example you were to propose or a team were to propose in the Dual Military Technology area which is about $81 million and your proposal is $79 million, that section on pervasive impact ought to be really dynamite because it's going to have to justify why all of those dollars should go to one proposal versus others that might be as competitive. So in that area as well as in the commitment to productize, you're going to have to justify why your level of spending is the appropriate one that should be awarded.

DR. PHIL NANZETTA: Does that answer your question? Okay. Next.

STEVE ROSE: My name is Steve Rose. I'm with the NASA Forest Regional Technology Center at U.S.C.N. In the presentation earlier it was mentioned unfortunately there was no match-making kind of an entity. Actually, that is one of our functions, and we would be happy to try to help put together teams. I can be reached at (213) 743-6132.

DR. TOM STARKE: Let me amplify on that. What Lee was really getting to and because we've had this question before is that we are not -- the Government is not in the position of having a list of matches wherein anyone can call in and say, "Well, gee, how should I propose?" The government agencies can, however, make suggestions and go out and encourage people to form partnerships, but there is no number that you can call that you say, "Team me up with someone so I can make a proposal." It's really sort of being proactive rather than "Here's your answer."

DR. PHIL NANZETTA: Next question.

PHIL GREEN: I'm Phil Green from Cal. Surgical Corporation. One of your speakers said that the Government funds are not to be considered as venture capital equivalent, and I'd like to know if the converse, a start-up company with venture capital, can use that venture capital as its matching funds.

DR. PHIL NANZETTA: Absolutely. There's no match which is better than cash. Over here.

SCOTT BLAKE: Hi. I'm Scott Blake. Good Assembly Guidance. Simple question. Does a federal lab count as a firm in a partnership, or do I have to go find another company to go along with us along with the federal lab?

DR. TOM STARKE: When you look at the different programs you'll be proposing to, when it asks for an eligible firm, a federal lab is not an eligible firm. However, as was stated this morning, there are certain kinds of participants that have to be in. Like one of them calls for two or more eligible firms. There is nobody who is excluded. So if you had two or more eligible firms, you could then add federal labs. You could add universities or whatever made sense, but if you only had one eligible firm and it called for two and you said, "Well, I want to take an eligible firm in a national lab. Is that enough?" The answer is "No."

DR. PHIL NANZETTA: In the middle.

MIKE JACOBSON: My name is Mike Jacobson. I'm with Coin. It talks in the

red book about a market analysis, but you haven't talked much here about a market analysis. You almost implied that certain parts of the market might be other agencies, but if you had a commercial market analysis or a commercial area involved, what would you consider reasonable justification or evaluation of that market?
DR. TOM STARKE: Well, we would evaluate it in terms of the end goal which is to get products to market so that market evaluation is one element of the overall business plan or commitment to productization. It's not necessarily a stand alone in that it's the only thing we'll look at. We're trying to look at the whole commitment and the whole process to get what you are proposing to some market at some time in the future with the necessary tools, with the capabilities, with the capital, with people, with whatever is required to make that transition.

DR. PHIL NANZETTA: Over here.
RON WALACKI: Ron Walacki, Ceramic Apollens. If a proposal is based on an ongoing effort meaning it's stimulating an effort that's already started prior to the award, does the effort that's been extended prior to the award count as an in-kind match?
DR. PHIL NANZETTA: Things which have been consumed prior to the start of the award such as personnel time and so forth would not count. If you will recall, Rick Dunn's presentation on counting technology transfer, if you have some tangible intellectual property which can be transferred into the partnership, then that can be negotiated as a part of the match, but simply expenditure resources on the activity up to that point or transferring an intellectual property which is already in the public domain would not be something that would count as in kind. Over here.

ALAN ESKOVITZ: Alan Eskovitz, T.R.W. This morning
Mr. Beckner stated he was interested in maximizing the D.U.E. lab involvement in programs. How will proposals be evaluated with respect to the extent of the Government agency or government laboratory involvement?
DR. TOM STARKE: That's a neutral factor. What we're really looking for is producing the best concept and convincing us that you can succeed, move on to productization. If working with a federal lab is the best way to do it, that strengthens your proposal, but there are no extra points because you happen to have or don't happen to have a federal lab on board. It is neutral in terms of winning. What counts is how it supports what you're trying to accomplish.

DR. PHIL NANZETTA: In the middle.
STEVEN ANDROTTI: Yes. My name is Steven Androtti with Sueo Conducting Corp Technology in Denver, Colorado. Under appendix A in the technology focus areas it has these areas judged as the highest priority based on future potential military and commercial opportunities. Is there a decision matrix that goes with this to say how these technology areas were chosen, and then how would you have other technology areas defined in terms of being eligible for proposal submittals?
DR. TOM STARKE: Well, you may want to ask to get more involved in this in the break-out session on technology development, but a short answer to your question, that list of 11, and when you count the subbullets, 28 is not exclusive. It is more than just a suggestion, but it's not exclusive. So if you found a particular area that you think is fruitful and is consistent with the ultimate goals of the program, you should send in a proposal with the justification or with your argument as to why this is important. So don't be limited by what's in there. It is a guide, a guide that we think covers the areas that have a lot of benefit but were not limited to that.

DR. PHIL NANZETTA: Okay. Next.
RICK REESE: Rick Reese from Stanford University. We're going to be

proposing in the manufacturing education area, and my question is: Can matching funds come from foundations like the Sloan Foundation for example?

DR. PHIL NANZETTA: Absolutely. That's a very good match.

RON CROWNER: Ron Crowner, San Francisco State University, a related question to the one before the last. In the manufacturing education area do we interpret manufacturing broadly as was done in the technology development areas to include things like environmental technology or environmental technology training and education?

DR. PHIL NANZETTA: Could you repeat that question. I'm sorry.

RON CROWNER: The technology development areas include things that are not strictly product oriented like environmental technology. Now, going over to the manufacturing education and training area, do we broadly define manufacturing to include things like the environmental technology area in terms of training or education or retraining?

DR. TOM STARKE: Insofar as you're talking about training people how to work with manufacturing engineering on components that might be sold to an environmental market, yes. In that you're talking about retaining people into the environmental area, say the environmental services sector, no. The legislation focuses onto manufacturing and manufacturing engineering education exclusively.

RON CROWNER: So there's not quite a match between the technology development area and the education area.

DR. TOM STARKE: That's correct. We'll take two more questions.

RON CROWNER: I think Lee mentioned that there were two things we wanted to know. Where is the money? How do we get it? There might be one third one. When would it be awarded if we did get it?

DR. PHIL NANZETTA: It's our intent to carry the review process forward as quickly as we can and arrive at award announcements around the first of October. We may find that we are so overwhelmed with proposals that that will slip some, but it's our intention to do that and then to negotiate the actual awards as quickly as possible after that. It's our intent to carry this whole thing through on as fast a track as possible.

JOHN THANROWITZ: John Thanrowitz from Peat Marwick. Who is going to perform the audit of these contracts?

DR. TOM STARKE: The audits are going to be performed, if necessary, based on whatever the best auditing-type organization would be for a specific partnership. If it's somebody who normally works with N.S.F. and they normally get audited by some association related to that, we would use that. If it happens to be a purely commercial firm that normally uses commercial auditing standards, we are prepared to go out to a commercial auditing organization and commission the audits. The point is we do not want the companies or partners to re-do, invest in re-doing, their financial systems to meet a whole bunch of rules that we set up. We want to leverage what they're already using and use the appropriate people to do the auditing.

JOHN THANROWITZ: One other question. Will you have FAR clauses in the contract at all, any Federal Acquisition Regulation clauses, that are being anticipated?

DR. TOM STARKE: The rule that was stated by Rick this morning is that if we use the other agreement which it's intended to use for most of these, other agreements are not under the FAR. Now, the FAR incorporates many principles of good business that will probably be incorporated in these agreements as they're written, but those are to be negotiated, and

negotiations will be a two-way process after the awards are selected.

BURT BERSON: Burt Berson, Berson and Associates. What role are the laboratories going to play in proposal evaluation, contract management, that kind of stuff?

DR. PHIL NANZETTA: In proposal evaluation, all of the agencies which are members of the Technology Reinvestment Project are going to participate in the selection process. It has not been defined in great detail, and after it's defined, it will probably not be announced since it will be source selection sensitive information. The Inner Agency Working Group will carry this all the way through the selection process up to the point of final selection. After the winning proposals have been selected, they'll be assigned to one of the agencies for purposes of contracting and management.

BURT BERSON: So this wouldn't flow down to a particular laboratory? So, for example, if we talked about Enrad in San Diego, would they have a role in the program?

DR. PHIL NANZETTA: They might potentially have a role. The primary agencies that we would look at for purposes of contracting and managing are the five agencies, but there's nothing which would rule out using another government agency for purposes of execution.

THOMAS NELSON: Yes. My name is Thomas Nelson. I represent U.S. Air Force and myself. I have two questions. No. 1 is: On the transition after a proposal is awarded, how does a federal agency or federal government become that sponsorship of that proposal? I work at McCollem Air Force Base and I've worked with electro-optic technology. How does the facility there become a sponsorship of the proposal development?

DR. PHIL NANZETTA: What do you mean by "sponsor"? A partner to the proposal or the manager after?

THOMAS NELSON: The management aspect of it afterward and possibly also being a partnership involvement. If a consortium comes to me and says, "You have equipment that needs to be utilized," we will work within the proposal arrangement. That's one mechanism. The other mechanism is then the manager after the proposal --

DR. PHIL NANZETTA: Do you want to talk about that John?

JOHN FENTER: If I understand what you asked, I think there's two parts there. It sounded like the first part was related to possibly the technology development side rather than deployment where it's electro-optic technology, and you may want to work with some companies, and I would suggest that you consider the technology development proposal, and you could certainly join up with some companies in a proposal in that regard. The selection of the sponsorship of the programs like Phil was saying is going to be decided later, and within each of those technology development areas there is an air force, army, and navy point of contact already, and I suggest that you work with them and tell them what's going on and how you want to develop a proposal.

RICK SAYSIN: Rick Saysin for the Center of New Ventura Links from the California State University in Hayward. We've been doing some work with Lawrence Labs over the past two years trying to do market assessment of their technology. One of the things that we found out was the difficulty of calling transfer, the bureaucracy that's involved in acquiring rights or options of technology. Perhaps if you could address that. In the past I think federal labs were not alowed to get into some kind of brokering arrangement. Has that been overcome? And second, on the matching fund is there any specific guidelines on in-kind and cash in terms of portions if those are under a million dollars?

DR. PHIL NANZETTA: Do you want to say anything Rick? In terms of match

the important thing is aside from the requirement at a million dollars, the important thing is that the match which you propose be clearly focused toward on the objective that you're trying to achieve. If what you're doing is a part of an extension activity to set up a software demonstration facility where you can help companies make a choice of software, then contributed software would be an appropriate type of in-kind match to use. It wouldn't be appropriate to count 10 percent of the dean's salary and 15 percent of the janitor's salary as a part of the match. That would not be very well-focused toward it. There are no hard and fast, sharp dividing lines in many cases, but as a part of the selection process a proposal which has match, whether it's cash or in-kind which is really focused on the objective and which is really under the control of the manager of that activity once it's selected is a strong form of match to have.

RICK SAYSIN: Does it give you as a competitor advantage to have more cash as opposed to in-kind?

DR. PHIL NANZETTA: Not necessarily. We don't want it to turn out to be like a cost competition where the person with $15 more wins. Cash is a very strong form of match. Cash is a kind of match which you can spend on a lot of things, but you could have in-kind match which would very strongly orient toward your objective and was just as strong as if you did have cash.

RICK SAYSIN: How about my second question?

RICK DUNN: I'll add a little bit to what Phil said. I don't think there's an inherent superiority between cash and non-cash and in fact some in-kind contributions, if you're talking about the value of compensated services of employees, it's just about the same as cash-on-the-barrel head. It's almost indistinguishable. The more you get into something that's speculative in nature, something that has to be chased with an audit or something that people can differ in opinion, I think we're starting to drift away from the reality quotient, and it becomes more nebulous, and in that sense, certain kinds of in-kind contribution will not be viewed as favorably as cash or hard in-kind contributions if you will. With respect to the rights and the difficulty in dealing with government labs, in either the general session or earlier here today, did anybody use the term "reinventing government"? Okay. We have to say "reinventing government" at least once. We can't fix everything. However, we think the mere process of these five agencies collaborating together, the positions that we're taking on intellectual property issues, the fact that the Government's record in licensing intellectual property is absolutely something that there is a process that may be in motion to change. And I can't tell you in the short term that things are going to get better or that they're going to get fixed quickly, but I think the way some things are clearly, they don't have to be as bad as they are, and I hope that this project and people like you being interested in these issues will be an occasion for Government to start rethinking some of these positions and that the Government holding onto rights of technology as if it was going to do something with it. It gets to be pretty absurd on occasion.

DR. PHIL NANZETTA: Over here.

JOHN HADA: Thank you. I'm John Harda, Genesis Spectrum Associates, San Diego. We're consultants working with companies on defense conversion. My question is this: In selecting technology for commercialization, one question is going to be what's the size of the potential market for a commercial product. Corresponding with this program, does the administration anticipate relaxing export license restrictions on defense technology that are converted?

DR. PHIL NANZETTA: That's really not a part of this project activity. That's not really a part of this project activity. Go ahead.

RUSSELL SEEVY: Gentlemen, I'm Russell Seevy, vice-president and managing director of S.Y.S. in San Diego. We do commercialization of technology. I was also head of the Technology Congress here for Congressman Brown, Inland Empire last year, and something I noticed is that a lot of manufacturers came to me in a conference and said, "We go to the federal labs, and we don't know how to communicate with them, and they don't know how to communicate with us." Do you represent the Government Defense Technology, aerospace technology, and we're talking about commercializing this. The defense people for the most part don't know how to spell the word "profit," and on the other side of the fence the commercial people don't know how to go to a shuttle or a space station and say, "What's in this for me?" and when they go to these labs, there's a big communication block and barrier.Are you doing anything to try to bridge that gap?

DR. PHIL NANZETTA: Yes. I'm going to pull out one of the slides that I didn't use. If you'll look at this model, the extension model for technology deployment, the small manufacturing firms as the target for the Technical Assistance Providers such as manufacturing technology centers or others draw upon the existing knowledge base and existing commercial products and help companies bring that technology into use, into their use. There's a rich source of technology existing in federal labs and other places. What we expect to have as Technology Access Services are services which extract that technology and make that available into the body of common knowledge and commercial products so that it can be drawn upon by the technical assistance providers and made available to small companies. So we are explicitly providing a category of proposals which works to help laboratories make that technology available and to put that technology into circulation, if you wish, within the broad nationwide extension program. The second part of the answer is that the laboratories themselves are undergoing change. They know that they need to make their technology available, and they're paying a great deal more attention now than they were a year ago or two years ago to figuring out ways to make that technology available.

ROGER SMITH: Roger Smith with the Grayton Group. I have one question, and maybe a second one depending upon the answer to the first. The first question is: Is it possible for an organization to submit more than one proposal?

DR. PHIL NANZETTA: Yes.

ROGER SMITH: So now I have a second question. The second question is: Is it conceivable that that organization could actually be awarded or win both of those proposals that they submitted?

DR. PHIL NANZETTA: Yes.

ROGER SMITH: I have a third one, but I'll just let that one go.

DR. PHIL NANZETTA: A kind of situation that might arise, however, and somebody asked in the earlier general session, if you are writing two proposals and you don't know which one is going to win, you may put the same match in both proposals. In that case you can't win with both of them because you'd be double counting. In that case where you'd want to propose alternative ideas which may be selected by the selectors you should identify in the proposal that you're doing that so that nobody will think that you're playing games.

ROGER SMITH: So you're saying that as long as you have different plans, do you need to --

DR. PHIL NANZETTA: No. As long as you have different match plans, you don't have to do what I just said.

ROGER SMITH: If you have more than one proposal, do you have to in any way specify that you do have more

than one that one wouldn't assume that --

DR. PHIL NANZETTA: No, you don't. If they stand alone and if they would both stand if they both won in terms of match, then you don't have to say anything in particular.

INAUDIBLE SPEAKER: I'm from the University of Southern California School of Medicine. The question I have is that we are interested in deploying some technology, but because we are health care they need to be tested to some extent, and I was wondering whether that comes under deployment or whether that comes under research and development activity.

DR. PHIL NANZETTA: It does not come under deployment. If what you're trying to do is develop something in the health field, that's one of the identified target technology areas in the technology development area, and if you're moving toward the development of a product which will become commercial, then that may be a proposal which would be suitable.

INAUDIBLE SPEAKER: The question is whether we should put it in the deployment activity or in the research activity. There is no research involved. There's just the testing of it.

DR. PHIL NANZETTA: That does not fit in the deployment activity.

INAUDIBLE SPEAKER: The second aspect we are interested in is in the clearing of some of the people who come in from the defense activity. I know that NIST is interested in current extensions and training and so on. Are we to develop the standards ourselves, or can we ask NIST and other agencies to help us in developing the standards for masters programs or Ph.D. programs or whatever?

JOHN JENNINGS: In general it's a good idea to partner with people who can contribute to people with a proposal. In specific I'm not sure what the partnering arrangements would be, but that's something that would be worth pursuing with the contacts whose telephone numbers are in the sheet that you have. The purpose of deployment and if you're in here and you're interested in being in the business of taking technology and moving it to someone else so that they themselves may use it, then this is the right thing. If you're interested in the process of making technology for your own use, then you should be in the development section. So we're interested in people who are interested in the business of moving technology from one area to getting to someone else so that they may use it.

BRUCE CANAFF: My name is Bruce Canaff. I'm from the City of Alameda. We have a highly specialized labor force that exists within the naval aviation depot that exists at the Naval Air Station, Alameda. I think that we have a perfect prototype for a pilot program, and I think it would fit within the deployment, but I'm not sure. It would be the development of a business plan including the market analysis and the creation of perhaps the existence of employee-owned ownership, Aesop structure that does exist and has been employed effectively, but it is to take what is now a defense establishment and turn it into a commercial, purely commercial, activity using the skills that are there. On the one hand, it has the opportunity of a hundred percent impact that you're looking for on all of the suppliers that currently feed that $40 million a year enterprise. On the other hand, if the outcome is such that the business plan fails, the possible anticipated impact is zero. So because of your tight funding deadline, what I'm wondering is: Is there any kind of effect?

DR. PHIL NANZETTA: What you're describing may be too peripheral to fit. If you look at the red book, there's an example, example 9, which talks about an example of a new business creation approach, and you might want to look at that example for some guidance to the thinking that went into this.

JOHN CARVEL: John Carvel with the California Manufacturing Technology Center and Chancellor's Office Liaison. Two questions. Are you expecting appendix materials to accompany these and a second volume? And the other question is if you are successful in two proposal areas, one falls under a million dollars and one falls over, are you additive, or is each proposal treated separately?

DR. PHIL NANZETTA: First of all, we do not want appendix material. We do not want more than 35 pages to read. Secondly, separate proposals stand alone as far as the threshold of the one million dollars. So if you submit two proposals, each under a million dollars and they both win and they total more than a million dollars, you still don't have to come up with the cash.

ED MULLEN: My name is Ed Mullen. I'm with Infinite Machines Corporation. We're not associated with the defense industry. We manufacturing civilian products. Our interest was to utilize existing defense tool shops primarily and to go in and of them get funding so they can be -- so they can train themselves to make our products cost effectively, but I notice that all of yours perhaps don't lead to a finished product. Is there any such program?

DR. PHIL NANZETTA: If I understand what you're saying, it doesn't sound to me that it fits in the deployment category. It sounds like a good business idea.

ED MULLEN: Well, what we bring to the defense conversion arena here is orders for these machine shops that desperately need orders, but they also need training funds. They need long assistance. They need a lot of other things so they can be competitive civilian manufacturers. Is there anything available for those people to do that?

DR. PHIL NANZETTA: It sounds to me that those companies would be appropriate client companies for an extension activity and that what you should do is look for an extension service provider which can help those companies, but to provide orders for those companies I don't think fits in the deployment.

ED MULLEN: Just a general question. From what I've been listening to all day, my understanding is that you want to work on developing or transferring technology between civilian and military use and vice versa up to the point other than a product out of the market; is that correct?

DR. PHIL NANZETTA: Yes. What you're talking about is from the perspective of the development area.

ED MULLEN: Correct. What assurance do you have when all that development is done and everyone's successful as to who is going to make that product and sell it that will actually have to be part of your proposal and part of your commitment and the firms that are making these proposals are required to put up half the money?

ROBERT NORWOOD: Their money will be at risk if they do not follow through. That's a large portion of our assurance.

ED MULLEN: The machine shops in this area are not consumer product marketers. At some point in time when all these nice inventions come to pass, are they going to be sold by anybody?

DR. PHIL NANZETTA: I think what you should do is talk to one of us off to the side because these are really not questions that are of general interest.

KEN WILLIAM: I'm Ken Williams with McDonnell Douglas Aerospace. I had a little suspicion about corporation alliance because I was involved with the original technology transfer programs of the late '70s and early '80s, and we used an aggressive method of one half of one percent taken from R & D perhaps to try and encourage these people to help us transfer technology. Can you assure us that you have better mechanisms in place and that you have a true cultural change within the

laboratories that support these companies?

DR. PHIL NANZETTA: Well, I can't assure you how good it is. I can assure you that it's changing. I can assure you that the culture is different now from what it was one year ago in the laboratories, and it's changing rapidly, and I can assure you that the people in the labs who have any comprehension of what's happening in the world have a very strong motivation to work with companies outside.

KEN WILLIAMS: Can you describe or give us an example of what actually you're doing.

DR. PHIL NANZETTA: What I'm doing?

KEN WILLIAMS: What these labs are doing to ensure the technology sharing.

DR. PHIL NANZETTA: I'll give you one example. Is that good enough?

KEN WILLIAMS: That's good enough.

DR. PHIL NANZETTA: The y-12 facility at Oakridge now has 200,000 square feet of facilities which used to be inside the control of the industrial areas that are now outside the controlled industrial area, and they are developing specific technology transfer activities, utilizing that space both to serve people within their local region through shared manufacturing kinds of operations and are developing techniques for making their specialized knowledge available on a nationwide basis.

DEAN SWANE: Dean Swane, W.J. Shaeffer. I'm aware of some work going on at a national lab that might be of use. Can I write a proposal and just say that when this program is successful according to its program objectives on a certain date, here's what I plan to do with it, or do I need to go cut a deal with a national lab prior to that?

DR. PHIL NANZETTA: You need to cut a deal with the national lab.

SCOTT BECKWITH: Scott Beckwith, Beckwith Technology, Salt Lake. One comment on the export control question before it will get more severe. This years negotiations are getting harder. As a member of the Department of Congress Advisorial Committee, I can tell you it's going in the other direction. Second, I have a question. You listed eight selection criteria, and you said they were weighted. Do you have weighting factors published?

DR. PHIL NANZETTA: They're equally weighted.

LEE WALLACE: Lee Wallace, Southern California Gas. I had a question in regard to the distinction between deployment and development. In your deployment section you listed as an example incubators. Those as we understand them require some type of technology development before they get to the commercialization stage. Is that the way you understand them, or should we treat them as technology development?

