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UNITED STATES ARMY
COMMUNICATIONS-ELECTRONICS COMMAND

FORT MONMOUTH, NEW JERSEY

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ADVANCE PLANNING BRIEFING FOR INDUSTRY

" MEETING THE CHALLENGES OF TOMORROW'S ARMY"

SHERATON EATONTOWN HOTEL &
CONFERENCE CENTER

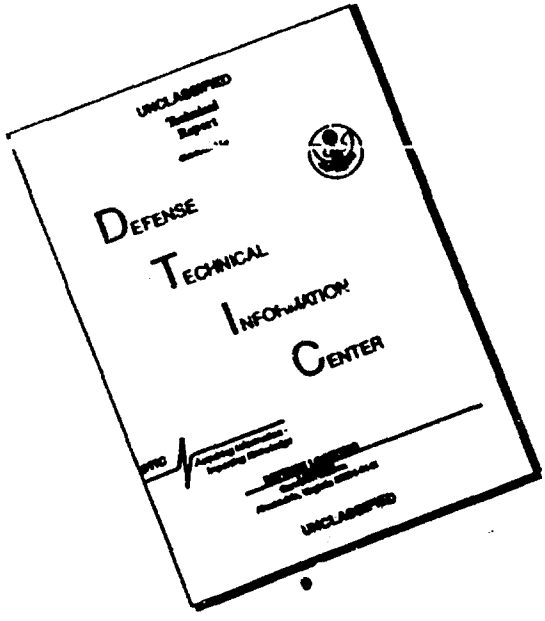
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UNITED STATES ARMY
COMMUNICATIONS-ELECTRONICS COMMAND
FORT MONMOUTH, NEW JERSEY



ADVANCE PLANNING BRIEFING FOR INDUSTRY

" MEETING THE CHALLENGES OF TOMORROW'S ARMY"

SHERATON EATONTOWN HOTEL &
CONFERENCE CENTER

MAY 19-20, 1993

DEPARTMENT OF THE ARMY
HEADQUARTERS, US ARMY COMMUNICATIONS-ELECTRONICS COMMAND
AND FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5000

REPLY TO
ATTENTION OF

Office of the Commanding General

Ladies and Gentlemen:

On behalf of the Communications-Electronics Command (CECOM) and the C3I community, I am pleased to present these proceedings of the CECOM 1993 Advance Planning Briefing for Industry (APBI). The objective of this publication is to encourage an exchange of information which will assist the Department of the Army in fulfilling its long range acquisition requirements while providing Industry with fair and equitable acquisition and investment opportunities.

The Department of the Army will continue to focus its energies and resources on training and developing a strategic force capable of decisive victory. However, due to current economic projections, it is imperative that Government and Industry continue working together as a team to enhance the fighting capability of tomorrow's Army in the most efficient and cost effective manner.

I welcome your participation in our APBI program.

Sincerely,

Otto J. Guenther
Major General, U.S. Army
Commanding

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St-A per telecon, Maj. Corbett, US Army Communications-Electronics Comd.,/AMSEL-PE-OD. Ft. Monmouth, NJ 07703.

7-12-93 JK

NOTICE

This publication contains the briefings presented during this Advance Planning Briefing for Industry (APBI). Following the APBI a Proceedings Book containing these briefings, any revised charts, and any information disclosed by the government during the conduct of the one-on-one sessions will be published. Copies of the Proceedings Book may be obtained, for a minimum fee, by contacting the Defense Technical Information Center (DTIC). The telephone number is (703) 274-6867.

We hope that the above publications prove beneficial to your long-range planning efforts. If you have any additional questions and/or suggestions please contact the Program Analysis and Evaluation Directorate, AMSEL-PE-OD, ATTN: Mari Aufseeser, (908) 532-5054.

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ADVANCE PLANNING BRIEFING FOR INDUSTRY

MAY 19-20, 1993
SHERATON EATONTOWN HOTEL AND CONFERENCE CENTER
EATONTOWN, NEW JERSEY

MEETING CHAIRMAN
MG OTTO J. GUENTHER
COMMANDING GENERAL, CECOM

AGENDA

TUESDAY, MAY 18, 1993

1800 - 2000 PRE-REGISTRATION - SHERATON

WEDNESDAY, MAY 19, 1993

0700 REGISTRATION

0815 ADMINISTRATIVE REMARKS
Mr. Edward C. Thomas
Director, Program Analysis and Evaluation, CECOM

0820 WELCOMING REMARKS
MG Otto J. Guenther
Commanding General, CECOM

0845 SESSION I - ARMY'S STRATEGIES FOR THE FUTURE

SESSION OVERVIEW AND INTRODUCTION
MODERATOR
Mr. Anthony V. Campi
Director, Research, Development and Engineering Center, CECOM

LOUISIANA MANEUVERS AND BATTLE LABS
LTC Charles J. Venable
Executive Officer, Louisiana Maneuvers Task Force
Ft Monroe, VA

DIGITIZING THE BATTLEFIELD
Mr. Roy F. Arnold
Program Director, C3I Systems Group

0950 QUESTION AND ANSWER PERIOD

1000 BREAK

CECOM ADVANCED TECHNOLOGY DEMONSTRATIONS (ATDs)
Mr. Jan W. Moren
Deputy Director, Advanced Systems, CECOM

ELECTRONICS FOR THE FUTURE ARMY
Dr. Clarence G. Thornton
Directorate Executive, Electronics and Power Sources,
Army Research Laboratory

ARMY SCIENCE & TECHNOLOGY MASTER PLAN
Mr. Charles A. Strimpler
Chief, Technology Planning Team
Advanced Systems, CECOM

CALS INITIATIVES
Mr. Raoul C. Cordeaux
Deputy Chief of Staff, Information Management, CECOM

ELECTRONIC BULLETIN BOARD/DIGITAL PROCUREMENTS
Mr. Edward G. Elgart
Director, C3I Acquisition Center, CECOM

OMNIBUS CONTRACTING AT CECOM
Mr. Edward G. Elgart
Director, C3I Acquisition Center, CECOM

1200 QUESTION AND ANSWER PERIOD

1215 LUNCH

1330 SESSION II: COMMAND AND CONTROL

SESSION OVERVIEW AND INTRODUCTION
MODERATOR
- -COMMON SOFTWARE
- -MANEUVER CONTROL SYSTEM
- -COMBAT SERVICE SUPPORT CONTROL SYSTEM

Mr. Robert F. Giordano
Deputy Program Executive Officer, Command and Control Systems

ARMY WORLD WIDE MILITARY COMMAND AND CONTROL SYSTEM
INFORMATION SYSTEM
Mr. James H. Bray, Jr.
Project Manager, Army World Wide Military Command
and Control System Information System

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM
Mr. Frank G. Nissen
Deputy Product Manager, Standard Theater Army Command
and Control System

COMBINED ARMS COMMAND & CONTROL
Dr. James E. Soos
Associate Director for C2, Command/Control and Systems Integration Directorate, CECOM

HIGH TECHNOLOGY RESEARCH AND DEVELOPMENT
Mr. Joseph J. Pucilowski, Jr.
Director, Space & Terrestrial Communications, CECOM

C3 SYSTEM ENGINEERING & INTEGRATION
Mr. Joseph E. Johnson, Senior Systems Engineer, PEO Command and Control Systems

1440 QUESTION AND ANSWER PERIOD

1450 BREAK

1510 SESSION III: COMMUNICATIONS

SESSION OVERVIEW AND INTRODUCTION
MODERATOR
BG David R. Gust
Program Executive Officer, Communications Systems

SEAMLESS BATTLEFIELD INFORMATION ARCHITECTURE
Mr. John T. Benner
Deputy Project Manager, Systems and Engineering
Program Executive Office, Communications Systems

REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT (RSCCE)
Mr. Ronald F. Johnson
Product Manager, DSCS Control
Project Manager, Satellite Communications

HIGH GAIN MULTI-BAND SATELLITE ANTENNA
LTC Michael R. Mazzucchi
Product Manager, Tactical Satellite Terminals
Project Manager, Satellite Communications

VEHICULAR CONFORMAL ANTENNAS
Mr. Joseph J. Pucilowski, Jr.
Director, Space & Terrestrial Communications, CECOM

SCAMP BLOCK II TECHNOLOGY DEVELOPMENT PROGRAM
Mr. Joseph J. Pucilowski, Jr.
Director, Space & Terrestrial Communications, CECOM

1700 QUESTION AND ANSWER PERIOD

1730 RECEPTION

THURSDAY, MAY 20, 1993

0755 ADMINISTRATIVE REMARKS
Mr. Edward C. Thomas
Director, Program Analysis and Evaluation, CECOM

0800 SESSION IV: INTELLIGENCE AND ELECTRONIC WARFARE

SESSION OVERVIEW AND INTRODUCTION
MODERATOR
Mr. Andrew R. D'Angelo
Program Executive Officer, Intelligence and Electronic Warfare

OPEN SYSTEMS ARCHITECTURE
Mr. Francis J. Schrenk
Chief, Systems Engineering Division
PEO Intelligence and Electronic Warfare

JOINT STARS GROUND STATION MODULE
COL James L. Mitchell
Project Manager, Joint Surveillance Target Attack Radar System

IEW COMMON SENSOR
COL Thomas L. Vollrath
Project Manager, Signals Warfare

INTELLIGENCE AND ELECTRONIC WARFARE TECHNOLOGY INITIATIVES
-ELECTRONIC WARFARE TECHNOLOGY
-INTERCEPT TECHNOLOGY
-TACTICAL INTELLIGENCE DATA FUSION
Mr. Ronald J. Dlugosz
Deputy Director, Intelligence & Electronic Warfare, CECOM

0935 QUESTION AND ANSWER PERIOD

0945 BREAK

NIGHT VISION AND ELECTRONIC SENSORS TECHNOLOGY
Mr. James F. Gibson
Special Assistant to the Director, Night Vision/ Electronic Sensors, CECOM

LASER/THERMAL SYSTEMS
-SNIPER NIGHT SIGHT
-LASER COUNTERMEASURE SYSTEM (AN/PLQ-4)
-GEN II FLIR HORIZONTAL INTEGRATION
COL Martin J. Michlik
Project Manager, Night Vision and Electro-Optics

COOPERATIVE AIRCRAFT IDENTIFICATION (CAI)
COMBAT IDENTIFICATION PROGRAM
Mr. Robert Doto
Deputy Project Manager, Combat Identification

1130 QUESTION AND ANSWER PERIOD

1145 LUNCH

1300 SESSION V: STRATEGIC AND SUSTAINING BASE ACQUISITION OPPORTUNITIES

SESSION OVERVIEW AND INTRODUCTION
MODERATOR
Mr. Thomas J. Michelli
Deputy Program Manager, Army Information Systems and Deputy, US Army Information Systems Management Activity

PEO STANDARD ARMY MANAGEMENT INFORMATION SYSTEMS COMPUTER CONTRACT (SCC)
COL Dennis M. Moen
Project Manager, Defense Communications and Army Switched Systems

OUTSIDE CABLE REHABILITATION II (OSCAR II)
COL Dennis M. Moen
Project Manager, Defense Communications and Army Switched Systems

PENTAGON RENOVATION
COL John W. Barnes, Jr.
Project Manager, Information Management and Telecommunications

1400 QUESTION AND ANSWER PERIOD

1410 BREAK

1430 SESSION VI: ADDITIONAL C3I BUSINESS OPPORTUNITIES

SESSION OVERVIEW AND INTRODUCTION
MODERATOR
Mr. Martin J. Burger
Deputy Director, C3I Logistics and Readiness Center, CECOM

LIFE CYCLE SOFTWARE ENGINEERING FOR MISSION CRITICAL DEFENSE SYSTEMS
Mr. John H. Sintic
Director, Software Engineering, CECOM

FUTURE FOREIGN MILITARY SALES OPPORTUNITIES
Mr. Eugene P. Bennett
Director, Security Assistance Management, CECOM

FUTURE OF THE SPARE REPAIR PARTS BUSINESS AT CECOM
Mr. William C. Riehl
Deputy Director, Resources, Materiel Management, CECOM

1535 QUESTION AND ANSWER PERIOD

1545 EXECUTIVE PANEL

MG Otto J. Guenther
Commanding General
US Army Communications-Electronics Command

Mr. Andrew R. D'Angelo
Program Executive Officer
Intelligence and Electronic Warfare

Mr. Edward G. Elgart
Director, C3I Acquisition Center, CECOM

Mr. Joseph J. Pucilowski
Director, Space & Terrestrial Communications, CECOM

Mr. John T. Benner
Deputy Project Manager, Systems and Engineering
Program Executive Office, Communications Systems

Mr. Martin J. Burger
Deputy Director, C3I Logistics and Readiness Center, CECOM

Mr. Richard K. Koval
Chief, Operations Office, PEO Command and Control Systems

Mr. Thomas J. Michelli
Deputy Program Manager
Army Information Systems and Deputy, US Army Information Systems Management Activity

1645 CLOSING REMARKS
MG Otto J. Guenther
CG, CECOM

1700 ADJOURN

CONTENTS

		Page
WELCOMING REMARKS		1
PRESENTATIONS		
SESSION I:	ARMY'S STRATEGIES FOR THE FUTURE	21
	Session Overview and Introduction	23
	Louisiana Maneuvers and Battle Labs	31
	Digitizing the Battlefield	45
	CECOM Advanced Technology Demonstrations (ATDs)	47
	Electronics For the Future Army	67
	Army Science & Technology Master Plan	93
	CALS Initiatives	107
	Electronic Bulletin Board/Digital Procurements	123
	OMNIBUS Contracting at CECOM	129
SESSION II:	COMMAND AND CONTROL	145
	Session Overview and Introduction	147
	Army World Wide Military Command and Control System Information System	183
	Standard Theater Army Command and Control System	191
	Combined Arms Command & Control	199
	High Technology Research and Development	207
	C3 System Engineering and Integration	217
	Combat Service Support Control System	225
SESSION III:	COMMUNICATIONS	239
	Session Overview and Introduction	241

Page

Seamless Battlefield Information Architecture 253

Replacement Satellite Configuration Control Element (RSCCE) 267

High Gain Multi-Band Satellite Antenna. 279

Vehicular Conformal Antennas. 289

SCAMP Block II Technology Development Program 303

SESSION IV: INTELLIGENCE AND ELECTRONIC WARFARE 319

Session Overview and Introduction 321

Open Systems Architecture 333

Joint Stars Ground Station Module 345

IEW Common Sensor 359

Intelligence and Electronic Warfare Technology. . . . 391

Night Vision and Electronic Sensors Technology. . . . 425

Laser/Thermal Systems 459

Cooperative Aircraft Identification (CAI) 485

Combat Identification Program 497

SESSION V: STRATEGIC AND SUSTAINING BASE ACQUISITION OPPORTUNITIES 509

Session Overview and Introduction 511

PEO Standard Army Management Information Systems Computer Contract (SCC) 517

Outside Cable Rehabilitation II (OSCAR II). 527

Pentagon Renovation 535

SESSION VI: ADDITIONAL C3I BUSINESS OPPORTUNITIES. 553

Session Overview and Introduction 555

Life Cycle Software Engineering for Mission Critical Defense Systems 561

Future Foreign Military Sales Opportunities 593

Page

Future of the Spare Repair Parts Business at CECOM 609

ADDITIONAL BUSINESS OPPORTUNITIES. 617

Broad Agency Announcements (BAA's) 619

The Small Business Innovation Research (SBIR's) Program. 627

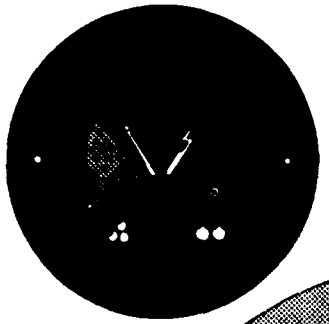
EXECUTIVE PANEL. 635

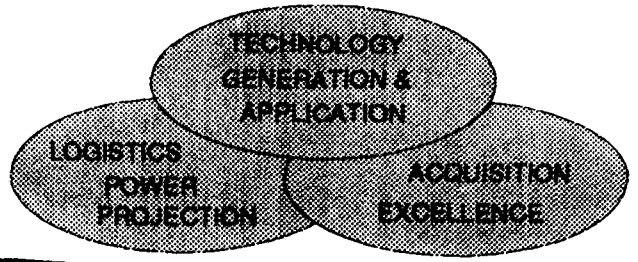
SYMPOSIUM PARTICIPANTS 637

WELCOMING REMARKS

MG OTTO J. GUENTHER

COMMANDING GENERAL, CECOM





U.S ARMY COMMUNICATIONS-ELECTRONICS COMMAND AND FORT MONMOUTH

ENSURING LAND FORCE DOMINANCE

MEETING THE CHALLENGES OF TOMORROW'S ARMY

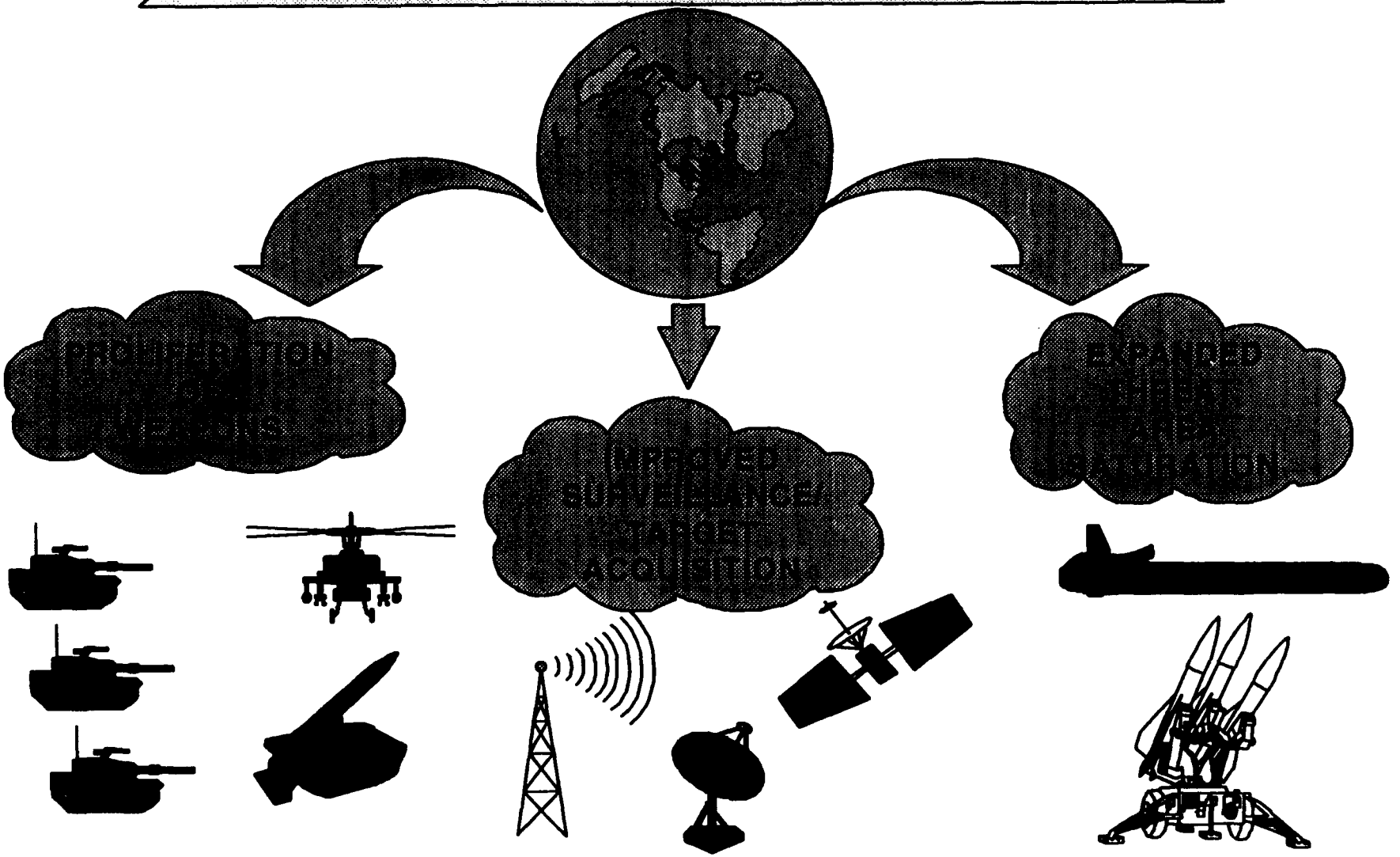
MG OTTO J. GUENTHER
COMMANDING GENERAL

OUTLINE

- BACKGROUND
- HOW WE WILL MEET THE CHALLENGE
- APPLYING NEW IDEAS
- CONCLUSION

BACKGROUND

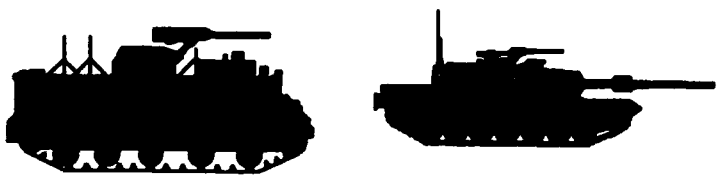
PLANNING FOR THE FUTURE

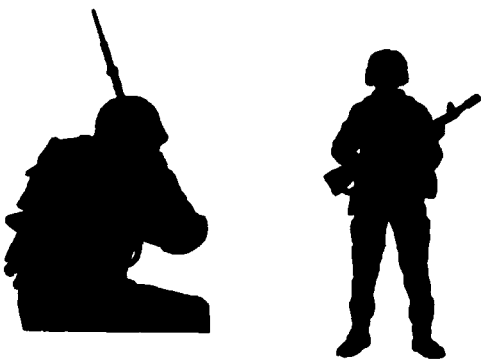


THE WORLD IS MORE: UNPREDICTABLE, UNSTABLE, VOLATILE

BACKGROUND
ARMY MISSIONS

TRADITIONAL:





