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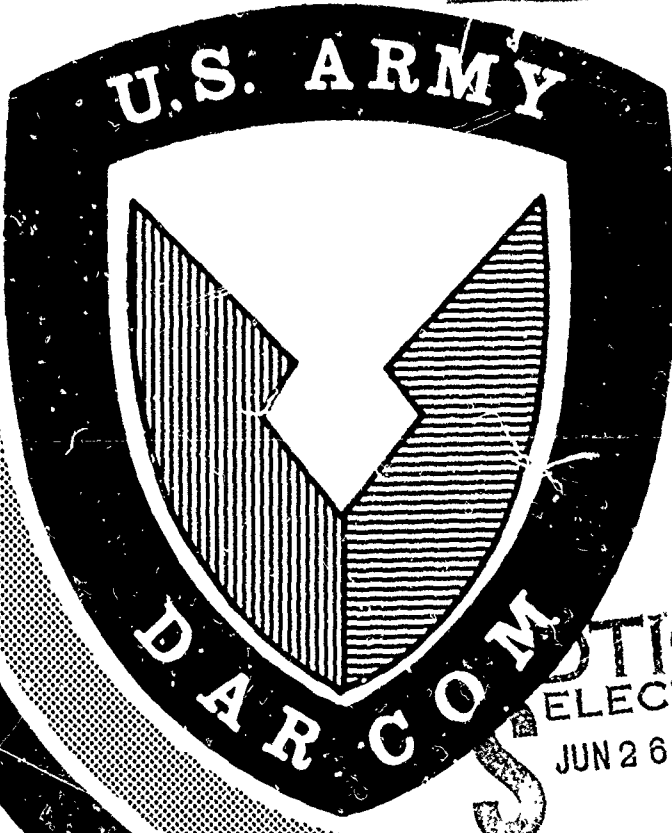
SUPPLEMENTARY  
ADDITIONAL

# Matériel Acquisition Management Guide.

U.S. Army Materiel Development and Readiness Command

12/28/80

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DEPARTMENT OF THE ARMY  
HEADQUARTERS US ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND  
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DRCPM

11 Feb 80

SUBJECT: DARCOM Materiel Acquisition Management Guide

DARCOM Acquisition Manager:

The DARCOM Materiel Acquisition Management Guide was prepared to assist you in carrying out your assigned responsibilities. It focuses on a number of critical issues that affect the acquisition management process but is not to be expected to stand alone in advising a manager on how to do his job. Only your dedication, resourcefulness and initiative can succeed in the complex task of managing Army acquisitions.

This edition of the Guide has been extensively revised by implementing numerous recommended changes from HQDA, the DARCOM staff and the field. The wealth of revisions and new information, as well as a different printing process, has prevented strict adherence to our original intent of "one page per issue" in Section III but I believe you will find the additions worthwhile. Several new subjects include: Transition Process, Systems Analysis, Environmental Protection and Enhancement, Cost Estimating, Training Devices, Retail Support Agreement, Project Management Charters and Life Cycle Acquisition and Support Planning. Subjects pending publication will include: RSI, Type Classification, Work Breakdown Structure and Nondevelopmental Items.

As you uncover new alternatives and strategies that can make the job in meeting Army requirements more efficient, I encourage you to let us know about them. They will promote timely revisions of the Guide and will provide our acquisition managers a source of up-to-date, yet experienced and practical information. You should address any changes directly to the Office of Project Management (DRCPM, Autovon 284-8372).

Sincerely,

ROBERT J. BAER  
Lieutenant General, USA  
Deputy Commanding General  
for Materiel Development

TABLE OF CONTENTS

	PAGE
INTRODUCTION.....	1
PART I - THE ACQUISITION PROCESS.....	I-1
APPLICATION .....	I-1
BASIC ACQUISITION AND APPROPRIATION PROCESSES .....	I-1
ACQUISITION PROCESS BASIC POLICY AND PROCEDURAL GUIDANCE .....	I-5
<u>TABS:</u>	
PRE-PROGRAM INITIATION .....	I-8
PROGRAM INITIATION DECISION (MILESTONE 0).....	I-11
EXPLORATION OF ALTERNATIVE SYSTEM CONCEPTS .....	I-14
DEMONSTRATION/VALIDATION DECISION (MILESTONE I).....	I-17
DEMONSTRATION/VALIDATION PHASE .....	I-20
FULL SCALE ENGINEERING DEVELOPMENT PLANNING .....	I-23
FULL SCALE ENGINEERING DEVELOPMENT DECISION (MILESTONE II).....	I-26
PRODUCTION PLANNING/PROGRAM UPDATE .....	I-29
ENGINEERING DEVELOPMENT DESIGN/PROTOTYPING .....	I-32
ENGINEERING DEVELOPMENT PROTOTYPE TESTING .....	I-36
PRODUCTION AND DEPLOYMENT DECISION (MILESTONE III) .....	I-39
INITIAL PRODUCTION .....	I-42
FULL/FOLLOW-ON PRODUCTION .....	I-45
PROGRAM TRANSITION .....	I-47
SYSTEM OPERATION - MAINTENANCE - SUPPORT .....	I-50
DISPOSAL .....	I-52

	PAGE
PART II - THE MANAGEMENT PROCESS .....	II-1
APPLICATION .....	II-1
ARMY PROJECT MANAGEMENT RESPONSIBILITIES .....	II-1
<u>TABS:</u>	
HIGHER AUTHORITY .....	II-6
ACQUISITION MANAGEMENT .....	II-9
FINANCIAL MANAGEMENT .....	II-11
TECHNICAL (ENGINEERING) MANAGEMENT .....	II-15
INTEGRATED LOGISTIC SUPPORT MANAGEMENT .....	II-19
PROCUREMENT .....	II-22
PRODUCTION .....	II-25
TEST AND EVALUATION .....	II-28
PART III - AREAS OF ACQUISITION MANAGEMENT ISSUES .....	III-1
APPLICATION .....	III-1
ORGANIZATION .....	III-1
<u>TABS:</u>	
ACQUISITION AND MANAGEMENT OF DATA .....	III-4
APPLICATION OF SPECIFICATIONS AND STANDARDS .....	III-7
CAPITAL INVESTMENT INCENTIVE FOR CONTRACTORS .....	III-9
CONCEPTIVE PROTOTYPING .....	III-13
CONFIGURATION MANAGEMENT .....	III-15
CONTRACTOR COST/SCHEDULE CONTROL .....	III-18

	PAGE
COST ESTIMATING .....	III-21
DECISION PROCESS .....	III-25
DECISION TIMING AND SCHEDULING .....	III-27
DESIGN INFLUENCE .....	III-31
DESIGN REVIEWS .....	III-34
DESIGN TO COST .....	III-36
DISTRIBUTION PLANNING/FIELDING .....	III-39
ENVIRONMENTAL PROTECTION AND ENHANCEMENT .....	III-41
FACILITIES PLANNING .....	III-43
FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS .....	III-45
FUNDING .....	III-49
GOVERNMENT/INDUSTRY PRODUCTION OPTION .....	III-52
INCENTIVE/AWARD FCB .....	III-55
INDUSTRIAL BASE PLANNING .....	III-58
INTEGRATED LOGISTIC SUPPORT PLANNING .....	III-60
LEGISLATIVE CONSIDERATIONS .....	III-64
LIFE CYCLE ACQUISITION AND SUPPORT PLANNING .....	III-66
MANUFACTURING TECHNOLOGY .....	III-68
MINORITY BUSINESS ENTERPRISE PROGRAM.....	III-70
NON-DEVELOPMENTAL ITEMS.....	III-73
OMA FUNDED PRODUCTION ENGINEERING (PE).....	III-76
PERSONNEL STAFFING .....	III-78
PROCUREMENT PLANNING/PROCUREMENT PLANS .....	III-81

	PAGE
PRODUCIBILITY ENGINEERING AND PLANNING (PEP).....	III-83
PRODUCT IMPROVEMENT PROPOSALS (PIPs).....	III-85
PRODUCTION TESTING OF ARMY MATERIEL .....	III-89
PROGRAM/PROJECT/PRODUCT MANAGEMENT CHARTERS .....	III-92
PROPOSAL EVALUATION/SOURCE SELECTION .....	III-95
PROVISIONING .....	III-97
QUALITY ASSURANCE/ENGINEERING .....	III-100
RELEASE OF MATERIEL FOR ISSUE .....	III-103
RELIABILITY, AVAILABILITY, MAINTAINABILITY, DURABILITY (RAM-D).....	III-106
RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS).....	III-109
REQUEST FOR PROPOSAL/WORK STATEMENT .....	III-111
RETAIL SUPPORT AGREEMENTS .....	III-115
RISK ANALYSIS/TRACE . .....	III-117
RSI .....	III-119
SKILL PERFORMANCE AIDS (SPA).....	III-122
SMALL BUSINESS PROGRAM .....	III-123
STANDARDIZATION .....	III-126
SYSTEM ASSESSMENTS .....	III-129
SYSTEMS ANALYSIS .....	III-132
TECHNICAL DATA PACKAGES .....	III-136
TECHNOLOGY BASE/TRANSFER .....	III-138
TEST AND EVALUATION - PLANNING .....	III-140
TEST AND EVALUATION - TEST DESIGN .....	III-143
TEST EXECUTION, REPORTING AND EVALUATION .....	III-146
TRAINING .....	III-149

	PAGE
TRAINING DEVICES .....	III-152
TRANSITION PROCESS .....	III-155
TRANSPORTABILITY/TRANSPORTATION .....	III-157
TYPE CLASSIFICATION.....	III-159
VALUE ENGINEERING (VE) .....	III-162
WARRANTIES/RELIABILITY IMPROVEMENT WARRANTY .....	III-165
WORK BREAKDOWN STRUCTURE .....	III-167
APPENDIX A - ACRONYMS AND DIRECTIVES REFERENCE .....	A-1
APPENDIX B - CROSS INDEX OF REFERENCED DIRECTIVES TITLES .....	B-1

## INTRODUCTION

This Materiel Acquisition Management Guide has been prepared by the U.S. Army Materiel Development and Readiness Command to assist current and prospective acquisition and other managers in carrying out their assigned acquisition management responsibilities.

### PURPOSE OF THE GUIDE

No information base that deals with Army acquisition management "lessons learned" is accessible to acquisition managers and their staffs. Likewise, no single reference or composite of current Army policies articulates and defines system and equipment acquisition management. This Guide, therefore, is designed to collect, collate, and organize selected areas of the DARCOM "corporate memory" that emphasize three arenas of Army acquisition management: (1) the system acquisition and appropriation processes, (2) the responsibilities of the acquisition manager and his functional organization counterparts, and (3) the identification and examination of current issues that require acquisition management attention and action.

#### • OBJECTIVE

The basic objective of the Guide is to assist Army acquisition managers in carrying out their assigned responsibilities. It does this by providing a vehicle for the rapid and concise transmittal of Headquarters' guidance to these managers, by permitting them to have ready access to the DARCOM "institutional memory" through an integration of "lessons learned" into its format. The Guide also provides a tool that each manager may use to collect and collate his own "institutional memory" in identifying and organizing the status of his program or assessing the impact of alternative acquisition approaches or changes as they occur.

#### • APPLICATION

The Guide provides the acquisition manager with a means to identify key organizational or activity issues and considerations quickly and accurately. It enhances his ability to be responsive in identifying and resolving problems. The Guide will be kept current through periodic user feedback and the distribution of updated guidelines that reflect policy changes or new initiatives. Users of the Guide will find that its structure provides a convenient means to catalog and collate their own "institutional memory," and it will help them to communicate needs more explicitly to both Headquarters and subordinate organizations.

The Guide does not specify a single, inflexible procedure, which, if followed, will achieve all acquisition objectives. Each part of the Guide is designed to encourage management ingenuity, to promote an informed perspective, and to help crystallize areas of acquisition management that require the manager to plan, take action, and get the job done. Specifically, the Guide's focus has been on "WHAT" and not "HOW TO."

### ORGANIZATION OF THE GUIDE

To accommodate the varying cyclical processes, management functions and lessons learned considerations of Army acquisition management, the Guide is organized in three parts:

- Part I - The Acquisition Process. Provides an overview of the key phases of system development and production and the annual appropriation process, highlighted by the specific details provided in tabbed one-sheet descriptions.
- Part II - The Management Process. Provides an overview of key functional activities performed by the acquisition manager and his staff, highlighted by the specific details provided in tabbed one-sheet descriptions.
- Part III - Areas of Acquisition Management Issues. Provides a series of comprehensive one-sheet descriptions that consider detailed activities of the acquisition management processes covered in Parts I and II.

Throughout the Guide all one-sheet descriptions, which constitute the "building blocks" of materiel acquisition management, are formatted uniformly. That is, each contains the following sections:

- SUMMARY - provides a general description of the scope and purpose of the subject area implied by its title.
- BASIC POLICY - identifies the fundamental requirements and responsibilities for application of the subject area by the manager.
- CONSIDERATIONS - establishes important factors and qualifiers to be considered when dealing with or applying the subject area.
- QUESTIONS - provides the manager with a means to inquire about pertinent and relevant issues associated with the subject area.
- REFERENCE - identifies sources of information on policy and procedure guidance that should be consulted for additional detail.

Appendix A of the Guide (Acronyms and Directives Reference) serves a twofold purpose: it provides an alphabetical listing and translation of key acronyms used throughout the Guide, and it provides reference citations of Army and other organizational issuances that deal with subject area(s) implicit in each acronym. It is a road map of considerable significance in utilizing the Guide.

Appendix B of the Guide (Cross Index of Referenced Directives Titles) lists those publications identified by number (short title) throughout the Guide with their current official titles. Users of the Guide may find this listing useful in establishing their personal data base or a library of information.

#### USING THE GUIDE

Users of the Guide, whether experienced or new to materiel acquisition management, can maximize its usefulness by initially reviewing the narrative of Parts I and II to gain an understanding of the Guide's organization. The framework provided by Parts I and II provides the means for placing the tabbed one-sheet descriptions of all parts in proper perspective. With this perspective in mind, the User can select those "building block" tabs of individual importance and thus "tailor" the Guide to his personal needs.

#### PROONENT

The proponent organization for the Guide in DARCOM Headquarters is the Office of the Deputy Commanding General for Materiel Development. Any revisions to the tabs in Part III should be directed to the office chief of the office listed on pages III-1 and III-2 and in the reference section of the tab. Other contents of the Guide may be revised by contacting the Office of the Deputy Commanding General for Materiel Development.

**PART I.  
THE ACQUISITION PROCESS**

## PART I - THE ACQUISITION PROCESS.

The Army acquisition process is a sequence of specified phases of program activity and decisions. It is directed toward the achievement of objectives through the application of resources made available through the annual appropriation process. The acquisition process is satisfied when the Army has reconciled its mission needs with its capabilities, established priorities and acquired resources, and introduced an operational system into the inventory. The process is different for each acquisition. There is no universal standard for strict application in every case. Each acquisition requires a tailored process. The appropriation process overlays the acquisition process and extends from the annual reconciliation of needs, priorities, and resources, through the formal request, granting, and distribution of resources to the public and private sectors.

### APPLICATION

This part of the Guide identifies issues that should be considered in designing any system acquisition process by providing an overview of the key phases of both the systems acquisition (development and production) and annual appropriation processes. Associated with these processes is a series of phased activities that, when accomplished, should signify program readiness for succeeding activities. The basic objectives and key policy considerations for these processes are amplified and consolidated in each of the tabbed sections of this part.

### BASIC ACQUISITION AND APPROPRIATION PROCESSES

This section summarizes the objectives of the acquisition and appropriation processes.

#### ● THE ACQUISITION PROCESS

Each phase of the acquisition process has as its underlying objective the progressive refinement and quantification of the technical, economic, and schedule projections that are the bases for system requirements. As part of each phase, program, economic, technical, logistic, production, procurement, and evaluation considerations will be identified, analyzed, and quantified in specifications, program plans, and estimates essential to subsequent decisions. The basic premise and objectives for each phase of the acquisition process are:

- (a) Exploration of Alternative System Concepts - The technical, economic, military usefulness, broad management, and acquisition approaches are established, and the program is formally initiated. Basic objectives include:

Analysis of the technology base and the identification of material deficiencies and development of new alternatives;

- . Review and agreement on the broad system and program issues, parameters, and priorities;
- . Critique and analysis of the acquisition/procurement strategy and the approach to management and competition; and
- . Formal initiation of the program.

(b) Demonstration and Validation of Alternatives - The initiation decision baselines are refined through the analysis and quantification of alternative design concepts, and preferred (least risk) solutions are established to reaffirm the need. Basic objectives include:

- . Establishment of a project office;
- . Analysis and quantification (and model evaluation) of system performance requirements;
- . Trade-off and establishment of firm program thresholds and management approaches; and
- . Reaffirmation of the need and a decision to commit development (or production) resources.

(c) Full Scale Engineering Development - The total system (including support) is designed, fabricated, and tested for operational worth to establish the basis for the production decision and the use of production resources. Basic objectives include:

- . Complete system design and engineering;
- . Firm and achievable program and acquisition plans and estimates;
- . Operational worth confirmed by independent evaluation; and
- . Service approval and a decision to produce the system in limited or full production quantities.

(d) Production and Deployment -

Production - The total system (including its support) is

production engineered, fabricated with production tooling, and fully tested for operational worth when directed by the decision review. The operational system and its support are produced and delivered to inventory. When inventory objectives are complete, the program is transition to commodity management. Basic objectives include those established for engineering development as well as the following:

- . Production engineering and planning complete;
- . Long lead item procurement accomplished (when applicable);
- . Production tooling and facilities in place;
- . Complete inventory objectives;
- . Commodity program transition;
- . Full service approval and a decision to produce in full-production quantities; and
- . Project office phase out.

System Deployment - Concurrent with full production, inventory items are delivered to operating forces. User reports establish modification (retrofit) and overhaul requirements, and the system is operated and maintained until classified as obsolete. Basic objectives include:

- . Annual operation, maintenance, and support objectives updates;
- . A decision to obsolete the system and
- . Phase in/phase out planning execution and inventory depletion.

#### ● THE APPROPRIATION PROCESS

The annual appropriation process overlays the acquisition process and, based on current policy, is an integral part of it. The underlying objective of the appropriation process is to examine the annual statement of the acquisition plan (strategy) in resource (people, time, and dollar) terms. As a part of this process, established Army requirements (military needs) are expressed in terms of annual and succeeding year cost objectives (budgets). The basic premise and objectives for each phase of the appropriations process are

- (a) Planning - The Army and Joint Strategic Planning Systems provide the basis for establishing Army force objectives and capabilities within fiscal constraints. Implicit in the accomplishment of this phase are the annual planning and estimating updates and analyses provided as outputs of the acquisition process. Basic objectives include:
- . Assessment and establishment of Army force and support level objectives;
  - . Review of key program issues and priorities, and establishment of critical program risks and broad acquisition strategies (plans); and
  - . Critique and decision on the Army's acquisition position, program risks, and options.
- (b) Programming - Army recommendations are translated into a structure of time-phased resources to achieve materiel objectives and capabilities within Army-specified mission areas. Implicit in the accomplishment of this phase is the "costing out" and display of a balanced Army program, including supportive force and economic analyses and their implications. Basic objectives include:
- . Review and consideration of needs and resources for recommended and alternative programs and materiel quantities;
  - . Critique and decision on the Army's program objectives and the formal inclusion of the need in (or update of) the program plan; and
  - . Formal notification of the intent to solicit funds (budgets).
- (c) Budget Formulation - The annual budget expresses the financial (including personnel) requirement to support the approved Army program, and establishes what the Army expects to accomplish with the requested resources. Implicit within this phase are the processes of budget formulation and justification. Basic objectives include:
- . Presentation and justification of budgets to all echelons during budget review; and
  - . Planning and estimating program updates to support budget decisions and adjustments.
- (d) Budget Execution - The appropriation bill is a legal directive to the Army, and within broadly specified purposes establishes what can be acquired. Implicit in the accomplishment of this

phase are the update and execution of the acquisition strategy, procurement, administration of agreements, and achievement of appropriation and acquisition objectives. Basic objectives include:

- . Distribution and control of appropriated funds (and personnel resources);
- . Establishment of the acquisition and expenditure rate plan;
- . Solicitation, evaluation, and award of contracts (or other service tasks);
- . Administration and control of contracts and modifications;
- . Reports of accomplishments and expenditures; and
- . Results of current year and establishment of out-year fiscal requirements and objectives.

#### ACQUISITION PROCESS BASIC POLICY AND PROCEDURAL GUIDANCE

Army policy and procedural guidance are enunciated across a broad base of higher authority and internal issuances. This section of the Guide does not duplicate this base but rather identifies those key milestone and decision points that are basic to the acquisition process. At minimum, each manager should have an informed awareness of the procedure and guidance provided by the most recent issuance or modifications of the following:

- OMB Circulars A-11, "Preparation and Submittal of Budget Estimates"; A-76, "Policies for Acquiring Commercial or Industrial Products and Services for Government Use"; and A-109, "Major Systems Acquisition."
- DoDD 5000.1, "Major Systems Acquisition"; and 5000.2, "Major Systems Acquisition Process", and DODD 5000.3, "Test and Evaluation."
- AR 1-1, "The Army Planning, Programming, and Budgeting System"; 15-14, "Systems Acquisition Review Council Procedures"; 1000-1, "Basic Policies for Systems Acquisition by the Department of the Army."

Tabs associated with the accomplishment of the following major activities are provided hereafter to summarize DoD, Army, and DARCOM policy and procedural guidance.

- PROGRAM INITIATION

The Army performs prerequisite program initiation activities to establish the mission element need, required resources and program

priorities, and thresholds and approaches (plans). The following program activities are accomplished:

- . Pre-Program Initiation
- . Initiation Decision (Milestone 0).
- . Exploration of Alternative System Concepts
- . Advanced Development Planning.
- . Demonstration/Validation Decision (Milestone I).

● PROGRAM VALIDATION - DEMONSTRATION

In order to identify or refine initial design concepts and plans and to fabricate, test, and evaluate models/prototypes, advanced development efforts are undertaken to reduce technical risks. These activities result in defined program baselines and a reaffirmation of the need through the accomplishment of:

- . Advanced Development Design/Prototyping.
- . Advanced Development Prototype Testing (DT/OT I)
- . Engineering Development Planning
- . Full Scale Engineering Development Decision (Milestone II).

● FULL SCALE ENGINEERING DEVELOPMENT

Engineering development and system and support production efforts are performed to reduce remaining program and system uncertainties through detailed analysis and full operational testing and type classification. These activities result in the establishment of the system production and operational support baselines prerequisite to the commitment of major Army resources through the accomplishment of:

- . Production Planning/Program Update.
- . Engineering Development Design/Prototyping
- . Engineering Development Prototype Testing (DT/OT II)
- . Production Decision (Milestone III)

● PRODUCTION

. Production-tooled systems and support items are fabricated in limited or full quantities to achieve IOC objectives. These activities result in a complete production description adequate for competitive follow-on, including breakout through the accomplishment of the following production alternatives:

- . Initial Production.
- . Full/Follow-On Production.

- OPERATIONAL - DISPOSAL

Concurrent with the production effort, the system and its support will be deployed to operational forces. Required improvements will be evaluated formally, then produced and the baselines updated. Operational, maintenance, and support activities are continued until obsolete classification and replacement items are phased in and the system is removed from inventory through the accomplishment of:

- . Program Management Transition
- . System Operation-Maintenance-Support.
- . Disposal.

To obtain maximum benefit from this part of the Guide, a review of the Management Process (Part II), which is accomplished as an inherent part of the acquisition process, would be appropriate.

Users of the Guide are cautioned that the achievement of a milestone or activity does not necessarily signify that all prerequisite activities have been completed, nor does the Guide imply that all post-requisite activities are required. Each tab should be tailored to accommodate unique requirements and constraints of the specific acquisition.

## PRE-PROGRAM INITIATION

### SUMMARY:

The Army conducts basic and applied research and exploratory development to establish the broad base of technology to be applied to prospective and established programs. Analyses performed as a part of this activity provide input to the appropriation and initiation decision process. Both the efforts of industry and other services are monitored as a part of this activity.

### BASIC POLICY:

It is the Army's basic policy as a part of this pre-program initiation activity to:

- establish and maintain a technology base and perform continuous comparative analyses of mission areas to identify mission deficiencies and exploitable technology;
- satisfy materiel needs through the use of existing hardware/software where feasible;
- document the results of analyses and trade-offs and initial planning and estimating for major Command review and resolution of major issues; and
- establish the Army position, prerequisite to formal decision and initiation of a program.

### CONSIDERATIONS:

The following key considerations form a part of this pre-program initiation activity:

- Technology Base - Intelligence estimates; user recommendations; basic/applied research and exploratory development projects; industry research and development and programs of other services; results of analyses, trade-offs, and studies; unsolicited proposals.
- Materiel Needs - Mission Element Needs Statement (MENS); Product Improvement Proposal (PIP) programs; materiel concept investigations; Military Adaptation of Commercial Item (MACI).

- Results Documentation - Special Task Force or Special Study Group (STF/SSG) reports; operational and organization concepts; Operational Capability Objectives (OCO); Science and Technology Objectives Guide (STOG); Life Cycle Management Plan (LCMP) and assessments.
- Position Papers - Issue papers; Letters of Agreement (LOA); LOA critical issue analyses; Joint Working Group (JWG) reports.

#### QUESTIONS:

##### TECHNOLOGY BASE

- What are the results of materiel concept investigations? How can they be applied to needs? Do need and long-range studies identify alternatives to be investigated?
- Do user studies and reports (recommendations) identify technology areas to be explored? Can user requirements be achieved through product improvements or is new technology needed?
- How will the results of research and exploratory development be applied? Are industry and foreign technology applicable?
- How are industry and others kept informed of needs? Can I informally provide information? Should I solicit unsolicited proposals? How?

##### MATERIEL NEEDS

- Who funds PIP? MACI? Or does it come out of my program funds? Is PIP a feasible alternative?
- Should I involve TRADOC at this time or wait?

##### POSITION PAPERS

- How do I propose "development shortcuts"? What are the lessons learned?
- When do I prepare my "acquisition strategy"? How do I maintain competition?
- Who provides the resources for training and logistics studies? Environmental assessment? Logistics supportability?

- What's my involvement in LOA? LOA issue papers? critical issue analysis? trade-off studies? Issues?
- How do I influence the Army position in areas that affect future programs and resources, or current programs and resources?
- Who is the DARCOM contact point? How do I support his requirements? How does he support my needs?

Refer to the following in Part III:

COST ESTIMATING	INTEGRATED LOGISTICS SUPPORT PLANNING
DECISION PROCESS	LEGISLATIVE CONSIDERATIONS
DECISION TIMING AND SCHEDULING	PRODUCT IMPROVEMENT PROPOSALS (PIPs)
FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS	RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)
FUNDING	RISK ANALYSIS/TRACE
GOVERNMENT/INDUSTRY PRODUCTION OPTION	TECHNOLOGY BASE/TRANSFER

REFERENCES:

AR 11-27, 15-14, 70-1, 70-15, 70-27, 1000-1; DODD 5000.1, 5000.2; OMB Circulars A-76, A-109.

## PROGRAM INITIATION DECISION (MILESTONE 0)

### SUMMARY:

The Army will formally communicate its mission and resource needs to the DoD and Congress. The program initiation decision will identify the technical, schedule and management alternatives, and acquisition strategies to be pursued. Prior activity requirements, if not previously accomplished, will also form a part of this activity. Program initiation involves SECDEF approval of MENS for an OSD major program or LOA approval by DARCOM/TRADOC or HQDA for a SECARMY major program or non-major program.

### BASIC POLICY:

It is the Army's basic policy as a part of this initiation decision activity to:

- submit a MENS to formally advise external authority of all major new initiatives;
- formally charter (assign) an acquisition manager with specific authority, responsibility, and resources to accomplish program objectives;
- submit a Mission Budget Statement (MBS) to formally advise external authority of its resource needs; and

In addition:

- Program Initiation will occur upon approval of the program at Milestone 0 review or LOA approval.
- Initiation approval will be based on the evaluation of mission needs, program objectives, system requirements, program planning, budgeting, funding, research, engineering, development, test/evaluation, contracting, production, and program/management control.

### CONSIDERATIONS:

The following considerations form a part of this initiation decision activity:

- Mission Needs - Force level guidance; MENS; draft MBS; acquisition strategy and plans.
- Program Charter - Acquisition manager and organization; staffing and resource plans; program threshold and objectives statements.

- Budgets - Budget submittals and backup data.
- Thresholds - Concept Formulation Package (CFP); initial Design to Cost (DTC) goals; Decision Risk Analysis (DRA); budget estimates; environmental assessments; outline plans.
- Other - Threat; existing defense capabilities; technology base; commercial sources; foreign systems; PIP; and budgetary atmosphere.

## QUESTIONS:

### MISSION NEEDS

- Has force level guidance been provided? Are multi-mission requirements identified and prioritized? Are mission duration times established? Will a single mission system suffice? What are the system/subsystem characteristics? What subsystems are available, or in development, that would meet the need? part of the need? Has basis of issue been provided?
- Is an acquisition strategy established? How long will competition be maintained? What are the primary risks? Are they achievable? Will a product improvement suffice?

### PROJECT CHARTER

Can program complexity and cost warrant the establishment of a project? Where should the office be established? What charter limits will be imposed? Why?

### MANAGEMENT

How will the acquisition be managed? What is the tenure of the manager? How will he be supported? What is the manager's role? What resources will he be provided? Who is his reporting senior?

### THRESHOLDS

Are the cost-schedule-performance goals established? Are all major risks identified and are contingency plans provided? Are these plans consistent and costed out? Have reviews confirmed threshold accuracy and consistency? Have special IPRs been conducted? Are results documented? Has the COA reviewed the estimates? Is the CFP available? Will DTC be applied? Are DTC goals established? Are technical assessments of environmental and safety requirements available?

Refer to the following in Part III:

CAPITAL INVESTMENT INCENTIVE  
FOR CONTRACTORS

COMPETITIVE PROTOTYPING

COST ESTIMATING

DECISION PROCESS

DECISION TIMING AND  
SCHEDULING

DESIGN INFLUENCE

DESIGN TO COST

FOREIGN ACQUISITION/INTERNATIONAL  
PROGRAMS

FUNDING

GOVERNMENT/INDUSTRY PRODUCTION  
OPTION

INTEGRATED LOGISTIC  
SUPPORT PLANNING

LEGISLATIVE CONSIDERATIONS

PERSONNEL STAFFING

PROCUREMENT PLANNING/  
PROCUREMENT PLANS

PROPOSAL EVALUATION/SOURCE  
SELECTION

RELIABILITY CENTERED MAINTENANCE  
STRATEGY (RCMS)

REQUEST FOR PROPOSAL/WORK  
STATEMENT

RISK ANALYSIS/TRACE

TECHNICAL DATA PACKAGES

TECHNOLOGY BASE/TRANSFER

TEST AND EVALUATION - PLANNING

REFERENCES:

AR 1-20, 10-16, 11-1, 15-14, 70-1, 70-5, 70-17, 70-27, 70-32, 70-37,  
71-1, 71-9, 700-18, 700-127, 750-1, 1000-1; DARCOM-R 614-13, 750-27;  
DoDD 5000.1, 5000.2; 5000.3; OMB Circular A-109.

## EXPLORATION OF ALTERNATIVE SYSTEM CONCEPTS

### SUMMARY:

The Army generally conducts efforts to identify/refine initial design concepts through competitive prototype fabrication and test. As a part of this effort initial plans and estimates are refined (quantified) and updated to reflect the results of analyses performed by the acquisition manager. Alternative system or critical subsystem design concepts solicited from a broad base of the private and public sectors are evaluated to establish feasible/achievable approaches.

### BASIC POLICY:

It is the Army's basic policy as a part of this planning effort to:

- perform trade-off analyses and studies to quantitatively establish program parameters and risks;
- update the planning, estimating, and requirements baselines and prepare the detailed near-term and outline long-range acquisition plan; and
- assemble the solicitation and evaluation packages and formally solicit interested private/public sources.

### CONSIDERATIONS:

The following key considerations form a part of this advanced development and prototype planning effort:

- Assessment - Perform Trade-Off Analyses/Determinations (TOA/TOD); Logistic Support alternative refine initial estimates of cost (BCE), risk (DRA), personnel (QQPRI), support (ILS), performance (RAM) and design (alternative concepts, designs); estimates and costs (DTC); Systems Analysis (SA) and Engineering (SE); Cost and Operational Effectiveness Analysis (COEA).
- Planning - ILS and Training Plan update; Advance Procurement Plan (APP) update; RAM planning; training (ICT, MOS, NET, TDR); personnel (QQPRI, MOS); quantity (BOIP, unit structure); logistic element plans (T/H, SS, S/TE; P/T, T/D, LSRF); Level of Repair Analysis (LORA); Maintenance Concept; Maintenance Allocation Chart (MAC).
- Solicitation - Source Selection and Evaluation Plan (SSEP); Technical Data Package (Data); Solicitation Package (SOW, Specification, Clauses); Determination and Findings (D&F).

## QUESTIONS:

### ASSESSMENT

- Does the technology base provide sufficient data to perform trade-offs? What assumptions and constraints should be provided to the analyst? Who should do the studies? in house or industry?
- How do I (or do I) assess study results? What guidance is available for the TOA?
- Who prepares the BCE? How valid are the estimates? How detailed should they be? Are they tested for accuracy? validity? completeness? How sensitive are they to change? What about people costs? logistic costs?
- Is a RAM assessment required now? DTC now? Life Cycle Cost (LCC) now? LSA now? LORA now? Logistic Design Decisions now? DRA now? System Engineering Analysis now? COEA now?
- If assessments are required, who establishes? Who funds? And what guidance is provided? Should there be a Logistic Support Analysis (LSA), LORA, and logistic design decision now or later?

### PLANNING

- How many plans are required? Will a single LCMP suffice? Who decides on the depth of the planning required? Who funds? What is my involvement in TOD? QQPRI? BOIP? NET? MOS?
- Where do I get financial, technical, logistic, production, Test and Evaluation (T/E), and procurement data to prepare my plans? Do I have sufficient resources? If not, who provides them? Or who approves "less than total" effort?
- Where do I get people, in quantity, and out-year information? Who establishes and is it sufficient to perform studies?

Refer to the following in Part III:

APPLICATION OF  
SPECIFICATIONS AND STANDARDS

PROCUREMENT PLANNING/PROCUREMENT  
PLANS

CAPITAL INVESTMENT INCENTIVE FOR  
CONTRACTORS

PROPOSAL EVALUATION/SOURCE SELECTION

COMPETITIVE PROTOTYPING

QUALITY ASSURANCE/ENGINEERING

CONTRACTOR COST/SCHEDULE CONTROL

RELIABILITY, AVAILABILITY, MAINTAIN-  
ABILITY, DURABILITY (RAM-D)

DECISION TIMING AND SCHEDULING

RELIABILITY CENTERED MAINTENANCE  
STRATEGY (RCMS)

DESIGN REVIEWS

DESIGN TO COST

RISK ANALYSIS/TRACE

FACILITIES PLANNING

SMALL BUSINESS PROGRAM

FUNDING

SYSTEM ASSESSMENTS

GOVERNMENT/INDUSTRY PRODUCTION  
OPTION

TEST AND EVALUATION - PLANNING

INCENTIVE/AWARD FEE

TRAINING

INTEGRATED LOGISTIC SUPPORT  
PLANNING

REFERENCES:

AR 1-20, 10-16, 11-1, 15-14, 70-1, 70-5, 70-17, 70-27, 70-32, 70-37, 71-1, 71-9,  
700-18, 700-127, 750-1, 1000-1; DARCOM-R 614-13, 750-27; DoDE 5000.1, 5000.2,  
50003; OMB Circular A-109

## DEMONSTRATION/VALIDATION DECISION (MILESTONE I)

### SUMMARY:

As a part of this major decision milestone, the need is reaffirmed during reviews leading to the Milestone I decision. Program priorities and technical/management approaches and strategies are firmed, and resources are provided for advanced development efforts and alternative design concepts are reviewed.

### BASIC POLICY:

It is the Army's basic policy as a part of this major decision point to:

- perform a comprehensive review and assessment of program justification and acquisition packages and resolve all critical program and system issues...reflect review results in an upgraded program and system baseline; and
- reaffirm the need and adjust or confirm program objectives prerequisite to the formal decision to procure advanced development effort.

### CONSIDERATIONS:

The following key considerations form a part of this major decision milestone:

- Reviews - Special In-Process Reviews (IPR); pre-ASARC/DSARC reviews and decisions; review memorandum; Decision Coordinating Paper (DCP)/Army Program Memorandum (APM).
- Program Update - STF/SSG final report; Acquisition Plan; planning and estimating updates; LCC estimates; COFA update, OAP, LOA.
- Phase Execution - Systems Engineering and Support Program Analyses and Trade-Offs.
- Program Charter - Acquisition Manager and organization; staffing and resource plans; program threshold and objective statements.

### QUESTIONS:

#### PROGRAM UPDATE

- Is the program ready for Milestone I? Have all elements of the milestone checklist in AR 15-14 been satisfied?

- Based on reviews, do I have sufficient lead time to incorporate results prior to the next series of reviews? How should the updates be done at this time? Do I need an audit trail? Do I have the resources? Should I plan for outside help?
- During the review process, should I wait and then do a complete planning and estimating update or should I update concurrently with reviews?
- Do I continue analyses and trade-offs during reviews? How do I handle a major change between reviews? Do I go back through the process or just advise? Is it better to sit on these types of data? When is the best time to firm the DCP/APM? AP? LCMP? LCC?

#### PHASE EXECUTION

Based on reviews, do I establish the program baseline (BCE, Specifications, Plans) before or after contract award? or as a part of negotiation?

#### SCHEDULES

Can the Initial Operational Capability (IOC) date be slipped for cost or risk reduction? Can it be preserved? What parts of the program are deferrable? For how long? Why? Is the IOC date realistic? What is the difficulty of schedule? of pacing elements? Are there significant differences in schedules by competitors? Have these differences been analyzed? Are schedules consistent with OSD/Congressional constraints?

#### ACQUISITION MANAGEMENT

- What is the Army management staff for this program? What is the tenure of the acquisition manager and his key personnel? How will the contractor be managed (monitor, control)? Are MIL STD 881 and DODD 7000.1 being implemented?
- For a joint service program, have joint service operating procedures been developed? How will change control be managed? How will change proposals be reviewed? Have discrete cost elements (e.g., unit production cost, operating and support cost) been translated into "design-to" requirements?

Refer to the following in Part III:

APPLICATION OF  
SPECIFICATIONS AND STANDARDS

PROPOSAL EVALUATION/SOURCE SELECTION

COMPETITIVE PROTOTYPING

QUALITY ASSURANCE/ENGINEERING

CGST ESTIMATING

RELIABILITY, AVAILABILITY, MAINTAIN-  
ABILITY, DURABILITY (RAM-D)

DECISION PROCESS

RELIABILITY CENTERED MAINTENANCE  
STRATEGY (RCMS)

DECISION TIMING AND SCHEDULING

REQUEST FOR PROPOSAL/WORK STATEMENT

DESIGN TO COST

RISK ANALYSIS/TRACE

FACILITIES PLANNING

SYSTEM ASSESSMENTS

FOREIGN ACQUISITION/INTERNATIONAL  
PROGRAMS

TECHNICAL DATA PACKAGES

FUNDING

TECHNICAL BASE/TRANSFER

GOVERNMENT/INDUSTRY PRODUCTION  
OPTION

TEST AND EVALUATION - PLANNING

INCENTIVE/AWARD FEE

TRAINING

INTEGRATED LOGISTIC SUPPORT PLANNING

WARRANTIES/RELIABILITY IMPROVEMENT  
WARRANTY

LEGISLATIVE CONSIDERATIONS

MANUFACTURING TECHNOLOGY

PROCUREMENT PLANNING/PROCUREMENT  
PLANS

#### REFERENCE

AR 1-20, 10-16, 11-1, 15-14, 70-1, 70-5, 70-17, 70-27, 70-32, 70-37, 71-1  
71-9, 700-18, 700-127, 750-1, 1000-1; DARCOM-R 614-13, 750-27; DODD 5000.1;  
5000.2; 5000.3; OMB Circular A-109

## DEMONSTRATION-VALIDATION PHASE

### SUMMARY:

When funded, alternative designs and hardware/software (preferred) prototypes are competed. The results of evaluation and test and continued planning/estimating analyses provide the bases for establishing system cost-performance-schedule goals and management/acquisition plans.

### BASIC POLICY:

It is the Army's basic policy to:

- formally select and participate fully with selected sources in the analysis and evaluation of the systems designs...competitively design, fabricate, and test sufficient items to prove the technical and economic feasibility and practicality of the design concepts;
- track and report program progress and all critical program objectives, thresholds and baseline shortfalls...reflect the results of analyses and evaluations in upgraded program planning and estimating baselines; and
- complete scheduled tests and provide evaluation of test results as a prerequisite to the Milestone II decision.
- Procure long lead item if necessary and approved.

### CONSIDERATIONS:

The following key considerations form a part of this effort:

- Procurement - Solicitation, evaluation, and award; CTP/OTP; Source Selection Authority (SSA).
- Fabrication - Producibility Evaluation; Producibility Engineering and Planning (PEP); contract designs; prototype fabrication.
- Administration - CAS report/audits; Engineering Change Proposal (ECP) processing; Acceptance Testing.
- Analysis - Physical Teardown; Safety/Health and Producibility Analyses; Electromagnetic Compatibility (EMC); Manufacturing Technology Program/ Manufacturing Methods and Technology (MTP/MM&T).

- Evaluation - Development Test/Operational Test (DT/OT) and data; Test Incidents Reports; Advanced Development Verification Test (ADVT); Independent Evaluation Report (IER).

## QUESTIONS:

### FABRICATION

- How many models are there? prototypes? What are the requirements for GFM? Test? Data? Hardware delivery? Who accepts delivery? Data? Hardware? Who ships?
- What are the test program planning requirements? Who prepares the CTP/OTP? How do I ensure objectivity? consistency? completeness? Who does acceptance test?

### ADMINISTRATION

What is the CAS/CAA/CO involvement? What records are mandatory? essential? nice to have? Who are the CAS/CAA/CO? Do they have the resources for each contract? How do I get responsiveness? What are their responsibilities? What are mine? How do I control constructive changes? Do I want to? How do I handle changes (formal vs. informal)? inspection? How are they coordinated?

### ANALYSIS

Who reviews data output? Who accepts? Do I require a Physical Teardown? Producibility Analysis? EMC? safety? environmental? How are test results handled? How do I protect the contractor's interests? Can I transfuse results? What are the legal contractual implications of trans- fusion? What are my rights to data? What do I do when data are withheld? Should I force the issue? Can I?

### EVALUATION

What are my involvements? the contractor's involvements? How do I stay out of the middle? What reports are required? Are the formats spelled out in CTP/OTP? included as Data Item Descriptions (DIDs)? Who prepares the IER? What is my involvement?

Refer to the following in Part III

APPLICATION OF SPECIFICATION  
AND STANDARDS

CAPITAL INVESTMENT INCENTIVE FOR  
CONTRACTORS

COMPETITIVE PROTOTYPING

CONFIGURATION MANAGEMENT

CONTRACTOR COST/SCHEDULE CONTROL

DESIGN REVIEWS

INCENTIVE/AWARD FEE

INTEGRATED LOGISTIC SUPPORT PLANNING

MANUFACTURING TECHNOLOGY

PROCUREMENT PLANNING/  
PROCUREMENT PLANS

PRODUCIBILITY ENGINEERING AND  
PLANNING (PEP)

PROPOSAL EVALUATION/SOURCE  
SELECTION

QUALITY ASSURANCE/ENGINEERING

RELIABILITY, AVAILABILITY, MAIN-  
TAINABILITY, DURABILITY (RAM-D)

RELIABILITY CENTERED MAINTENANCE  
STRATEGY (RCMS)

REQUEST FOR PROPOSAL/WORK STATE-  
MENT

SYSTEM ASSESSMENTS

TECHNOLOGY BASE/TRANSFER

TEST AND EVALUATION -- TEST  
DESIGN

TEST EXECUTION, REPORTING AND  
EVALUATION

TRAINING

WARRANTIES/RELIABILITY IMPROVEMENT  
WARRANTY

REFERENCES:

AMC Guide for DTUPC; AR 5-5, 10-16, 11-18, 15-14, 70-1, 70-10, 70-32, 70-37,  
71-1, 71-2, 71-3, 71-5, 71-7, 71-9, 310-34, 310-49, 570-2, 611-1, 700-51,  
700-120, 700-1, 702-3, 750-1, 1000-1; DAR Sections II, III, IV, V, VII, XXVI;  
DARCOM-R 1-34, 11-1, 70-5; TRADOC-DARCOM Joint Guide on COEA Cost Data.

## FULL SCALE ENGINEERING DEVELOPMENT PLANNING

### SUMMARY:

As a part of this phase and continuing throughout engineering development, the system and program parameters are analyzed and specified. The results of prior phase efforts are incorporated into established baselines through formal change approval and baseline update.

### BASIC POLICY:

It is the Army's basic policy, as a part of this phase of the planning effort, to:

- procure long lead items if necessary;
- continue systems engineering (including personnel), support, producibility, and financial analyses to ensure complete system (and program) integration and description...prepare detailed evaluation, procurement, fielding, transition, and control plans;
- fully participate in all critical system and program reviews and evaluations and incorporate the results in baseline descriptions...ensure complete documentation and evaluation of all proposed baseline changes... track and report program progress, including threshold breaches, and take immediate corrective action to eliminate or reduce the impact of shortfalls.

### CONSIDERATIONS:

The following considerations form a part of this effort:

- Planning and Estimating Update - CFP; ICE; DRA; DP; DCP/APM; BCE; DTC; WBS; COEA; ROC; R', ILS; I/E updates; Army Materiel Plan; Transition Plan; Schedule for physical teardown prototype.
- Procurement - Procurement and Selection plan; Budgets; Technical Data Package.
- Reviews - CTP/OTP reviews; Planning and Tracking Group (PTG) reviews; pre-IPR/SARC reviews.

## QUESTIONS:

### PLANNING

- Are pre-phase planning and estimating documents available? current? What is the updating status? Is the CFP complete and current? DP? Army Materiel Plan (AMP)? Systems Engineering (SEMP)? Logistics (ILS)? Procurement (APP)? Test (CTP/TEMP)? Production? LCMP?
- Are program estimates complete and current? ICES? BCEs? Life Cycle Cost Estimates (LCCE)? Estimating and budgeting backup in WBS format?
- Are decision documents complete and current? DGP/APM? Is backup available? Is the DRA current? Are contingency plans available?
- Are technical documents available? current? ROC? RAM? QQPRI? MOS? BOIP?
- Are procurement documents available? current? Statement of Work (SOW)? Source Selection (SSEP)? Proposal (RFP/IFB)? Specifications? CDRL/DID?
- What are the plans for transition? fielding? What are the plans for data collection and use of contract data?
- If plans are not current or available, what are the plans for preparation? who? when? how? What resources are available to accomplish the above? When can I get them? Who provides them?
- Are all DIDs approved? DRRB? TDMO? Are required DIDs in preparation? when?