DR. PHIL NANZETTA: The incubator is the facility which takes a company in that has a technology and helps them to develop their company and their business and their idea so that the individual company which would go in and make use of an incubator facility, if it were applying, would be applying on the development side. The incubator itself as the facilitator and the service provider would make the proposal under the deployment category.

BRAD REESE: My name is Brad Reese, and I work at Atagried Solar Energy Corporation in the City of Industry. My question is you have a problem in selecting your proposals in that you have to assign some sort of value to the outcome of the proposal. How in any way do you tie that in with the amount of money that is being proposed in the first place for the project? Does a $50,000 proposal get rejected because it doesn't yield enough economic benefit? How would you judge that?

DR. PHIL NANZETTA: If you'll look at the selection criteria for deployment and the definition of target population, for example, 2 says that the size of the target population needs to be commensurate with the amount of money being requested. So it's really a match between the dollars requested and the impact proposed and not the absolute size of the proposal.
BRAD REESE: Are you applying a formula to that?
DR. PHIL NANZETTA: No. Here.

BRAD REESE: I here something that's not being said today. He got the adrenaline flowing about how to get contracts and money out of the Government and so forth. My question addresses what happens after we win the contract. Are we going to be burdened with the same kinds of government documentation, rules and procedures, and things of that nature that go along with government contracting? Because if a commercial company comes forward to you and wins a contract, they're not going to know what you're talking about. How are you addressing that issue?
ROBERT NORWOOD: I'm sorry that Rick Dunn has left because he has a really good, strong answer for that. Go ahead.
JOHN FENTER: Basically what Rick would say is we have no more intention to remake in the Government's image. There's a strong intention not to use any contracts at all to avoid those sort of requirements. The value of using another transaction in a cooperative agreement is precisely to escape those burdens that make it so difficult for people who don't work with the Government and Defense Department to work with us. Those are the people we want to participate. The tuning instruments and the rules of the program are going to be structured precisely to avoid those problems.
BRAD REESE: Do you really feel the Government can make that big of a change, that dramatic change?

JOHN FENTER: Well, I can not here, but I'll tell you he's told me about they have a number of programs existing in other transaction agreements that exist right now that are operating under these rules and are moving ahead and are funded and are regarded so far as being fairly successful. So there's precedence of this. There are mechanisms in place. We have the law, the authority, and we really want to do it.
DR. PHIL NANZETTA: You can look at the problem we made so far beginning with the legislation which is pretty fragmented and which has been made into a coherent program once you get into looking at the program and the fact that you have five government agencies working cooperatively to carry this out is an indication of early steps which would make you think it's possible. It won't be perfect.

JERRY LOUIE: I seem to be the last one standing. My name is Jerry Louie with Litton Industries. What is the process for asking the question I'm going to think of at 3:00 in the morning? In other words, what's the follow-up for procedure forgetting additional questions and answers between now and the 14th of May?
DR. PHIL NANZETTA: There is a list of telephone numbers of contacts which should have been provided to you at registration. If you're interested in specific technology, pick ones which are in that technology area. Otherwise, pick ones which are listed under the regional category. Call them up and talk to them. The people that are involved in this do want to talk to you.

UNIDENTIFIED SPEAKER: Should the proposor specify what instruments he wants to use whether it's a cash, a grant, or others?
DR. PHIL NANZETTA: Sure. Just don't specify contract.
JOHN JENNINGS: In general the emphases will be on cooperative

agreements and other transactions. If you have a particularly strong bias toward one or the other, you might mention it, but generally you should be focused on what it is that you want to do, and then we'll try and use the funding instrument that makes the most sense and fits around that.

DAY DIYEL: My name is Day Diyel. I wanted to ask: Is there a list, a catalog, to tell us what projects are available? I'm from the commercial side. What is available from those defense laboratories?

DR. PHIL NANZETTA: No. There's no catalog.

JOHN JENNINGS: There's a couple of things you could try. If you look in the back of the book, I think it's appendix D, it lists a lot of the federal laboratories and phone numbers for each one. Moreover, it lists an organization called the Federal Labs Consortium and phone numbers for that that you can call to find out what technology will be available. Moreover, in a plug for NASA, NASA has a Regional Technology Transfer Center, one of which is in this region. You may call them up, and they have access not only to NASA technology but to the federal technology in general. So there isn't a single unitary business that you can get at. There are a number of sources you might try. Labs near you.

DR. PHIL NANZETTA: One last question.

CHARLIE CLERK: Yes. Charlie Clerk from San Diego Defense Conversion Program. The question I have is let's say you want to have an integrated program that pulls aspects of, let's say, incubator along with other enabling as well as an outreach program that does direct assistance on it. Can you tie them together? Do you have to keep them separate within the same organization if you want to integrate a proposal that uses aspects out of two or three 6 of the mentioned four areas?

JOHN JENNINGS: The best answer there is what makes for the strongest proposal.

CHARLIE CLERK: To put it together because want to use the same resources to do the outreach and support the incubator but also continue to build the technology base to be able to tie the partnerships.

JOHN JENNINGS: Then do that.

CHARLIE CLERK: That's three separate areas.

JOHN JENNINGS: What you would do if you have those three bullets, you could propose under those, and there would be a way of indicating that these are associates, and if they're strong and you can indicate what their linkage are, when the facilitation actually comes out, you'll be able to show that, and you'll be able to argue that case.

DR. PHIL NANZETTA: I'd like to thank you for sticking with us until 5:00 on a Friday afternoon. (Whereupon, the meeting concluded at 5:00 P.M.)

Manufacturing Education and Training

Investment in Manufacturing Education and Training

. . . we plan to attend to the needs and problems of the nation's defense industrial and technology base, defining the core skills and industries we require for our national defense and working to integrate more closely defense and commercial technology and manufacturing.

William J. Clinton
A Vision of Change for America
February 17, 1993, Page 70

TRP – Manufacturing Education and Training
Systemic Change

- Institutionalizing integrative process of "making things"
- Accelerating the development and application of advanced manufacturing technologies–the processes, information, and equipment needed for competitiveness
- Encompassing all aspects of the production process–design, manufacturing, supporting technologies, manufacturing infrastructure elements
- Investing in human capital

TRP – Manufacturing Education and Training
Intellectual Focus

- Manufacturing Design Technologies–the tools and techniques used to prepare for manufacturing
- Manufacturing Technologies–the processes and equipment used for the actual production of physical products
- Supporting Technologies–the underlying core technologies needed to provide advances in design and manufacturing technologies
- Manufacturing Infrastructure Elements–the concepts and mechanisms for managing the development of appropriate technologies and for encouraging their widespread dual-use within the industrial base

TRP – Manufacturing Education and Training
Activity Emphasis

- Dual-use engineering and enterprise design skills
- Innovative systemic curriculum change
- Skill conversion for engineers, technicians, and other professionals displaced by defense drawdown
- Integrated team effort among academic, industry, and federal/ state/local/regional entities
- Diversity of firms, locations, and participants, including under-represented populations

TRP – Manufacturing Education and Training
Selection Criteria

- Commitment for quality and accessibility
- Innovative, useful, and effective approaches
- Involvement of defense firms and the Nation's richly diverse work force
- Quality and experience of industrial and academic personnel in manufacturing research and education; adequacy of resources, including non-Federal cost-sharing
- Demonstrated industrial involvement and committed I-U partnership

TECHNOLOGY REINVESTMENT PROJECT

TRP – Manufacturing Education and Training
Activities

- Manufacturing Engineering Education Across the Curriculum
- Practice-Oriented Master's Degree
- Retraining of Manufacturing Work Force
- Education Traineeships for Defense Industry Engineers
- Manufacturing Engineering Education Coalition
- Supplementary Education Awards to Ongoing Centers and Coalitions Devoted to Manufacturing
- Individual/Group Innovations in Manufacturing Engineering Education
- Manufacturing Experts in the Classroom

TECHNOLOGY REINVESTMENT PROJECT

TRP – Manufacturing Education and Training
Across the Curriculum

- Comprehensive, integrated; dean of engineering-led/endorsed, involving academic and industrial partnership in curriculum design and implementation; linkage to extant cross-disciplinary centers
- Integrated emphasis on analysis, design, processing, and other relevant aspects of production, manufacturing, and enterprise management
- Enabling graduates to interface facilely to industrial practice
- Examples: Design/manufacture experience; synthesis-based problem definition/solution; teaching/learning laboratories
- 3 years @ up to $1,000,000 per year each

TECHNOLOGY REINVESTMENT PROJECT

TRP – Manufacturing Education and Training
Practice-Oriented Master's Degrees

- Intellectually rigorous to prepare graduates for the integrated process of "making things"
- Provision for experienced engineers from defense firms or National Laboratories to pursue degrees
- On-site experience and exposure to practice-oriented T/L laboratories with up-to-date manufacturing equipment
- Example: Degree program with local company network for case study-based projects with joint I/U supervision and emphasis on industrial needs
- 3 years @ up to $100,000 per year each

TECHNOLOGY REINVESTMENT PROJECT

TRP – Manufacturing Education and Training
Retraining the Manufacturing Work Force

- Knowledge and skill improvement of manufacturing work force and re-orientation of defense work force toward civilian production
- Emphasis on dual-use potential and small/medium firm involvement
- University, college, and industry collaboration and joint facilities use, including high-tech delivery systems
- Collaborating with existing centers and engineering technology department as appropriate
- Example: Center with state-wide/regional focus on developing and testing T/L methods and materials suitable for adult learners
- 3 years @ up to $500,00 per year each

TECHNOLOGY REINVESTMENT PROJECT

TRP – Manufacturing Education and Training
Traineeships for Defense Industry Engineers

- Re-orientation to dual use for defense industry engineers
- UG/G degree in manufacturing or non-degree technical upgrade
- Support of special education approaches or educational material development for adults with practical experience
- U/I team teaching encouraged
- Example: Special program including remedial courses in engineering science and math to help students pursue future degrees; academic requirements duplicating job experience waived, industry to match stipend and comp time
- 3 years @ up to $200,000 per year each

TECHNOLOGY REINVESTMENT PROJECT

TRP – Manufacturing Education and Training
Manufacturing Engineering Education Coalitions

- Systemic undergraduate curriculum reform and quality improvement involving multi-institution consortia
- To develop, implement, evaluate, and disseminate innovative approaches in laboratory and classroom experiences
- To create significant intellectual exchange and resource linkages among U.S. manufacturing education programs
- To increase the number and diversity of manufacturing engineering degree recipients, especially W/M/D
- Example: A 6-school coalition featuring early introduction to statistics; process control, quality methods, cultural understanding, communication and interpersonal skill, and project teams; with a process engineering core, summer internship and major design project
- 2 years @ $2,000,000 per year each

TECHNOLOGY REINVESTMENT PROJECT

TRP – Manufacturing Education and Training
Supplements to Existing Centers and Coalitions

- To build on and enhance existing capabilities for emphasizing dual-use technology in manufacturing education
- Curriculum reform, innovative instructional materials or software, development of T/L laboratories
- Strategic research planning and implementation focused on technological advances to guide firms to new market niches
- Example: Supplementary award to existing ERC to develop technology strategic planning component in undergraduate curriculum on assessing foreign competitor strategies and devising counter-strategies
- 3 years @ $200,000 per year each

TECHNOLOGY REINVESTMENT PROJECT

TRP – Manufacturing Education and Training
Individual/Group Innovations

- Individual or group effort on innovations in manufacturing engineering education with industrial collaboration
- Joint activities among university and community college faculty groups encouraged
- May supplement existing individual or group research awards
- Example: Grant to U/I team to include new process control methodology in curriculum which has the potential of greatly improving both the efficiency and flexibility of environmentally benign chemical manufacture
- 1 to 3 years @ between $50,000 to $200,000 per year each

TRP – Manufacturing Education and Training
Diversity and Linkages

- Defense and Civilian Sectors
- Engineering Science and Practice
- Industry and University
- Cross-Disciplinary Interfaces
- Analysis and System Integration
- Theory and Implementation
- Management and Technology
- Interagency, with States/Local Jurisdictions
- Geographic and Strategic Locations
- Minorities, Women, and People with Disability

President Clinton

. . . to adjust America in good ways so that we can win in the 21st Century, so that we can make change our friend and not our enemy.

. . . We live in an era of constant change . . . . Diversity is a strength, not a source of division . . . .

at Silicon Graphics
Mountain View, CA
February 22, 1993

Diversity not only brings new talents to our pool, but also improves those of us who are already in the pool.

Diversity

↓

Flexibility, Adaptability,
Receptiveness to new ideas, etc.

↓

Creativity, resourcefulness, etc.

Small Business Innovative Research

(SBIR)

Small Business Innovative Research (SBIR)

- Technology Reinvestment Project (TRP) plans to solicit proposals from small businesses
  - Proposals will address technology development focus areas
  - Procurement will be based on Federal SBIR guidelines
- Cost sharing will be permitted for TRP SBIR proposals, but is not required and will not be an evaluation factor
- Out-year TRP activities are a natural SBIR Phase III follow-on

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Small Business Innovative Research Eligibility and Limitations

- Proposer must qualify as small business for research or research and development purposes
  - Independently owned and operated, organized for profit
  - Not dominant in field of proposal
  - 51% U.S. citizen/permanent resident alien ownership requirements
  - Number of employees not to exceed 500
- Minimum two-thirds of Phase I SBIR project must be carried out by proposing firm
- Primary employment (over 50%) of principal investigator must be with proposing firm
- Research/development must be performed in United States (including territories and possessions)
- Joint ventures permitted if entity created qualifies as small business

PIP Page C-2

TECHNOLOGY REINVESTMENT PROJECT

Small Business Innovative Research General Description

- **Phase I**
  - **Determine scientific/technical merit or feasibility of idea**
  - **Typically one person-year effort (not to exceed $100,000)**
  - **Period of performance generally less than 6 months**
- **Phase II**
  - **Research and development effort resulting in product/process**
  - **Based on Phase I results and commercial potential**
  - **Typically two to four person-years efforts (not to exceed $375,000)**
  - **Period of performance generally less than 24 months**
- **Phase III**
  - **Only SBIR Phase I contracts are expected to be awarded by this year's TRP program**
- **Phase II contracts may be awarded under future appropriations**

TECHNOLOGY REINVESTMENT PROJECT

Small Business Innovative Research Planned Proposal Information

- **Method of selection**
  - **Proposal first evaluated for relevance to TRP program**
  - **Relevant Phase I proposals evaluated using criteria below**
- **Phase I evaluation criteria**
  - **Technical approach and anticipated agency and commercial benefits**
  - **Adequacy of proposed effort, relationship to fulfilling research requirements**
  - **Soundness and technical merit**
  - **Qualifications of proposed principal/key investigators, staff, and consultants**
- **Final decisions may be made considering other factors**
  - **Duplication of other work**
  - **Program balance**

PIP Page C-3

Planning for Submission of Proposals

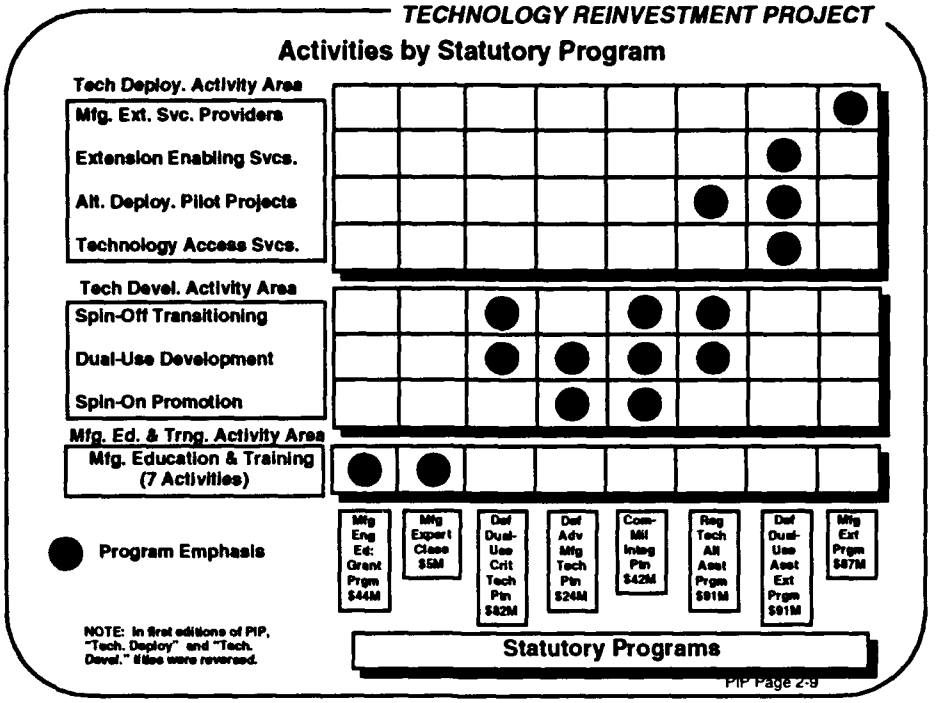
- All Government employees are bound by statute not to disclose proprietary information.
- The Government will not execute individual non-disclosure statements with proposers.
- Non-Government subject matter experts may be used in evaluations.
- Non-Government employees having access to proprietary data will be required to execute a non-disclosure certificate.
- Any offerer unwilling to allow non-government employees access to its proposal will stipulate GOVERNMENT ONLY ACCESS on the outside of the envelope and on the proposal cover, so that the proposal may be handled separately.

PIP Page 3-1

Planning for Submission of Proposals

- Planned Technical Proposal Format (technical proposals will be a maximum of thirty-five (35) pages)
  - Section 1—Executive Summary
  - Section 2—Body of the Proposal (Includes Management Plan)
  - Section 3—Statement of Work (SOW)
  - Section 4—Selection Criteria Index
- Planned Cost/Funding Proposal Format
  - Section 1—Proposed Cost (by SOW task)
  - Section 2—Cost to the Government
  - Section 3—Fund Matching and In-Kind Contributions

PIP Page 3-1


TECHNOLOGY REINVESTMENT PROJECT
Activities by Statutory Program
Tech Deploy. Activity Area
Mfg. Ext. Svc. Providers
Extension Enabling Svcs.
Alt. Deploy. Pilot Projects
Technology Access Svcs.
Tech Devel. Activity Area
Spin-Off Transitioning
Dual-Use Development
Spin-On Promotion
Mfg. Ed. & Trng. Activity Area
Mfg. Education & Training (7 Activities)
Program Emphasis
Mfg Eng Ed: Grant Prgm $44M
Mfg Expert Class $5M
Def Dual-Use Crit Tech Ptn $82M
Def Adv Mfg Tech Ptn $24M
Com-Mil Integ Ptn $42M
Reg Tech Alt Asst Prgm $91M
Def Dual-Use Asst Ext Prgm $91M
Mfg Ext Prgm $87M
Statutory Programs
NOTE: In first editions of PIP, "Tech. Deploy" and "Tech. Devel." titles were reversed.
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25

BREAKOUT C: MANUFACTURING EDUCATION AND TRAINING

JOE BORDOGNA: I'm going to make a presentation. My name is Joe Bordogna. I'm a member of the Technology Reinvestment Project Team. I'm not going to tell you what agency I'm from because we're trying to be a team and I think you have to understand that all of this comes out of a joint effort and Lee Buchanan was saying that we're going to review everything and make selections together; even though pieces of these things may seem disconnected from each other, we want integrate them all.
What I want to do first is give you a little bit of introduction to what the context of our view of the change we need in manufacturing engineering education and the go into the pieces of the red book and to have you ask any particular questions.
But most of the questions that I've received before on this in other kinds of meetings had really to do with the context in which we're viewing the change you want to see.
So to begin with this is the whole story. This is a cartoon which is in a school of business. It's a morning session. This is a five-year
old cartoon, by the way, out of the Christian Science Monitor.
The professor of management's at the front of the room. He has already spent some time in the previous two years of trying to link with the engineering school on campus, trying to get something going together, so he comes forward and he's doing his duty now and he has a word, Production, on the chalk board.
And he says, Now I Know you all want to make money but today we're going to discuss making things. And in very small letters under that he says, sheepishly, actual things, because he's tender about they're going to accept this or not.
And in the back of the room the students are really angry about this and one says, things, I don't want to make things. I want to make money. And another student has a solution. We can make some money by suing the business school.
So It's funny but it's real and it's deep and it's not a slap at a business school. In fact it's to point out that the connections among the business school, the engineering school, the liberal arts and trying to elevate the respect for making things, that this country respects for reductionism or a Ph.D..
None of this is to diminish the value of a Ph.D.. It's important, it's the best thing this country does. Don't ruin it, embellish it. Embellish it, but that's not the only thing we do.
Now to give a context for what we're looking for in an educational point of view, let me do this in a socio-political, technological point of view first.
A lot of people feel the second bullet is all you need and our country does it well. Investment and of the taxonomy developed with the President's manufacturing initiative which is now becoming very formal.
And, finally, invest in human capital which is the most important part of this program.
Now the intellectual focus, I picked up these four pieces of the overall President's manufacturing initiative which is about eight months old. If you know the word, FCCSET; How many people in the room know the word, FCCSET? About 25 percent.
FCCSET is the Federal Coordinating Council for Science, Engineering and Technology. It's a council chaired by the science advisor. It's members our the heads of all the departments and the agencies in the federal government. O'Leary, for example, today's head, is on the council. That support and /or do R&D.
What they've been doing for the last four years is forming initiatives on major dilemmas. One's in biotechnology, one's in math, science and engineering education. One's in advanced materials and processing.

You must have about that one. The AMP program. There's six of these. The newest one is manufacturing. In the manufacturing initiative are these community, government, industry, academe, have done an awfully lot of good things in thinking about what to do. There's a whole sequence of eight or nine reports out, National Academy of Engineering, NSF, ABET, all these acronym groups of people, NSPE, IEEE, ASME as an education group.

If you read them all they all say the same thing about the dilemma we're in. Engineering's an integrative process and education should be toward that end. They all have a common philosophy.

So one reason for this, so these programs have developed out of all that yeasty kind of discussion, a lot of it, which has been reported and peer reviewed in the literature already, so we're trying to grab that.

And one of the notions here is that all engineers should learn how to make things. When I say make things, some scholars and intellectuals get worried because they think it's vocational. That is not.

Again I'm going to repeat. The idea here and elsewhere, and here we have an opportunity of $50 million in a windfall coming in a year's time, to do many of the things people have been trying to do, that some of us in the agencies have been trying to find $1 million fast in industry because they've work together in teams. They've been making things for four years in some sense and that's what this is about.

There's an example here. We've given examples in the red book. I caution you about them. They're re very limited. We had to throw some examples in, but I worry about that because it might get your mind thinking that's what we want you to do. We want you to be free and open thinking about this.

The money. Three-year programs up to a million dollars per year each. So $3 million kind of thing. We have 50 million bucks or so, we can't do too many of these, but we're interested in a couple of these.

Incidentally, we haven't specified among these programs how much money goes where. We're going to look at the proposals and see which are the best and make a program out that.