PROMPT & SUSTAINED COMBAT OPERATIONS ON LAND

NON-TRADITIONAL:

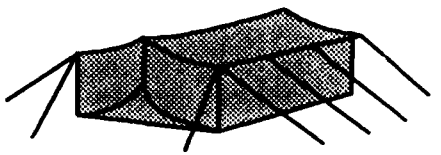
COUNTER DRUG



DEMOCRATIC REFORM



DISASTER RELIEF



HUMANITARIAN RELIEF



BACKGROUND

ENSURING LAND FORCE DOMINANCE

PROJECT AND SUSTAIN THE FORCE



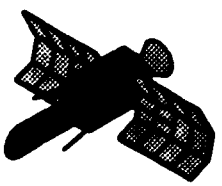
PROTECT THE FORCE

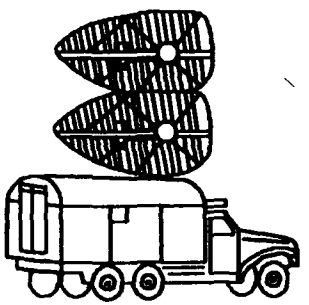


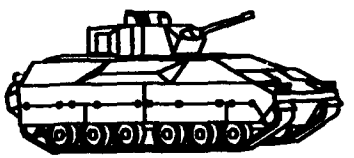
DOMINATE THE MANEUVER BATTLEFIELD



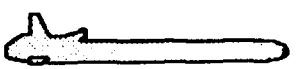
WIN THE INFORMATION WAR







CONDUCT PRECISION STRIKES





ARMY MODERNIZATION OBJECTIVES

BACKGROUND

STRATEGIC VISION

- ARMY STRATEGIC VISION
  - •• TOTAL FORCE TRAINED & READY TO FIGHT
  - •• SERVING THE NATION AT HOME & ABROAD
  - •• STRATEGIC FORCE CAPABLE OF DECISIVE VICTORY

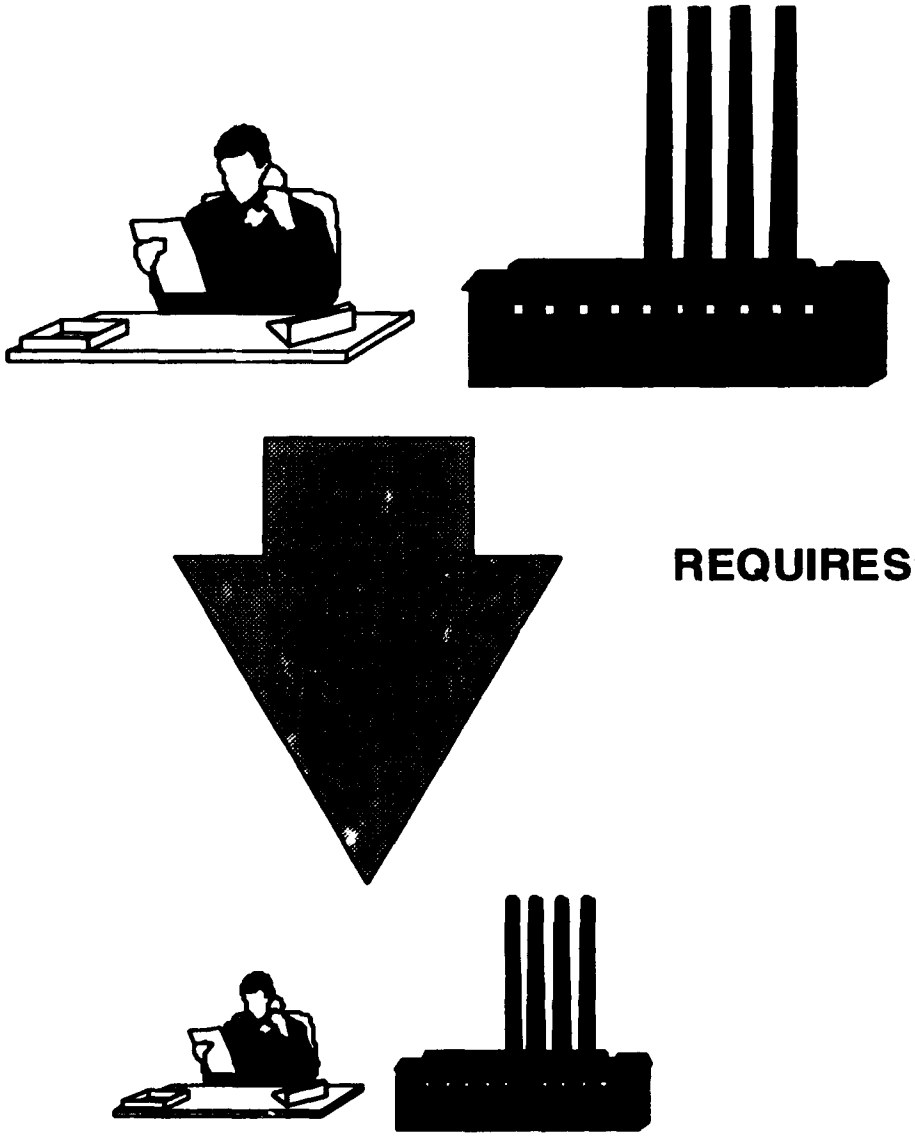
- AMC'S STRATEGIC VISION
  - •• ARMY'S LEADER IN EQUIPPING & SUSTAINING TOTAL FORCE
  - •• SUPERIOR TECHNOLOGY & RESPONSIVE SUPPORT
  - •• WORLDWIDE POWER PROJECTION
  - •• DECISIVE VICTORY

- OUR STRATEGIC VISION
  - •• WORLD CLASS ORGANIZATION OF QUALITY SOLDIERS AND CIVILIANS
  - •• PROVIDING AND SUSTAINING TECHNOLOGICALLY SUPERIOR C3IEW SYSTEMS
  - •• ENABLING THE INTUITIVE COMMANDER TO OWN THE NIGHT, OWN THE SPECTRUM, AND KNOW THE ENEMY

HOW WE WILL MEET THE CHALLENGE
KEY INVESTMENT TENETS FOR THE FUTURE

- MAINTAIN SCIENCE & TECH BASE
- CONDUCT ADVANCED TECHNOLOGY DEMOS
- INSERT ADVANCED TECHNOLOGIES IN EXISTING SYSTEMS
- LIMIT DEMONSTRATION VALIDATION TO PRODUCTION SYSTEMS
- MAINTAIN INDUSTRIAL BASE

HOW WE WILL MEET THE CHALLENGE
SHIFT IN ACQUISITION EMPHASIS



REQUIRES:

- ACQUISITION EXPERTISE
- BEST VALUE
- CONTRACTOR EVALUATION
- COMMUNICATIONS WITH INDUSTRY
- UNSOLICITED PROPOSAL MGT
- INDUSTRIAL BASE MGT

HOW WE WILL MEET THE CHALLENGE
DEVELOP/EVALUATE/TEST TECHNOLOGY BEFORE PRODUCTION

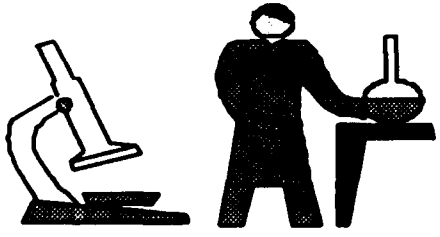
DEVELOP CAPABILITIES

DEMONSTRATE CAPABILITIES

ASSESS & INTEGRATE CAPABILITIES

S&T THRUSTS

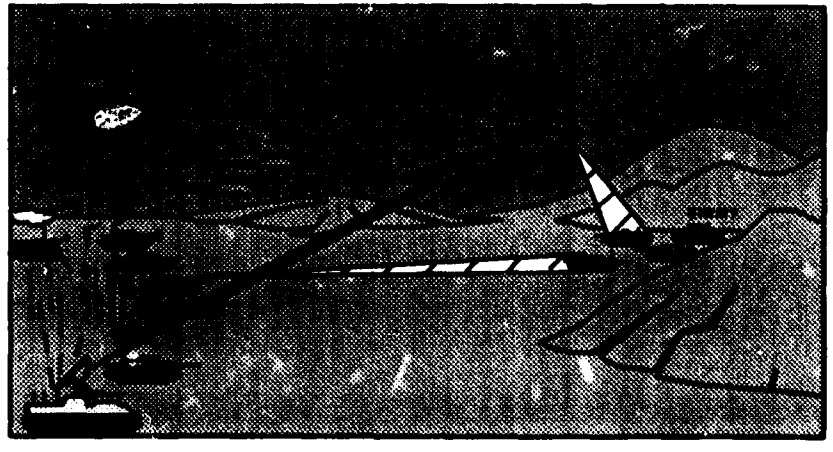
ATDs



BATTLE LABS



LOUISIANA MANEUVERS

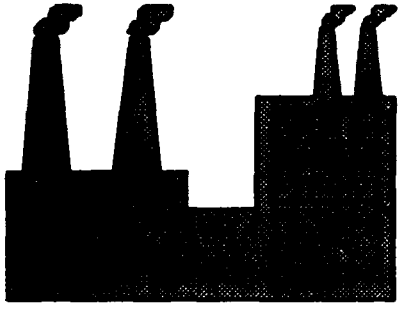




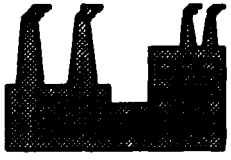
TEST CAPABILITIES

HOW WE WILL MEET THE CHALLENGE
DEFENSE CHANGES AND THE INDUSTRIAL SECTOR

1980s



AVAILABILITY OF DOD UNIQUE SECTORS REDUCED

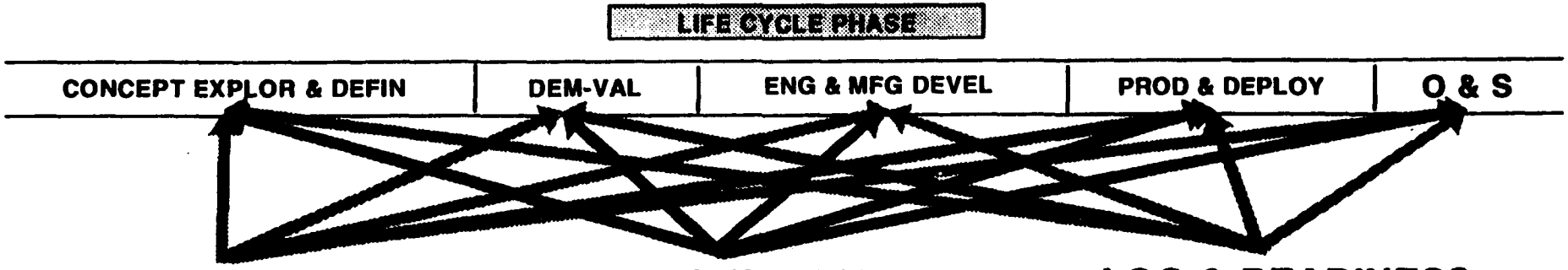


1990s

1990s

- STANDARDIZE TO COMMERCIAL AREAS
- APPLY MILITARY APPLICATIONS TO COMMERCIAL (GPS, BROAD BASED SPECTRUM)
- FOREIGN MILITARY SALES
- REPLACE WITH OTHER TECHNOLOGY (IMAGE INTENSIFICATION TO THERMAL IMAGE)
- PROCURE ACROSS SERVICES (CECOM PROCURES ALL POWER SOURCES)
- OMNIBUS TECHNIQUES
- DUAL PRODUCTION LINES

APPLYING NEW IDEAS
INTEGRATION OF TEAM IN THE ACQUISITION PROCESS



R & D

- INCREASE/EXPAND CAPABILITIES
- EXTEND LIFE
- REDUCE COSTS
- SIZE REDUCTION
- AUTOMATE TESTING
- MERGING SYSTEMS
- ATD LEVERAGING
- SIMULATION

ACQUISITION

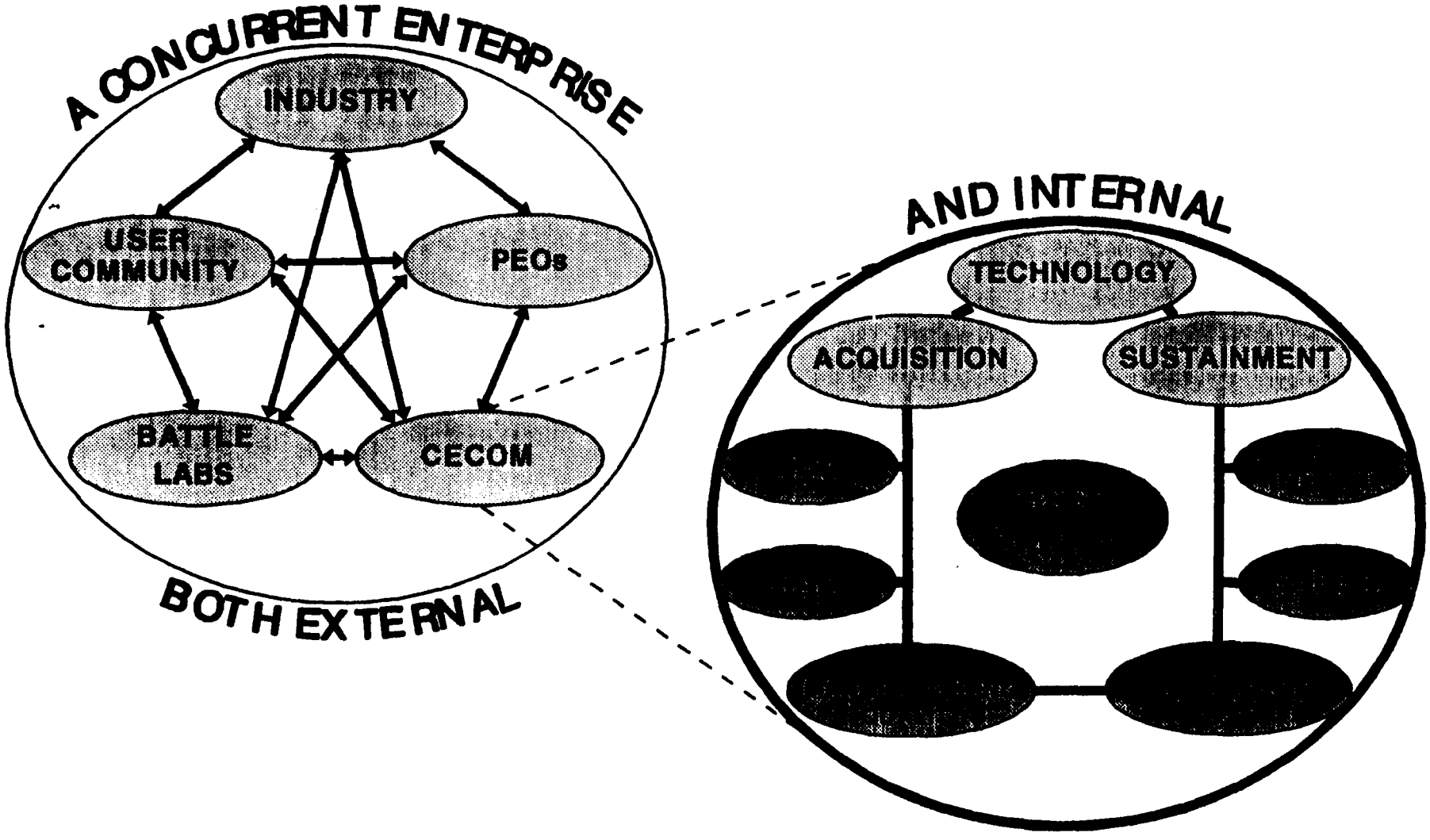
- BEST VALUE
- ACQ STRATEGY
- REDUCING FUNCTIONAL REQUIREMENTS
- AWARD PROCESS
- CUSTOMER/USER FOCUS

LOG & READINESS

- SUSTAINMENT INTEGRATED INTO REQUIREMENTS
- ARCHITECTURE STANDARDIZATION
- PRODUCIBILITY
- MATERIEL AVAILABILITY
- INDUSTRIAL BASE