Refer to the following in Part III

APPLICATION OF SPECIFICATIONS  
AND STANDARDS

CONFIGURATION MANAGEMENT

CONTRACTOR COST/SCHEDULE CONTROL

COST ESTIMATING

DECISION PROCESS

DESIGN REVIEWS

DESIGN TO COST

FUNDING

INTEGRATED LOGISTIC SUPPORT PLANNING

LEGISLATIVE CONSIDERATIONS

MANUFACTURING TECHNOLOGY

PROCUREMENT PLANNING/  
PROCUREMENT PLANS

SKILL PERFORMANCE AIDS (SPA)

PRODUCIBILITY ENGINEERING AND  
PLANNING (PEP)

SYSTEM ASSESSMENTS

PROPOSAL EVALUATION/SOURCE  
SELECTION

TECHNICAL DATA PACKAGES

QUALITY ASSURANCE/ENGINEERING

TECHNOLOGY BASE/TRANSFER

RELIABILITY, AVAILABILITY, MAIN-  
TAINABILITY, DURABILITY (RAM-D)

TEST AND EVALUATION - PLANNING

RELIABILITY CENTERED MAINTENANCE  
STRATEGY (RCMS)

TRAINING

RISK ANALYSIS/TRACE

VALUE ENGINEERING (VE)

WARRANTIES/RELIABILITY IMPROVEMENT  
WARRANTY

REFERENCES:

AMC Guide for DTUPC; AR 5-5, 10-16, 11-18, 15-14, 70-1, 70-10, 70-32, 70-37, 71-1, 71-2, 71-3, 71-5, 71-7, 71-9, 310-34, 310-49, 570-2, 611-1, 700-51, 700-120, 700-127, 702-3, 750-1, 1000-1; DAR Sections II, III, IV, V, VII, XXVI; DARCOM-R 1-34, 11-1, 70-5; TRADOC-DARCOM Joint Guide on COEA Cost Data.

## FULL SCALE ENGINEERING DEVELOPMENT DECISION (MILESTONE II)

### SUMMARY:

As a part of this major decision milestone, the need is reaffirmed and the recommended program and system approach(es) are established. The Milestone II decision includes a commitment to continue development or enter limited (low-rate) production and procure long lead items.

### BASIC POLICY:

It is the Army's basic policy as a part of this major decision point to:

- continue competitive development where practical, feasible, and economically supportable; and
- reaffirm the need, verify the soundness of the selected design(s), and establish firm program and system thresholds and baselines prerequisite to a commitment to engineering development or limited production and long lead item procurement.

### CONSIDERATIONS:

The following key considerations form a part of this major decision milestone: Validation of IPR; Pre-ASARC II, APM II; DPM; draft DCP submission; DSARC II; DCP approval.

### QUESTIONS:

#### PROGRAM BASELINE

- Is the program ready for Milestone II? Have all elements of the milestone checklist in AR 15-14 been satisfied?
- Have program objectives changed during Validation? Are there significant changes in key premises or characteristics? Is the threat current, and validated by the ACSI? Has the threat plan been updated? What is the confidence in achieving current objectives?

- Has a formal risk analysis been made? Are new risks or increases in already known risks identified during Validation? Have trade-offs been made?
- What are the operational, technical, cost, scheduling, procurement, and acquisition management implications of indirect or "spillover" effects of the system? Have SIGSEC and countermeasure considerations been addressed as appropriate?

#### COSTS/BENEFITS

- How realistic are cost and benefits/effectiveness estimates? Are all significant cost elements (e.g., test facilities equipment, electromagnetic spectrum, and crypto-materiel) included? Are costs expressed in both constant year and current year dollars? Are there significant differences in cost estimates between the Government and contractors? Have the costs, in terms of required effectiveness for all or part of the forces, in terms of realistic contingency missions been assessed (quality vs. quantity trade-offs analyses)? Have program costs been estimated by the COA? Are cost estimates well documented? Has there been a LCC analysis for the alternative proposed programs? Have differences between BCE and ICE been isolated? Are the reasons for the differences clearly understood?
- Is the funding profile consistent with OSD/Congressional constraints? Does a highly visibly cost trail exist? What is the cost effectiveness vs. design alternatives? How is the DTC goal planned to be implemented contractually?

#### SCHEDULES

Can the IOC date be slipped for cost or risk reduction? preserved? What parts of the program are deferrable? for how long? Why? Are the IOC dates realistic? What is the difficulty of schedule? pacing elements? Are there significant differences in schedules by competitors? Have these differences been analyzed? Are schedules consistent with OSD/Congressional constraints?

Refer to the following in Part III:

APPLICATION OF SPECIFICATIONS  
AND STANDARDS

COMPETITIVE PROTOTYPING

CONFIGURATION MANAGEMENT

CONTRACTOR COST/SCHEDULE CONTROL

COST ESTIMATING

DECISION PROCESS

DECISION TIMING AND SCHEDULING

DESIGN TO COST

DISTRIBUTION PLANNING/FIELDING

FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS

FUNDING

INCENTIVE/AWARD FEE

INTEGRATED LOGISTIC SUPPORT PLANNING

LEGISLATIVE CONSIDERATIONS

PERSONNEL STAFFING

PROCUREMENT PLANNING/PROCUREMENT PLANS

PRODUCIBILITY ENGINEERING AND PLANNING (PEP)

PROPOSAL EVALUATION/SOURCE SELECTION

QUALITY ASSURANCE/ENGINEERING

RELIABILITY, AVAILABILITY, MAINTAINABILITY, DURABILITY (RAM-D)

RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)

REQUEST FOR PROPOSAL/WORK STATEMENT

RISK ANALYSIS/TRACE

STANDARDIZATION

SYSTEM ASSESSMENTS

TECHNICAL DATA PACKAGES

TECHNOLOGY BASE/TRANSFER

TEST AND EVALUATION - PLANNING

WARRANTIES/RELIABILITY IMPROVEMENT WARRANTY

REFERENCES:

AR 10-16, 15-14, 70-1, 70-27, 70-37, 700-120, 1000-1; DARCOM-R 1-34, 70-5; DODD 5000.1, 5000.2, 5000.3.

## PRODUCTION PLANNING/PROGRAM UPDATE

### SUMMARY:

Concurrent with prototyping efforts, the joint Army/Industry team will perform detailed analyses and planning to establish the production program baseline and estimates. As a part of this effort, firm proposals for production will be solicited and evaluated. Test results will be incorporated into the system baseline and management responsibility may be transferred.

### BASIC POLICY:

- It is basic DARCOM and Army policy that, whether or not the system is located in the R&D or MR Command, the DARCOM resources are available to the systems manager; and
- prerequisite planning and estimating and system performance/support capability will be fully demonstrated prior to transition...transition will be thoroughly planned and smoothly executed.

### CONSIDERATIONS:

The following key considerations form a part of this effort:

- Planning - Complete planning and estimating updates; update QOFRI, MOS, TOE, BOIP; Material Fielding Plan (MFP); DRA, DP, DCP, COEA, IPCE, ICE, LCC update; Production plans and proposals; MP, AMMH updates; IEP, CTP, OTP, TDP updates.
- Results - Test, evaluation, and demonstration of system performance (RAM); DT/OT results.
- Transition - Transition schedule review and a firm Transition Plan and Modification Work Order (MWO).

### QUESTIONS:

#### ANALYSES

- Are production processes, rates, and quantity analyses documented? valid? realistic? achievable? include FMS requirements? logistics requirements? other service requirements? Are analyses required for facilities, tooling industrial capacity, schedules? Are they available or documented by proposals? Have requirements for repair cycle/operational readiness floats been included? compatible with the maintenance concept and RAM-D requirements?

- Has the DRA been updated to identify production program and rare problems? alternatives? impacts? Are cost estimates current? complete? accurate? Are the IPCE, LCC, and COEA updated?

#### INTERFACES

- Have the TOE, BOIP, and MFP been incorporated into production plans and analyses?
- Are the IPCE, LCC, and COEA incorporated into production plans and analyses?
- Have rates been established for support program requirements? Support and Test Equipment (S/TE)? Spares Support (SS)? Storage and transportation? training?
- Have test and demonstration requirements been established?

#### RESULTS

- Are plans formulated for updating specifications, drawings, and lists for establishing the Product Baseline? How will test results be incorporated? When? Who?
- How will RAM results be validated? What requirements are specified? How detailed? consistent? Is order of precedence established?
- Is the CTP/OTP/TDP current? included by reference in specifications? reviewed by TIMG? Are production quality/inspections plans consistent with inter/intra test and demonstration requirements? What Army inspections are identified?

#### TRANSITION

- Is the Transition Plan planned? When will transition occur? What prerequisite data and information are required? Are pre-transition teams established? When will they be involved? To what extent are AM resources to be used?

Refer to the following in Part III:

APPLICATION OF SPECIFICATIONS  
AND STANDARDS

CONTRACTOR COST/SCHEDULE  
CONTROL

ACQUISITION AND MANAGEMENT OF DATA

COST ESTIMATING

CAPITAL INVESTMENT INCENTIVE FOR  
CONTRACTORS

DESIGN TO COST

COMPETITIVE PROTOTYPING

CONFIGURATION MANAGEMENT

DISTRIBUTION PLANNING/FIELDING

PROVISIONING

FACILITIES PLANNING

QUALITY ASSURANCE/ENGINEERING

FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS

RELIABILITY, AVAILABILITY, MAINTAINABILITY, DURABILITY (RAM-D)

FUNDING

RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)

INCENTIVE/AWARD FEE

RISK ANALYSIS/TRACE

INTEGRATED LOGISTICS SUPPORT PLANNING

SKILL PERFORMANCE AIDS (SPA)

MANUFACTURING TECHNOLOGY

TECHNICAL DATA PACKAGES

PROCUREMENT PLANNING/  
PROCUREMENT PLANS

TEST AND EVALUATION - PLANNING

PRODUCIBILITY ENGINEERING AND PLANNING (PEP)

TRAINING

PRODUCT IMPROVEMENT PROPOSALS (PIP)

TRANSPORTABILITY/TRANSPORTATION

PROPOSAL EVALUATION/SOURCE SELECTION

WARRANTIES/RELIABILITY IMPROVEMENT WARRANTY

REFERENCES:

AR 5-5, 11-18, 11-28, 15-14, 37-15, 70-1, 70-10, 70-15, 70-17, 70-27, 71-1, 71-2, 71-3, 71-5, 71-7, 71-9, 310-1, 310-3, 310-31, 310-34, 310-49, 385-16, 570-2, 611-1, 700-18, 700-120, 700-127, 702-3, 750-1, 795 Series, 1000-1; DA PAM 70-21; DARCOM-P 385-23; DARCOM-R 1-34, 11-1, 614-13, 700-33, Supplement 1 to 700-120, 750-27

## ENGINEERING DEVELOPMENT DESIGN/PROTOTYPING

### SUMMARY

When funded, selected system designs and prototypes are fabricated and acceptance tested. The results of testing and planning are incorporated into baseline descriptions, and the system is type classified (full or limited) prerequisite to the production decision.

### BASIC POLICY

It is the Army's basic policy, as a part of this detail design and preproduction prototyping fabrication and test effort, to:

- completely design, analyze, fabricate, and deliver prototype test articles, including support...prepare and deliver the production designs...prepare and submit change and production proposals\*.. fabricate and deliver Long Lead Items (LLI), if approved defensible...provide test support and technical and engineering services.

### CONSIDERATIONS

The following key considerations form a part of this effort:

- Strategy - Low rate/full production; scope of DT/OT and expected results; follow-on competition (including degree and proposals).
- Design - TDP, test results input, production engineering, processes; Support package; Training package; Production package.
- Baseline - Specification/drawing package; changes; Make or Buy decision; GFP and Interface Drawings; Planning and Estimating update; Provisioning package.
- Procurement - Contractor Engineering Technical Services; Test support items (spares, repair parts, training); LLI; Solicitation and Evaluation Package; Off-the-Shelf.
- Delivery - Physical teardown prototype; test and support items; data; training; TM/FM (Draft); Bill of Lading.

### QUESTIONS

#### MANAGEMENT AND PLANNING

- Are system requirements detailed and specified and related to the ROC? Are they translated into functions for system

operability? supportability? Are design solutions established? design approaches? RAM? ILS? T/E?

- Will a Systems Engineering approach be utilized? tailored? per TM 38-760? Will a SEMP be prepared? When? What elements will be included?
- When will Design Reviews (DR) be conducted? Who will conduct them? How will results be documented? communicated? Critical Design Reviews (CDR)? System Design Reviews (SDR)? Functional Configuration Audits (FCA)?
- What is the plan for Baseline Control? Baseline Management? DRA? Technical Performance Measurement (TPM) RAM? Maintenance Engineering (MEA)? LORA? Failure Modes and Effects (FMEA)? Quality Assurance (QA)? Electromagnetic Compatibility (EMC)? Survivability/Vulnerability (S/V)? Human Factors? Safety? Security? Value Engineering (VE)? Integrated Logistic Support (ILS)?

#### TECHNICAL PERFORMANCE MEASUREMENT (TPM)

What parameters will be reported? When? in what format? What group prepares? reviews? What data are specified as output? On DID/CDRL? What cost? How will output be used? Is output tied to the QA and test program? How?

#### MAINTENANCE/MAINTENANCE ENGINEERING

Is MTTR specified? MTBM? What are the program requirements? Is the maintenance concept established? Is a Maintenance Engineering Analysis (MEA) required? LORA? How will design output be used to perform MEA? How does MEA feed the design process? Will a Maintenance Plan be a process output? Who reviews? When? Impact on other support elements? Is MEA a part of LSA?

#### ELECTROMAGNETIC COMPATIBILITY (EMC)

What EMC requirements have been specified? How will the design process be handled? When will design be proofed with mockups? How will the results be documented? When?

#### SURVIVABILITY/VULNERABILITY (S/V)

What S/V requirements have been specified? How will the design process be handled? When will design be proofed with mockups? How will the results be documented? When?

## HUMAN FACTORS (HF)

What HF requirements have been specified? How will the design process be handled? When will design be proofed with mockups? How will the results be documented? When?

## SAFETY

What Safety requirements have been specified? How will the design process be handled? When will design be proofed with mockups? How will the results be documented? When?

## SECURITY

Are Security requirements specified? How will Security requirements be incorporated into designs? How will results be documented?

Refer to the following in Part III:

APPLICATION OF SPECIFICATIONS AND STANDARDS	RELIABILITY, AVAILABILITY MAINTAINABILITY, DURABILITY (RAM-D)
COMPETITIVE PROTOTYPING	
DESIGN INFLUENCE	RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)
DESIGN REVIEWS	
DESIGN TO COST	RISK ANALYSIS/TRACE
FACILITIES PLANNING	SKILL PERFORMANCE AIDS (SPA)
FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS	STANDARDIZATION
INTEGRATED LOGISTIC SUPPORT PLANNING	SYSTEM ASSESSMENTS
MANUFACTURING TECHNOLOGY	TECHNICAL DATA PACKAGES
PRODUCIBILITY ENGINEERING AND PLANNING (PEP)	TEST AND EVALUATION -- PLANNING
	TEST AND EVALUATION -- TEST DESIGN
	TRAINING
PROVISIONING	TRANSPORTABILITY/TRANSPORTATION
QUALITY ASSURANCE/ENGINEERING	WARRANTIES/RELIABILITY IMPROVE- MENT WARRANTY

REFERENCES:

AR 11-13, 11-28, 15-14, 70-1, 70-10, 70-32, 70-37, 71-3, 71-9, (C)105-2, (C)105-16, (C)105-87, 310-3, 310-31, 385-16, 700-18, 700-127, 702-3, 702-4, 725-1, 750-1; DARCOM-R 11-1, 385-23; TRADOC-DARCOM Joint Guide on COEA Cost Data.

## ENGINEERING DEVELOPMENT PROTOTYPE TESTING

### SUMMARY:

Delivered prototypes are tested against operational, support, and maintenance requirements with trained personnel. The results of independent tests (DT/OT) provide the basis for formal (or conditional) acceptance for service use, prerequisite to the production decision.

### BASIC POLICY:

It is the Army's basic policy to:

- conduct competitive (fly off) testing where practical, feasible, and economic;
- independently test Engineering Development prototypes to the requirements of operational, maintenance, and support requirements documents;
- completely identify and correct system/equipment shortfalls prior to IOC.
- avoid duplicative testing;
- fully plan, coordinate, and support all formal test programs;
- conduct successful development and operational testing as a prerequisite for service and production approval;
- conduct sufficient tests and evaluations to successfully validate the Required Operational Capability document and the system specifications;
- ensure that all test and evaluation programs are properly planned and coordinated and designed to validate the required capability prior to execution; and
- ensure that test results are formally documented, analyzed, and approved prior to distribution.

CONSIDERATIONS:

The following key considerations form a part of this effort:

- Test Planning - IER, TDP, OTP, CTP updates; Test Facility Agreements; Safety Release; Delivery of Test/Support (Shipment); Maintenance and Support of GFE during Development and Test.
- Test Packages - Doctrinal and Organization Maintenance and Support Test Packages.
- Test Conduct - Extreme environmental testing; on-site user testing; PQT-C Witnessing; Physical Teardown and Maintenance Evaluation; EMC Vulnerability.
- Test Results - EMC/V reviews; LOGCAP reviews; test incident reviews; technical data reduction; TDP update.

QUESTIONS:

Refer to the following in Part III:

APPLICATION OF SPECIFICATIONS AND STANDARDS

COMPETITIVE PROTOTYPING	RELEASE OF MATERIEL FOR ISSUE
CONFIGURATION MANAGEMENT	RELIABILITY, AVAILABILITY, MAINTAINABILITY, DURABILITY (RAM-D)
CONTRACTOR COST/SCHEDULE CONTROL	RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)
DECISION TIMING AND SCHEDULING	RISK ANALYSIS/TRACE
DESIGN REVIEWS	SKILL PERFORMANCE AIDS (SPA)
DISTRIBUTION PLANNING/FIELDING	STANDARDIZATION
FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS	SYSTEM ASSESSMENT
GOVERNMENT/INDUSTRY PRODUCTION OPTION	TECHNICAL DATA PACKAGES
INCENTIVE/AWARD FEE	TECHNOLOGY BASE/TRANSFER
INTEGRATED LOGISTIC SUPPORT PLANNING	TEST EVALUATION - TEST DESIGN
INTEGRATED TECHNICAL DOCUMENTATION AND TRAINING (ITDT)	TEST EXECUTION, REPORTING AND EVALUATION
	TRAINING

MANUFACTURING TECHNOLOGY

VALUE ENGINEERING (VE)

PRODUCTION TESTING OF ARMY  
MATERIEL

WARRANTIES/RELIABILITY  
IMPROVEMENT WARRANTY

PROVISIONING

QUALITY ASSURANCE/ENGINEERING

REFERENCES:

AR 10-16, 11-13, 15-14, 70-10, 70-37, 71-37, 105-2, 105-16,  
105-87, 700-127; DA PAM 70-21; DARCOM-R 11-1, 70-5.

## PRODUCTION AND DEPLOYMENT DECISION (MILESTONE III)

### SUMMARY:

As a part of this major decision milestone, the Army commits major resources to the achievement of IOC objectives.

### BASIC POLICY:

It is the Army's basic policy as a part of this major decision point to:

- fund full production when systems are Service Approved and Type Classified (Standard);
- formulate the Transition Plan from MD to MR or Commodity management; and
- conduct DEVA IPR/ASARC III/DSARC III and execute the plans for Follow-on Production, System Introduction, and Fielding.

### CONSIDERATIONS:

The following key considerations form a part of this decision point:

Independent Estimates; DEVA IPR; Pre-ASARC III, ASARC R&D Team; ASARC III; APM III; DPM III Approval; TC Standard; DSARC III; DCP Approval; Update; Revise DCP/DPM/APM Draft DCP.

### QUESTIONS:

#### PROGRAM BASELINE

- Is the program ready for Milestone III? Have all elements of the milestone checklist in AR 15-14 been satisfied?
- Have program objectives changed since ED Phase completion? Are there significant changes in key premises or characteristics? Has the threat plan been updated? What is the confidence in achieving current objectives (operational performance, EMC, reliability, cost, schedule)?
- Formal risk analysis complete -- new risks or increases in already known risks identified in the ED Phase? trade-offs made?

- What are the operational, technical, cost, scheduling, procurement, and program management implications of indirect or "spillover" effects of the system?

#### COSTS/BENEFITS

- How realistic are cost and benefits/effectiveness estimates? Are all significant cost elements included? Are costs expressed in both constant year and current year dollars? Have the costs, in terms of required effectiveness for all or part of the forces, in terms of realistic contingency missions been assessed (quality vs. quantity trade-off analyses)?
- Have program costs been estimated by COA? Are cost estimates well documented? Is there a LCC analysis for the alternative proposed programs? Have differences between BCE and ICE been isolated? Are the reasons for the differences clearly understood?
- Is the funding profile consistent with OSD/Congressional constraints? Does a highly visible cost trail exist? cost effectiveness vs. design alternatives? How is the DTC goal planned to be implemented contractually?

#### SCHEDULES

Can the IOC dates be slipped for cost or risk reduction? preserved? What parts of the program are deferrable? for how long? Why? How realistic are the IOC dates? What is the difficulty of schedule? pacing elements? Are there significant differences in schedules by competitors? Have these differences been analyzed? Are schedules consistent with OSD/Congressional constraints?

Refer to the following in Part III:

APPLICATION C <sup>2</sup> SPECIFICATIONS AND STANDARDS	FUNDING
COST ESTIMATING	INTEGRATED LOGISTIC SUPPORT PLANNING
DECISION PROCESS	LEGISLATIVE CONSIDERATIONS
DECISION TIMING AND SCHEDULING	PROCUREMENT PLANNING/ PROCUREMENT PLANS
DESIGN TO COST	PRODUCIBILITY ENGINEERING AND PLANNING (PEP)
FOREIGN ACQUISITION/ INTERNATIONAL PROGRAMS	

PRODUCT IMPROVEMENT  
PROPOSALS (PIPs)

RISK ANALYSIS/TRACE

PRODUCTION TESTING OF ARMY  
MATERIAL

SYSTEM ASSESSMENTS

PROPOSAL EVALUATION/SOURCE  
SELECTION

TECHNICAL DATA PACKAGES

TRAINING

RELEASE OF MATERIEL FOR ISSUE

WARRANTIES/RELIABILITY  
IMPROVEMENT WARRANTY

RELIABILITY, AVAILABILITY  
MAINTAINABILITY, DURABILITY  
(RAM-D)

RELIABILITY, CENTERED MAINTENANCE  
STRATEGY (RCMS)

REQUEST FOR PROPOSAL/WORK  
STATEMENT

REFERENCES:

AMC Guide for DTUPC; AMCR 70-60; AR 10-16, 11-18, 15-14, 70-1,  
70-2, 70-27, 70-32, 71-6, 700-120, 1000-1, DA CIR 70-5, DARCOM-  
1-34, 70-5; DoDD 5000.1, 5000.2.

## INITIAL PRODUCTION

### SUMMARY:

When funded, remaining uncertainties and operational shortfalls are resolved through fabrication and test of initial production quantities.

### BASIC POLICY:

In addition to those basic policies for full engineering development, it is the Army's basic policy to:

- authorize full production at Milestone III. Limited production is an exception which must be fully justified and approved by IPR/ASARC.
- produce, deliver, and test initial production quantities to insure contractual compliance;
- validate the configuration through physical audit and confirm the production baseline;
- when LRIP is conducted, consider competitive breakout as a part of the acquisition strategy;
- deliver the initial production to the developer; and
- when LRIP is conducted, structure the contract for increased production rates without a production break.

### CONSIDERATIONS:

The considerations applicable to the ED planning, production, test, and decision, as well as the following considerations, apply:

- Full Production Decision and DCP/DPM/AMP update.
- Planning and estimating update.
- Procurement and Data Package (Product Baseline) update.
- Award of follow-on production contracts.

- Facilities - Production facilities and special tooling; Depot capability; Storage; Training.

QUESTIONS:

- Refer to the following in Part III:

APPLICATION OF SPECIFICATIONS AND STANDARDS	
CONFIGURATION MANAGEMENT	PRODUCIBILITY ENGINEERING AND PLANNING (PEP)
CONTRACTOR COST/SCHEDULE CONTROL	PRODUCTION TESTING OF ARMY MATERIEL
DECISION TIMING AND SCHEDULING	PROPOSAL EVALUATION/SOURCE SELECTION
DESIGN INFLUENCE	PROVISIONING
DESIGN REVIEWS	QUALITY ASSURANCE/ENGINEERING
DESIGN TO COST	RELEASE OF MATERIEL FOR ISSUE
DISTRIBUTION PLANNING/FIELDING	RELIABILITY, AVAILABILITY, MAINTAINABILITY, DURABILITY (RAM-D)
FACILITIES PLANNING	RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)
FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS	REQUEST FOR PROPOSAL/WORK STATEMENT SKILL PERFORMANCE AIDS (SPA)
FUNDING	SMALL BUSINESS PROGRAM
GOVERNMENT/INDUSTRY PRODUCTION OPTION	SYSTEM ASSESMENTS
INTEGRATED LOGISTIC SUPPORT PLANNING	TECHNICAL DATA PACKAGES
LEGISLATIVE CONSIDERATIONS	TEST, EXECUTION, REPORTING AND EVALUATION
MANUFACTURING TECHNOLOGY	TRAINING
PROCUREMENT PLANNING/ADVANCE PROCUREMENT PLANS	WARRANTIES/RELIABILITY IMPROVEMENT WARRANTY

REFERENCES:

AMCR 70-6; AR 11-18, 15-14, 37-55, 70-2, 70-27, 71-2, 71-6, 700-120,  
700-127, 702-3, 750-1, 1000-1; DARCOM-R 1-34; DoDD 5000.2; 5000.34.

## FULL/FOLLOW-ON PRODUCTION

### SUMMARY:

When funded, inventory objectives are achieved through the competitive award production contract for hard tooled systems (including support) and approved baseline modifications and retrofits.

### BASIC POLICY:

In addition to those policies established for initial production, it is the Army's policy to:

- improve system quality through retrofit, modification, and product improvement;
- improve cost-quantity relationships and reduce item costs through competition, breakout, and sales to other services; and
- transfer management responsibility to a readiness Command.

### CONSIDERATIONS:

The following key considerations, in addition to those identified for LRIP, apply:

- Production contract awards.
- First unit equipped/IOC.
- Standard LIN; TAADS Common Table of Allowance (CTA); introductory letter.
- Materiel fielding team.
- Certificate of Issue and Release for troop use.
- Statement of Quality and Support (SOQAS).
- Reliability Improvement Warranty (RIW).
- Production rate delivery.

### QUESTIONS:

#### CONTRACT AWARD(S)

- What steps have been taken to "break out" the system? maintain competition?
- What considerations have been made for war reserves? surge capabilities? Should multiple contracts be awarded? How do I retain configuration integrity?
- What about support requirements? Can they be "broken out"? Should they? Is the data package current?

#### RELEASE FOR TROOP USE

- Is a Certificate of Issue and Release required? Who prepares? When? contents?
- Are the users ready to accept the item? Have they been contacted? Do they understand their responsibilities? What agreements have been reached? Are agreements documented? Has the materiel fielding plan been prepared?

## DELIVERIES

- Are delivery plans consistent with production rates? user needs? fielding plans?
- What units have priority? Will a complete system and its support be provided at one time? or spread out? for how long? Is this acceptable to the user?
- Are troop units aware of the delivery schedules? and their implications?
- What about FMS? other services? Who has priority? Where is priority established? Are any major delays contemplated? Is a "domino effect" indicated? What steps have been taken to preclude this?
- Are Contractor Engineering Technical Services contemplated? for how long?

Refer to the following in Part III:

APPLICATION OF SPECIFICATIONS AND STANDARDS	PRODUCTION TESTING OF ARMY MATERIEL
CAPITAL INVESTMENT INCENTIVE FOR CONTRACTORS	PROPOSAL EVALUATION/SOURCE SELECTION
CONFIGURATION MANAGEMENT	PROVISIONING
CONTRACTOR COST/SCHEDULE CONTROL	QUALITY ASSURANCE/ENGINEERING
COST ESTIMATING	RELEASE OF MATERIEL FOR ISSUE
DESIGN INFLUENCE	RELIABILITY, AVAILABILITY, MAINTAINABILITY, DURABILITY (RAM-D)
DESIGN REVIEWS	RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)
DESIGN TO COST	REQUEST FOR PROPOSAL/WORK STATEMENT
DISTRIBUTION PLANNING/FIELDING	RISK ANALYSIS/TRACE
FACILITIES PLANNING	SKILL PERFORMANCE AIDS (SPA)
FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS	SMALL BUSINESS PROGRAM
FUNDING	STANDARDIZATION
GOVERNMENT/INDUSTRY PRODUCTION OPTION	ACQUISITION AND MANAGEMENT OF DATA
MANUFACTURING TECHNOLOGY	TECHNICAL DATA PACKAGES
PROCUREMENT PLANNING/PROCUREMENT PLANS	TEST EXECUTION, REPORTING AND EVALUATION
PRODUCIBILITY ENGINEERING AND PLANNING (PEP)	TRAINING
PRODUCT IMPROVEMENT PROPOSALS (PIPs)	TRANSPORTABILITY/TRANSPORTATION
	VALUE ENGINEERING (VE)
	WARRANTIES/RELIABILITY IMPROVEMENT WARRANTY

## REFERENCES:

AR 70-28, 70-50, 71-2, 310-34, 310-49, 570-2, 700-34, 700-120, 700-147, 1000-1.

## PROGRAM TRANSITION

### SUMMARY:

When program objectives are achieved, responsibility for system or item management is transferred to a commodity manager or other readiness agency. Adequate and timely planning for transitioning are keys to continued fulfillment of DARCOM's Readiness mission.

### BASIC POLICY:

It is the Army's basic policy to:

- prepare and formally execute the Transition Plan;
- continue to support the materiel needs of the operating forces; and
- insure minimum turbulence through detailed planning for transition of systems/programs and assignment of items.

### CONSIDERATIONS:

The considerations applicable to Production Planning and update transition apply to this element. The effect of the transition on civilian career development and unit strengths must be carefully considered.

### QUESTIONS:

#### ANALYSES

- Are production processes, rates, and quantity analyses documented? valid? realistic? achievable? Include FMS requirements? Logistics requirements? Other service requirements?
- Are cost estimates current? complete? accurate? Are the IPCE, LCC, and COEA updated?
- Are analyses required for facilities, tooling industrial capacity, schedules? Are they available or documented by proposals? Are the producibility plan and criteria established for full production? follow-on production? support?
- Has the DRA been updated to identify production program and rate problems? alternatives? impacts?

- Are the required experience, skills, and grades of system personnel available to the gaining command to fulfill the continuing system responsibilities including PIPs?

INTERFACES

- Have the TOE, BOIP, and MFP been incorporated into production plans and analyses?
- Are the IPCE, LCC, and COEA incorporated into production plans and analyses?
- Have rates been established for support program requirements? Support and Test Equipment (S/TE)? spares support (SS)? storage and transportation? training?
- Have test and demonstration requirements been established?

RESULTS:

- Are plans formulated for updating specifications, drawings, and lists to establish the Product Baseline? How will test results be incorporated? When? Who?
- How will RAM results be validated? What requirements are specified? How detailed? consistent? Is order of precedence established?

TRANSITION

Is the Transition Plan planned? When will transition occur? What pre-requisite data and information are required? Are pre-transition teams established? When will they be involved? To what extent are AM resources to be used? Have personnel resources been reassigned with minimum deleterious effects to the command involved?

Refer to the following in Part III:

APPLICATION OF SPECIFICATIONS AND STANDARDS

ACQUISITION AND MANAGEMENT OF DATA

CONFIGURATION MANAGEMENT

CONTRACTOR COST/SCHEDULE CONTROL

COST ESTIMATING

DECISION PROCESS

DECISION TIMING AND SCHEDULING

DISTRIBUTION PLANNING/FIELDING

FACILITIES PLANNING

FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS

FUNDING

GOVERNMENT/INDUSTRY PRODUCTION OPTION

INTEGRATED LOGISTIC SUPPORT  
PLANNING

MANUFACTURING TECHNOLOGY

PERSONNEL STAFFING

PROCUREMENT PLANNING/PRO-  
CUREMENT PLANS

PRODUCIBILITY ENGINEERING AND  
PLANNING (PEP)

PRODUCT IMPROVEMENT PROPOSALS (PIPs)

PRODUCTION TESTING OF ARMY MATERIEL

PROPOSAL EVALUATION/SOURCE SELECTION

PROVISIONING

QUALITY ASSURANCE/ENGINEERING

RELEASE OF MATERIEL FOR ISSUE

RELIABILITY, AVAILABILITY, MAIN-  
TAINABILITY, DURABILITY (RAM-D)

RELIABILITY CENTERED MAINTENANCE  
STRATEGY (RCMS)

REQUEST FOR PROPOSAL/WORK STATEMENT

RISK ANALYSIS/TRACE

SMALL BUSINESS PROGRAM

STANDARDIZATION

SYSTEM ASSESSMENTS

TECHNICAL DATA PACKAGES

TEST EXECUTION, REPORTING AND  
EVALUATION

TRAINING

TRANSPORTABILITY/TRANSPORTATION

VALUE ENGINEERING (VU)

WARRANTIES/RELIABILITY IMPROVEMENT  
WARRANTY

REFERENCES:

AR 5-5, 11-18, 11-28, 15-14, 70-1, 70-10, 70-17, 70-27, 71-1, 71-2, 71-3,  
71-7, 71-9, 310-1, 310-5, 310-31, 310-34, 310-45, 385-16, 570-2, 700-18,  
700-120, 700-127, 750-1; DA PAM 70-21; DARCOM-P 385-25; DARCOM-R 11-1,  
70-1, 614-13, 750-27; TRADOC-DARCOM Joint Guide of COEA Cost Data.

## SYSTEM OPERATION - MAINTENANCE - SUPPORT

### SUMMARY:

Systems introduced into the inventory are operated and maintained by the field units and supported and maintained through established support resources. Modifications are designed, produced, and installed to improve capabilities.

### BASIC POLICY:

It is the Army's basic policy to:

- continue to support the system in the field and to perform analysis to minimize the logistic burden;
- continue systems analyses to identify system improvements and reduce operation, maintenance, and personnel costs and/or improve effectiveness or extend system service life;
- retain systems in inventory as long as they meet mission needs and are cost effective; and
- support and maintain items sold to other services or for which the Army has joint service cognizance.

### CONSIDERATIONS:

The following key considerations apply:

- Program Update - Equipment Maintenance; BOIP update; TOE Unit reports; MACRIT studies; AMMH update; Proposed Revisions TOE; FM/TM; International Logistics; update AMP/MIDP; Transition to Commodity Command; ECP evaluation.
- Baseline Update - MWO; Recondition/Retrofit Designs.
- Logistics Update - Training Program Review; Stock Distribution COSIS.
- Test - Follow-on Evaluation; FOTE.
- Procurement - Follow-on Procurement Activities.
- Production - PIP; Materiel Objective Attained.

### QUESTIONS:

Refer to the following in Part III:

APPLICATION OF SPECIFICATIONS AND STANDARDS

ACQUISITION AND MANAGEMENT OF DATA

CAPITAL INVESTMENT INCENTIVE FOR CONTRACTORS

CONFIGURATION MANAGEMENT

COST ESTIMATING

DESIGN INFLUENCE

DESIGN REVIEWS

DESIGN TO COST

DISTRIBUTION PLANNING/FIELDING

FACILITIES PLANNING

FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS

FUNDING

GOVERNMENT/INDUSTRY PRODUCTION OPTION

INTEGRATED LOGISTIC SUPPORT PLANNING

MANUFACTURING TECHNOLOGY

PROCUREMENT PLANNING/PROCUREMENT PLANS

PRODUCIBILITY ENGINEERING AND PLANNING (PEP)

PRODUCT IMPROVEMENT PROPOSALS (PIPs)

PRODUCTION TESTING OF ARMY MATERIEL

PROPOSAL EVALUATION/SOURCE SELECTION

PROVISIONING

QUALITY ASSURANCE/ENGINEERING

RELEASE OF MATERIEL FOR ISSUE

RELIABILITY, AVAILABILITY, MAINTAINABILITY, DURABILITY (RAM-D)

RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)

REQUEST FOR PROPOSAL/WORK STATEMENT

SKILL PERFORMANCE AIDS (SPA)

SMALL BUSINESS PROGRAM

STANDARDIZATION

SYSTEM ASSESSMENTS

TECHNICAL DATA PACKAGES

TEST EXECUTION, REPORTING AND EVALUATION

TRAINING

TRANSPORTABILITY/TRANSPORTATION

WARRANTIES/RELIABILITY IMPROVEMENT WARRANTY

REFERENCES:

AR 11-18, 37-55, 70-10, 70-15, 71-2, 71-3, 71-9, 310-1, 310-3, 310-31, 310-34, 310-49, 385-1.6, 570-2, 700-120, 700-127, 702-3, 705-1, 705-6, 759-1; DA PAM 70-21; DARCOM-P 385-23, Supplement 1; DARCOM-R 700-5.

## DISPOSAL

### SUMMARY:

Systems no longer needed or satisfactory for intended use are classified obsolete and phased out of the inventory, as replacements are phased in.

### BASIC POLICY:

It is the Army's basic policy to:

- plan for the systematic phase out of obsolete systems and the phase in of new systems and support;
- maximize the cost benefits of system and support transfer, sale, or scrap value possible;
- demilitarize and dispose of materiel in the safest economical and least environmental impact manner; and
- participate in the DoD Precious Metals Recovery Program.

### CONSIDERATIONS:

The following key considerations apply:

- Obsolete Decision - Type Classify Contingency/Disposal.
- Program Update - New Materiel Requirements Identification; PIPs; Contingency Plans; Disposal Plans.
- Baseline Update - Environmental Assessment of Disposal.
- Logistics Update - Phase down training and support.

### QUESTIONS:

Refer to the following in Part III:

APPLICATION OF SPECIFICATIONS  
AND STANDARDS

CONFIGURATION MANAGEMENT

COST ESTIMATING

DECISION PROCESS

DECISION TIMING AND SCHEDULING

DISTRIBUTION PLANNING/FIELDING

FOREIGN ACQUISITION/INTERNATIONAL  
PROGRAMS

FUNDING

INTEGRATED LOGISTIC & PLANNING

LEGISLATIVE CONSIDERATIONS

PERSONNEL STAFFING

PROVISIONING

RISK ANALYSIS/TRACE

SMALL BUSINESS PROGRAM

SYSTEM ASSESSMENTS

TECHNICAL DATA PACKAGES

TRANSPORTABILITY/TRANSPORTATION

### REFERENCE:

AR 70-15, DA CIR 755-18

PART II.  
THE MANAGEMENT PROCESS

## PART II - THE MANAGEMENT PROCESS

The Army acquisition management process is designed to accommodate three basic responsibilities for: determining what has to be done, organizing provided or acquired resources for its accomplishment, and measuring the results. To achieve his objectives in carrying out this process, the manager must communicate his goals, be responsive to the direction of higher authority, and utilize resources specifically assigned or acquired to get the job done.

### APPLICATION

Initially, this part of the Guide provides an overview of the primary management functions associated with the acquisition and appropriation processes described in Part I. It considers the internal functions of the manager's office, as well as the performance of external functions that support it. Succeeding sections of this part deal with the three basic management responsibilities of both the acquisition manager and his key supporting functional managers.

### ARMY PROJECT MANAGEMENT RESPONSIBILITIES

This section provides a summary of basic acquisition management responsibilities. The following primary and subordinate management responsibilities are inherent in the accomplishment of Army acquisitions. They are performed either by the manager, his staff, or by other DARCOM functional organizations. There are, of course, other ancillary responsibilities that could be identified. For the sake of simplicity and conciseness, however, there are assumed to be implied within those that are identified.

- FORMULATING THE ACQUISITION PLAN

This primary management responsibility consists of three subordinate responsibilities that provide the information base, the acquisition strategy, and the plans for managing the acquisition. Subordinate responsibilities include:

- (a) Gathering the Information Base - To keep himself and others informed and to meet his responsibilities, the acquisition manager gathers whatever information and data are available. He couples these with his personal background, experience, and imagination -- as well as that of his staff, functional organizations, and the "institutional memory" and policy -- in order to formulate the acquisition strategy.

- (b) Assessing the Risk - Based on a reasonable understanding of existing constraints and probable future activities, the acquisition manager identifies those approaches and resources required for the accomplishment of acquisition objectives. Based on both internal and external office inputs and consensus, an optimum approach is selected. Contingency approaches may be planned for in parallel with selected approaches when major technical risks are identified.
- (c) Planning - Concurrent with or as an outgrowth of risk assessment, formal near-and long-range plans documenting the acquisition strategy are prepared. To ensure objectivity, the viewpoints of external office organizations (both solicited and required by policy) are incorporated into final plans. These final plans are the basis for obtaining a corporate decision and resources, and for executing the acquisition plan.

● DIRECTING ATTAINMENT OF THE ACQUISITION PLAN

This primary management responsibility consists of three subordinate responsibilities performed by the acquisition manager and/or by other authority. Subordinate responsibilities are:

- (a) Deciding - The adequacy of the information base formulated initially will determine, in large measure, the accuracy of the acquisition manager's decisions about the acquisition plan. Several techniques and disciplines are available to assist the manager's office in identifying, manipulating, and presenting data in sufficient detail to ensure their consideration in the decision making process.
- (b) Organizing and Providing Resources - Based on the results of prior actions (specifically planning and deciding), the acquisition manager formally organizes his resources to facilitate communication, coordination, and control. Inherent in this responsibility is the planned allocation of money, personnel, and time to support internal or external organizations.
- (c) Communication and Coordination - The communication links formed by plans and policy provide the acquisition manager with a formal means to communicate and coordinate efforts in order to attain his objectives and to provide required information throughout the project organization.

● EVALUATION OF RESULTS AND REDIRECTION

This primary responsibility consists of results measurement, evaluation, and control, and acquisition strategy readjustment -- an iterative process -- through to attainment or cancellation of the objective. This responsibility is accomplished by the acquisition manager and his staff and/or by external organizations. Satisfactory attainment of acquisition objectives may result in the establishment of additional objectives, and the management process will be repeated.

- (a) Results Measurement, Evaluation, and Control - The variety of techniques and disciplines available to the acquisition manager to accomplish these responsibilities is virtually unlimited. Many are specified by current policy and procedure, others by the nature of the acquisition and available resources. The acquisition manager's task, therefore, is to select and tailor, as a part of his acquisition strategy, those techniques that are consistent with his objectives and resources. Once selected and identified as part of his planning responsibility, these techniques and disciplines provide input and output to the achievement of acquisition objectives. They become the basis for ongoing activity, effort redirection, close-out, or resource allocation toward the achievement of new or revised objectives.
- (b) Acquisition Plan Adjustment - Based on results measurement, evaluation, and control, the acquisition manager adjusts his acquisition strategy and resources, and the management process is terminated or reiterated as necessary to achieve new or revised objectives.

● FUNCTIONAL MANAGEMENT

The following functions are inherent in the accomplishment of Army acquisitions:

(a) External Project Functions

- Monitoring - This may be compared to the function of the Board of Directors of any large and complex enterprise. The basic objectives of the Board are to establish policy, select competent management, guard against mismanagement, and make decisions regarding the commitment and expenditure of major resources (e.g., Congress, DA/DoD, other Army, Executive Department, or service entities).
- Implementing - This function includes all organizational elements that are external (but responsive) to the acquisition manager when provided project resources (e.g., industry, field activities, and other projects and services).

(b) Internal Project Functions

- Executive - This function is performed by the assigned manager, his key advisors, and selected elements of the DARCOM community. Included within this function are efforts related to achieving the management responsibilities described previously, the administration of the resources assigned for their accomplishment, and the responsibility for external communications and execution of corporate policy and procedure.
- Engineering - Engineering is responsible for the application of technology to design, development of the product, and the application of engineering techniques and disciplines required to transform a requirement into an operational capability.
- Logistics - Logistics is responsible for ensuring that support requirements are incorporated into the design and engineering process in order to reduce the maintenance and support burden and to optimize the system's operational capability.
- Production - Production is responsible for ensuring that manufacturing requirements are incorporated into the design and engineering process in order to ensure adequate materiel, facilities, and other resources in the transformation of the design into a producible operational capability.
- Evaluation - Evaluation is responsible for product verification to ensure that required performance, availability, and other mission requirements meet the operational needs of the User and that system deficiencies are corrected prior to item issuance and deployment.
- Procurement - Procurement is responsible for the acquisition of those services and materials purchased from sources external to the Army, for the preparation and administration of formal agreements, and for compliance with the laws and regulations governing this function.

The tabbed one-sheet descriptions included in this part are arranged in the following order:

- Higher Authority
- Acquisition Management
- Financial Management

- Technical (Engineering) Management
- Integrated Logistic Support Management
- Procurement
- Production
- Test and Evaluation

The intensity of involvement of each of the management elements summarized above and detailed in the following tabs is a function of the acquisition process described in Part I of this Guide. To obtain maximum benefit from this part of the Guide, a review of Part I tabs would be appropriate.

## HIGHER AUTHORITY

### SUMMARY

Individual officials of the Government, external to the direct influence and control of the manager, are responsible for independent review, assessment, and/or decision on critical program efforts and resources. These individuals directly (or indirectly) influence the efforts undertaken by the manager or others by: evaluating program worth and importance; establishing materiel need and program objectives; and thresholds; providing resources to accomplish objectives; ensuring compliance with regulatory and program requirements; measuring results and risks and deciding if the program will continue, be redirected, or be terminated.

### BASIC POLICY

It is the Army's basic policy that:

- the Army will continually assess and establish its mission element needs prerequisite to program initiation...When an established need is identified, the Army will formally initiate a program and charter a project whose designated manager will, within established thresholds and provided resources, plan, direct; and control (evaluate) the attainment of program objectives:
- the manager will ensure compliance with regulatory and program objectives and formally communicate all breaches of thresholds to the next higher authority...When satisfied that all major (or interim) objectives are attained or that risks are sufficiently reduced, the manager will recommend program progression to the subsequent achievement of objectives or redirection or termination decision and identify resource needs or reprogramming actions required; and
- when approved by competent authority, the program will be terminated or redirected or progress to subsequent efforts and the cycle will be repeated.

### CONSIDERATIONS

The following key considerations apply:

- General - ASARC/DSARC; IPR; acquisition strategy and APP; TC; MOU; ICE; DCP/DPM/APM; phase planning and estimating analyses and results; QQPRI; MOS; BOIP; TOE.