Practice oriented master's degree, very important issue. This is an attempt to have, and again this is after a decade of arguing about these things, the M.S. in engineering is primarily in practically every place a stepping stone to the Ph.D..

Now you've Heard of frequently a student at the M.S. must do a thesis, so we can see if that student's really able to d a Ph.D.. The professors who supervise the Ph.D. dissertations are teaching most to the master's courses and again they're oriented toward that paradigm.

We want to crack that some way. We think after a baccalaureate there are two major issues involved, one's integrationist and one's reductionist. A baccalaureate student for manufacturing across the curriculum program will graduate understanding a least both those contexts, analysis-synthesis, reductionism-integration, and can make a choice at that time or maybe after working a couple of years in industry but have two routes, a practice oriented integrated master's degree that prepares you for industrial practice and a Ph.D. which prepares you for good research.

We know how to do one, we don't do the other very well so this is an attempt again to use a lever for people in academe who want to get at this but the practice oriented degree isn't respected enough. We want to raise the value of this intellectually.

So this is an attempt to be intellectually rigorous, prepare graduates for the integrated process making things, get experienced engineers in defense firms who might want to spend a year at a university and get retooled for civilian practice in some way.

This again is a bit of an experiment in that sense because what are we going to do , I mean we did a good job after World War II with the returning enlisted personnel, GI bill, and I don't know how many of you really have studied that issue but I hear numbers like for every dollar invested in an entering graduate from the GI bill $1000.00 of wealth was created. I think it's easy to imagine that's so. And in fact I think we can claim that for most part the last 40 years of U.S. supremacy in technology came out of those enlisted personnel being educated by the government.

So now we have a different kind of situation. We have defense engineers that may need this. This is a try to see if we can learn something from that. Maybe something broader can come out of this experience.

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And so on here, and these are three years up to $1000,000.00 per year each to get these going.

The next one, retrain the manufacturing work force. Probably the most difficult to get at. We don't see this happening without universities, industries and communities colleges working together getting some bright ideas to do it. We want to integrate that so community colleges are a very big part of this but we're trying to get universities and community colleges to talk together too, another lever here to that.

Again, all these are out of the book, let me keep going ahead. These are 500,00 per year, up to, for three years. I should mention that Lee Buchanan was answering the questions this morning about how long is this going to be. He did explain very nicely the fact that we want to get this stuff out there and tried out some way. We have great confidence with Clinton in place that if these things work well and we prove our me[illegible]e more funds will be forthcoming. So that's the experiment here.

So whereas he said 18 months and 18 months, things like that, in the education part up to three years max. It can be less or more, so on/

If this works right it's likely that agencies will get money in other venues from congress, administration to education more, not necessarily defense conversion. The idea here is to leave it.

BREAKOUT C:MANUFACTURING EDUCATION AND TRAINING

NEW YORK REGIONAL BRIEFING AT THE SHERATON NEW YORK HOTEL AND TOWERS, MONDAY, APRIL 12, 1993.

SPEAKER: (Inaudible.)
DR. BORDOGNA: The reason for that is the schizophrenia we have about one time money or not here. This is $500 million really one time right now and so we're taking a gamble here, we're saying let's use most of this money to synergize the thing with the belief if we do it well we can get more money. So this means no renewal out of this program.
SPEAKER: (Inaudible.)
DR. BORDOGNA: That's right, up to three years. Most of the things we're doing with education, let me answer that a little more carefully. In education you all know if you understand academe at all, even slightly, it is hard to change it and so you want to think of a rationale change in academe is going to take ten years, half a generation. So most of our programs are five years and we have to be patient. This is a new paradigm for the last five to six years in trying this because the authorizing appropriation groups in congress want to see action fast. So three years is small compared to the usual and that's why that's in there. Traineeships. This is a more focused effort at trying to get at can we have a fellowship program for engineers in defense industry or maybe even federal labs, as a matter of fact, who are getting impacted by the downsizing, they have to leave. This is an attempt to say, Well, suppose you have someone on board in your organization doing defense work, an engineer, and you want to find a way to send him or her to school for a bit to get trained to do civilian things or help you make your company turn around, here's the chance to have some money for it. Or if someone's been laid off within the last two years can come into this program. We're not quite sure how to define it well. We hope the community can define this, but it has two pieces. One is to try to do something worthwhile, the other is an experiment. If this works well maybe we can go to the congress and say we should have a big program just for this. Coalitions. This requires a little bit of, again, systemic undergraduate curriculum reform here, undergraduate as opposed to the practice oriented master's degree. We have a program out of National Science Foundation that's about three years old and this is one of these programs that were developed out of a national consensus workshops report and that is we should take, to get at this integrative paradigm and change the system in academe, we should have groups of engineering schools get together in coalition and try this together. We fund these at $15 million over five years, $3 million a year. We have four coalitions presently. They range in size from six to ten schools. These work on underrepresented minorities, retention of them, getting manufacturing across the curriculum, getting design and teamwork done in the freshman year and throughout, and so we felt maybe we should have one of those on manufacturing per se. They've mostly been generic. They have their own different tones to them but they're mostly generic. So here's a chance to fund, and we have two years and two million, so it's a four million thing, up to that. The usual size of our coalitions is three million bucks a year, so this is one of them. So this is a way to try to get as an experiment, having a group of engineering schools to get together and create a coalition that would deal with manufacturing education at the undergraduate level. Let me emphasize again that if you're going to propose in this piece, we don't want to create a manufacturing discipline, we don't want to create a manufacturing department. Here we want to take some schools and see if

they can teach manufacturing across the curriculum better. That's different. And if you have confusion about that you'll ask a lot of questions later. Supplements. We have existing engineering research centers, science and technology centers, industry and university cooperative research centers, state industry and university cooperative research centers, ten different kinds of things going on, and if these present centers have great ideas about this program, we'll supplement what they're doing. This is a real important piece because many of these centers are already focusing on manufacturing. Of the 18 entering research centers, six deal with manufacturing, and maybe this can help synergize them, maybe they can get together some way. Maybe an engineering research center and an engineering education coalition can get together. Again, it's wide ranging and we want to get creativity to see how this can come about. And then this is if all else fails, try something you think of on your own. That's what this piece is. So this is individual group innovations and this essentially says, Gee, if you something out there we haven't thought about we want to hear it. Maybe you have the key. And you should submit in this. So this let's you not have to fit in anything else. There's also another piece called manufacturing experts or managers in the classroom, which is sort of pieced out from the rest of this. You know, in the eight programs this is one, manufacturing and engineering education, and there's a manufacturing experts managers in the classrooms for about a little less than $5 million. This is connected but in legislation it was separate and it has a lot to do with the very correct notion that why don't we get real intellectual manufacturing engineers in industry actually making things into the academic environment with status equal to the most prestigious professor. I'm not being sarcastic about this. I'm trying to be very real to the situation. Again, change in the system. Usually when a person from industry comes into academe they're an adjunct. You're semi-connected. You're there for a while. And generally they'll look at that from the academic point of view, I think the professors are taught this over the years, that person isn't quite in the group, isn't part of the system in reality. So this money was put out in congress because in lobbying for that agony we want to make the most of that, so we want to have people from industry come in, be part of the team really in academe, and eventually over time get the notion changed that they're different. So again it's a coupling. Now the professoriate is anxious about not this particular program, but the generic notion because they think some of the autonomy may be adulterated and we want to show it won't. It will be enhanced by this because experience of some of us who've been at this for a long time doing little programs, I've been at this for 15 years trying to put academe and industry together, it works well and the people from industry understand what academe is about, the real good people do, and they bring something to it without really saying that we're going to interfere with what you do in academe. So this has a real deep meaning, the manufacturing experts in the classroom. Yes?

SPEAKER: (Inaudible.)
DR. BORDOGNA: A good question. We don't want to mess up anything that's good right now. We're trying to fill up the holes. And, yes, adjunct professor, but we're not going to use this money for an adjunct professor, a better way to answer your question. We will not use this money to fund an adjunct professor.
SPEAKER: Many places even that take on permanent faculty into the professorial ranks call them by a different name, industry professor, for example. They're on the staff and so forth but they don't have the

(inaudible), but they are not really members (inaudible).

DR. BORDOGNA: None of this is precluded. What I'm trying to do up here is say we're trying to look at the basic problem of connecting industry and academe, that's part of what we're trying to do. And we want to think of brighter ideas. In fact why bring a person from industry and give that person a special name like industry professor, why not a regular tenured track position? Why don't they do that more? Does the person have a Ph.D., because the person really wasn't anointed properly, because the person spent too much time in industry, the person didn't write enough papers? Those are real issues and they should be checked. But people have value beyond that, value which might be equivalent or should be equivalent in some cases to what a regular professor does or regulars, in quotes, because of the way it's defined in academe. I don't want to get too deeply in this, I'm trying to give you a notion. The manufacturing experts in the classroom can be anything. I'm trying to give you the context when we're trying to put an integrated program together to change academe and industry relations at the same time.

SPEAKER: (Inaudible.)

DR. BORDOGNA: An excellent question. It does not mean, just like I'm the lead engineer at NSF. That doesn't mean we're going to take this money and put it in NSF programs. We're trying to create something here which is broad ranging, so if it deals with educating students to go out and help make things, all is fair game. Practice oriented master's degree, for example, I'd like to see and some few schools have started these programs, a whole new kind of master's program which would be with the engineering school and the management school together, but doing neither an MBA or an MSE but some kind of integrated program. Now most of these new programs in management and technology, which is part of this, are simply the combination of the regular programs in the management and engineering schools. We want to see some kind of new combination of that, which is a practice oriented master's degree which combines technology, engineering, manufacturing, business management, organizational behavior, software use as a tool, all of this. So, yes, if you have something in the university that's not in the engineering school, but deals with manufacturing better than your engineering school does, yes. But hopefully you'll combine it all. Yes?

SPEAKER: There are many professional societies, Society of Manufacturing Engineering, there's APCS, The American Production and Control Society, that have many certification programs that teach how to better produce product. Would they be eligible for this program or must it be through a college?

DR. BORDOGNA: The requirement here is by law an institution of higher education, a university generally. Can a community college put in? Yes, but again community colleges and industry and universities together put in together to propose, but it has to come through a university. But let me be very positive. What I want to do also is have the professional societies work with this so you can be proactive. You can go to a local university doing some hot stuff and say, Why don't we get together so we can bring our value added to this? So the answer to your question is no, you can't propose individually, but certainly you should be proactive and try to dig in with a university proposer.

SPEAKER: And also you seem to be aiming it towards reteaching, if you will, or new teaching of engineers, but could it be other people that are hurt? I mean there are more than just engineers in aerospace and defense that are being unemployed.

DR. BORDOGNA: That's a good question. I worry about it, but this is manufacturing engineering education.

That's what the money's for. But you're right, you're making a point that's vital. I think we can end the slides. Let me get your question. Let me just finish the two slides so you see this. Again, this is important, diversity and linkages and you see them all here. Not saying you had to be totally global in putting it altogether but we want to see linkages. If you unlinked it's unlikely you're going to get an award. Forget this one, let's just end up with this. Put that last one back. That's not a rank list. Actually this is a bit cute, in a sense. We're trying to show all the stuff that's going on and we want to push linkages. You define it, they have all of these and it's not ranked in order. Let's stop the slides and we'll ask questions. You had a question. Can you go to the microphone please?

SPEAKER: You have been mentioning repeatedly engineering education and engineering schools. We do have manufacturing in a great manner being taught in engineering technology programs. Are we eligible for this, the award?

DR. BORDOGNA: Yes. In fact it says that in some place in there, engineering technology schools specifically. But again we want to couple, you're bringing up a good a good issue, we want to couple the engineering technology battle with the engineering schools. So we're going to look kindly on integration of things. So if a technology school and engineering school get together, their act together, with regard to the engineering profession and manufacturing, that's great. If there starts to be engineering school doing this and engineering technology school in Havana Community College doing that, then it's likely that we won't be interested.

SPEAKER: I like your transparencies. Can we get a copy of them?

DR. BORDOGNA: Yeah, all the; you have to call this number. Wait a minute. They just told me before we came in here. At the bottom of the agenda in very small print there are a bunch of numbers and one is for the National Technical Information System. I'll say them to you here loud, because unless you have good eye sight, it's hard to see it. But if all else fails at the bottom of the agenda you all have, there's a number for NTIS, 703-487-4650, and you ask for the following package: P like Peter, B like boy, PB93-169829. Now it's all down at the bottom. Now that apparently is a code for responding to the fact that Lee said he will give the stuff to the states and they will distribute it. Between then and now that's going to be done through this number and it won't be ready for a week and a half, two weeks, I'm told.

SPEAKER: (Inaudible.) He said that we could get stuff that was presented today by going through our host here.

DR. BORDOGNA: Our host just said no. So in any case you will get these. That number is 703-487-4650, ask for PB93-169829, and good luck.

SPEAKER: (Inaudible.)

DR. BORDOGNA: Transcript too, you get everything there. I hope we don't spend time on this because I can't do much about that. Any how, let's get to questions now. We started some good questioning. Yes, my friend?

SPEAKER: I'm not from a university, I'm with an industrial organization, but we are doing what I think is innovative work in process technology through simulation using computers, where, for example, we're looking at a solidification process, we're looking at how a material will solidify from a liquid state, which is very important in some manufacturing processes. We're looking at vapor deposition processes, again, analytically using three dimensional, time dependent computer models. I think my company would be interested in some kind of a teaming relationship with a university. We have people at the Ph.D. level who are doing this kind of applied research and that's what we would tend to offer, that kind of practical application of computer technology to actual manufacturing processes.

DR. BORDOGNA: Let me take advantage of what you just said which I appreciate very much and you're being generous and gracious with offering to universities some connection. This is what we'd like to see and just like you were just proactive in saying that I can't propose, the university can, maybe we can be of some use, let me turn it around. When you look at the entire program and you say, Gee, I'm at a university but I can't propose, some for profit company has to propose over there, combinations, the university is going to be proactive in drumming up a team for some university's proposing you're part of the team. Another facet of this is we've had experiments going on now where freshmen make things and at the end of the freshman year if you hear those kids making reports they're very savvy and you can do it. And there's no reason why freshman can't take advantage of this simulation to learn about manufacturing, not wait till the senior year. We'd like to have manufacturing be the envelope of the four-year undergraduate experience, not the end point. A deep meaning to that one too. The worst time in the world for a student to do a project, a design project, is the senior year. There's two things wrong with that. One is they're all trying to get jobs and they're very busy with other things. And the worst is the kids think why did the professors wait this long to teach me about design, it's probably not that important. Any how, a little facetiousness. Yes, please?

SPEAKER: I wonder if you can reconcile what you say about universities not being the proposing agency with your six-member university coalition? In those kind of situations, do you have six universities and then on top of that an outside industrial firm doing the proposal? And maybe you could explain the rationale why universities can't propose, can't be the main agent.

DR. BORDOGNA: Good questions. First of all, the proposal entity was dictated by the congressional act, right, that's the first thing. Now secondly in these coalitions it's sort of like a virtual organization. If you have six engineering schools in the coalition, they propose together, and in fact there's no building where he coalition exists, it exists among all of them. There's a board of governors. Now that's different; so industry should be involved in all of this. In are engineering education coalitions already, industry has to be involved, an engineering research center, engineering; industry has to be involved. So even though the university proposes the universities cannot propose unless industry is involved in it.

SPEAKER: Involved in what sense?

DR. BORDOGNA: Intellectually. I'm serious. In fact we started programs in Washington which try to get away from this match stuff because that's an agony and we have an environmentally benign chemical manufacturing research program in which the requirement for a university professor who makes a proposal in this must be an intellectual connection with someone in industry with no money involved. So we're interested in trying to, it's in this program, but I'm trying to give you a little more than that. The system in Washington is moving to want to bring industry and academe and the government into some kind of partnership, or lots of kinds of partnerships.So in this program here, the one with the red book, all engineering, manufacturing engineering education proposals must have industry in them.

SPEAKER: (Inaudible) contract, it can be the university.

DR. BORDOGNA: It must be. In these two programs here it must be, but you cannot be alone. And in fact if you have several schools together or if you have combinations of different entities together, that's what that last slide was intended to show, you're likely to make out better and not because we're going

to give them to groups because we've noticed in the last several years when the groups do get together proposals are better. It's more meaningful. But the main connection here for the long run is an intellectual connection between academe and industry.

SPEAKER: If you would give a little bit more detail on the cost sharing scenario, maybe different scenarios, when you're talking this integration. You know, you can get some private universities that may have large endowments, some public schools, you know, that are depending on the bankrupt government for money, and then maybe you get some of the private sector that would probably have money through their private trusts and foundation. How are you really looking at that? You know, they've made mention of the fact that 50, 60 and then some of that was cash, non©cash. I think that's some of the things when you're trying to put together the proposal you'll look at first, you know, we want to sell it down in Washington because we want to get as much as we can, but at the same time interested in sustaining something, not after three years you throw it in the garbage can, but beyond three years. This is going to last 10 years, 15 years, as you pointed out, relative to what happened after World War II, with some of that thinking. I mean we try to think that way, but, you know, maybe you can give us

DR. BORDOGNA: (Interposing.) First of all, in the education part of this, it's 50 percent. There's no 50, 60, 70. It's different from the others. I think making the match in this part of it ought to be easier. We have a, you know, among the working group, in the end we're going to make the selection and so on. And my mind is totally open, if it's legal, we're probably going to do it, and that's sort of the tone that we try to, Lee Buchanan tried to give you too. We don't quite know what to do here, but we want to be as flexible as possible. And Rick Dunn, the lawyer, Lee said, did you ever hear a lawyer like that, he's really taken a different approach to this. And there's OM 110, which is partly a guideline. So for the education things, the matching can be almost anything that's legal; in kind, forgiving overhead recovery, which some of the schools do in these coalitions. Not forgive them, but they would say, Okay, we'll cover the overhead. Cash, leases, cash is better, cash is always better, but I don't think in the education part

SPEAKER: (Interposing, inaudible.) come by. So I can't answer better than that except to say we're totally open minded and anything that's legal is going to be listened to. In the end I'll tell you what is the real thing. We're going to look at the proposals intellectually first, the ones we think are great, and then we'll get down to the details. So it may be that one of the great ones, we look at it carefully, and say, Gee,it's only 35 percent match. It's likely we'll go back and say, Can't you do better on that and we'll try to work with you on it. Somebody over here. You're next here.

SPEAKER: Thank you. My question is perhaps more philosophical than practical and that is that it's the question of beginning this experience at the freshman year college and to what extent having certain preparatory skills and other training and experience really have such an obviously direct impact on what students of that beginning college level will be able to do. And the other side of that or another aspect is the recent publicity given to the apprenticeship training programs in western industrial countries like Germany, I guess, is a leading example. And, again, those aren't within the four corners of your existing program but I just wondered what your thoughts might be on how those linkages or those alternatives might be developed over time.

DR. BORDOGNA: Well you're asking probably the most important question and when we're talking about starting and entering the freshman year that sends a lot of fibrillation through the system because, and I've had many, many arguments with my best friends on this, Joe, how can you teach students of design unless they know the fundamentals? That's the generic response to this. And so I say, What are the fundamentals? And the fundamentals of design, you don't teach in the beginning any way. You teach them engineering science. And that's not to denigrate the engineering science, you do terrific in thermodynamics, you do terrific in mechanics. We're great in that. And that's not necessarily what you need to do design or to make something. That's one issue. And we actually have not just anecdotal information now. We have funded places which have, Drexel University is probably the best place to look right now. They have thrown away the first two years traditional and they've gone and bit the bullet and doing all of this new kind of stuff and it's successful, and when I made the comment that when you hear these freshmen, at the end of the freshman year, giving project reports, they sound savvy, Drexel's the place where I've heard this. And savvy means, they don't quite know what a 4A transformer really is yet, in the sense of analytically computing one, but they've had it simulated on a machine. They know what the power spectrum means, they have a feeling for it. âSo that's now an intellectual paradigm shift which we're at . Secondly, we lose 40 percent of the engineering students who register in the freshman year, by the end of the sophomore year. It's intolerable. And we ought to spend more time on that than worrying about recruiting new people. And the ones that get hurt the most are the woman and the unrepresented minorities. Thev're the biggest part of this disaster. They get lost at a higher rate, 65 percent or something like that. And a lot of this on both sides, it's generic, it's not just minorities, women, regular students too, they get bored, they get turned off, they've been back to high school for two years, they're doing abstraction. They came to make things. And we know in most cases they're bright students. They're not leaving in droves because they can't do the work. So any how that's enough. I think thattries to get at your question. We're at this in a big way and again that's generic paradigm shift and we're trying to play this program because manufacturing is the quintessential part of making things, to try to enhance that and leverage it. Yes, sir?

SPEAKER: In reading the available material I didn't see anything that said the proposals in manufacturing education should be exclusive to manufacturing engineering or engineering education until just now. So I wonder if we can clarify that a little bit and I'd just like to say I think it could go a lot deeper than that, especially in the context of defense conversion and saving jobs and maybe it should go further than that.

DR. BORDOGNA: Let me see if I understand the question. I think the question relates to this is all manufacturing engineering education. I've been talking a lot about engineering education.

SPEAKER: Manufacturing education without the engineering, right.

DR. BORDOGNA: Without the engineering?

SPEAKER: That's the way I read it originally and now it seems to be, from your comments just a few minutes ago, you seem to be talking about engineering education only.

DR. BORDOGNA: A good question. A good question because, that's an excellent question. First of all, the title of this, according to law, is manufacturing engineering education. That's the title of this thing by law. And what we're trying to do here is say that engineering education is the making of things, which manufacturing is and so it's hard to

discern the difference between the two. Now also we're trying to use this as a lever on general engineering education, we admit that. But the proposals are in the context of manufacturing, but they should be done in the overall context of changing engineering education at the same time because we don't feel there's much of a difference between manufacturing engineering education and engineering education. We can argue that, in your proposals you can argue it, but that's where we're going. Did it get at all right? I mean you may disagree with that, if you're disagreeing with it we can argue. If you want to disagree, come up and disagree.

SPEAKER: Let me just say I think my answer is that the educating of technicians or operators on the manufacturing floor to acquire new skills would be included?

DR. BORDOGNA: Oh, yes, yes. Let me be more specific. There was an argument, I've talked to some of the people, the first thing we did was we talked to the staff people in congress who helped the senators in congress put these bills together. And beyond the title of these things, they admitted that the paragraphs describing them were very flexible. They didn't quite know what to say there. Secondly, when I talked to people involved from the community who were really trying to help write white papers and so on that led to the legislation, there was a big argument that ensued about engineering versus technical training, community colleges versus universities, and in the end the engineering education part won out, in quotes. But on the other hand if you read the legislation, it's still fluid and flexible in there. So what we're trying to do is say that, yes, technician training, work force thing should be done, but it should be done in linkage with the engineering education, not isolated. And, again, it's a little subtle but on the other hand we're trying to look globally at this. Somebody mentioned about Germany, the Franhoffer Institute, we shouldn't copy anything another nation does but the Franhoffer Institute does a great job for Germany that we have a vacuum on. We don't have skilled people at the level that Franhoffer puts out. And also the Franhoffer depends on industry, it's industry led. We're talking about industry led here. So part of this is another little experiment to see if we can couple the engineering with the technical schools, the schools of technology, to get at this bigger dimension, which is going to be separate money for eventually any way, this technical education part. The President has started through this FCCSET thing, a new FCCSET working group, it's only about three months old, on technical education alone. So it's elevated that importance there. Nothing much has been done with that yet, we're just getting started.