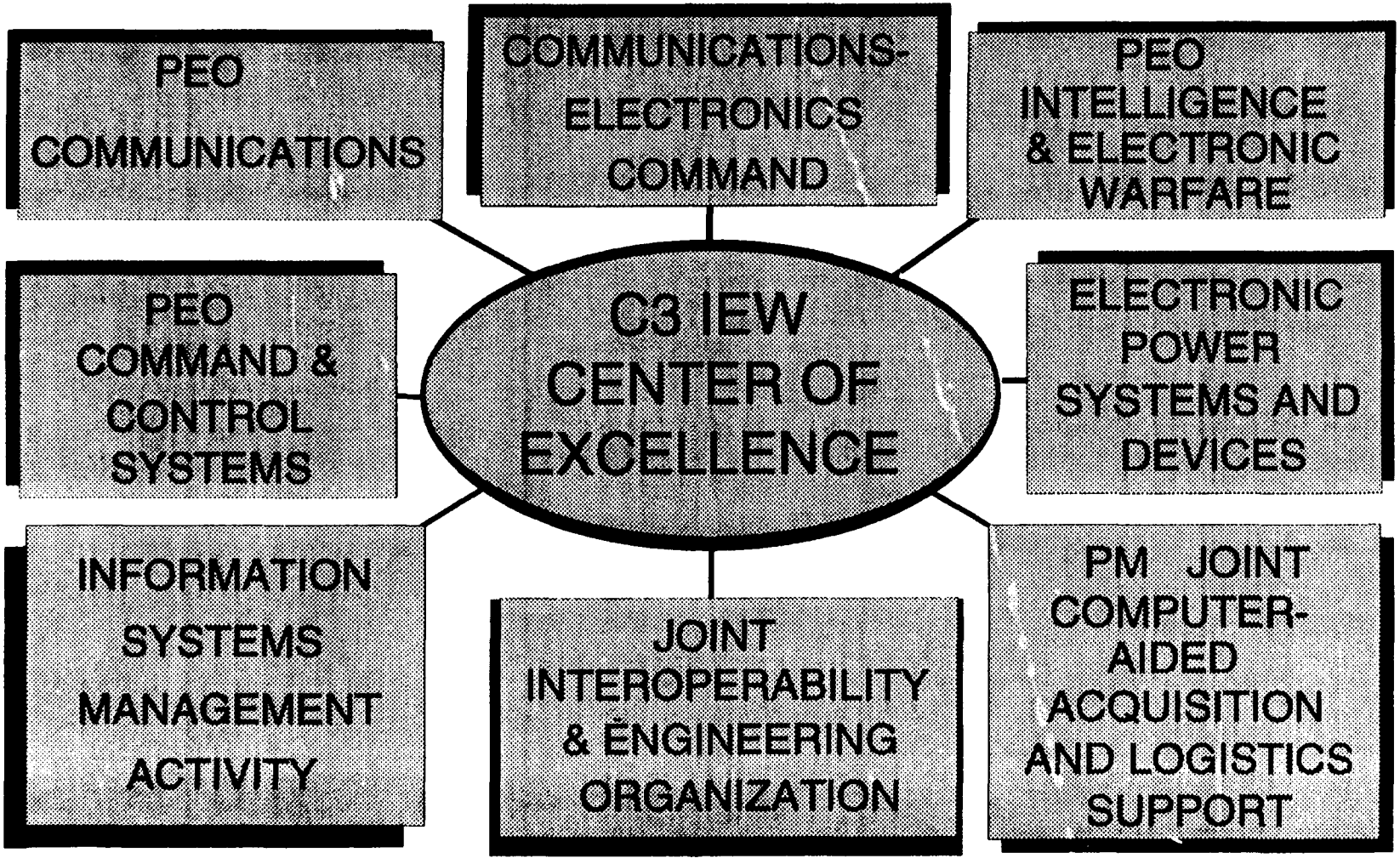
PROVIDE SUSTAINABLE, INTEROPERABLE, FLEXIBLE, AND TECHNOLOGICALLY SUPERIOR EQUIPMENT

APPLYING NEW IDEAS
BALANCE AND AFFORDABILITY THROUGH TEAMING

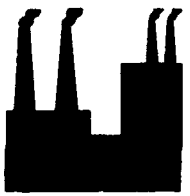


BRINGING TECHNOLOGY RAPIDLY TO THE SOLDIER THROUGH TEAMING

APPLYING NEW IDEAS



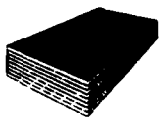
APPLYING NEW IDEAS



INDUSTRIAL BASE

- Depots & Arsenals to Commercial?
- Depots & Arsenals Government Operated?
- What's the Role of Small Business?

COMMERCIAL STANDARDS



& PRACTICES

- Commercial Accounting
- Ownership Rights
- Government Audit/Oversight



ENVIRONMENTAL ISSUES

- Evaluation Criteria in Source Selection
- Base Closures Must Address Cleanup Levels

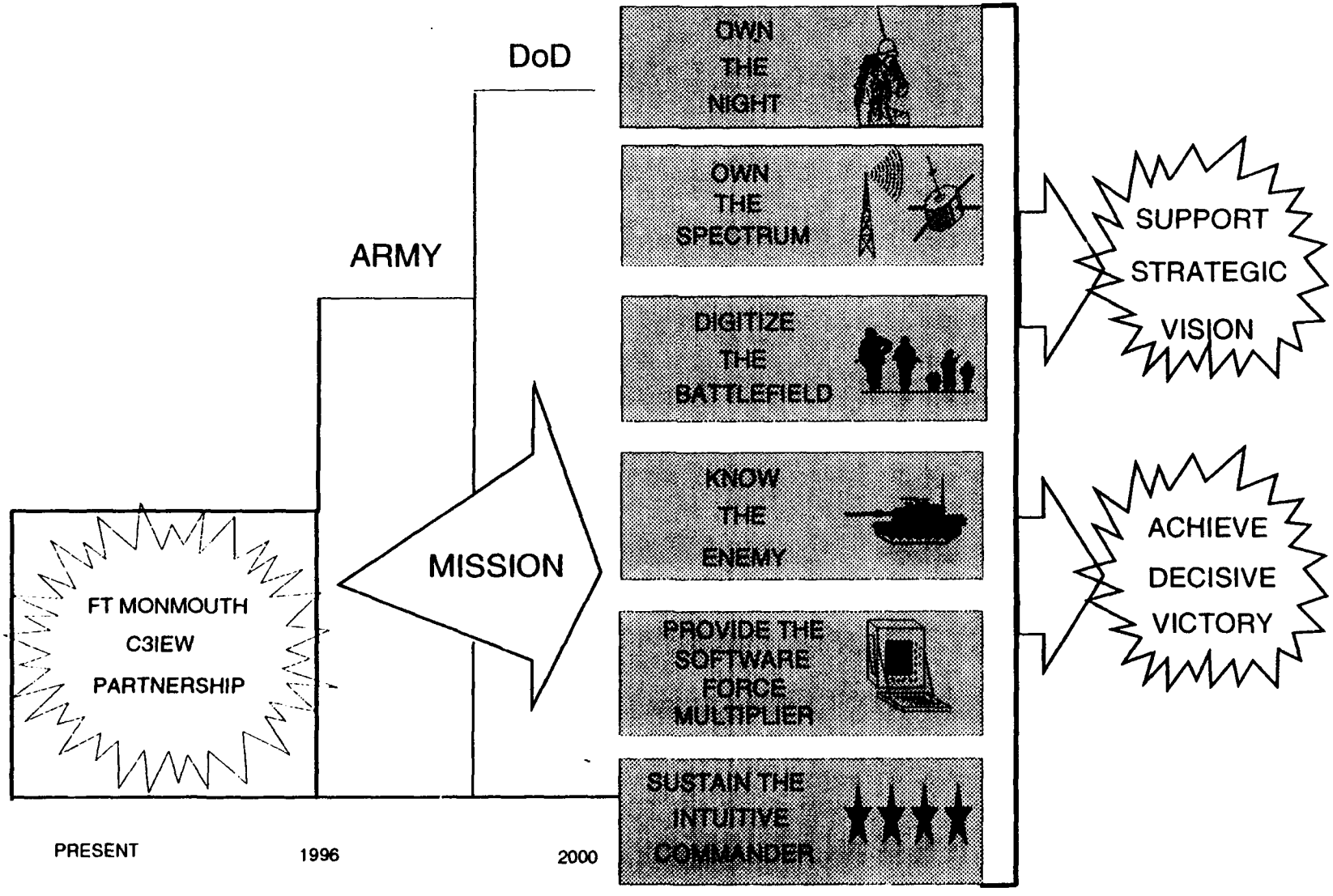




GOVERNMENT ORGANIZATIONS

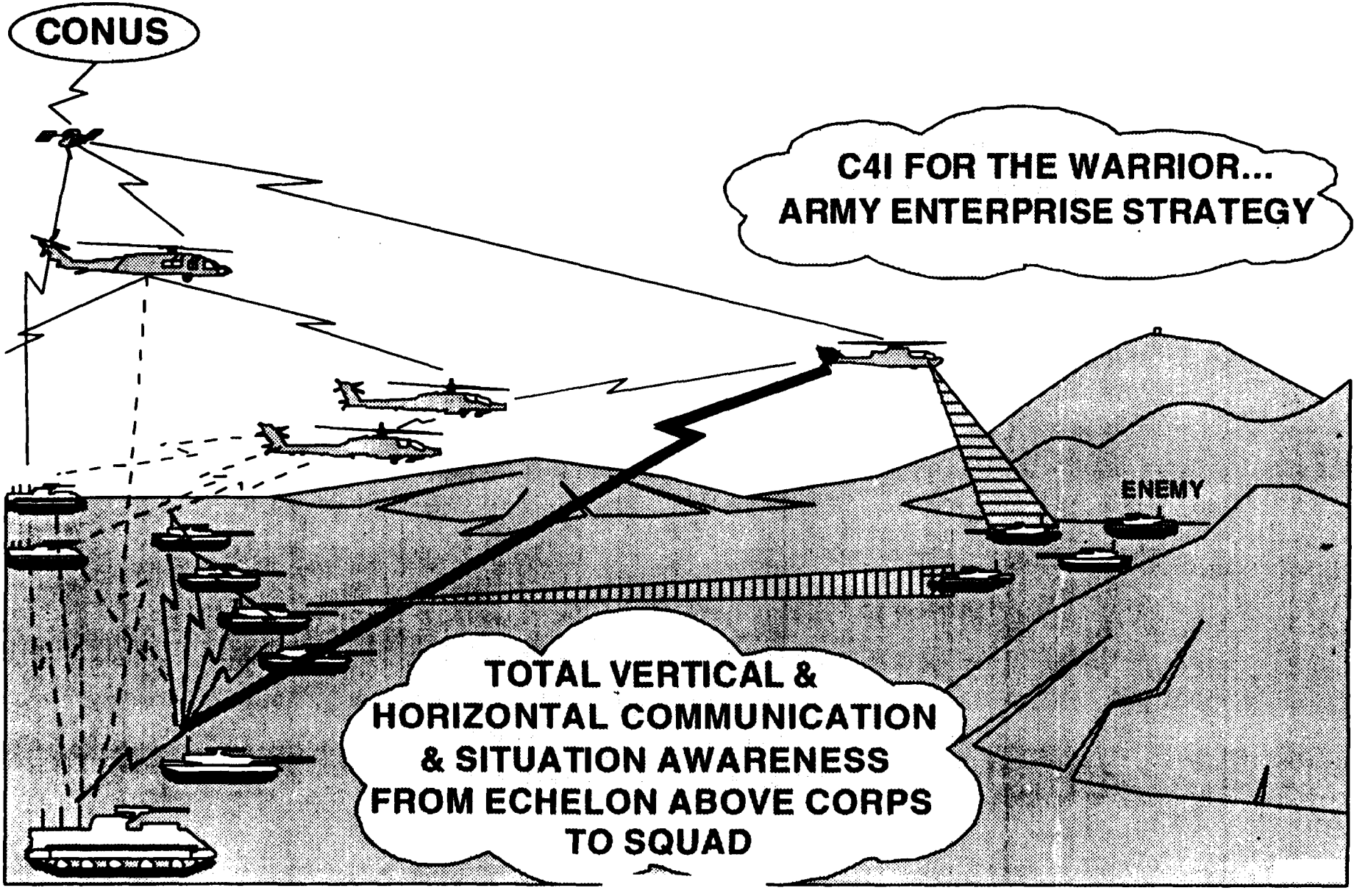
- Streamling & Consolidate (Defense Contract Management Command)
- "Purple" Organizations

CONCLUSION: WHAT ARE WE TRYING TO ACHIEVE ?

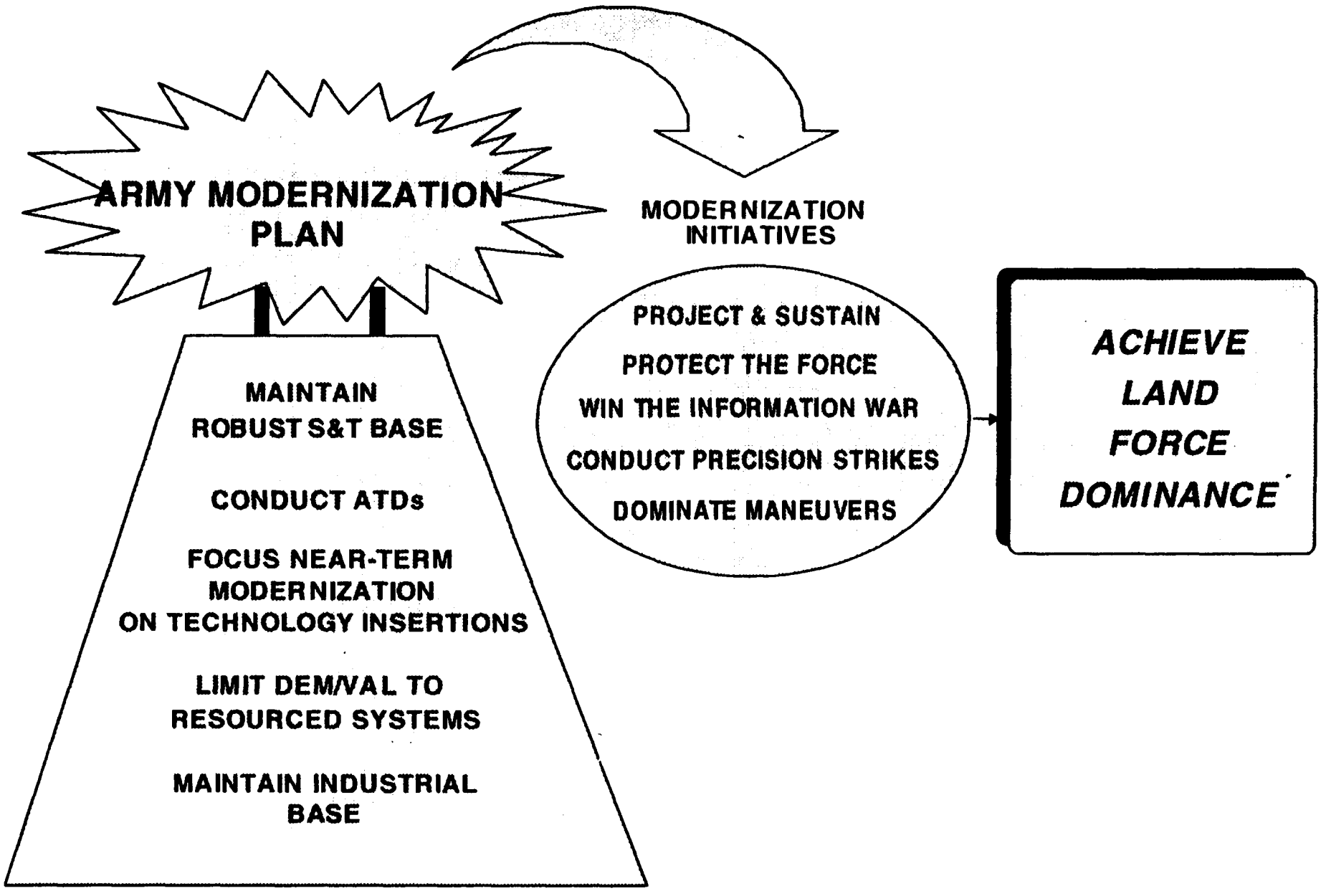


CONCLUSION

HORIZONTALLY & VERTICALLY INTEGRATE THE BATTLEFIELD



CONCLUSION


ARMY MODERNIZATION PLAN
MODERNIZATION INITIATIVES
PROJECT & SUSTAIN
PROTECT THE FORCE
WIN THE INFORMATION WAR
CONDUCT PRECISION STRIKES
DOMINATE MANEUVERS
ACHIEVE LAND FORCE DOMINANCE
MAINTAIN ROBUST S&T BASE
CONDUCT ATDs
FOCUS NEAR-TERM MODERNIZATION ON TECHNOLOGY INSERTIONS
LIMIT DEM/VAL TO RESOURCED SYSTEMS
MAINTAIN INDUSTRIAL BASE