- Initiation - Intelligence estimates; user recommendations; LOA; STF/SSG/JWG results; critical issues, thresholds, and objectives statements and guidance; unit structure; MENS/MBS; Initiation and Validation Decisions; Project Charter.
- Validation/Demonstration - STF/STG/JWG final reports; initial planning and estimating updates; ICE; ICTP; IER; draft concept of operation; Training Test Support Package (TTSP); Full Scale Engineering Decision; Test and Evaluation Master Plan (TEMP) (for DARC only).
- Engineering Development - Planning and estimating update; MIDP; Doctrinal and Organizational Test Support Package; on-site user testing; test report reviews and analyses; Service-Use Approval; pre-SARC (red team) reviews; Transition Plan; Production (limited/full) Decision.
- Production - FMS; planning and estimating update; Transition Plan Production (Full/Follow-on) Decision; Fielding Plan approval; First Unit Equipped; IOC.
- Operation-Maintenance-Support - MACRIT; MP; AMMH; FM/TM approvals; Commodity Command Transition; Contingency Planning; Type Classification (disposal); Phase-Out/Phase-In Plan.

QUESTIONS:

REVIEWS

Are IPRs and Army/DOD (SARCS) scheduled? pre-reviews? Technical Reviews? Are review packages prepared? in process? How will review results be incorporated into Program Baselines? Is sufficient time allowed? Are the DCP and AP prepared? DPM/APM prepared? Are all critical questions/issues resolved or planned for resolution? Are appropriate plans (ILS, TEMP, SEMP, DP, APP, LCMP) prepared? Have risks been reduced to acceptable levels or identified for reduction (elimination) during engineering development? Are parallel efforts warranted? Are management and contractual approaches established? planned? approved?

INITIATION (MILESTONE 0) (Refer to Part I)

Are subsequent phase planning and estimating documents available?  
Will the program be intensively managed?

VALIDATION (MILESTONE I) (Refer to Part I)

Are the initiation baselines updated?

Are there political, economic, and technical conditions that preclude entry into Advanced Development? Are the program planning and estimating baselines established? reviewed and consistent with IOC? Are the mission profiles and performance envelopes defined? Are major uncertainties (risks) identified? DRA?

ENGINEERING DEVELOPMENT (MILESTONE II) (Refer to Part I)

Are the validation baselines updated?  
Are there remaining issues and problems that preclude entry into Full Scale Engineering Development? Are essential analyses, trade-off studies, and assessments performed? Has DT/OT been satisfactorily completed?

FULL PRODUCTION (MILESTONE III) (Refer Part I)

Are the engineering development baselines updated?  
Are there remaining issues and problems that preclude entry into production? Has DT/OT been satisfactorily completed? results reviewed? all important characteristics tested? major technical risks eliminated? Is the documentation (TDP) package available? current? complete? Are the test plans documented? coordinated? Is the Product Baseline established? firm? Are the program planning and estimating baselines firm?

REFERENCES

DARCOM-R 70-60, 750-33,; AR 1-35, 5-8, 10-16, 11-8, 11-18  
15-14, 37-19, 37-55, 70-1, 70-2, 70-10, 70-15, 70-27, 70-37, 71-2,  
71-3, 71-5, 71-6, 71-9, 310-1, 310-3, 310-31, 310-34, 310-49, 385-16,  
570-2, 611-1, 700-120, 700-127, 702-3, 705-50, 750-1, 750-6, 759-1,  
1000-1; DA PAM 70-21; DARCOM-P 385-23; DARCOM 1, DARCOM-R 1-34, 1-35,  
11-1, 11-27, 11-28, 70-5; DoDD 5000.1; DoDD 5000.2; MIL STD-1388;  
TRADOC-DARCOM Joint Guide on COEA Cost Data.

## ACQUISITION MANAGEMENT

### SUMMARY:

The acquisition manager (AM), including the development and readiness manager, commodity manager, or item manager, is the centralized management authority for the overall technical, financial, and administrative direction and control of an assigned materiel objective. In the accomplishment of this responsibility, the AM will ensure that the management aspects of organizing, directing, controlling, and evaluating are accomplished at his level and by supportive functional managers and that the program represents a balanced and integrated consideration of all program objectives.

### BASIC POLICY:

It is the Army's basic policy to:

- intensively manage all critical and high economic cost programs;
- charter an acquisition manager and provide dedicated resources for the accomplishment of designated programs...be responsible for the control of assigned resources;
- clearly specify the role and authority and lines of communication for each acquisition manager; and
- annually review and update or request termination of each charter.

### CONSIDERATIONS:

The following key considerations apply:

- General - Input and output to/from all functional elements and application of general responsibilities; Life Cycle Management Planning (LCMP); planning, programming, and budgeting; Letters of Agreement (LOA); Decision Risk Analysis (DRA); ROC system/support quantities and costs; industry interface (unsolicited proposals); funding; Change Control Board (CCB).
- Initiation - Joint Working Group (JWG) or Special Study Group (SSG); AM Charter; PMO staffing; Concept Formulation Package (CFP); STF/STG reports; Work Breakdown Structure (WBS); Procurement and Evaluation Plan (APP/SSEP).
- Exploration of Alternative System Concepts - OAP, DCP, CTP
- Demonstration/Validation - Planning and estimating updates; DTF/DPM/APM updates/revisions; IPR/SARC; Outline and Development Plan (ODP/DP); Transition Plan; ROC Program Change Request (PCR).
- Engineering Development - Planning and estimating updates; Development Plan (DP) update; Materiel Fielding Plan (MFP); international agreements; Army Materiel Plan
- Production - Planning and estimating updates; TDP review; new materiel introduction letter; Certificates of Issue and Release for troop use; IOC; Transition Plan; Contingency Plans.
- Operation-Maintenance-Support - Planning and estimating updates; Transition Phase Out/Phase In Plan.

### QUESTIONS:

#### GENERAL

- How valid is my data base for decision making? What sources of data are available? How reliable are the sources?
- Are all critical risks identified? Are contingency plans formulated? Do these

plans reflect a realistic approach? Are there parallel approaches to be considered?

- Are all planning and estimating documents current and available? concurred in by the staff and others? reflect current policy?
- Do I have an adequate information system? How responsive is it to my needs or staff needs? How can it be improved? Does the system provide an auditable/traceable record of decisions made? actions taken?
- How should I organize my resources? What type of organization is best for me? Can I change the organization? Who provides the resources? What resources have I provided? How are they being used?
- Are my planning documents serving the purpose of communicating requirements to others? Are they used for feedback purposes? Are they current? Do they reflect resource requirements?
- Do I have the resources to measure results? What measurement data and information are provided? What are the sources? What data are provided by industry or others? Are they usable?
- Based on results, what should I change? modify? adjust? What will it cost? What must I give up? Should I terminate the effort? What are the consequences? Are these decisions reflected in planning and estimating updates?

Refer also to all other Part I, II, and III tabs.

#### PROJECT OFFICE

When I need more people, who provides them? When? How do I stay current on "new policy"? How should I organize my office? Can I reorganize it? How detailed should the Transition Plan be? Where can I get some training on procurement? Why so many reports? What distribution? What's best -- function-task-output or matrix organization? How often should I review status? What are my organizational options? For PMs who report to HQ DARCOM - Who will retain design integrity after transition?

#### REFERENCES:

AR 11-28, 15-14, 37-55, 70-1, 70-10, 70-27, 70-32, 70-37, 71-1, 71-3, 71-9, 385-16, 700-120, 700-127, 702-3, 1000-1, DA PAM 70-21; DARCOM-P 385-23; DARCOM-R 1-34, 11-1, 11-27; 715-2; DoDD 5000.1 and 5000.2; TRADOC-DARCOM Joint Guide on COEA Cost Data; OMB Circular A-109.

## FINANCIAL MANAGEMENT

### SUMMARY:

The assigned financial manager (FM) is responsible for estimating, allocating, and administering assigned financial resources in compliance with current regulations. In the accomplishment of this function, the FM will ensure the validity and accuracy of all estimates, budget submissions, and backup data; comply with and ensure that others comply with established funds accountability and control requirements; and ensure compliance with appropriation conditions and report requirements.

### BASIC POLICY:

It is the Army's basic policy that:

- in house cost estimates will be developed, and a cost tracking system will be established to compare actual costs with all estimates of a materiel system;
- a single current cost estimating structure will be used to collect, collate, and display estimates, budgets, and expenditures of all program elements.
- a continuous comparative analysis and forecast of program resources against objectives will be performed for the purpose of budgeting, identifying program short-falls, and decision making;
- budget estimates and revisions to reflect directed financing will be arrayed against program objectives and work elements to display total fund availability;
- appropriated resources will be allocated, accounted for, and controlled through a single financial management information system; and
- all expenditure of resources will be recorded, reported, and traceable to each appropriation. The assigned manager will be responsible for the expenditure and control of resources.

### CONSIDERATIONS:

The following key considerations apply:

- General - PPBS estimates; phase out cost estimates; WBS; DTC

goals and targets; Independent Parametric Cost Estimates (PCE); LCC estimates; funds accountability and financial reporting; cost and budget updates and refinements.

- Initiation - Development funds; DRA inputs; financial accounting and information systems.
- Validation - Development funds; unit cost/DTC; personnel requirements; development/production/operating and support cost estimates.
- Full Scale Development - Firm personnel, production, and support estimate;; Engineering Development funds; firm DTC goals; management reserves.
- Production - Follow-on production and support costs estimates and budgets; firm change cost estimates; procurement funds.
- Cost Tracking and Analysis - Applied to high dollar engineering change proposals (ECPs) actions; address the effect on logistic support, technical manuals, user cost and field maintenance.
- Operation-Maintenance-Support - Annual OMA funds; retrofit/modernization cost estimates; firm maintenance cost estimates.

#### QUESTIONS:

#### COST ESTIMATING/ANALYSIS

What cost estimates are required: Annual budget estimates? Complete and total program life cycle costs? R&D costs? Investment costs? Operating and support costs? Unit hardware costs? Design-to-costs? Is a Baseline Cost Estimate (BCE) required? Is an Independent Estimate or IPCE required? Is a COEA cost estimate required? Does the cost estimate comply with existing DOD, DA, and DARCOM cost analysis regulatory and guidance requirements? Is the cost estimate complete in terms of cost elements and WBS elements? Are the estimating methods and data sources supportable and documented? Are the current DA/DARCOM inflation factors applied correctly? Does the cost estimate properly treat uncertainty including that of technical risks? Has the estimate been compared with historical experience of similar or replacement systems? Has the cost estimate been validated by the CECDC? What use is being made of the respective estimates for better acquisition management: Life cycle cost trade-offs? Configuration trade-offs? Intra and inter system trade-offs? What steps are being taken to manage and control high cost items or sub-programs of this system? How do the cost, time, and performance management elements tie together? Have cost tracking procedures been installed and implemented?

## ECONOMIC ANALYSIS

Is an economic analysis (EA) required? Does the decision involve alternative courses of action (including the Status Quo)? Does the decision necessitate a commitment of new resources or reallocation of existing resources? Is the specific course of action directed in writing by higher headquarters thus obviating the need for an economic analysis? Does criteria contained in relevant DA or DARCOM regulations/directives govern the preparation of the analysis? Is the EA specifically requested by higher echelons? Is the objective of the analysis properly stated and defined? Are the means confused with the end? Is the statement unbiased? Are all applicable assumptions and constraints identified and included? Are all feasible alternatives identified and included? Is the workload projection well documented? Does the format of the EA suit the project/item being considered? Are all cost, benefits, both direct and indirect, addressed? Are both recurring and non-recurring cost included? Have environmental costs or costs/benefits to the local economy been considered? Have the source and derivation of the costs/benefits been included? Are the alternatives adequately discussed and evaluated? Have sensitivity analyses been performed on weak or uncertain areas of the EA? Can the EA be tracked? Can someone unfamiliar with the topic addressed in the EA read the economic analysis and logically arrive at the same conclusions as the proponent? Is the economic analysis complete? Does the EA comply with the provisions of AR 11-28 and the DARCOM supplement thereto?

## PROCUREMENT

- In the event of lower than planned responses, did the Finance and Accounting Office decommit funds? reprogram?
- How much should be decommitted? Is a contingency fund established? How do I retain resources for contingencies? expected low bids? emergencies? changes?

Refer to the following Part III:

CONTRACTOR COST/SCHEDULE  
CONTROL

COST ESTIMATING

DECISION TIMING AND  
SCHEDULING

DESIGN TO COST

FOREIGN ACQUISITION/  
INTEPNATIONAL PROGRAMS

FUNDING

INCENTIVE AWARD FEE

LEGISLATIVE CONSIDERATIONS

PERSONNEL STAFFING

PRODUCT IMPROVEMENT PROPOSALS  
(PIPs)

PROPOSAL EVALUATION/SOURCE  
SELECTION

RELIABILITY CENTERED MAINTENANCE  
STRATEGY (RCMS)

RISK ANALYSIS/TRACE

VALUE ENGINEERING (VE)

WARRANTIES/RELIABILITY IMPROVEMENT  
WARRANTY

REFERENCES:

AR 10-39, 11-18, and 37 Series; DAPCOM-R 11-4, 11-6, 11-20, 11-35, and 37 Series. DA Pam 11-2, 11-3, 11-4, 11-5.

## TECHNICAL (ENGINEERING) MANAGEMENT

### SUMMARY:

The assigned technical director (TD) or systems engineering manager (SEM) is responsible for the development and management of the Systems Engineering program and for ensuring the definition, analysis, and specification of system (and subsystem) performance parameters, integrating engineering specialties and personnel requirements, and maintaining the technical integrity of the total system design. In accomplishing this effort, the TD/SEM will ensure a balanced and integrated consideration of all technical, logistic, financial, procurement, and evaluation considerations, and that the primary objective of a producible, operational capability is achieved.

### BASIC POLICY:

It is the Army's basic policy that:

- quantitative and qualitative system performance and RAM requirements will be developed for each major program;
- detailed analyses and trade-offs to establish the technical and financial parameters and approaches for engineering discipline integration will be continually performed;
- all technical and related program considerations will be integrated and balanced to establish the engineering program and required resources;
- systems and detail specifications and related technical documentation packages will be prepared; and
- results of engineering efforts will be periodically reviewed and, when required, efforts will be redirected to achieve technical program objectives.

### CONSIDERATIONS:

The following key considerations apply:

- General - Systems Engineering (SE) Analysis Studies and Design; Environmental Impact Assessments for Life Cycle (EIALC); COEA; RAM; S/V Analysis; Health Hazard and Safety Analyses; ROC; Engineering Change Proposal (ECP) evaluations.
- Initiation - Alternative technical approaches; experimental designs; RAM-D planning; Trade-Off Determinations (TOD); foreign technology assessment; system specification.
- Validation/Demonstration - Planning and estimating update; Functional Configuration Audit (FCA); safety statement and release; EMC; S/V Assessment; GFE interface and characteristics, allocated baseline (specifications, drawings, lists); subsystem specifications; In-depth Design Reviews (DR).
- Engineering Development - Planning and estimating update; Physical Teardown and Maintenance Evaluation; safety releases for test; Physical Configuration Audit (PCA); product baseline; Technical Data Package (TDP); failure; Failure Definition and Scoring Criteria (FD/SC).
- Production - Planning and estimating update; FD/SC conference; RIW; SOQAS; First Article Configuration Review and Inspection (FACR/FACI); MWO.
- Operation-Maintenance-Support - MWO release; retrofit/modification kits; environmental assessment for disposal.

### QUESTIONS:

#### MANAGEMENT AND PLANNING

- Are system performance and operational requirements, cost and readiness parameters established in the LOA?
- Have responsibilities for SE, EIALC, COEA, DRA, RAM, TOA/TOD, TDP been established?
- Is a Systems Engineering Management Plan (SEMP) required? What elements are included? Who will prepare? When? What guidance?
- Are DRs scheduled? environmental studies and assessments? LCC? survivability? vulnerability? Configuration Audits (FACR)? safety? foreign technology? interface specifications?

SYSTEMS ENGINEERING ANALYSIS (Refer to Design Influence in Part III.)

Will cost-performance-schedule trade-offs and analyses be performed? When? Who? How? Will RAM-D analyses be performed? COEA? DRA? TOA/TOD? LCC? What data will be produced? When? And does timing support the decision process? Who reviews? What considerations have been made for the application of CSC/TPM? LSA? LORA? EMC? S/V? HF? safety? security?

Refer to the following in Part III:

- |   |  |
|---|--|
| ACQUISITION AND MANAGEMENT OF DATA              | PRODUCT IMPROVEMENT PROPOSALS (PIPs)                           |
| APPLICATION OF SPECIFICATIONS AND STANDARDS     | PRODUCTION TESTING OF ARMY MATERIEL                            |
| CONFIGURATION MANAGEMENT                        | PROPOSAL EVALUATION/SOURCE SELECTION                           |
| COST ESTIMATING                                 | QUALITY ASSURANCE/ENGINEERING                                  |
| DESIGN INFLUENCE                                | RELIABILITY, AVAILABILITY, MAINTAINABILITY, DURABILITY (RAM-D) |
| DESIGN REVIEWS                                  | RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)               |
| DESIGN TO COST                                  | REQUEST FOR PROPOSAL/WORK STATEMENT                            |
| DISTRIBUTION PLANNING/FIELDING                  | RISK ANALYSIS/TRACE  |
| FACILITIES PLANNING                             | SKILL PERFORMANCE AIDS (SPA)                                   |
| FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS      | STANDARDIZATION  |
| INCENTIVE/AWARD FEE                             | SYSTEM ASSESSMENTS   |
| INTEGRATED LOGISTIC SUPPORT                     | TECHNICAL DATA PACKAGES  |
| MANUFACTURING TECHNOLOGY                        | TECHNOLOGY BASE/TRANSFER                                       |
| PROCUREMENT PLANNING/<br>PROCUREMENT PLANS      | TEST AND EVALUATION - PLANNING                                 |
| PRODUCIBILITY ENGINEERING AND<br>PLANNING (PEP) | TEST AND EVALUATION - TEST DESIGN                              |
|   | TEST EXECUTION, REPORTING AND<br>EVALUATION                    |
|   | VALUE ENGINEERING (VE)   |
|   | WARRANTIES/RELIABILITY IMPROVEMENT<br>WARRANTY                 |

REFERENCES:

DARCOM-R 11-15, AR 5-5, 11-18, 15-14, 70-1, 70-10, 70-27, 70-37, 71-2, 71-3, 71-9, 200-1, 700-120, 700-127, 702-3, 750-1; DA PAM 70-21; DARCOM-R 11-1; Supplement 1; TRADOC-DARCOM Joint Guide on COEA Cost Data.

## INTEGRATED LOGISTIC SUPPORT MANAGEMENT

### SUMMARY:

The assigned logistics manager is responsible for the development and management of the ILS program and for ensuring the timely, economic, and effective procurement and positioning of total support resources required to meet the operational requirements of all using services. In the accomplishment of this effort, the logistics manager will ensure that the logistics aspects of all program functions are identified, analyzed, planned, managed, specified, and integrated into the design process and that the primary objective of reducing logistics burdens is achieved.

### BASIC POLICY:

It is the Army's basic policy to:

- develop quantitative and qualitative logistics support requirements based upon program objectives;
- perform detailed analyses and trade-offs to establish the costs and approaches for individual logistic elements.
- integrate the logistics and engineering efforts to establish the system and support specifications and the integrated logistics support management and element plans and resource requirements; and
- periodically evaluate the results of logistics efforts and redirect and replan the ILS program to accomplish acquisition and operations phase objectives.

### CONSIDERATIONS:

The following key considerations apply:

- General - Maintenance and support requirements; Logistic Element Plans (Maintenance) (MP), Supply Support (SS), Support and Test Equipment (S/TE), Personnel and Training (P/T), Transportation and Handling (T/H), Facilities (F), Information (LSMI), Funds (LSMF); Logistics Support Analysis (LSA); Level of Repair Analysis (LORA); Foreign Military Sales (FMS) agreement; support system specifications and designs; Qualitative/Quantitative Personnel Requirements Information (QQPRI); ECP analysis; Skill Performance Aids (SPA).

- Initiation - Personnel, support, and maintenance analyses; requirements and costs (LCC), Logistic Support plans and estimates.
- Validation/Demonstration - Qualitative Construction Requirements (QCR); New Equipment Training (NET) plan; Planning and estimating update; Provisioning Plan; requirements for test support (Test Support Packages). Identification of new start for Depot Maintenance Interservice Review, LSA.
- Engineering Development - Planning and estimating update; Validation Plan for Populations (TM/FM); nonstandard TMDE; stock numbers; Consolidated Repair Parts Lists (CRPL); provisioning conferences; Maintenance Allocation Chart (MAC); Cataloging; LOGCAP review; troop training; long lead provisioning; Annual Maintenance Man-Hour (AMMH) allocation; depot maintenance study; support system specifications; maintenance and support demonstrations.
- Logistics Command Assessment - Assure timely reviews (LOGCAP) of all materiel acquisition programs (development, non-development and product improvement to insure Integrated Logistic Support (ILS) elements are accorded requisite consideration throughout systems acquisition process.
- Milestone Control - Assure the measurement of overall effectiveness and control (Milestone Control Program) of systems performance with respect to the range and timeliness of actions to provide improved materiel.
- Production - Planning and estimating update; ILSP Summary (ILSS); facility data package; TM/FM publication; preservation and packaging plan; TMDE and calibration plan; product improvement; support/maintenance demonstration.
- Operation-Maintenance-Support - Planning and estimating update; stock distribution and replenishment; Care of Supplies in Storage (COSIS); failure and shortage analysis; stock phase-down.

QUESTIONS:

LOGISTIC SUPPORT ANALYSIS (LSA)

- Will an LSA or LOR be performed? criteria for performance? Who will perform? What are the outputs? How will the outputs be used? Is support/life cycle cost a consideration?
- What data will be provided? when? Does the timing support the decision process? When will data be received?
- Is an LSAR specified?

LOGISTICS ELEMENTS

- What elements of logistics are (should be) considered? cost? schedule? performance criteria?
- How is each related? How critical is each element? Who is performing? what guidance?

MAINTENANCE PLANNING (MP)

- Required maintenance actions established? Logistics support analysis? maintenance allocation? required support and repair levels?
- Maintenance actions identified? tasks? skills? data? tools? test equipment? spares? facilities? maintenance levels?
- Maintenance costs established? alternatives analyzed? maintenance/support concept (approach) established? level of repair established?
- Item identified as a Depot Maintenance Interservice (DMI) new start?

Refer to the following in Part III:

ACQUISITION AND MANAGEMENT  
OF DATA

APPLICATION OF SPECIFICATIONS  
AND STANDARDS

CONFIGURATION MANAGEMENT

COST ESTIMATING

DESIGN INFLUENCE

DESIGN REVIEWS

DESIGN TO COST

DISTRIBUTION PLANNING/FIELDING

FACILITIES PLANNING

FOREIGN ACQUISITION/  
INTERNATIONAL PROGRAMS

FUNDING

GOVERNMENT/INDUSTRY  
PRODUCTION OPTION

MANUFACTURING TECHNOLOGY

PROCUREMENT PLANNING/  
PROCUREMENT PLANS

PRODUCIBILITY ENGINEERING AND  
PLANNING (PEP)

PRODUCT IMPROVEMENT PROPOSALS (PIPs)

PRODUCTION TESTING OF ARMY MATERIEL

PROPOSAL EVALUATION/SOURCE SELECTION

PROVISIONING

QUALITY ASSURANCE/ENGINEERING

RELEASE OF MATERIEL FOR ISSUE

RELIABILITY, AVAILABILITY, MAINTAIN-  
ABILITY, DURABILITY (RAM-D)

RELIABILITY CENTERED MAINTENANCE  
STRATEGY (RCMS)

REQUEST FOR PROPOSAL/WORK STATEMENT

RISK ANALYSIS/TRACE

SKILL PERFORMANCE AIDS (SPA)

STANDARDIZATION

TECHNICAL DATA PACKAGES

REFERENCES:

AR 71-2, 71-3, 70-10, 70-15, 310-3, 310-31, 385-16, 700-120, 700-127, 750-1, 750-43, 759-1; DARCOM-R 1-41, 700-13, DA PAM 70-21; DARCOM-P 385-23, Supplement 1; MIL STD 680; TM 38-715, 38-703-3.

## PROCUREMENT

### SUMMARY:

The Contracting Officer (KO) is responsible for ensuring compliance with the legal and regulatory requirements for procurement planning, solicitation, award, and administration of contractual agreements. In the accomplishment of this function, the KO, assisted by the proposal team and others, will ensure that the contractual aspects of the program are adequately identified, coordinated and properly documented, and that the terms and conditions of all agreements are complied with.

### BASIC POLICY:

It is the Army's basic policy that:

- an acquisition strategy and (Advance) Procurement Plan (APP) will be prepared to establish the procurement baseline for each major program;
- solicitation and evaluation packages will be prepared and reviewed for consistency, completeness and accuracy, and for compliance with procurement and legal requirements;
- responses will be formally solicited and evaluated, pre- and post-award surveys will be conducted, and awards will be made in a manner most advantageous to the Army; and
- agreements will be administered rigorously and complete records will be maintained of all legal, procurement, and administrative matters.

### CONSIDERATIONS:

The following key considerations apply:

- Information Base - Defense Acquisition Regulation (DAR); Army Procurement Regulations (APR); Risk Analysis (RA); acquisition strategy; cost estimates; procurement methods; contract types; general and special provisions (clauses); procurement authority; specifications; Statement of Work (SOW); Data Item Descriptions (DID); Contract Data Requirements List (CDRL); Determination and Findings (D&F); legal reviews; Request for Proposals (RFP); Invitation for Bids (IFB).
- Planning - APP; source selection plan; pre-award surveys.
- Executing - Solicitation summary; Commerce Business Daily (CBD); bidders lists; evaluation criteria; pre-negotiation surveys; industry solicitation; response evaluations; negotiation position; negotiation; best and final; debriefing; award; award; Contract Administrative Services (CAS); contractor cost/schedule/technical performance measurement; changes; progress/progress payment; delivery; termination; closeout; records; reports.

### QUESTIONS:

#### INFORMATION BASE

- Are the acquisition strategy and APP documented? Are the type of contract and method of procurement established? Consistent with DRA? Do special and general clauses of ASPR apply or are deviations required? Who approves?
- Has the solicitation and evaluation package received legal and technical review? Is a D&F required?

#### EXECUTING

- Has the solicitation summary been prepared? published? How were industry/others informed of the requirement? bidders lists?

- Does the schedule allow sufficient time? Are any slippages anticipated? How will slippages be handled?
- Who is the SSA? audit agency? PCO? negotiator?
- Has the SSEP been prepared? criteria established? Is it consistent with solicitation package? reviewed? approved? Have SSEB/SSAC members been identified? Have sources and facilities been established? Are conflict of interest statements required?
- Are pre-bid proposal conferences scheduled? Who will run them? Who is invited? How will questions be handled? How will answers be treated and distributed? Are answers binding? Are contractors' questions made a part of the record?
- How will the solicitation be handled? CBD? Will pre-award conferences be conducted? How will negotiations be conducted? Will Best and Finals (B and F) be solicited? Who will perform? Will pre-award surveys be required? when? how? who? Four Step Source Selection Process?
- Will debriefings be conducted? formal or informal? How will proposals be safeguarded and controlled? Who is responsible?
- Will post-award conferences be conducted? when? who? What is anticipated scope? purpose? DCAA/DCAS?
- How will the contract be administered? Who will administer? Will they be responsive to requirements for materiel? GFP? QA? ECP? reports? Contractor Cost/Schedule/Technical Performance Measurement?
- What are the requirements for payments? progressing? termination? closeout? administrative and contractual records?

Refer to the following in Part III:

ACQUISITION AND MANAGEMENT OF DATA

APPLICATION OF SPECIFICATIONS AND STANDARDS

CAPITAL INVESTMENT INCENTIVE FOR CONTRACTORS

COMPETITIVE PROTOTYPING

CONFIGURATION MANAGEMENT

CONTRACTOR COST/SCHEDULE CONTROL

DESIGN TO COST

DISTRIBUTION PLANNING/FIELDING

FUNDING

GOVERNMENT/INDUSTRY PRODUCTION OPTION

INCENTIVE/AWARD FEE

PROCUREMENT PLANNING/PROCUREMENT PLANS

PRODUCT IMPROVEMENT PROPOSALS (PIPs)

PRODUCTION TESTING OF ARMY MATERIEL

PROPOSAL EVALUATION/SOURCE SELECTION

QUALITY ASSURANCE/ENGINEERING

RELIABILITY, AVAILABILITY, MAINTAINABILITY DURABILITY (RAM-D)

RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)

REQUEST FOR PROPOSAL/WORK STATEMENT

RISK ANALYSIS/TRACE

SMALL BUSINESS PROGRAM

TECHNICAL DATA PACKAGES

TECHNOLOGY BASE/TRANSFER

TRANSPORTABILITY/TRANSPORTATION

VALUE ENGINEERING (VE)

WARRANTIES/RELIABILITY IMPROVEMENT WARRANTY

REFERENCES:

AR 11-28, 15-14, 70-1, 70-37, 700-51, 700-78, 702-4; DAR Sections II, III  
IV, V, VII, XXVI; DARCOM-R 11-1, 700-66, 715-2, 715-3, 715-4.

## PRODUCTION

### SUMMARY:

The production function is responsible for the producibility aspects of established technical/logistic requirements and for ensuring the availability of industrial capacity to achieve inventory objectives both in quantity and quality. In the accomplishment of this, the acquisition manager, in coordination with others, will ensure that the production aspects of all other functions are identified, analyzed, planned and specified, and that the quality and quantity objectives are achieved in the most economical manner possible.

### BASIC POLICY:

It is the Army's basic policy to:

- commence production planning, analysis, estimating, and specification activities with program initiation;
- establish the system LCC and DTC estimates and practical goals for production;
- perform advance production engineering as part of engineering development;
- establish the system product baseline prior to release for production;
- type classify (Limited/Standard) items prior to commitment of PA resources;
- conduct production readiness reviews.
- produce sufficient initial system quantities with production tooling and facilities to support DT/OT only when directed by Milestone III decision review;
- produce sufficient production quantities to achieve inventory and pipeline (including Army, other service, and FMS) objectives; and
- achieve and maintain a high degree of standardization in produced and fielded systems and equipments.

### CONSIDERATIONS:

The following key considerations apply:

- General - Industrial Engineering (IE) studies and analyses; producibility assessments; production plans; production cost; industry capability assessments; production specifications/standards; GFP schedules and information; Product Improvement Proposals (PIPs).

- Initiation - Advanced development fabrication plan; GFP lists and sources.
- Validation/Demonstration - Producibility Engineering and Planning (PEP); Manufacturing Technology Program (MTP) and Methods and Technology (MM&T); system and support quantity/cost trade-offs.
- Engineering Development - Planning and estimating update; PEP for long lead items and Initial Production Facilities (IPF); Technical Data Package (TDP); Quality Assurance/Inspection (QA/I) plan; Pre-Production Acceptance Testing (PAT).
- Production - Planning and estimating update; manufacturing process simulation; pilot overhaul; Production Acceptance Testing; Initial Operational Capability (IOC).
- Operation-Maintenance-Support - Planning and estimating update.

QUESTIONS:

GOVERNMENT-FURNISHED PROPERTY

How do I optimize the quantity of GFP? What clauses apply? What are contractor/Government roles? responsibilities? When the contractor's system is nonresponsive, what can I do? What should I do? What should the property administrator do? How do I control GFP delivery? What do I do when it's late? unsuitable? What are contractors' responsibilities for maintenance of GFP? What records is the contractor required to keep? how long? What do I do about waste? excess materiel? What other alternatives are available for correcting GFP shortfalls/late delivery?

INDUSTRIAL PRODUCTIVITY

How deep into the contractor's system should we go? How do I get a data base? What are my responsibilities? authority? How much resource should I spend? source? What reports are required?

Refer to the following in Part III:

APPLICATION OF SPECIFICATIONS AND STANDARDS

CAPITAL INVESTMENT INCENTIVE  
FOR CONTRACTORS

PRODUCTION TESTING OF ARMY  
MATERIEL

CONFIGURATION MANAGEMENT

PROPOSAL EVALUATION/SOURCE  
SELECTION

CONTRACTOR COST/SCHEDULE  
CONTROL

PROVISIONING

DESIGN INFLUENCE	QUALITY ASSURANCE/ENGINEERING
DESIGN REVIEWS	RELEASE OF MATERIEL FOR ISSUE
DESIGN TO COST	RELIABILITY, AVAILABILITY, MAINTAIN- ABILITY, DURABILITY (RAM-D)
DISTRIBUTION PLANNING/ FIELDING	RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)
FACILITIES PLANNING	
FOREIGN ACQUISITION/ INTERNATIONAL PROGRAMS	STANDARDIZATION
GOVERNMENT/INDUSTRY PRODUCTION OPTION	SYSTEM ASSESSMENTS
INTEGRATED LOGISTIC SUPPORT PLANNING	TECHNICAL DATA PACKAGES
MANUFACTURING TECHNOLOGY	TECHNOLOGY BASE/TRANSFER
PROCUREMENT PLANNING/ADVANCE PROCUREMENT PLANS	TRANSPORTABILITY/TRANSPORTATION
PRODUCIBILITY ENGINEERING AND PLANNING (PEP)	VALUE ENGINEERING (VE)
PRODUCT IMPROVEMENT PROPOSALS (PIPs)	WARRANTIES/RELIABILITY IMPROVEMENT WARRANTY

REFERENCES:

AMC Guide for DTUPC; AR 11-18, 70-1, 70-10, 70-32, 71-3, 700-18, 700-78, 700-90, 700-120, 702-4, 715-2, 725-1, 795 Series, 1000-1; DA CIR 70-5; DA PAM 70-21; DARCOM-R 70-46.

## TEST AND EVALUATION

### SUMMARY:

The test and evaluation function is responsible for the development and management of the T&E program and for ensuring that produced items meet operability objectives. In the accomplishment of this effort, T&E will ensure the availability of T&E resources, integration and conduct of the T&E program within established policy and procedure, and independent evaluation of T&E program results, and that the primary objectives of system quality and operability (including maintenance and support) are inherent in the materiel item.

### BASIC POLICY:

It is the Army's basic policy that:

- commensurate with risk and available resources, the leader-follower concept of competitive prototyping will be applied;
- formal test and demonstration of systems and support (including RAM-D) will commence as early as practicable;
- successful DT/OT is a prerequisite for Approval for Service Use, Type Classification, and Approval for Production.
- DT and OT will assess both requirement documents and operations test issues;
- test and evaluation programs must be flexible and should accomplish the acquisition strategy when possible without compromising the independent evaluation;
- a function of test and evaluation is risk assessment (however, test cost must be balanced with program risk);
- independent evaluation of valid test data is the basis for ensuring objectivity. Testing is conducted where it is most cost effective; however, Government Validation Testing is the responsibility of TECOM and is preferably conducted at TECOM test facilities;
- integration of contractor, developer, and operational tests should be accomplished as often as possible. Combined testing with independent test design and evaluation is preferred over separate tests to avoid duplicate testing, but should not be done at the sacrifice of operational realism and adequate testing;
- the Coordinated Test Program (CTP) Plan and when appropriate, Test and Evaluation Master Plan (TEMP) will be prepared and utilized by the developer to ensure integrated testing. For systems undergoing DSARC review, a Test and Evaluation Master Plan (TEMP) is also prepared.

## CONSIDERATIONS:

The following key considerations apply:

- General - Test Integration Working Group (TIWG); outline, draft, and final coordinated program; Independent Evaluation Plans (IEP) for Development/Operational (DT/OT); test results analysis and reports; test incident reports.
- Initiation - Experimental test program plan; prototype and model test and demonstration.
- Validation/Demonstration - Planning and Estimating update; Advanced Development Verification Test (ADVT); environmental testing; Development Test and Evaluation (DTE); Operational Feasibility Test (OFT); Technical Feasibility Test (TFT); Force Development Testing and Experimentation (FDTE); Operational Test and Evaluation (OT&E).
- Engineering Development - Planning and Estimating update; Engineering Development (model test and demonstration); Test Design Plan (TDP); integration test and demonstration; personnel qualification demonstration and evaluation; man-machine integration; support and maintenance demonstrations; physical teardown; extreme environmental testing; Approval for Service Use (ASU); Operational Test and Evaluation (OTE); DTE.
- Production - Planning and Estimating update; Production Acceptance Testing; user report and first article inspections; Follow-On Test and Evaluation (FOTE).
- Operation-Maintenance-Support - Planning and Estimating update.

## QUESTIONS:

### MANAGEMENT AND PLANNING

- Is the TIWG formed? Are test designs formulated? objectives of T/E for each phase established? resources identified? test program established, coordinated, and documented?
- Does TDP establish test and test program requirements? Are ILS, RAM, and producibility requirements established? Who will perform T/E for each phase? What organizations will be involved? What are their responsibilities/authorities?
- Who will prepare and review TDP? test reports? update plans? coordinate program? review results? document reports? reduce data? prepare test incident reports?

Refer to the following in Part III:

APPLICATION OF SPECIFICATIONS AND STANDARDS	RELEASE OF MATERIEL FOR ISSUE
COMPETITIVE PROTOTYPING	RELIABILITY, AVAILABILITY MAINTAINABILITY, DURABILITY (RAM-D)
CONFIGURATION MANAGEMENT	RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)
DECISION PROCESS	RISK ANALYSIS/TRACE
DECISION TIMING AND SCHEDULING	SKILL PERFORMANCE AIDS (SPA)
DESIGN REVIEWS	SYSTEM ASSESSMENTS
FOREIGN ACQUISITION/ INTERNATIONAL PROGRAMS	TECHNICAL DATA PACKAGES
FUNDING	TECHNOLOGY BASE/TRANSFER
GOVERNMENT/INDUSTRY PRODUCTION OPTION	TEST AND EVALUATION - PLANNING
INCENTIVE/AWARD FEE	TEST AND EVALUATION - TEST DESIGN
INTEGRATED LOGISTIC SUPPORT PLANNING	TEST EXECUTION, REPORTING AND EVALUATION
PRODUCTION TESTING OF ARMY MATERIEL	TRAINING
QUALITY ASSURANCE/ENGINEERING	WARRANTIES/RELIABILITY IMPROVEMENT WARRANTY

REFERENCES:

AR 15-14, 70-10, 71-3, 71-7, 702-3, 1.000-1; DA PAM 70-21; DARCOM-R 1-34.

**PART III.  
AREAS OF ACQUISITION  
MANAGEMENT ISSUES**

### PART III - AREAS OF ACQUISITION MANAGEMENT ISSUES

#### APPLICATION

This part of the Guide provides a series of tabbed one-sheet descriptions of selected areas of acquisition management issues. These one-sheet descriptions incorporate, at least to some degree, the DARCOM "institutional memory" on lessons learned. Users of the Guide should remember that issues identified here or elsewhere throughout the Guide will not apply necessarily to every acquisition, to every phase of the acquisition process, nor to every functional management area. Therefore, each manager should tailor his use of these issue sheets to meet his special needs.

#### ORGANIZATION

The following tabbed one-sheet descriptions of selected areas of acquisition management issues, arranged in alphabetical order, are provided throughout this part of the Guide:

	<u>Headquarters Element</u>
ACQUISITION AND MANAGEMENT OF DATA	DRCDE-RE
APPLICATION OF SPECIFICATIONS AND STANDARDS	DRCDE-RE
CAPITAL INVESTMENT INCENTIVE FOR CONTRACTORS	DRCPP-S
COMPETITIVE PROTOTYPING	DRCPP-SP
CONFIGURATION MANAGEMENT	DRCDE-RE
CONTRACTOR COST/SCHEDULE CONTROL	DRCPP-K
COST ESTIMATING	DRCCP-L
DECISION PROCESS	DRCPM
DECISION TIMING AND SCHEDULING	DRCPM
DESIGN INFLUENCE	DRCRE-I
DESIGN REVIEWS	DRCDE-DG
DESIGN TO COST	DRCMT
DISTRIBUTION PLANNING/FIELDING	DRCMM-S
ENVIRONMENTAL PROTECTION AND ENHANCEMENT	DRCPA-E
FACILITIES PLANNING	DRCMM
FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS	DRCIRD

	<u>Headquarters Element</u>
FUNDING	DRCCP-B
GOVERNMENT/INDUSTRY PRODUCTION OPTION	DRCPP-S
INCENTIVE/AWARD FEE	DRCPP-SP
INDUSTRIAL BASE PLANNING	DRCPP-I
INTEGRATED LOGISTIC SUPPORT PLANNING	DRCRE-I
LEGISLATIVE CONSIDERATIONS	DRCSA-C
LIFE CYCLE ACQUISITION AND SUPPORT PLANNING	DRCPA-S
MANUFACTURING TECHNOLOGY	DRCMT
MINORITY BUSINESS ENTERPRISE PROGRAM	DRCPP-Z
OMA FUNDED PRODUCTION ENGINEERING (PE)	DRCMT
PERSONNEL STAFFING	DRCFT-SU
PROCUREMENT PLANNING/PROCUREMENT PLANS	DRCPP-SP
PRODUCIBILITY ENGINEERING AND PLANNING (PEP)	DRCMT
PRODUCT IMPROVEMENT PROPOSALS (PIPs)	DRCTI/DRCRE
PRODUCTION TESTING OF ARMY MATERIEL	DRCQA-P
PROPOSAL EVALUATION/SOURCE SELECTION	DRCPP-SP
PROVISIONING	DRCMM-M
QUALITY ASSURANCE/ENGINEERING	DRCQA-E
RELEASE OF MATERIEL FOR ISSUE	DRCQA-P
RELIABILITY, AVAILABILITY, MAINTAINABILITY DURABILITY (RAM-D)	DRCQA-E
RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)	DRCMM-E
REQUEST FOR PROPOSAL/WORK STATEMENT	DRCPP-SP
RETAIL SUPPORT AGREEMENTS	DRCIS-S
RISK ANALYSIS/TRACE	DRCDE-P

Headquarters Elements

SKILL PERFORMANCE AIDS (SPA)	DRCDE-DG/DRCMM-MP
SMALL BUSINESS PROGRAM	DRCPP-Z
STANDARDIZATION	DRCDE-RE
SYSTEM ASSESSMENT	DRZQA-E
SYSTEMS ANALYSIS	DRCPA-S
TECHNICAL DATA PACKAGES	DRCDE-E
TECHNOLOGY BASE/TRANSFER	DRCLDC
TEST AND EVALUATION - PLANNING	DRCDE-R
TEST AND EVALUATION - TEST DESIGN	DRCDE-R
TEST EXECUTION, REPORTING AND EVALUATION	DRCDE-R
TRAINING	DRCRE-I
TRAINING DEVICES	DRCPM-TND-PC
TRANSITION PROCESS	DRCPA
TRANSPORTABILITY/TRANSPORTATION	DRCMM-S
VALUE ENGINEERING (VE)	DRCMT
WARRANTIES/RELIABILITY IMPROVEMENT WARRANTY	DRCQA-E

The headquarters element to which inquiry may be made regarding each of these tabs is identified above.

## ACQUISITION AND MANAGEMENT OF DATA

### SUMMARY:

The policies, requirements, and procedures for the acquisition and management of data within the Department of the Army are delineated in Army Regulation 700-51. This document implements the DOD Data Management Program within the Army. The procedures apply to all elements within the Department of the Army requiring, preparing, or purchasing administrative, management, financial, or technical data regardless of dollar value and throughout the life cycle of the system or equipment. Data requirements will be planned, programmed, budgeted, and funded as are other system requirements.

### BASIC POLICY:

- Data will be acquired contractually on the basis of need, intended use, and cost.
- Data may be accepted on contractor's format when there is no demonstrable advantage in specifying a Government format, consistent with current directives and contractual requirements.
- Approved Data Item Descriptions (DIDs) contained in the DOD Acquisition Management Systems and Data Requirements Control List (AMSDL), DOD 5000.19L VOL II, shall be used to the maximum extent practicable.
- Each DID selected for use shall be tailored to ensure that only essentials are specified.
- Management controls will ensure that only the minimum essential data requirements are incorporated into contractual documents.
- Data requirements shall represent the integrated efforts of acquisition management, engineering, procurement, training, maintenance, operations, supply and other functions.

### CONSIDERATIONS:

- Impact of data requirements on cost. Impact of not having data.
- Alternate data forms (e.g., computer tape vs hard copy).
- Timing and timeliness of data. Data rights.
- Maintenance, storage, retrieval and dissemination of data.
- Compatibility/interface of data requirements.
- Quality assurance/validation of data.
- Data Requirements Review Board (DRRB).

QUESTIONS:

MILESTONE 0

- Has the broad base of applicable technology been identified and assessed?

MILESTONE I

- Have all data requirements been identified?
- Will required data support anticipated decisions and succeeding program phases?
- Have data requirements been reviewed and challenged on the basis of need, intended use, and cost? Are the data submissions scheduled properly?
- Can meaningful, accurate data be furnished at this point in time?
- Have data requirements been tailored to the program and contract type?
- Are data requirements included in the solicitation included in the Contract Data Requirements List?
- Can data be accepted on the contractor's format?
- Will acquisition management data be furnished from the same data base used by the contractor to manage the program?
- Do data being provided conform to requirements?
- Should there be a predetermination of data rights?
- Should greater than limited rights data be obtained to satisfy the potential needs of the Army?

MILESTONE II

- Have data requirements been included in planning?
- Has a data manager been designated?
- Has a management and control system for data been established?
- Who will store and maintain the data?
- What provisions have been made for retrieval?
- Will data be required for competitive procurement?

MILESTONE III

- Have engineering changes been taken into account?

REFERENCES: DRCDE-RE

AR 700-51 and DARCOM Suppl 1, DODD 5000.19, DODI 5010.12, DODI 5010.29,  
DOD 5000.19L VOL II, DOD 5000.32M.

## APPLICATION OF SPECIFICATIONS AND STANDARDS

### SUMMARY:

The application of specifications and standards constitutes an important technique for contractually imposing technical and management decisions. Specifications define the essential technical requirements for items, materials, or services and include the minimum procedures necessary to determine that requirements have been accomplished. Standards establish engineering, management, and technical limitations and applications for items, materials, processes, methods, practices, and designs. Specifications and standards are generated and utilized by federal, military, industry, Army, and international organizations. The application of specifications and standards significantly affects the performance and life cycle costs of Army material.

### BASIC POLICY:

- The blanket contractual imposition of specifications and standards will be avoided.
- Specifications and standards utilized in the acquisition process will be selectively applied and tailored to impose the minimum essential needs.
- A management review of cited specifications and standards will be performed prior to solicitation release.
- The results of the specifications and standards selective application and tailoring process will be made a matter of record.
- Bidders and contractors will be encouraged to propose alternate cost-effective application and tailoring of specifications and standards. Mandatory and essential acquisition objectives will not be compromised.
- The application of specifications and standards is governed by AR 700-70.