DETROIT REGIONAL BRIEFING AT THE WESTIN HOTEL RENAISSANCE CENTER, TUESDAY, APRIL 13, 1993.

QUESTIONER: Two quick comments. Someplace in the red book I saw a statement saying at least one-third of the funding would go towards new programs.

DR. BORDOGNA: Yes, that's mandated in the congressional law. That's right.

QUESTIONER: Just an observation. The other one is I wouldn't stand where you're standing to speak from. If you look up, your life may not --

DR. BORDOGNA: Am I going to get killed there? All right. I'll go back and forth. Thank you. I need to give out 50,000,000 bucks. We want to enable a grad to see if they expand industrial practice. That's a fancy statement. It's very important in the sense that we don't want to change the four year program and have the kids go day one to G.M. to be directly useful there on the manufacturing line. That's irrational. It's also incorrect. We're

giving them an education. On the other hand, we don't want to have G.M. have to suffer the problem of taking analysts and trylng to make them integrators, which is what they need to. So that's the trick, and we want to make them interface more fastly. That's the idea, a different kind of education. Incidentally, I'll be finished in a few minutes. I'm trying to be bold and pushing it out because I'm standing on a lot of credibility from these reports and these ideas and these experiments going on. But again, you'll see the last program allows you to do every one. We have one program in there for your innovation totally on your idea.

QUESTIONER: You keep emphasizing four year programs, but the red book talks prevalently about that.

DR. BORDOGNA: Right here. I'm not finished. There are a bunch of things. What I'm doing, in the beginning, read what I'm saying as a context of the whole thing. I'm going to specific programs. The first one I gave you is manufacturing across the undergraduate curriculum. That's one. Second one, very important idea again, intellectual idea. Again, talked about, studied that for ten years. Longer than that, but it's been very formal. The idea here is to have the M.S. not be just a stepping stone to a Ph.D. because that's a reductionist analytic program. That's not to say it's not valuable. And in your own culture, your own school, you may decide that's still important to you. But nationally, there are really two things you do in our education. One is get that Ph.D. We're going to keep supporting that the best we can. That's very, very important. We don't want to mess it up. We know how to do it. We don't need much innovation. We're the best in the world. But the M.S. should not just be a stepping stone for Ph.D. taught by the factory in the same mode that they would teach a Ph.D., and that is analytic downbeat reductions and so on. We want a program of charis people to go out in not necessarily just the industry, but to go out into the world and be able to put things together, put enterprises together, to understand technology well, to create products, to create services, what have you. The M.S. usually -- many factories say I don't want a Ph.D. student until he or she does the M.S. What does that really mean? You have to prove yourself for reductionist program. And as a result, the M.S is not what we think it really should be. You can do that if you want. This program is to get a new kind of masters degree at which there are some schools in the country already trying to experiment the last five, six years, serious experiments, integrative. An intellectually rigorous paragraphlcs with the integrative process of making things. Not the reductionist process of discovery. This doesn't say discovery is wrong. I want to make that clear all the time because we start getting attacked, we're going to ruin what we have. We don't have to ruin what we have. We're going to embellish what we have. Here's a vacuum. We need some development. Experienced engineers in defense firms to pursue degrees. Now one of the questions I get here is if you're a defense engineer and your company wants to -- there's another program here that allows for sharing of a defense engineer going to a university to get sort of skilled in civilian stuff. I'm not sure we know how to do that yet, but we do have engineering research centers which are doing that kind of thing. We do have science and technology centers which are trying to do some of those things. We have industry university cooperative research centers which do some of those -- lease them to you in which you learn is industrial civilian oriented. So we have a fall program for that, but also bring them into just maybe a three month experience or what have you. Experience, exposure, up to date manufactured equipment. You can't really do up to date manufacturing equipment too well in a masters

program unless you're connected with industry somehow.

QUESTIONER: Joe, on the particular one and some other ones, what if you've had a practiced oriented masters degree in operation for some years, are you foolish to have started so early?

DR. BORDOGNA: That's an excellent question. I've agonized over that a bit. I think if you have a bang-up degree you need no help with, fine. But my impression is that there is some schools struggling to start this kind of thing. The dean in particular, if he or she is leading this and wants it to happen, has trouble trying to get resources to make shifts in the way the faculty does its business and so on. So I would suspect that most programs underway would have an edge in the sense that they started something on their own, they easier to make an easier match. It might look more exciting because you've proven some new things to do, so I don't think there's any program that I know of in the country that does this totally well yet. So I would think it would leg up if you started something rather than -- and again, let me answer that a little more because I want to keep emphasizing we don't know exactly what to do. We collected all this wisdom, and I think we have a good way to start this, but you may have something that's not here, and we're totally open-minded. Retraining the manufacturing work force. This is a tough one here in the sense that there are moneys being developed, there are moneys around to start doing this. I gave you the example of labor. There's an awful lot of money there at the technician level. There's going to probably be maybe some big program that's not even developed yet because Congress is anxious about the hundred thousand defense engineers. The number I'm told is 127,000. I don't know if that's exact, but there's a lot of people. There may be a kind of G.I. bill for that. We're going to try to experiment here. This is a small part of 50,000,000. My expectation is we're not going to do a lot with this because it's too big a problem, but we want to get a handle on it. On the other hand, maybe the best proposals have come in here.

QUESTIONER: Joe, could I ask you a question? For every engineer out there, there's some number five, eight, ten technicians in line by worker. What's being done or contemplated in the context of recreating them?

DR. BORDOGNA: The Department of Labor is focusing on that particular issue, and that's going to happen. I think there's almost a foregoing conclusion. A big program in retraining technicians.

QUESTIONER: That won't be a part of the --

DR. BORDOGNA: It will be here. It's like all of this here. Community college, university college and industry collaboration, joint facilities used high tech delivery systems. How do you get at this? The manufacturing work force includes technicians and engineers. So it's up to you get some ideas in. And the corollary to this question is I noticed the word "vocational" was used once in the description in the red book about education, and in another instance it was referred to, but that's the last that was said about it. There's this whole universe of vocational high schools out there. This is a higher institution, an institution of a higher education. Let me answer this question. There are two answers. One is we don't want the word "vocational." We have to find that one and get it out. We'll try to excise that for the major reason that if you use "vocational -- and this is higher education. We're trying to change the culture of the way the faculty operates. That's a very negative thing. So you say vocational. It's not intellectual. The second answer is this is institutes of higher education, which includes community college. Not high schools, not grammar schools. This is not to say it's not important. There are other programs around that focus on that, so this is not for high school voc. ed.

QUESTIONER: If this program is to address the cultural issues, does this phase of it or does another phase of it include questions like management methods, approaches, so on, so forth?
DR. BORDOGNA: Yes, yes, yes.
QUESTIONER: Is that in this part of the program?
DR. BORDOGNA: If you think it's important to get at this, you can put it in. We're more specific in other areas on that.
QUESTIONER: Okay.
DR. BORDOGNA: A practice only masters degree, for example--

QUESTIONER: Let me follow his question, please. I'm with Ohio University, and I have a couple of contracts at the moment with some major corporations, and we're doing exactly what this man alluded to. We are in there creating programs for the development of human resources management knowledge for the engineering groups because in this focus of engineering development, they have left out the dimension of what do you do to get promoted to management. And that's a big, big area of activity. I've been involved in it for six years now since they brought me into Ohio from California, and I don't see anything here addressed to that particular area.
DR. BORDOGNA: You may not see it, and I'm not doing a good job of telling you what's going on. I can't see how you can have a practice only masters degree without management skills in it, with organizational behavior, with enterprise design. That's what this is for. Well, that's what it is. I mean we don't want to create a technology degree here of super technologies. So that's number 1. Number 2, I don't think you want to train a kid so that when he gets ahold to management, he can know what to do. This is a deeper issue. We want the kids to understand a connection of management technology from day 1 no matter what they're doing. That's a totally different issue. That's what we're after here.

QUESTIONER: Ron Gillette with EDS. I just want to follow up on the gentleman up front's question. You said that the use of vocational in here was a misnomer, so this program is truly geared only towards higher education, not the work or work force level.
DR. BORDOGNA: You're asking a question that has two pieces, which to me don't connect the right way.
QUESTIONER: Explain it however you'd like
DR. BORDOGNA: I'll explain it however I want
QUESTIONER: Yes.
DR. BORDOGNA: Congress has mandated that this is for institutions of higher learning, which excludes K to 12. It includes 12 to 14.
QUESTIONER: My question is not about people --
DR. BORDOGNA: Let me tell you that's number 1, and I think -- I think the problem with vocational is it's usually in high school. I don't hear usually community colleges doing vocational things. They're giving degrees for a technical work force. The work force issue --
QUESTIONER: There are vocational schools that are post high school.
DR. BORDOGNA: If you're a community college kind of school which you want to call vocational, you can participate in this. You're an institution of higher learning if you're beyond high school, beyond 12th grade. I'm using the word "vocational" in an intellectual context, and I really mean it because the problem you have and the problem deans have in academe trying to make these changes is anything that sounds like it's integrative or you're going to do things with your hands or design is immediately suspect an a non-scholarly activity, and they call it vocational. If you're in a university which is a comprehensive university, the engineer is looked down upon compared to the scientist and liberal arts people. Because what they do is

vocational. We don't do vocational things. I'm just talking about that word. It's an important issue to keep arguing about. If you have a school which is called vocational and it's beyond high school, you can participate. Now, the general work force issue, this is for the work force. So if there are people out in the work force that need some training, they can be part of this, but only in the context of the higher education kind of milieu.

QUESTIONER: So only a higher education organization can deliver this to them, is that what you're saying, the degree awarding?

DR. BORDOGNA: No. The only proposers for this are institutes of higher education. Partners can be anybody. Vocational schools, back to 12th grade. Industry is an imperative. You cannot get a grant without industry being involved. Partners of all kinds. So participants galore, but proposers, only institutes of higher education.

QUESTIONER: Okay. Thank you.

DR. BORDOGNA: Now I want to add a little bit more that we're looking for in here is it's unlikely we'll give something through a university. It's unlikely we'll give something to something that's not really a bunch of people trying to make a systemic change. It's unlikely we'll give money to a community college to gear up a new technical program that's manufactured. If the community college links with the unlversity so we can get engineering and technician training integrated somehow, that's great. We're looking for a continuum between K and Ph.D. and not the slots anymore. And so we can argue about that because this is what we're trying to do, a systemic change, K to 12 integrative. We're not going to do K to 12 integrative just this program. We're at the sort of baccalaureate masters level here, but that has a whole packet of stuff in it, which includes community colleges. One of the most important things deans of great engineering schools have to do, which is difficult for them, is to connect with community colleges. It's the future. What does that mean? It doesn't mean you give -- the government gives money to community college to do its thing and gives money to universities to do its things. It means trying to do it together. So let me reiterate this program is not being done in isolation. The five agencies do it together. They're going to review it together and so on. We created it together. But it's even a bigger thing in getting the whole systemic change up and down the line.We can't do it all with this.

QUESTIONER Could you talk a little more about this management side of the concept? Are you saying that you want to see business schools involved in this?

DR. BORDOGNA: Yes. I had a graph of context saying there was a disconnect -- remember I had issues in engineering education? A disconnect between management and engineering schools. That's why I gave those first seven slides. I said I don't see how you can have a practice only masters degree without -- that's management. I'm trying to broaden these terms. It's organization behavior. It's what are the norms in an environment where people are working together. How do you interact with people? What's the psychology of the work place? Tied with technology. If the practice only masters is going to be valuable for industry, to the graduate as well as the industry, is it a good career choice? The idea here is to help that person know how to operate in the environment out there, which includes designing the enterprises as well as making the product going out the door. A lot of people have a lot of ideas about this. We don't have any prescription for it, and some people are starting a curricular like this. But a manufacturing masters degree which is devoid of management, as you call it, or these other issues is not going to be of much -I'll say it more boldly --

positive status. Let me go through the rest of these programs because you're beginning to ask questions that relate to some of the other programs. See the third bullet says support of special education approaches or development for adults. It could be second bullet, degree, undergraduate, graduate or non-degree. This is very open because we don't know quite what to do about it, and some of the people in the marketplace are trying things. We hope something will come up. We'll try some of these, and maybe that can be the precursor to a bigger federal program outside even the context of defense conversion. This is a little more specific. We have had an engineering education coalition program come out the Federal Government handled through NSF. Again, this program originated from a workshop about four years ago which followed several other workshops, and the reason this workshop -- Art Block got mad one day, Art Block, head of NS, and he said, "You've got a lot of good ideas. We're not doing it yet. We're not doing it yet." He called a few people around the country in his office and said, "Let's get together and do something big here." The result of all this was a lot of study and a proposal that we started, an engineering education coalition program. We have four of those now. That's an attempt to have systemic change of the kind I described happen. And the coalition does a number of things. It ensures that if you do do something good, at least it's across a number of schools. These coalitions, we have four. They vary in size from six to ten schools. That's sort of the order of magnitude. Each school has to fit an integrative experience with the students. That's the paradigm shift. They can do it. The coalitions -- and we want them different because we don't know how to do this. They're at this now. It's only about two years into it. We're not sure where it's going, but we're serious about it. We want to keep investing in it. So this is an attempt to grab that idea and say -- and we ought to have about 10 or 12 of those. We can't fund them all yet, and we're going to keep trying very -- that's a high priority item right now. There's a chance to get a coalition that might dwell in manufacturing. What is manufacturing across the curriculum in undergraduate program and have a coalition funded to do that in some way. So this is within the regular coalition program money to fund another one who would focus on manufacturing across the curriculum or some other bright idea. We'd like to see one of these. We're going to fund one of them. This will add to the four. I will also have an impact on the four. It's also an experiment. Some people have asked, from the civil engineering community -- they've gotten out of civil infrastructure. Now you know this administration wants infrastructure. It's a hot thing, we're prepared for that. And they're talking about maybe we should have a coalition of infrastructure curriculum not civil engineering, but infrastructure curriculum. So this manufacturing things is another experiment. Should we -- we're not sure we want to do this totally. But should we have these coalitions begin to focus on areas, and we're reluctant to do it. So this, though, has a rationale that all engineers should learn how to make things. So manufacturing across the curriculum. This is important for you to note. There's going to be one of these, but not more than in this program. Then supplements, they're ongoing things. There are 18 engineering research centers. There are 28 science and technology centers. There are 50 industry university cooperative research centers. There are now 10 or 12 state industry university cooperative research centers. The latter one is sort of new, a couple years old. I'm retracing trying to couple the state initiatives in technology with the federal initiatives. Those are very useful test beds. There are a lot of stuff going on, 80 you can

ask for a supplement to do something special in manufacturing engineering education of a kind you think is best. We're very excited about this because there's a lot of good stuff going on all over the place. In these beds they're hoping to create a new way of doing business in academe. And then in the end, anything at all. These will be 50 to $200,000 grants, fairly heavy grants, one to three years. Some idea may have -- can be almost anything. So this is open -- and this is not to say because one to three years between 50 and 200,000. We priced out 50,000,000, and we sort of know we can do one coalition, some things. We may do maybe three coalitions because the rest think the proposal. But here's an area in which we'd like to see some yeasty stuff come in, your own imagination. This is a list of glass because we also want to pound on you because, again, even though I sound like I'm really moving, we don't know what to do. These are ideas. And so we're going to develop the program as we get the proposals. Yes, sir.

QUESTIONER: Yes, I think the answer to the question may be obvious, but I want to make sure you're going to say it out loud here.

DR. BORDOGNA: That's what you want to make me do.

QUESTIONER: There are things that happen in manufacturing that will never give you a Ph.D. anywhere because the system won't let -- the sound history in the system holds against it. But it can be grinding work. At the technion they do grinding work. I don't think you can get a Ph.D. in grinding in an American university. The concept of adopting an engineering, the practical involvement and the turn ship in industry or the fact you probably come from industry, does that fall under this?

DR. BORDOGNA: No.

QUESTIONER: Okay.

DR. BORDOGNA: No, there's no Ph.D. program

QUESTIONER: I'm not talking of Ph.D.'s.

DR. BORDOGNA: But I said -- wait. Let me finish. Or doctor of engineering.

QUESTIONER: Why not? Why not a practice oriented thing as they do now in Germany, Israel and other countries?

DR. BORDOGNA: Well, first of all, you're asking a good question. This is not the venue in which to discuss that. We have limited funds to try some ideas. There also is in these reports that I'm talking about a strong feeling that the practice only masters degree is the way to go to produce these kind of people you're talking about. You can argue if you want on this, but we're --

QUESTIONER: My background I'll say out loud. I spent 30 years at Ford. I headed advanced manufacturing. I've come back to the university for a year. Were producing some super master students which can only do so much in 36 credit hours. The internship concept, the retraining of people in manufacturing opens up a brand new venue. I think what's happening is fantastic. But it seemed as though you had closed the door, and apparently you have.

DR. BORDOGNA: No, no, don't misinterpret what we're trying to do here. First of all, $50.000,000 is a lot of money to spend in one year, but there are a number of things to do. What I put up on the screen are advance -- and ideas have come very credible among a lot of people in the professoriate. The doctor of engineering is not that credible among a lot of people. They're still arguing about that. So these are investments in areas in which there's a lot of consensus.

QUESTIONER: So what I'm hearing you saying is be innovative but not too innovative?

DR. BORDOGNA: No, I'm not saying that at all.

QUESTIONER: You said come up and argue, so

DR. BORDOGNA: I'm arguing with you, but I told you why we took these. In that sense the doors close on this program for a doctor of engineering. I didn't say that wasn't good. I didn't say that wasn't important. But I am saying very strongly that what we've done here is looked very carefully at the consensus of the country. This is not a me invented thing. We studied very, very deeply, and we've been doing this for sometime. This is a window to do something. This is not just imagined over a short period of time. And the things we've listed here are great credibility consensus across the professoriate, industry and so on. You agree with them too.

QUESTIONER: The consensus across industry, I don't know that that's true. Professoriate, yes.

DR. BORDOGNA: We can argue about that, but every one of the --

QUESTIONER: I am from industry except for the last ten months.

DR. BORDOGNA: You're a person, one person. We've had scabs representing --

QUESTIONER: Representing a big company.

DR. BORDOGNA: We've had Ford people, Liserge Graps, I mean all these guys. I've known them for a long time. I can name them. They've been involved for a long time. Maybe you haven't, but there have been a cadre of industrialists, government people and academic people working for sometime. And so this is the consensus. Adopting engineering may be something in the future, not for this program. Yes, sir.

QUESTIONER: Can K12 be partners to drive this down further into the system?

DR. BORDOGNA: The answer is yes, but let me again caution you on this. At NSF there's six hundred million dollars for essentially K to 12, a lot of money to handle. This is $50.000.000. So it is critical. K to Ph.D. is critical. This money is for a special niche, and that's what we're at. So we're going to look more kindly at the things that focus on what I've been talking about.

QUESTIONER: This money appears to be for a special niche, but I can see where you can bring a group of companies together and actually hit from those companies every one of the points you've made today in terms of original development, in terms of new curriculum development or in new ways to approach new methodologies, a number of ways. I guess my question to you then is would you find a particular little niche to push or would you make this kind of proposal where you would go all the way across the border?

DR. BORDOGNA: You mean across all these programs?

QUESTIONER: I can see. I can see it.

DR. BORDOGNA: You can. First of all, make sure you said companies, but institution of a higher education at the propose. Companies can move out.

QUESTIONER: Yes, yes, you want to have an institution of higher ed.

DR. BORDOGNA: The reason I stopped a minute is I have had questions about companies proposed.

QUESTIONER: I'm working at any one time with anywhere between 30 and 50 companies.

MR. BORDOGNA: The companies must be involved in your own way. The question as I see it is should you go for broke and have a whole big proposal that would encompass all of these areas? That's the question.

QUESTIONER: I could see it happening.

DR. BORDOGNA: Yes, if you think you have something that could really win. I believe Buchanan answered this question again in the open session. Maybe all 471,000,000 goes to one place or maybe in each program all 50,000,000 here goes to one thing. I think it's a little rational to think that can obtain. But yes, the answer is yes. You can, if you have something you think could really make it, yes.

QUESTIONER: If you do that, you adopt that strategy and you propose across let's say more than one of these items,

and in your view you see that some of that makes a lot of sense and some of that doesn't make sense, could the reviewers come back and say we like this part and we don't like this part?
DR. BORDOGNA: Yes. That's an excellent question. Let me review again. This is probably the most important issue from my point of view. This again is a partnership. We're looking for good stuff. We're looking for excellence. We've put some constraints, an envelope around what to do. But in that, anything goes. And if you come up with something we like three quarters of and the other quarter is deficient but it's so exciting, your three quarters, we'd come back to you. And we'd say either why don't you twist this around, or we might say join with this other group or what have you.
QUESTIONER: Now this is in your period between now and the official solicitation?
DR. BORDOGNA: Well, no, no, no. May 14th, the solicitation comes out. At that time we can't be proactive like this and try to urge you. I can actually now, if I know something, say why don't you two get together and do something. When the solicitation is out, all I can do is answer questions. Between then and July 23rd when proposal is in, we'll answer any kind of question you have. There are phone numbers to call. After that --
QUESTIONER: Freedom decreases with time.
DR. BORDOGNA: Well, after that, then it's in our hands. We will put a team together -- we're putting it together now -- to review. I think this is one of the discomforts we have. How do we do this because we have to do it very fast. I want to maximize the number of independent people outside the Federal Government involved in that. That was mentioned today. They will do this. They will go -- and the way we're essentially going to do this is they will go and look and say these are the best. I have something like these are the outstanding ones, these are the middle ones, these need more study and these don't look so good. They will then argue among themselves a bit more. They will give us, the five of us on one, the five people, Lee Buchanan, Phil Nanzetta, we will take this whole package all the proposals and the whole four hundred seventy something million dollars, and we will have maybe 120 percent of the money spent from the collectivity they give us. We look at that and study that carefully, and of course we'll have a lot of input for reviewers about some of these questions. This looks good, but we want to put it in or a piece of it is not right or a match isn't right. We will look at all this and we'll say this is the group of programs that seems to make the most sense in an integrative sense. If some of them aren't quite what we think they should be, we go to those people at that point and say why don't you tune this up or, gee, we saw this other proposal. Why don't the two of you link together. We'll do all those kinds of things. That's the hope, and we're going to work at that, but again the time period is short. But the most important thing is this is a new way of doing things. Does that answer your question?