SESSION I

ARMY'S STRATEGIES FOR THE FUTURE

MODERATOR

MR. ANTHONY V. CAMPI
DIRECTOR
RESEARCH, DEVELOPMENT AND ENGINEERING CENTER
CECOM

SESSION I

ARMY'S STRATEGIES FOR THE FUTURE

SESSION OVERVIEW AND INTRODUCTION

MODERATOR
MR. ANTHONY V. CAMPI
DIRECTOR
RESEARCH, DEVELOPMENT AND ENGINEERING CENTER
CECOM

UNCLASSIFIED

CERDEC

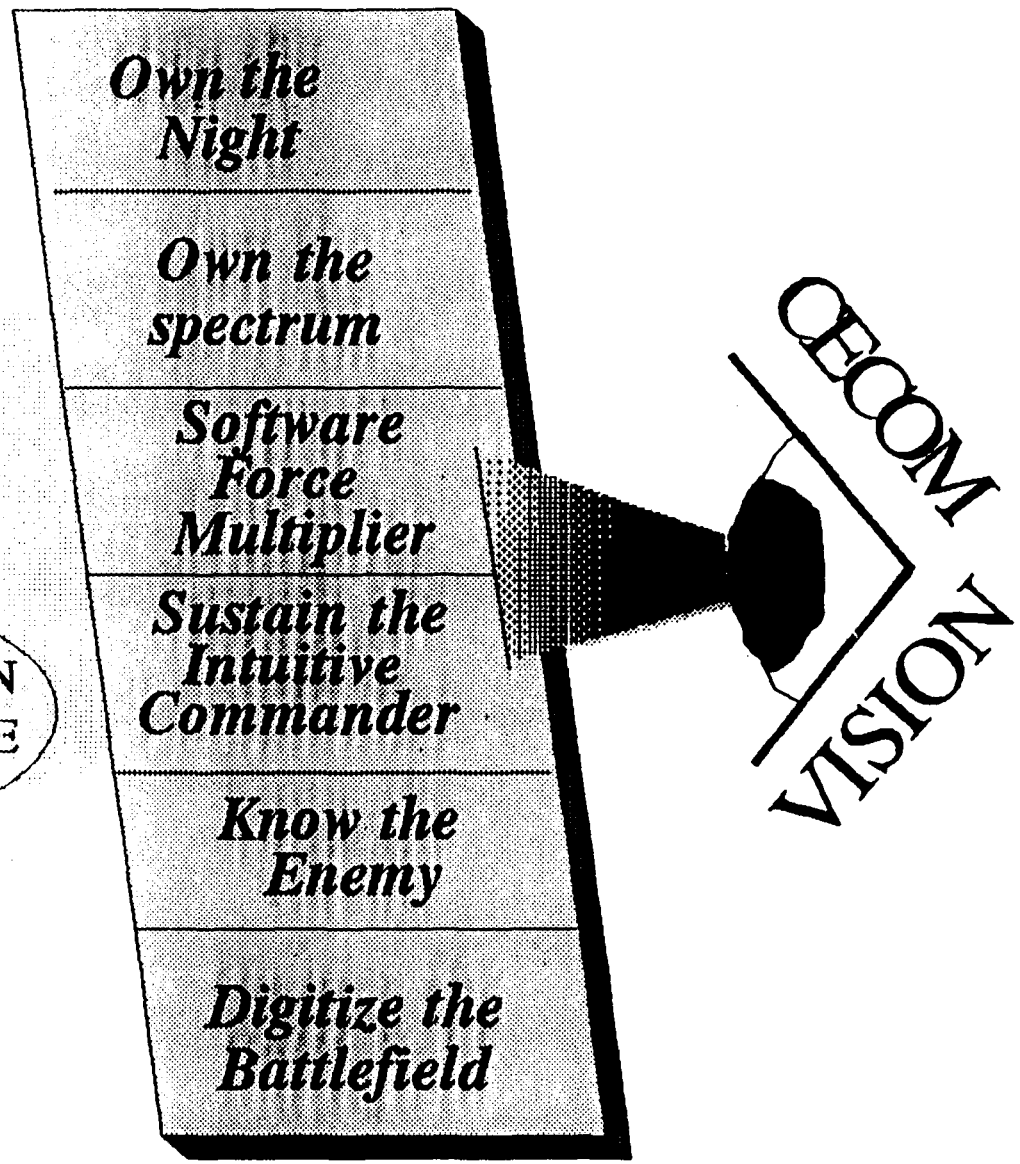
C3I
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C3I
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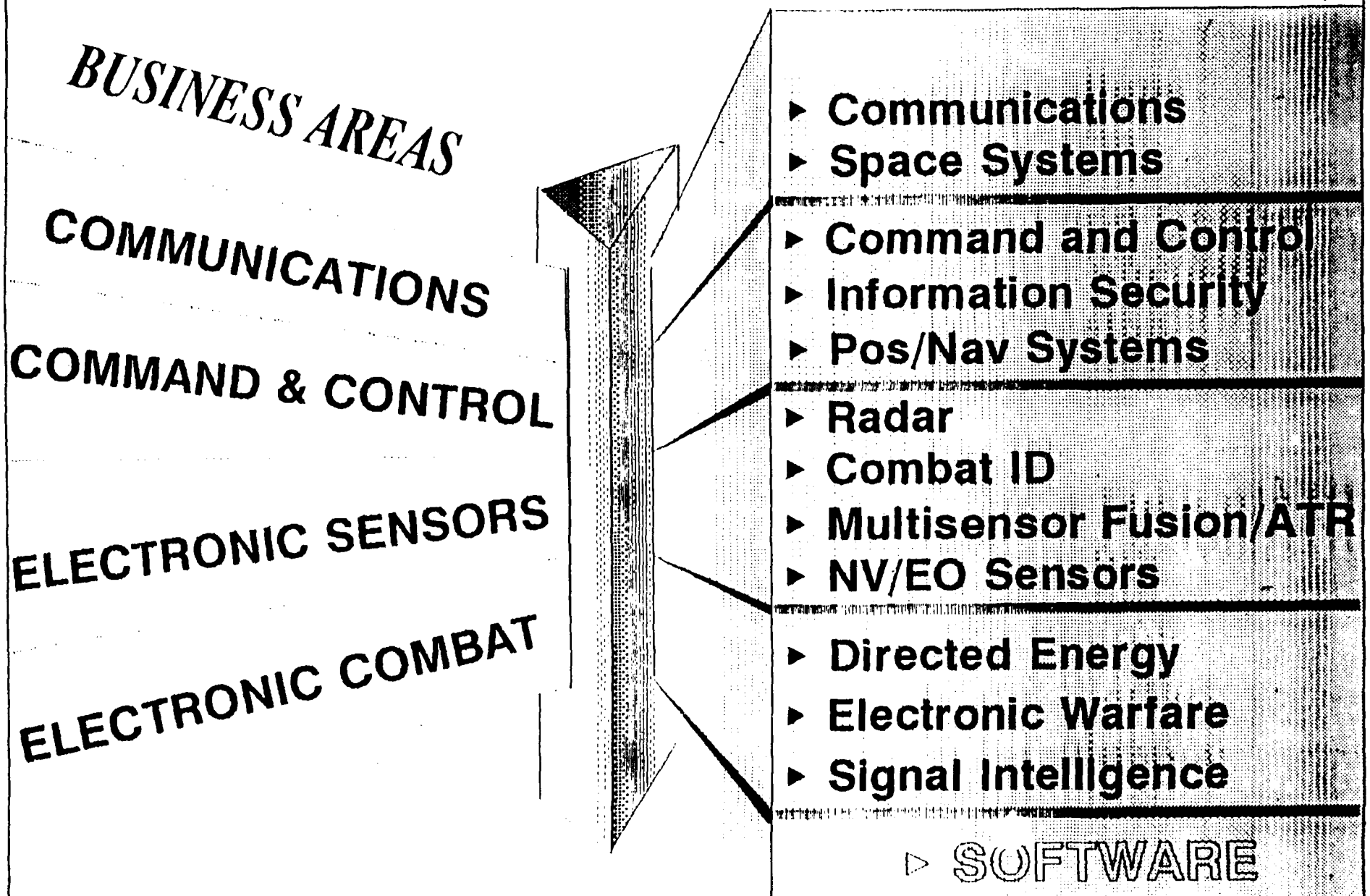
TECHNOLOGY GENERATION/ APPLICATION

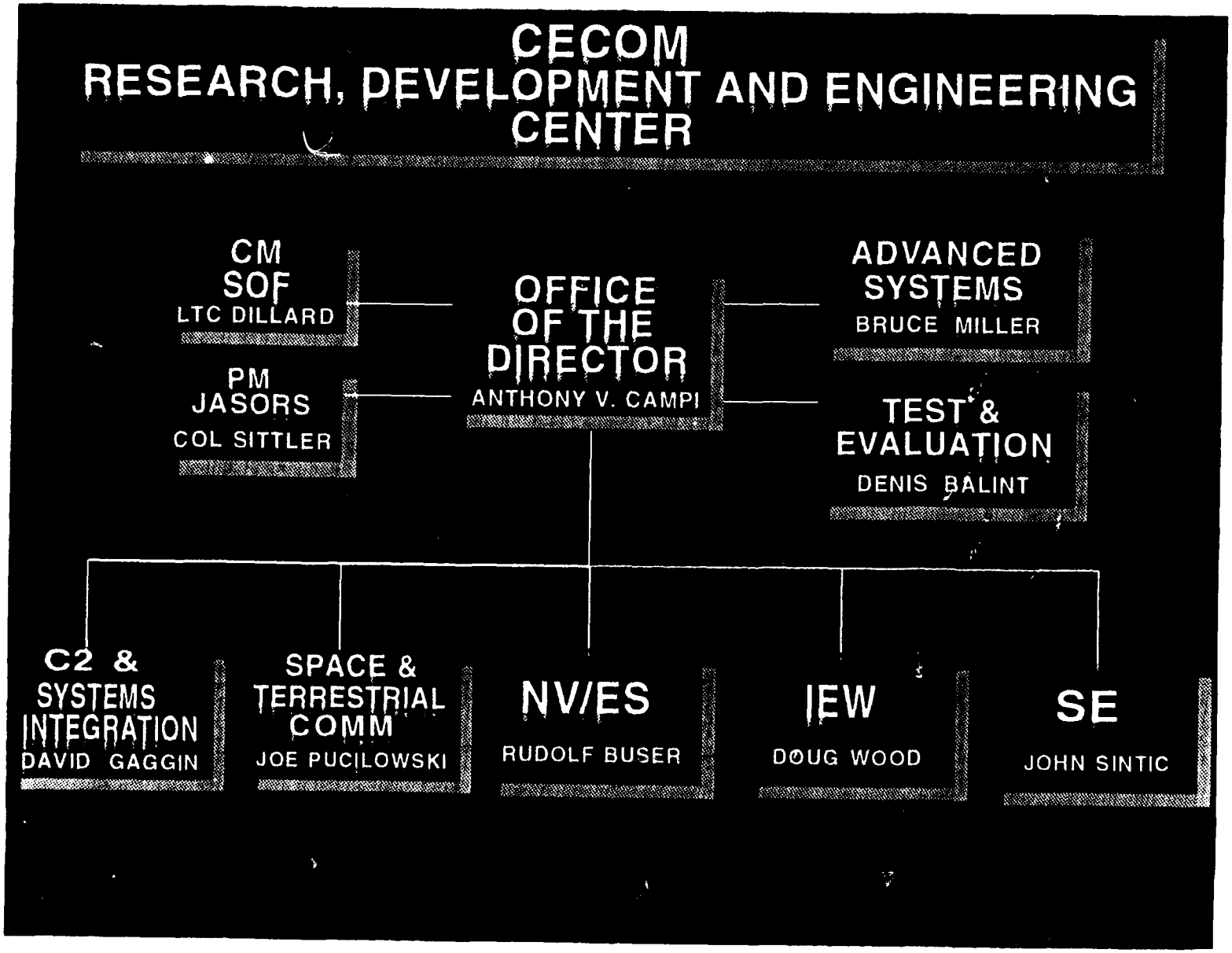
LOGISTICS POWER PROJECTION

ACQUISITION EXCELLENCE

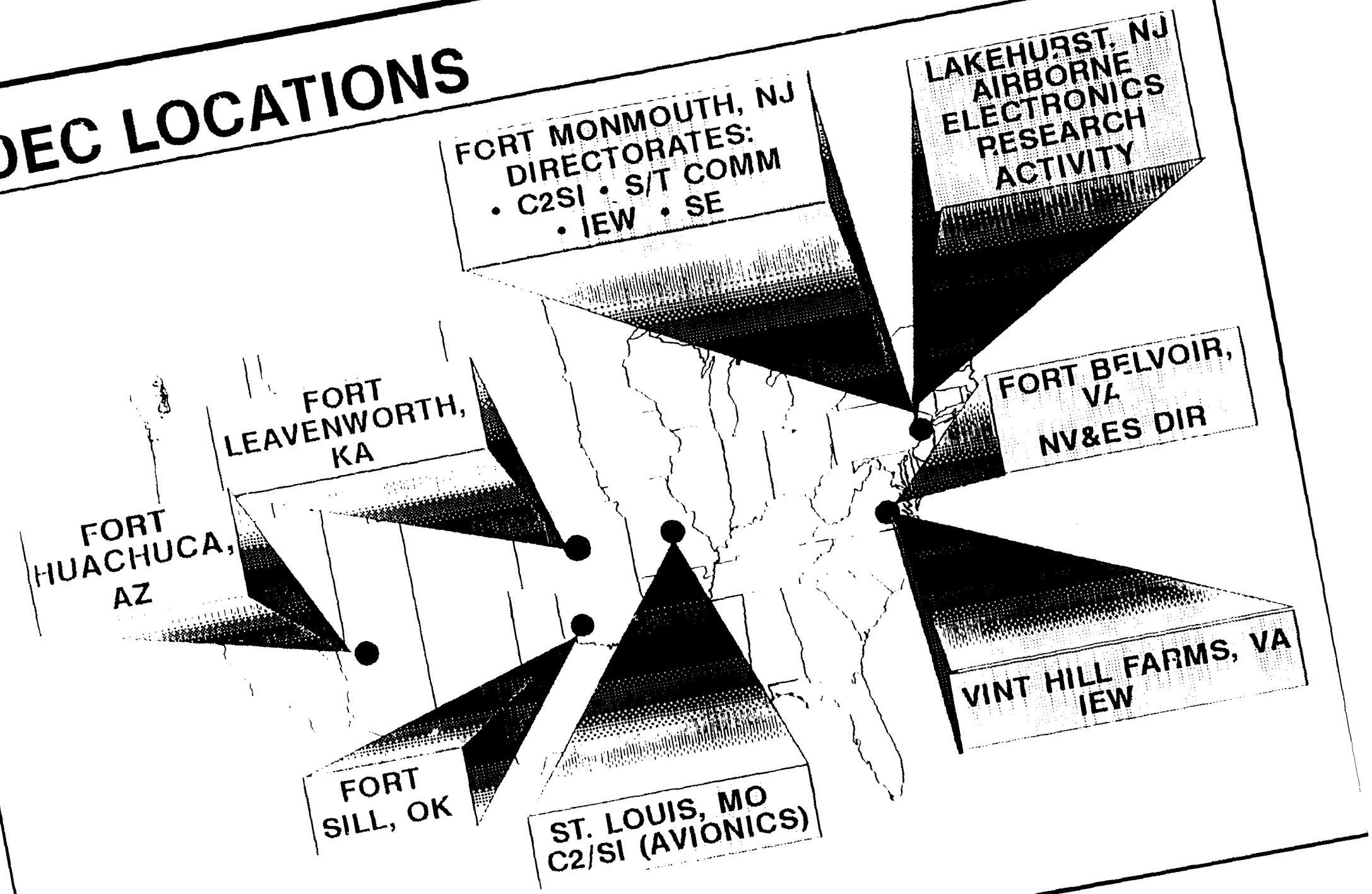


BUSINESS LINES

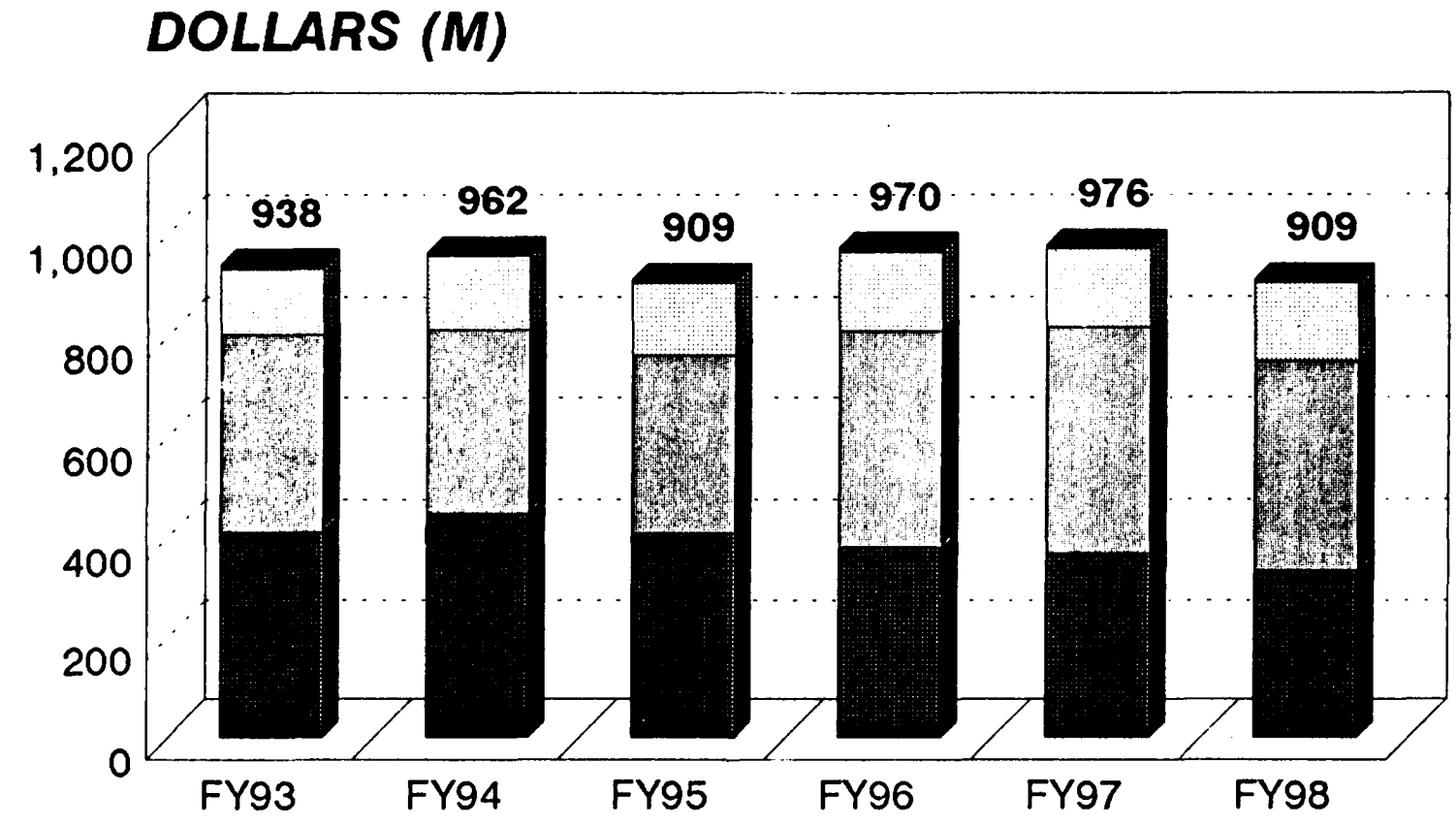



CECOM
RESEARCH, DEVELOPMENT AND ENGINEERING CENTER
CM SOF
LTC DILLARD
PM JASORS
COL SITTLER
OFFICE OF THE DIRECTOR
ANTHONY V. CAMPI
ADVANCED SYSTEMS
BRUCE MILLER
TEST & EVALUATION
DENIS BALINT
C2 & SYSTEMS INTEGRATION
DAVID GAGGIN
SPACE & TERRESTRIAL COMM
JOE PUCILOWSKI
NV/ES
RUDOLF BUSER
IEW
DOUG WOOD
SE
JOHN SINTIC

RDEC LOCATIONS



RDEC BUSINESS PLAN APPROPRIATIONS



OTHER	8	8	8	8	8	8
OMA	131	144	142	154	153	155
PA	389	362	352	428	446	412
RDTE	410	448	408	380	369	335

RDTE PA OMA OTHER

SESSION I
THEME - ARMY STRATEGIES FOR THE FUTURE

- Army Strategies For Determining Future Requirements
  - Louisiana Maneuvers / Battlelabs

    BG Tommy R. Franks
- Technology Strategy
  - Digitizing The Battlefield Concept

    Mr. Roy F. Arnold
  - Advanced Technology Demonstration

    Mr. Jan W. Moren
  - Electronics For The Future Army

    Dr. Clarence G. Thornton
  - Army Science & Technology Master Plan

    Mr. Charles A. Strimpler

SESSION I (Cont.)
THEME - ARMY STRATEGIES FOR THE FUTURE

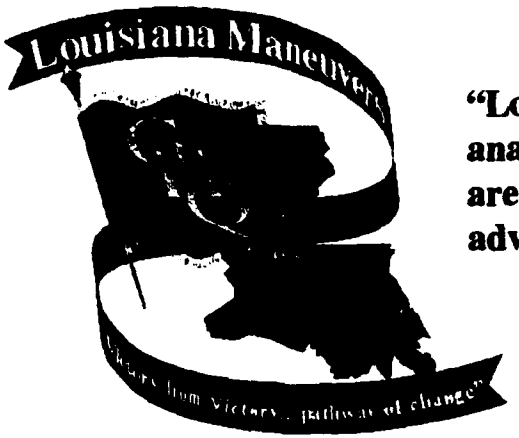
- Business Strategy
  - Computer Aided Logistics System (CALS)

    Mr. Raoul C. Cordeaux
- Procurement Strategy
  - Electronic Bulletin Board
  - Omnibus Contracting

    Mr. Edward G. Elgart

"...the Louisiana Maneuvers program ... focuses energies on what is important. It is a process, a campaign, to help evolve America's Army for the next century."

GEN Sullivan



"Louisiana Maneuvers ... will allow us to analyze those areas on the battlefield that are changing as a result of technology advances and changes in warfighting ideas ..."