### CONSIDERATIONS:

- Limit the application of specifications and standards to mandatory and essential requirements.
- "Scrub" specifications and standards and "tailor" their application.
- Ensure that the application of specifications and standards does not create a tiered "reference chain."

### QUESTIONS:

#### GENERAL

Have specifications and standards been tailored to impose the minimum essential requirements? reviewed for consistency and completeness?

scrubbed of all nonessential requirements? Has the order of precedence been utilized? per MIL-STD-1438? Are data requirements in specifications and standards incorporated into the Contract Data Requirements List (CDRL)? Are management system specifications and standards incorporated into the Management System Summary List.

MILESTONES 0, I, II, III

Has the functional technical manager certified that tailoring has been effected to ensure the minimum essential requirements? Have provisions been made in the RFP for the contractor to recommend further tailoring? Have all first tier documents been separately identified in an appendix to the RFP and reviewed and challenged by a Data Requirements Review Board? Have data requirements and Data Item Descriptions been tailored to ensure that they conform to the tailored specifications and standards? Is the timing correct for introducing these requirements? Are specifications and standards overly restrictive? Are any specifications or standards, identified as cost drivers, included as requirements in the contract? Have they been scrubbed or tailored to reduce or remove unnecessary requirements?

REFERENCES: DRCDE-RE

AR 700-70; DAR 1-1201, 1-1202, 1-1203; MIL-STD-1438; DODD 4105.2; DODD 4120.21

## CAPITAL INVESTMENT INCENTIVE FOR CONTRACTORS

### SUMMARY:

Recent studies indicate that industrial facilities used by contractors for defense work are not as modern or productive as those they utilize for commercial work. Defense Procurement Circular No. 76-3, in conjunction with Cost Accounting Standard 414, was issued in an attempt to rectify this situation. The effect of these issuances allows the imputed cost of facilities capital employed to be paid as an identifiable cost and modifies the weighted guidelines method for determining profit or fee in order to do so. The official policy is, therefore, to encourage contractors to add new (or modernized) facilities for utilization in defense work.

### BASIC POLICY:

- Basic DoD policy (DAR Section XIII) requires contractors to furnish their own resources in the performance of a Government contract.
- Contractors will be encouraged to invest in facilities that would benefit the Government in the performance of DoD contracts.
- Pursuant to DAR 13-105, TECOM test facilities will be made available to contractors to preclude test facility duplication, establishment or modernization at government expense and/or when arrangements prove to be cost effective to the government.

### CONSIDERATIONS:

- DSARC designated program in accordance with DoDD 5000.1, "Acquisition of Major Defense Systems," Section II.
- Cost portion of contracts increased due to allowability of the cost of money under CAS 414 and DAR 3-808, 3-1300, 15-205.50 and E-509.5.
- Reduction in Government "going in" negotiation profit objectives.
- Secretarial level approval for investments valued at \$5 million or more (when not in the budget, \$1 million...for RDT&E facilities, projects over \$1 million forward to OASA(RDA).
- Decrease (generally) in total cost, since profit portion decreases more than cost portion increases.
- OJSD (R&E) approval in case of other programs using research and development funds.

- Existing contracts and their applicability under the new policy.
- Contractor facilities investment without the use of the special buy-back contract provisions.
- Lengthening procurement cycles and additional contractor record and audit requirements.
- Existing contracts not previously subject to CAS 41+.
- Proposed changes to DAR will provide for the use of special termination provisions for Government buy-back of facilities.

#### QUESTIONS:

##### GENERAL

- Will labor intensive contractors tend to withdraw due to a decrease in profits or tend to build unnecessary facilities?
- Will the policy encourage contractors to replace efficient but depreciated facilities?
- Will the Internal Revenue Service consider imputed facilities cost as income, thereby discouraging investment?
- Will industry resistance to facilities/profit policy changes--due to short-run profit or fee decreases--force a relaxation in the Government's position?

##### MILESTONE 0

- Is the program listed in the Five-Year Defense Program?
- Are program quantities adequate to amortize the value of investment?
- Is the determination for use of special termination buy-back provisions based on a supportable analysis?
- Does the analysis cover each item of capital investment? Does the analysis account for all elements of cost and benefits to be derived by the Government.
- Has the potential Government liability been authorized by the appropriate approval authority during the budget process? Has an assessment been made (on the contractor's Make or Buy structure) to

determine if specialized facilities are necessary? Has a formula for pricing each item of capital investment been devised? Has the unamortized amount been estimated at the time the contractor elects to have the Government acquire ownership? Has the flexibility of establishing the length of depreciation periods under CAS 409 (Unusual Depreciation Periods) been explored? Have procedures been augmented for reporting the total net book value in the budget, Program Operating Memorandum, and Systems Acquisitions Report each fiscal year?

#### MILESTONE I

- If an Advance Agreement has been employed, does it:  
state the maximum potential liability? list the items to be covered by the termination provision? list specific criteria for screening individual facility investments?
- Does the contract:  
list all items to be covered by termination provisions? provide the amortization schedule or other means to establish the price at termination? provide a time limit within which the contractor must provide notice that he is exercising his rights under the special termination provisions? provide criteria for determining when items have been reduced or cancelled? state the limit of Government obligations and liabilities? state the point at which title would pass to the Government? contain the proviso that facilities are to be in good condition if and when the Government assumes ownership? establish third party liability before and after title passes to the Government? state the point at which responsibility for non-recurring maintenance passes to the Government? Stipulate procedures for disposition instructions, should the Government assume title?

#### MILESTONE II

- If the Government assumes title, does the acquisition manager or Contracting Activity have a plan for disposition, restoration (if required), removal, and storage of facilities?
- Does planning include an adequate funding requirement for disposition and removal of equipment to Government storage?
- Does planning give priority for use of facilities on other Government contracts or commercial application?
- Has the break-over point been achieved so that disposition of facilities for commercial value rather than storage in Government inventory would be more beneficial to the Government?

REFERENCES: DRCPP-SC

CAS 414: DoDD 4275.5, 5000.1, OMB Circular A-109

## COMPETITIVE PROTOTYPING

### SUMMARY:

Competitive prototyping is an acquisition technique that can be used during development to foster technical competition as a means of reducing technical risk and cost consequences in later phases of the life cycle.

### BASIC POLICY:

Competitive prototyping will be used when:

- a program has a moderate to high degree of technical risk,
- two or more promising but significantly different trade-off or technical approaches are offered;
- there is the expectancy that later costs for engineering and development or production will be lowered.

### CONSIDERATIONS:

- Potential savings on later phases sufficient to offset the costs of development by competing sources.
- Competition in development causing the two or more contenders to maximize their efforts in doing a superior job.
- Lack of competition in prior development causing unresolved technical problems in production articles.
- Broader statement of Mission Element Needs to foster increased numbers of alternative approaches requiring consideration and potential competition in the prototyping efforts.
- Competitive prototyping on components of a developing system applied on a tailored basis to recognized high risk elements.
- Lack of time and resources for parallel production in conflict with the need for competition.
- Justification for front-end costs of competitive prototyping.

QUESTIONS:

GENERAL:

- Will competitive prototyping lead to lower production costs?
- Is competitive prototyping more cost effective or expedient than obtaining a technical data package from the developer and competing it after initial production?
- Does the DCF reflect adequate consideration of the potential for competitive prototyping?
- Are there components of the system which might be broken out for competitive prototyping?
- How does the approach to competitive prototyping relate to the incentive provisions of the proposed contract?
- Has proper emphasis been placed on the Government's rights-in-data?
- How does the Army foster and preserve the spirit of competition during development?

REFERENCES: DRCPP-SP

AMCP 70-3; AMCR 70-50; AR 70-1, 1000-1, DoDD 5000.1, OMB Circular A-109.

## CONFIGURATION MANAGEMENT

### SUMMARY:

Configuration management (CM) is a technical and management discipline for applying systematic techniques to configuration identification, control, accounting and audit. The discipline provides for the establishment of baselines of technical documentation (specifications, drawings, lists. . .), the management and control of all changes to baselines, the record accountability of all approval changes between baselines and the comparative audit, and comparison of the product to its documented descriptions to ensure completeness and accuracy. The CM discipline is applicable to both hardware and software.

### BASIC POLICY:

- The discipline of CM will be applied to all major Army programs, and the acquisition manager is responsible for ensuring its application.
- System baselines will be formally approved as a part of each major decision milestone. Changes to baselines that result from major reviews will be documented and incorporated into such baselines. When changes modify existing or emerging technical data packages (TDPs), the TDPs will be updated prior to their use in solicitations.
- Proposed changes (ECPs) will be fully documented in accordance with MIL-STD-480 or 481, reviewed by cognizant functional managers, formally approved by proper authority, and funded and implemented in accordance with the terms and conditions of existing agreements.
- The Technical Data/Configuration Management System will be used to track all changes in process and provide an audit trail between baselines. Both documentation-to-documentation and hardware-to-hardware audits will be performed to validate baselines.
- The results of audit will be formally documented and will provide the basis for a decision to upgrade the hardware, the software, and the documentation. Baseline descriptions, when updated, will be made available to all using activities.

### CONSIDERATIONS:

- Planning - Depth of management required by each phase; organization and resources; depth of identification, control, accounting, and audit; implications of "hands off" policy; warranties; contractor support; value engineering; DTUPC.
- Management - Formal vs informal reviews (including audits) and change proposals; Configuration Control Board (CCB) functions and responsibilities; change review, approval, and authorization process; responsibility and authority of the acquisition manager; contracting officer; baseline vs change management.

- Baselines - Adequacy of the data package; package reviews; specifications and standards; drawings; lists; manuals; accountability.
- Changes - Expected volume and scope; degree and depth of review; review resources; procedures and guidance; backup detail; ECP forms and formats; work/deviation requirements.
- Accounting - Scope of function; number of systems; data elements; machine vs manual accounting; in-process and baseline accounting; audit trail.
- Audit - Number and scope; resources; results documentation and feedback; TDP update and release; use of accounting system.

QUESTIONS:

GENERAL:

- What requirements are imposed contractually? Configuration (MIL-STD-480 or 491) or change management?
- Has an approved specification tree been developed? Is the specification tree compatible with the approved Work Breakdown Structure?
- What format is specified for ECPs? Is complete information provided?
- How are baselines accounted for? changes? change in process? approval changes?
- Have the required audits been accomplished prior to release of the product baseline?
- What levels of authority are required to approve changes? Who is on the CCB?
- What baselines are established? Have they been audited?
- Have audits been planned? conducted? with what results? Is there an audit trail?
- Does the configuration management program provide an efficient method for controlling changes to the system and development specifications?

MILESTONE 0

Have Mission Element Need statement and operational environment conditions been spelled out? Has consideration been given to the preparation of the configuration management plan?

### MILESTONE I

What elements of configuration management have been implemented (e.g., identification, change control, status accounting, and audit)? Has the Work Break-down Structure been developed? per MIL-STD-881? Has the system specification been established? What update to the configuration management plan is required? Are sufficient data/documentation available to establish the allocated baseline? Are deviations and waivers fully documented?

### MILESTONE II

Are there sufficient data to complete development specifications? Are there documentation/data maintenance procedures? Have requirements been established for the preparation of drawings and the updating of specifications? Have configuration management provisions been incorporated into the development contract? What configuration management procedures and interface have been developed between the contractor(s) and the Government? Are there procedures and criteria developed for Functional Configuration Audit (FCA) and Physical Configuration Audit (PCA)? Do the results of the FCA and PCA match the configuration management documentation for functional performance and physical characteristics? Is there documentation for the product baseline? What changes are needed prior to establishing the product baseline? Are drawings, specifications, parts lists, and so forth updated as a result of FCA and PCA? Is the technical data package adequate for procurement?

### MILESTONE III

Are configuration management provisions spelled out in the production contract? Are MIL STD 1456 requirements for a configuration management plan implemented fully prior to Configuration Item Verification Review (CIVR)? What procedures are needed to establish criteria for CIVR? Are there service test requirements established prior to full-scale production? Are in-house configuration control boards established? How are deviations/waivers and substitutability handled? How will modifications to hardware and software be reported (to maintain and audit trail)? Are there procedures for interface among acquisition managers and functional elements to assure total integration?

### REFERENCES: DRCDE-RE

AR 70-37 and DARCOM Suppl 1; DAR Sections VII, XXVI; MIL-STD-480, 481, 490; MIL-S-183490.

## CONTRACTOR COST/SCHEDULE CONTROL

### SUMMARY:

In order to protect the Government's interest and minimize costs on CPFF, CPIF, CPAF, and FPI contracts, contractor cost and schedule control systems may be required to meet established DoD criteria. Uniform requirements have been established in order to avoid burdening contractors with duplicative systems and reports. The criteria (C/SCSC) apply to contract from development through production (including PEP, IPF, ES). Use of C/SCSC assists the DoD in evaluating contractors' management systems, while aiding contractors in understanding the Government's needs. Standardized reports by the contractor are used for cost performance reporting, contract fund status, and cost data base.

### BASIC POLICY:

- Contractor management control systems are required to meet the DoD Cost/Schedule Control Systems Criteria (C/SCSC) on all large and critical contracts and subcontracts (unless they are firm fixed-price).
- The only changes contractors are required to make to their cost/schedule control systems are those necessary to meet C/SCSC. Imposition of specific cost/schedule systems, methods, or techniques on contractors is not authorized.
- Contractor cost/schedule data reported to the Government must come directly from the contractor's internal management system. On major contracts, the Cost Performance Report (CPR) will be used. On non-major contracts, the Cost/Schedule Status Report (C/SSR) will be used.
- Procurement plans will indicate, in the section on management information/program control, specifically whether or not C/SCSC with CPR, or C/SSR, will be applied.
- The applicability of C/SCSC and provisions concerning the acceptability and use of contractors' cost/schedule control systems will be included in appropriate solicitations and will be a contractual requirement in resulting contracts. Approval must be obtained from HQ (DARCOM) for non-application when C/SCSC meets or exceeds threshold for mandatory application.

- Only as much information as is essential for effective management control will be obtained from contractors. Maximum use will be made of available contractor data and reports.
- A single Work Breakdown Structure based on MIL-STD-881A will be used in structuring the contract and in the contractor's procedure for planning and assignment of work control and reporting of progress, and generation of historical cost data. This WBS will be used for cost reporting and cost/schedule performance measurement.

#### CONSIDERATIONS:

- On contracts of a cost-reimbursement type, Government managers need to assure that contractors use adequate cost and schedule control systems. This is also true on large FPI contracts.
- On large and critical cost-reimbursement and FPI contracts, the adequacy of the contractor's management systems (i.e. his compliance with C/SCSC) is determined by on-site reviews by trained Government personnel.
- If a contractor's management system is sound (i.e., complies with C/SCSC), the Government manager can rely on summary level cost and schedule data, requesting detailed data only in those areas where problems exist.
- The amount, level of detail, and nature of the cost and schedule data the Government requires to be reported by the contractor depend on the type, size, and duration of the contract.
- Standardized, as opposed to unique, cost and schedule reports will be required of contractors, and these should be "tailored-down" to call for the minimum data needed by the Government.
- The C/SCSC may be applied when appropriate to in-house (Government Owned/Government Operated) development and production activities.

#### QUESTIONS:

- Are the cost and schedule data from the contractor valid, timely, and auditable?
- Is progress measurement determined objectively and on the basis of the amount of work performed?

- Is there a controlled budget baseline which prevents budgets from being arbitrarily shifted, thus obscuring cost variances and the problems causing them?
- Is cost performance determined by comparing actual costs with the value of the work actually accomplished?
- Are significant cost and schedule variances reported with analysis of causes, impacts on the contract and program, and corrective actions taken and proposed?
- Are estimated final costs determined on the basis of actual cost of work accomplished to date plus estimated cost for the amount of work remaining? Are they reviewed at least monthly and updated as necessary?
- Does the cost performance measurement baseline plus any contractor management reserve equal contract value (e.g., target cost plus estimated cost of unpriced changes)? If the baseline exceeds contract value, has prior Government concurrence been obtained?
- Is the Cost/Schedule Status Report (C/SSR) included in all appropriate non-major contracts.
- Is the C/SCSC requirement (by means of the proper DAR clauses) included in all appropriate solicitations and contracts? Is the Cost Performance Report (CPR) also required?
- Is the contract administration office providing adequate support (e.g., assurance that the contractor's system continues to operate as required, and assurance that the cost performance and related data are valid)?
- Is the Government manager analyzing and effectively using the cost and related data to gain early visibility of incipient overruns, as well as a basis for decision making? Is this visibility used to make necessary changes to budgets and fiscal plans?

REFERENCES: DRCPP-K

DARCOM-R 715-2; with Changes; DARCOM P-715-5; 715-13; AMCP 715-10; with Change 1 and 2; DoDI 7000.2; 7000.10; MIL-STD-881A.

## COST ESTIMATING

### SUMMARY:

Cost estimating is an analytical effort directed toward calculating the cost of weapon systems and equipment. Valid estimates are essential to management planning and decision making intended to optimize the use of scarce resources. Cost estimating for each program phase provides total cost visibility that ensures adequate control as well as data for program continuation decisions. Realistic cost estimates are developed through comparison of data from different sources and/or use of alternative estimating techniques and methods. Computer assisted estimating techniques can aid in the development of in-house cost estimates.

### BASIC POLICY:

- Cost estimates for major and non-major systems shall be formulated for key materiel acquisition decision points and attendant documents including the LOA, the concept formulation package, the task force report, the ROC, the APM, the DCP, and the COEA.
- baseline Cost Estimates (BCE's) shall be formulated and/or updated for key decision points in the acquisition process.
- The acquisition manager shall be responsible for the BCE to include a complete, detailed, and fully documented estimate of the life cycle costs.
- The BCE shall be validated by the Cost Estimate Control Data Center (CECDC) activity of the Cost Analysis Office at each major subordinate command.
- An Independent Estimate (IE) or Independent Parametric Cost Estimate (IPCE) shall be prepared by the Cost Analysis Office to give an unbiased, second estimate of a program's cost and to serve as a test of reasonableness of the BCE.
- Traceability of succeeding cost estimates and cost factors including economic escalation shall be maintained.
- Cost estimates as input for TRADOC prepared COEA's shall be formulated by the Cost Analysis Office with input from the respective project manager(s) for all key decision points in the acquisition process.
- The COEA shall rank order candidate systems in order of preference based on intergration of the cost estimate(s) and operational effectiveness data.

#### CONSIDERATIONS:

- Impact of cost estimate on: established thresholds, programs, budgets, present funding, established schedules.
- Impact of cost estimates on Conceptual Force Structure, Joint Strategic Objective Plan (JSOP), Army Initial Realignment Action, Program Objective Memorandum (POM), and Joint Force Memorandum (JFM).
- Use of Army Force Planning Cost Handbook to obtain factors that can be applied in estimating resource requirements.
- Developmental systems managed in accordance with established design-to-cost (DTC) goals.
- Visibility and management provided to operating and support (O&S) costs of weapon systems.

#### QUESTIONS:

##### GENERAL

- Does the cost estimate comply with existing DOD, DA, and DARCOM cost analysis regulatory and guidance requirements? Correct format? Correct definition of terms? Proper rationale and documentation?
- Does the cost estimate comply with specific guidance and instructions provided by HQDA, HQ DARCOM, or other activities (e.g., TRADOC)?
- Is the cost estimate complete in terms of cost elements and WBS elements? Are specific inclusions and exclusions identified?
- Are the estimating methods and techniques logical, supportable, and documented?
- Are the cost factors and data sources current, reliable, supportable, and documented?
- Are the current DA/DARCOM inflation factors and guidance used? Applied correctly?
- Are assumptions clearly identified particularly when used to supplement guidance, data, or techniques used in the cost estimate?

- Has the estimate been prepared in terms of a range estimate which addresses the "uncertainty" about a most likely point value? Are technical risks assessed?
- Are estimates expressed in terms of excessive and unwarranted precision?
- Has the cost estimate been submitted to and validated by the CE CDC? Have differences been explained or resolved?
- Can a cost track be made of estimate progression and change? Have cost tracking procedures been installed and implemented?

#### MILESTONE 0

Are near term RDTE budget funding requirements realistically estimated (e.g., Advanced Development).

#### MILESTONE I

Has the Baseline Cost Estimate been prepared by the acquisition manager? Does the IE test the reasonableness of the BCE? Are budgetary cost estimates realistic? Do budgetary cost estimates have a wide enough band (high/low range) to accommodate all seriously considered technical approaches? Have costs been compared with historical experience of similar or replacement systems? Has TRACE been included? Are initial DTC goals formulated? Has a cost tracking system been established?

#### MILESTONE II

Does the DCP prepared contain firm program cost information based on an updated BCE and IE/IPCE validation? Have program thresholds been prepared for cost? Have management cost thresholds been established to reflect acceptable variances at the end of each fiscal year through program completion? Are DTC and LCC requirements realistic and effective in achieving cost objectives? Has a variance analysis been prepared highlighting differences between the BCE and the IE? Are conclusions and recommendations part of the variance analysis? Has a tracking system been implemented? Have estimates been refined and updated to take advantage of actual experience and hard cost data obtained?

### MILESTONE III

Are the requirements for Milestone II still valid? Have estimates been refined and updated to take advantage of actual experience and hard cost data obtained during each phase? Have design-to-cost goals been obtained? Are estimated production costs within established procurement thresholds? Are established operating and support (O&S) costs goals still relevant and achievable?

#### REFERENCES: DRCCP-E

AR 1000-1, 15-14, 11-18, 70-1, 70-27, 71-9; DA PAM 11-2, 11-3, 11-4, 11-5, 11-25; DODD 5000.1, 5000.2, 5000.4, 5000.25, 5000.28; DODI 5000.33; DARCOM-R 37-4; DARCOM COEA Guide; AIC DTUPC Guide.

## DECISION PROCESS

### SUMMARY:

Central to the management of identifying, directing, and executing efforts is the decision process. Within the Army, managers at all levels are involved. Their personal decisions influence other decisions made at higher levels. The Army is organized (structured) to accommodate three basic precepts of management decision making: exercising judgment and making reasonable, objective, and timely decisions; taking reasonable risks on an individual basis; and, based on the facts and information available, choosing the least risky alternative(s).

### BASIC POLICY:

- Top managers within Army will participate personally in making face-to-face decisions
- The forum for key decisions will be the review process provided by in-process and systems acquisition reviews.
- The agenda for reviews will focus on major issues and alternatives. Pre-reviews will be conducted to resolve minor issues and clearly define major issues and positions.
- Information and data pertinent to the reviews will be provided to participants in advance. All agencies will support the acquisition manager in review preparations.
- Challenges to established issues or practices will be considered only when significant and supported by solid evidence.
- Changes to threat, thresholds, program objectives, and resources will result in re-reviews. When feasible, re-reviews will be accommodated within the established review schedule.

### CONSIDERATIONS:

- Program Initiation - Adequacy of the technology base and intelligence; urgency of the need and required capability; results of continuing Army studies and analyses, and the Army position and agreements on thresholds; objectives, issues, and resources the acquisition strategy and alternatives; and the need for intensive management.
- Program Validation - Reaffirmation of the initiation baseline; results of planning, estimating, and evaluations; feasibility and practicality of alternative design approaches; reasonableness (and firmness) of projected thresholds, objectives, and resources; and resolution of all critical issues.
- Program Development - Reaffirmation and confirmation of the validation baseline through formal (competitive) evaluation; resolution of all major issues (and risks), firming of program plans; estimates and systems designs; fabrication and test of the best technical approach(es); and system approval for service use.
- System Production - Confirmation of the development baseline through resolution of all remaining critical risks; establishment of the program plans, estimates, and system design; selection of the production source; transition from intensive management and achievement of the operational capability.
- System Disposal - Systems operation, maintenance, and support, through to obsolete classification and system phase out in consideration of replacement phase in.

### QUESTIONS:

#### GENERAL

- Have coordinations and preparations been made for all scheduled pre- and formal reviews? Have review administrative and information requirements been established? Who is responsible?

- Has the description, rationale, and evaluation of system need and threat been established? reflected in current plans and estimates? Are logistics, test and evaluation, production, and technical requirements established? Are current phase results documented?
- What issues can be resolved prior to major reviews? What alternatives should be presented? Will a real-time approach be used?
- Who will be at each review? What is the intelligence on their organizational position? How can I accommodate it? Where do I compromise? or should I?
- Who documents the record decision document at each review? Who handles and coordinates reclaims? How should critical challenges be handled? Who should handle them?

#### MILESTONE 0

- Has force level guidance been established? Are critical risks identified? alternatives? Will a PIP suffice? Are budgets and thresholds established?
- Will the program be managed intensively? Who will manage? What support will be provided? When?

#### MILESTONE I

- Are program (Milestone 0) baselines updated? thrust? missions? objectives? resources?
- Are planning and estimating baselines current? valid? reasonable?
- Do results support subsequent phase objectives? What is the acquisition strategy? Is it reasonable? affordable? What are the alternatives?

#### MILESTONE II

- Are the program (Milestone I) baselines current? firm? confirmed by test results?
- Are all planning and estimating baselines documented? Do they support the acquisition strategy budgets?
- Are technical approach(es) established in firm designs? Are design packages current?
- Are formal plans established for management (LCMP, DP), technical (SEMP), logistics (ILSP), procurement (CAPP), production, and test (TEMP)?
- Do results of prior activities support the decision to proceed? Are all major issues and risks resolved?

#### MILESTONE III

- Are the program (Milestone II) baselines firm? supported by current plans and estimates? Is the acquisition strategy and system design firm? reflected in current plans? budget?
- Are formal test and evaluation results available? Do they support the service approval, type classification, and production decision? Is the Transition Plan documented? Are resources identified for transition?

#### DISPOSAL

Is the system type classified (obsolete)? Are the phase and plan complete? When will the replacement item be phased in? Can the transition be effected smoothly?

#### REFERENCES: DRCPM

AR 15-14, 1000-1, 1000-2; DoDD 5000.1, 5000.2.

## DECISION TIMING AND SCHEDULING

### SUMMARY:

Of immediate concern to the acquisition manager are the timing and scheduling of milestone reviews and the necessary pre-reviews conducted as part of the decision process, as well as the relationship of these decisions to the timing of the POM/budget process. Sufficient time must be provided for analysis in support of decision-makers at each milestone, but the length of the decision gap must be minimized. Scheduled milestones should not be delayed, if it can be avoided.

### BASIC POLICY:

- Time to reach IOC will be minimized.
- Program schedule will provide sufficient time for analysis in support of decision making at each milestone.
- Analyses (evaluation of DT and OI, cost analysis and subsequent evaluations, COEA and subsequent reviews) will be conducted concurrently to the maximum feasible extent.
- All critical reviews will be formally scheduled and the dates of these reviews will be promulgated to all involved agencies. The schedules will realistically reflect the time required to conduct and report on required testing, and to prepare and distribute the independent evaluation to the IPR/SARC.
- The manager will ensure the timely delivery of pre-review documentation to IPR/SARC principals and others when directed by cognizant authority.
- The manager will ensure the timely delivery of requested backup information and will document the delivery of such material.
- All resources will be utilized to maintain scheduled review dates. If rescheduling is mandatory, the approving authority will be notified immediately.
- The Red Team approach to major program reviews will be utilized when appropriate, and when utilized it will be considered in the preparation of schedules.
- The schedules will include sufficient time to incorporate the results of predecessor reviews into the documentation provided for subsequent reviews.

## CONSIDERATIONS:

### GENERAL

Provision of emerging results of DT/OT to cost analysts and COEA team; validation of COEA costs prior to completion of LCCs; impact on OSD/OMB/Congress perception of the program if a milestone decision is slipped; early identification of program challenges/issues in order to permit thorough analysis without slipping the milestone review; timing of POM budget submissions.

### MILESTONE 0

Force level guidance; MENS; draft MBS; acquisition strategy and plans; acquisition manager (AM) and organization; staffing and resource plans; program objective statements; budget submittals and backup data; Concept Formulations Package (CFP); DRA; special In-Process Review (IPR) reports; budget estimates; outline plans; threat; existing defense capabilities; technology base; commercial sources; foreign systems; PIP; and budgetary atmosphere.

### MILESTONE I

Special IPRs; Army and Decision Program Memorandum (A/DPM); Pre-ASARC/DSARC reviews and decisions; review memorandum; Decision Coordinating Paper (DCP); STF/SSG final report; Development Plan (DP); Planning and Estimating updates; LCC estimates; COEA update; Systems Engineering and Support Program Analyses and Trade-offs.

### MILESTONE II

Validation IPR; Pre-ASARC II, APM II; DPM; draft DCP submission; DSARC II; DCP approval.

### MILESTONE III

Independent Estimates; DEVA IPR; Pre-ASARC III; ASARC RED Team; ASARC III; APM III; DPM III approval; TC limited; DSARC III; DCP review; update DP; revise DCP/DPM/APM draft DCP; transfer responsibility from RD to Mk.

### DISPOSAL

Obsolete decision; type classify contingency/disposal; program update; new materiel requirements identification; PIP proposals; contingency plans; disposal plans; baseline update; environmental assessment of disposal; logistics update, phase-down training and support.

## QUESTIONS:

### GENERAL

Have coordinations and preparations been made for all scheduled pre and formal reviews: Have review administrative and information requirements been established? Who is responsible? What issues can be resolved prior to major reviews? What alternatives should be presented. Will a RED Team approach be used? Who documents the record decision document at each review? Who handles and coordinates reclaims? How should critical challenges be handled? Who should handle them? Does the program schedule minimize decision gaps? Is sufficient time planned at each milestone for review/analysis of DT/OT results, cost estimates, and COEA prior to each pre-review? Is maximum concurrency provided in analysis/review DT/OT results, cost estimates, and COEA at each milestone? What issues/challenges are likely to be raised at the next milestone by IPR/ASARC/DSARC principals? Can these issues/challenges be thoroughly analyzed before the pre-review? If not, are the arguments against schedule slippage sufficiently compelling to justify going to milestone review with inadequate analysis of anticipated issues/challenges? What backup data should be assembled prior to pre-reviews.

### MILESTONE 0

Has force level guidance been established? Are critical risks identified? alternatives?

### MILESTONE I

Are program (Milestone 0) baselines updated? threat? missions? objectives? resources? Are planning and estimating baselines current? valid? reasonable?

### MILESTONE II

Are the program (Milestone I) baselines current? firm? confirmed by test results? Are all planning and estimating baselines documented? Do they support the acquisition strategy budgets? Is technical approaches (es) established in firm designs? Are design packages current?

### MILESTONE III

Are the program (Milestone II) baselines firm? supported by current plans and estimates? Are the acquisition strategy and system design firm? reflected in current plans? budget? Is the transition plan documented?

DISPOSAL

Is the system type classified (obsolete)? Is the plan for phaseout complete? When will the replacement item be phased in? Can the transition be effected smoothly?

REFERENCES: DRCPM

DoDD 5000.1, 5000.2; AR 1000-1, 15-14

## DESIGN INFLUENCE

### SUMMARY:

The fundamental concept of integrated logistic support is to influence system design through the balanced and cost-effective planning of all the support considerations relative to hardware decisions. This influence starts with the research and development phase of system acquisition efforts. In effect, there is no integrated logistic support unless support considerations exert a balanced influence on the design process.

The objective of acquisition program design is to achieve a military need at the lowest reasonable cost. It is recognized that performance of a piece of equipment can be obtained through various designs and design variations. During the earliest design and conceptual stages, the cost influence of design parameters is considered through trade-off studies to determine its impact on life cycle costs before the design is frozen.

### BASIC POLICY:

- The Required Operational Characteristics (ROC) and Materiel Need (NM) banded performance parameters and a priority for characteristics.
- The designers will conduct trade-off studies during the design phase to assure minimum DTC and DTLC while achieving minimum or better performance.
- During the competitive (Advanced Development) phase, the Government will allow competing contractors to exercise their design flexibility.
- Support parameters in terms of reliability, maintainability, and other design factors will be established and validated in the earliest program definition phase of the life cycle.

### CONSIDERATIONS:

- Influence of earliest stages: Logistic Support Analysis during exploration of alternative system concept and Demonstration and Validation Phases.
- Formal vs. informal.
- Basis of Issue (BOI).
- Maintenance Concept.
- Field Command/User representation.

- Warranties: contract support.
- Management and technical process.
- Follow-up at milestones.
- Documentation.
- PIP or new system equipment - Evolutionary Technology.
- Contractor innovative approaches.
- Remove gold plating.
- Cost and performance influence on new designs.
- Develop cost drivers in requirements.
- Consider effect on development cost, production costs, and operational cost.
- Tooling and production considerations during design.
- Technical transfusion resulting from competition.

QUESTIONS:

MILESTONE 0

- Have pertinent reliability, maintainability, and other functional requirements and parameters been incorporated in the Letter of Agreement and other programs documents?
- Have trade-off studies been conducted?
- Has the life cycle cost of ownership been considered?
- Have development costs been weighed?
- What are the significant logistic issues?
- Are the requirements fully understood as to design impact?
- Has historical data from previous similar systems been utilized?

MILESTONE 1

- Has design to life cycle been considered?

- Has LSA been applied and LSAR utilized for significant components?
- Do performance and readiness requirements drive the design?
- Have logistic support alternatives been analyzed?
- Are performance parameters consistent?
- Has the preferred alternative been selected?
- Have the alternatives been ranked as to affordability?
- Has the Maintenance Concept been developed? Has a Level of Repair Analysis been conducted?
- Have the applicable support parameters been identified and validated?
- Have TMDE concepts been applied effectively?

MILESTONES II and III

- Do design requirements drive the development, production, and operational costs?
- Have LCC estimates changed significantly?
- What is the effect of design freeze?
- Is design flexibility useful?
- Are trade-off studies still valid?
- Have new manufacturing technology and automation been considered in production planning?

REFERENCES: DRCRE-I

AMCR 700-99; AR 70-1, 700-127 and Supplement 1, 750-1, 1000-1, DoDD 4100.35, 5000.1, 5000.28; TM 38-703-1.

## DESIGN REVIEWS

### SUMMARY:

Technical reviews of all engineering and design efforts resulting in the delivery of design concepts, requirements definitization, or hardware/software are essential to technical visibility. Without such visibility, design deficiencies may not be identified until item test. Latent disclosure of design deficiencies results in costly and untimely delays or hardware/software shortfalls. Design reviews include a constructive, positive examination and technical appraisal, a documented identification of deficiencies and corrective actions, and a follow-up review to ensure correction.

### BASIC POLICY:

- Design reviews are mandatory for all engineering and design efforts performed both internally or under contract (or by agreement) for the Army.
- Formal design reviews will provide a technical appraisal of all critical designs and engineering characteristics and interfaces, an analysis of all design deficiencies, and a formal assignment of corrective action responsibility. All assigned actions will be formally tracked.
- Design reviews will be conducted on a periodic and as-occurring (special) basis. Special reviews will be conducted (as a minimum) to establish baselines and as a prerequisite to a major decision. Full participation by all organizations affected by the hardware/software design is mandatory. Each participating organization will file its official report with the assigned manager.
- Critical Design Reviews (CDR) will be accomplished by the developing activity when the detail design is essentially complete. Critical reviews will be performed as a prerequisite to the establishment of baselines.
- Design reviews will be used to measure contractor (or other agency) performance and compliance with contracts (or agreements). When established contractually, the results of formal design reviews will be used to measure progress, and under certain agreements will determine the amount of progress payment.

### CONSIDERATIONS:

- Planning - Plan for the conduct of PDR/CDR; procedures, schedules, and targets; special requirements for configuration audit, DTC, RIN, RAM-D, V/S, ILS, T/E; inputs to planning documents and schedules; Government participation, contractors, subcontractors, other services, external/internal organizations; tailoring
- Procurement - APP, CDRL, DID, specifications and SOW inclusion; schedule for and Government interface to all formal reviews; requirements for contractor procedures, controls, and reports; basis for progressing, payment or fee; method of correcting and tracking design deficiencies; degree of visibility.
- Reviews - Type and frequency of reviews (preliminary, critical, formal/informal); participation and organizational responsibilities; administration and control; results and tracking; corrective actions and contract compliance; reports (DID, CDRL); Independent Government Design Reviews; functional organization involvement (T/E, ILS, financial, production, procurement, users).

### QUESTIONS:

#### GENERAL

- Has a cohesive design review program been tailored for the specific system under development? Is there a need for Independent Government Design Reviews?

- Is MIL STD 1521A understood and has it been considered in structuring the design review effort? Has the design review effort been considered vis-a-vis the configuration management process, and have they been properly integrated? Has consideration been given to subcontractor design reviews?
- Does the contract work statement integrate all design reviews into a cohesive program? Note that Reliability and Maintainability Military Standards call for specific design reviews. Have the proper CDRL requirements been included in the contract (see TD-3 DIDS; DI-S-3118 and DI-A-3029)? Are the procedures for performing design reviews specified in the contract?
- Has a workable system been established to obtain visibility into the corrective action process for deficiencies surfaced during design reviews? Is the design review process being used to introduce Army experience into the design before the design is frozen or turned into hardware? Do the design reviews identify program risks? Is the Army authorized contractually to participate in and obtain total visibility to design reviews?
- Is there a total systems engineering orientation? Is there an effective, specific problem documentation procedure? Is there a specific procedure for addressing documented problems? Have design reviews been accomplished prior to proceeding with major milestones?
- What is the relationship of the design review procedure to the contract management (vs. the acquisition management) process? Should the design reviews be combined with the configuration management audits?
- If tactical computer software is involved, is the acquisition manager knowledgeable of the design review requirements of DARCOM Pamphlet 70-4.

PRELIMINARY DESIGN REVIEWS (See CDR below)

Is PDR mandatory? When should it occur? Who is involved? Is it required by contract? How is PDR related to major decision points? audits? to Critical Design Reviews? FACI/FACR? What are the expected results of the PDR?

CRITICAL DESIGN REVIEWS (See PDR above)

When is CDR scheduled? Have all involved organizations been notified? Do they understand their roles and authorities? What is the relationship of CDR to progress, payment, fee?

CONFIGURATION MANAGEMENT

What is the relationship of DR to CM? item documentation (drawings, lists, specifications) to TM/FM? FACI/FACR? audits? waivers?

REFERENCES: DRCDE-DG

AR 70-1, 70-37, 200-1, 700 Series, 702-3, 702-4.

## DESIGN TO COST

### SUMMARY:

Design to Cost is a concept in which the Unit Production Costs (DTUPC) and/or Life Cycle Costs (DTLCC) are considered to be design requirements equal in importance to system performance and all other parameters. The process of designing to cost provides goals so that the fully developed system can be produced (and operated) within cost ceilings assigned during development. The process includes early setting of cost performance targets which are included in contracts and monitored during development, production, and operation. The Work Breakdown Structure can facilitate control and appraisal of proposed cost or performance changes prior to implementation.

### BASIC POLICY:

DTC provisions will be included in all development contracts (advanced, engineering, or operational systems development) and Product Improvement Programs where anticipated production is expected to exceed \$10 million. It is optional in lesser programs. Minimum essential performance characteristics will not be compromised. Trade-offs below those necessary to satisfy required operational capability are not permitted. Technically feasible alternatives will be analyzed and cost/performance trade-offs made to provide the lowest life cycle solution. Firm DTC targets will be stated in constant dollars with and without GFE and with requirements for contractor tracking and reporting. DTC targets will be of equal importance with performance requirements design. Waiver of DTC contractual provisions must be approved by the Director of Procurement and Production, HQ DARCOM. LCC estimates will be updated and validated prior to the full scale development (Milestone II) and production (Milestone III) phases of the project. Circumstances leading to a waiver of established Design-to-Life-Cycle-Cost goals will be described to the Director of Readiness, HQ DARCOM.

### CONSIDERATIONS:

- Relate DTC goal to the minimum number of essential performance and schedule requirements utilizing a Work Breakdown Structure to identify elements of cost. Specify the objective (what) not the way to achieve the objective (how). Focus on performance, not design. Schedule DTC programs with time for several iterations (relaxed schedules) not on a 100% success basis within deadlines. Begin DTC effort/ considerations at Milestone 1.
- Are there provisions for Government Furnished Equipment (GFE) for or in support of the system?
- Quantity-cost relationships approved by the designated authority.

- Cost/performance flexibility been determined?
- Application of Value Engineering to achieve DTC targets.
- Application of DTC concept to other than major programs; less than major programs; Product Improvement Programs; system modifications; and subsystems and components.
- Do not use DTC if security or performance and schedule goals must have priority.
- Impacts of DTC on: performance and RAM goals, schedules, contracts and contractors, competition, changes, management and control, staffing, and contractor flexibility.
- Use of: performance specifications, trade-offs, LCC, Unit Production Costs (UPC), Work Breakdown Structure, Operating and Support (O&S) cost, contract types (incentive, award-fee), and models.
- Cost Elements: recurring, nonrecurring, labor and materials, sub-contractors/vendors, overhead, G&A, and profit.
- Production Elements: rates, quantities, schedules, improvement factors and facilities/tooling.
- Cost/Performance Element: sensitivity and validity, estimating techniques and confidence, consistency and priority, and sensitivity to change.
- Interpretation of incentive clauses.

#### QUESTIONS:

##### GENERAL

What is the availability and adequacy of the cost/performance data base? Will effective DTC during development adversely impact total LCC program and acquisition costs? Have cost/performance priorities and parameters been established? By whom? Have trade-offs been performed? Are results documented? Are DTC goals an integral part of the functional baseline (e.g., formally released system specifications)? Does the DTC program provide adequately for cost/performance trade-offs? Are DTC/performance parameters specified? Do the contract type and its clauses provide essential flexibility? Is DTC to be used to evaluate responses? What are the criteria? Has a deflation methodology been identified? Are DTC program plans formulated? Do they provide for essential reports and tracking? How will change be handled? Has the contractor's DTC program been validated by the Government?

### MILESTONE I

Have the number of critical performance characteristics in specifications and the RFP been limited? Are these additional goals or features in terms of priorities? Variable (but defined) budget estimate? Has it been validated by the COA? Is LCC or approximation (reliability and maintainability) in cost goal? Is LCC used as a source selection criterion? Is a cost-reimbursement type contract being used? Have realistic cost estimates, performance parameters, and schedules been used? Is monitoring and reporting system established? Are these performance, reliability, maintainability, life cycle cost, and unit production cost in incentives?

### MILESTONE II

Are minimum performance features stated; no "how to" specification in RFP? Is cost goal increasingly firm? Have you considered a production price option? Is LCC or approximation on firmer base? Has a cost-reimbursement type contract with possible production options been considered? Are there incentives in production unit cost and performance? Has the Work Breakdown Structure been established? Is contractor monitoring and reporting satisfactory?

### MILESTONE III

Is there minimum use of military specifications in RFP? Are cost goals firm? Has use of warranties been considered, fixed-price type contract, profit incentives, value engineering, resolution of apparent unfavorable cost variances, initial production, and re-evaluation and validation of development estimates by COA?

### REFERENCES: DRCMT

AR 70-1; DA PAM 11-25; DARCOM 715-4-77, AMC Guide for Design to Unit Production Cost; DARCOM-P 700-6; DoDD 5000.28; Life Cycle Costing Guide, LCC-3.

## DISTRIBUTION PLANNING/FIELDING

### SUMMARY:

The transition from Development and Readiness Command cognizance (the producer organizations) to the User Commands is particularly critical in the area of logistic support. The most complete consideration of all support elements must be integrated into all fielding plans and procedures to minimize materiel and support failures during the initial operational periods and the life cycle of the equipment.

### BASIC POLICY:

- DARCOM is committed to user satisfaction as a prime goal.
- Fielded materiel will perform well in the hands of the soldier.
- For each level of readiness, equipment will operate satisfactorily and be logistically supportable within authorized resource levels.
- DARCOM will assist in deprocessing, deploying, check-out, and initial support of new or modified materiel.
- DARCOM will provide free replacement of defective items during the initial support period when possible.
- DARCOM is committed to acceleration and simplification of the fielding process whenever and however possible.

### CONSIDERATIONS:

- Materiel Fielding Plan (MFP).
- Complexity and logistic impact of new or modified materiel on the gaining Command.
- Risks of accelerated turnover
- Materiel Fielding Team.
- DARCOM/User Fielding Agreements.
- Statement of Quality and Support (SOQAS) requirement.
- Contractor support; RIW.
- Operational feasibility models.
- User point of contact.

- New Equipment Training (NET).
- Transition conditions.
- Basis of Issue (BOI).

QUESTIONS:

MILESTONE 0

No action required.

MILESTONE I

Has the Deputy Chief of Staff for Operations (DCSOPS) identified an operational or other unit that will prepare to receive the system in its first fielding?

MILESTONE II

Has draft MFP been prepared? Has user point(s) of contact been established? Has gaining Command(s) been advised of quantity and date(s) of planned distribution? Has contractor support been considered in the fielding operation? Has user's mission support plan been requested? Has user's mission support plan been provided? Have all elements of ILS been addressed in MFP? Has the MFP been tailored to each gaining Command? Has draft MFP been provided gaining Command for review and coordination? Has planning and coordination been accomplished with all DoD registered users for multiple user item programs? For multiple user items, have adequate repair parts support arrangements been made, including provision for initial and replenishment spares and identification of automatic return items?

MILESTONE III

Has checklist for DARCOM been developed? Has checklist for user been developed? Has the SOQAS been prepared and approved by DARCOM and the gaining Command? Has DARCOM/user fielding agreement been signed by both parties and included in Section I of the final MFP? Has NET been provided? Does gaining Command have trained personnel? Does gaining Command have an ASL on hand? Have field maintenance technicians (Logistic Assistance Office) been trained? Have Materiel Fielding Team members been selected?

REFERENCES: DRCMM-S

DARCOM-R 700-97 (Ch. 10, 11, etc.); AR 700-120, 700-127, DARCOM Supplement 1 to 700-127, 1000-1; TM 38-703, 38-703-1.

## ENVIRONMENTAL PROTECTION AND ENHANCEMENT

### SUMMARY:

The National Environmental Policy Act requires that materiel acquisition actions and programs which may adversely affect the quality of the human environment be thoroughly reviewed to select the best course of action.

### BASIC POLICY:

- At the earliest practical stage in the planning process, and prior to the first significant decision point, proponents will assess life cycle (concept to disposal) environmental consequences of the proposed action concurrently with economic and technical considerations.
- For any proposed action which involves unresolved conflicts concerning environmental matters, proponents will conscientiously develop and describe appropriate alternative courses of action.
- On every major action expected to be environmentally controversial or which could cause a significant impact on the quality of the human environment, proponents will prepare and process under the procedures set forth in AR 200-1 a detailed Environmental Impact Statement (EIS). Doubtful cases will be resolved by publishing a Negative Declaration in the Federal Register. Proponents of actions requiring an EIS will not implement the action until the EIS or Negative Declaration process has been completed.