QUESTIONER: I have a couple of logistical questions.
DR. BORDOGNA: Yes.
QUESTIONER: And they are about the 50,000,000 and the 20,000,000. And it seems to me that if we're going to submit proposals and 20,000,000 has to be spent by the end of October of '93.
DR. BORDOGNA: 1st of October.
QUESTIONER: Wow. We don't have very much time to spend that first 20,000,000.
DR. BORDOGNA: Right.
QUESTIONER: Because funding decisions for this morning is going to be September or October, correct?
DR. BORDOGNA: Right.
QUESTIONER: Okay. So we're going to propose a project that's going to use the money and potentially --
QUESTIONER: That means awarded, right?

DR. BORDOGNA: Yes, awarded, awarded.
QUESTIONER: Oh, it means awarded, not using?
DR. BORDOGNA: We must make the award. The money is committed, otherwise it goes back to the creditor.
QUESTIONER: Perfect. Okay. And then after that time, how long does the remaining thirty million remain available?
DR. BORDOGNA: Well, we might spend all the money by October 1st. Maybe there's a lot of good stuff coming in. There are people around that are doing things. Three or four days, they could put a proposal together. Some people are moving and it could be varied. And that's one reason why we selected this grouping. There are things going on we know about. So I don't think we'll spend all the money by that time. But if we can, we will, and we're going to spend it fast. We'll just keep going. A lot of weight.
QUESTIONER: And the maximum amount of time that the authorization is available is for one year?
DR. BORDOGNA: Until next year, yes, one year.
QUESTIONER: Thanks a lot.

QUESTIONER: Burt Ramsey, Chemical Concept Corporation. I have a phase 1 SBIR actually from NSF in the education area. There's obviously some things that could be appropriate to consider here. What would be your advice relating to the correlation between the phase application and this? In other words, phase 2 requires some corporate partnerships and so forth, so I'm looking for some advice.
DR. BORDOGNA: I'll give you three answers to that. The first one is I like the idea, and I think we'd like to receive that. The second is I'm not sure how we'd work it. The third is we tussled with the SBIR money for sometime on this project, one whole day. We argued about this, and the scenario was, well, it's five hundred million bucks. One half percent comes off the top. You could just dump in BOD before the transfer of money. But when it gets to ARPA, they can dump it in ARPA. And we decided, no, here's another experiment we can have. Let's use that money in this program as an SBIR program. We're still trying to find -- what we were doing is solicitation for that. So the third answer is we really want to do something with SBIR to energize that more, especially with phase 3 commercialization. Now there have been studies out that say SBIR is better in commercializing in private venture capital. The private venture capital isn't so good. We have seen a lot of problems in phase 3 commercialization, so we're interested in synergizing that in a manufacturing. In fact, when I first went to NSF, the first question I asked our SIBR guys was how much are we doing in manufacturing. It was very little. It was in the service industry. So enough said. I think we're tussling with globally trying to synergize the SBIR more, so we solicit here too.

QUESTIONER: As you mentioned, the proposals have to come from academia, but we historically don't have close connections with academia or the industry in the Troy area, and we're trying running as fast as we can to catch up with those connections in the last year. You mentioned that there was some way to communicate that to your organization s0 that if there was a need for a team player, that you could connect us.
DR. BORDOGNA: Sure.
QUESTIONER: I'm making that known then. I'm in charge of the training and development for the engineering scientists of our lab, and we're sort of an outside team type. We're not industry, we're not academia, we're the other parts.
DR. BORDOGNA: Let me ask you to do one thing and tell you something else. Get your business card, put a note in the back you want me to connect you with somebody, and I will when I get back.

QUESTIONER: Thank you.
DR. BORDOGNA: The second thing is you folks have a great window opening up because the President wants to have a clean car. I don't know if you've heard about that. He's very serious about it. We're already serious about it. We've already started three weeks ago working on this thing. We're not quite sure where it's going to lead, but the automotive industry has likely to be up front in a special kind of grand challenge in this President's FCCSET initiative -- well, "FCCSET," I use that word. Who knows what "FCCSET" means?
QUESTIONER: I do.
DR. BORDOGNA: I should tell you this. It's very important. FCCSET, Federal Coordinating Council on Science, Engineering and Technology. Allan Brown, the previous science advisor, has energized that into a program in which we developed FCCSET initiatives led by the president, presidential initiatives. There are six. Biotech, materials, high performance computing and so on. And the most recent one, as I mentioned before, is manufacturing. Manufacturing is new, and we sort of had the context of it, and I mentioned some of it here. But within that we have some grand challenges like they have computing communications initiative, the automotive industry the tech style industry. There's a lot going on there to recapture that, very exciting, and some others. What's like the automotive industry, number 1, because that's the best way to get at the clean cars. Since it's Detroit. I tell that too.

QUESTIONER: I have a question to try to get a little clarification on a couple details. We've talked a bit about multiple activities, multiple proposals. And on the infamous ball chart that was used in the general session, manufacturing education and training was listed with one with the parenthesis, seven activities. Does that imply seven separate proposals or does that say if you're applying for a couple of these that it's restricted to one?
DR. BORDOGNA: First of all, it's eight. The rule number 7 is wrong because it didn't include the experts in the classroom thing because they were separate. But, no, those aren't in the sense of mandated programs. The mandated program is the whole program for education. So you can couple all of those. That's not in the sense of writing two separate proposals or two separate programs.
QUESTIONER: I guess the question is should they be coupled or not coupled or does that matter?
DR. BORDOGNA: We like coupling. We like integration. We're trying to tell you putting things together and if you're smart, wise and clever and have a great idea, you're going to brighten people's eyes and will likely to invest in. Again, these pieces, if they're de coupled from each other, that doesn't make any sense either. It's all connected somehow.
QUESTIONER: Joe, hopefully a simple question regarding detail on matching funds. Say you have a hundred dollar proposal. The government is willing to go up to fifty dollars, okay. The other fifty, university, industry, either, both?
DR. BORDOGNA: Any, both.
QUESTIONER: Any combination thereof.
DR. BORDOGNA: Gift, five bucks from an alumnus.
QUESTIONER: Right. It doesn't necessarily have to come out of any given pocket.
DR. BORDOGNA: In fact, let me say more than that. We're on a team. We're very uncomfortable with the match thing, and academe is sort of hyperbolic about matching these things for the obvious reasons. But it's mandated, so there's no use griping about it. So on the other hand we're very open-minded of what it is. So as long as it's legal, we're likely to say okay. On the other hand, hard cash is better than non hard cash. I've heard the question about the overhead

recovery. Now sometimes you say that's matching and so on, so all that's okay. And it was mentioned, if you want to get into it very thoroughly, this OMBA 110 thing sets the matching scene. But in any case, the answer is we're going to be as flexible as we can about this.

QUESTIONER: To follow up, would you consider state funds as matching funds?

DR. BORDOGNA: Yes, nonfederal matching, anything that's nonfederal. But if the state got some money from the government, you can't wind that around the federal government, so don't be tricky.

QUESTIONER: I'd like you to try a crystal ball. This is all very exciting. It sounds like we're getting our act together in the country. But this now in FY '93 with a little of a carry-over from '92, what do you think -- in '94 there's not enough time to judge this, but do you think the mood is that this will be -- that the bucket will be filled again or what?

DR. BORDOGNA: We had an argument. It was a good argument and I enjoyed it. Let me feed on that some more. We're very optimistic about all this because it's -- first of all, it began the role under Bush and others. Ideologically he was constrained. Now Clinton is opening up the doors. Secondly, it's the other argument I gave you. It has enormous credibility in the community, these things, and so we're going to focus on them. We argued about this. You know, do one shot, a couple things, or let's try to get these going, and I'm confident in NSF, for example, if we get this moving some more. It's building other things. Congress will go berserk.

QUESTIONER: In a sense it's you who have to do something during '93 because the people who get the money can't do it by then, so the judgment of really what's happened will be what happens with the group of five of you.

DR. BORDOGNA: Well, not quite. There's a large cadre of people around us. The reason we're being so able to do this is because the head of the agencies want to do it, my colleagues at NSF want to do it.

QUESTIONER: The five agencies.

DR. BORDOGNA: Yes. And also, another thing I should mention is if a proposal comes in this $470,000,000 thing, that none of the five agencies -- it's a good proposal -- doesn't seem to fit in any of the five agencies we'll invite another agency to do it because we're interested in adding agencies to this team.

QUESTIONER: So one of the things that doesn't fit manufacturing, but in the other sessions, getting defense industries and commercial industries together, the aircraft industries themselves have split minds. Has anyone talked about the commercial defense part of aircraft companies getting together?

DR. BORDOGNA: You're getting at a question I think I'd like to describe as what is industry. For example, I happened to be heading the clean car thing right now. This all the sudden happened. One of the first questions is what's a clean car, what's the automotive industry, what's an American car? I found out that the Honda made in Marysville has more American-made parts in it than the new Chrysler automobile. So, yes, there's a lot of discussion on this issue, aircraft, everything. And of course we're not going to solve it by demanding that it be purely American thing or purely commercial military. We're tussling with this. I don't know how to answer your question except that way.

QUESTIONER: There are people asking this kind of question though?

DR. BORDOGNA: Yes, yes. There's an enormous discussion .

QUESTIONER: I'm David Baker with the Illinois coalition, and we've heard from Phil Nanzetta that for technology deployment, this can be a real premium placed on organizing orderly state responses to this proposal. We have nine fine engineering schools in

Illinois, and I know that almost all of them are intending to propose under this component, and I'm sure that every other state has got a similar issue. Are you looking -- and those universities have good relationships with community colleges. Are you looking for some kind of orderly state response in this area as well or do you expect to see individual engineering school based proposals?

DR. BORDOGNA: Well, institutions of higher learning must propose in this area. It's unlikely we'll be interested if one engineering school proposes that groups of them do because Michigan wants to get together and change the system. That's probably better. If the state wants to match some money or do something, that's great too. But I don't think we can -- I don't know what you mean by "orderly." There's not enough time to really get things too much in order when they're doing things here.

QUESTIONER: I meant orderly like either you sort out the individual proposals or we sort them out and send them to you as a package of some kind.

DR. BORDOGNA: Oh. No, we'll do the sorting. This question has come up several times. It comes up -- it came up in New York yesterday as -- it's been actually at us for sometime with the state initiative people coming to talk to the Defense Conversion Council, and it goes like this. Why don't you let us filter the proposals first? And we decided no. It's going to be straight competitive into the working group. But the states can have an influence on this process. It turns out that four great engineering schools in the state of Illinois have this great idea, the proposal looks great and the state says we like this one. Of course there's the other one that came in. That will influence us. The broad answer is we want the states increasingly involved in everything. So we're going to listen hard to what you say, become partners so we can begin to trust each other. That's the best way I can answer that.

QUESTIONER: That's a good answer.

QUESTIONER: Joe, a question about eligibility of the proposals. George Andrews, General Motors. Sometimes it's very difficult to get both industry and academia to work together, especially if you have several institutions of higher learning that are interested in working together. Is it acceptable for a community organization to serve as the fiscal agent that has the universities and the industry as participants on there rather than an individual university taking the lead on this?

DR. BORDOGNA: I like that idea and I practiced that in the past, but the congressional mandate here is institutions of higher learning must be the proposer. I can't change that.

QUESTIONER: Okay. So an institution of higher learning --

DR. BORDOGNA: A university.

QUESTIONER: -- must be the lead.

DR. BORDOGNA: That's right. Must be the proposer. Let me be careful. It may be that industry goes around and picks up a couple universities that are proactive and is leading this idea.

QUESTIONER: Yes, sir.

DR. BORDOGNA: And they get one of the universities to agree to be the fiscal agent.

QUESTIONER: But what if the universities and industry have already joined together into a community organization already accessible?

DR. BORDOGNA: Well, the university has to propose. The university is the fiscal agent for that. The proposal must come from the university. It does not obviate the kinds of ideas you're talking about. You should be able to work it in some way.

QUESTIONER: Okay, thank you.

QUESTIONER: Joe, you've made the statement a couple times you don't see funding going to a single university. If a university puts together, that university, and wants to do something that's a pilot with, let's say, five or six or seven corporate entities, is this more along the lines when you say it's not just a university?

DR. BORDOGNA: Let me be -- a university can singularly do something here and propose.
QUESTIONER: Right.
DR. BORDOGNA: And I'm just telling you our mind set.
QUESTIONER: Right. That's what I'm asking.
DR. BORDOGNA: It's not reasonable for us to think that a university by itself can make a systemic change. So, number 1, it's required for industry to be involved. So you can't do it without it. Then it seems more logical to us if you want to change the system, that we have university banging against each other a bit and reduce their parochial interest and get at what the nation needs. That's a statement of some kind. Also intellectually, it's sort of good. That's where we started the coalition. In fact, we're now trying to -- we have 18 ERC's. We're thinking about -- there are six doing manufacturing. Maybe we should synergize those for now. That's the trend. We think that's good. There's a consensus. That's a pretty good idea. That doesn't obviate or prevent you from doing what you wanted to do. A one single university can submit a proposal.
QUESTIONER: I understand that. You're just saying that the odds don't look good in that direction because that's not the way the mind set is. I'm thinking if you've got something that can be developed and is portable, it's a simpler situation to develop it with a handful of industries and an institution, try and work out the details there and then port it elsewhere.
DR. BORDOGNA: Well, that's your passionate opinion. But generally the experience with portability is very bad. That's why the coalitions are there. That's why the ERC's are there. Portability hardly ever happens. We don't fund courses actively anymore or course innovation because over the last 40 years, the general outcome has been a professor gets money to change a course; generally those changes aren't too much. But when it's even good, the professor teaches it and the goodness is there. It never gets exported. And then when the professor teaches another course, the whole thing dies. So we're after systemic change here. We don't think system change can happen unless there's some integration at the front end where exportability will be natural. The coalitions -- we always see exportability happen. It's only two years old. We're doing things together. And those coalitions by the way, there's a rule. A professor in a -- one of the coalition universities cannot get money unless he or she is connected with the professor of another coalition university. The idea is exportability. But, again, get down the baseline here. You can do it, and you may have something fantastic that would be good. But the trends around this haven't been so good. It's not a mind set, but the feeling is that we want to see collectivity of things. But what you're saying is not allowed.

QUESTIONER: Marty Graver with Industrial Technology Institute and the Midwest Manufacturing Technology Center. I have two questions. One, on the support grants, you mentioned the ERC's and things like that. Is there any idea if those sorts of grants would be available to manufacturing technology centers to do educational efforts at outreach? And secondly, there is this concept of the teaching factories, and I'm wondering is this something that's funded under this program or is this part of the deployment activities under this?
DR. BORDOGNA: Teaching factories is not in here specifically. But if somebody puts together a program under one of these titles that involves a teaching factory, it's a terrific idea because we don't deal with teaching factories. We don't know how to institutionalize them by the way. Remember one of the overheads I went and institutionalized this stuff. So a teaching factory coupling with this would be good, but it's not specifically here. We're not going to spend money

just on a teaching factory. Your first question I'm not quite sure I understand. Manufacturing technology centers out of NIST and so on, we're not funding that here. But if a group of people got together and included one of those in a proposal for this, that would be a positive thing.

QUESTIONER: Well, for example, one of my jobs with our center is coordinating a group of community colleges here in Michigan. We also have industry councils, and I was wondering if there's any way that we can look at money from the support program to link our industry councils to the community colleges to improve the technical education and gear it towards the smaller medium size firm focus.

DR. BORDOGNA: Within this, a group of community colleges and industry and the Manufacturing Technology Center or what have you can put together a program and it fits in. We're more interested, though -- and it may be great. I don't want to dissuade you. It's important. You can do it. But for two reasons we're looking a little bit differently at the whole global thin. The kind of thing you're talking about is going to be heavily funded from labor. There ought to be bigger money than this just for this. So it's going to be taken care of. We're more interested in if that collectivity is connected with the university in here so we can get manufacturing across the board. And we have -- there are classes of society in engineering. There's the engineer, there's an engineering baccalaureate technology guide, and then there's the technician, and they have a hard time relating to each other, so se want to try to bring that culture together. Just community college by itself, labor is not -- I know they're going to really fund it.

QUESTIONER: Valerie Grubb with the Allison Gas Turbine Division of General Motors. Our base is in Indiana, Indianapolis. Is it a problem if we -- I just received this booklet three weeks ago. I'm interested in getting involved with this, so we're going to be searching out universities to team up on this. Is it a problem if I approach, say, a university outside of Indiana or even promoting --

DR. BORDOGNA: Sure, yes, yes.

QUESTIONER: Okay.

DR. BORDOGNA: We had one yesterday or this morning -- I forget now what city I'm in, but we had a question can Alabama team up with Rhode Island. Yes. It's one country. We would like to see that.

QUESTIONER: Okay. And do you expect to have another session like this? I'm concerned that if the universities that I contact, if they're not here today and they have questions that perhaps -- I mean I'm hearing a lot of questions that are so geared toward universities that 1 know I can't give the answers to. I've got a ten page list here of numbers. Who do I call in here? I don't see your name. I've looked in here. I can't find you in here.

DR. BORDOGNA: Anybody can call me except I'm starting to get so many calls I'm not answering them. The next best person -- I've delegated this to our Engineering Education Center's division, NSF. We trained about 20 people so far. We have people across NSF in all -- all directors, all of NSF being trained in what this is all about. Let me give you Marshall Lih's number. Marshall Lih is a director of Engineering Education Centers, and he will -- we don't act together yet. We'll eventually have some kind of pipeline so we can spread these questions around for these 20 or so people in NSF. Marshall Lih's number is (202) 357-9707. If all else fails -- I don't want to get any phone calls from you. I'm answering as best I can, but my number is (202) 357-9832. I've answered most of them so far, but I'm starting to hand them off anyway, so it's better to go to Marshall. But if you're distraught, call me because I'll square it away. The last thing is, to answer your question more directly, I met with the deans of engineering two

weeks ago on this whole issue and other things, and I pounded on them very hard, 250 deans or so across the country. About 150 go to that conference. So the word is out now to the deans. It's not just information, but I have challenged them. You have been waiting for a long time now. I'm talking about consensus. The deans have been trying to get at this, and a lot of deans need some help. We have a lot of deans interested in making these changes, but the academic system mitigates against their doing so. The culture mitigates against them doing so, and now we have a way to leverage them a bit. So I tried to get them to be proactive in doing something here. So the word is out to academia, universities. When you go, it's likely that you'll hit a school that's probably likely the dean was at this meeting. Plus all my troops at NSF, where ever they're going now, they go all over the place, they add this to their talk. Now one last thing here is universities propose in this area and industries propose in the other parts of this defense conversion. But I've encouraged the deans. I said be proactive. If you're in a region in a couple engineering schools and you have industry that you know can do it but they're not quite aware or synergized, go synergize them. It's the reverse of the question I was asked that a company proposed. Can a company go synergize an engineering school. Now engineering schools and deans can go synergize companies. They propose but it's a joint program. That's not an idle comment. I think the universities and engineering schools can be more deeply involved by being proactive on all this. This part is not just engineering schools. This is for everybody. Well, industry must be involved. The other parts, universities better be involved. We're not going to deploy well if universities aren't involved.

QUESTIONER: I'm interested in exploring consortiums a little bit, and I'm thinking about consortiums of higher education institutions, business and labor, variety of businesses and variety of labor organizations and a variety of educational institutions. And I'm wondering about what if not all of those institutions are defense contractors.

DR. BORDOGNA: Well, here they don't have to be defense contractors. This is an attempt to create a manufacturing paradigm in engineering schools. So you don't have to have defense. You also heard the comment this morning that if you look at it very broadly, the system is getting such or one to be such that you can't tell the difference between civilian and defense. So the other areas, we're trying to convert defense companies into something else. Here it's a different story. What you're talking about sounds very interesting.

QUESTIONER: Okay. And what if I want to go farther down the line on the employee groupings below engineers to the support people and the machinists?

MR. BORDOGNA: Again I have to answer that that is an important issue which the Labor Department is going to put a lot of money into. Here, if you connect the baccalaureate masters programs with that, then it has a chance. If we tried to do that alone, it won't have any chance. There's just not enough money to get at that. It's important. Incidentally, in this area, I know -- what was it -- Focus Hope, we're very interested in that. That's not an institute of higher learning or anything. They're doing terrific stuff. I'd like to see connectives. There's a connection to be made. That's the kind of thing which might be connected with the university which might be good here.

QUESTIONER: I'm a little more familiar than I'd like to be with the labor programs. But one of the problems that I encounter with them are some of the funding restrictions. And so I'm wondering if sometimes this might give us an opportunity to test something new.

DR. BORDOGNA: That's what we're doing. This is a hidden agenda here that we can invent new ways of doing business here that might flow to other parts of the government. That's why it's uncomfortable for us to try to answer questions as a result of the sessions that don't sound direct. The reason we're being asked this is because usually it's a very direct definitive way to do it. We're trying to change the system here. We're trying to keep it pleasant so we can get some ideas and try to get new kinds of issuing of the money.
QUESTIONER: Thank you.

QUESTIONER: One quick follow-up to this gentleman back here from Illinois. I have a concern if I heard you correctly when you said there would be a certain amount of favor -- that's my word, not your word -- that would be attached to the proposal if you came with a state endorsement. The particular activity area that I work, that would be an impossibility although I'm in Ohio. We are basically working in tri-state corners, and therefore the organizations with whom we work are not within the same state, so what is it we're talking about? And I do have an innovative proposal to consider for you. But I know standing here that it's going to involve four states, so there is no way on earth that I would have a state that could have an equal consideration. Second question if you would, I have a concern over a slide that Lee put up this morning or this afternoon. It said the HBCU's and minority groups would have a special consideration as a tie breaker. I am operating in a minority area which is called Appalachia. Appalachia does not consist of HBCU's and has -- we don't have luck with DOL because we do not have a large black population. We run 2.7 percent across the Appalachia, which is 13 states. But that keeps getting us thrown out. So my question really is do you, in your considerations, know that Appalachia regional is a minority?
DR. BORDOGNA: A minority in what sense?
QUESTIONER: A minority organization.
DR. BORDOGNA: A minority in what sense?
QUESTIONER: The Appalachia regional commission?
DR. BORDOGNA: Hispanic, native American, black?
QUESTIONER: No, they're being looked upon as economically disadvantaged.
DR. BORDOGNA: Economically disadvantaged, that doesn't apply here. You're making a good point, but minority here means underrepresented minority people and disabled and women. That's the grouping. And underrepresented minority people, underrepresented in the profession of science and engineering, for example, are --
QUESTIONER: We have good students of science and engineering, but the population that we serve doesn't have mobility because there aren't any jobs.
DR. BORDOGNA: I'm not arguing that what you have is an important thing to do. I'm trying to tell you what was put up on the screen had to do with the definition of minority people who are underrepresented in the profession of engineering and science. And they include definitively, by law --
QUESTIONER: You're using the legal definition of minority then?
DR. BORDOGNA: Yes, that's right.
QUESTIONER: Now I know what not to put in the proposal.
DR. BORDOGNA: To answer your first question, let me use your word.
QUESTIONER: That's fine.
DR. BORDOGNA: We would favor four states way above one state.
QUESTIONER: Thank you.
DR. BORDOGNA: Let me answer that a little better. I think, as you correctly said, I didn't say "favor," but we're trying to make a connection with the state, so we want to listen to them. We'll listen more to four governors get together because regions don't exist in a state. They exist across state lines and so on.