GEN Franks

Meeting the Challenges of Tomorrow's Army 19 May 1993

- Balance, Pace, Affordability
- A Strategic Army
- On the Road of Change
- Crossroads
- How Does the Army Experiment?
- Process
- '93 and '94 Issues
- LAM '93
- Balls in the End Zone
- Issue Decisions
- '93 Issues into POM
- Tomorrow's Army

Balance, Pace, Affordability ...

The dangers we face ...

1. A continued weak U.S. economy
2. The failure of democratization
3. Continued nuclear proliferation
4. Irredentism

"...we find ourselves engaged in a fundamental examination of America's military requirements for the future ... as we reshape and resize ... you can rest assured we will have, above all, a ready to fight force."

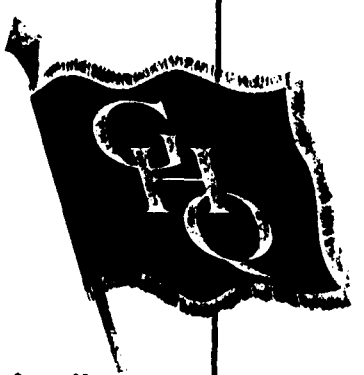
Les Aspin



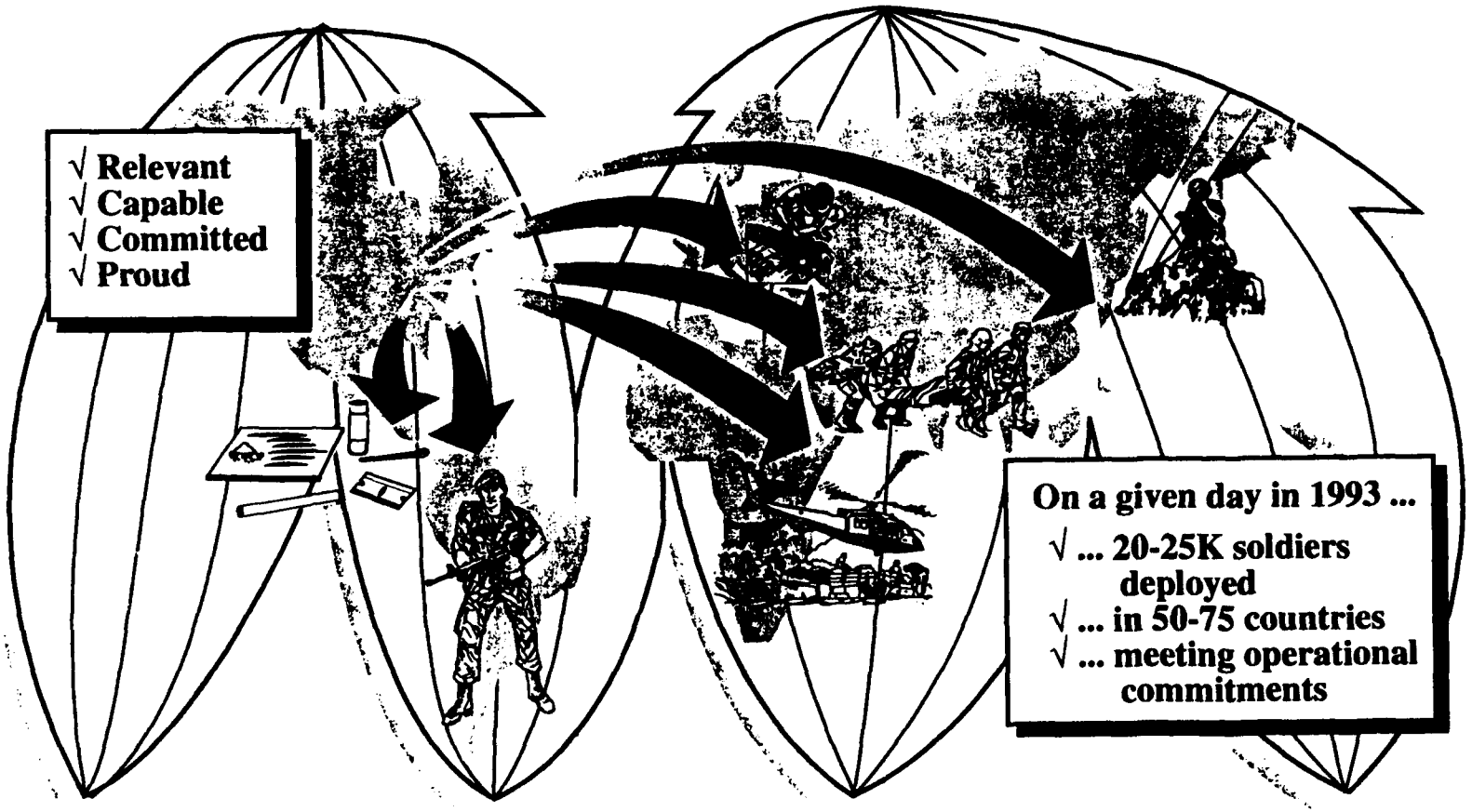
√ Meet operational requirements
√ Remain trained and ready

United States Army Posture Statement FY94 ...

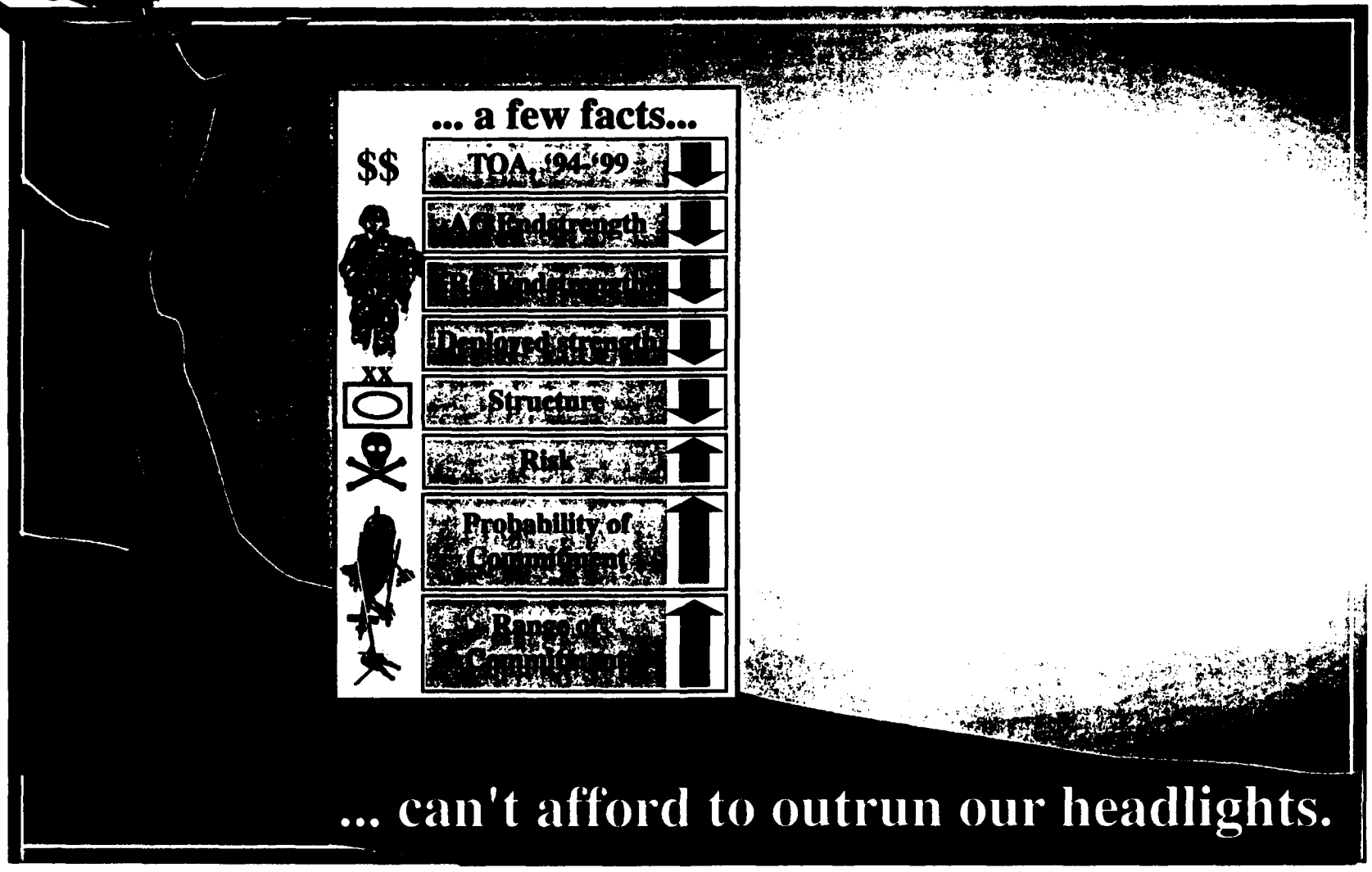
"The intent of the Louisiana Maneuvers... is to energize and guide the restructuring of the Army while simultaneously keeping it combat ready... laboratory to practice roles and missions... develop and explore options... assess and direct progress... provide a framework for decisions by senior leaders... facilitate the Army's transformation."



A Strategic Army ...



On the Road of Change ...



... can't afford to outrun our headlights.

Crossroads ...

1992....

"Can we Change, Maintain our Effectiveness, and Grow into the 21st Century?"

GEN Gordon R. Sullivan
5 Aug 92

1941....

"I am so fed up on paper, impressive technique and the dangerous effect of masses of theory which have not been leavened by frequent troop experiences..."

GEN George C. Marshall

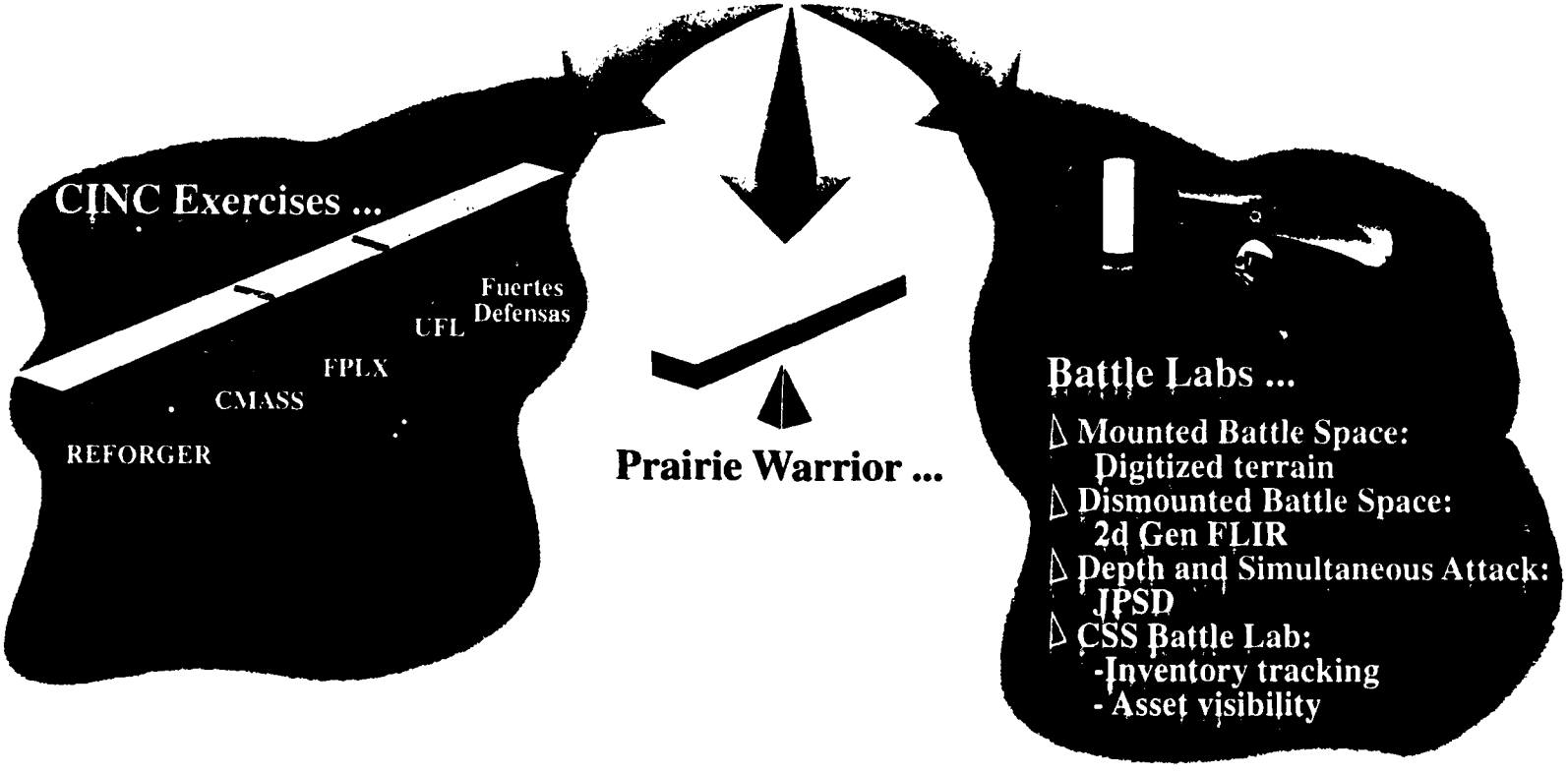
TRADOC BATTLE LABS

- √ **Experiments**
- √ **Focus on Title 10 and warfighting**
- √ **Provide proof of major organizational decisions -- policy, operational, technological**

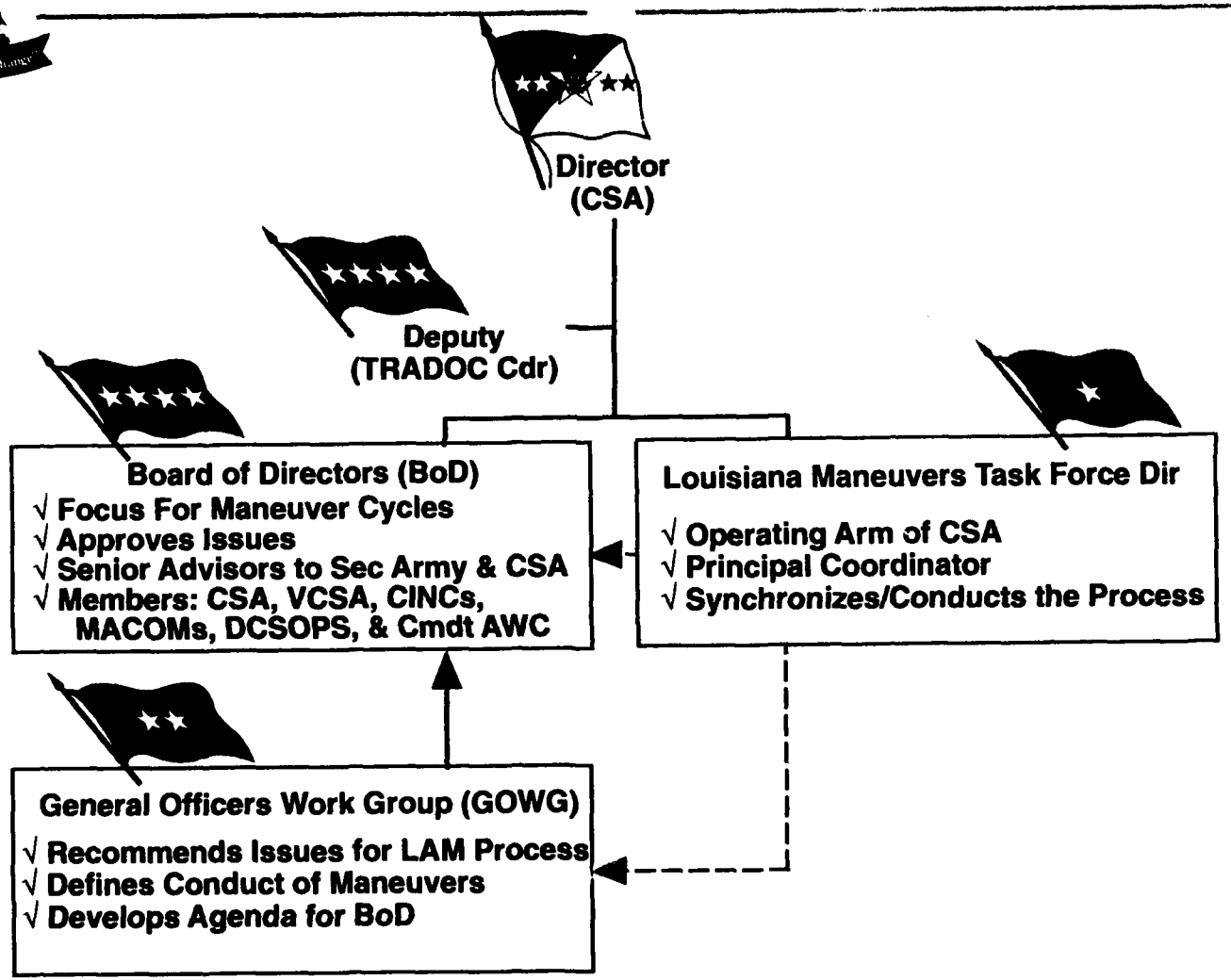


How Does the Army Experiment?

The question is " how can we think about the future and investigate promising structures, technologies, and policies ... How does the Army experiment?"
GEN Franks



Support Structure ...



The Process ...

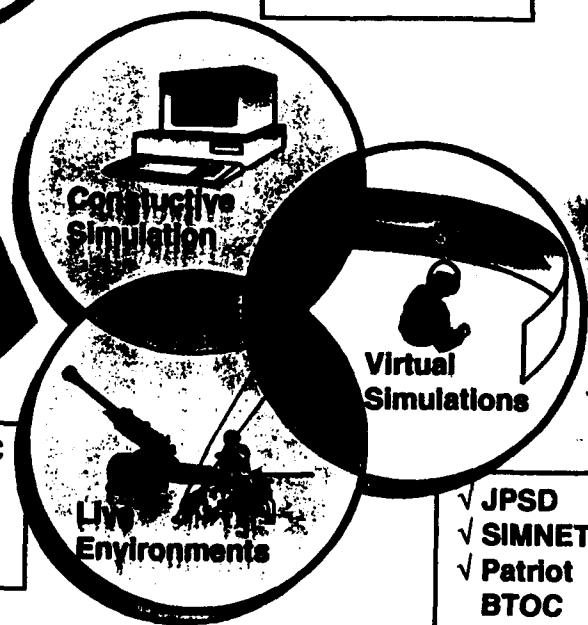
"Louisiana Maneuvers is a campaign in the fullest sense."



"The ... senior ... will iden... specific p... and warfig... issues ..."

- √ REFORGER
- √ Prairie Warrior
- √ FPLX
- √ GHQx

Strategic Agil... Decision Ma... Title 10 ... Warfightin...



- √ NTC, JRTC, CMTC
- √ Man-in-the-Loop Experiments
- √ Unit Field Trainig

- √ JPSD
- √ SIMNET
- √ Patriot
- BTOC

...will be an evaluation ...cle to assess new ideas in 'real time' and shortcut Cold War policy decision methodologies."

'93 and '94 Issues ...