### CONSIDERATIONS:

- Environmental consequences considered will include as a minimum those listed in AR 200-1.
- Every decision document/funding request will be accompanied by documentation certifying that environmental consequences have been assessed, i.e., an Environmental Impact Assessment (EIA), an Environmental Finding, Negative Declaration or EIS.
- Generic-type EIAs/EISs (e.g., white phosphorous smoke devices, stratified charge, multifuel engines) will be emphasized to simplify tailoring of EIA/EISs for each procurement phase and location (e.g., testing at Aberdeen Proving Ground).
- Final Disposal considerations will be considered during the assessment process.
- Failure to properly assess environmental considerations will cause delays in, or cancellation of the procurement process and could lead to costly adverse litigation.

• Final approval of Environmental Findings/EIAs will be made at the lowest command level consistent with the mission of the command, subject to case-by-case review by higher headquarters, when appropriate.

QUESTIONS:

MILESTONE 0

Has a conscientious mental evaluation been conducted sufficient to answer the following questions? Is the action a major action? Will a significant environmental impact result from the action? Will the action be environmentally controversial? Is an EIA, a negative declaration or an EIS required?

MILESTONE I

Has the EIA been prepared sufficiently to answer the questions posed under MILESTONE 0? Has the environmental finding/EIA been signed by the appropriate approval authority? If an EIS is required, does it adequately address alternative courses of action/unresolved issues/controversial issues?

MILESTONE II

Have generic EIAs/EISs been tailored to the procurement phase and location in a supplement? Has the supplement been signed by the appropriate approval authority? Does additional information require reassessment of the chosen course of action?

REFERENCES DRCPA-E

AR 200-1, DARCOM Supplement 1 to AR 200-1, DARCOM R 75-2.

## FACILITIES PLANNING

### SUMMARY:

The maintenance of adequate industrial facilities and capabilities that will be responsive to the mobilization requirements of the Army is a matter of prime concern. Contracting and procurement policies and acquisition strategies should include a consideration of impacts on those facilities and capabilities which may be included within the definition of mobilization base. The Joint Conventional Ammunition Program Decision Models Directorate of ARRCOM has developed an economic decision model to determine the highest readiness mix of component inventory end-item inventory, and mobilization production response attainable for a specified budget. This model, the Item Acquisition/Production Trade-Off (IA/PT) Model, compares costs of acquiring component and end-item inventory with costs for proposed methods to improve mobilization production response.

### BASIC POLICY:

- Facilities planning will include the development and maintenance of an industrial base capable of supporting approved forces and future military operations.
- Facilities planning will include the budgeting and execution of projects for acquisition, procurement, production, and maintenance of resources to provide military materiel under current and emergency conditions.
- Facilities planning will encompass management of industrial production and maintenance facilities, to include the acquisition, construction, rehabilitation, and layaway or disposition of plants and equipment.
- Facilities planning is formulating, justifying, and defending programs and budgets.

### CONSIDERATIONS:

- The mobilization base as established through implementation of AR 700-90, Army Industrial Preparedness Operations.
- DPC No. 76-3 and Cost Accounting Standard 414: new profit policy and facilities investment.
- Base retention/expansion as determined by computed requirements and mission.
- Dependence of private industry to provide the mobilization base.
- The Army supplementing what industry cannot or will not provide.
- Government direct funding of the contractor.
- The GOCO approach; Arsenal Statute [10 USC 4532(a)].

- Split procurement: multiple source participation.
- Mobilization planning with Canada (the only foreign involvement).
- Products vs. mobilization rate.
- Additional sources.
- Planning agreements.

QUESTIONS:

MILESTONE 0

No action required.

MILESTONE I

No action required.

MILESTONE II

- What decision process should be used in determining the technology development (MM&T) to facilities program?
- What are the considerations in replacement vs. renovation/modernization decisions?

MILESTONE III

- What is the impact of implementing a policy of decreasing reliance on a Government operated base?
- What is the impact of stockpiling on item obsolescence?

REFERENCES: DRCMM

AR 500-10, 570-10-5; DoD 3005.2.

## FOREIGN ACQUISITION/INTERNATIONAL PROGRAMS RESEARCH AND DEVELOPMENT

### SUMMARY:

Foreign Acquisition/International Programs includes the acquisition or collaboration with friendly foreign nations on technology exchange, development of weapons systems, effecting the interoperability of systems and procedures, and enhancing near term readiness. The principal interchanges are between the United States and the NATO alliance members. Occasionally exchanges with members of other alliances and free world nations are affected. Provisions for borrowing, loaning, and purchasing weapons systems for test or evaluation are also included.

### BASIC POLICY:

- Comply with the Data Exchange Program (DEA) - Provides for cooperative research and development. The U.S. exchanges technical and scientific information of mutual interest with participating countries; this includes the negotiated loan of equipments.
- Comply with ABCA/NATO Program - To effect interoperability/standardization between the Armies of the US/UK/CA and AS(NZ), and the NATO member nations, this provides participants the opportunity to review the R&D and interoperability requirements of other nations. The objective is to provide opportunities to enhance the combat operational effectiveness of the US Army and participating nations. It also provides for the loan of equipments.
- Promote Interdependent R&D - A participating nation's Army may monitor system development by another nation's Army. The extent of participation in Interdependent R&D will be specified by separate bilateral arrangements between the armies concerned.
- Utilize Collaborative R&D - Participating nations may collaborate in the research and development of a single item or component and/or provide for interoperability through joint test, assessment, product improvement and/or the development of interface capabilities. Collaboration details are by separate arrangement between the Armies concerned (joint management provision of finance, specialist staff facilities, and so forth).
- Coordinate R&D and/or Interoperability with Participating Nation - In undertaking similar or related research and development and/or effecting interoperability provisions, the US offers to coordinate its efforts with those of another nation.

- Engage in Competitive R&D - Armies agree to compete in development, adopting the best technical or prototype approach to a common, over-all requirement.
- Utilize a Memorandum of Understanding (MOU) - A negotiated, cooperative program is agreed to between the U.S. and foreign nations utilizing the best industrial, scientific, and technical resources of each country. An MOU is appropriate when the specifics of a cooperative approach can be defined fully.
- Enhance Near Term Readiness - A program to identify and support an enhancement of the capabilities of the US Army and the other NATO nations to operate as a total force in the European environment.
- Implement DOD Rationalization, Standardization and Interoperability (RSI) Initiatives - Pursue the objectives of Rationalization, Standardization, and Interoperability (RSI) to avoid duplication of R&D efforts and to promote the objectives of interoperability to the maximum extent.
- Promote USA/Canada Defense Development and Production Sharing - The provisions of these agreements should be given full consideration in the R&D and procurement process.

CONSIDERATIONS:

- DEAs can be negotiated upon approval of the DARCOM CG or delegated authority.
- Discussions with foreign personnel under a Data Exchange Agreement are limited to the scope of that Agreement.
- Content of documents provided under a Data Exchange Agreement must fall within the scope of that Agreement.
- All Data Exchange information must be cleared by the proper classification authority.
- A quid pro quo must be provided before sensitive information is released under a Data Exchange Agreement.
- Cooperative R&D should be initiated with our allies at the earliest stage in the development cycle.
- No agreements for cooperative R&D should be made without prior approval of DARCOM HQ.
- Requests to negotiate and conclude cooperative R&D MOUs should

contain as a minimum:

- . An MOU or a detailed outline of what is proposed.
- . A legal memorandum setting forth statutory and other legal authority.
- . A fiscal memorandum setting forth estimated cost, if any, of each obligation proposed and the source of funds for each specified fiscal year.
- Cooperative R&D efforts cannot exceed existing program authorizations.
- Interoperability determinations are normally not charged to R&D except when they are associated with a specific R&D system.
- When interoperability determinations are associated with a special R&D system, management and support funds are not used to support such determinations.
- Identification of interoperability enhancements within NATO is applicable to all systems, subsystems and components.

QUESTIONS:

MILESTONE 0

- Has a DEA been considered? What are the ILS implications?
- Are the ABCA countries and/or NATO allies pursuing a comparable program?
- Is funding available?
- Have foreign sources been considered?
- What are the security implications?
- Would foreign involvement positively affect standardization?
- What are the legal implications?
- What are the financial implications?
- Is OSD and/or State Department approval required?
- Have interoperability implications been considered?

MILESTONES I - III

- What are the arrangements to meet with foreign representatives?
- What is the composition of the U.S. negotiating team?
- Has the draft MOU or DEA been prepared in advance?
- What fallback position does the U.S. have if required?
- At what level will the MOU be signed for the U.S. (DARCOM, DA, OSD)?
- Will the program positively affect standardization?
- Will the system be interoperable in the NATO environment?
- If so have appropriate STANAGS/QSTAGS been considered to maintain this interoperability.
- Are DEAs exploited to surface potential MOUs?
- When MOUs terminate, is consideration to be given to DEAs for continuation of exchange?
- What impact will the fielding of this system have on near term readiness within NATO?

REFERENCES: DRCIRD

AR 34-1, AR 34-2, 70-15, 70-33, 70-41, 1000-1.

## FUNDING

### SUMMARY:

The Congress authorizes the expenditure of funds and provides actual dollar resources within prescribed amounts. Funds may be further distributed by the acquisition manager to the performing activity through allotments, funded orders, or other appropriate fund authorizations. These allotments and authorizations provide financial resources in support of approved projects. Funding may be restricted at different levels and in different ways, such as annual or multi-year availability, or for application only for specified purposes and in specified amounts.

### BASIC POLICY:

- Acquisition manager funding must match the life cycle phase of the managed item.
- The funds accountable officer will be held responsible for all aspects of funds management. When funds are assigned directly to a project, the project manager is responsible. He will be held responsible as an "Installation Commander" for a year-end certification report.
- The project manager will receive funds directly from the General Operating Agency.
- Project managers reporting to HQ DARCOM will receive funds from the SOA.
- Budget estimates will be prepared, justified, and submitted in accordance with the schedule provided by HQ DARCOM and higher authority.
- Budget backup detail, including estimates and analyses, will be kept current, reflect the current and proposed changes to the FYDP and the justification for changes. The project manager will ensure budget estimate accuracy and currency and will be prepared to justify all budget submissions and reclaims.
- A budget distribution plan will be prepared to reflect current, fiscal, and budget year plans. Expenditures will be traceable to the distribution plan and reflect all return costs.
- Internal records of distribution will be made available to cognizant accounting organizations upon proper request. HQ DARCOM and higher authority will be appraised monthly of all deviations to the distribution plan.

- A single project summary Work Breakdown Structure will be prepared and utilized for the purpose of funds accountability and reporting to higher authority.

CONSIDERATIONS:

- Accurate projections of requirements through the Five Year Defense Plan period.
- Project Management Office manpower requirements documented and funded.
- Accurate and complete budget backup material. Congressional reductions in budget estimates.
- Changes in program cost estimates reflected in funding documents or requests.
- Special attention for Congressional justification backup material. Reprogramming flexibility during budget execution.
- Special attention to provisions of RS 3679 which prohibits obligation or disbursement of funds in excess of availability.
- Special attention to provision of RS 3678 which prohibits use of appropriated funds for reasons other than for purposes and items intended by Congress as stated in the Appropriation Act.
- Total Risk Assessing Cost Estimate (TRACE) for formulation of RDT&E program requirements. Unfunded reprogramming requirements associated with high technical risk areas.
- Careful attention to execution constraints during program execution (Congressional floors, Congressional ceilings, ODDR&E Special Interest Items, DA Administrative Instructions, etc.).
- Funded Reimbursement Authority (FRA) before certain sales to FMS customers.
- Technical efforts should match program category of funds used (e.g., 6.2 efforts with 6.2 funds, and so forth).
- Planning for FRA; RCS-CSCAB-307--the "307 Report."
- Project manager review status of unliquidated obligations with local F&AO every 120 days.
- Inevitable changes in scope of work.

QUESTIONS:

GENERAL

- If the project manager does not retain fund control, is the delegation in writing?
- Does local F&AO certify funds available and perform fund control as tasked by the acquisition manager?
- Were resources planned for or provided to F&AO to perform services as SOP?
- If FMS sales are planned, has action been initiated to obtain FRA if needed?
- Have provisions been made for F&AO to provide year-end certification?

MILESTONE 0

- What Army Industrial Fund (AIF) resources are applicable to the R&D program?
- What about the quality and precision of funding requirements estimates?
- Is the Resource Programming and Planning Schedule timely to meet requirements?

MILESTONE I

- Is R&D funding adequate to the fiscal year?
- What should be the size of the Management Reserve?
- What are the specified constraints by appropriation?

MILESTONE II

- Is the impact statement prepared?
- Is there the possibility of a second source funding?

REFERENCES: DRCCP-B/DRCPP-P/DRCDE-P  
AR 37-2, 37-20, 37-21, 37-108, 37-120

## GOVERNMENT/INDUSTRY PRODUCTION OPTION

### SUMMARY:

The acquisition manager will decide on the best source for test development, pilot production, or similar operation based on the alternative that is most advantageous to the Government. Either in-house production or contracting decisions shall consider the overall life cycle implications of the program. A prudent decision should be the result of consultation among legal, cost analysis, procurement, production, engineering and maintenance personnel. Acquisition shall be made at the lowest total cost, commensurate with requirements, from the best source among all available sectors.

### BASIC POLICY:

- All available manufacturing or services resources, private and public, shall be considered in identifying the lowest total cost alternative.
- Examine the option to select Government facilities or the private manufacturing sector through the contracting process, within the framework of existing statutes and acquisition guidelines.
- Selection of the acquisition process strategy will include consultation with staff legal, cost analysis, procurement, production, engineering, maintenance, or other personnel to ensure decision consistency.
- Initial development, test, pilot production, and so forth performed by Government facilities, followed by production by private industry (or other combinations).
- Relative costs, overhead rates, facilities, capacities, and time frames shall determine the in-house vs. contracting decision.
- Cost data shall be validated to ensure that the Make or Buy decision is based on accurate life cycle cost evaluation.

### CONSIDERATIONS:

- Partial in-house manufacture and then Government-Furnished Property (GFP) provided to a prime contractor at less cost to the Government.

- In-house manufacture where a facility/Command has wide-ranging total responsibility (such applications as Ordnance, Biological, Chemical/Radiological).
- Both Government and private facility utilization where future requirements exceed either capacity.
- War mobilization production base maintained in both the Government and private areas.
- Higher budget emphasis on small business set asides.
- Utilizing Government test facilities to verify findings (e.g., National Bureau of Standards in lieu of contracting out).
- Inter-service utilization.
- Upgrade MOB-Base.

#### QUESTIONS.

##### GENERAL

- What options are available for the mission or task to be accomplished, considering in-house manufacture vs. contracting?
- What regulations, statutes, handbooks, guidelines, and so forth are available that govern the Make or Buy decision?
- What will be the basis of cost comparison between the two options?
- Would a combination of options be most advantageous (e.g., components manufactured in-house provided to the contractor as GFE)?
- Are the overall requirements long-term or short-run, such as one-time tests?
- What are the available talents within the Government vs. the private sector?
- What is the available equipment in both sectors?
- What are the respective workloads in each sector?
- Are there aspects of a particular mission that may restrict accomplishment to a particular facility?

- What has been the history of the facility or contractor with respect to cost over-runs, delivery, and quality of product?
- What may be the impact of new regulations or reorganizations (e.g., the single service management concept)?
- Would socio-economic considerations such as small business, labor surplus, minority business utilization be a factor?
- What will be the managerial control aspects of an in-house vs. contracting decision?
- Would the acquisition manager have more control over product assurance and acceptance in-house or through a contractor?

REFERENCES: DRGPP-S

AR 235-5; OMB Circular A-76; 10 USC 4532(a).

## INCENTIVE/AWARD FEE

### SUMMARY:

The Cost-Plus-Award-Fee (CPAF) contract is a cost-reimbursement contract with special fee provisions. The contract type provides a base fee (which remains constant throughout performance) and an award fee above the base fee which, if earned, will be paid either in part or in whole on the basis of periodic evaluations of contractor performance by the Government. It provides a means of applying incentives in contracts which are not susceptible to finite measurements of performance essential to structured incentive arrangements, as in Cost-Plus-Incentive Fee (CPIF) or Fixed-Price Incentive (FPI) contracts. The award fee portion of the CPAF concept may be used on other type contracts. Thus, a CPIF contract could use the AF feature for subjective assessment and reward of an aspect not subject to quantitative evaluation.

### BASIC POLICY:

- The CPAF arrangement should motivate the contractor to optimize (make the best use of) his resources in performing the entire contract, not cause him to maximize his fee by trading-off one or more performance areas against another.
- While competition for follow-on awards normally provides an adequate incentive, sole source procurements with Design to Cost (DTC) requirements may be enhanced through the application of award-fee provisions in addition to the purely cost, schedule, and/or performance incentives prescribed in the basic CPIF or FPI contract.
- Evaluation of contractor performance must be in light of contractually specified performance plan requirements; evaluation or performance criteria for each work assignment or functional performance area should be stated in clear and unambiguous terms.
- CPAF cannot be used to avoid CPFF or CPIF type contracts, nor should a CPIF contract be used where a CPFF or other contract type is appropriate. The predominant manner in which the fee is to be determined will establish whether the CPAF or some other type of incentive contract is to be employed.
- Permitting the contractor to recover unearned fee during the last evaluation period may present him with an underserved reward of "roll-up" entitlement which should, once lost, be forever lost.
- Therefore, the use of roll-up provisions is discouraged.

- On project managed contracts, the PM will be the chairman of the Award Fee Review Board. In such cases, the Head of Contracting Activity shall serve as the fee determining official.
- On the award fee for design to cost, the largest increment of the fee should be reserved for the assessment based on a price obtained in a production contract, if possible.
- Use of performance/schedule incentives (other than DTC) on CPIF/FPI contract will require DARCOM Procurement and Production Directorate approval.

#### CONSIDERATIONS:

- Be certain that those responsible for administering the award-fee contract understand their respective roles (e.g., the Fee Determination Official, the Award-Fee Evaluation Board, Functional Monitors, and Performance Monitors).
- Avoid the growth of an adversary environment with the contractor. Be timely in the fulfillment of award-fee review and reporting requirements. Frequent and honest communication, both within the Army's award-fee team and between the Army and the contractor, is essential.
- Don't spread excessive verbiage throughout an award-fee performance plan, keep it as simple and declarative as possible.
- Regard and respect the award-fee performance plan as part of a contractual instrument. Any changes to it must be made through the cognizant contracting officer.
- In many instances, performance measurements under a CPAF contract are grounded in subjective assessments. Provide the best possible performance standards for these measurements, so that even though the assessment is subjective, it is an informed assessment not a guess.
- The method used to provide an incentive for the contractor should be tailored to the circumstances of the procurement. Use of incentive fee provisions causing a share in any underrun or overrun for target cost may be a more appropriate technique than a CPAF contract. If so, the CPIF or FPI contract types should be used. Take into account the cost of administering an incentive contract.

QUESTIONS:

- Does the contractual award-fee plan answer the following questions: What is to be evaluated? What significance (expressed as a percentage of 100) is to be placed on each performance area to be evaluated? How and on what basis (rating plan) is the evaluation to be made? What is the duration and frequency of each evaluation period? Within the Army award-fee team, who has the responsibility and at what levels to evaluate, to consolidate results, and to determine the award-fee amount? Does the provision for award-fee payment identify the basic method or technique for calculation of the award fee?
- Have performance monitors (or evaluators) a firm understanding that their role is to assess, not judge, contractor performance? Does the entire Army team understand that the contractor must be evaluated in light of what the contract requires, not in light of what he might have done?
- Are the expressed performance standards for assessing contractor activities or output as declarative and unambiguous as possible? Or do they range from slippery to obtuse? (If the latter, then cause them to be changed or upgraded.)
- Is the award-fee plan grounded in achievable performance goals? Does it motivate the contractor to optimize his resources toward continuously excellent performance? Is award fee the best way to incentivize the contractor? What percentage range should the award fee cover? Does the operation of the incentive cause the contractor to meet the Government's objectives in order to earn it? Have the criteria for the award been satisfied?

REFERENCES: DRCPP-SP

AR 70-1, Chapter 5; DAR Section III, Parts 4 and 8, and 3-405.5; DoDD 4275.5, 5000.1.

## INDUSTRIAL BASE PLANNING

### SUMMARY:

The development and maintenance of adequate industrial facilities and capabilities that will be responsive to Army mobilization requirements is a matter of prime concern. Acquisition policies and contracting strategies should always consider the potentials of the industrial base to meet current and emergency needs. Every effort should be made to improve mobilization response to assure the highest readiness posture for approved forces.

### BASIC POLICY:

Industrial Base Planning includes:

- Development and maintenance of industrial capability essential to the support of approved forces and future military operations.
- Budgeting and execution of projects for acquisition, procurement, production and maintenance of resources to provide military materiel under current and emergency conditions.
- Management of industrial production and maintenance facilities, to include the acquisition, construction, rehabilitation, and layaway or disposition of plants and equipment.
- Formulating, justifying, and defending related programs and budgets

### CONSIDERATIONS:

- The industrial production/maintenance base as established through implementation of AR700-90, Army Industrial Preparedness Program.
- Base retention, modernization, and expansion as determined by computed requirements and assigned missions
- Dependence on private industry to provide the industrial base.
- Army supplementation of the base when industry cannot or will not provide the needed capabilities.
- Direct funding of the contractor.

- The Government-Owned, Contractor-Operated (GOCO) approach.
- The Arsenal Statute (10 USC 4532(a)).
- Split procurement, multi-year production, multiple source participation.
- Mobilization planning with Canada (the only non-U.S. involvement)
- Alternate sources.
- Planning Agreements.

REFERENCES: DRCPP-I

AR700-90, Army Industrial Preparedness Program  
DOD Directive 4005.1, DOD Industrial Preparedness Production Planning.

## INTEGRATED LOGISTIC SUPPORT PLANNING

### SUMMARY:

Integrated Logistic Support (ILS) planning is performed within the Army to establish support and maintenance objectives for systems and equipments over their life cycle. The ILS process is integrated concurrently with the systems engineering and design process. The results of logistics support analysis provide the basis for detailed planning of the logistic elements and their management, as well as information and resource requirements.

### BASIC POLICY:

- An ILS office will be established within each Command and project. The office will have organizational visibility and identity at a level where decision influence can be exerted.
- The Development Command and acquisition manager will be fully responsible for ILS development until transition to the Materiel Readiness (MR) Command. The MR Command will be responsible for nondevelopment items and will evaluate readiness and availability throughout the life cycle.
- A logistics manager responsive to the needs of the acquisition manager will be designated for each major program and equipment acquisition. The acquisition manager and assigned logistics manager will be responsible for the completeness, accuracy, and currency of all planning and estimating documents.
- Support resources will not be subject to trade-off merely to satisfy time, cost, or effectiveness limitations. Threshold approval authority decision review will be required to adjust established logistic thresholds.

### CONSIDERATIONS:

- Support subsystems development is an integral part of system development.
- ILS is mandatory in systems developed by the Department of the Army, all other procurements, and in Product Improvement Programs.
- ILS subsystems development is equal in priority and importance to hardware developments in all weapon systems acquisitions.

- The resources devoted to planning, developing, acquiring, and managing ILS are an inherent part of the overall cost of developing, producing, and delivering an operationally effective system.
- Early design and development effort shall consider those parameters which have a significant impact on system readiness, capability, or cost.
- Logistic support shall be a principal design parameter.
- The ILS scope of work for each contract will include requirements for a Logistic Support Analysis (LSA) Process.
- Logistic aspects of basic design will be evaluated at each design review, including system readiness, supportability, capability, and operating and support costs.
- The System Support Package (SSP) is the responsibility of the materiel developer. A SSP is made up of drafts or prototypes of those tangible logistic support elements and/or descriptions of such elements required to operate and maintain a materiel system in an operationally ready condition. Failure to provide a timely, complete and adequate SSP for DT/OT II bars a production decision under the provisions of AR 1000-1 until corrections are made and tested.
- Joint service programs shall be taken into account.
- Prototype hardware and technical data will be provided for the Logistic Teardown Evaluation Review/Maintainability Demonstration.
- Has Depot Maintenance Interservicing been considered for providing organic depot support?
- Applicable funding source: R&D, APA, SF or OMA.
- Reliability Centered Maintenance (RCM) principles will be considered during all phases of design for the purpose of reducing operating and support costs.
- Commercial-type warranties will be considered in Equipment Acquisition.

QUESTIONS:

MILESTONE 0

Development Command

Have ILS considerations and support parameters been provided for LOA?

Has "Design-To" reliability/maintainability been incorporated in the program? Have logistic support (LSA) studies/investigations for LOA been determined? Has the Level of Repair Analysis (LORA) been conducted? Has the maintenance concept been prepared and coordinated? Have coordinated trade-offs been made between logistic support alternatives and design alternatives? Has a life cycle cost analysis been prepared?

Materiel Readiness Command

Have logistic support study requirements been provided for the IOA? Has the logistic system for the item been described? Have considerations that affect system readiness and availability been evaluated? Have "design-to" reliability and maintainability criteria and functional requirements been provided?

MILESTONE I

Development Command

Have test/calibration functions been identified? Have all required SPA materiel been acquired? Have logistic support system elements been identified and validated? Has LSA been conducted to identify, quantify and resolve logistic issues?

Materiel Readiness Command

Have all logistic support issues been resolved?

MILESTONE II

Has an LSA been conducted to the required level of the Work Breakdown Structure? Has the LSA Record been analyzed by an ILS review team, including representatives of the Materiel Readiness Command and TRADOC? Have complete ITDT materiel been scheduled for delivery and test during DT/OT II? What is the potential for system readiness and availability based on the demonstration, tear-down and evaluation at the Physical Teardown and Evaluation Review? What are the conclusions of the Materiel Readiness Command, OTEA, and TECOM as to system readiness and availability as a result of Government development validation testing and operational testing? Are the requirements of the Required Operational Capability (ROC) and Letter Requirement (LR) being satisfied as to supportability? Have operational readiness and repair cycle requirements been approved? Has the Materiel Fielding Plan been initiated? Have points of contact in the gaining Command(s) been obtained? Has the distribution plan by quantity and date been furnished to the gaining Command? Has the preliminary mission support plan been obtained from the gaining Command.

### MILESTONE III

Is the Materiel Readiness Command participating deeply in the acquisition of support elements and in planning the Materiel Fielding Operation? Are LSAR data being used to support the provisioning buy? Are all logistic support elements on schedule to include personnel in required numbers and skills? Is the Materiel Fielding Plan signed by both the DARCOM representative and the gaining Command representative being distributed? Is the Statement of Quality and Support approved and funded? Have all gaining Command requirements been considered? Will repair parts fill and support equipment be satisfactory and timely? Will fielding be successful? Will a DARCOM representative be in the gaining Command to meet all shipments? Has coordination been effected with both the DARCOM Maintenance Interservice Support Management Office and the Joint Logistics Commanders' Maintenance Interservice Support Group, Central to insure that depot maintenance interservice support considerations are completed on a timely basis, and a depot support activity has been designated?

### REFERENCES: DRCRE-I

DARCOM-R 700-97; AR 70-1, 70-15, 700-18, 700-120, 700-127 and Supplement 1, 750-1, 750-10, 1000-1; DoDD 4100.35, 5000.1; TM 38-700, 38-703-1.

## LEGISLATIVE CONSIDERATIONS

### SUMMARY:

Contact and communication with Members of Congress shall be conducted in keeping with the importance of Congressional concern for the acquisition process. All discussions should be candid and cooperative in order that the best interests of key and important programs are well served. This policy applies to committee staff and Congressional staff, as well as to Members themselves. Clarity and precision will be sought in all communications with Members. Existing Army and DoD directives on the subject are provided for guidance of all project management personnel in promoting unambiguous and effective dialogues.

### BASIC POLICY:

- The utmost cooperation will be given to Members, committees, and staff members of Congress.
- All Congressional inquiries will be dealt with promptly.
- Replies must be forthright and non-technical.
- Official statements will be confined to matters under the cognizance of the acquisition manager concerned.
- Complete courtesy and cooperation will be extended Members, committees, and staff members of Congress during Congressional visits. Visits will be followed by Congressional visit reports as required in AR 1-20.
- Acquisition managers will provide factual information, statistics, and other data as requested.
- Acquisition managers will serve as witnesses or backup witnesses as desired by Congressional sources in connection with reprogramming and other legislative actions.
- Reprogramming and other such matters will be coordinated promptly and fully with DRCSA-C.

### CONSIDERATIONS:

- Totally factual and responsive replies.
- Expeditious and timely responses.
- Minimum, unavoidable abbreviations and acronyms (spelled out first).
- All allegations and/or issues addressed properly.
- Alternatives to development.
- Impact of accelerations and delays.
- Reasons for costs.

### QUESTIONS:

#### GENERAL

- Is the project fully funded, or is it contingent on further legislative action?
- Has a clear statement of ROC been developed?
- How does the system integrate on the battlefield with other systems?

- What is the potential use, development, and so forth with other Services?
- Have development steps (based on system need rather than a life cycle management chart) been justified?
- What were past fiscal year dollars used for? Show progress with film clips or other display media.
- What is the current budget request to be used for?
- What has been done toward NATO standardization?

REFERENCE: DRCSA-C

AR 1-20.

## LIFE CYCLE ACQUISITION AND SUPPORT PLANNING

### SUMMARY:

The planning and execution functions of an acquisition program are complex. The full life cycle process must be understood by managers to acquire the desired materiel and to lay the proper groundwork for successful fielding and support. Life cycle planning requires a knowledge of the requirements and interaction of the many Army and DARCOM regulations and directives that govern the total materiel management process relative to major and non-major systems and items. The starting point for DARCOM planning of an acquisition program is DARCOM-R 11-27, Life Cycle Management of DARCOM Materiel.

### BASIC POLICY:

- All life cycle activities and events will be defined in common terms of reference to insure a common language among managers, functional specialists and users.
- Threshold management procedures for controlling expenditures, schedules and performance will be established for all materiel programs.
- The functions and responsibilities of the research and development commands and the materiel readiness commands will be carefully delineated and established for each materiel program.
- The developer/logistician will establish close coordination ties with the combat developer/trainer/user.
- Each manager will structure his plans and implement those actions which will reduce the time and resources for development and yet minimize the operating and support costs after deployment.
- Each project will have a plan in outline form which carries through IOC with detailed plans and schedules for the immediate 12 - 18 month period.

### CONSIDERATIONS:

- The nature, complexity and urgency of the system or item.
- The approval authority for milestone decisions.
- Required phases, activities, events and products and those which can be eliminated, consolidated, or reduced in scope.
- Development and acquisition progress of the equipment, support and TDP as the pacing factor.

● Transition planning (DARCOM-R 70-1) in relation to the nature of the item.

● Timely reporting of successes and failures which affect materiel performance, schedules, and resources.

● Maintenance of records to document baselines and subsequent changes in cost, schedule, performance estimates, configuration, support requirements, and the TDP.

● Consideration of viable alternatives at each decision point.

#### QUESTIONS:

##### GENERAL

● How can the planned schedule be reduced to result in minimum expenditure of resources and yet yield data to show true progress toward the IOC goal?

● Which activities need to be coordinated with TRADOC so that their requirements can be included in the plans, contracts, reports, and documents?

● What are the special rules on the use of various Army appropriations and the PPBS cycle which will impact the project schedules?

● What other organizational elements must be contacted to provide support to the acquisition effort?

● Can the planning effort be aided by the standard ADP life cycle management model?

##### SPECIFIC

See DARCOM-R 11-27 and the five phases of life cycle management. A total of 528 separate activities events and products are identified as a possible "shopping list" for planning purposes. Each manager will selectively tailor his plans to fit the materiel for which he is responsible.

##### REFERENCES: DRCPA-S

AR 1000-1; DA Pam 11-25, DARCOM-R 10-2, 11-27, and 70-1.

## MANUFACTURING TECHNOLOGY

### SUMMARY:

The Manufacturing Methods and Technology (MM&T) program (which the other services call "Manufacturing Technology") is intended to promote the timely establishment and improved quality of the manufacturing processes, as well as techniques and equipments required to support current as well as projected or anticipated programs. These improvements will ensure an enhanced ability to produce, reduce lead times, ensure economic availability of end items or components, reduce costs, increase efficiency, improve reliability, and incorporate safety and anti-pollution measures. In the Army, MM&T plus MACI (Military Adaptation of Commercial Items) comprise the funded area of production engineering measures. Aside from providing for reliable and economical manufacture of materiel, MM&T projects serve to expand manufacturing technology and translate new technology into practical production processes. MM&T provides advanced manufacturing techniques and processes to support modernization of the industrial base. Procurement lead time and costs may be reduced, and alternative methods of manufacturing components may be investigated. MM&T projects may also involve technical or management studies for improving manufacturing processes or techniques. Military Adaptation of Commercial Items (MACI) projects explore the feasibility and practicability of adapting commercial items/components to meet military requirements. These projects may provide for procuring, evaluating, testing, and type-classifying commercial items for military application, including determination of performance and quality assurance criteria prior to quantity procurement. Adaptation applied to commercial items should be solely related to satisfying a military need.

### BASIC POLICY:

- The MM&T program will be implemented by all Commands to optimize the utilization of technology advances in maintaining a modern, viable industrial base.
- The support of current as well as projected production requirements, industrial readiness, and/or quick reaction production needs has applicability under the MM&T program.
- MM&T program monetary resources will be applied to the areas that promise the greatest returns in reduced costs.
- Areas of major investment will be identified.
- The market analysis approach will be emphasized.
- Those projects supporting areas that will produce the greatest return on investment will be determined.
- Resources will be allocated accordingly.
- The MM&T program invites industry participation in selecting and initiating projects.
- Only those efforts to which industry cannot or will not commit private capital will be funded under MM&T.

### CONSIDERATIONS:

- Demonstration of feasibility.
- Coordination with other services to avoid duplication.
- Return on investment (ROI).
- Conservation of strategic materials.
- Occupational Safety and Health Agency (OSHA).
- Conservation of energy.
- Pollution abatement.

- Other sources for funding.
- Probability of success.
- Probability of implementation.
- Implementation costs.
- Time phasing.

QUESTIONS:

MILESTONES I, II, III

- Is the system design producible?
- What types of manufacturing technologies will make it producible?
- What manufacturing technologies are needed to meet DTUPC objectives?
- Are these manufacturing technologies available elsewhere (other services, other industries, other countries)?
- Has feasibility been demonstrated?
- Will a particular MM&T project, if successful, contribute significantly to the fielding of a system on time?
- Will the project contribute to desired cost and performance objectives?
- Are additional production facilities necessary?
- Will the MM&T project be the critical path element in the establishment of a facility?

REFERENCES: DRCMT

AR 70-1, 700-90.

## MINORITY BUSINESS ENTERPRISE PROGRAM

### SUMMARY:

The Government actively pursues a policy of providing business opportunities for minority business development through awarding Government contracts. The Head of Contracting Activity, or his authorized representative shall be responsible for administering the Minority Business Enterprise (MEE) Program which, as a minimum, shall provide for the activity to do the following:

### BASIC POLICY:

- Prime Contracts (Extracts from the DAR)
  - Seek out MBE firms and facilitate the placement of such concerns on source lists.
  - Solicit offers/bids from the MBE firms on source lists.
  - Counsel minority businesses with respect to business opportunities for the purpose of enhancing their potential participation in Government procurement.
  - Ensure that MBE firms will have an equitable opportunity to compete for contracts, particularly by arranging (i) solicitations, (ii) time for preparation of bids, (iii) quantities, (iv) specifications, and (v) delivery schedules, to facilitate their participation.
  - Establish operating procedures which accomplish the above stated requirements.
  - Maintain records showing with respect to MBEs (i) concerns on source lists, (ii) concerns solicited, and (iii) dollar value of awards to such concerns.
  - Pursuant to Section 8(a) of the Small Business Act, contracting officers, in their discretion, shall continue to award prime contracts to the Small Business Administration (SBA), which in turn shall subcontract such contracts for performance by MBEs or such otherwise SBA certified "8(a) contractors."
- Subcontracts
  - Through implementation of specific DAF, or special departmental clauses, the contracting officer will provide for MBE subcontracting programs to be followed by contractors when it is determined that there

are significant subcontracting opportunities for minority business concerns.

- Contractor's subcontracting performance with MBE firms shall be reviewed by the cognizant Contract Administration Services (CAS) organization, with records made available to the activity making the prime contract award.
- Appropriate use of weighted guideline profit determinations to recognize contractor performance in minority business contracting.

CONSIDERATIONS:

- Prime Contracts
  - Cooperation with the Office of Minority Business Enterprise (OMBE) in the Department of Commerce may be helpful in the identification of MBE firms sought for both requirements and source lists.
  - Cooperation with the SBA is required in effecting all awards under the Section 8(a) authority.
- Subcontracts
  - Contractors are required to exercise their "Best Efforts" in implementing MBE subcontracting for contracts between \$10,000 and \$500,000.
  - For contracts in excess of \$500,000, the contractor is required to implement a MBE subcontracting program requiring:
    - designation of a cognizant liaison officer;
    - consideration of MBEs in "make-or-buy" decisions;
    - assuring MBEs an equitable opportunity to compete;
    - maintaining records and filing reports;
    - including the "Best Efforts" clause where appropriate;
    - cooperating with the contracting officer in any studies and surveys the contracting officer may request;
    - incorporating similar subcontract provisions in subcontracts over \$500,000.
  - Review of the contractor's program conducted by the cognizant CAS organization.
  - Records to be made available to the contracting officer, upon request.

QUESTIONS:

- Prime Contracts
  - Should OMBE be urged to recommend legislation to the Congress which would enable MBE set-asides for prime contracts?
  - How can we assist procurement activities in meeting their goals for minority business participation?
- Subcontracts
  - Does the prime contract offer substantial subcontracting possibilities?
  - Is the offeror's (bidder's) program consistent with the requirements of both DAR clauses and special departmental clauses?
  - How effective is the contractor's "make-or-buy" decision concerning minority businesses?
  - What is the form and substance of the contractor's program for recognizing individual performance on behalf of minority business subcontracting?
  - Are deficiencies in the contractor's program promptly brought to his attention and follow-up action taken to ensure correction?

REFERENCES: DRCPP-Z

DAR Sections 1-322 and 7-104.36.

NON-DEVELOPMENTAL ITEMS

This section to be published upon publication of the new Chapter 6 of AR 70-1 which is currently under revision.

Action Office - DRCDE-D

III-73,74,75

## OMA FUNDED PRODUCTION ENGINEERING (PE)

### SUMMARY:

This aspect of acquisition management is a companion to the Manufacturing Technology area described elsewhere in Part III and is in some instances indistinguishable. For instance, the only distinguishing characteristics for an MM&T or MACI program in this area is that it is concerned with OMA Stock Fund Items whereas the MM&T/MACI cited in the Manufacturing Technology area is strictly limited to Procurement Appropriation items. Even this distinction fades when one considers that there exists in OMA funded PI a reimbursable account (728012.16) which is for Procurement items. The only remaining distinguishing feature between these two areas (OMA funded PI and Manufacturing Technology) is that the MM&T/MACI for OMA PE efforts are funded at non-AIF facilities. Aside from the similarities cited between the two areas, the OMA funded PE differs considerably in that it covers other PE services in support of procurement such as: Engineering in support of items in production (ESIP), Post Production Engineering (PPE), Updating Technical Data Packages (TDP's), Engineering Change Proposals (ECP's), Value Engineering (VE), Product Improvement Proposals (PIP's), etc.

### BASIC POLICY:

In addition to the basic policy cited in the Manufacturing Technology area, this area includes the following supplemental policy:

- Develop Production Engineering Plans which accurately predict future year workloads.
- Develop programming strategies which increasingly improve the allocation value of Production Engineering funds.
- PE services such as updating TDP's will be of the highest quality to insure that subsequent procurements are well defined.

### CONSIDERATIONS:

The following considerations are in addition to those cited in the Manufacturing Technology area:

- Only PE efforts cited in AR 37-100-XX under the applicable AMS code are chargeable to OMA funded PE.
- Value engineering methodology will be utilized whenever applicable during the performance of OMA funded PI efforts.

QUESTIONS:

Questions posed in the Manufacturing Technology area are applicable to this OMA area.

REFERENCES: DRCMT

AR 700-90, Chapter 3  
AR 37-100-XX

## PERSONNEL STAFFING

### SUMMARY:

The staffing of the project office will be determined by the acquisition manager and validated by HQ DARCOM. The requirements both as to number and grade level of personnel shall be tailored to the most current demands on the office. There is no "standard" or prescribed staffing or organizational structure for any particular project office, except from a general policy point of view. Each office shall be organized and staffed in the most efficient and effective manner, relative to its workload volume and the project's current status. Monitoring of staff requirements shall be a matter of continuous interest to the acquisition manager.

### BASIC POLICY:

- The acquisition manager will staff only a nucleus organization to manage, direct, and monitor the project.
- The acquisition manager may, when necessary, have other functional personnel temporarily detailed.
- Staffing requirements will parallel the development, production, and deployment of the weapon system.
- The acquisition manager will utilize the capability of existing functional organizations to support his project.
- Request for Acquisition Management approval will contain a TDA reflecting recommended grades in accordance with current military standards and regulations and Civil Service Classification Standards.
- A position structure chart reflecting the organization and the positions contained in the TDA will be developed.
- Appropriate AMS Codes (OMA & RDT&E) will be determined in accordance with AR 37-100.

### CONSIDERATIONS:

- As the acquisition moves through the phases of the life cycle, the composition, funding sources, and numerical level of the staff will be adjusted to reflect shifting emphasis, as of type classification.
- Staffing should decrease as the project phases down.
- Staffing levels do not correlate well with factors such as funding levels, reporting channels, or complexity.

- Careful judgment must be exercised in arriving at the initial staff level for each project.
- The grade and series for civilian positions and the grade and speciality code for military positions may change with changes in missions and functions.
- Staffing requirements will be affected by changes in DARCOM-wide resources.
- The following shall be considered: acquisition manager selection; his charter, authority, and responsibility; job requirements data sheet for Reduction in Force; recapitulation charts.

QUESTIONS:

MILESTONE 0

Have temporary personnel been detailed to the acquisition manager's Office? Are newly assigned personnel familiar with acquisition management office functions? Has a staffing plan been prepared? Does the staffing plan cover the system life cycle? Is the Work Breakdown Structure complete? What functions will be performed by organizations outside the acquisition manager's office (e.g., comptroller, personnel, and others)? Has the staffing plan been approved by the local Commander and HQ DARCOM? Are sufficient resources (local Command and HQ DARCOM) available to successfully accomplish the mission? Are funding requirements in the PPBS cycle? Have funding alternatives been defined? Are impact statements included? Has correct Degree I, II, or III been justified in accordance with Position and Pay Management Job Evaluation Guide for AMO (CPR P50-AMC-PMO)? Are manpower resource requirements consistent with higher level policies of HQ DARCOM? Has the TDA been prepared correctly? Does the TDA reflect only that staffing required for optimum efficiency and effectiveness?

MILESTONE I

Has the required 3 year training program been developed? Is the training program flexible and is updating provided for? Have requirements for advanced degrees been identified and substantiated? Is maximum utilization planned for DOD/DA/DARCOM training facilities?

MILESTONE II

Has the staffing plan been updated after each milestone? Is the staffing plan revised annually in line with the President's Budget?

MILESTONE III

Has the impact of transition from Development to Readiness been determined? What are the space requirements for transition?

Has the impact of project completion on personnel been determined?

REFERENCES: DRCPT-SU

DARCOM-R 570-4; AR 37-100, 570-4,; DA FAM 570-4; DARCOM-R 11-16.

## PROCUREMENT PLANNING/PROCUREMENT PLANS

### SUMMARY:

Procurement planning is used to establish the procurement objectives of each major program over its life cycle in consonance with projected resources. Consideration is given to procurement lead times, required approval and review cycles and budget cycles, as well as solicitation and response times to establish near-term plans. The procurement plan establishes the acquisition strategy and incorporates the requirements of other management programs, including technical data and materiel, to be provided as a part of each procurement action.

### BASIC POLICY:

- Procurement planning will be performed jointly between the acquisition and procurement organizations.
- Procurement plans will be prepared for each program when: development costs exceed \$2 million; production costs exceed \$15 million (\$5 million per fiscal year); services costs exceed \$10 million, or when DA so directs.
- Procurement planning is performed by the assigned manager, and the plan is prepared and maintained by the contracting officer and approved by the Head of the Contracting Activity or the Principal Assistant for Procurement. Procurement Plans will be prepared for each system and reflect by reference and summary other management planning documents, GFM to be provided, the acquisition strategy, organizational involvement resources (money, time, people) and schedules. Procurement plans will be approved prior to the release of solicitations.
- Procurement plans will be upgraded to reflect critical changes in budgets, requirements, and schedules, and will be available for all major program reviews and decisions.
- Procurement plans for production items are approved by OASA(RDA).

### CONSIDERATIONS:

- Plan Initiation -- adequacy of the requirement.
- Topics to be addressed in the Procurement Plan include:

- funding
  - delivery requirements
  - program reviews
  - technical and contract history
  - risk
  - support planning
  - design to cost
  - life cycle cost
  - RAM objectives
  - warranties
  - test & evaluation
  - management systems
  - type classification
  - IOC date
  - GFP
  - component breakout
  - should cost
  - milestone dates
  - procurement sources
  - source-selection approach
  - contract type
  - reprocurement data
  - alternative approaches
  - nature of competition
- The plan should provide adequate flexibility to cope with new systems with unknown production requirements and cost through a continuing updating process.

QUESTIONS:

- When should a procurement plan be initiated and updated?
- Will the plan accommodate rapid obsolescence and changing requirements (military/budgetary/political)?
- To what extent will the prior investment in time and effort affect the objectivity and impartiality of planning personnel in weighing the continuing relevance of the plan?
- Is the procurement plan keyed to the FYDP, budget submissions, DCP/Program Memorandum, and DSARC milestone review points?

REFERENCES: DRCP-SP

DAR 1-2100; Army Procurement Procedure 1-2100; DARCOMPI 1-2100.

## PRODUCIBILITY ENGINEERING AND PLANNING (PEP)

### SUMMARY:

Producibility Engineering and Planning (PEP) applies to those R&D funded planning and systems production engineering tasks undertaken by the materiel developer on major or non-major end items or components to insure a smooth transition from development into production. PEP, a Systems Engineering approach, assures that an item can be produced in the required quantities and in the specified timeframe, efficiently and economically, and will meet necessary performance objectives within its design and specification constraints. As an essential part of all engineering design, it is intended to identify potential manufacturing problems and suggests design and production changes or schedule trade-offs which would facilitate the production process. The final end product of PEP efforts conducted by the materiel developer will be a Producibility Plan. PEP is the precursor that leads into production engineering (PE) or engineering in support of production. The Army is particularly interested in advanced techniques for production. PEP plans for and ensures the use of computer aided design (CAD), Computer-Aided Manufacturing (CAM), Numerical Control (NC), advanced production methods, and computer modeling/simulation.