QUESTIONER: You're reading my mind correctly. I've got eight senators to work with as opposed to two.
DR. BORDOGNA: That's the way we have to work.
QUESTIONER: Okay.
DR. BORDOGNA: Get rid of the boundary lines. Innovation happens in a region. It may cross many boundaries, state, government boundary lines. Same problem -- many problems, a series of problems is cities and suburbs. When we do educational things, we like to see the connections there too, rather than from one mayor. Five mayors is better than one mayor.

ORLANDO REGIONAL BRIEFING AT THE HYATT ORLANDO HOTEL, WEDNESDAY, APRIL 14, 1993.

I'm sure you've got some questions. I'll be happy to answer the questions. Want to come to the microphone.

UNIDENTIFIED MALE PARTICIPANT: Are you ready for one?
DR. KRAMER: Yes.
UNIDENTIFIED MALE PARTICIPANT: In your seventh activity area -- (whereupon, the court reporter asked for audience participant to identify himself with no cooperation.) -- manufacturing. The environmental industry in the narrow sense doesn't manufacture anything.
DR. KRAMER: Right.
UNIDENTIFIED MALE PARTICIPANT: Do you intend this to be industry in a broad sense or do you mean to manufacture in producing a product, a tangible product?
DR. KRAMER: I understand. I'm me tell you definitely it would be included, and you can draw your own conclusions from there. Say a curricular add-on which would help students to understand the environmental ramifications of the manufacturing process, that would clearly be included. Curricular components that might include the design of production processes to minimize the environmental impact. Those things would certainly be included. So I think if I were you, I would slant my proposal towards those sorts of activities.

MR. CHIN: Brian Chin (ph), Auburn University. Can you identify which of these individuals I should call to discuss proposals involving manufacturing education?
DR. KRAMER: You're going to have to let me look at this. (peruses document.) What I would strongly recommend here is among these, I would start at the National Science Foundation and write these listed people at the foundation. There's a representative here from each of the engineering divisions and from the division of material science. And I think I would pick the person who's most closely aligned with the area which you want to propose and talk with them.

MR. COLBURN: Jim Colburn (ph) from Georgia Tech. I notice in the list of funding they included manufacturing experts in the classroom. Would you just cover that or is that a separate presentation?
DR. KRAMER: That is a mistake that we made. Our initial feeling was the manufacturing experts in the classroom was such an important component of everything that was going into the seven areas that we should be pervasive among them, and we would spread that funding among them. It turns out that it's a separate piece of legislation and, therefore, has to be funded separately. In the may 14th document, there will be a clarification as to exactly what to do with the proposal at that time.
MR. COLBURN: Yes, I didn't see that, but I was told that the May 14th document might just be one page, and it says, this is it.
DR. KRAMER: Well, I think what when he says it may be one page saying, this is it, plus any corrections and clarifications.

MR. COLBURN: Okay. Thank you. And one last question. You have an asterisk in front of the forty-four million dollars for manufacturing education. It says that includes twenty million of fy-92. Does that mean it has already been spent or allocated or?
DR. KRAMER: No. It's a very good question. There's twenty-five -- I think it's twenty-five million dollars -- it's twenty point one million dollars in 1992 money. We have two years to spend that money so it has to be spent by the end of the fiscal year 1993.

MR. MCFARLAND: Chuck McFarland (ph), Advanced Technology Center, Des Moines, Iowa. It's run by Iowa State University & Des Moines Area Community College. Your slides are basically an expansion on materials already contained in the red book. You are out of copies of those. Is there a phone number where we can call and have them sent to us?
DR. KRAMER: You mean the red books?
MR. MCFARLAND: No, no, the red books I've got plenty of. But the slides that you've just ran through are an expansion of materials already in the red book.
DR. KRAMER: They're not much of an expansion, but in that information sheet you were handed out here, there are numbers at the bottom, or I think the National Technical Information Service is providing copies of all the slides if you want them. There's a number to call.

UNIDENTIFIED MALE PARTICIPANT: What he's saying is, he didn't get it. They ran out.

DR. KRAMER: Well, let me -- (peruses document) National Technical Information Service, area code 703-487-4650 and the records number ispb93-169-894. Have you got that?

MR. MCFARLAND: The second question, if I could, earlier today it was mentioned that the defense requirements were clearly there but they will be a very lowly weighted part of the criteria. Would you expand on that just a little bit?

DR. KRAMER: I didn't hear that comment. But my understanding is, they're not actually lowly weighted, but that the interpretation on what was defense applicable is broad enough so that we would expect that almost everything would fit in. It's not that it's not important, but since we're moving towards duel-use capability, we'd like to take a very broad view of what might be defense useful.

UNIDENTIFIED MALE PARTICIPANT: During the general session, you stated that no federal funds could be used to match the grants on the defense issue. There are a few federal block grant programs, or titles, if you will, whereby federal statute can use an expansion. Are those also exempt.

DR. KRAMER: I'm not an expert on this. This is something you should really should ask rick dunn. But the answers to questions i've heard in the past, my understanding is those block grants are not allowable as matched. There's a block grant from the federal government which is dispersed by a state agency. That is federal money and, therefore, it does not apply.

UNIDENTIFIED FEMALE PARTICIPANT: Jane(inaudible), Mississippi State University. I also have a question on the match. Are you going to consider a university-waived indirect cost as an appropriate match?
DR. KRAMER: I believe so.
UNIDENTIFIED FEMALE PARTICIPANT: Will that be true for all of the programs or just the educational programs, do you know?
DR. KRAMER: I believe it will be true for all of the programs. That's money you are entitled to. If you're waiving it, that's a contribution you're making.

UNIDENTIFIED FEMALE PARTICIPANT: Just a comment on the state contributions through match. I don't think there are too many states out there that are able to contribute to that sort of a program, and most funds are already allocated for FY-94 in the states for educational funds. How much of a requirement is that?

DR. KRAMER: Well, it's not a requirement, the fifty percent match is a requirement. My personal concern is that it's going to be very difficult for universities to get the fifty percent match from industry. I would think that if you could come to a state with a proposal, a strong proposal, say twenty-five percent matching from industry, and you needed another twenty-five percent, that it might be compelling. However, I understand it's difficult.

UNIDENTIFIED MALE PARTICIPANT: Doing a follow-up on the state match, as was just stated, most pledges are set for the coming fiscal year. Would a commitment by someone in the state that said pending legislative action, is that considered a match or is it not?

DR. KRAMER: Well, I think it comes into the question of quality of match. I mean, that would be a lower quality of match than actual money, but everybody's in that boat, so . . .

UNIDENTIFIED MALE PARTICIPANT: (inaudible) assume he comes in and he says that you must have picked out somebody already, it's an arranged match. But I can't imagine anybody -- the legislature is not in session now -- being able to find money.

DR. KRAMER: Well, if nobody's got it, then everybody's in the same boat. If nobody comes in with a firm match, then . . .

UNIDENTIFIED MALE PARTICIPANT: I expect somebody will. I expect somebody already has it sitting there. But for most of us, we don't already have it sitting there, and I guess my question is, and I think you've answered it, is that it won't count if you don't have any.

DR. KRAMER: Well, it's not that it won't count. But it will all go into the question of quality of match. I'm sympathetic because the timing here is horrible. I mean, it's really critical, on how little time you have to respond to this. That's just a problem with the way the legislation is handled.

UNIDENTIFIED MALE PARTICIPANT: I don't want to throw a hand grenade into this, but Ben Franklin Partnerships in Pennsylvania are set up to provide funding for just these kind of opportunities. You knock on a door and you say, hey, I need two hundred and fifty thousand dollars this year to go after this type of a grant. That's what every state competing against pennsylvania's will be up against, to have to work -- (whereupon, the court reporter requested participant to speak louder.)

UNIDENTIFIED MALE PARTICIPANT: yes. I said, the Ben Franklin Partnerships in Pennsylvania are an excellent model to take a look at. If nothing else, it's something for you to go pound on your own state legislators office and make your plea. I wanted to offer, and I can't remember the name of it, but they advertise in the wall street journal once every three or four months. I'm with lockheed and, you know, I know the frustrations of dealing with a large company -- I also teach at U.C.L.A. -- in trying to get matching funds. But a rather innovative plan that the national society of professional engineers offers is companies donate old equipment to a certain foundation, and that is available to any university to tap on. I think united van lines ships it to your university free. But, you know, any large piece of manufacturing,you know a c&c mill (ph), anything that's being thrown out. We throw out in droves out at lockheed because they weigh too much to do anything with. We sell them for scrap steel. By getting a hold of the

national society for professional engineers --their headquarters are in arlington, virginia --you can get something very quickly and at least identify with some things that we surplus. You know, there's just no use for the equipment other than for teaching reasons, and a lot of times it's prohibitive to bring it in, but United Van Lines will deliver.

DR. KRAMER: I would really be interested in hearing your feedback on whether you think this whole idea. I'd be very interested to know whether you think there is a need to develop maybe this next level of engineering educational or things are just fine the way they are or what would you do better.

UNIDENTIFIED FEMALE PARTICIPANT: I suppose more than a question, I have a comment to the statement you just made. (inaudible) Engineering in Orlando. I've heard a lot of comments today that made a lot of sense to me and I've heard some things that bothered me. One of my difficulties, a very specific difficulty is highly skilled machinists. I want our craftsmen to see their job as a science, a skilled technology. The last gentleman that spoke about getting the old equipment from companies that no longer want it,that's a big problem. I don't want somebody that's learned on old equipment. I need somebody who knows what I'm doing today. We've had a little bit of communication with valencia community college here in town, and they're nice people, they have some nice ideas, but not totally realistic from an economic standpoint. I'm a small business, very small business, but I'm also employing people and these are all kinds of things that we're hearing in the news that you were talking about. But I want everybody to be realistic. I'm disturbed that you're talking about education as, I think you said where people from industry enter the universities and roll up their sleeves and work together. The place where I'm rolling up my sleeves and getting dirty is in my shop. And I'm confused by the focus here. I'm not sure that what you're saying here matches what was being said in the larger session. You're not saying give me your ideas and we'll see what makes sense. What you're talking about here is really the same old thing: write a good grant and you'll get the money.

DR. KRAMER: That's a good comment. (period of applause.)

DR. KRAMER: Well, the hope is that the good proposals would incorporate good ideas. I hope I didn't make it sound like it was a one-way street with the industry people going into the university and the university people not going out into the street. One thing you said that bothered me a little bit, which is, don't you find that the community colleges are training good people that you can use and can't get machinists out of the systems? Is this an opportunity for them to upgrade their equipment.

UNIDENTIFIED FEMALE PARTICIPANT: I'm sorry, I was going back to my seat.

DR. KRAMER: What I was just interested in knowing is, you mentioned there's a local community college and you're not getting as highly skilled machinists from that program as you'd like to get. Wouldn't this be an opportunity for them to upgrade their facility and get better quality --

UNIDENTIFIED FEMALE PARTICIPANT: That's why I'm in this session.

DR. KRAMER: Well, this is absolutely intended to be what I wanted to happen.

DR. KRAMER: It's included under this program. It's intended to.

MS. BROWN: Patricia Brown from Seminole Community College. Many of the companies that I work with are not hiring really high-paid, very, very skilled labor. They're hiring more at the lower level labor. That's where the jobs seem to be going. And I guess I'm

concerned that if we were to spend a lot of time preparing a proposal and put it in, that it might get shot down because the guys would say, oh, they're only gonna make seven dollars an hour and we would rather fund a proposal where they're going to make thirty thousand dollars a year rather than,you know, four hundred jobs over here where they're only going to make seven dollars an hour. How important is it that the salaries of the people being trained at the skill level be so terribly high that they are professionals rather than the laborers or the people that this lady is talking about?

DR. KRAMER: Well, it really depends on the set-down details of the proposal. I don't think the proposal proposed to train people for non-professional jobs will be eliminated by any stretch of the imagination. It would have to be a well worthy proposal that showed some innovation and some promise, and also the potential, if it were successful, to serve as a model for other programs in other places.

MR. SOILEAU: M.J. Soileau, University of Central Florida. I couldn't resist the temptation to respond to your question, does anybody think that this is a good idea; is there anything wrong with our educational system. It would be foolish to say, no, that there isn't anything wrong. However, I think the thing that is most wrong with it is that for about the last two to three decades, we've been putting innovation into it and the quality of our time in engineering education has been going down. You can almost apply innovation versus quality. We get bright ideas that we spend two or three weeks, maybe a month, developing and we implement that into a curriculum, and as opposed to a curriculum that evolves over maybe a decade or so,that in many cases, and I know at our institution,very closely involves industry. Some of the things that I have heard that you would like to see in there, let's makes things,put-things-together kind of stuff in our curriculum I get from my industrial advisory board, the D.E.S. Give the students good basic education because that's the last time they're gonna get a chance to do it. In the factory floor they can learn this, that and the other. We want them to know differential equations. We want them to know newton's second law. They don't understand thermodynamics, and that's what they go to college for, not to do the other things. So I guess I'm a bit confused as to what we hope to gain.

DR. KRAMER: Well, it is confusing. I can only offer my own personal perspective there. I think in some ways, that's a it's-not-broken-why-fix-it sort of argument. And that's a pretty good argument because it's a great educational system just as it is. My own personal feeling though is that although there are elements of innovation, that if you look at the central engineering curriculum today, and you compare them to the central engineering curriculum of twenty years ago, that they're really not fundamentally all that different. And the thing that's missing from them is the treatment of the engineering process in the interfaces between the disciplines and even between the subjects. I think we do have a good system now, but it could be better if we move to the next level.

MR. SMALLEY: What would you take out?

DR. KRAMER: It's not a question, taking out. It's a question --

MR. SMALLEY: It is a question because we can't require our students to have six years to get a bachelor's degree --

DR. KRAMER: But it's not so much a question of --

MR. SMALLEY: -- You've got to take something out. (participant is not at microphone speaking and the court reporter is unable to hear.)

DR. KRAMER: Okay. Personally, I don't agree with you. I think there's some real opportunity for innovation.

MR. HOFFENBERG: I'm Cal Hoffenberg (ph) from North Carolina State University. I'm interested in a couple of notes on both issues. You were very specific about this be your '92 funding and this be your '93.
DR. KRAMER: yes.
MR. HOFFENBERG: And then we speak about reviews at the end of the first year and site visits and quarterly reports. Will it be a commitment for a three-year proposal out of FY-93 funds?
DR. KRAMER: Yes.
MR. HOFFENBERG: Then what's the contingency on annual reviews if the funds are all awarded for the first year for three years?
DR. KRAMER: I was talking specifically about the coalition. Those are two-year awards. I'm certain that that program will have probably a cooperative agreement. Let me take that back. There's some likelihood that that particular program will be funded by a cooperative agreement and that there will be some kind of review process after two years to decide on tuition funding, if funds are available. Does that answer your question?
MR. HOFFENBERG: Well, I thought the red book was speaking about quarterly reports, annual reports, annual reviews.
DR. KRAMER: not in the manufacturing education section. There's an annual report requirement.
MR. HOFFENBERG: So this will be a three-year commitment for a three-year program out of FY-93 funds?
DR. KRAMER: yes.
MR. HOFFENBERG: And only three.
DR. KRAMER: Only three.
MR. HOFFENBERG: The other question relates to the comment that came in the main meeting locally, that was no guideline about scope, about size; a good small proposal could fit if you think it fits. Does that go for those two programs but not to ours?
DR. KRAMER: Yes, we've given you some very clear guidelines here.
MR. HOFFENBERG: That's really not what we heard in the main session. It only speaks to employment development and not to this.
DR. KRAMER: I would again urge you that these guidelines are not inviolable. I mean, if you've got something that's well-motivated and it makes sense, feel free to go outside the guidelines. That doesn't mean we'll cut it back.
MR. HOFFENBERG: the last question relates to our predecessor's question. Have you at all coordinated with abet and how will abet deal with these curricular changes?
DR. KRAMER: Well, the short answer is no, we haven't coordinated with abet and I think probably the wise thing to do would be to design these changes in such a way that would be compatible.
MR. HOFFENBERG: That would mean you would make no changes.
DR. KRAMER: It's definitely the opposite.

MR. SPENCER: My name is James Spencer, and I'm from (inaudible) I'm not from the educational realm, but I also work part-time as kind of a management volunteer for an organization called the national technical association, which has a program in brevard county called the science technical application resource program, which is designed togo into communities where there are people who are socially at a disadvantage, to provide them access to technology to enable them to use technology to enhance and make their lives more productive. To do this is a way of bringing in non-profit organizations to help us deal with some social issues so we can educate people in the area of science and engineering. One of the things is that I see here, the focus is looking towards universities and colleges to enhance and improve their ability to teach engineering and

educate the students in science and math. One of the things that I see on a daily basis is young people who don't even make it to college because they don't have access to the benefits of going to college, so they don't even get there. They'll never see the resources that are being given out in this type of forum. And what I consider is, I work to get a proposal that sets out our program, which has learning centers all throughout the eastern brevard county, and we're going to expand it to the state, and hopefully throughout the country, we've had great success, but is it going to be looked upon as seriously because we are not the university. We have educational programs --

DR. KRAMER: Why can't you hook up with a university?

MR. SPENCER: We would like to.

DR. KRAMER: It seems to me that would be a very smart thing to do.

MR. SPENCER: Well, the only concern is our focus is, right now, on younger-aged students.

DR. KRAMER: What age?

MR. SPENCER: Middle-aged to high school. Now, we want to look at the community college and we've made plans to do that, and also to the University of Central Florida (inaudible)

DR. KRAMER: See, I think that would be very well motivated as feeding your students into that system.

MR. SPENCER: That's the objective now. What I'm saying is, if we focus the effort on younger students versus just the college, will we have to integrate the college --

DR. KRAMER: I think if you had a program that was going to -- the intention was to prepare high school students to enter the university system and did it in cooperation with the university or community college, that would certainly qualify. Sounds like a good proposal.

MR. SPENCER: Okay, one other thing I want to comment on in terms of I think this is a good point. Any time the government opens the doors and allows individuals to come with unsolicited proposals, I think it's a great idea, a good opportunity.

DR. KRAMER: many of these programs would look like great design courses, which abet loves. My bet is that you can use this to your advantage.

MS. GRANT: Yes, sir. I'm Shay Grant with Oak Ridge Associated University in Oak Ridge, Tennessee, and I'm here under a complex situation in that I just came from the development seminar because many of our universities, which are sixty-five colleges and universities, are involved in research as well as teaching and training education. And I came here primarily to look at the education of training capabilities. One thing I'm curious about is, because of the various clients or universities that we serve, they all have different service areas. For example, many of them are neighbors to defense conversion areas such as canal river, such as White Wells(phonetic) in Oak Ridge and Pinellas possibly, many of them under contract situations. But at the same time that doesn't involve all of our member institutions. Would it be possible to entertain a proposal that might counter-cross all of these different examples in the manufacturing, education and training, such as the retraining for jobs.

DR. KRAMER: Let me restate your question to make sure I understand it. Would we take a proposal that integrated all the universities in your consortium to address all the issues across all the subject areas in manufacturing, education,and training?

MS. GRANT: Yes, sir.

DR. KRAMER: Yes.

MS. GRANT: Thank you.

DR. KRAMER: I want to make it -- maybe it's a little unclear. All of those areas under manufacturing, education and training are in one of those dots, so you don't have to associate your proposals, they are all contained in

that one dot. So it's completely transparent as far as proposing in different areas.

MR. FISK: My name's Raymond Fisk from the University of Central Florida. (court reporter asks participant to speak louder.)
MR. FISK: I'm a marketing professor from a business school here in central Florida, and all day we've been talking about technology transfer, dual-use and all sorts of things. I'm wondering, how in the hell did you come up with all this stuff without including business schools as part of the solution? Business schools didn't have much interest in what you did when it was a defense base because we only have one customer. Now you're talking about trying to take technologies and finding lots of customers. Well, that's actually what we have actually have some knowledge about,and we train people in finding more customers in business school. And I would hope that engineers aren't something you're trying to (inaudible)business technology and try to plug into their curriculum. It's crazy. We might as well start plug strange stuff in our business curriculum. We've got to take advantage of the expertise that we have in the university. But somehow you've left the business out of it altogether. All I can say is, I'm shocked. Surely there's somebody in the government that could attack things --
DR. KRAMER: You're not totally excluded. Business is intended to be included. It's specifically written into a few of these emphasis.
MR. FISK: It's not specifically written in. I've read it carefully. You manage to imply it, but you've not specifically written it in.
DR. KRAMER: Well, for example, in cooperation from the school of engineering business school --
MR. FISK: Where was that? I didn't see it.
DR. KRAMER: Strategic plans for defense (inaudible) but anyway, I don't want to nit-pick, but business schools are included and they're encouraged.

MR. MARTIN: My name is Lee Martin, Economic Florida Tech. I've been in manufacturing education, oh, probably for about fifteen years, and I think probably the biggest problem this whole field has had is that it's a second class citizen. One of the biggest problems we've had in this country is the fact that everything that has to do basically with pure design, so on and so forth, has been looked at as academically very appealing. And dealing with manufacturing issues has always been relegated to a second level. This is a major problem in our competition with other countries where development of machine/tool specialists are looked upon as very highly prestigious professionals and so on. This is the first time that I'm seeing monies of this magnitude going to the manufacturing education. Forty-four million dollars, even though it's spread throughout the country, is significantly larger than any amounts that I've ever seen in those fifteen years. So on the flip side, regardless of what the new emphasis may be, I would like to in some sense, you know, applaud and encourage making a perpetration of this because I think there's a real stimulus here in this. So from that respect, I just want to lend a favorable ear to it. (period of applause).
DR. KRAMER: I think it's true. This is sort of a once-in-a-generation opportunity, and I think what we have to decide is if it's something we can use or not.

UNIDENTIFIED MALE PARTICIPANT: At the main session, you indicated, I believe, that each of the sections has to have this is a number and this is a number. As I read the education section, I think it applies in most cases it should be headed by academia. Is that an absolute rule or is that just guidance?

DR. KRAMER: It is an absolute rule.
UNIDENTIFIED MALE PARTICIPANT: Okay. So if we team with anybody, it would either be a community college or a full university that would head up each of these separate proposals?
DR. KRAMER: No, you need at least one academic participant.
UNIDENTIFIED MALE PARTICIPANT: You know, everybody wants to be the team leader. That's why I asked. Is it meant to be headed by the university or is it meant that it can be headed by a university?
DR. KRAMER: I'm not a hundred percent sure, but I think the wording does say it should be university headed.
UNIDENTIFIED MALE PARTICIPANT: Okay. Thank you.

UNIDENTIFIED MALE PARTICIPANT: I see in the time table here that the planned date for submission of proposals is July 23rd of this year.
DR. KRAMER: Yes.
UNIDENTIFIED MALE PARTICIPANT: We submit our proposal or proposals and they're not selected, what's the possibility then in the future there will be another opportunity to submit proposals? Is this a continuing program or is this a one shot?
DR. KRAMER: I don't know. I think there's a high likelihood that there will be other opportunities in fiscal year 1994. Maybe we have time for a couple more questions.