'93

Warfighting

- √ HQ Above Corps
- √ Mil Opns w/ Unfamiliar Forces
- √ Own the Night
- √ Battle Command
- √ C4I

Title 10

- √ Force Structure
- √ Equipping the Force
- √ Mobilization/Deployment
- √ Sustainment

'94

Warfighting

- √ Holistic Review of C4I
- √ Continuous Operations

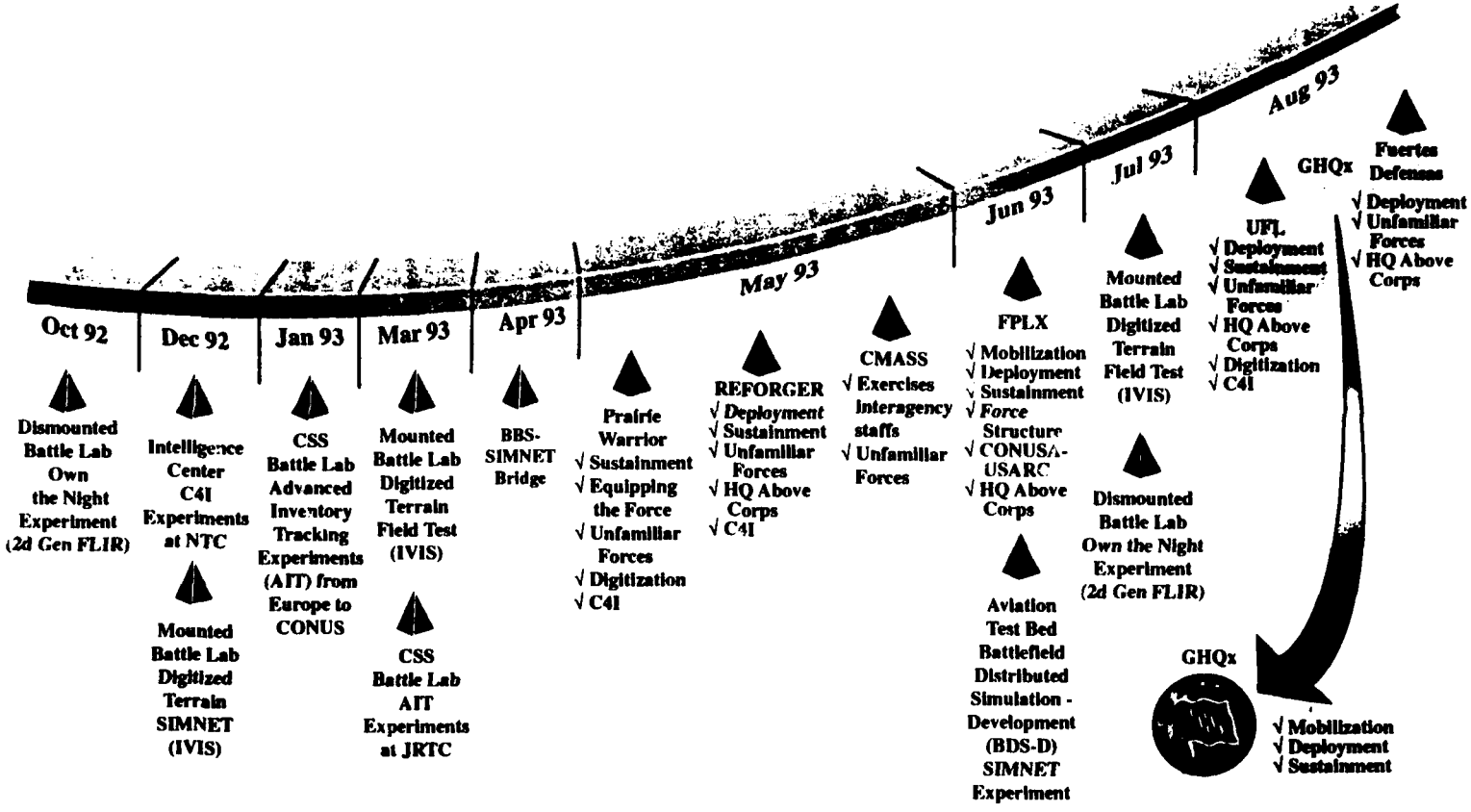
Title 10

- √ New Technologies
- √ Sustainment
- √ Lighter, Smaller, more Deployable Forces
- √ Weapons of Mass Destruction
- √ Deployment

Space

- √ Army Exploitation of Space Assets

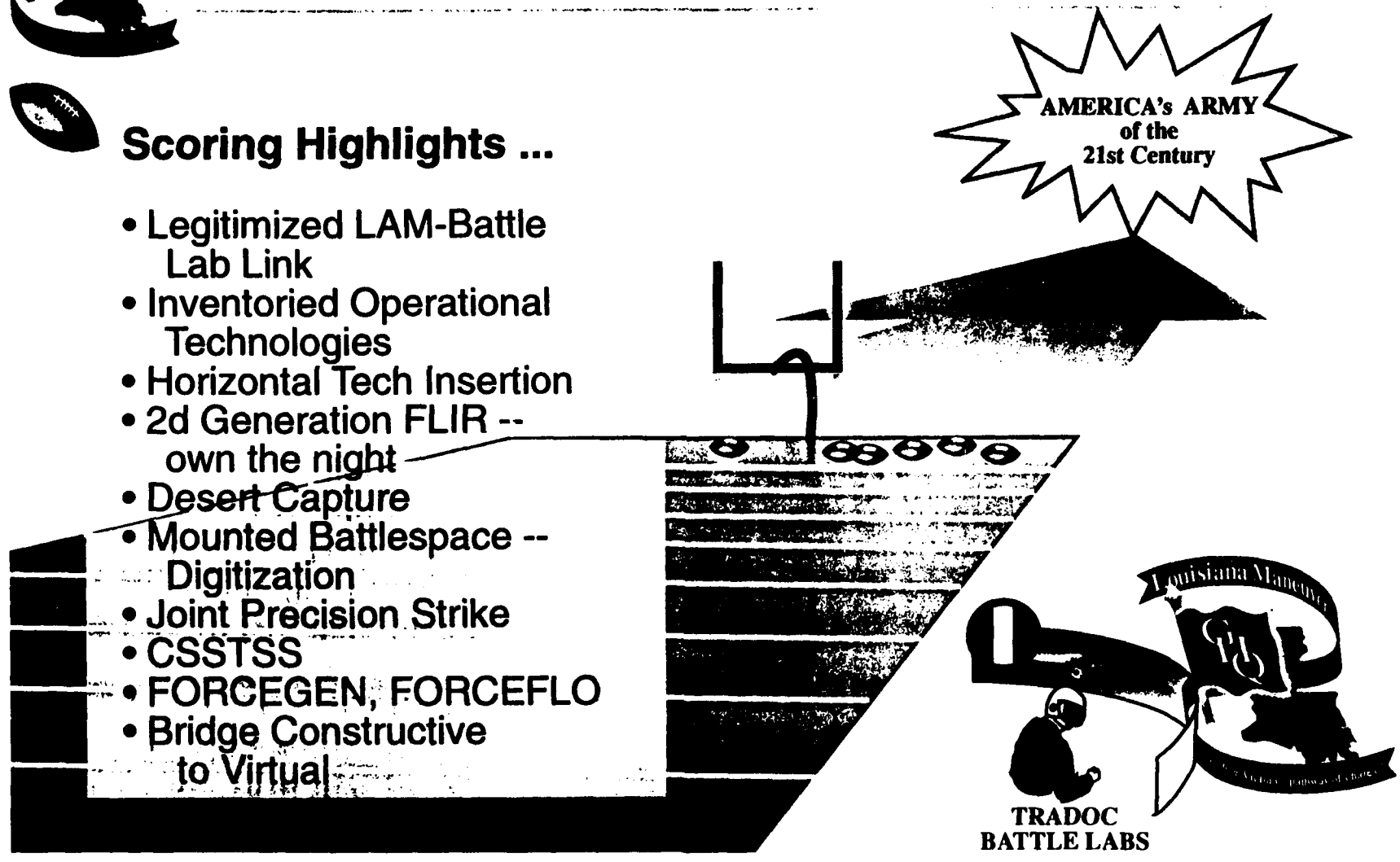
LAM '93 ...


Oct 92
Dismounted Battle Lab Own the Night Experiment (2d Gen FLIR)
Dec 92
Intelligence Center C4I Experiments at NTC
Mounted Battle Lab Digitized Terrain SIMNET (IVIS)
Jan 93
CSS Battle Lab Advanced Inventory Tracking Experiments (AIT) from Europe to CONUS
Mar 93
Mounted Battle Lab Digitized Terrain Field Test (IVIS)
CSS Battle Lab AIT Experiments at JRTC
Apr 93
BBS-SIMNET Bridge
May 93
Prairie Warrior
√ Sustainment
√ Equipping the Force
√ Unfamiliar Forces
√ Digitization
√ C4I
REFORGER
√ Deployment
√ Sustainment
√ Unfamiliar Forces
√ HQ Above Corps
√ C4I
CMASS
√ Exercises interagency staffs
√ Unfamiliar Forces
Jun 93
FPLX
√ Mobilization
√ Deployment
√ Sustainment
√ Force Structure
√ CONUSA-USARC
√ HQ Above Corps
Aviation Test Bed Battlefield Distributed Simulation - Development (BDS-D) SIMNET Experiment
Jul 93
Mounted Battle Lab Digitized Terrain Field Test (IVIS)
Dismounted Battle Lab Own the Night Experiment (2d Gen FLIR)
Aug 93
GHQx
UFL
√ Deployment
√ Sustainment
√ Unfamiliar Forces
√ HQ Above Corps
√ Digitization
√ C4I
Fuertes Defensas
√ Deployment
√ Unfamiliar Forces
√ HQ Above Corps
GHQx
√ Mobilization
√ Deployment
√ Sustainment

Balls in the End Zone ...

Scoring Highlights ...

- Legitimized LAM-Battle Lab Link
- Inventoried Operational Technologies
- Horizontal Tech Insertion
- 2d Generation FLIR -- own the night
- Desert Capture
- Mounted Battlespace -- Digitization
- Joint Precision Strike
- CSSTSS
- FORCEGEN, FORCEFLO
- Bridge Constructive to Virtual



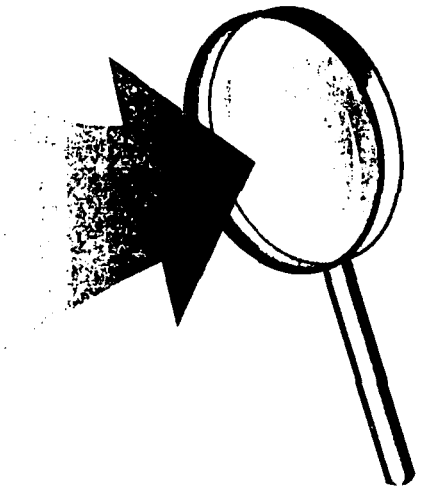
Issue Decisions ...





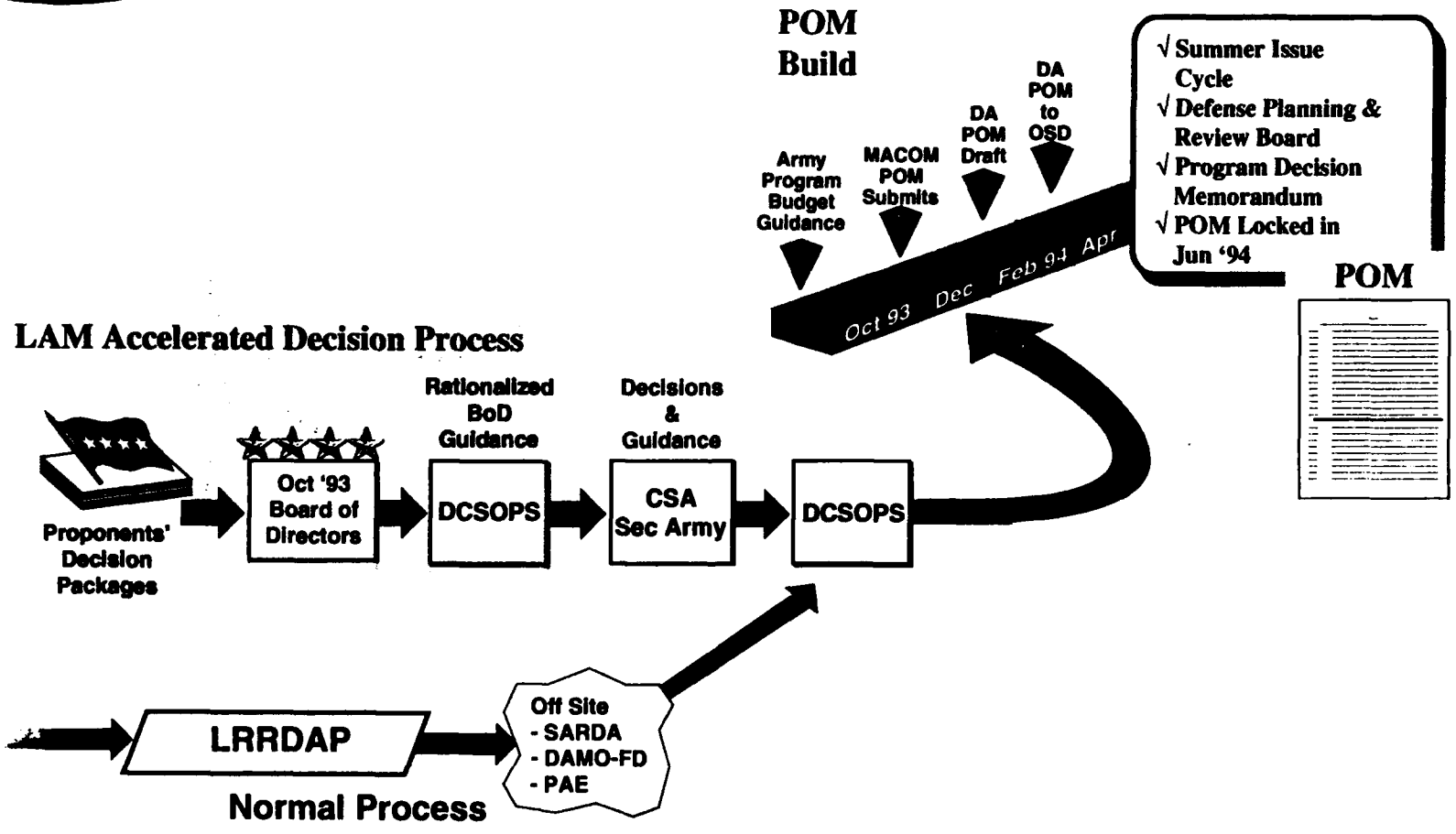


Battlefield Return on Investment (BROI)

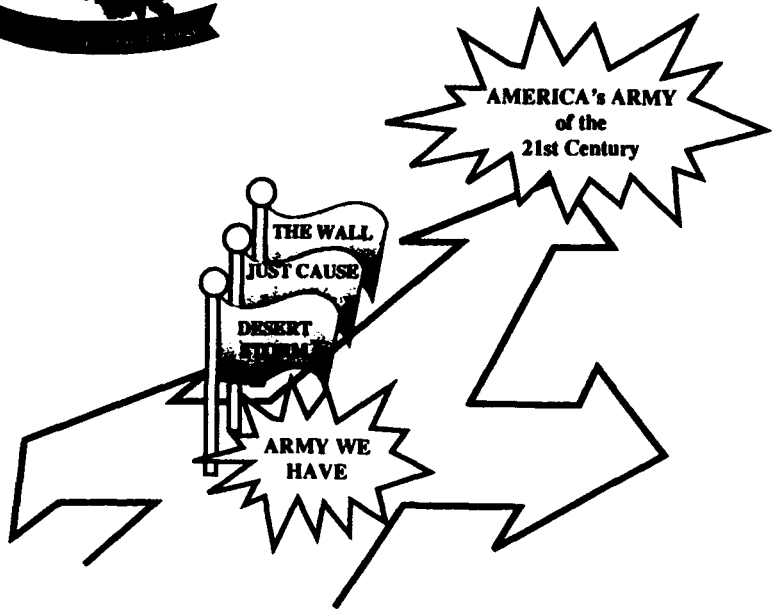




'93 Issues into the '96-'01 POM ...



Tomorrow's Army ...



√ Far from being a "Hollow Army"
- small, well-trained, well-led
- balanced
- level the drop in capabilities
- more than "stopgap" utility