### BASIC POLICY:

- The PEP effort accomplished during advanced development will be associated primarily with the confirmation of producibility of critical components.
- PEP is applicable to end item efforts for both major and non-major weapons systems.
- During engineering development, PEP will be initiated as early as practicable following the award of the engineering development contract but not later than initiation of DT II/OT II.
- PEP efforts will ensure that all Technical Data Packages have been examined for completeness, have incorporated necessary changes resulting from testing after the production decision, and are entirely adequate for full scale production.
- Draft DoD policies related to PEP may require complete visibility and traceability of the PEP effort.
- RDT&E projects that include the PEP effort will treat PEP as a separate task within the project.
- Producibility will be an agenda item on all program reviews.

- The developer will be responsible for validation of producibility in requesting type classification-limited procurement and release for low rate initial production (LRIP).
- Efforts will be undertaken to ensure viable technical data suitable for second source identification.

CONSIDERATIONS:

- All dimensions and associated tolerances, parallelism, perpendicularity, etc.
- Appropriateness of material selected, and availability.
- Adequacy of surface and protective finishes.
- Unique or peculiar processes and process specifications.
- Manufacturing assembly sequences.
- Adequacy of mechanical and electrical connections
- Computer modeling or simulation of manufacturing processes to assess producibility.
- Planning for plant layouts.
- Special handling.
- Special tooling.
- Packaging and packing information.
- Quality assurance provisions.
- Quality control data and procedures.
- Inspection, test and evaluation requirements.
- Acceptance inspection equipment.
- Calibration equipment and information.
- Requirements for in-line production test equipment and end item test equipment.
- Exploitation of foreign manufacturing technologies for enhanced producibility.
- Performing risk analysis of new manufacturing processes.

- Suitability for second source identification.
- Cost effectiveness analysis.
- Applying value engineering principles and methodology throughout development.
- Maintenance engineering/integrated logistics support.
- Examining processes (as created by the combination of equipment and operation) to determine hazards to man and the environment. Preparing Environmental Impact Assessments (EIA) and Environmental Impact Statements (EIS) as appropriate.
- Determining the need for a Manufacturing Technology Research (MTR), Manufacturing Technology Development (MTD) or Manufacturing Methods and Technology (MMT) effort.
- Transition from PEP to engineering support (production).
- All development contracts \$100,000 or more will include PEP clauses.

QUESTIONS:

MILESTONES 0, I, II, III

- Has the need for PEP funding been reflected clearly and adequately in the proposed program?
- Are PEP needs being made known early enough?
- Have the proper RDT&E funding channels and documentation been pursued?
- Will the PEP effort accommodate competitive procurement?
- Does the PEP effort interface well with initial production facilities (IPF)?
- Is the PEP effort being coordinated with requirements and procurement personnel responsible for IPF?
- Is the design effort reviewed periodically for producibility?
- Producibility, simulation and planning?

REFERENCES: DRCMT

AMCP 706-100; AR 70-1, 700-90.

## PRODUCT IMPROVEMENT PROPOSALS (PIPs)

### SUMMARY:

This program is intended to extend the useful life of existing systems and equipments, to reduce system cost, and to provide an economic and responsive alternative to new developments. A product improvement is a configuration change to a type classified weapon system or component and requires engineering, testing and, usually, the procurement and installation of modification kits. PIP applies to items classified standard (STD) or limited production (LP) and includes all costs of engineering, testing, production line charges, modification kit procurement, training, repair parts, support equipment and documentation changes, installation of all modification kits, and follow-up assessment of user satisfaction.

### BASIC POLICY:

- PIPs will be initiated in response to user needs.
- All PIPs are coordinated with the user's representative, TRADOC, and no PIPs will be approved without TRADOC concurrence.
- The desirability of improvements to existing equipment versus new development must be weighed.
- Product improvement is the responsibility of the organization which is assigned system/material item management responsibility. When the latter transitions between commands, the PI responsibility accompanies it.
- All DARCOM PIP approval authority was delegated to the Major Subordinate Commands (MSCs) on 22 July 1975.
- Late start unprogrammed/unfinanced PIPs approved under delegated authority will be funded by reprogramming from assets of the approving MSCs; for outyears, PIPs will be budgeted.
- Documentation identifies all funding resources required to accomplish the improvement. Required resources, interface schedules, coordination, and justification will be documented.
- Audit trail must be maintained by the originating MSCs, which will be the DARCOM office of record.
- Product improvement management begins with identification of the requirement and extends through development, procurement, and timely application of the improvement.

- Since 1 July 1976, all Department of Army Mandatory Work Orders (DAMWO) are accomplished under PIP management and documented as PIPs.

- The MSC's PIP are considered semiannually at HQ DARCOM by the joint DA/TRADOC/DARCOM PIP review.

- DA priorities are assigned each approved PIP.

- When there is more than one proposal, a master PIP will be prepared to reflect (in summary) all of the individual PIPs.

- PIPs exceeding the established performance envelope will be funded in the engineering and testing phase with RDT&E, otherwise with the procuring appropriation if the system/item is in production or scheduled for production (FYDAP, AMP)...if the weapon/item production status is neither of the foregoing, the development/engineering phase must be funded with OMA 7M/(OMA 7S is for Stock Fund procured items). Procurement will be accomplished by procurement funds...Application must be accomplished by the appropriate OMA 7M program...The exception is contractor-conducted conversion which, on a case-by-case basis, may be accomplished with procurement funds.

- PIPs will be used to reduce cost.

- No production decision will be made without consideration of an independent assessment of the completed test data regardless of who performed the testing. The independent assessor will be AMSAA or TECOM in coordination with the responsible Red Team.

#### CONSIDERATIONS:

- Alternative of new development program vs proposed improvement.

- Impacts on interfaces (weapons, ammunition; production and deployment schedules; and established reliability/effectiveness); on counter-countermeasures; on test support equipment and resources for installation.

- Resource identification; application plan; priorities; possible duplication of effort; appropriation criteria; RDT&E vs procurement funds; cost and logistics effectiveness of design approach;

- Priority

- Propriety of using identified appropriations.

#### QUESTIONS:

##### MILESTONES O, I, II

What user action, Disciplined Review recommendation or safety, operational effectiveness, RAM standardization, legislative, environmental, energy conservation, or cost savings potential led to this improvement proposal? Are

these and the following elements adequately documented in an audit trail? Are economic and cost analyses provided and certified by the local cost estimating data center (CECDC)? Are funding resources properly identified and categorized? Do resources identified for fiscal year track with logically anticipated obligations? Does requirement for improvement warrant a "late" start PIP and have reprogramming sources been identified for first year effort? Have realistic testing requirements been identified? Have they been coordinated with TECOM and OTEA as appropriate? Has there been validation of both testing costs and schedules? What will be the user/developer interface during the product improvement test? Has the independent assessor of the test data been determined by TECOM/AMSAA? Also are all significant factors included in the economic analysis/program evaluation? Are repair part, training, and data collection program impacts identified, coordinated, and reflected in the PIP documentation? Is coordination required with other MSCs or laboratories? Are Memorandums of Understanding (MOUs) between participating Command elements required? Have responsibilities been identified and assigned? Is the proposed schedule reasonably achievable? Has the Major Subordinate Commander reviewed the proposed program? Has he agreed to commit the necessary future/out-year application of resources to the proposed program?

### MILESTONE III

Does the product improvement test verify the improvement characteristics? Has the required independent assessment of the test data been performed by AMSAA or TECOM? Does the IPR indicate that the improvement is ready for procurement? What is the result of the verification review of the production kits? How will the improvement be applied? When? In production? In the field? Have application/installation agreement/MOU's been coordinated with the user? Is the responsibility for integrating kit procurement, delivery, application clearly identified and recognized? Has a sample data collection program been included in the PIP? What are the results of sample data collection in the field after the improvement has been applied?

### REFERENCES:

a. DRCPI. AR 701-15, 1 April 1975 (under revision); DARCOM Pamphlet 70-5, December 1978, Product Improvement Management Information Report (PRIMIK).

b. DRCRE. AR 750-10, Modification of Materiel; DARCOM R 750-50, Modification of Materiel.

## PRODUCTION TESTING OF ARMY MATERIEL

### SUMMARY:

Production testing will ensure that all newly produced materiel entering the inventory conforms to specifications in all respects and that predicted performance will meet Army requirements.

### BASIC POLICY:

- Production testing shall demonstrate that newly produced materiel conforms to its technical data package, as well as to stated quality, performance, safety, operational effectiveness, human factors and safety, and reliability standards of the MENS.
- Production test incidents/defects shall be reported and evaluated, and deficiencies corrected prior to release of the equipment to the supply system.
- Production tests shall be designed to ensure that the Army has an effective and efficient program for measuring and predicting the performance of materiel entering the supply system from production.
- Production test planning shall provide for a smooth, continuous transition from development through production.

### CONSIDERATIONS:

- Planning, programming, and budgeting for production testing early in the development cycle.
- Provisions in the Army Materiel Plan (AMP) for test items, facilities, and resources to support quality assurance testing during production.
- Programs not proceeding into succeeding phases of acquisition when testing reflects significant deficiencies which are to be corrected and verified in retest.
- Test costs, schedules, item complexity, known problem areas, and risks.
- Utilization of previously validated test data.

### QUESTIONS:

MILESTONE 0

N/A

### MILESTONE I

- Have testing technology needs been identified?
- Have plans been made to initiate a life cycle audit trail of validated test results?
- Are system critical issues established?
- Are test plans formulated?
- Do the development specifications address testing?
- Have previous test results been reviewed?
- Are funds to cover tests in the AMP?
- Is full production being considered in conducting DT/OT?
- Have the required configuration management audits, both functional and physical, been accomplished?

### MILESTONE II

- Are production test plans being prepared for subsequent procurement?
- Is full production in consideration during DT II/OT II?
- Has the audit trail of test results been maintained?
- Have all test results been validated?
- Are funds to cover testing in the AMP?

### MILESTONE III

- Has the CTP been updated to reflect full production testing?
- Are test facilities/equipment planned?
- Are first article test requirements specified in the contract?
- Have previous validated test results been reviewed?
- Are comparison tests planned?
- Does the program preclude duplicate testing?
- Are adequate training devices planned?
- Does the contract provide for a maintenance test/support package and support personnel?

REFERENCES: DRCQA-P

AR 70-10, 71-3, 702-9.

## PROGRAM/PROJECT/PRODUCT MANAGEMENT CHARTERS

SUMMARY: The net effectiveness of the Army acquisition and readiness program is, in large measure, a reflection of the abilities of the PMs and of the policies established in the PM charters by top management.

### BASIC POLICY:

The Army's basic policy and guidelines emphasize:

- Decentralization of authority and responsibility to the maximum extent possible in the acquisition process;
- Assignment of a single manager - the PM - for the development and production, deployment and readiness of each major system;
- Recognition of system costs as a major design constraint;
- Emphasis on early and extensive use of test and evaluation;
- Greater emphasis on controlling the number of changes allowed in the production phases of the program(s);
- Improvement of weapons system acquisition and readiness effectiveness.

### QUESTIONS:

- When is a PM established?

When it is determined by the Secretary of Defense, Secretary of the Army or CG, DARCOM that a weapons systems acquisition program is of such importance, complexity or cost to warrant the employment of intensive management practices.

- What is Project Management?

Program/project/product management is a flexible, highly responsive form of intensive management, which holds each PM responsible and accountable for successful accomplishment of his chartered mission.

- What is the purpose of a PM charter?

- To make it clear to the PM what it is that is expected of him.
- To clearly identify the level of authority granted the PM.
- To provide the Project Manager the authority and responsibility to accomplish his job.

● Who initiates initial charter actions?

When a program has been selected for intensive management under the provisions of AR 70-17 and DARCOM-R 11-16, it is the responsibility of the PM, the appropriate HQ DARCOM staff element, or the DARCOM major subordinate command to initiate a concept plan including:

- A. - PM charter
  - Justification of project/product management for non-major systems
- B. - Organizations, missions and functions
  - TDA and position structure
  - Job descriptions and evaluation statements

● What basic essential elements of guidance are included in a PM charter?

The PM charter should directly relate to the PM's mission, orientation, type organizational structure, communications and reporting channels, resource control, location, rationalization, standardization and interoperability, and anticipated relationships with organizational activities external and internal to DARCOM and transition/deprojectization of PM program.

Instructions for placing the PM charter in final format for submission to HQ DARCOM for review and approval are outlined above in the order in which they should be prepared.

● Who approves and signs the PM charter?

This is dependent upon the intensity and level of management required:

- DOD program/project managers. When the Office Secretary of Defense has a dominant interest in joint services/DOD agencies programs, charter approval and signature of the Secretary of Defense is required.

- DA program/project managers. Charter approval and signature of the Secretary of the Army is required.

- DARCOM product managers. Charter approval and signature of CG, DARCOM, is required.

● What guidance and direction will the approved and signed charter contain?

- PM charter approved by the Secretary of the Army or CG, DARCOM, designates the PM, specifically defines his mission, authority, responsibilities, and

major functions; also describes his relationships with other organizations/activities.

- Charter "authority and responsibility" is stated: i.e., (the project manager is delegated the full line authority for the centralized management of his specific project, and is responsible for planning, directing, and controlling the allocation and utilization of all resources authorized for execution of the approved project. He is responsible for achieving the technical performance objectives of the project on schedule and at the lowest practicable cost. He is also responsible for research, development, initial procurement, production, distribution, and logistical support to accomplish project objectives. Further, the project manager is responsible for assuring that planning is accomplished, and that, except as otherwise directed, the execution of the project conforms to the plan, including implementation by the organizations responsible for the complementary functions of evaluation, logistic support, personnel training, qualitative and quantitative personnel requirements, operational testing and activation or deployment of the system and its related equipment).

- Charters will remain in effect until superseded or rescinded by the chartering authority. Substantive charter changes requiring Secretary of the Army approval generally include assignment of a new program/project manager, extensive changes in program scope, and extensive changes in PM responsibilities. Directed changes, such as command reorganization do not require charter revision.

- PM's will review their charters annually on the anniversary date of the latest charter approval and forward the review for revalidation to HQ DARCOM.

REFERENCES: DRCPM

AR 70-17, DARCOM-R 014-13 and 11-14.

## PROPOSAL EVALUATION/SOURCE SELECTION

### SUMMARY:

Source selection is a reasoned judgment by the designated Source Selection Authority in determining which contender offers the Government the most advantageous proposal, price and other factors considered. This judgment is shaped from proposal evaluation process inputs that consider each offeror's technical, cost and management proposals, and any other appropriate factors bearing on the decision.

### BASIC POLICY:

- Evaluation will be accomplished using only those criteria stated in the Request for Proposals.
- Technical transfusion is to be avoided.
- The Source Selection Authority will be assisted by a Source Selection Advisory Council and Source Selection Evaluation Board when formal procedures apply.

### CONSIDERATIONS:

- Decision latitude for the Source Selection Authority requires that recommendations for source selection be made only on request.
- An impartial, equitable, and comprehensive evaluation of each offeror's proposal and capabilities is to be assured.
- Competitive sensitivity should be safeguarded.

### QUESTIONS:

- Has the comparative capability of each offeror been determined through evaluation of the proposal? compared to the SSEP?
- Have past experience and performance been considered?
- Have narrative descriptions been prepared to support quantitative evaluations?

- Have prospective development, production (DTC), and support costs (LCC) been considered?
- Has the offeror proposed to meet the technical, performance, schedule, and logistic support objectives defined in the RFP RIW?
- Which of the offers, following evaluation, are determined by the contracting officer to be within the competitive range? (DAR 3-805.2)
- Is the Independent Government Cost Estimate (IGCE) available for comparison?
- Have questions about each proposal been identified as a basis for discussion with those offerors within the competitive range?
- Following negotiation, have best and final offers been requested, received, and evaluated?
- Has the source selection been justified in writing?
- Are we prepared for debriefings to unsuccessful offerors following award?
- Does the risk assessment identify the degree of risk? (Government or contract)?
- Are evaluation factors properly weighted and realistic?
- Does the solicitation tell the offeror how the proposal will be evaluated?
- Is the four-step source selection procedure appropriate?

REFERENCES: DRCP-SP

AMCP 715-3; AR 715-6; DAR 4-107; DoDD 4105.62.

## PROVISIONING

### SUMMARY:

Provisioning (initial, follow-on and reprovisioning) is a process of planning for determining the range and depth of support items. The process includes planning for provisioning and the identification, analysis, quantification and delivery of spares and repair parts, special tools, test and support equipment, as well as cataloging, Support List Allowance Cards (SLAC) preparation, delivery instructions and subsequent provisioning from the same contractor (follow-on) or another contractor (reprovisioning).

### BASIC POLICY:

- Provisioning will be accomplished on an integrated basis in accordance with MIL-STD-1552 and 1561, AR 700-13 and TM 38-715-1.
- Provisioning conferences under the chairmanship of the ordering activity will be conducted in advance of long lead order dates and in sufficient time to achieve the initial operational capability date. Analyses (LSA, MEA, LOR) will be used to establish the range and depth of items. Each deployment will be preceded or accompanied by a repair parts fill of 100% in range and 90% in depth.
- Spare and repair parts orders will include requirements for other services as identified in multi-service agreements. Stockage levels will be maintained to support system readiness and availability requirements.
- Required cataloging actions will be performed for all new items of procurement. New or modified equipment will be supported by the wholesale supply system at initial deployment.
- Reprovisioning actions will be initiated based upon usage rates to ensure proper stock levels. The acquisition manager or logistics manager will be responsible for all provisioning actions including provisioning of PIPs, until the item is fully supported by the Army or transitioned to one of the MRC's NICP item manager.

### CONSIDERATIONS:

- Logistic support and system design alternatives.
- Contractor vs. Government support.
- Military implications of contractor support.
- Equipment density and distribution.
- Component reliability.
- Operational readiness and availability standard.

- Management and technical data.
- Funding.
- Logistic Support Analysis.
- Maintenance concept.
- Maintenance engineering analysis.
- Level of repair analysis.
- Cataloging (Army and CSA/DLA).
- Allowance listing.
- Product Improvement Proposal.
- Follow-on support.
- Affected elements of logistic support.
- Range and depth vs. cost.
- Initial vs. follow-on consideration.
- Common support vs. unique support.
- Cost to stock an item of supply.
- Provisioning requirement in the initial contract.
- Consequences of "cutting off" the contractor.
- The role of CSA/DSA.
- Contractor-provided data.
- Interim logistics support prior to implementation of planned long-term support.
- Transition requirements going from interim support to planned long-term support.

QUESTIONS:

MILESTONE 0

No action required

### MILESTONE I

- Have economic influences of logistic support vs. design alternatives been considered? Has the logistics environment for the item been considered? Has a logistics system design been considered? Have ILS tasks for investigation been identified? Has a life cycle cost analysis been considered?
- Has the maintenance concept been considered? Have logistics support issues been resolved? Was a Level of Repair Analysis conducted? Has the logistics support system been described? Has a maintenance engineering analysis been performed? Have test and calibration equipment functions been identified? Have all pertinent elements of logistics support been considered? How will range and depth of support be established and by whom? Has the supporting Materiel Manager been included in all phases of provisioning development? Has the provisioning plan been developed? Has the requirement for Special Support Computation Methodology (SCMM) (ERPSL, etc.) been considered?

### MILESTONE II

How much is enough? Has physical teardown and evaluation been scheduled? Is a maintainability demonstration scheduled? Does the logistics support analysis indicate that the Required Operational Capability (ROC) or Letter Requirement (LR) will be satisfied? Has support of the Maintenance Test Support Package been provided for: Do development validation tests and the independent evaluation reflect compatibility of reliability and maintainability factors with planned support? Have the least reliable items been analyzed for potential design improvements? Have Reliability Centered Maintenance (RCM) policies been implemented? Have unique/high-priced items been identified? Have Long Lead Items (LLI) been identified?

### MILESTONE III

Have LLI been ordered? Is a continuing logistics support analysis process being accomplished in order to make adjustments to provisioning? Are repair parts and support equipment on schedule for concurrent delivery with end items? Are Reliability Improvement Warranties (RIWs) or other contractual incentives included in the procurement? Have P-2 funds been obtained to support the DARCOM commitment to user satisfaction? Have stocking costs and funds sources been determined? Has transition planning been completed? Has a post-provisioning review been scheduled to take advantage of lessons learned from the initial provisioning?

### REFERENCES: DRCMM-M

DARCOM-R 700-97 Chapter 4; A. 700-18, 700-32; 700-120, 700-127 (including DARCOM Supplement 1), 708-1, 710-1, 710-2; MIL STD 1552, 1561; TM 38-703, 38-703-1, 38-715, 38-715-1.

## QUALITY ASSURANCE/ENGINEERING

### SUMMARY:

Quality Assurance (QA) encompasses that function of management which ensures that newly acquired materiel conforms to the stated quality, performance, safety, and reliability standards of the Technical Data Package (TDP) and contract performance specifications. It is the contractor's responsibility to offer only conforming materiel and establish systems and programs which will ensure conformance to applicable specifications and, when required, substantiating evidence of conformance. Quality engineering includes functions to establish Quality Assurance standards, and for design of inspection and test equipment necessary to determine product acceptance, and to ensure least cost conformance to user requirements.

### BASIC POLICY:

- QA planning will integrate actions of development Commands, readiness Commands, depots, DCAS agencies, and contractors.
- The weapon system development and acquisition strategy shall be planned to ensure mission success.
- The weapon system manager has primary responsibility for QA planning and integration efforts of MSC, arsenals, laboratories, and other organizational elements.
- Detailed planning will be conducted early in the development life cycle, and the plan will be adjusted/revised as the program proceeds.
- Quality engineering activities will establish quality standards and provisions to ensure conformance to user requirements at minimum cost and risks.
- QA provisions will establish procedures for inspection and test to demonstrate conformance of materiel to satisfy user requirements.
- Design of inspection and test equipment required for product acceptance will be an integral part of the development program.

### CONSIDERATIONS:

- Extent of QA involvement with in-house activities and contractors.
- Sufficient visibility of the overall QA program.
- Coverage on the complete life cycle quality operation.
- QA effect on overall quality of the system.

- Adequacy of repair part drawings.
- QA provisions based on essential requirements.
- Inspectability and testability of end items and repair parts.
- Design of special acceptance inspection equipment.
- Sufficient visibility and management of quality during development.
- Quality management tailored to the end item.

QUESTIONS:

MILESTONE 0

Have initial Product Assurance Plans been developed? Has a Quality Assessment been performed? Reviewed parametric data on similar systems? Analysis of available data to determine minimum essential quality and RAM characteristics?

MILESTONE I

Have the preliminary Product Assurance Plans been updated? Independent Product Assessment performed? Have quality (physical, technological, psychological and time oriented) characteristics been identified and defined? Have the QA contract provisions been prepared to support contract activity? Have performance parameters (RAM) been included in the requirements documents (ROC)? Have QA technical data been planned for? Will QA program reviews be conducted? Have points of contacts been established? Do QA provisions reflect the requirements of the system specifications, LOA, LR, or ROC (user requirements)? Are measurement/test requirements within current technology? Are test equipment calibration procedures prepared? Have metrology and calibration procedures been developed? Are testing technology projects required? Have adequate time and funds been provided to develop QA documentation? Is Product Assurance involved in evaluation of in-house or contractor proposals for engineering development? Have special acceptance inspection equipment (SAIE) requirements been identified?

MILESTONE II

How much will adequate QA cost in development and production? save in reduced supply and maintenance costs? Have system requirements been allocated to end items, components, and repair parts? Have essential inspection/test requirements and procedures been established? What is the inspection plan for development? production? stockpile surveillance? depot rebuild? What are requirements for QA provisions?

special acceptance inspection equipment? qualifications? conformance inspection? Are any special facilities required? proving ground support required? Have performance parameters (RAM) been included in the requirements documents? Have the test schedules been set? Are QA provisions prepared to support the technical data package? Are independent Product Assurance reviews being conducted? QA plan updated? Are quality characteristics identified and defined in measurable terms? Are calibration and metrology plans available? Have NATO QA interfaces been identified? Have quality provisions been prepared for production contract? Has quality transition plan been prepared to prevent degradation of product quality from development to production? Have producibility and quality engineering analysis been performed?

### MILESTONE III

Have the TDP and contract been reviewed for the adequacy and accuracy of QA requirements? Have all associated elements with responsibility been oriented to operations? Have the necessary coordination trips been scheduled? Will all appropriate actions be completed in order to release materiel? Is FMS required? special calibration requirements? Has the necessary training of CAS elements been conducted? Is the production QA Program Plan implemented? updated? Have configuration audits been conducted? product and service quality audits? Is the first article test scheduled? What requirements are essential? Are comparison tests planned for? Has DCAS accomplished in-plant planning? Have the contractor's procedures been reviewed? Are product inspections being ensured? Is qualification testing provided for? Established baseline control of engineering changes and configuration? Provisions made to monitor contractor or in-house quality? Have military service QA plans for maintenance and overhaul been implemented? Storage serviceability standards and cyclic inspection instructions developed? Established depot maintenance work requirements and QA product acceptance programs? Initiated data feedback systems with deployment? Storage and distribution QA plans implemented? Initially deployed systems monitored to assure user satisfaction?

### REFERENCES: DRCQA-E

DoDD 4155.1, AR 70-1, 700-89, 702-3, 702-4, 702-9, 702-10, DARCOM/AMC-R 700-6, 702-2, 702-4, 702-14, 702-23.

## RELEASE OF MATERIEL FOR ISSUE

### SUMMARY:

Release of materiel for issue shall not be undertaken unless the releasing agency has complete confidence that the item has satisfied the specifications and operational requirements and is supportable logistically.

### BASIC POLICY:

- Critical decision points will be established early in the materiel life cycle to review, evaluate, and certify that materiel is suitable for release.
- Items subject to release action will be identified early in the acquisition or reconditioning phase to enable proper management decisions.
- The acquisition manager will provide adequate technical requirements and guidance to contractors, depots, and other in-house activities to ensure that resulting materiel is suitable for issue.
- A complete record shall be maintained, including a documented audit trail of all test results, corrective actions, acquisition of support items, as well as an identification of individuals responsible for all aspects of the release decisions. The record will then set forth the basic facts that clearly and convincingly support the release decision. On Category I-End Items, the Commander, MCOM, will be responsible for providing a written statement as to the adequacy of materiel performance to meet specified requirements.
- The materiel should be delivered complete and free of deficiencies.

### CONSIDERATIONS:

- Item suitable for issue in terms of quality performance, safety, environmental requirements, reliability, and maintainability.
- Deficiencies detected during inspection and tests have been or are being corrected and validated.
- Required basic issue items are adequate, available, and accompany the item to be released.
- Required technical documentation, support equipment, and repair parts are adequate and available for field use.
- Provisions for training are adequate and have been accomplished.
- Grant aid and foreign military sales items identified.
- Deprocessing teams training provided.

CONSIDERATIONS: (Continued)

- Required calibration equipment, techniques and procedures are available to support measurement requirements (accuracy, repeatability and traceability) of the item and/or support equipment to be released.

QUESTIONS:

MILESTONE 0

N/A

MILESTONE I

- Have test and supportability of the item been considered?
- Have the provisions of a materiel release program been considered in the development of contract requirements?
- Has a milestone of critical events been prepared to support release?

MILESTONE II

- Have all provisions of the release program been addressed?
- Do contract requirements documents consider the release decision?
- Are all tests, technical literature, safety, environmental requirements, RAM, and quality performance requirements covered?
- Is the development effort fully supportable of planned release?
- Have transportation and preparation for shipment requirements been addressed?

MILESTONE III

- Is testing addressed in sufficient detail to support a release decision?
- Are quality and performance requirements covered?
- Will safety be covered?
- Has supportability been covered sufficiently to support release?
- Are RAM requirements adequately demonstrated?
- Is training being conducted?

MILESTONE III (Continued)

- Are all of the requirements of the materiel release program satisfied?
- Have receiving organizations acknowledged their readiness to accept?

REFERENCE: DRCQA-P

DARCOM-R 700-34; AR 750-25.

## RELIABILITY, AVAILABILITY, MAINTAINABILITY, DURABILITY (RAM-D)

### SUMMARY:

RAM-D requirements will be expressed in specific quantitative terms. The program requirements apply throughout the system life cycle and will be included in requirements documents for system and equipments. RAM-D data, including the evaluation of development and operational test results, must be related to requirements. RAM-D is applicable to system components, TMDE, training devices, and facilities. It is applicable to commercial, off-the-shelf, and adopted/other service equipments, as well as to Army-developed systems. There are established RAM characteristics for solicitation documents, systems design applications, and performance evaluation.

### BASIC POLICY:

- RAM-D requirements shall be established for defense systems based on operational requirements, the projected state-of-the-art, and life cycle cost.
- RAM-D shall be managed as a major system performance parameter.
- Trade-offs between RAM-D and cost, schedule, and other performance parameters shall be made to ensure that valid user needs are satisfied.
- RAM-D is a characteristic of design.
- Design efforts shall be implemented to ensure achievement of RAM-D requirements.
- RAM-D performance shall be determined by development and operational testing and jointly evaluated by the user, developer, and testers as part of the materiel acquisition process.
- RAM-D data shall be collected during all phases of the materiel life cycle.
- Appropriate RAM-D assessments are presented at decision-making process points.
- An audit trail shall be maintained and feedback of data shall be made by the data collection effort.

### CONSIDERATIONS:

- Impact of RAM-D characteristics on life cycle cost.
- RAM-D requirement based on realistic statement of needs, mission, and projected state-of-the-art.
- Quantitative RAM-D reflected in ROC, DCP, and contract.

- RAM-D requirement both realistic and measurable.
- Sufficient visibility and management of RAM-D program during development.
- RAM-D achievement through design effort.
- RAM-D designed for and tested under conditions of intended use and environment.
- RAM-D effect on ILS.
- Training doctrine.
- TMDE.
- Failure Definitions and scoring criteria; tester and user.
- Verification of fielded item RAM-D levels.

QUESTIONS (TO BE ANSWERED AT EACH MILESTONE):

MILESTONE 0

- Have RAM characteristics been considered as factors of operational readiness, effectiveness, and O&S cost in defining the Mission Element Needs Statement?
- Have the RAM characteristics of system alternatives been analyzed?
- Is there an adequate comparison data base for these alternatives?

MILESTONE I

What is the relationship between RAM-D and acquisition and O&S costs? What kinds of demonstrations and rules of demonstrations have been provided? Have the mission and environment been defined adequately? What RAM-D tasks will be conducted? What do they contribute to achieving RAM-D? Will sufficient data be available to formulate and justify fully RAM-D requirements in ROC? Is a RAM-D program implementation plan available?

MILESTONE II

How much is RAM-D going to cost in development and production? save in field O&S cost? RAM-D vs. DTUPC considered? What is the mission? Is it realistic? What is the RAM-D need? realistic? attainable?

## MILESTONE II (Cont)

What kinds and rules of demonstrations are provided? Are requirements in ROC compatible with the DCP? with the contract? What RAM-D tasks will be conducted? What do they contribute to achieving RAM-D? Is RAM-D part of the design effort? How will RAM-D be assessed and influenced throughout development? design reviews? reliability growth? test and demonstration? Are environmental profiles reflective of intended operations? Does testing reflect this? test cost-risk relationship considered? Do RAM-D requirements motivate the contractor? RAM-D as criteria during competitive prototyping? warranty or RIW considered? incentives? What is adequate and effective data system? design feedback? data available for decision? data system adequate for O&S cost determination? Is RAM-D integrated into the materiel acquisition process? design? test? TDP? ILS? What RAM-D provisions are in the RFP/contract? quantitative requirements in Section 3 of specifications? test requirements in the specification (Section 4)? Have test/fix cycles been established to permit RAM-D improvement through successive design changes? Have failure definition/scoring criteria been established, coordinated, and approved? updated as necessary? Do test quantities reflect cost-effective demonstration of RAM-D goals/requirements?

## MILESTONE III

What is the confidence that the RAM-D minimum acceptable values have been demonstrated? Do production/configuration changes require more/ revised documentation? Has RAM-D been adequately characterized in the TDP? quantitative requirements in Section 3 of specifications? test requirements in the specification (Section 4)? What RAM-D tasks will be conducted during production? What do they contribute to achieving RAM-D? How will RAM-D data be collected in the field? What effect will it have on the equipment? the next generation of equipment? Does it compare to test results? Has degradation of RAM-D due to production line been eliminated/minimized? tested?

## REFERENCES: DRCQA-E

AR 702-3; MIL STD 170, 78JA.

## RELIABILITY CENTERED MAINTENANCE STRATEGY (RCMS)

### SUMMARY:

RCMS establishes formalized maintenance program planning with a decision tree type logic. It recognizes that reliability built into the basic design of equipment will not be improved by maintenance once fielded unless design is changed or improved. RCMS must therefore be employed early enough in the development stages to influence equipment design. This will assure consideration of equipment maintenance by the designer, producer and the ultimate user which will result in safe, reliable and maintainable equipment, capable of performing at least cost.

### BASIC POLICY:

RCMS will be incorporated into the design and maintenance plans of all new Army equipment.

### CONSIDERATIONS:

- Planning
- Design influence.
- Changes -- PIP, ECP, DAMWO, CM.
- Value engineering.
- Level of repair analysis.
- Component reliability.
- Logistic Support Analysis.
- Maintenance concept.
- Inspectability and testability of systems and components.
- Maintenance Data Requirements.
- Non-destructive testing technology, state-of-the-art/improvements/changes.
- Identification of specific training requirements.

### QUESTIONS:

- Will this policy drive designers to require excessive crew/operator monitoring?
- Will the contractor have incentive to provide RCMS oriented design?
- How can contractors be motivated?
- Will there be a tendency to under maintain?
- Is there a need for a design review to assure proper incorporation?
- Will additional funds be required to accommodate RCMS into the basic design?
- Will analyses be required to determine cost vs. operational trade-offs?

- Has a permanent record been established to display why and how each scheduled maintenance transaction was established?
- Are overhaul selection criteria and overhaul performance requirements keyed to the designed reliability?

REFERENCES: DRCMM-E

AMC Pamphlet 750-16, DARCOM change 1; AR 5-4, 11-18, 15-14, 30-37, 70-1, 70-15, 70-27, 70-37, 71-1, 71-9, 310-3, 385-16, 570-2, 700-18, 700-21, 700-51, 700-120, 700-127, 702-3, 750-1; DARCOM-R 750-7; MIL STD 756, 785, 1390; TM 38-715, 38-750, 38-760.

## REQUEST FOR PROPOSAL/WORK STATEMENT

### SUMMARY:

The Request for Proposals (RFP) is the solicitation document used in negotiated procurements. It communicates to offerors an understanding of the work to be done and provides the basis on which proposals must be submitted. The heart of the RFP is the work statement, the foundation on which the offeror builds his identification of resources required for performance.

### BASIC POLICY:

- Competition is to be fostered to the maximum practicable extent.
- Requirements statements are to address the need, not the solution.
- Unnecessarily lengthy and elaborate proposals are discouraged.
- The Government may reserve the right to award without conducting written or oral discussions with offerors.
- Evaluation criteria will be included in the RFP and listed in descending order of relative importance.
- The contemplated type of contract will be identified in the solicitation.
- All deliveries (product, services, and data) will be identified and applicable specifications cited.
- All requirements for proposal content (technical, management and cost) will be identified in the RFP...and proposal in accordance with the Uniform Contract Format prescribed by DAR.

### CONSIDERATIONS:

- Clarity of the work statement and proposal requirements will simplify response and add credibility to proposed cost and approach.
- Asking for more than is needed increases cost and diminishes competition.
- The need for a preproposal clarification conference should be assessed.

- Consider the usefulness of alternative proposals, the use of incentives, risk sharing agreements, and special clauses to control the program and/or products.
- Provisions for trackability between technical, cost and management proposals should be built into the solicitation.
- Identification of measureable accomplishment-oriented tasks and milestones will enhance later performance monitoring.
- There should be a direct relationship between line items, the work statement, and any provided Work Breakdown Structure.
- Improvement in responsiveness and clarity of proposals may be enhanced by issuing a draft RFP for industry comments.

QUESTIONS:

- Does the work statement completely define the obligations of both the offeror and the Government?
- Have we assured consistency between the RFP and factors included in the procurement plan and source selection plan?
- Has the extent of expected competition been determined? Sole or multiple sources?
- Have we considered competitive prototyping or parallel development of alternative systems?
- Have targets been identified for Design to Cost?
- Have we organized the RFP to ease proposal preparation and evaluation?
- Is there a Work Breakdown Structure prescribed?
- Is there a clear and trackable relationship among the Work Breakdown Structure, work statement, line items and packaging, and delivery and inspection requirements?
- Has the offeror been given a brief overview of the essence of the requirement through an executive summary or introductory section?
- Does our work statement describe a level-of-effort or a completion-type requirement?

- If we have defined a phased procurement, have we clearly identified both the requirement for this phase and its relationship with follow-on work?
- Are there any contemplated exclusions from participation in a follow-on effort? Have they been stated in the RFP?
- Have identified risks (cost, technical, or time) been assessed and included in the RFP as appropriate?
- Will the RFP encourage innovative responses?
- Are any deviations to DAR indicated?
- How will we analyze the cost or pricing data furnished by offerors?
- Are the selected evaluation criteria sharp and discriminating?
- Have RAM costs been considered and acceptability of trade-offs in design, development, production, and operational support stated?
- Has a solicitation review been accomplished?
- Does the specification satisfy the materiel needs requirements?
- Have all the essential data item descriptions (DIDs) been identified?
- Are hardware/software inspection and acceptance clearly defined?
- Has the Government defined system responsibility for design, development and performance, including low rate initial production for the system?
- Does the RFP address penalties for late delivery of hardware or maintenance support test packages?
- Are DTC provisions included as applicable?
- Have the data requirements been scrubbed by the Data Requirements Review Board (DRRB)?
- Is review by DARCOM/DA Request for Proposals/Contract Requirement Review Board (RFP/CRRB) required?
- Does the RFP/Work Statement identify the tests to be conducted by the contractor, by the Government, and jointly by the contractor?

and government; include specific requirements that contractor test data/reports be promptly provided to the Government: and stipulate that the Government can monitor/observe contractor testing?

REFERENCES: DRCPP-SP

DARCOM 3-501; AR 700-51, 715-6; Army Procurement Procedure Section III, DAR Section III, Part 5; DoDD 4105.62, 5000.1.

## RETAIL SUPPORT AGREEMENTS

### SUMMARY:

Retail intraservice/interservice support is support accomplished at the post/installation/base level, and between operating commands, with resources that are available to the installation commander. A formalized negotiated agreement, which delineates specific requirements and responsibilities of the host and tenant, provides for timely programing, budgeting and furnishing of logistical and administrative support essential to mission accomplishment and the morale and welfare of tenanted organizations.

### BASIC POLICY:

- The assigned manager will insure that required support agreements are negotiated at the lowest practicable level and are reviewed and amended as required.
- The assigned manager will neither program nor fund for materiel or services required to be provided by an Army host when the host has been given program and budget responsibility.
- Interservice agreements will be negotiated and documented on DD Form 1144 in accordance with the Defense Retail Interservice Support (DRIS) Manual.
- An intraservice agreement need not be used for one-time reimbursable or nonreimbursable support.
- Disagreements or rejection of requests for support which cannot be resolved by commanders concerned will be forwarded through command channels and resolved at the lowest possible command level.
- Prior to finalizing a support agreement and in collaboration with the commander requested to furnish the support, the assigned manager must determine that the proposed method of obtaining the support is the most effective/economical method.

### CONSIDERATIONS:

- Planning and programing involving changes in support requirements should be closely coordinated in the early stages with the supporting commander.
- Contingency plans should be developed for alternate sources of support in the event of mobilization, reorganization, base closure, etc.
- A Memorandum of Understanding (MOU) is used to document mutually agreed parameters within which support agreements will be developed.

- An MOU is not a substitute for formal agreements.

QUESTIONS:

- Is a support agreement required/necessary?
- Is there an existing MOU to consider?
- Are funds available to effect reimbursement, if required?
- Are funding arrangements consistent with current policy?
- Has a cost effective determination been made?
- Have provisions been made for annual review requirements and agreements prior to anniversary dates?

REFERENCES: DRCIS-S

AR 1-35, DARCOM Suppl 1 to AR 1-35, AR 5-8, AR 5-9, AR 37-49, DOD 4000.19M (DRIS MANUAL, SEPT 1978).

## RISK ANALYSIS/TRACE

### SUMMARY:

Risk analysis is the identification of areas of uncertainty in a program or project and the identification of viable alternatives to the risks identified. The analysis includes selection of the optimum (least risk) solution and contingency alternatives should the selected approach fail. Risk analysis also includes prediction of what may go wrong and proposed actions to avoid or minimize the impact in those eventualities. The TRACE (Total Risk Assessing Cost Estimate) includes costs associated with all possible areas of uncertainty or risk to ensure the identification of a reasonably realistic "outside" cost through the R&D phase.

### BASIC POLICY:

- TRACE shall be incorporated in the Baseline Cost Estimate (BCE) for the R&D effort only.
- Risk analysis techniques shall be used to compute the risk factors to apply to the Work Breakdown Structure and produce the TRACE.
- TRACE shall be allocated by fiscal year from a combination of the technical risk, schedule risk, non-negligent human errors, and potential requirement changes that are anticipated for that particular fiscal year.
- The TRACE shall have a 50/50 chance of producing either a cost overrun or an underrun.

### CONSIDERATIONS:

- A realistic assessment of the probable expansion of work by risk multiplication factor.
- Risk analysis factors based on sound engineering judgment.
- The effects of possible technical design changes, rescheduling, additional testing, additional hardware, and non-negligent human errors.
- Each Work Breakdown Structure element identified and considered in TRACE analysis.
- The TRACE properly phased down as the development program approaches conclusion.

### QUESTIONS:

#### MILESTONE I

- Has TRACE been addressed adequately in the BCE?

- Is TRACE a realistic percentage of the R&D cost effort?
- Has the variance analysis (differences between the BCE and the Independent Cost Estimate) addressed the cost difference both with and without TRACE?
- Has TRACE been allocated properly by fiscal year?

MILESTONE II

- If R&D has been completed, has TRACE been deleted from the BCE?
- If there is a remaining R&D effort, does TRACE reflect the advanced state of the R&D program?

REFERENCES: DRCDE-P

AR 11-18; DODD 5000.1.

RSI

This section to be published.

Action Office - DRCIRD/DRCPM

117-119,120,121

## SKILL PERFORMANCE AIDS (SPA)

### SUMMARY:

DARCOM and TRADOC are committed to the concept of SPA as a workable approach to improving soldier maintenance and training. Both Commands acknowledge the SPA methodology is in its formative stages. DARCOM and TRADOC must work together, on a new level of "togetherness," to solve problems in order for SPA to take its place as a regular feature of system development.

### BASIC POLICY:

Definitive policy guidance and definition of DARCOM and TRADOC responsibilities is now under development, but not yet available.

### CONSIDERATIONS:

- DARCOM/TRADOC interface.
- SPA funding.
- SPA Validation
- SPA products.

### QUESTIONS:

- Has the DARCOM/TRADOC SPA team been established?
- Adequacy of SPA work statement? Is it tailored to the system or equipment?
- Has a plan been developed to validate SPA products using actual users?
- Are early SPA products practical and not overboard on minutiae?
- Have provisions been made for TRADOC to sign-off on Task Analysis? Has it been done?
- Are all training devices planned for and under development so that a full Training Support Package will be ready for DT/OI (II)?
- Is funding clearly under control -- DARCOM funding/TRADOC funding?

### REFERENCES: DRCDE-DG, DRCMM-MP

AR 210-21, AR 310 Series, AR 1000-1, MIL-M-63035, MIL-M-63036, MIL-M-63038, MIL-M-63040, MIL-HDBK-63038-1, MIL-HDBK-63038-2.

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## SMALL BUSINESS PROGRAM

### SUMMARY:

The Government actively pursues a policy directed toward assuring small business concerns an opportunity to be considered fairly as prime contractors or subcontractors in performing work or rendering services under Government procurement contracts.

### BASIC POLICY:

- Prime Contractors
  - Small businesses may contend for award in open competition, or through limited competition with other small businesses when a small business "set-aside" determination has been made.
  - A small business set-aside decision requires competition among small businesses and an expectation of reasonable prices.
  - Labor surplus areas must also be considered in arriving at a "set-aside" determination.
  - Goals are established for contracting activities and performance measured on an annual basis.
- Subcontracts
  - Through implementation of specific DAR clauses, the contracting officer shall provide for small business subcontracting programs to be followed by contractors when it is determined that there are significant subcontracting opportunities for small businesses.
  - Contractor's subcontracting performance with small business shall be reviewed by the cognizant Contract Administration Services (CAS) organization, with records made available to the Small Business Administration (SBA) on request.
  - Appropriate use of weighted guideline profit determinations to recognize contractor performance in small business contracting.

### CONSIDERATIONS:

- Prime Contracts

- Cooperation with the SBA Representative is required in arriving at "set-aside" determinations when the contracting activity has decided not to set-aside.
- Class "set-asides" are made by an individual contracting activity when the nature of the procurement indicates a continuing need on a repetitive basis and competition can be expected from small businesses.
- Only about one-third of the prime contract awards to small businesses are made under the set-aside determination.
- Labor surplus areas are to be considered.
- Subcontracts
  - Contractors are required to exercise their "best efforts" in implementing small business subcontracting for contracts between \$10,000 and \$500,000. Performance is that which is consistent with efficient completion of the contract.
  - For contracts in excess of \$500,000, the contractor is required to implement a subcontracting program requiring:
    - a designated liaison officer;
    - consideration of small business in Make or Buy decisions;
    - assuring small business an equitable opportunity to compete;
    - maintaining records on subcontracting and filing reports;
    - notifying the contracting officer when small business has not been solicited;
    - incorporating the same provisions in subcontracts over \$500,000.
  - Review of the contractor's program conducted by the cognizant CAS organization.
  - Records to be made available to SBA, upon request.
  - Selected programs currently being evaluated for the application of mandatory small business subcontracting goals.
  - Labor surplus areas.

QUESTIONS:

- Prime Contracts

- Can we obtain effective competition among small businesses?
- Can we expect award at reasonable prices?
- Should we expect or require any less in the way of performance from a small business subcontractor?
- How can we assist the contracting activity in meeting its goal for small business participation?
- Subcontracts
  - Does the procurement offer substantial subcontracting possibilities?
  - Is the offeror's program consistent with the requirements of DAR 7-104 clauses?
  - How effective is the contractor's Make or Buy decision process in considering small business?
  - Does the contractor have an adequate breakout program?
  - Are small business subcontractors identified as part of the "team" in proposals?
  - What is the form and substance of the contractor's program for recognizing individual performance on behalf of small business subcontracting?
  - Are deficiencies in the contractor's program promptly brought to his attention and follow-up action taken to ensure correction?