UNIDENTIFIED FEMALE PARTICIPANT: Question about community colleges. I'm at St. Petersburg Junior College. Is it all right if we have consortia of community colleges without a university presence?
DR. KRAMER: Yes.
UNIDENTIFIED FEMALE PARTICIPANT: Okay. This is unusual for us.
DR. KRAMER: I would urge you not to check with your local four-year schools and see if they don't have something that you'd really like to use. Any other questions? (negative response from audience.)
DR. KRAMER: Well, you're a great audience. I hope we're all doing the right thing. (whereupon, at 4:45 o'clock p.M., The proceedings were concluded)

DALLAS REFIONAL BRIEFING AT THE CENTRAL DALLAS RADISSON HOTEL, THURSDAY, APRIL 15, 1993.

THE SPEAKER: Dick Philly from Arizona State University. In talking about retraining defense industry engineers with -- possibly with fellowships and some other ideas, would it be okay to lure them out of the defense industry and into the commercial industry by a program that have fellowships? We do this already --
DR. STARKE: I think that would be more than okay. That's one of the major objectives of what we're talking about here is helping them to make that transition through providing them with some additional education skills that they can make that transition more successfully, more effectively, that they're more positively viewed by potential commercial employers.
THE SPEAKER: Thank you.

DR. STARKE: Before we take another question, I'd like to make a suggestion. We have a stenographer recording the questions. I would ask both that you state your name and affiliation as well as speak clearly because we don't have mikes out in the audience and we're hoping to use the information from your questions to help improve the solicitation.

THE SPEAKER: Bob McGlocklin, Texas A & I University. In line with the spirit of what you said, we have a more or less an ongoing and relatively successful practice oriented Masters program, but we're strongly interested in going to the next level, say doctorate of engineering type program. Is that within framework of what you have in mind or is the pay out potentially too long for what y'all have in mind?
DR. KRAMER: I think we can certainly consider it. I think what you need to do is to justify that that's a real need and probably the best way to justify that is to have the industrial partners to team up. That'll say that we really need these engineering Ph.D.s and we'd like to see them provided for.
MR. SPEAKER: Well, we have (unintelligible) suit in the state of Texas that also has some justification.
DR. KRAMER: One thing you might think of is isn't there anything you really wish you could do with your Masters programs to -- 92
MR. SPEAKER: We have plenty of ideas but we see this as fundamental -- well, for our school.
DR. KRAMER: Make a strong case.

MR. SPEAKER: Don Perry with the Dallas Community College District. In the section related to retraining the manufacturing work force, certainly engineers are very critical and important, but the work force is made up of more than just engineers.
DR. KRAMER: I'm sorry, I misspoke there. The technical work force is certainly included under that and that's a specific thrust of that component.
MR. SPEAKER: Okay, thank you.
MR. SPEAKER: I think we're missing the boat here somewhere. We've been talking about graduate programs and you're forgetting that one of the things we're hearing from industry is a typical high school graduate is not prepared to enter the work force. One of the things I'd like to know is can we go backwards? We're developing -- I'm from Dallas -- I used to be from the Dallas. I'm a president in the Houston Community College system. One of the things we're trying to look at is developing what we're calling a technology middle college where we want to 93 build a high school for technology inside my college, to prepare students and inundate them in technology, so they can go then to TSU, University of Texas, or University of Houston. Is that something that would be attractive going down to the ninth grade and creating a technology literate engineering potential student?
DR. KRAMER: Very strong, yes. I think it's a very interesting idea. One caveat is it shouldn't be a problem for you but that should be closely tied to the university program.
THE SPEAKER: It already it is. Thank you.
DR. KRAMER: All the way to the back.
THE SPEAKER: Lyndon McClure with the Dallas County Community College District. This is a suggestion as to the readers of these proposals that you make sure you do include community college individuals as readers.
DR. KRAMER: Okay. We'll take that under advisement. In all probability, the predominant composition of these review panels will be government agency people.
THE SPEAKER: Why is that?

DR. KRAMER: Because the time is so short.

THE SPEAKER: (Unintelligible) from Texas A & M University. You certainly are making a lot of interesting ideas of what could be made out of that book. So my question is, is it possible for a person to be involved in more than one proposal a year?
DR. KRAMER: Certainly.
THE SPEAKER: What was the question?
DR. KRAMER: Is it possible for an individual to be involved in more than one proposal.

THE SPEAKER: Dave (Unintelligible), Corporation. In training one thing I've noticed is we do have a lot of engineers involved in the defense industry layoffs and so forth, but I deal (unintelligible) referred to, out of the proposals here, five out of the seven deal with engineering and one deals with work force. It seems like, and I know in our company, 50 percent layoff is out of the force who do not have engineering degrees, or any degree whatsoever. We're being shortchanged.
DR. KRAMER: Come in with a good proposal. You'll notice that we give suggested ranges of funding but we don't see how the split will come out. We're going to pick all the best proposals, if 95 they're all in training, all the money will go to training so you'e not necessarily being shortchanged, you need to come up with a strong proposal.
DR. STARKE: I'd like to add something to that. When President Clinton announced this program sometime ago, March 11th, he announced a $1.7 billion program. That program included several other activities, some funded under the Department of Labor that were specifically focused on the problem you just described. This is a very small element of the program and was aimed predominantly at the manufacturing sector, and I would encourage you very much to look at the rest of President Clinton's package in trying to address the greater problem you just mentioned.

THE SPEAKER: My name is Bob (Unintelligible), Southwest Texas State University. We do quite a bit of proposal writing to NSF under the ILI program and we've been rather successful with it. Now if we have -- let's take an example of let's say $200,000 out under great consideration this year and that's funded and the proposal requires a 50 percent match, can we use that $100,000 the university matches as match for this 96 type of agreement?
DR. KRAMER: You can't use the same match twice.

THE SPEAKER: Gale Simons, Kansas State University. Under the supplementary education awards, is it necessary that these are NSF centers?
DR. KRAMER: No, no, they tend to be NASA centers, state centers would qualify.
THE SPEAKER: Because it says here specifically NSF centers in the write-up as I read it.
DR. KRAMER: Does it actually say NSF centers?
THE SPEAKER: No, it says to build on the investment already made by NSF in centers devoted to to vote manufacturing research.
DR. KRAMER: Error.

THE SPEAKER: I'm Pete Hinedahl from the University of Wisconsin located just above the northern border of Texas. Maybe you can clear up confusion that I have between the activities and the programs. When I look through all the activities and I see the examples presented, I see consistently in there that the match has got to come from industry, 97 and in some cases defense industry specifically. But then when I read the program from whence the money comes, it says that the proposer would

be a university consortia of universities and the group. The team may include outside agencies. Doesn't say anything there about any requirement for the industry to be involved.
DR. KRAMER: The actual requirement is for non-federal funds.
THE SPEAKER: That leads me to my next question. Can we use university funds?
DR. KRAMER: Yes.
THE SPEAKER: As the match?
DR. KRAMER: Yes.
THE SPEAKER: Is the industries that we are involved with, do they have to be defense industries?
DR. KRAMER: No, but they have to be industries with potential defense application, which we're interpreting in a very broad sense.

THE SPEAKER: Bob McGlocklin again, Texas A & I. We're a member of an engineering education coalition proposal group that might get an award in May or June, whenever it is. Would it be fruitful to maybe submit a supplementary education award 98 proposal even though it says ongoing engineering education coalition?
DR. KRAMER: No, you should have an existing award at the time you submit this proposal.
THE SPEAKER: Okay.
DR. KRAMER: Don't submit a proposal for supplementary award for prospective award.
THE SPEAKER: The award has to be in effect or the announcement has to be made?
DR. KRAMER: Call us.
DR. STARKE: Let me take a shot at that just for a second. I think you're certainly within the requirements of the rules that you could submit if you had the award made, but from the point of view of the probability of competing well with other people who have existing centers with perhaps years of progress and well established procedures and successes, you might be perhaps not making the wisest use of your bidding proposal money to do that.
THE SPEAKER: Well, we also have some members who are more than competitive in the coalition with the track history.

THE SPEAKER: Victor Sullivan, Pittsburgh State University in Kansas, that's on the northern 99 border also but we're in the southern part of the state. We have a coalition of three universities involved in a manufacturing that (inaudible) could be and we could do a supplemental of that coalition on that project.
DR. KRAMER: Uh-huh.

THE SPEAKER: Julie Sanford, UT El Paso. If we're partnering with one of the DOE labs and they're contributing their researchers' time to our education program, does that count as a match?
DR. KRAMER: They're federal money.
THE SPEAKER: Yeah, I know.
DR. STARKE: So it cannot count as a match unless they happen to be in some way or another paid by non-federal funds which is relatively rare.

THE SPEAKER: Fred Ling, UT Austin. Clarification, Dr. Kramer. You mentioned earlier that the last item the manufacturing expert has to be called out as a separate. Now in your answer to a question here you said you can do more than one proposal meaning of the programs, the remaining seven items, not the areas, can you cover more than one item in that the single proposal has to be separate proposals?
DR. KRAMER: I'm glad you asked that. The 100 question is among those seven areas excluding the manufacturing experts in the classroom, is it necessary to submit separate proposals under each one of those areas and the answer is an emphatic no. In fact all of those seven

activity areas are under one Bingo dot on the chart so what we want to see is integrated proposals across all those seven areas. Is that completely clear?

THE SPEAKER: My name is Doug Pickle. I'm from Amarillo College and I have a question. We have two (unintelligible) accredited programs at the community college level. Would these qualify for these grants and if so we don't have engineering deans, we have division chairs. Would that category for submitting these, would that put us in that category?
DR. KRAMER: Oh, yes, you certainly qualify. We're interested -- requirement for the dean's endorsement is just a requirement to the school as one unified approach. So if you've got some equivalent to the Dean, whoever that top person might be, they would certainly qualify.
THE SPEAKER: Especially under the ABED accreditation and engineering accreditation, that's what I'm asking.
DR. KRAMER: I'm not sure what your question is. Ask it again.
THE SPEAKER: You've begun directing most of your questions -- or most of the program is directed towards the university, most of the things you've said is towards the universities. I have two ABED programs that are accredited. How are they going to be considered? Are they going to be considered -- cannot be considered for the other categories other than Category 5 to put this in the community college?
DR. KRAMER: Yes, you can be considered for any of them, you are fully qualified.

THE SPEAKER: Lyndon McClure again with Dallas County Community College District. Upgrading of requires extensive -- upgrading of curriculum requires extensive purchase of equipment. Is there any limitation on equipment in some of these areas purchasing this equipment?
DR. KRAMER: There's no formal limitation depending on your justification but traditionally we scrutinize equipment purchases pretty strongly so I think what we'd like to see you do is to leverage your -- to be a good entrepreneur, to get out and see what equipment might be available in industry 102 that you might be able to get into the university or what equipment might be surplus by various governing agencies that's no longer needed and I think as a last resort, we purchase expensive new equipment.

THE SPEAKER: Malouf (Unintelligible) from Texas A & M University. This is an extension of that question by professor from El Paso. This is regarding the (unintelligible) of the national laboratories. If there is a three way interaction between the university and national lab and industry which can cause (unintelligible), would that be acceptable?
DR. STARKE: Most definitely.
DR. KRAMER: As long as you got the cost (unintelligible).

THE SPEAKER: Gill Hanson, Convex. This is an extension of the question of integrating one proposal, seven activity areas in manufacturing training, what about crossing further into other activity boundaries where you're integrating one proposal R & D in development and something down in manufacturing training?
DR. STARKE: That is an extremely good idea and it's very much to be encouraged --
THE SPEAKER: What was it?
DR. STARKE: I got your attention. Let me repeat the question. These are just two of the many activities that were briefed in the main briefing. There are indeed technology development activity areas, there are deployment activity areas, and the question was is it encouraged that there

be collaborative or associated proposals between the education area and maybe a development or a deployment proposal as well and the answer is that's the whole reason we're doing this together at one time. There is a belief that not just any ongoing engineering center that's a outreach activity like the MTCs or like the NASA centers but in fact one that may be proposing something really new and innovative under this program could collaborate with an education program also proposed under this activity and the two working together might be able to do much more in terms of going to this next level that we are talking about. So yes, it's very much encouraged that the education element be part of what the people are talking about in the adjacent two rooms because to be successful they're only going to predominantly do pilot projections, even a half billion dollars isn't 104 really that much to make a dent in this problem. However, if they come up with the right idea and they're linked with an educational institution that can develop the model curricula that explains how to teach that new approach to students, other educational institutions can copy that curriculum and the whole process can replicate and expand and then the program will really be successful so emphatic yes.

THE SPEAKER: I would like to know does it have to be two proposals or can it be one?

DR. STARKE: All right. The process that John Jennings explained earlier toward the end of the last session was if you're going to cross between two different activity areas or two different program element areas, you have got to write two separate proposals and indicate in them that they are associated with each other so they will be reviewed together but in fact they will also have the ability to stand on their own, so if one of them turns out to be really super and the other one is good but it's just outweighed by the competition in the other category, you won't lose the first one. They can be considered independently as well as together and whatever works out best in the global 105 program is what the result will be.

DR. KRAMER: Correct me if I'm wrong, Tom, but I believe to have one proposal that was headed up by a university that was headed up by an industry consortium then you could you link those two as well.

DR. STARKE: That's true. You could link two proposals inside the same area if you wanted to, so if for some reason you didn't want to put one proposal in from two universities working together, you each wanted to do a proposal but you wanted to have them linked, that is an option.

THE SPEAKER: I'll put a little bit different twist on that. I've got two programs that fit very well within the manufacturing engineering education grant program, but to write them up in one proposal would kind of muddy the water. Is my dean going to require me to do two proposals to submit, or two separate ones or would you accept two separate proposals from one institution in the same area?

DR. KRAMER: We prefer not to. If it's compelling we would certainly consider. I think our bias is that the areas are tightly enough coupled that if you can't figure out what the connection is 106 between them it may not be that good of a proposal, but on a case by case basis, that would be evaluated.

THE SPEAKER: So we could not submit two in the same area?

DR. KRAMER: Strictly speaking I think you're allowed to. We would certainly be suspicious if you did.

DR. STARKE: I think you would have to explain why that is the better way for the program in fact to fund those two efforts rather than funding them together and I think you'll note from the earlier session there was a tremendous information emphasis on

integration consortia and partnerships. The sense I think we're getting is having to put them separately implies there's some barrier to partnerships that hasn't been overcome.

DR. KRAMER: It would certainly be to your advantage to try and find the connection.

THE SPEAKER: Hi, Dick Philly, Arizona State University again. Can you give us a little more insight on defense industry and exactly what constitutes that and how we can identify what is defense industry and what isn't?

DR. STARKE: I don't think it matters to be really honest with you. I think almost any industry you would want to work with for the most part would have some connection with defense or with technologies of interest to defense and that is the weakest of all conditions in this offset of criteria so within reason and frankly we have yet to come up with a good example among ourselves of what is not a defense industry, so I don't see that as a problem. I would not be inhibited by that.

DR. KRAMER: But on the other hand if you've got industries that are working that are clearly defense industries and you've got this defense conversion problem and you're helping to solve those problems, that would undoubtedly be a plus.

THE SPEAKER: Rodney Joggins, Pilot Aircraft Rental. Would you consider the -- not the curriculum but the hardware and software used in the curriculum?

DR. STARKE: As a funding match?

THE SPEAKER: Yes -- no, the development of hardware and software.

DR. KRAMER: I think we'd want to see them used in actual curricula. In other words just to develop the hardware and software divorced from 108 actually testing it in a teaching environment, I don't think that would be a very strong proposal, so I think if you were going to develop hardware and software systems, you want to have a plan for testing, for implementation, for dissemination. Does that make sense?

THE SPEAKER: Gale Simons, Kansas State University. I hate to ask this but will there be any restrictions or anything special with respect to overhead?

DR. KRAMER: I can't believe that word came up. I believe you'll be allowed your normal overhead but I'd be less than honest if I didn't say that there is some feeling that overhead is not as valid a charge as other charges. Personally I don't share that feeling but it's an issue that's not decided.

DR. STARKE: One way you might look at this is since we're not in an arena where the rules are not as fixed and firm as they are with grants and we may be talking about other agreements conceivably or cooperative agreements where there are firmer rules, there is a premium on being innovative and how to deliver the most product, the most result for each dollar invested. If you can argue that your existing overhead structure is absolutely the best way to deliver value to the customers, which are the people who are going to receive this new program and benefit from it, that's probably the best you can do and that's what you should do. If you can be even more innovative and find more ways going beyond your current overhead in a positive way, that certainly would be looked at and apprised just from the innovativeness of it.

DR. KRAMER: Any other questions?

THE SPEAKER: Marvin Hull of Lockheed Fort Worth. We're looking at teaming with a lot of our subcontractors. We've got 1000-1500 spread across all types of businesses. I wonder if you could tell me about our trying to team with

the universities in these types of joint operations.

DR. KRAMER: It's a great idea. That's exactly what we're looking for.

DR. STARKE: Not only in this but also in the deployment area. An example of teaming between a prime and a large number of subcontractors is one of the prime examples being used there, the air force in specific is very interested in that out of right lab. If you were to tie that to with an 110 education program in addition, that would be a very interesting proposal.

THE SPEAKER: But we would only be able to propose the deployment of the implementation or -- the institutions would have to do the proposing on the other side; is that correct?

DR. KRAMER: That would be a really great associated proposal.

DR. KRAMER: Any other questions?

THE SPEAKER: Dave (Inaudible) again. With reference to an earlier question about the hourly, what other titles were you referring to when you mentioned there was availability of funds? You mentioned something --

DR. STARKE: I can't give you the exact titles. There's a lady named Joan Horn who is here with us on this trip. She's there in the back of the room, maybe she could say a few words.

DR. KRAMER: Joan, come on up.

MS. HORN: What was the question?

DR. STARKE: Perhaps you should ask your earlier question again now that Joan is here and she can tackle it a little more.

THE SPEAKER: In reference to some of the programs we've heard, maybe five out of seven dealt with engineering retraining degrees of some sort, et cetera and I deal with hourly population, and that's the majority of the layoffs and so forth and it didn't apply to them. And the gentleman mentioned that there was other programs or titles that I would refer to under that situation.

MS. HORN: Within the Department of Defense there are three broad categories in programs. Those that deal with people, those that deal with the communities affected by draw downs, and the technology ones which we've concentrated on today, this program is about. In defense itself there are multiple programs that deal with workers, dislocated workers, there are worker re-entry programs, there are worker training programs which are carried out through a wide range of programs. There are also worker programs in the Department of Labor and there are likely to be shortly in the Department of Education. For instance, the 1993 authorization sets aside an amount for something called Troops to Teachers and also provides for military personnel who are leaving and -- perhaps before they would like to leave to do other kinds of innovative things to do with their special, special kinds of talent. So there are a wide range of those. If you would like to leave me a card, I can perhaps get you some more information. The office of economic adjustment in the department of defense deals with the community program so a community that is faced with an impact from a base closure or a defense draw down, I'm from the St. Louis area, the home of McDonnell-Douglas and we had 14,000 employees laid off -- directly McDonnell-Douglas employees over a very short period of time and our community got their preliminary planning grant from the office of economic adjustment and then a full planning grant to assess your community's resources to see what the strengths and weaknesses are. If you have a piece of property such as the base, you can look at what that might be used for, so those other kinds of programs and some located in other departments and if you would like more information about that, we can get that for you.

THE SPEAKER: Sally Little from NASA. Is there any plan to have an integrated approach regarding people

with these kinds of skills and all and their needs somewhere what ARPA has done to have an integrated approach for the technology package. You know, we get to have the privilege of talking with you today and hearing about this through the contact, but what's the rest of the country to do?
MS. HORN: That is exactly what I have been asked to do by the President and the Secretary of Defense and it's a very new effort. This is my third week, I don't have business cards to give out to anyone yet but there is very much a commitment to integrating programs to presenting a sort of a central entry focal point where someone can come into the Department of Defense to find what's available there. And then even interdepartmental with commerce and education and labor so that the community or the company or whatever the case might be will be able to find out about a whole lot of phone calls and a whole lot of confusion. We also hope to have, plan to have an outreach program, some of -- those who need us the most, don't know we're there, don't know how to find us, and don't know what to do about it and those sometimes are more sophisticated community with planners and with grant talents will be right on the edge. But some of the smaller communities especially in the base closure area might not ever have had to deal with anything like that. So we also do hope to have an outreach program and perhaps an early intervention program because sometimes the sooner you can find out, the better you can plan for your workers in your community.

THE SPEAKER: Malouf (Unintelligible), Texas A & M. This is a hypothetical question and I'm afraid it's a little bit (unintelligible). Most of our graduate programs at Texas A & M have a lot of international students and proposal is sent for a Masters practice -- forget the --

DR. KRAMER: Practice oriented Masters program.
THE SPEAKER: -- practice oriented Masters program, and if it so happens that there are several international students involved and (unintelligible) which are more sensitive information might lead to complications, so would it be better to make a declaration that this would be opened to U.S. citizens? I'm just imagining things at this point.
THE SPEAKER: The question is say a university came in with a practice oriented Masters degree program and there might be some international students in the program, there might be some difficulties, it's sensitive information industry that industry might not want to expose to such international students. I think it probably would be wise to team with industry in such a way that proprietary information is not an issue. It would be uncomfortable both for international students and for domestic students and my guess is you could find ways to avoid that issue.
THE SPEAKER: We operate a small business development center in conjunction with 12 other community colleges and we have a technology transfer center that's part of that and a defense contracting unit that's part of that. Does that make it kind of a coalition that's already in existence that that be a good vehicle for this kind of operation?
DR. KRAMER: It sounds like it's got all the elements of a good proposal but without hearing the details it's hard to tell.
THE SPEAKER: I was sort of surprised that the small business administration was not one of the five or six agencies involved.
DR. STARKE: The SBA wasn't involved you because as you read the law that created this, it 116 was very much technology focused while we acknowledged that all the business skills that are necessary in deployment and to bring products to market are very important. The

legislation that enabled this program did not have a focus on those SBA type skills but rather application on technology and distribution of technology and that's why it ended up the way it was without an SBA participation.
THE SPEAKER: Would there be a possibility of combining here an education component with a deployment of technology component through the SBDC?
DR. STARKE: That would be a very interesting proposal combining the SBDC and an education proposal perhaps with a collection of universities or community colleges or whatnot, that would be a very interesting proposal.
THE SPEAKER: You'll see it.
DR. STARKE: Good.