√ Breaking the mold of historical post-war atrophy

√ Maintain technological and training advantage

√ Force Projection Focus

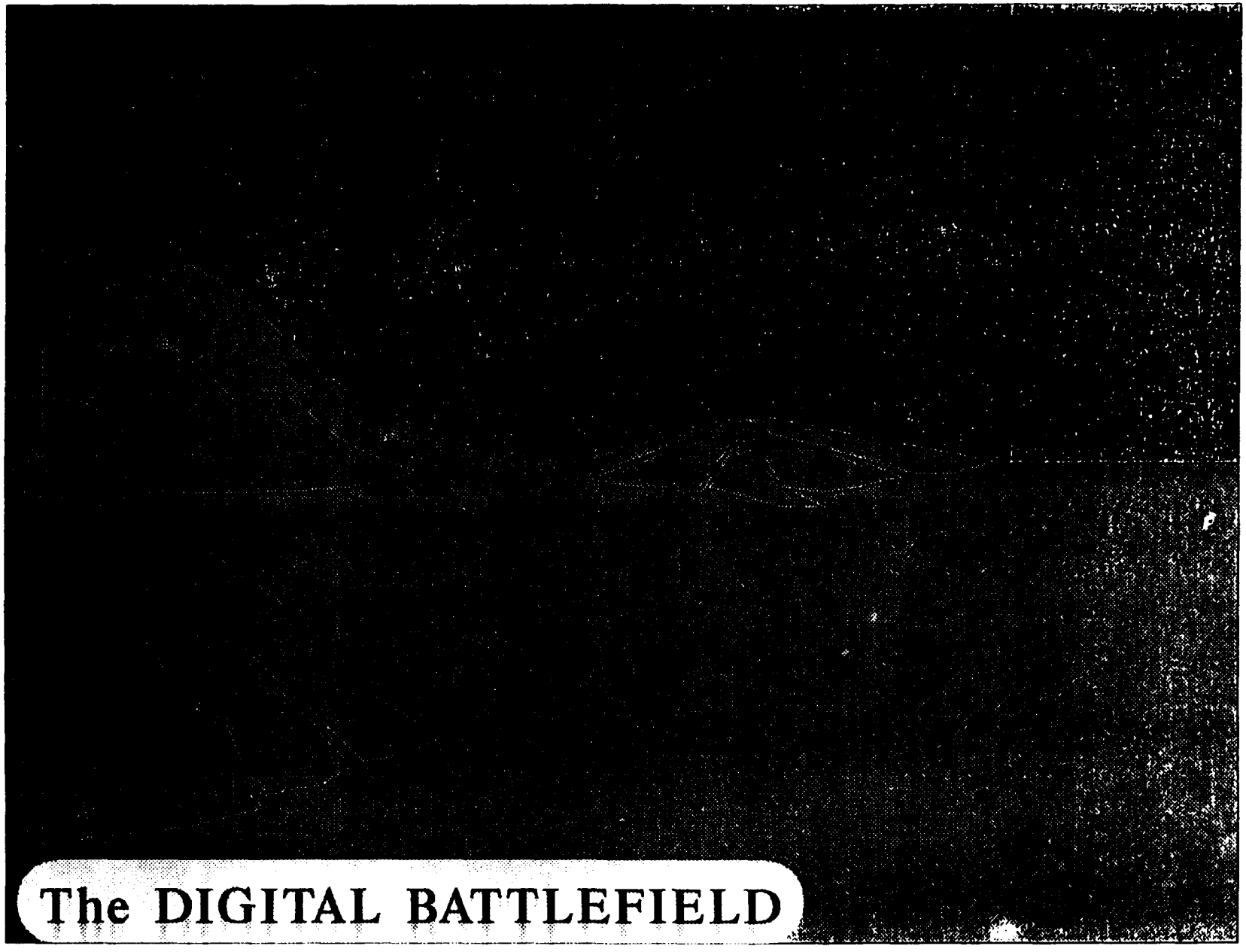
DIGITIZING THE BATTLEFIELD

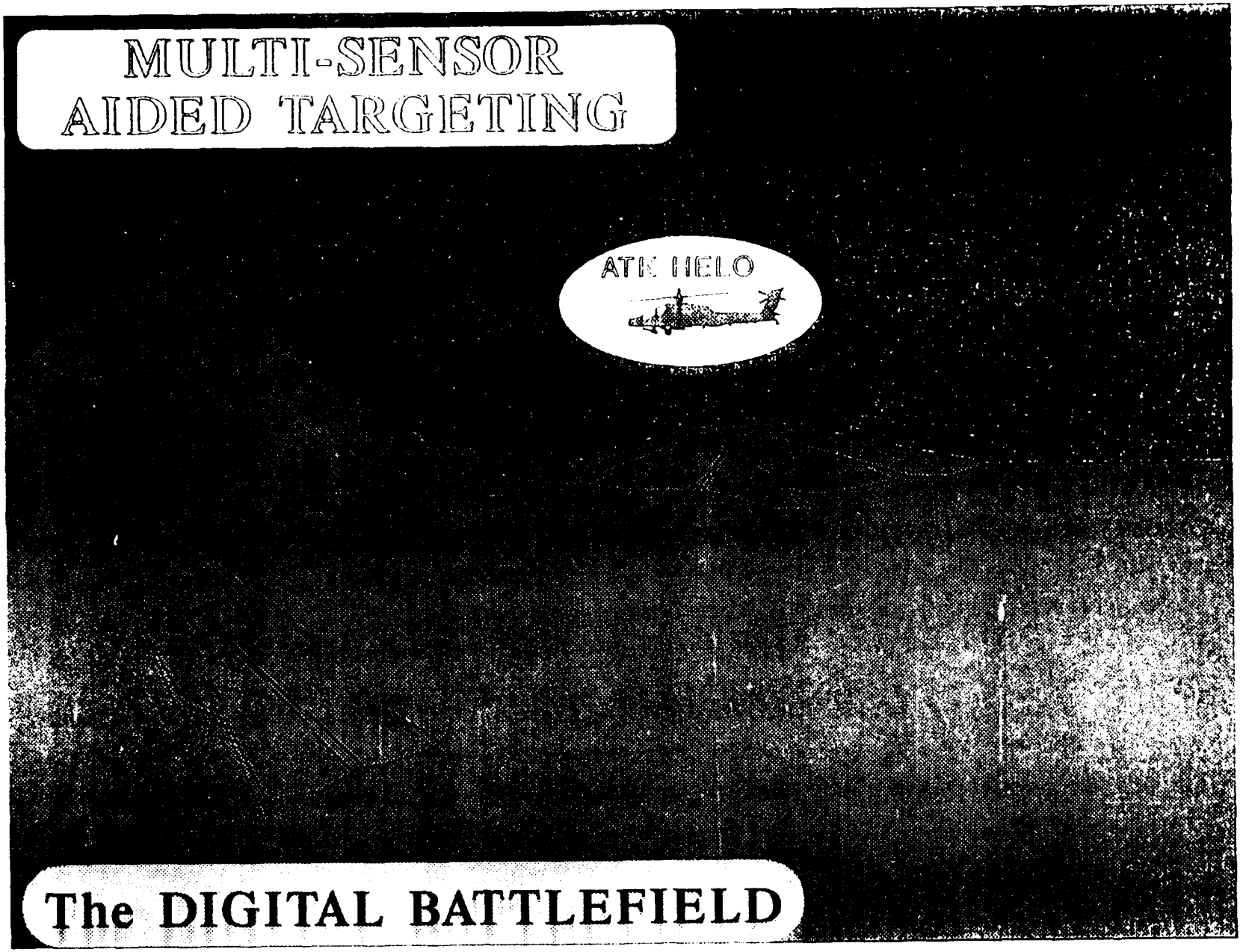
(THIS PRESENTATION WAS DONE ELECTRONICALLY AT THE APBI)

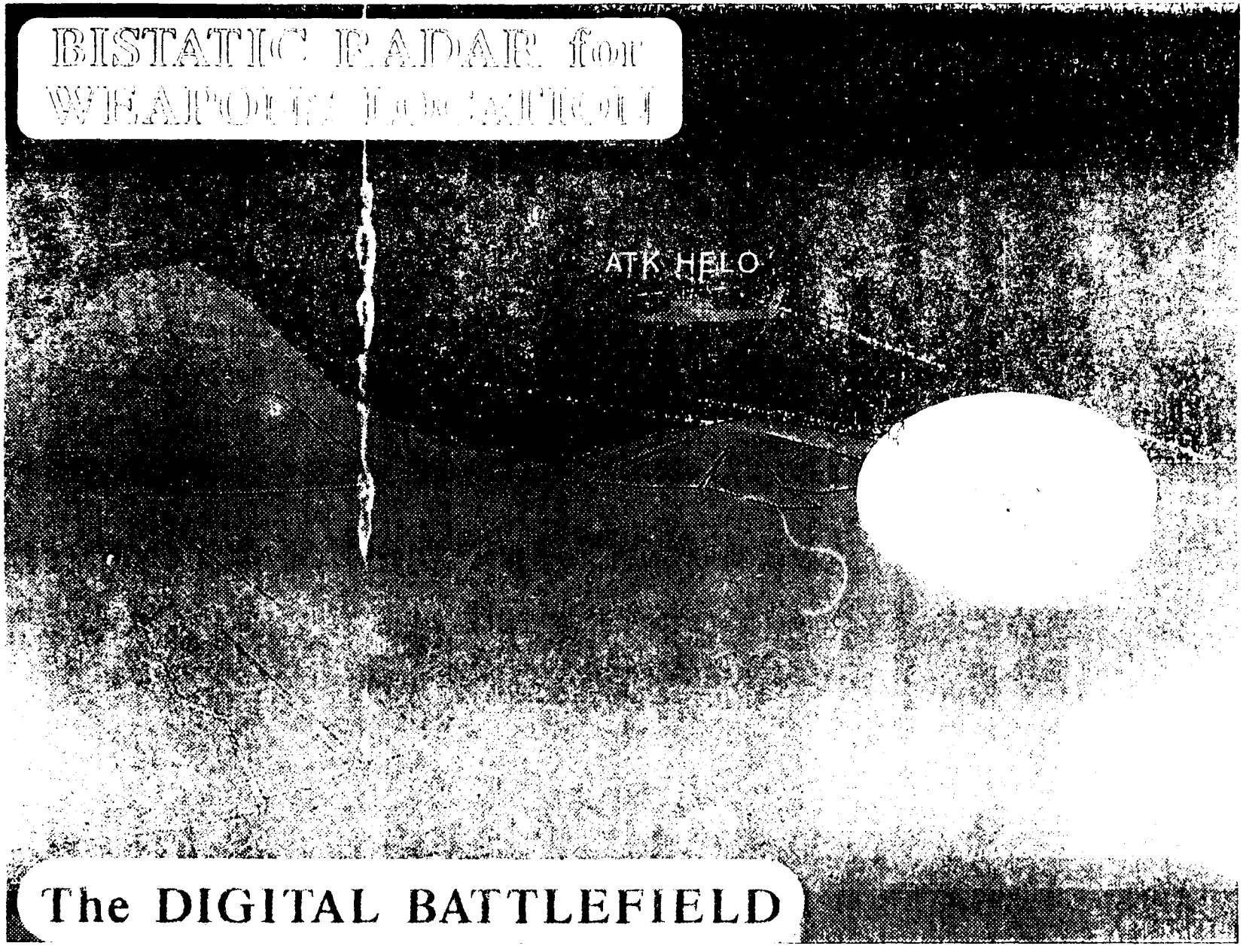
CECOM ADVANCED TECHNOLOGY DEMONSTRATIONS (ATDs)

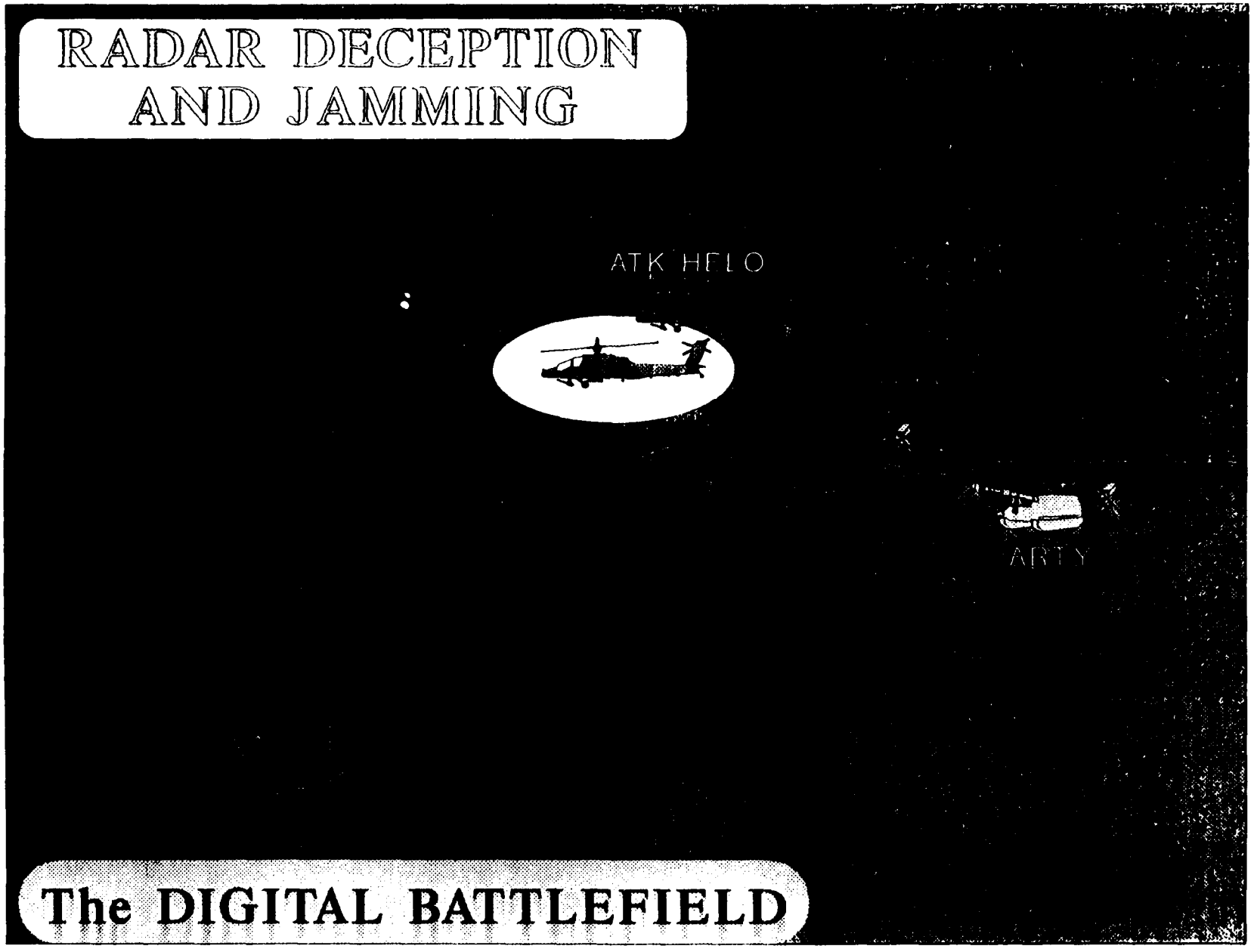
MR. JAN MOREN
DEPUTY DIRECTOR, ADVANCED SYSTEMS
CECOM