REFERENCES: DRCP-2

DAR Section I, Part 7; APP Section I, Part 7.

## STANDARDIZATION

### SUMMARY:

Standardization is the adoption and use of engineering and management criteria to achieve the objectives of the Defense Standardization Program. Optimum standardization, consistent with effective operational and support systems, is a major procurement consideration. Insufficient attention to inter- and intra-system and service standardization can lead to severe logistics and production problems. Unique, nonstandard items will have both cost and system effectiveness impacts. However, the inclusion of nonessential standardized specifications in solicitations and contracting documents should be avoided. Emphasis and attention to standardization procedures become critical in co-production situations.

### BASIC POLICY:

- Where feasible, military operational requirements for materiel shall be satisfied through the use of existing military designs or commercial products. If not feasible, the new development shall encompass all equivalent needs of the military.
- The use of existing standard items and standard engineering and management practice during exploratory and advanced development is advocated. "Standards" shall be secondary to the prime objective (e.g., proof of a concept).
- Standardization shall be achieved consistent with performance, reliability, availability, and cost requirements.
- Variety of items of supply will be reduced to a minimum consistent with effectiveness.
- Standardization techniques during procurement shall be employed.

### CONSIDERATIONS:

- Contractor penalties for nonstandardization.
- Impact of standards on life cycle cost.
- Ensure relevancy to the product under procurement.
- Avoid overlap/contradictory requirements.
- Be alert to "overstandardizing," "overspecifying."
- Solicit comments from prospective contractors.
- International Standardization Agreements (STANAGS).

QUESTIONS:

MILESTONES 0 - I

- Have the approved specifications and standards been considered in a needs statement?
- Can the need be fulfilled by use of an existing item or with modifications to same?
- Is the item available in domestic or foreign materiel?
- Are provisions in the RFP for the contractor recommendations?
- Are data requirements consistent with Data Item Descriptions?
- Will standardization inhibit technological development and advancement?

MILESTONE II

- As a new item is developed, are adequate records kept to facilitate conversion to military specifications, standards, or handbooks?
- Is there an adequate study of existing specifications and standards?
- Will standardization assist or hinder initial production?
- Has the contractor been required to prepare specifications to formats excessive to program needs? Have MIL-S-83490, MIL-STD-490, and/or MIL-STD-961 been applied?
- Have precautions been taken to prevent nonstandard parts from entering the Government supply system (MIL-STD-965)?
- Has there been proper coordination between data managers and standardization officers?

MILESTONE III

- Are the operation manuals prepared following guidance in the MIL-M-63000 Series?
- Is there proper feedback to the manual writers?
- Feedback to preparers of specifications and standards during the life cycle?
- Are the Standardization Document Improvement Proposals (DD Form 1426 on the back of each specification) properly executed?

- Are specifications and standards definitive and complete?
- Does standardization inhibit warranty agreements?

REFERENCES: DRCDE-RE

AR 700-47; AR 700-60; DAR 1-1201, 1-1202; DODD 4120.3

## SYSTEM ASSESSMENTS

### SUMMARY:

Management control during acquisition to evaluate status and identify areas needing corrective action is a key part of the acquisition manager's job. The assessments process should integrate all major technical performance, logistic, and cost parameters to provide a complete perspective on current status.

### BASIC POLICY:

- System assessment will be based on an integrated data base of technical performance, logistics, and cost information generated during acquisition.
- System assessment information requirements will provide the framework for test design and data collection during acquisition.
- System assessments will be performed in preparation for design reviews and decision review councils.
- System assessments will be the "institutional memory" that documents the progression and completion of the project.
- System assessments will provide the documentation to support transition from acquisition to materiel readiness.

### CONSIDERATIONS:

- Requirements stated in manner that permits system assessments.
- Definitions and ground rules determine structure of system assessments.
- Data requirements specified in contracts and test designs.
- Integrated data base serves acquisition manager, and engineering and logistics personnel.
- Acquisition manager controls and maintains quality of integrated data base.
- Plan data collection during test to satisfy needs.
- Assessments from C/SCSC, RAM, T/E, and TPM are the key to success of design reviews and are required for SAR/DAPR/RECAP.

### QUESTIONS:

#### MILESTONE 0

- Have all technical performance, logistical, and cost requirements been stated in a manner that will permit their assessment?

- How are requirements defined?
- What methods will be used to assess achievement of requirements? direct measurement? prediction? judgment?
- Have ground rules for assessments been defined? techniques? participation? criteria?
- Has a system assessments schedule been set up?

#### MILESTONE I

- Has a detailed plan for conducting system assessments been prepared? What tasks will be conducted? responsibilities?
- What will be the management information feedback?
- Has the integrated data base been designed and set up?
- Have data requirements been identified?
- Have controls been established on data collection, analysis, and usage?
- Are efforts fully funded?

#### MILESTONE II

- Has a detailed plan for conducting system assessments been prepared?
- Are test data complete enough for use in engineering analysis, logistics support analysis, and predicting O&S costs?
- Are system assessments being performed in timely manner for design and decision reviews?
- Are system assessments doing the job intended?
- Are problems identified being corrected? follow-up and closeout?
- Are the records in order? audit trail visible?

#### MILESTONE III

- Have all requirements been satisfied?
- Is the system assessment audit trail complete enough to support materiel release? transition?
- How will performance in the initial deployment period be assessed? plans for field data feedback? Is the effort fully funded?

- Is the integrated data base updated?
- Are all problems closed out?
- Have system assessments/disciplined reviews been scheduled? How will they be conducted?
- Have plans been made to visit selected operating forces to obtain direct user assessment of materiel?
- Have systems/components which degrade RAM performance and contribute to excessive O&S costs been identified and designated as RAM Improvement of Selected Equipment (RISE) candidates?
- What method of field data collection will be used? existing data on field performance? sample data collection? field visits? surveys? user questionnaires?

REFERENCES: DRCQA-E

AR 70-1, 750-37, DARCOM/AMC-R 700-6, 702-1, 702-9, 702-15.

## SYSTEMS ANALYSIS

### SUMMARY:

Systems analysis provides a structured basis for decision-making. Its use promotes better understanding of broad defense objectives and functional responsibilities as well as a better understanding of management problems to be solved. The decision framework provided by the systems analysis approach assists the decision-maker in comprehending the complex relationship of system variables. The essential activities of a systems analysis study are defining objectives, identifying alternatives, establishing costs/effectiveness criteria, formulating models, obtaining results and drawing conclusions.

### DEFINITIONS:

- COEA. A study which has a purpose of developing recommended rank orderings of candidate systems for meeting an approved requirement based on meaningful relationships between cost and operational effectiveness.
- DRA. A specific form of systems analysis which defines and attempts to quantify the risks associated with alternative solutions. It is a structured approach which includes a well-defined problem, the establishing of alternatives, sensitivity analysis of critical factors, and presentation of the analysis and results to a decision-maker.
- IE. A comprehensive analysis performed prior to a major decision using test data and other pertinent information to provide a decision-maker with an objective analysis to include comparisons, challenges to established requirement, significance of deficiencies and short-comings and alternative courses of action.
- Red Team. A group formed to perform an independent, objective assessment of an analysis or study. Members of this group are selected from the systems analysis community and/or other elements within the command having the expertise and objectivity required for the subject in question.

### BASIC POLICY:

- Systems analysis will be employed to support complex decisions throughout the life cycle of materiel. Two principal DARCOM examples are IEs and DRAs. There are a number of other points in the life cycle where systems analysis should be used.
- Each R&D and MR command has a systems analysis organizations.

- An IE and DRA will be completed prior to each decision milestone in major programs which will involve ASARC or DSARC proceedings or in non-major program for which DA has retained IPR approval authority. For non-major systems, an IE will be completed prior to each IPR, as will a DRA unless it is clear that no appreciable time, cost, or performance risk is associated with the decision.

CONSIDERATIONS:

- Use of AMSAA in its role to conduct major systems analyses and cost effectiveness studies for DARCOM activities and project managers:
- Track and evaluate significant draft MENS and LOA documents to assure that the requirements will permit all suitable candidates to be considered and evaluated.
- Track the progress of significant materiel development programs and logistical support activities within DARCOM and provide red team support to project/product managers and commanders within DARCOM, as required.
- Design development tests and conduct independent evaluations to provide bases for major decisions with respect to major, designated non-major and selected other materiel systems.
- Maintain direct contact with Army materiel users in the field to record apparent requirements for improvements and new materiel, evaluate these requirements and seek timely solutions through application of current and emerging technology.
- Develop methodologies for use in IE reports on assigned systems for evaluation of the trade-off between predicted operational availability and logistic support resource costs.
- Use of the Army Logistics Management Center in its role to:
  - Conduct systems analysis studies concerning logistics doctrine systems, and procedures.
  - Conduct courses in systems analysis and operations research in support of the training requirements of DARCOM.
  - Conduct or provide specialized technical assistance in DARCOM systems analysis studies.

- Use of the Systems Analysis Organizations within the DARCOM sub-commands in their role to:
  - Insure use of systems analysis in making significant decisions within the commands.
  - Insure that IE's and DRA's are initiated.
  - Insure that decisions involving materiel readiness activities, logistics support programs, and logistics systems are supported with quantitative evaluations and assessments.
  - Provide the focal point for collecting data (other than cost data) from the command or project/product managers at his command and providing these data to TRADOC for COEA purposes.
  - Provide the red team leader to work with US Army Test and Evaluation Command (TECOM) on the IE of assigned non-major systems.
  - COEA are generally conducted by or for TRADOC. The DARCOM role in the COEA process is to provide the technical data on systems characteristics, performance, effectiveness, vulnerability, survivability and cost. The normal sources for these data are HQ, DARCOM, development and readiness commands, project/product managers, laboratories, and activities.
  - Risk analysis and decision risk analysis are important parts of the total modern management process. RA and DRA are applied to alternative courses of action and permit structuring models which address the uncertainty of cost, schedule, and performance of systems.
  - The function of the red team is to ferret out alternatives that might have otherwise been over-looked; to add balance to subjective ranking, weighting or risk assessment schemes; to challenge the validity and sensitivity of the major assumptions; and, to provide specific assistance in quantifying results through the use of operations research techniques.

QUESTIONS:

Have the following analyses been prepared? Are they required for:

MILESTONE 0

- Analyses leading to MENS and options to meet materiel objectives.

MILESTONE I

- Analyses leading to alternative support concepts decision, logistics design decision, maintenance concept; analysis of LOA; parametric

design studies; TOD; BTA; environmental assessment; health hazards and safety assessments; design of experimental test program; evaluation of experimental feasibility test; and life cycle planning of development, acquisition and support.

#### MILESTONE II

- Special task force studies, establishment of RAM characteristics and goals, failure mode and effects analysis, survivability and vulnerability analysis, review decision on logistics support alternatives, broad level of repair analysis, update of TOD and ETA, DT I design plans, technical input to ROC, evaluation of DT I and OT I, and production engineering and planning.

#### MILESTONE III

- Source Selection, evaluation of ECPs, characteristics trade-off analysis, detail level of repair analysis, analysis of operational availability, physical teardown evaluation, DT II design plans, provisioning, selection of test, measurement and diagnostic equipment, survivability analysis, evaluation of DT II and OT II, and MOS and training requirements.

#### POST-MILESTONE III

- Ammunition combat rate studies, production base studies, logistics plans and systems, initial provisioning, spare parts requirements, storage methods and location, shipping, packaging, transportation, system assessments, disciplined review, equipment distribution plan, final annual maintenance man-hours data, evaluation of ECP and PIP, evaluation of equipment improvement reports, depot rebuild programs stockpile reliability studies, average useful life studies, identification of new replacement material, and recommendation for reduction and elimination of materiel.

#### REFERENCES: DRCPA-S

DODD 5000.1, 5010.22 and DODI 5154.19; AR's 5-5, 5-7, 11-8, 11-28, 15-14, 70-1, 70-9, 70-10, 70-27, 71-9, and 1000-1; DA Pamphlets 11-25 and 70-21; DARCOM-R 10-16, 10-48, 11-1 and 11-27; DARCOM Supplement 1 to AR 5-5, DARCOM Supplement 1 to AR 677-20; and TRADOC Regulation 11-8 and TRADOC Pamphlet 11-1

## TECHNICAL DATA PACKAGES

### SUMMARY:

Technical Data Packages (TDPs) include documentation in the form of engineering drawings, specifications, and standards necessary to control the design, engineering, performance, and quality of an item sufficiently to ensure functional and physical adequacy for its intended application. TDPs are included as part of the system/equipment competitive procurement effort. The TDP, therefore, should be available for production/procurement initiation.

### BASIC POLICY:

- TDPs will be acquired when competitive procurement of the system or equipment is planned.
- The acquisition of a TDP will be planned so as to ensure its availability in time to meet the initial production and procurement schedule for the system or equipment.
- Only the minimum technical documentation required for maintenance and readiness support will be acquired when competitive procurement of the system or equipment is not planned.
- When proprietary data are included in a TDP, it will normally (unless marked with a valid restrictive legend) be considered free for use by the Government.

### CONSIDERATIONS:

- Immediate (planned) and probable future use of the prime system/equipment.
- Additional procurement in the future.
- "One-of-a-kind" equipment; competitive equipment, competitive procurement.
- Configuration management; configuration management identification; configuration management audits.
- PEP and PIP effort.
- GFP.
- Logistic support, spares, support equipment, provisioning.

### QUESTIONS:

#### MILESTONE 0

- What documentation will be required to capture the technical aspects for future efforts?

- Will Level 1 drawings defined in DOD-D-1000 be required?
- What will be the impact of proprietary sources on total system development?

#### MILESTONE I

- What documentation will be required to capture the technical aspects for future efforts?
- Have the requirements of MIL STD 490 been considered?
- Have configuration baselines been formally established?
- Will Level I drawings defined in DOD-D-1000 be required?

#### MILESTONE II

- Is it necessary to acquire a complete TDP or only the data required for logistics and maintenance support?
- Will the TDP support competitive procurement?
- What drawing level will be required to support planned procurement and operational needs?
- Have MIL-STD-885, DOD-D-1000, and MIL-T-60530 been considered for stating TDP requirements?
- Have quality control requirements (MIL-T-50301) been established to assure adequacy of the TDP?
- Has the role of the Data Requirements Review Board (DRRB) been considered?

#### MILESTONE III

- Has the product baseline been placed under configuration management control?
- Has Preproduction Evaluation (PPE) been invoked?
- Is the TDP adequate to support competitive procurement?

#### REFERENCES: DRCDE-RE

AMCP 715-6 ; DAECOM-R 70-46 MIL-STD-480, 481, 490, 885, 961; MIL-T-50301, MIL-T-60530, DOD-D-1000.

## TECHNOLOGY BASE/TRANSFER

### SUMMARY:

Existing or potential technology levels are the fundamental parameters within which other major system acquisitions and developments must take place. During the conceptual phase of program initiation, the available technology will be established.

### BASIC POLICY:

- Early investigations will be characterized by close, continuing dialogue and synchronous interaction between combat and materiel developers.
- Extensive efforts to expand the technological base or use exploratory development knowledge will be undertaken (insofar as possible).

### CONSIDERATIONS:

- State-of-the-art technology to be infused into each phase of the acquisition process.
- Legality of transfusion (data rights) to be established contractually.
- OMB Circular A109 discourages technical transfusion between contractors.
- Security and national interest considerations.  
DARCOM official policy.
- Legal and contracting considerations requiring care and precision in administration.
- Legality vs. need; lateral/relatable technology data rights.
- Poor requirements definition vs. lack of clearly defined missions.
- Personnel availability vs. no quick response capability.

### QUESTIONS:

#### MILESTONES O, I, II, -II

- How do I plan for transfer? Is it legal?
- What are the Governments's rights? How exercised?

- Who makes a decision when the contractor does not want to provide the data? How?
- What is the thrust of ED/AD programs?
- Technical/operational feasibility, practicability, and logistic support parameters: How are they identified?
- Assess technical options, uncertainties: How? When? Who?
- Develop/assess design characteristics: How? When? Who?
- Develop cost estimates: How? When? Who?
- Assist or assess inputs regarding: How is balance achieved? Who provides? When? Format?
  - Operational concepts
  - Performance bands
  - Cost considerations
  - Test requirements
  - Uncertainty -- risk
  - User requirements
  - System support
  - Man-machine trade-off
  - Threat validation

REFERENCES: DRCLD-C

DARCOM-R 70-13; AR 70-23

## TEST AND EVALUATION - PLANNING

### SUMMARY:

The preparation of the Coordinated Test Program (CTP) document is the focus around which planning for T/E will be developed. The CTP is used to plan and coordinate all the testing for a system or equipment. The planning process essentially ensures that the designs for DT and OT are prepared and that the procedures are such that the test results are evaluated objectively and independently. Development and operational tests should be planned for minimum resources per unit data yield, so that developer as well as operator needs are addressed. Involvement in testing, either directly or in a supporting role, extends from the Chief-of-Staff level through all levels of development, readiness, operational, and support Commands.

### BASIC POLICY:

- . Development Testing will be planned as a single integrated test cycle between contractor and materiel developer.
- . Contracts will require that testing is the responsibility of and will be conducted by the contractor to demonstrate compliance with contract specifications.
- . Testing will be conducted at the most cost-effective site whether it be contractor facilities, TECOM facilities, other DARCOM facilities, or other DOD facilities.
- . Test planning will be coordinated among all development and operational test agencies to minimize the number of tests, to preclude duplication of tests, and to minimize the exchange of data between operation tests and development tests.
- . The CTP document is the key test management document to ensure integration of all testing. For systems undergoing DSAR review a Test and Evaluation Master Plan (TEMP) will also be prepared.

### CONSIDERATIONS:

- . RAM test measurement and analysis details prior to award.
- . Providing for test support requirements, including construction of special facilities well in advance of testing.
- . Testing to evaluate safety, Human Factors Engineering (HFE), and health characteristics.

- . Testing of key critical issues (e.g., minimal operational capabilities) early in the test program.
- . RAM-D/RIW.
- . TEMP.
- . IEP/TDP/OTP/DTP for DT/OT.
- . Review of the guidance contained in AR 70-25, Use of Volunteers as Subjects in Research.
- . TECOM concurrence with terms of usage of TECOM facilities in support of contractor testing responsibilities.
- . Adequate testing to support performance statements or results; for PIP programs.

QUESTIONS:

MILESTONE I

- . Do the Independent Evaluation Plan (IEP), Test Design Plan (TDP), Outline Test Plan (OTP), and Detail Test Plan (DTP) provide a clear audit trail from program critical issues?
- . Does the CM plan permit quick change to reflect test results?
- . Have DT and OT plans been fully coordinated and integrated?
- . Has RAM testing been planned for aggregation of DT and OT data?
- . Have ILS elements been considered in test planning and evaluation?
- . If competitive testing is used, what are provisions for protecting proprietary and procurement sensitive information?

MILESTONE II

- . Do the IEP, TDP, OTP and DTP provide a clear audit trail from program critical issues?
- . Have DT and OT plans been fully coordinated and integrated?
- . Has RAM testing been planned for aggregation of DT and OT data?
- . Have provisions been made to provide a complete training, logistic, and maintenance test support package?

- . Insofar as practicable, have demonstrations of logistic feasibility been considered?

MILESTONE III

- . Does DT/OT III, when directed by the Milestone III decision review, indicate that initial production units demonstrate capability?
- . Has provision been made for continuing force development testing and experimentation?
- . Is production testing planned to ensure contract compliance?

REFERENCES: DRCDE-R

AR 70-10, 71-3, 1000-1; EA PAM 70-21; DARCOM-R 70-10; DCDD 5000-2.

## TEST AND EVALUATION - TEST DESIGN

### SUMMARY:

The materiel developer and operational tester, whose test designs and evaluations should be mutually independent, employ a series of test planning documents which will include a Test Design Plan (TDP) and Detailed Test Plan (DTP). The TDP, a refinement of the Independent Evaluation Plan (IEP), is a formal test document approved by the test organization which states the circumstances under which a test is executed, the data required from the test, and the means of analyzing test data. The DTP is the test organization's internal document for a specific test which provides explicit instructions for directing every phase of test. The DTP is derived from the TDP and the OTP, and it typically addresses the purpose, objective, and scope of the test, reflecting as much planning as possible on matters of test control environment(s), data collection, data analysis, and the administrative aspects of test operations.

### BASIC POLICY:

- Test and evaluation programs must be flexible and tailored to the acquisition strategy as opposed to following an idealized model.
- Design efforts will seek a minimum of testing to obtain necessary data for evaluation.
- Models, simulations, statistical design, system analysis, engineering analysis, operations analysis, and data bases will be used to reduce test costs, as applicable.
- The objective of test and evaluation is risk assessment; therefore, the value of program risk reduction must be balanced with test cost.
- Complete integration of contractor and developer, and close cooperation with the operational tester is a must.
- Combined testing with independent test design and evaluation is preferred over separate tests, but the requirements of each test must not be compromised.
- Formation of a Test Integration Work Group (TIWG) is required for all major and DA-designated non-major systems, and optional for all other systems.
- Test design is based on resolving approved program critical issues.
- Changes for user satisfaction must be documented before release to production.
- Validation of early production must verify user satisfaction.

### CONSIDERATIONS:

- Alternative test strategies in risk assessment -- test cost vs risk.
- More testing earlier in the acquisition cycle.
- Investment in simulations, models, software drivers to reduce test costs.
- Impact of other systems on the test design (e.g., command, control and communications; intelligence information; logistics; training; tactics and doctrine; countermeasures; and survivability).
- Familiarity with the test item, test instrumentation requirements, and limitations of test facilities.
- Test requirements and criteria as reflected in RFP and contract.
- Duplicative testing; documentation; sampling; funds; contractor support; use of contractor data; adequate data collections by trained data collectors; RAM; RIW; TPM; TEMP; incentives.

### QUESTIONS:

#### MILESTONE 0

Has there been some Operational Feasibility Testing (OFT), Technical Feasibility Testing (TFT), or Force Development Testing and Experimentation (FDTE) to augment in evaluating technical approaches?

#### MILESTONE I

- Are DCP issues resolved in time for IPR/SARC?
- Has a TIWG been established?
- Have alternative test strategies been examined (risk vs cost)?
- Have meaningful critical issues, test criteria, and measures of effectiveness been defined?
- Are test requirements/criteria specified in the contract, and were they coordinated with T/E agencies?
- Has the use of simulation been considered to reduce/augment test data?
- Has the DT and OT design been coordinated? no duplication?

MILESTONES II and III

- Have alternative test strategies been examined (risk vs cost)?
- Have meaningful critical issues, test criteria, and measures of effectiveness been defined to demonstrate completed engineering effectiveness and suitability?
- Are test requirements/criteria specified in the contract, and were they coordinated with the T/E agencies?
- Does the test design address training, logistic, and maintenance test support requirements?
- Does the test design address the need and scope of environmental testing (ECM, EMI, climatic, and nuclear) required for a production decision?
- Has the DT and OT design been coordinated?
- Can test areas not critical to selection be postponed?
- Duplication in DT/OT?
- Is re-testing required as a result of Milestone I?

REFERENCES: DRCDE-R

AR 70-10, 71-3, 100-2, 1000-1; DA PAM 70-21; DARCOM-R 70-10.

## TEST EXECUTION, REPORTING AND EVALUATION

### SUMMARY:

Test and evaluation during research, program initiation, demonstration and evaluation, full-scale engineering development, and production and development is primarily the contractor's responsibility. However, this does not reduce the Army's responsibility to protect the best interest of the Government in monitoring the contractor's performance or to modify in any way the requirements of the Department of the Army and DARCOM integrated test policy. There will be frequent instances of involvement by the acquisition management organization in the T/E process. The objective of the test and evaluation process is to ensure that contractual requirements are satisfied at minimum cost. Both Development Testing (DT) and Operational Testing (OT) are coordinated in achieving this objective through the Coordinated Test Program (CTP). A Test and Evaluation Master Plan (TEMP) is prepared for systems that undergo DSARC review. Personnel and equipment resources for OT support are coordinated and approved as a function of Five Year Test Program (FYTD) development/Outline Test Plan (OTP). Test reports and results are distributed over a wide range of functions (e.g., test and evaluation, materiel development, user, logistics, acquisition review, and others). Test reports analyzing results are a primary source of input to the Cost and Operational Effectiveness Analysis (COEA) and are made available to all interested organizations for their Independent Evaluation. The Independent Evaluation Report (IER), a result of the continuous independent evaluation (IE) process, provides assessment of technical/operational performance and the adequacy of testing to date.

### BASIC POLICY:

- Testing will be integrated when in the best interest of the Government.
- Testing should be terminated if the article appears grossly deficient with little chance of meeting requirements.
- Testing should be terminated if there appears to be possible undue hazards to personnel or equipment.
- Test data acquired during DT and OT will be exchanged between DT and OT evaluators.
- Equipment Performance Reports and Operational Test Incident Reports (OTIRs) will be prepared on test incidents and provided to agencies as prescribed by AR 70-10.
- Test reports and evaluations for DT and OT will be prepared independently.
- Emerging test results will be provided to cost estimators and COEA personnel, in order to reduce time consumed in decision gaps.

- IERS (with supporting test reports and other data) will be provided to organizations represented at the IPR/ASARC, two weeks in advance of the preliminary IPR/ASARC.
- The independent evaluations of DT and OT will be presented to the preliminary IPR/ASARC on their independent evaluation.
- Any interested organization or Command may forward to decision reviews the result of their reviews and recommendations on test reports. However, the test reports themselves may not be changed by these organizations or Commands.

#### CONSIDERATIONS:

- Monitoring contractor tests by developer and independent evaluators; adequate contractor testing accomplished prior to entering Government tests.
- Funding; facilities; personnel; maintenance support package.
- Risk reduction vs. cost; early "quick look data" available.
- Sufficient visibility of the test program during execution; all testing (bench through tactical exercises) to be evaluated; test conditions consistent with intended use and environment; DT and OT RAM-D data evaluated and aggregated, if feasible, by the OT evaluator, differing objectives and administration of DT (establish priority for tests) vs. OT.

#### QUESTIONS:

##### MILESTONE I

- Has provision been made for breadboard/experimental prototype reports?

##### MILESTONE II

- Has a determination of readiness for testing been made (both for DT and OT)? Has provision been made for prompt reporting of test results/incidents? Are deviations from the planned test program justified, coordinated, and documented?
- Have the DT and OT IERS been distributed to all agencies represented at the IPR/ASARC? Do the IERS address the decision to be made (e.g., entry into full-scale development)?

- Has the developer addressed all Environmental Protection Requirements (EPRs), RAM impact, and the status of correction?
- FDTE/breadboard or advanced development prototype results?
- Has a determination of readiness for testing been made (both for DT and OT)? Are training, logistic, and maintenance test support packages complete? Has a waiver been granted for incomplete test support packages? Has provision been made for prompt reporting of test results/incidents? Are deviations from the planned test programs justified, coordinated, and documented?
- Have the DT and OT IERs been distributed to all organizations represented at IPR/ASARC? Do the IERs address the decision to be made (e.g., entry into production)?
- Has the developer addressed all ECPs, RAM impact, and the status of correction?

### MILESTONE III

Has provision been made for prompt reporting of test results/incidents? Are deviations from the planned test programs justified, coordinated, and documented? Is documentation adequate? What are the results of engineering development prototype testing? What about initial production testing? What about post-production testing?

### REFERENCES: DRCDE-R

AR 70-10, 70-21, 71-3, 1000-1; DA PAM 70-21; DARCOM-R 70-10; DoDD 5000.3.

## TRAINING

### SUMMARY:

The training effort is two-tiered. The new equipment training plan is prepared by the support development activity. Individual and collective training is conducted by the trainer (TRADOC). The training plan provides for that initial transfer of knowledge needed to establish a training base or capability in major user Commands. This includes both operational and maintenance training which must be based on the physical and functional characteristics of the system as its configuration develops.

Training and personnel requirements are critical long lead items. Early consideration of both quality as well as quantity of staff and money needs are particularly critical. Training, as defined in relation to systems acquisitions and support, includes both in-house DoD training and contractor training.

### BASIC POLICY:

- Skill levels and numbers of personnel sufficient to meet operating requirements will be determined precisely.
- In order for training plans, materiel, and equipment to be developed and acquired in an effective manner, schedules will be established early in the acquisition process.
- Technical and other data requirements in training systems will be placed and satisfied.
- Trained personnel must be available prior to the introduction of the system or equipment.
- First production units will be dedicated for training purposes.
- Development Tests and Operational Tests (DT/OT II) are to demonstrate that all key criteria can be satisfied, including training requirements and logistics supportability.
- The requirements and constraints of the Army Training Plan will be observed.
- The development contract will require a Logistic Support Analysis (LSA).
- Communication with Army personnel agencies will be maintained throughout development of the system.

### CONSIDERATIONS:

- Training devices and equipment requirements identified and programmed simultaneously with prime system requirements.
- Personnel/training requirements vs. cost.
- Funding requirements for training devices and equipment financed in parallel with prime systems.
- The LSA process identifying all required Skill Performance Aids (SPA) material.
- Changes in design after production decision point adversely affecting repair parts support and equipment publications, as well as related training.
- Levels of skills properly analyzed and identified.
- Adequate training of testers and data collection personnel.
- Contractor training.
- Operator and maintenance training requirements.
- Technical data impact on training plans.
- Military and civilian training requirements.
- Skill levels vs. numbers trade-off.
- Personnel cost average over 50% of the life cycle cost of weapons systems.

### QUESTIONS:

#### MILESTONE I

- Does the letter of Agreement (LOA) provide for identification of Table of Organization and Equipment (TOE) training equipment requirements? Are Training Device Requirements (TDR) to be identified concurrently with the LOA effort? Have requirements for New Equipment Training (NET) been identified and planned for? Has the basis of issue and mission factors been determined?
- Has the LSA process been accomplished in sufficient detail to identify training device and training equipment requirements?

## MILESTONE II

- Is development of the TRADOC training support plan in phase with the total system schedule? Have the initial unit structure, first Basis of Issue Plan (BOIP), and the mission profile been established? Has the provisional Qualitative and Quantitative Personnel Requirements Information (QQPRI) been prepared and distributed? Have tentative Military Occupational Specialty (MOS) decisions been made? Are training devices being developed in phase (Life Cycle System Management Model (LCSMM)) with the prime system? Has the staff planners' course been planned? conducted? Has adequate training of test and data collection personnel been accomplished? Have cost estimates for the personnel and training element and for each of the other elements of logistic support been validated?
- Does the solicitation document (RFP) address personnel and training requirements properly? Will the physical teardown provide for a demonstration of maintainability and a validation of LSA-generated data for training use? Has the BOIP been updated? If required, has a draft plan TOE been prepared? Have the QQPRI and updated tentative MOS been prepared? Has adequate training of test and data collection personnel been accomplished?

## MILESTONE III

- Were validated training and lesson plans and training materiel available during the conduct of DT/OT II? What were the results of OT II in relation to training materiel? Will correction of training materiels cause a delay in the overall program? Was the correct MOS identified and validated in DT II? Were training devices available for OT II training? Will adequate numbers of trained operator and support personnel be available in the receiving unit? Will unit personnel require a NET team? Are personnel and training considerations adequately stated in the Materiel Fielding Plan? Has adequate training of test and data collection personnel been accomplished? Have the QQPRI, BOIP, MOS decision, and TOE been approved.

## REFERENCES: DRCRE-I

PARCOM-R 700-99, Chapter 13; AR 71-5, 71-7, 1000-1; TM 38-703, 38-703-1.

## TRAINING DEVICES

### SUMMARY:

Training devices are items of equipment designed to assist the US Army training community in the accomplishment of its primary mission. The purpose of a training device is to meet or exceed the training effectiveness achieved through current methods, and to accomplish training in a cost effective manner.

In some cases training devices permit effective training in areas not previously conducive to any form of training. In other cases training devices can totally replace actual equipment for training purposes with cost savings accruing due to reduced maintenance on actual items of equipment, and increased life expectancy of those items. However, in most instances, training devices replace actual equipment for significant portions of the training period.

TRADOC, US Army Training Support Center (ATSC) represents the user and works in close coordination with the Project Manager for Training Devices (PM TRADE) throughout the development cycle of training devices. Specifically, it is ATSC who bears the responsibility to establish requirements for training devices. It is the close association between these organizations which insures that developed training items truly meet the needs of the training community.

### BASIC POLICY:

- Training devices are basically divided into three categories.
- Nonsystem devices. Nonsystem training devices are developed to support general military training, training on more than one item/system, or several different types of equipment. These devices may be developed, funded, and procured by either the appropriate materiel developer or trainer. The development and procurement of all nonsystems and non-type classified training devices are the sole responsibility of PM TRADE.
- System devices. System training devices are those developed in support of a specific item/system. They are designed for use with only that system or item of equipment, including subassemblies and components. It is the responsibility of the item/system project manager or appropriate materiel developer to develop, fund and procure a device concurrent or as closely thereto with the prime system/item or to fill a training void for items/systems already fielded. PM TRADE is specifically responsible for the Synthetic Flight Training Systems (SFTS) and is developing and fielding a family of high fidelity flight simulators (UH-1, AH-1, CR-47, UH-60, and AH-64). In addition to the SFTS, PM TRADE is also providing support for other PMs, from the acquisition of the devices (Fighting Vehicle Systems, XM-1, FIREFINDER, M-60, TOW/COBRA, ROLAND, and BLACK HAWK) to providing-sultation services (DIVAD).

- Training aids acquired by TRADOC. Another category of training devices are those manufactured or procured by TRADOC activities. These are generally of low value requiring no RDT&E funds, usually fabricated within TRADOC facilities for a specific school. These items do not fall within the purview of DARCOM or PM TRADE, therefore are not subject to any DA or DARCOM life cycle management system.

CONSIDERATIONS:

- During the front end analysis of the prime system, areas of training must be identified.
- Training devices are not to be handled lightly. They are, in many cases sophisticated, computer driven simulators which require the same effort and time to develop and procure as the prime system.
- Funding requirements for training devices are based on a concept formulation phase which identifies in detail, the operational characteristics and tentative B01P of the devices.
- The training device development contractor must obtain design information from the prime development contractor. To accomplish this the PM must determine the proper data requirements and contract clauses to use in his initial development contract. In order to minimize the amount of data required PM TRADE has developed a guide to assist the PM in making the above determination and will furnish it upon request.
- Is the prime system configuration frozen to the extent that a training device can be developed utilizing available data without costly and time consuming changes?
- Access to the prime systems prototype is required by the training device developer to become more familiar with all concepts of the system.
- Have you considered the DARCOM training device developer (PM TRADE) for alternative methods to your concept or the possibility of having them develop and procure your training devices?
- Directors of Industrial Operations and their counterparts need to be advised early on during the acquisition cycle in order to program people and funding for the operations and materiel maintenance mission for training devices.
- It is imperative that all areas, as outlined under "Considerations for training" (Section III-141), be considered.

QUESTIONS:

Those milestones listed under the training section (III-141) are applicable to training devices during the materiel acquisition process.

REFERENCES: DRCPM-TND

AR 71-7, 71-9, 71-5, 71-7, 750-1, 1600-1, TRADOC Circular 70-1, PM TRADE Charter, TM 38-703-38, 703-1, AMCR 700-99.

## TRANSITION PROCESS

### SUMMARY:

The transition process applies to the orderly transfer of materiel management responsibility, for an item or system, from a development manager (DM) to a readiness manager (RM). The process begins with the establishment of a transition planning tracking group (PTG), composed of representatives of the DM and RM and, chaired by the DM. The PTG is formed within 60 days following contract award for full scale engineering development (FSED) or in the event of in-house development, 60 days following receipt of funding for FSED. Chairmanship of the PTG transfers to the RM on the date materiel management transitions. The PTG continues until the RM and the DM agree that it is no longer required.

### BASIC POLICY:

- Transition will occur at the earliest practical time in the materiel life cycle.
- While overall management responsibility will rest with the designated DM or RM, managers must rely on organizations throughout DARCOM for planning and execution of important elements of programs.
- A transition plan will be prepared for all items. There is to be one transition plan for each item/system project regardless of the DM involved in developing component items or the number of RM who have residual readiness management responsibilities.

### CONSIDERATIONS:

The following criteria serve as final assessment gates for implementing the transition action:

- Major design engineering activity has been accomplished and design stability achieved.
- Product baseline is established.
- Technical information is available to support component breakout decisions.
- Procurement information and assistance is available for use under the Department of Defense high dollar program in determining procurement method codes.
- Technical Data Package has been validated by the DM.
- System and major assemblies thereof have been produced on hard tooling,

have been accepted in accordance with configuration management parameters, and all technical and performance requirements are met.

- User feedback has documented user satisfaction.
- Residual tasks to be accomplished subsequent to transition by the DM are identified and milestones established.
- All integrated logistic support (ILS) planning and implementation required prior to the transition date has been accomplished.
- FM is prepared to undertake follow-on procurement and to perform materiel readiness functions.
- For computer-based systems, firm availability dates have been established for software documentation and rights. Additionally, a computer resource management plan has been prepared to incorporate future software maintenance/enhancement.

QUESTIONS:

- Has the RM programmed and budgeted for requirements associated with assuming materiel management responsibilities?
- Have all residual DM tasks been identified?
- Are the responsibilities of RM for component items defined and provided for in appended agreement?
- Are the DM and the designated RM in agreement that transition should occur as planned?

REFERENCE: DRCPA

DARCOM-R 70-1

## TRANSPORTABILITY/TRANSPORTATION

### SUMMARY:

Transportability is that quality or condition of an item of equipment which makes the task of moving it from one point to another an easy or simple one. This consideration is important and will be integrated into the development process as an influence on design.

### BASIC POLICY:

- Transportability shall be an inherent capability of all materiel systems to be moved by available transport modes.
- Transportability is a characteristic of design, and design efforts shall be implemented to ensure achievement of transportability requirements.

### CONSIDERATIONS:

- Impact of transportability characteristics on performances and cost; trade-off analysis.
- Compatibility of available transport modes with new equipment development or PIP.
- Transportability requirements based on appropriate plan.
- Transportability considerations of fragile, sensitive, and/or dangerous materiel.
- Transportability characteristics varying with transportation modes.
- Transportability enhancement by fold-down, disassembly (e.g., boxing, palleting, tie-downs, and racks).

### QUESTIONS:

#### MILESTONE 0

No action required.

#### MILESTONE I

No action required.

#### MILESTONE II

- Has the materiel system been evaluated to determine its compatibility with the present transportation system?

- Will the present transportation system be available at initial operating capability time of the materiel?
- Will transportability requirements delay development of the materiel?
- What effect will the transportability requirements have on cost?
- Have the necessary steps for preliminary engineering for transportability in the design been defined adequately and verified?
- Are transportability considerations included in the required operational capability or letter of requirement?
- Has the initial transportability report been prepared?
- Has the initial transportability review summary been conducted and the report included in Section VI of the DP?
- Is transportability being assessed at ASARC/IPR?
- What transportability test criteria will be used in conducting and evaluating developmental tests?
- Is there an adequate description of transportability design data in the contract work statement?
- Have tie-down, packaging, and handling requirements been considered?
- Have transportability guidance technical manuals been prepared?
- Has transportability approval been acknowledged by MTMC?

#### MILESTONE III

- Are transportability guidance manuals being distributed to gaining Commands?
- Do product improvement programs and/or modifications include transportability criteria?

#### REFERENCES: DRCMM-S

DARCOM-R 700-97, Chapter 8; AR 70-17, 70-44, 70-47, 700-127; DoDD 3224.1; TM 38-703, 38-703-1.

TYPE CLASSIFICATION

This section to be published.

Action Office - DRCDE

III-159,160,161

## VALUE ENGINEERING (VE)

### SUMMARY:

DoD policy and procedures mandate a systematic approach to cost-effective design and continued attention to opportunities for cost reductions by contractors. Value engineering is provided by either a program requirements clause obligating the contractor to engage in VE or by an incentive clause which permits the contractor to share in savings from changes he proposes if they are approved by the Government. The contractor's incentive for continuing cost control is provided by allowing for a predetermined share of the resulting savings. The VE discipline represents an intensified examination of that portion (generally 10-20 percent of a system, equipment, item, or procedure) which is highest in cost or lowest in military worth. VE is intended to provide the necessary system or equipment functions at lowest cost, check spiraling costs, and, at the same time, ensure essential product RAM.

### BASIC POLICY:

- VE will be used to enhance military worth or eliminate unnecessary costs in all phases of the life cycle. VE will be given full visibility and primary emphasis by Commanders, technical directors, acquisition managers, and chiefs of operating agencies. Further subordinate commands, depots and program/project managers reporting directly to HQ DARCOM will include in all budget estimates and operating budgets such amounts as are necessary to pay for VEPs and VECPs, testing and other costs arising from VE.
- VE goals will be allocated to established functional, acquisition management, and technical decision points, and Value Engineering Proposals (VEPs) and Value Engineering Change Proposals (VECPs) will be processed promptly.
- VE provisions will be included in engineering development contracts as well as contracts for supplies, services, facilities, and materiel as provided in DAR Section 1, Part 17.
- Results achieved toward meeting the VE goals will be documented and validated at the originating level and reported in prescribed format.
- All research, development, test and evaluation, procurement and production, operations and services, maintenance, supply, overhaul, product improvement, transportation, construction, storage, and disposition agencies will utilize VE techniques.

- A centralized VE capability will be established in all DARCOM major subordinate Commands, Army depots, and by Acquisition Managers reporting directly to HQ DARCOM and through other appropriate activities. Military and civilian VE personnel will receive formal training in VE practices and procedures.
- VE is aimed at gaining a necessary function for the lowest cost; it is designed to check the upward spiral of cost, while ensuring essential product reliability, performance, and maintainability. VE methodology is a valuable tool in meeting Design-to-Cost (DTC) targets.

#### CONSIDERATIONS:

- Accomplishment as early in the life cycle as possible (e.g., before design release, to maximize savings); cost of the VE effort and subsequent implementation compared to the savings potential; prime benefitting program to bear the costs and share in the benefits arising from VE actions.
- Impact of VE changes on other departmental policies (e.g., standardization and configuration management).
- AR 70-27 Section III, will include time-phased systematic requirements for VE in RDT&E projects.
- Technical data packages will be updated as a result of approved VE changes.
- Competitive prototyping; incentive vs. contract requirement; VE application of state-of-the-art advances.

#### QUESTIONS:

##### MILESTONE I

- Has the specifying document (LOA, etc.) been critically examined for adequacy without "overkill"? Has the cost of any one design been examined for its effect on the R&D as well as the production program? Has the cost effect of contractually required over-design been discussed?
- Has a VE Program Requirements clause been considered? If the contract has a DTC provision, are the techniques of VE required as a management tool for achieving the DTC goal? Are the DTC and VE provisions of the contract compatible?
- Has the field of commercial availability been thoroughly reviewed?

- Have suggestions been invited from prospective suppliers regarding possible value improvement from less stringent requirements? Have provisions been made for proper training of personnel within the organization?
- Does the design give the user what he needs and no more? Could costs be radically reduced by a slight reduction of performance? Has the design been coordinated with similar design products to benefit from past experience?
- What actions has the acquisition manager taken to promote the VE program? Have in-house VE proposals been generated?

#### MILESTONE II

- Has the Required Operational Capability (ROC) or other specifying document been examined critically to see whether it asks for more than is needed?
- Has a VE Program Requirement clause or VE Incentive clause been considered? Is each specified requirement essential? Is the cost based on the magnitude of each needed requirement worth the benefit gained? Is the cost of tolerances specified on each requirement worth the benefit gained? Have in-house VEPs been generated?

#### MILESTONE III

- Has a VE Incentive clause been incorporated in the production contract? Has the contractor been informed about VE Incentive clauses and the possible dollar benefits to both the contractor and the Government?
- Are VECPs submitted by the contractor being processed in a timely manner in accordance with DARCOM-R 70-8? Has the contractor been apprised of the HQ DARCOM VE Awards Program?

#### REFERENCES: DRCMT

AR 5-4, 70-27; DAR I-17; DA PAM 5-4-5; DARCOM-R 70-8.

## WARRANTIES/RELIABILITY IMPROVEMENT WARRANTY

### SUMMARY:

Warranties, whether implied or specified, provide the Army a means of ensuring materiel conformance and/or producer correction of responsible defects during a prescribed period of time. Warranties (both limited or unlimited) normally imply joint user/producer requirements and conditions essential to establishing the degree of responsibility. When applied, these responsibilities must be clearly understood by all end item users. Warranties are most applicable for commercial and modified-commercial items, but the extent of their use is limited by the difficulty in their enforcement and in assessing the value of the warranty to the Government.

### BASIC POLICY:

- The assigned manager will ensure that proposed warranties are of benefit (cost-effective) to the Army, can be complied with technically and logistically, are compatible with deployment and use objectives, are in the best interests of the Army, and provide a positive return on the immediate contract or over the life of the system.
- The assigned manager will establish those conditions and requirements for warranties to be included in contractual documents in joint consultation with the Government and legal offices of the procuring organization.
- The contracting officer will ensure that contractual documents contain the means for enforcing (clauses) implied and specified in warranties, and that they do not impose undue administrative burdens or risks on either the Army or the contractor.
- On formally advertised procurements, offerors must meet the minimum requirements specified. On negotiated procurements, those warranties most advantageous to the Army will be included in executed contracts. Warranties are generally not formally evaluated as an award determinant. A warranty offered by the successful offeror not specified in the solicitation should be accepted by the Government, pending legal review.
- A Reliability Improvement Warranty (RIW) will be implemented with the intent of providing contractors with incentives to design and produce equipments with improved reliability and lower support costs.
- Two major criteria for the application of RIWs are: (1) the field reliability costs to support the equipment, and potential for reliability will be reasonably predictable at the time the firm-fixed bid is made, and (2) the terms of the RIW will be tailored so that the rewards and risks to both industry and Government are acceptable.

CONSIDERATIONS:

- Exposure to the military environment may invalidate the enforcement of the warranty.
- Industry normally may warrant the same or similar items.
- Prior experience with warranties for an item should be considered.
- RAM-D contractual incentives should be placed only if ample baseline data exist to accurately set requirements and clear assessment procedures have been developed to precisely analyze data.
- Items selected for RIW are normally small and self-contained, immune from failures induced by outside units, sealed to discourage unauthorized field repairs, and readily transportable to permit return to the vendor's plant.
- Isolating fault under warranty not attributable to outside causes is important and difficult to achieve.

QUESTIONS:

- Is a warranty really valid?
- Is the expected benefit derived worth the time, effort, and paperwork for enforcement?
- Should the warranty apply to all or selected geographical areas?
- Do all our users want it? Will they use it?
- Have we identified critical items needing reliability improvement?
- Will selected items fit the RIW concept? Has an independent analysis been performed?
- Are we forcing RIW where a normal warranty would be preferred?
- Are the warranty clauses in the contract and the rules for application realistic and enforceable?