THE SPEAKER: I'm Jim Jones with the University of Texas at Arlington with a center for environmental research training. We teach the 29 CFR 1910 120 OSHA (inaudible). And we do a lot of retraining for people coming out and saying (inaudible) complexes, trying to work in the environmental business, and I'm trying to see how we can incorporate that with a manufacturing company to give these people retraining. Would it have to be a specific company or is there provisions in there to provide this training with funding for people who need to get cross-training and get some of this experience into departmental areas?
DR. STARKE: Where would the fund match come from?
THE SPEAKER: We have a lot of equipment, we have classroom, we provide a lot of the -- the manuals for people going in the classes and I'm trying to figure someway for retraining in this area. There's a lot of people that need to retrain getting into the environmental area or does that not apply?
DR. KRAMER: Aren't the costs of all those facilities included in the tuition cost of the students?
THE SPEAKER: Yes, it is. I was trying to figure some way to tie it with (unintelligible).
DR. STARKE: I guess the sense of your question is if you could tie it in with an organization of companies that in fact would be interested in hiring some of those students would be helpful in helping you focus your curriculum who would form a partnership with you and would conceivably put up some of the matching funds because they would see a benefit for themselves, that might be a way to tie the skills that you're normally giving the students with going the next step, the skills that the companies might have to train them to once they've been hired and if the companies were willing to come on board and work for you, you might have a good concepts you could put together.
DR. KRAMER: I think you have to be a little careful in the environmental area because it's an area that's both in and out of the solicitation. In the sense of environmentally conscious manufacturing and manufacturing things in ways that produce less impact on the environment, that is very much inside the solicitation. If you want to say put sensors in toxic waste dump and monitor the effluent, that's probably not inside. So there is some kind of a dividing line and be sure you structure your proposal in a way that you're on the right side. If there are no more questions, you're a fabulous audience and we look forward to a lot of great proposals.

LOS ANGELES REGIONAL BRIEFING AT THE BILTMORE HOTEL, FRIDAY, APRIL 16, 1993.

MR. HARTMAN: David Hartman. I address Tom. Where do I get a copy of your slides?

DR. STARKE: At the bottom of the agenda for today there is a reference to NTTIS, and I believe the slides will be available from one of those two as early as next Monday, and please use that process to get them if the slides were not in the hand-out package, and I think some of these were not. You are quite correct. Please use this process.
MR. HARTMAN: Yours will be included in those that we ask?
DR. STARKE: Yes, they will be.

MR. CLETA: Archie Cleta, California State University. On the hand-out today similar to the red book, the only difference I see is one word. I would like to know which one is correct. Is it the one that lists the seven areas under manufacturing, education and training and the sense the proposals will fall into either one of the seven categories, or the other says seven categories, and I have a consolidated thing that fit three?
DR. KRAMER: I think you will notice another difference. There are seven categories in this book and eight categories in the slides. Let me try to clarify all these issues. The eight is manufacturing experts in the classroom. Our initial intent in putting these various suggestions together was that the aspect of manufacturing experts in the classroom was so important and critical to all elements and so pervasive in all the other elements that we distributed it through the other programs that were appropriate. It turns out there is a separate piece of legislation for this program, which means that we can't do that, and so there will be some kind of separate proposal for offering experts in the classroom. The detailed instructions of how to put in those proposals will be included with the solicitation on May 14th. Don't wait to put the program together until May 14, but there will be some procedural details.As far as your direct question, all of those eight elements are included under one dot on the chart. That means for the purpose of this solicitation they can all be grouped in any way you would like. We certainly encourage you to do that. We actively discourage you submitting multiple proposals under one dot because our ongoing assumption is if you can't figure out how two elements are related, what business do you have proposing it? If you have two elements and you can make a good justification for the fact they are unrelated and co-exist at your university, and it makes more sense to keep them separate, by all means, make this case, but my suspicion going in is this is a difficult case to make.

MR. DICKSON: John Dickson from Tennessee State University. I have two questions, one relating to the program schedule or start-up of being on a physical year which begins July 1st. It's possible that we might want to propose a program that would begin July 1, 1994, and if you have some extra funds by the end of September. Does this create any problem?
DR. STARKE: You probably should look at your program that's funded by the program. This activity here is starting later in this year. You could start something that you started before this, but as we said this afternoon, your manufacturing could only start once the agreement or this vehicle was negotiated for this activity. So if

these monies don't come out, let's say, until October or November, the awards doesn't get negotiated, of course it wouldn't be possible to have a program that started in July and anticipated using those monies; however, you could start something with your manufacturing funds or your institutional funds and plan on augmenting it or increasing it in November assuming that you, in fact, were successful in winning the competition.

DR. KRAMER: July '93 or '94?

MR. DICKSON: '94.

DR. KRAMER: Technically, I don't think there is anything that would prevent you from requesting a delayed start. Practically speaking, we are interested in seeing people get started as soon as possible, so unless you have a very strong reason to want to have a delayed start, I wouldn't request it.

MR. DICKSON: There is one other question with regard to designating partners. I have in mind something we might do with local industries bringing in manufacturing experts from a variety of different companies in middle Tennessee yet to be named, yet to be determined, that would perhaps merge as the program moved forward to serve the manufacturer expert, and yet they would in a sense be contributing funds and the cost of these people. If our program won, they qualify, would those funds qualify? Would they qualify as partners although we can't name them when we write our proposals?

DR. STARKE: There is nothing that would prevent you from proposing that scheme, but I would mention that if you propose that and another institution has named their individuals and has their money and has their associated industry lined up and identified, I suspect they will have a much stronger proposal than you will, and if everybody, if all the competition has that strength, I don't think you would compete well.

DR. KRAMER: There is a broader issue here, and that issue is the following: The time is very shoret, as is mentioned in my introductory remarks. If I were to start putting a proposal all together, the first thing I would do is to make an investigatory of my specific strengths, the strengths of my institution, the strength of the legislation I could make with the companies I'm closely associated with, the strength of other intercity institutions in the area I might team with. Obviously, given the short amount of time available, those institutions would have substantial ongoing efforts along the line of what's being asked for and would have a significant advantage. However, it is highly likely that this will not be the last solicitation along those lines. It is highly likely there will be another one next year. You might want to make the decision at some point this is not your year. It is time to spend a year building a partnership that will strengthen your case next year, and we certainly encourage you to think about that before you go through all the expense, trouble and heartache of putting a major proposal together.

MR. CLARK: Woody Clark from California State University. If there are programs on different campuses throughout the system, can these funds be used to enhance, expand, or disseminate this to other campuses or institutions?

DR. STARKE: Certainly. I would put the benefits together as strong as possible to make a compelling case for why that would be a high-level thing to do, but yes.

MR. DAVE: University of California, Davis. In retraining the manufacturing workers and educational traineeships, you are focusing on dual use. In the case of some of the defense contractors already laid off work first in the process of looking for retraining those individuals into other areas, how does this fit? How does this fit under the program if they have already been laid off? Is that under the program if you were looking at retraining them into environmental engineering, as an example?

DR. KRAMER: I think this program would be aimed at retraining them at manufacturing engineering with enhanced or redirected skills. I think if you were going to retrain them into fields outside the general grouping of manufacturing engineering, that it would fall into a different program.

MR. HALLICE: Gene Hallice from San Diego State University. You mentioned earlier that retraining the manufacturing work force may fall into the technology climate of this program. I would like a clarification. What circumstances should we be looking at, manufacturing, education and training, to find the niche for the programs that we are looking at, and we should be within the guidelines for unemployment?

DR. STARKE: In the program, it is really looking at the skill enhancement for manufacturing personnel, engineering, technicians. Many smaller companies don't have engineers and, in fact, use technicians when larger companies use engineering, so this program would be looking at that function. The deployment program includes an element of retraining of workers, but that element is linked to a number of different activities that deployment programs are supposed to do like disseminating information on advanced manufacturing technology and other things. So if you just said I want a program that is set up to retrain defense workers that were laid off in manufacturing type activities, and let's say we are looking more at retraining workers as opposed to skill enhancement for engineers, you probably belong looking at some of the Department of Labor programs or the other Department of Defense programs that are specifically targeted for that problem.

MS. RITA: Rita from California State University. I was wondering about this practical master's program for us to propose some new programs because if there is, I was wondering, a specific program which is a little bit smaller, but geared toward manufacturing and practicable application, would this qualify?

DR. KRAMER: I really wouldn't restrict myself to smaller. I would envision the program where you used some of your existing course offering somewhat modified where you perhaps adopt your degree requirements to take into account the fact that many experienced industry engineers have skills that would be

duplicated by existing courses, and an extreme example, perhaps, is to take an industrial designer that has been out designing for many years and forcing him to take computer design courses or some such thing. You might modify some of the your existing fundamental mathematic courses to ease the shock for an experienced industry engineer coming back and sitting in a classroom with a bunch of 19 or 20-year-olds and taking differential equations, and perhaps you might want to incorporate a practice basis Master's degree with joint supervision of the university faculties, industrial engineer, solve real industry problems.
RITA: I think I didn't phrase myself right. I don't have any problem with that. I want to comment on one thing. I'm real happy that this is the first time in so many years that somebody mentioned not just the part by a scientific phase, and one other comment, that the universities think we are not here to train people but to educate. You mentioned a point about training most of the people. My question was really from the point of view, I don't have any problem of putting this together. We already have a lot of all kinds of programs, but the problem is to have a program that has to show that there is no unique program in other schools, it has to be proven through the process of approval. The question is is there anything else we can do?
DR. KRAMER: There are no rules; there are no requirements. Obviously, a program that comes in that's been signed off on and has commitment from the university at the highest level and resources commitments will look like a more substantial proposal.
RITA: A program that is to be applied or a Master's program approved, which is people with big bucks for us.
DR. KRAMER: I think there is plenty of room in this concept into a Master's program.

MR. ACEMAN: Paul Aceman from Brigham Young University. Your practical oriented Master's program, a comment and a question. The first comment is there are a lot of people who are coming out of industry under circumstances that they would rather not. Many of those who are qualified to teach in a manufacturing program but meet a lot of resistance coming the university environment from the existing university environment. I happen to be one of those people who was fortunate enough to get into the university after spending 20 years out in the industry. I think there is a great need for industry training, professional people to come into the university environment, and if there is some way of enhancing that opportunity, I think is a necessary component at least in the future if not in the present program. Secondly, we do have a practical oriented Master's program, and we also will be introducing -- in fact, we are introducing it now under the mechanical engineering department -- coverage of a Ph.D. program in manufacturing engineering, and we will shortly be having a Ph.D. program in manufacturing engineering. Are you limiting the program to the Master's? We are looking at the opportunity of creating training people in the

manufacturing area, Ph.D.'s who can go into the university and participate in the training of Master's oriented people. Is this included in the program?

DR. KRAMER: The aspect of easing the transition of experienced highly qualified industry people into the University and teaching is part of the cultural change which we are encouraging. Here we are looking for proposals for industry experts coming in, help to design the curriculum, help to teach the curriculum, help to teach the laboratory, make their unutilized facility in the industry available to the students so they can actually produce the project that they design. All of those are part of the cultural change we will help you to make, but we don't know what that should be, so we are hoping that each university will rely on sort of a zero based budget approach, look at their requirements and procedures and see what makes sense for everyone to do, and we will look at how they can reorient or reexamine their system in order to take advantage of this opportunity that has presented itself.As far as the district program, I think the burden there is for you to demonstrate what the industry wants when manufacturing PLD and make good use of them, and the best way to demonstrate that is to have a strong industry partner in their program. This is a personal opinion, but my guess is that this is the best approach to take.I think if you come with an approach that says we are going to train more manufacturing Ph.D.'s to be university professors to teach other manufactured proposals, that would be a weaker approach.

MS. HORN: Let me state something in a hypothetical way. Look out there in your resource base, and will you have here I think probably with a factor of times five is what we have in the St. Louis region. We have an incredible resource of people who had been laid off, taken early retirement like IBM, AT& T, early retirement in industry in general. Even nondefense industries have gotten leaner, more efficient and downsized. So there is this resource of talented people, early retirement in their 30's, very bright and an incredible resource, number one. Factor this by two, we have a small business industry base, small machine tool shops, stamp shops. The production average age of equipment is three years with a technician that is keeping up day-to-day with an owner who does not in any way have a goal to come to something like this to learn about these programs, and he is trying to keep his people working who has maybe 10 to 100 to 200 employees. What can be done? It is a hard climate for education. What can be done to link that all up? We just opened in St. Louis a demonstration. It's called the demo tech. We have some national manufacturing science grants to put a whole, big roomful of these wonderful modern machines together, but you're not linking with wonderful smaller machines with whom should know all about this with all of those companies who desperately need a little bit of modernization. hey also know some management skills, marketing skills, perhaps computer skills. Perhaps a whole other range of things of being creative. This is the program that says, be creative.

Don't pigeonhole yourselves. My sense is that you have in Southern California an incredible number of things that need to work together and come together and would make excellent proposals and be models, perhaps replicates in other places.

DR. STARKE: I would like to follow on this with one other comment, and that is one of the things we have not stressed this afternoon. That it's extremely important t be in a creative frame of mind. There is no reason not to develop an associated proposal between either a technology development program and a manufacturing education program or a technology deployment program and a manufacturing education program. You don't have to think of this as a separate island from the other things that you heard this morning. If there is an institution or part of your own institution is building a proposal in the other area, maybe you have something that you could combine together that you could show not only do you have these educational programs but, in fact, they are going to be linked to some developments being done either in this development area or a new way of distributing information that happens to be in the deployment area. Think, be creative beyond just what we have talked about this afternoon. Be creative if this has been talked about in the other two parts that are part of this program offering.

DR. KRAMER: Maybe another brief comment. I don't want to leave the impression that we don't think the manufacturing Ph.D. is a valuable idea. We can look at our foreign competitors and note where they have active manufacturing Ph.D. programs, and Ph.D.'s go out into industry, and they are the VP's of manufacturing and production managers, and I think we can look forward to this one day, but my best estimate is that we are not at this point in the United States, and we don't necessarily want to encourage the institution to have multiple manufacturing Ph.D. programs where the manufacturing Ph.D. will primarily only get jobs in other universities, so if you are going to come in with that program, you have to have a strong industry as well at this time.

MR. MACLUDITE: MacLudite, California State Long Beach. I was wonder if the university from the same school system would have to collaborate for a joint proposal because there is a short notice, actually, and to arrange a cooperation with another school takes some time. I am wondering if you see two proposals, for example, coming from the University of California system or two proposals coming from the California State University system, which have basically the same, more or less the same ideas, what are you going to do in this case?

DR. STARKE: I think the answer there is that it depends on the quality of the proposals. If they are very, very similar, we may in fact consider talking to both individuals and saying consider getting together. Remember, as they talked this morning, this is an interactive process even after the proposals come in if there is something where, hey, it would have been much better if the two had gotten together, we will try to

encourage those kind of matches subsequently, but practical problems may limit the extent to which we can do that. I don't think you are going to be penalized because you didn't put together two things that were similar. You will be penalized if you put together something on the one hand, and somebody else puts a fraction on the other hand, and they both came out of the same school system, and neither of them looks as good as the competition by themselves, and if we can't figure out how to put them together and make them look good, they will probably fall by the wayside.

DR. KRAMER: We can't emphasize enough, there are no rules or requirements. In this situation described, it is hard to imagine how a combined proposal wouldn't be stronger than two individual proposals, so it is to your advantage to make those links in advance.

MR. WILLIAMS: Richard Williams, Dean of the College of Engineers, California State Long Beach, and there are several CSU deans here. I'm the secretary of CSU, the deans segment of the Engineer liaison counsel, and our chair is here. I think in a way my question refers to an issue that will affect the 13 campuses of CSU or most ofthe 13 campuses of California State University that offer engineer programs. We have all long recognized the desirability of bringing people in from the industry to teach our courses. A few years ago, 30 percent of our class work involved practicing engineers from industry. All these individuals had advanced degrees. Most had Ph.D.'s, and were well qualified in bringing current industry practice into the classroom at both the bacheloreate and the graduate level. In the graduate level the percentage was higher. We have been affected in the last two or three years with a continuing decline in budgets, and that has resulted in -- I could go through the minutes of our last meeting a couple of weeks ago, and campus after campus is saying we are having to lay off all of our part-time faculty. In other words, the people from industries, and we are left with only our regular full-time faculty. Recognizing the critical importance of keeping engineers from industry in our hands involving these people in our -- let's talk about our graduate program at the moment. Would it be reasonable, perhaps, not maybe as part of something else, or somehow would it be reasonable for a single campus or several campuses to propose a program perhaps 50/50 matched by industry that would allow us the difference to pay these part-time faculty in the full-time employment in the industries to come to the campus and teach? Let me throw out one question. Why can't industry pay the people to come and teach? The union won't allow us, but they will allow us if we can get the money to pay in.

DR. KRAMER: The answer, I think, is "yes" and "no." I think the idea of requesting matching funds to help to compensate industry people to come in and teach classes is certainly included within the program; however, we would like to see you doing, taking that process to the next level. Not necessarily bringing industry people in to teach just existing courses but to get those people involved in the development of new

curriculums, planning new curriculums, deciding how industry resources can be used in the curriculum in order to do a better job of giving students manufacturing experience, but our feeling is that we do an excellent job of teaching analysis. We graduate them and send them to industry, and tell the people to tell them about the practical reality of engineering. We would like to see the practical reality integrate from curriculum. We would like to bring these guys in to teach curriculum. Take it to the next level. Rethink your curriculum and use industrial engineers in that. That's exactly where the program is trying to go.

MR. WILLIAMS: My only comment, though, is that the existing programs in the CSU which are Master's and not Ph.D. oriented all are focusing on the very practical Master's to educate practitioners, and essentially all of the criteria that we talked about, which are things we believed in for a long time, are the way, I guess, within the CSU practically all if not all of our Master's programs are learning, and it is very practical on its own. However, I take what you said it to mean that we should really look at creating new programs that would involve industries, and that if we came forward with an existing program and said look, this is the existing program. It used to do everything you want, but it doesn't anymore because the state has cut our faculty positions.

DR. KRAMER: I would answer you a little bit differently. If you have a program that does everything you can think of already, then you have a fantastic base for doing the things that you have been dying to do that you didn't have the resources to do.

MR. WILLIAMS: It used to do what you want, but it doesn't anymore because we have lost a third of our faculty positions and can no longer hire.

DR. KRAMER: If you really believe in your previous program if augmented by some additional funding will allow you to bring in those industry people who will do everything that could possibly be done, then I would encourage you to bring that proposal.

MR. WILLIAMS: Anything can be improved, and we would not make this argument.

DR. KRAMER: There is a chance to make those improvements.

MR. WILLIAMS: Build upon an existing program?

DR. KRAMER: Absolutely. Every possible existing resource you can find. We don't want to reinvent anything. Any more questions?

MR. SIMTOTAKE: Terry Simtotake, Naval Current Control in Ocean Surveillance in San Diego. I think we can contribute something to an education program, but because we are in a Department of Defense Laboratory, I'm wondering how we might complicate the determination of matching funds. There is something in here about non-DOD funds being used.

DR. STARKE: For the most part, it's nonfederal funds that are required for the match, and what you might have to do is come up with a foundation, a state or an industry or industry group set of sponsors, who would work with you and an educational institution to perhaps make some of your

facility available to work inside of a program at a university or that a local educational institution would want to start. It is also possible that this local educational university may have some other funds at its disposal already that qualify as matching funds, and they may, in fact, be able to be put up to pull out federal funds that would come and support this program.

MR. SIMTOTAKE: If we were to provide facilities or people, those wouldn't be counted toward the school's contributions because it's already an asset?

DR. STARKE: That is correct.

DR. KRAMER: In addition, I believe any funding you receive would have to be matched.

DR. STARKE: No, that's not true. Any funds that you receive from this program would have to be matched by nonfederal funding that was received by some other part of your activity.

DR. KRAMER: Right.

DR. STARKE: So if TRP sent half a million dollars to you to run a teaching factory in one of your machine facilities that you would do jointly with a local state university, then the state running this program would have to come up with half a million dollars of cash that also went into running that teaching practice that was nonfederal.

MR. SIMTOTAKE: Since on these programs if the laboratories we are -- the colleges proposing, they might pay us. That would not complicate the equation?

DR. STARKE: No. The fundamental principal here is that the team that proposes makes the decision where the best place is for it to spend it, the combined federal/nonfederal resources. They come in and say this naval air station which has certain state-of-the-art facilities that's going to cost something to maintain and perhaps to pay some extra funding for the people who would help with it, and it's our team's decision that putting that money there is the smartest thing to do, then we are certainly not going to challenge their decision on what makes the best sense for them to succeed in this program, and they will be evaluated based upon what these proposals look like. It will meet the goals and objectives of this program without reference to which way money happens to be flowing.

DR. KRAMER: Your contribution as a federal entity does not have to be matched. It is neutral.

MR. SIMTOTAKE: That was part of my question, too. Thank with you.

MR. FOSH: Tom Fosh, Stanford University. I'm wondering if contributions from individuals such as alumni individuals would count toward the matching requirements?

DR. STARKE: It is nonfederal. It counts.

UNIDENTIFIED SPEAKER: I come from the other side of the spectrum. Mostly they are retraining with the forces being laid off. Could some of this money be used for the employer to train the people coming out of college, because when I came out of college, he doesn't have enough experience, and here are people that already have four, five, ten years experience, and so we can't hire you. Could it be something that the employer could use a 50/50 match to train in some other industry?

DR. STARKE: Th. ›rograms have to be proposed t y institutions of higher education. That's in the law. However, if your company and an institution of higher education got together and created a post Bachelor's degree program in the practical application of engineering that related to your company's needs, and you made it a model program that you intend to advertise and advocate the other people as you succeeded and showed its benefit, and the education institution was, indeed, the proposer, it certainly would qualify, and depending on how unique and how exciting what you were presenting was, it very well could be a good proposal.

UNIDENTIFIED SPEAKER: Since what we are seeing here seems to be the first part of the crusade to change industry culture of the United States, I have a question, and it also seems to be a focus of a trickle up model rather than the traditional trickle down. Is there a place -- focus on the trickle down -- in those nonengineering people involved in their industry's culture, the corporate executive, university administrators, government officials, who also need retraining to focus on this?

DR. STARKE: What I said earlier, and you heard this in the morning or the afternoon. What you heard is that these are guidelines. These are our best understanding of how to best achieve our goals in terms of these seven example program activity areas, but I'm very clear our goal is this conversion of the industries' base. Is there enhancement of the skills and qualifications of the people who work in it. If you were to come back -- and let me make up an example, and don't necessarily propose this because I don't think I'm nearly as smart as most of you out there, but if you were to make up a program that is aimed at small business leaders, small defense dependent manufacturing firm leaders, who, in fact, were in the process of trying to convert their companies and needed skills about how to work in the commercial marketplace, and you perhaps had a supplemental education program that would work with these individuals, it could even be a series of seminars that would be done on weekends or something. Something much different than the kind of skill course curricula type activity we have described here. I think we would be very interested in hearing some of those far-out ideas. The thing I like about the one I just mentioned is it has leverage. By teaching those business leaders who may or may not be engineers, they can use this skill to perhaps help keep a large number of people now working in their firms employed by going out and getting commercial orders, so we would encourage you to not see the limit and not see our example necessarily as limits. As Buchanan said this morning, this is a goal-oriented program among the defense industry, commercial industry base. The goal is jobs for present and former defense workers. The goal is helping the country to be more competitive and produce more defense products. If you have a different idea, a different model, a different target population that you think can benefit from a special education program or is a general one that focused on making them more

effective in achieving our goals, we really want to hear that.