REFERENCES: DRCQA-E

AMCRP-SP RIW Policy Letter of 5 January 1976, ASPR 1-324.

WORK BREAKDOWN STRUCTURE

This section to be published.

Action Office - ERCDE

**APPENDICES**

APPENDIX A -- ACRONYMS AND DIRECTIVES REFERENCE

APPENDIX A -- ACRONYMS AND DIRECTIVES REFERENCE

This appendix includes acronyms and directives which are used extensively throughout this Guide. For other acronyms commonly associated with materiel development and support, refer to DA Circular 70-4.

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
-A-		
AAO	Authorized Acquisition Objectives	AR 1000-1, 700-120
ABCA	American, British, Canadian, Australia	AR 795 Series, 70-23
ACI	Allocated Configuration Identification	AR 70-37 with DARCOM Supplement 1
ACO	Administrative Contracting Officer	AR 715 Series
ACSI	Assistant Chief of Staff for Intelligence	AR 10-5, 10-6, 10-46
AD	Advanced Development	AR 70 Series
ADUT	Advanced Development Verification Test	AR 700 Series
ADVT	Advanced Development Unit Test	AR 700 Series
AFDP	Army Force Development Plan	AR 11-11, 710-1, 725-65
AM	Acquisition Manager	See 1M
AMCR	Army Materiel Command Regulation	DARCOM-P 310-1
AMMH	Annual Maintenance Man-Hours	AR 73-55, 310-31, 570-2, 700-127, 702-3, 750-1; AM 750-33, MIL STD 1388
AMP	Army Materiel Plan	AR 11-8, 37-55, 71-2, 700-120, 700-127, 702-3, 750-1; AMCR 750-33
AMSDL	DOD Acquisition Management System and Data Requirements Control List	DOD 5000.19L VOL II
APM	Army Program Memorandum	AR 15-14, 70-27, 1000-1; DARCOM-R 1-34; DODD 5000.

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
APR	Army Procurement Regulations	AR 715 Series
AR	Army Regulation	DA PAM 310-10
ASA (I&L)	Assistant Secretary Army (Installations, Logistics and Financial Management)	AR 10-5, 10-6
ASA (R&D)	Assistant Secretary Army (Research, Development and Acquisition)	AR 10-5, 10-6
ASARC	Army Systems Acquisition Review Council	AR 15-14, 70-27, 1000-1; DARCOM-R 1-34
ASBCA	Armed Services Board of Contract Appeals	DAR
ASL	Authorized Stockage List	AR 740 Series
ASPR/DAR	Armed Services Procurement Regulation/ Defense Acquisition Regulation	
ASU	Approval for Service Use	AR 71-3
-b-		
BCE	Baseline Cost Estimate	AR 11-18, 70-1, 70-32; DA PAM 11-4, 11-5
B/F	Best and Final Offer	DAR
B/L	Bill of Lading	
BOIP	Basis of Issue Plan	AR 71-2, 71-9, 310-34, 310-49, 570-2
BTA	Best Technical Approach	AR 15-14, 70-1, 70-27, 71-1, 71-9
-c-		
CAA	Contract Audit Agency	See DCAA
CAIC	Cost Analysis Improvement Group	DoDD 5000.4
CAO	Cost Analysis Office	AR 11-18
CAS	Contract Administration Services	See DCAS

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
CBD	Commerce Business Daily	
CCB	Configuration Control Board	AR 70-37 with DARCOM Supplement 1
CCDR	Contractor Cost Data Report	DODi 7000.11, AMCP-715-8
CDR	Critical Design Review	AR 76 and 700 Series
CDRL	Contract Data Requirements List	AMCR 700-66; AR 700-51; DOD 5000.19I VOL II
CECDC	Cost Estimate Control Data Center	DARCOM-R 37-4
CER	Cost Estimating Relationships	AR 11-18
CETS	Contractor Engineering Technical Services	AR/DARCOM 700 Series
CFP	Concept Formulation Package	AR 15-14, 70-1, 70-27, 71-1, 71-9, 700-127 with DARCOM Supplement 1
CIVR	Configuration Item Validation Review	AR 70-37
CM	Configuration Management	AR 70-37
COA	Comptroller of the Army	AR 37-20; PAM 1-1
COEA	Cost and Operational Effectiveness Analysis	AR 5-5, 11-18, 70-1, 71-9; DARCOM-R 11-1. TRADOC-DARCOM Joint Guide on COEA Cost Data DARCOM Guide for COEA Cost Data
COSIS	Care of Supplies in Storage	AR 740 Series
CPAF	Cost-Plus-Award-Fee	DAR
CPFF	Cost-Plus-A-Fixed-Fee	DAR
CPIF	Cost-Plus-Incentive-Fee	DAR
CPR	Cost Performance Report	DARCOM-R 715-2 & C1; DoDI 7000.10
C/SCSC	Cost/Schedule Control Systems Criteria	AMCP 715-10 & C1 & C2; DARCOM P 715-5; DARCOM-R 715-2 & C1; DoDI 7000.2; MIL-STD 881

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
C/SSR	Cost/Schedule Status Report	DARCOM-R 715-2 & C1; DARCOM P-715-13; DoDI 7000.10
CRPL	Consolidated Repair Parts List	AR/DARCOM 700 Series
CTP	Coordinated Test Program	AR 70-10, 71-3, 71-7; DA PAM 70-21
-D-		
DAMWO	Department of the Army Modification Work Order	AR/DARCOM 70 and 700 Series
DAR/ASPR	Defense Acquisition Regulation/Armed Services Procurement Regulation	DoDD 5000.35
DARCOM	Department of Army Materiel Development and Readiness Command	AR 10-11
DCAA	Defense Contract Audit Agency	DAR
DCAS	Defense Contract Administration Services	DAR
DCP	Decision Coordinating Paper	AR 70-27; DoDD 5000.2
DCSOPS	Deputy Chief of Staff for (Military) Operations	AR 10-5
DEA	Design Engineering Analysis	TM 38-760
DEVA	Development Acceptance	AR 10-16, 15-14; DARCOM-R 70-5
DE	Development Estimate	AR 70-1, 70-27, 70-32
D&F	Determination and Findings	AR 70-1; DAR 3-211
DID	Data Item Description	DOD 5000.19L VOL II
DM	R&D Command Manager	AR 10 Series; 70-17
DMWR	Depot Maintenance Work Requirements	AR 37-55, 310-3, 700-51, 700-127, 702-3, 750-1; AMCR 700-33
DODAC	Department of Defense Ammunition Code	
DOTSP	Doctrinal and Organization Test Support Package	AR 70-10, 71-3; DA PAM 70-21, 611-1

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
DP	Development Plan	AR 70-27, 700-127 with DARCOM Supplement 1
DPM	Defense Program Memorandum	AR 15-14, 70-27, 1000-1, DARCOM-R 1-34, DoDD 5000.2
DR	Design Review	TM 38-760
DRA	Decision Risk Analysis	AR 11-28, 15-14; DARCOM-R 11-1
DRRB	Data Requirements Review Board	AR 700-51, AR 700-70
DRS	Decision Risk Analysis	AR 11-18, DoDD 5000.1, 5000.2
DS	Direct Support	AR 750-1; DA PAM 700-22
DSARC	Defense Systems Acquisition Review Council	AR 15-14; DoDD 5000.1; DoDD 5000.2; DoDD 5000.26
DT	Development Test	AR 70-10; DA PAM 70-21
DTC	Design to Cost	AMC Guide for DTUPC; AR 11-18, 70-1, 70-32; DA Circular 70-5, DoDD 5000.28; DARCOM-P 715-6, 700-6
DTP	Detailed Test Plan	AMC 706 Series PAMS; AMCR 70-18 AR 70-10, 71-3, 71-7; DA PAM 70-21; DARCOM-R 385-12
DTUPC	Design-to-Unit Product Cost	AMC Guide for DTUPC; AR 11-18, 70-1, 70-32, DA Circular 70-5 DoDD 5000.28; DARCOM-P 715-6, 700-6
-E-		
EA	Economic Analysis	AR 11-28; DoDD 7041.3
ECP	Engineering Change Proposal	AR 70-37
ED	Engineering Development	AR 1000.1
EDT	Engineer Design Tests	AR 70-1, 70-10; DA PAM 70-21; DARCOM-R 385-12
EIA/EIS	Environmental Impact Assessment/ Statement	AMCR 11-5; AR 200-1 with AMC Supplement 1

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
EIALC	Environmental Impact Assessment for Life Cycle	AMCR 11-5; AR 200-1 with AMC Supplement 1
EMC	Electromagnetic Compatibility	AR 11-13, 105-2, 105-16, 105-87
EMI	Electromagnetic Interference	TM 38-750
-F-		
FAC	Facilities	AMCR 415-8, 750-33; AR 37-55, 210-21, 415 Series, 700-90, 700-127, 702-3, 750-1; DAR 3-211; AT 70-1, 405-10, 415-10; OCE SP-72-100
FCA	Functional Configuration Audit	AR 70-37 with DARCOM Supplement 1
FACI	First Article Configuration Inspection	AR 70-37; DAR
FACR	First Article Configuration Review	AR 70-37; DAR
FD/SC	Facilure Definition and Scoring Criteria	AR 70-10, 702-3
FDTE	Force Development Testing and Experimentation	AR 71-3; DA PAM 70-21
FFW	Failure Free Warranty	AR 71-5, 71-7, 310-3, 310-31, 385-16 with AMC Supplement 1, 750-1; DARCOM-P 385-23
FM	Field Manual/Financial Managers	
FMEA	Failure Modes and Effects Analysis	MIL STD 756, 785
FMS	Foreign Military Sales	AR 795 Series
FOE	Follow-On Evaluation	AR 71-3; DA PAM 70-21
FOTE	Follow-On Test Evaluation	AR/DARCOM 70 Series
FPI	Fixed-Price Incentive	DAR
FYDP	Five Year Defense Program (Plan)	AR 1-1

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
-G-		
GBL	Government Bill of Lading	AR 55 Series
GFE	Government-Furnished Equipment	AR 70-1, 70-10, 70-32; DA PAM 70-21
GFM	Government-Furnished Material	DAR
GFP	Government-Furnished Property	DAR
GS	General Support	AR 75C-1
-H-		
HF	Human Factors	TM 38-760; AR 570 Series MIL-STD-1472, MIL-H-46855A
-I-		
ICE	Independent Cost Estimates	AR 11-18
ICT	Individual Collective Training	AR 71-5, 71-7, 611-1, 750-1
IE	Independent Estimate	AR 11-18
IEP	Independent Evaluation Plan	AR 15-14, 70-10, 71-3, 1000-1; DA PAM 70-21; DARCOM-R 1-34
IER	Independent Evaluation Report	AR 15-14, 70-10, 71-3; DA PAM 70-21; DARCOM-R 11-1
IFB	Invitation for Bids	DAR Section II
IGCE	Independent Government Cost Estimate	AR 11-18
IL	International Logistics	AR 795 Series
ILS	Integrated Logistic Support	AR 700-127 and DARCOM Supplement 1
ILSP	Integrated Logistic Support Plan	AR/DARCOM 700 Series
IOC	Initial Operational Capability	AR 700-120, 1000-1
IPCE	Independent Parametric Cost Estimate	AR 11-18, 15-14, 70-1, 70-27, 71-1, 71-9
IPF	Initial Production Facilities	AR 70-1, 700-90

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
IPR	In-Process Review	AR 10-16, 15-14, 70-1, DARCOM-R 70-5, 70-37 with DARCOM Supplement 1
IR&D	Independent Research and Development	AR 1000-1, DAR
ITDT	Integrated Technical Documentation and Training	AR 210-21, 210 Series
		-J-
JFM	Joint Force Memorandum	AR 1-1
JWG	Joint Working Group	AR 70-10, 71-9
		-K-
KO	Contracting Officer	DAR
		-L-
LCC	Life Cycle Costing	AR 11-18
LCCE	Life Cycle Costing Estimate	AR 11-18
LCMP	Life Cycle Management Planning	DARCOM-R 11-27
LCSMM	Life Cycle System Management Model	
LIN	Line Item Number	AR 70-28, 70-50, 71-2, 310-34
LLI	Long Lead Time Items	AR 70-1, 70-32, 700-18, 725-1, RP Memo 700-2
LOA	Letter of Agreement	AR 70-1, 70-1-, 71-9; TRADOC-DARCOM Joint Guide on COEA Cost Data
LOGCAP	Logistic and Command Assessment of Projects	AR 790-127 with DARCOM Supplement 1
LOI	Letter of Introduction/Intention	
LORA	Level of Repair Analysis	MIL STD 1390
LP	Limited Procurement	AMCR 70-60; AR 70-2, 71-6
LR	Letter Requirement	AR 70-1, 71-9; TRADOC-DARCOM Joint Guide on COEA Cost Data

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
LRIP	Low Rate Initial Production	
LSA	Logistic Support Analysis	AR 700-127 and DARCOM Supplement 1
LSAR	Logistic Support Analysis Record	AMCR 750-16; AR 700-127 and DARCOM Supplement 1
LSP	Logistic Support Plan	AR 700-18, 700-127 with DARCOM Supplement 1, 750-1; DARCOM-R 750-27; TM 38-715, 710-2
LSRF	Logistic Support Resource Funds	AR 700 Series
-M-		
MAC	Maintenance Allocation Chart	AR 310-3, 750-1; TM 38-715
MACI	Military Adaptation of Commercial Items	
MACRIT	Manpower Authorization Criteria	AR 310-31, 310-49, 570-2
MBS	Mission Budget Statement	DoDD 5000.2
MC	Materiel Concept	AR 70-1, 71-9
MCA	Military Construction, Army	
MD	Materiel Developer	AR 10 Series
MFNS	Mission Element Needs Statement	DoDD 5000.1, 5000.2
MFP	Materiel Fielding Plan	AR 385-16 with AMC Supplement 1, 700-120, 700-127 with DARCOM Supplement 1; DARCOM-P 385-23
MIDP	Major Item Distribution Plan	AR 11-8, 11-18, 71-2, 700-120, 705-50, 750-6; DARCOM-R 700-5; DRCRP Memorandum 700-2
MM&T	Manufacturing Methods and Technology	AR 70-1, 700-90
MOS	Military Occupational Speciality	AR 71-2, 71-5, 611-1
MOU	Memorandum of Understanding	AR 1-35, 5-8, 37-19, 70-1; DARCOM-R 1-35

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
MP	Maintenance Plan	AR 70-15, 385-16 with AMC Supplement 1, 700-127 with DARCOM Supplement 1, 750-1; DARCOM-P 385-23
MR	Materiel Readiness	
MSP	Maintenance Support Plan	AR 700-750 Series
MTDA	Mobilization Table of Distribution and Allowances	
MTOE	Modification Table of Organization and Equipment	
MTP	Manufacturing Technology Program	AR 70-1, 700-90
MTSP	Maintenance Test Support Package	AR 70-10, 71-3, 700-127 with DARCOM Supplement 1, 750-1; DA PAM 70-21
MWO	Modification Work Order	AR 700-127 with DARCOM Supplement 1, 750-1
-N-		
NET	New Equipment Training	AR 1-1, 71-3, 71-5, 71-9, 511-1
NETP	New Equipment Training Plan	AR 71-5, 71-9, 611-1
NICP	National Inventory Control Point	
NMIL	New Materiel Introductory Letter	AR 71-5, 350-xx, 385-16 with AMC Supplement 1; DARCOM-P 385-23
NSN	National Stock Number	
-O-		
OASD	Office of the Assistant Secretary of Defense	
OCO	Operational Capability Objective	AR 70-1, 71-9

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
ODP	Outline Development Plan	AR 70-27, 700-127 with DARCOM Supplement 1
OFT	Outline Feasibility Test	
OMA	Operation and Maintenance, Army	AR 37-100 Series
OMB	Office of Management and Budget	
OSD	Office of the Secretary of Defense	
OSHA	Occupational Safety and Health Agency (Act)	
OSUT	On-Site User Testing	AR 70-10, 71-3
OT	Operational Test	AR 71-3; DA PAM 70-21
OFE	Operational Test and Evaluation	AR 70 Series
OTEA	U. S. Army Operational Test Agency	AR 70-10, 71-3; DA PAM 70-21
OTP	Outline Test Plan	AR 70-10, 71-3, DA PAM 70-21
-P-		
PAT	Preliminary Acceptance Test	AR 70 Series
PCA	Physical Configuration Audit	AR 70-37
PCO	Procuring Contracting Officer	DAR
PCR	Program Change Request	AR 1-1
PEP	Producibility Engineering and Planning	AR 70-1; DARCOM-R 70-46
PIP	Product Improvement Proposal	AR 70-15
PM	Project, Program, or Product Manager	AR 70-17, 700-18, 700-127 with DARCOM Supplement 1, 750-1; DARCOM-R 614-13, 750-27
POM	Program Objectives Memorandum	AR 1-1
PP	Procurement Plan	DAR

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
PPES	Planning, Programming and Budgeting System	AR 1-1
PQT	Prototype Qualification Test	AR 70-10; DA PAM 70-21
PRICE	Programmed Review of Information for Cost and Evaluation	
PT	Personnel and Training	AR 70-10, 71-1, 71-3, 71-5, 71-7, 310-3, 611-1, 750-1
PTD	Provisioning Technical Documentation	AR 37-100, 700-18; TM 38-715
PTG	Planning and Tracking Group	DARCOM-R 70-1
PT&ME	Physical Teardown and Maintenance Evaluation	AR 700-21 with DARCOM Supplement 1, 700-127 with DARCOM Supplement 1, 750-1
PV	Production Validation	AR 10-16, 15-14, 70-1; DARCOM-R 70-5
PVT	Production Validation Testing-Contractor	AR 70-10; DA PAM 70-21
		-Q-
QA	Quality Assurance	AR 700-78, 702-4
QA/I	Quality Assurance/Inspection	MIL-Q-9858, I-45208; D.A.R.
QAP	Quality Assurance Plan	MIL-Q-9858
QCR	Qualitative Construction Requirements	AR 415-10; OCE SP 72-011
QQPRI	Qualitative and Quantitative Personnel Requirements Information	AMCR 750-33; AR 37-55, 71-2, 71-5, 611-1, 700-127, 702-3, 750-1
		-R-
RA	Reliability Assessment	MIL STD 785
RAM	Reliability Availability and Maintainability	AR 702-3
RAS	Requirements Allocation Sheet	TM 38-750
R/D	Research and Development	

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
RDTE	Research, Development, Test and Evaluation	
RFP	Request for Proposals	DAR Secticas III, IV, VII; DARCOM PAM 715-4
RI	Reallocation Inventory	
RIW	Reliability Improvement Warranty	AR 700-127 with DARCOM Supplement 1
RM	Readiness Manager (DARCOM)	DARCOM-R 70-1
ROC	Required Operational Capability	AR 70-1, 71-9; TRADOC- DARCOM Joint Guide on COEA Cost Data
RPSTL	Repair Parts and Special Tools List	AR 310-3, 700-18, 700-120, 700-127 with DARCOM Supple- ment 1, 750-43; MIL STD 680
-S-		
SA	Systems Analysis	AR 11-1
SAG	Study Advisory Group	AR 5-5, 11-18, 70-1, 71-9; DARCOM-R 11-1; TRADOC-DARCOM Joint Guide on COEA Cost Data
SAIMS	Selected Acquisitions Information and Management Systems	AR 37-200
SAMS	Standard Army Maintenance System	AR 570-2
SAR	Selected Acquisition Report	DoDI 7000.3
SARC	System Acquisition Review Council	DoDD 5000.1 and 5000.2
SDR	System Design Review	TM 38-760
SEAR	Summary Engineering Assessment Report	AR 70-10; DA PAM 70-21
SEM	Systems Engineering Management	TM 38-760
SEMP	System Engineering Management Plan	TM 38-760
SIGSEC	Signal Security	

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
SOP	Standing Operating Procedures	
SOQAS	Statement of Qualify and Support	AR 700-127 with DARCOM Supplement 1
SR	Safety Release	AR 70-10, 385-16 with AMC Supplement 1; DARCOM-R 385-12
SSA	Source Selection Authority	ASPR Section III; DARCOM PAM 715-3; DoDD 4105.62
SSAC	Source Selection Advisory Council	DAR Section III; DARCOM PAM 715-3; DoDD 4105.62
SSEB	Source Selection Evaluation Board	DAR Section III; DARCOM PAM 715-3; DoDD 4105.62
SSEP	Systems Safety Engineering Plan	
STD	Standard	
S/TE	Support and Test Equipment	
STF/SSG	Special Task Force or Special Study Group	AR 15-14, 70-27, 71-1, 71-9
S/V	Survivability and Vulnerability	
-T-		
TA	Table of Allowances	
TAADS CTA	The Army Authorization Documents System	AR 310-34, 310-49, 570-2
TAMMS	The Army Maintenance Management System	AR 750-1, 750-37; TM 38-750 Series
TC	Type Classification	AMCR 70-60; AR 70-2, 71-6
TC CON	Type Classification Contingency	AMCR 70-60; AR 70-2, 71-6
TC LP	Type Classification -- Limited Procurement	AMCR 70-60; AR 70-2, 71-6
TD	Technical Director	

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
T/D	Technical Data	AR 700-51, DOD 5000.19L Vol II
TDA	Table of Distribution and Allowances	
TDP	Technical Data Package/Technical Development Plan	
TDP	Test Design Plan	AR 70-10, 71-3; DA PAM 70-21
TDR	Training Device Requirement	AR 70-1, 71-2, 71-7, 611-1, 750-7
T/E	Test and Evaluation	AR 70 Series
TECOM	Test and Evaluation Command	
TEMP	Test and Evaluation Master Plan	AR 70 Series, DA PAM 70-21
TFT	Technical Feasibility Testing	AR 70 Series
T/H	Transportation and Handling	AR 700 Series
TIWG	Test Integration Working Group	AR 70-10; DA PAM 70-21
TM	Technical Manual	AR 70-10, 71-3, 310-3, 310-31, 385-16 with AMC Supplement 1, 700-127 with DARCOM Supplement 1, 750-1, 759-1; DA PAM 70-21; DARCOM-P 385-23; TM 38-703-3
TMDE	Test Measurement and Diagnostic Equipment	AR 700-120, 700-127 with DARCOM Supplement 1, 750-43; MIL STD 680
TOA	Trade-Off Analysis	AR 15-14, 70-1, 70-27, 71-1, 71-9
TOD	Trade-Off Determination	AR 15-14, 70-1, 70-27, 71-1, 71-9
TOE	Table of Organization and Equipment	AR 71-2, 310-1, 310-31, 310-34, 310-49, 570-2
TPM	Technical Performance Measurement	TM 38-760
TR	Test Report	AR 70-10, 71-3; DA PAM 70-21

<u>ACRONYM</u>	<u>TERM</u>	<u>REFERENCE</u>
TRACE	Total Risk Assessing Cost Estimate	
TRADOC	U. S. Army Training and Doctrine Command	
TTSP	Training Test Support Package	AR 70-10, 71-3, 71-5, 611-1
-U-		
UP	Unit Pricing	
USACC	U. S. Army Communications Command	
USD(KE)	Under Secretary of Defense (Research and Engineering)	AR 10-1
-V-		
VAL IPR	Validation IPR	AR 10-16, 15-14, 70-1, 1000-1; DARCOM-R 1-34, 70-5
VE	Value Engineering	AR 5-4; DARCOM-R 70-8
VECP	Value Engineering Change Proposal	AR 5-4, 70-37
VEP	Value Engineering Program (Proposals)	AR 5-4, 70-37
-W-		
WBS	Work Breakdown Structure	AR 70-1, 70-32, MIL STD 381

APPENDIX B -- CROSS INDEX OF REFERENCED DIRECTIVES TITLES

APF Y B - CROSS INDEX OF REFERENCED DIRECTIVES TITLES

This appendix provides a numerical listing of those publications, with reference to their current official titles, as identified by short titles (number) in Appendix A and other parts of the Guide. While extensive, this listing is not intended to duplicate information contained in official organizational listings. Therefore, when referring to Army publications, users of the Guide should refer to the current issuance of the following pamphlets for superseding or most recent information.

- . DA Pamphlet 310-10 -- Index of Administrative Publications
- . DARCOM Pamphlet 310-1 -- Index of Publications and Blank Forms

ORGANIZATIONS

Office of Management and Budget (OMB)

OMB Circular

- A-11 Preparation and Submittal of Budget Estimate
- A-76 Policies for Acquiring Commercial or Industrial Products and Services for Government Use
- A-109 Major Systems Acquisition

Defense Acquisition Regulation (DAR)

Sections and Parts

- 1-17 Value Engineering
- 1-324 Warranties
- 1-707 Subcontracting with Small Business
- 1-1201-1202 Specifications, Plans and Drawings
- 3-405.5 Cost-Plus-Award-Fee Contract
- 3-805.2 Written and Oral Discussions/Competitive Range
- 4-701 Leader Company Procurement
- Section II Procurement by Formal Advertising

Section III	Procurement by Negotiation
Section IV	Special Types and Methods of Procurement
Section V	Interdepartmental and Coordinated Procurement
Section VII	Contract Clauses and Solicitation Provisions
Section XXVI	Contract Modifications

Department of Defense (DoD)

Directives (D)

3222.2	DoD Electromagnetic Compatibility Program
4100.35	Development of Integrated Logistical Supply for Systems and Equipment
4105.62	Proposal Evaluation and Source Selection
4120.3	Development Standard Programs
4155.1	Quality Assurance
4156.1	DoD Coordinated Procedure Program Purchase Assignments
4275.5	Industrial Facility Expansion and Replacement
5000.1	Major Systems Acquisition
5000.3	Test and Evaluation
5000.4	OSD Cost Analysis Improvement Group (CAIG)
5000.19	Policies for Management and Control of Information Requirements
5000.26	Defense Systems Acquisition Review Council
5000.28	Design to Cost
5000.35	Defense Acquisition Regulatory System
7000.1	Resource Management Systems of DOD

Instructions (1)

5000.2 Major Systems Acquisition Process  
5000.19L VOL II AMSDL  
5000.33 Uniform Budget/Cost Terms and Definition  
5105.38M Military Assistance and Sales Manual  
7000.1 Resource Management Systems of the OSD  
7000.2 Performance Measurement for Selected Acquisitions  
7000.3 Selected Acquisition Reports  
7000.10 Contract Cost Performance, Funds Status, and Cost/Schedule Reports  
7000.11 Contractor Cost Data Reporting (CCDR)  
7041.3 Economic Analysis & Program Evaluation for Resource Management

Department Secretary Defense Memo 8/4/75 Spec./Stand App.

DD Form 1426 Standardization Document Improvement Proposals

Military Standards (MIL STD)

143 Standards and Specifications, Order of Precedence  
480 Configuration Management  
482 Configuration Status Accounting, Data Elements, Related Features  
483 Configuration Management Practices in Systems, Equipments, Munitions and Computer Programs  
490 Specification Practices  
680 Contractor Standardization Plans and Management  
756 Reliability Prediction  
785 Reliability Program for Systems and Equipment Development and Radiation

881 Work Breakdown Structures for Defense Materiel Items

882 System Safety Program for System and Associated Sub-  
systems and Equipment, Requirements for

391 Contractor Spare Parts Control and Standardization Program

1388 Logistics Support Analysis

1156 Contractor Configuration Management Plans

MILS-S 83490 Specifications, Types and Forms

MIL-Q 9858 Quality Program Requirements

MIL-I 45208 Inspection Requirements

Army Regulations (AR)

1-1 The Army Planning, Programming, and Budgeting System

1-20 Legislative Liaison

1-35 Basic Policies and Principles for Interservice, Inter-  
Departmental, and Interagency Support (SECNAVINST 4000.20B/  
AFR 400-27/DNA INST 4000.19)

5-4 Department of the Army Productivity Improvement Program

5-5 The Army Study Program

5-7 Defense Logistics Studies Information Exchange (RCS DD-1  
& L (AR) 1196)

5-8 Host-Supported Activity Relationships (Intraservice)

10-16 United States Army Nuclear and Chemical Surety Group

11-1 Systems Analysis

11-7 Internal Review

11-8 Principles and Policies of the Army Logistics Systems

(S) 11-11 Major Command Stockage Levels Worldwide (U)

11-13 Army Electromagnetic Compatibility Program

11-18 Cost Analysis Program

11-27 Army Energy Program

15-14 Systems Acquisition Review Council Procedures

34-1 United States Participation in NATO Military Standardization, Research, Development, Production, and Logistic Support of Military Equipment

37-13 Economic Analysis and Program Evaluation of Resource Management

37-19 Financial Administration of Interservice and Interdepartmental Support Agreements (AFR 172-3; SECNAVINST 7020.4C)

37-40 Army Production Base Support Program Report (RCS CSGLD-1123 (RI) (MIN))

37-55 Uniform Depot Maintenance Cost Accounting and Production Reporting System

37-80 Financing, Funding, Accounting, and Reporting for Military Sales to Eligible Foreign Governments and International Organizations

37-100 The Army Accounting Classification Structure (Fiscal Code)

37-112 Management Accounting for RDT&E Appropriation

37-200 Selected Acquisitions Information and Management Systems

55-1 CONEX Container Control, Utilization and Reporting

55-2 Assignment and Duties of Troop Commander and Transportation Officer on Military and Commercial Vessels and Aircraft

55-4 CONJUS Military Installation Materiel Outloading and Receiving Capability Report (Reports Control Symbol MTMTS-7 (R1)) (OPNAVINST 11200.7/AFR 75-23/MCO 4810.1/DSAR 4510.8)

55-6 Policies and Procedures for Obtaining Passenger Reservations for DOD International Air Travel (Single Passenger Reservation System for Air Movement)

55-7 LOGAIR Statistical Report, QUICKTRANS Statistical Report, Personal Property Statistical Report (Reports Control Symbol DD-I&L (Q) 493) (NAVSUPINST 4600.71A/AFM 75-3)

- 55-9 Overseas Ocean Terminal Handling and Inland Linehaul  
Cargo Cost Report (Reports Control Symbol MTMTS-79  
(RI)
- 55-13 Appointment of Transportation Officers and Acting  
Transportation Officers
- 55-14 Transportation Transactions, Army Management Fund
- 55-15 Land Transportation Within Areas Outside the Continental  
United States (OPNAVINST 4640.3A/AFR 75-95/MCO 4600.34)
- 55-16 Movement of Cargo by Air and Surface - Including Less Than  
Release Unit and Parcel Post Shipments
- 55-17 Lease of CONEX Transporters
- 55-19 Marine Casualties
- 55-23 Submission of Requirements and the Assignment and Location  
of Sea Transportation Space (OPNAVINST 4600.17B; AFR 75-37;  
MCO 4621.2A)
- 55-27 Vehicle and Component Parts Movement Schedule for Shipment  
Forecast (MCO P4600.23D)
- 55-28 Port Calls Procedures for Passenger Movements
- 55-29 Military Convoy Operations in CONUS
- 55-30 Space Requirements and Performance Reports for Transporta-  
tion Movements
- 55-34 Local Transportation Utilized in Connection with Official  
Business
- 55-36 DoD Use of Domestic Civil Transportation Under Emergency  
Conditions (OPNAVINST 4600.18A/AFR 75-39/MCO 4600.19 A/DSAR  
3005.4)
- 55-38 Reporting of Transportation Discrepancies in Shipments  
(RCS MTMC-54 (R1)) (NAVSUPINST 4610.33A; AFR 75-18; MCO  
P4610.19B; DSAR 4500.15)
- 55-39 Statistical Processing of US Government Bills of Lading  
(RCS MTMTS-16) (NAVSUPINST 469/APM 171-3)
- 55-43 Temporary Storage of Released Export Shipments (NAVSUPINST  
4452.9A/AFR 75-8/MCO P4600.26A/DSAR 4510.7)

- 55-46 Travel of Dependents and Accompanied Military and Civilian Personnel, To, From, or Between Overseas Areas
- 55-47 Use of United States-Owned Foreign Currencies in the Procurement of Transportation and Related Costs
- 55-55 Transportation of Radioactive and Fissile Materials Other Than Weapons
- 55-60 Official Table of Distances: Continental United States, Alaska, Hawaii, Canada, Canal Zone, Central America, Mexico, and Puerto Rico (NAVSO P2471 AFM 177-135)
- 55-61 Official Table of Distances - Foreign Travel (NAVSO P-2472/AFM 177-136)
- 55-70 Statistical Processing of US Government Transportation Requests (Reports Control Symbol MTMS-17) (NAVCOMPINST 7700.6A/MCO 4600.20A) (DARCOM Supp. 1)
- 55-71 Transportation of Personal Property and Related Services
- 55-78 General Policy Agreement for Department of the Army Water Terminal Support of the Department of the Air Force in Overseas Areas (AFR 75-69)
- 55-80 Highways for National Defense (OPNAV 11210.1, AFR 75-88, MCO 11210.2A, DSAR 4500.19)
- 55-113 Movement of Units Within the Continental United States
- 55-133 Space Requirements and Performance and Cost Reports for Overseas Airlift of Passengers
- 55-162 Permits for Oversize, Overweight, or other Special Military Movements on Public Highways in the United States (OPNAVINST 4600.11C/APR 75-24/MCO 4643.5B/DSAR 4540.8)
- 55-165 Agreement Between Army and Air Force for Joint Operation of CONEX Containers in a Pooled Fleet (AFR 75-14)
- 55-167 Policy Governing Transportation of Cargo by Military Sea Transportation Service (OPNAVINST 4610.5B/APR 75-49/MCO 4620.4)
- 55-170 Apportionment, Manifesting, and Billing for Ocean Transportation and Port Handling of Empty CONEX Containers (AFR 75-9)

- 55-174 Disposition of Equipment and/or Materiel Used in Securing Cargo on Vessels
- 55-176 Logistics Over-the-Shore Operations in Overseas Areas (OPNAVINST 4620.6A/AFR 75-4)
- 55-182 Accesorial and Other Miscellaneous Services Relative to Dry/Feeder Cargo; Responsibilities for (SECNAVINST 4620.8A/AFR 75-16)
- 55-183 Handling of Surface Mail at Military Ocean Terminals
- 55-203 Movement of Nuclear Weapons, Nuclear Components, and Related Classified Nonnuclear Materiel
- 55-228 Transportation by Water of Explosives and Hazardous Cargo
- 55-255 Railroad Equipment (DARCOM Supplement 1)
- 55-257 Operation of Utility Railroad Equipment (DARCOM Supplement 1)
- 55-292 Planning for and Operation of Staging Facilities in the Continental United States
- 55-354 Terminal Facilities Guide; DOD Activities Other Than Activities of a Specific Military Service (NAVSUP Pub 448/DSAH 4510.4)
- 55-355 Military Traffic Management Regulation (NAVSUPINST 4600.7G/AFM 75-2/MCO P4600.14A/DSAR 4500.3)
- 55-357 Terminal Facilities Guide United States Army (NAVSUP Pub 449/AFM 75-40/MCO P4600.10A/DSAH 4510.1)
- 55-358 Terminal Facilities Guide United States Navy, Marine Corps and Coast Guard (NAVSUP Pub 445/MCO P4600.9/DSAH 4510.2/CG-376)
- 55-359 Terminal Facilities Guide United States Air Force (NAVSUP Pub 447/AFM 75-42/MCO P4600.11A/DSAH 4510.3)
- 55-360 Single Manager for Ocean Transportation - Representation of the Department of Defense Before Ocean Transportation Regulatory Bodies (SECNAVINST 4620.6B/AFR 75.3)

- 55-361 Single Manager for Ocean Transportation - Tanker Loading and Discharge Reports and Procedures for Determining and Reporting Tanker and/or Terminal Demurrage (POL)
- 55-362 Single Manager for Ocean Transportation - Operational and Logistic Support for MSC Tankers (OPNAVINST 4620.7; AFR 75-28B; MCO 4600.29)
- 55-365 Terminal Facilities Guide: Commercial Contractors (NAVSUP Pub 446/APM 75-32/MCO P4610.23/DSAH 4510.5)
- 55-650 Military Railroads
- 70-1 Army Research, Development, and Acquisition
- 70-2 Materiel Status Recording
- 70-3 Department of Defense Food Research, Development, Testing, and Engineering Program (OPNAVINST 3900.26A/AFR 80-52/MCO 3900.9A/DSAR 3200.4)
- 70-5 Grants to Nonprofit Organizations for Support of Scientific Research
- 70-10 Test and Evaluation During Development and Acquisition of Materiel
- 70-15 Product Improvement of Materiel
- 70-17 System/Project Management
- 70-21 Certification for Access to Scientific and Technical Information
- 70-23 The Technical Cooperation Program
- 70-25 Use of Volunteers as Subjects of Research
- 70-27 Outline Development, Plan/Development, Plan/Army Program Memorandum/Defense Program Memorandum/Decision Coordinating Paper
- 70-32 Work Breakdown Structures for Defense Materiel Items
- 70-37 Configuration Management (NAVMATINST 4130.1A, MCO 4130.1A; AFR 65-3; DSAR 8250.4; NSA/CSS 80-14; DCAC 100-50-2; DNA INST 5010.18)
- 70-44 DoD Engineering for Transportability (OPNAVINST 4600.22A, AFR 80-18, MCO 4610.14B, DSAR 4500.25)

70-47            Engineering for Transportability

70-50            Designating and Naming Military Aircraft, Rockets, and  
                 Guided Missiles (AFR 82-1, NAVMATINST 8800.4)

71-1             Army Combat Developments

71-2             Basis of Issue Plans

71-3             User Testing

71-5             Introduction of New or Modified Systems/Equipment

71-6             Type Classification/Reclassification of Army Materiel

71-7             Military Training Aids and Army Training Aids Centers

71-9             Materiel Objectives and Requirements

(C) 105-2        Electronic Counter-Countermeasures (ECCM) (U)

105-16          Radio Frequency Allocations for Equipments Under Develop-  
                 ment, Production and procurement

(C) 105-87       Electronic Warfare (U)

200-1            Environmental Protection and Enhancement

210-21          Training Areas and Facilities for Ground Troops

235-5            Management of Resources; Commercial and Industrial-type  
                 Facilities

310-1            Publications, Blank Forms, and Printing Management

310-3            Preparation, Coordination, and Approval of Department  
                 of the Army Publications

310-31          Management System for Tables of Organization and Equipment  
                 (the TOE System)

310-34          Equipment Authorization Policies and Criteria, and Common  
                 Tables of Allowances

310-49          The Army Authorization Document System (TAADS)

385-16          System Safety

405-10          Acquisition of Real Property and Interests Therein

415-1            Report of Negotiated Construction Contracts and Modifica-  
                 tions (RCS CONG-1051)

415-2 Department of Defense Construction Criteria

415-10 General Provisions for Military Construction

415-11 Air Force Contract Construction (AFR 88-3/BUDOCKSINST  
11013.14)

415-13 MCA Program -- Disposal of Structure

415-15 MCA Program Development

415-16 Army Facilities Components System (Military Engineering  
Construction Support Designs, Materiel and Planning Data)

415-17 Empirical Cost Estimates for Military Construction and  
Cost Adjustment Factors

415-20 Project Development and Design Approval

415-22 Protection of Petroleum Installations and Related  
Facilities

415-25 Real Property Facilities for Research, Development,  
Test and Evaluation (RDT&E)

415-28 Department of the Army Facility Classes and Construction  
Categories

415-30 Troop Construction for the Air Force (AFR 88-12)

415-32 Performance of Military Construction Projects in the  
Continental United States by Troop Units

415-35 Minor Construction

415-36 Peacetime Planning and Construction in Overseas Base  
Rights Area Garrisoned on Temporary Basis

415-50 Co-terminous United States Basic Facilities and Space  
Allowances for Construction at Installations in Event  
of Emergency

570-2 Organization and Equipment Authorization Tables - Personnel

570-4 Manpower Management

(P)570-4 Manpower Procedures Handbook

611-1 MOS Development and Implementation

700-18 Provisioning of US Army Equipment

700-22 Worldwide Ammunition Reporting System (WARS); (Reports Control Symbol CSGLD-1322 (RI) (MIN))

700-47 Defense Standardization Program

700-51 Army Data Management Program

700-78 Production and Post-Production Testing of Army Materiel

700-90 Army Industrial Preparedness Program

700-97 Logistics Capability Estimates (DSAR 4100.7)

700-120 Materiel Distribution Management

700-127 Integrated Logistic Support

702-3 Army Materiel Reliability, Availability, and Maintainability (RAM) (RCS CSCRD-73)

702-4 Procurement Quality Assurance (DSAM 8200.1)

710-1 Centralized Inventory Management of the Army Supply System

715-6 Proposal Evaluation and Source Selection

715-22 High Dollar Spare Parts Breakout Program (NAVMATINST 4200.33A/MCO P4200.13A/AFR 57.6/DSAM 4105.2)

725-65 Operational Projects

750-1 Army Materiel Maintenance Concepts and Policies

750-7 Installation Support Maintenance Activities, Symbol (DD-I&L(A) 5907)

750-25 Army Metrology and Calibration System

750-43 Test, Measurement, and Diagnostic Equipment (Including Prognostic Equipment and Calibration Test/Measurement Equipment)

795-1 Transportation and Monitoring of Ammunition Destined to Central and South America

(C) 795-2 Continental United States Support of US - Federal Republic of Germany (FRG) Logistics Programs

- (S) 795-3 United States - Federal Republic of Germany (FRG) Logistic Planning (U)
- 795-4 Procedure for Detailed Support of Ammunition to Republic of Korea Forces in Korea Under MAP (KAMP)
- 795-5 International Logistics Management System
- 795-6 Army International Co-Production Projects
- 795-7 Support of Laos and Thailand from Army Appropriations
- 795-8 Reporting and Processing of Discrepancy Reports Against Foreign Military Sales Shipments (DSAR 4140.60/NAVSUPINST 4920.9/AFR 67-7/MCO 4140.1)
- 795-10 US Army Materiel and Service Support for RVNAF/FWMAF
- 795-11 Supply of Dry Batteries Under the International Logistics Programs
- 795-13 Army Security Assistance Technical Assistance Field Teams (TAFT)
- 795-14 Pricing of Sales of Defense Articles and Defense Services to Foreign Countries and International Organizations
- 795-16 Operating Instructions and Procedures for Grant Aid Military Assistance Programs
- 795-17 General Policies and Principles for Furnishing Army Materiel on a Grant Aid Basis
- 795-19 Functions and Responsibilities of International Logistics Activities
- 795-21 General Procedures for Furnishing Supplies and Services for Overseas Civilian Aid Programs
- 795-22 Materiel Logistic Support Services, Grant Aid Military Assistance and Foreign Military Sales
- 795-24 Operating Instructions and Procedures for Military Assistance Sales
- 795-25 Policies, Responsibilities, and Principles for Supply Support Arrangements
- 795-26 Operating Instructions and Procedures for Supply Support Arrangement

- 795-27 Delivery of Missile Systems Under the Foreign Military Sales Program
- 795-30 MAP Flying hour Program (RCS AMC-156)
- 795-204 Policies and Procedures for Furnishing Defense Articles and Services on a Sale or Loan Basis
- 1000-1 Basic Policies for Systems Acquisition by the Department of the Army

Department of the Army Pamphlets (DA PAM)

- 11-2 Research & Development Cost Guide for Army Materiel Systems
- 11-3 Investment Cost Guide for Army Materiel Systems
- 11-4 Operating & Support Cost Guide for Army Materiel Systems
- 11-5 Standards for Presentation & Documentation of Life Cycle Cost Estimates for Army Materiel Systems
- 11-25 Life Cycle Management Model
- 70-21 Coordinated Test Program (CTP)/Test and Evaluation Master Plan (TEMP)
- 570-4 Manpower Procedures Handbook

Technical Directives (TD)

- 3 Approved Data List (See DcD 5000.19L Vol II)

Technical Manuals (TM)

- 38-703 Integrated Logistic Support (ILS) Management Guide
- 38-703-1 Integrated Logistic Support (ILS) Support Integration
- 38-703-3 Integrated Logistic Support (ILS) Maintenance Engineering Analysis Data System
- 38-715 Processing Requirements for US Army Equipment (PR-1)

DARCOM (AMC) Regulations (DARCOM-R)

- 1-34 Command Reviews - Reviews and Command Assessment of Projects (RECAP)
- 1-35 Orientation of Newly Assigned Project Managers
- 11-1 Systems Analysis
- 37-4 Cost Estimate Control Data Center (CECDC) Activities
- 70-1 Transition of Management Responsibility from a R&D Command Manager to a MR Command Manager
- 70-3 Department of Defense Food Research, Development, Testing, and Engineering
- 70-5 Program Review for Milestone Decisions During Materiel Acquisitions
- 70-8 Value Engineering Program
- 70-10 Test and Evaluation During Development and Acquisition of Materiel
- 70-46 Technical Data Package for Procurement and Production of AMC Materiel
- 70-50 Designating and Naming Military Aircraft, Rockets, and Guided Missiles
- 70-61 Use of TECOM Test Facilities by Contractors
- 385-12 Life Cycle Verification of Materiel Safety
- 570-4 Manpower Support, Staffing Standards, Patterns and Policies
- 614-13 Project Officers
- 715-2 Cost/Schedule Control and Information Systems for Use in the Acquisition Process
- 750-27 AMC Utilization of Maintenance Data

DARCOM Pamphlets (DARCOM-P)

- 385-23 AMC System Safety Management
- 700-6 Design to Cost

- 706-100 Design Guidance for Producibility
- 715-3 Proposal Evaluation and Source Selection
- 715-4 Preparation of Work Statements
- 715-5 Cost/Schedule Control Systems Criteria, Joint Implementation Guide (AFSCP/AFLCP 173-5, NAVMAT P5240, DSAH 8315.2)
- 715-8 Contractor Cost Data Reporting (CCDR) System (NAVMAT P 5241, AFLC P 800-15, AFSCP 800-15)
- 715-10 C/SCSC Joint Surveillance Guide (NAVMAT P 5243, AFLCP/AFSCP 173-6, DSAH 8315.1, DCAFP 7641 40)
- 715-13 Cost/Schedule Management of Non-Major Contracts (C/SSR Joint Guide) (NAVMAT P 5244, AFSCP 173-3, AFLCP 173-2, DLAH 8315.3)

DARCOM Circulars (DARCOM-C)

- 715-4-76 Item III Design to Cost
- 715-11-76 Item III Design to Cost

AMCRP

Special Letter of January 1976, Reliability Improvement Warranty (RIW) Policy

AMCRD

TE Letter of 25 September 1975, Elimination of Non-Essential Specifications and Standards in Requests for Proposals and Subsequent Contracts

AMC Guide for DTUPC

MISCELLANEOUS

TRADOC-DARCOM Joint Guide on COEA Cost Data

OCE-SI-72-011

DARCOM Guide on Management & Control of COEA Cost Data

AMC Guide on Design to Unit Production Cost (DTUPC)

AMC Guide on Cost Estimate Control Data Centers