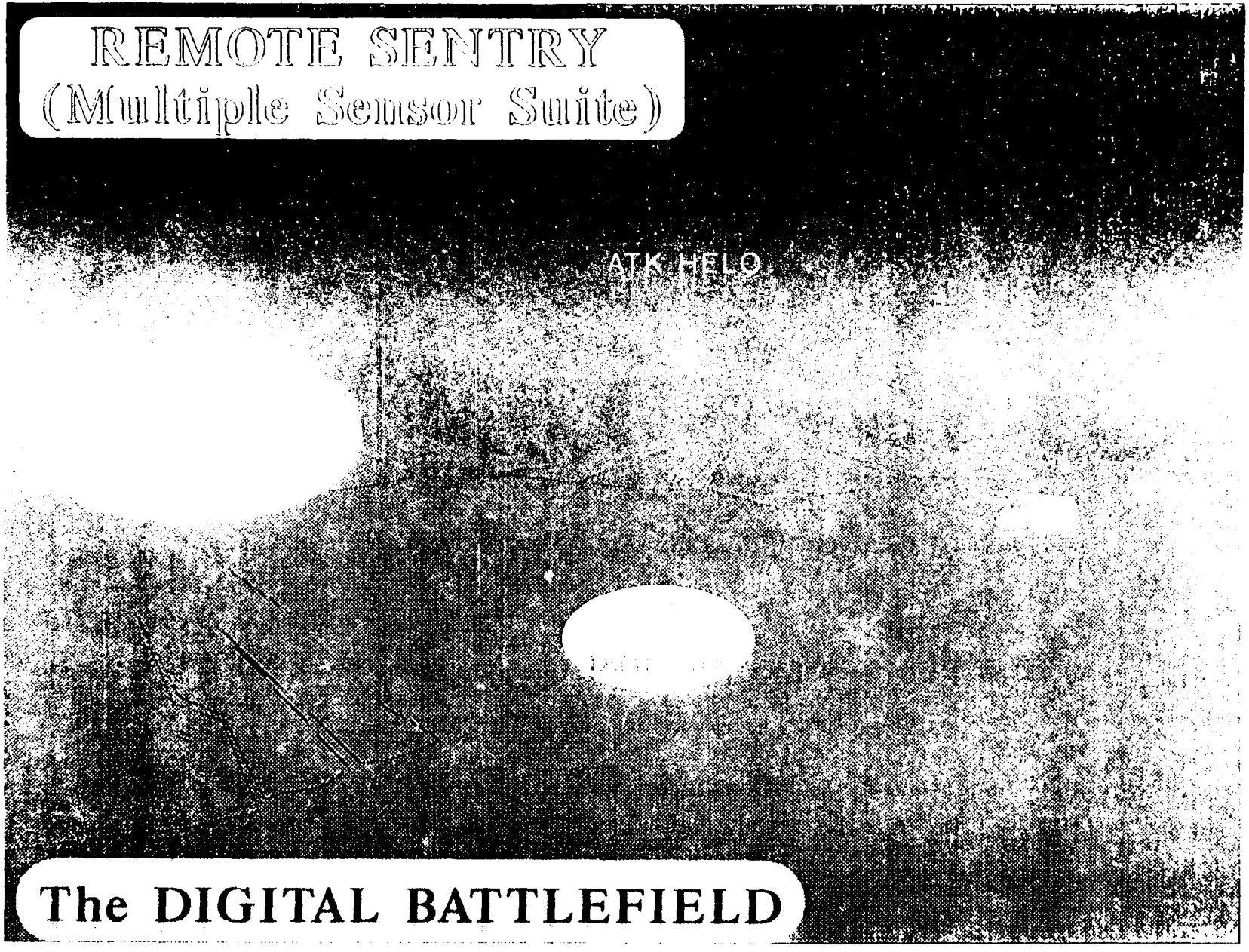
UNCLASSIFIED

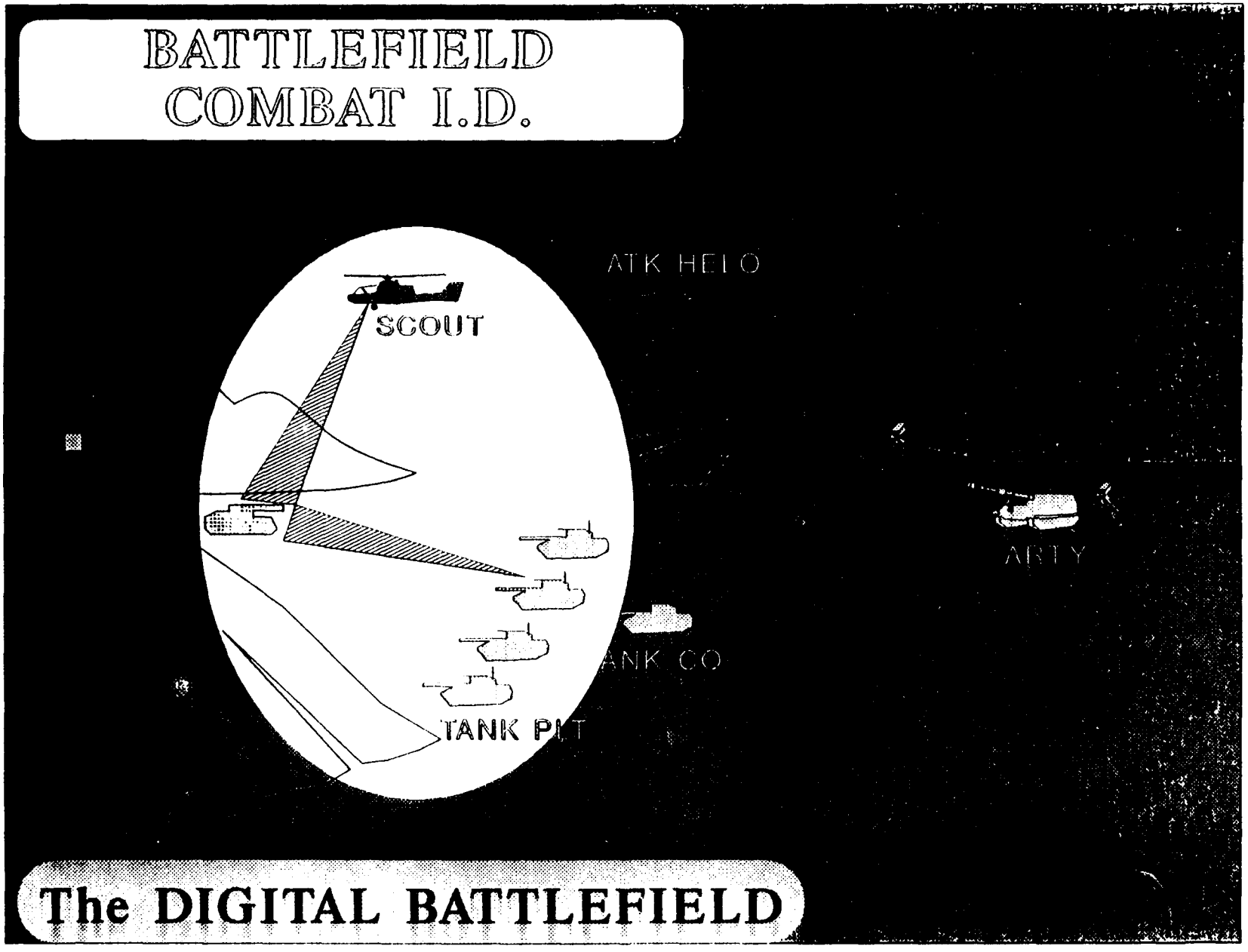

The DIGITAL BATTLEFIELD

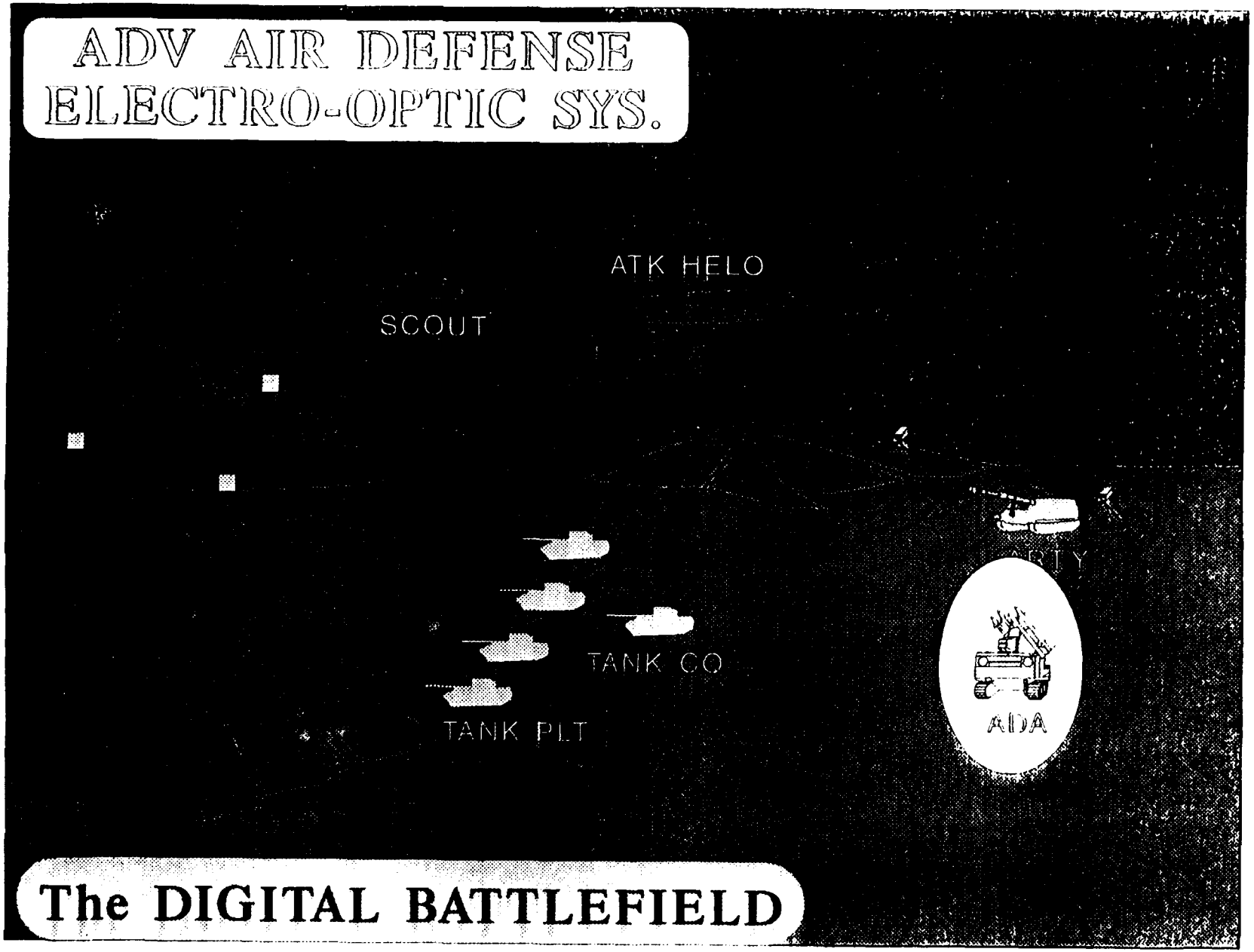

MULTI-SENSOR
AIDED TARGETING
ATK HELO
The DIGITAL BATTLEFIELD

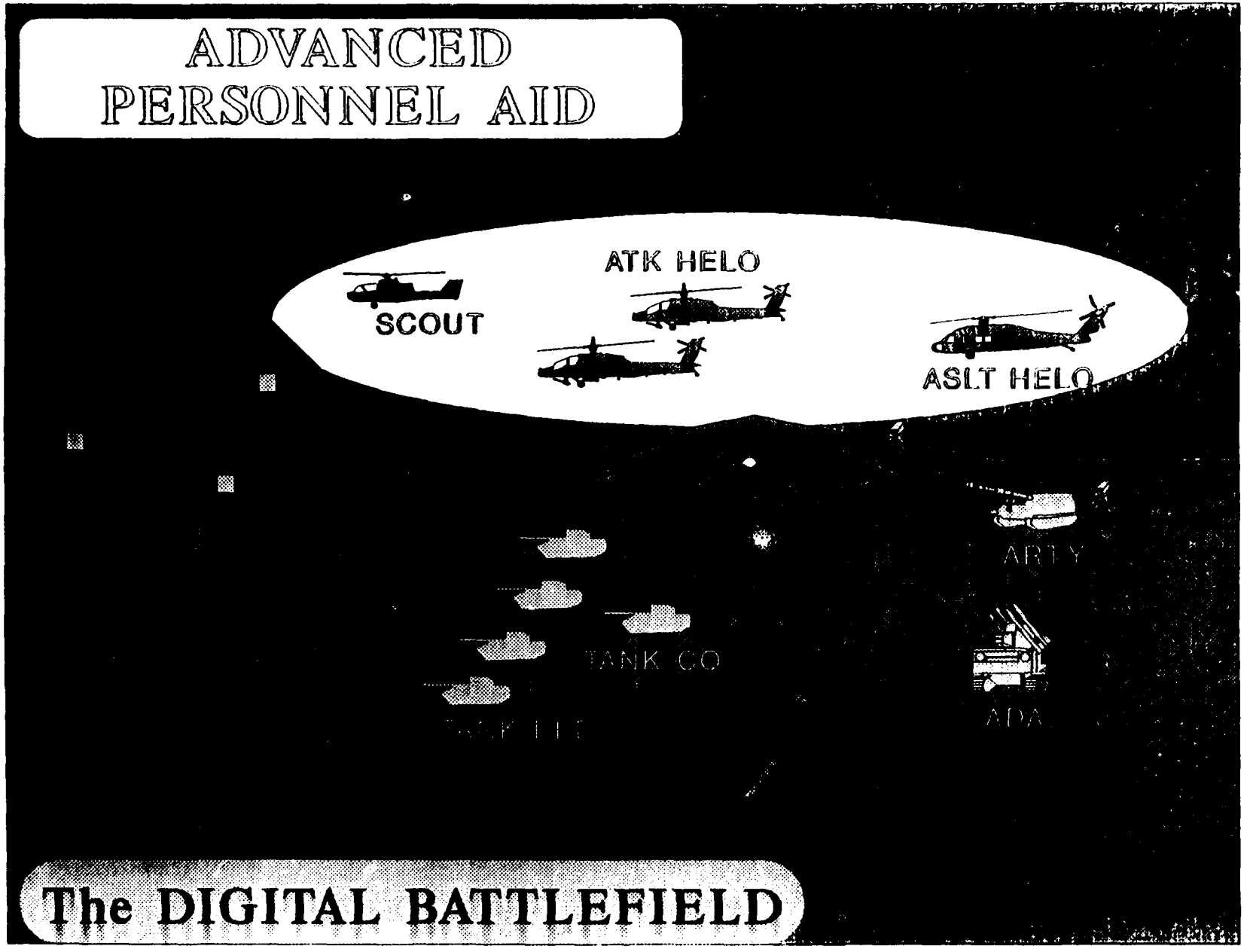

BISTATIC RADAR for
WEAPONS LOCATION
ATK HELO
The DIGITAL BATTLEFIELD

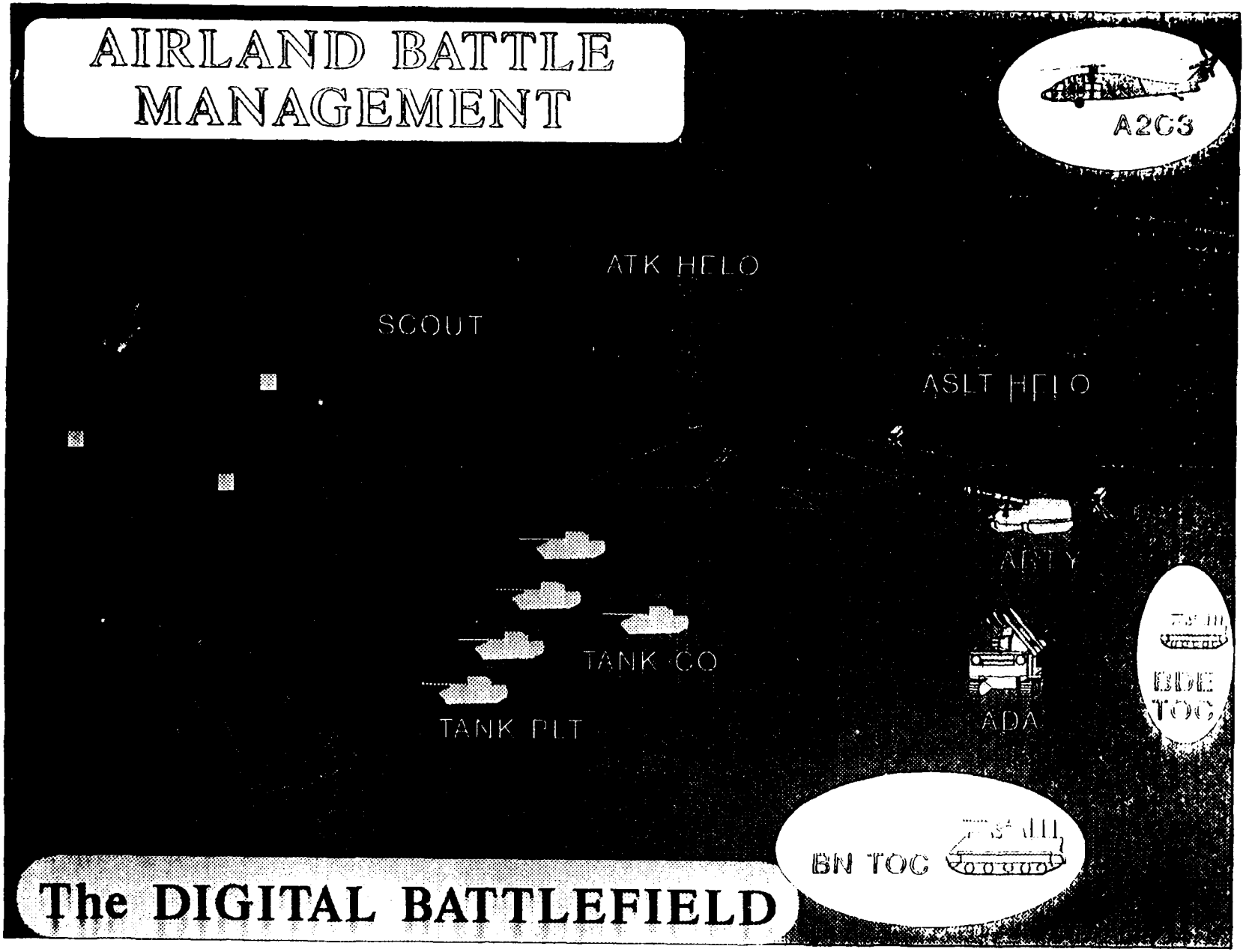

RADAR DECEPTION
AND JAMMING
ATK HELO
ARTY
The DIGITAL BATTLEFIELD

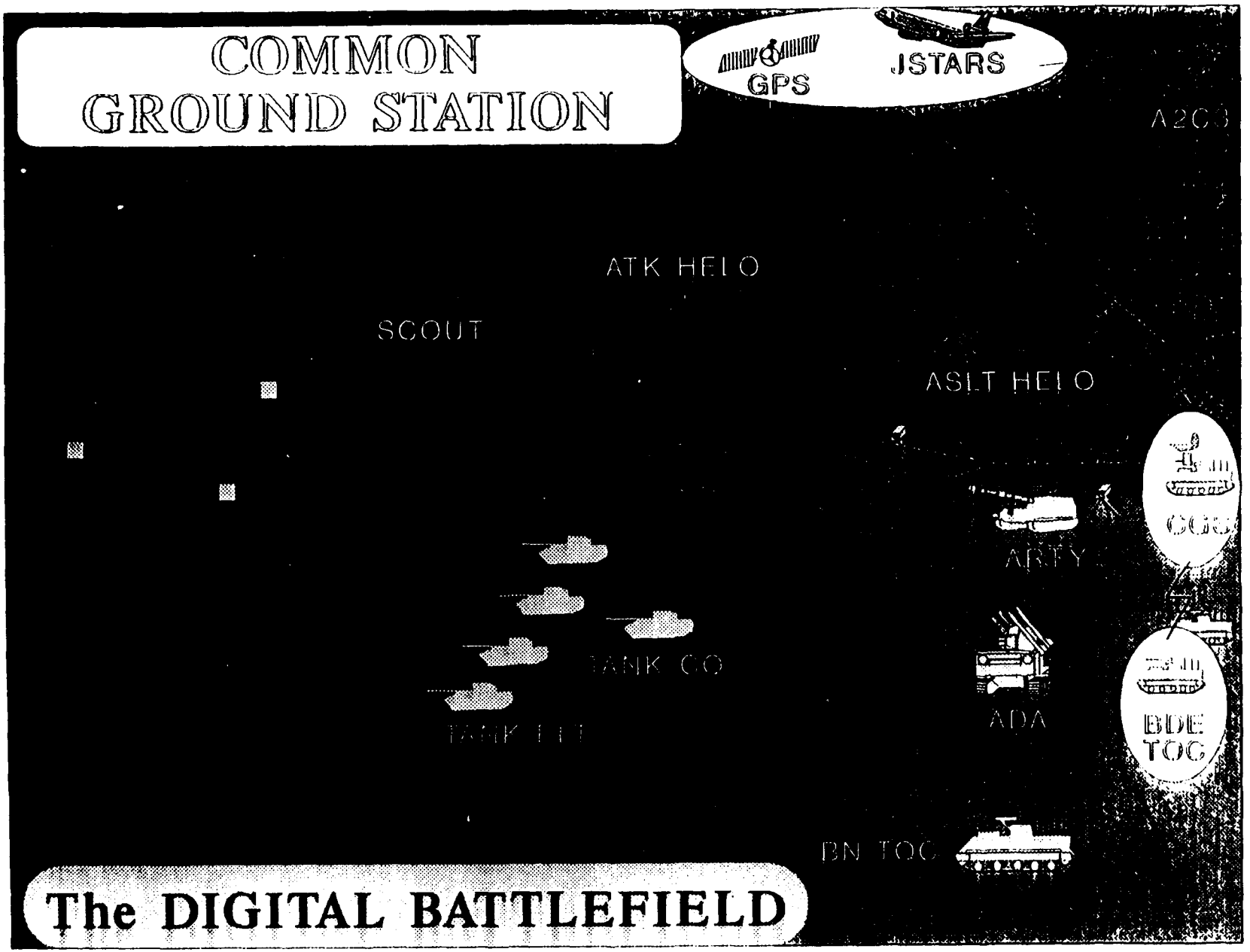

REMOTE SENTRY
(Multiple Sensor Suite)
ATK HELO
The DIGITAL BATTLEFIELD

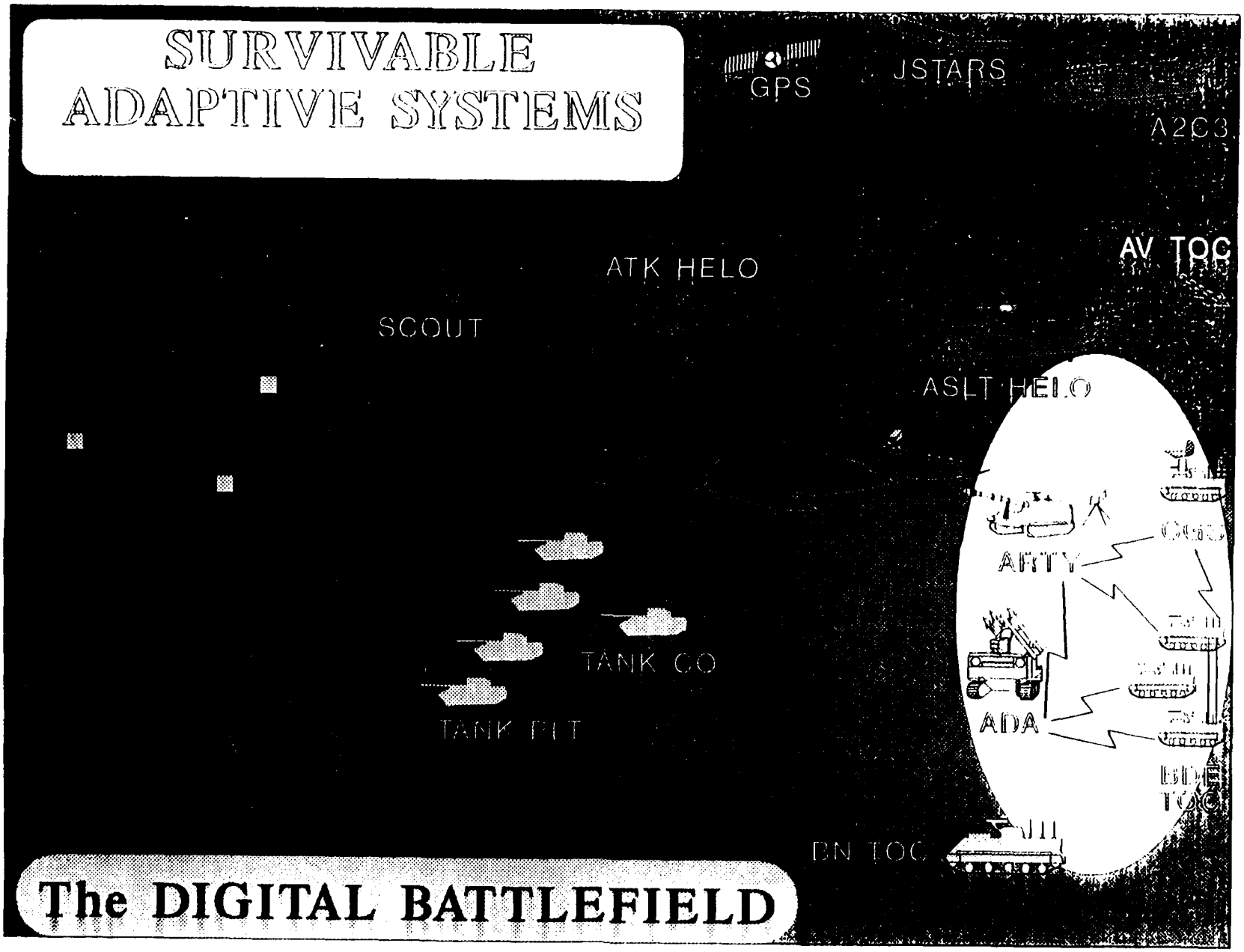

BATTLEFIELD
COMBAT I.D.
SCOUT
ATK HELO
ARTY
TANK CO
TANK PLT
The DIGITAL BATTLEFIELD

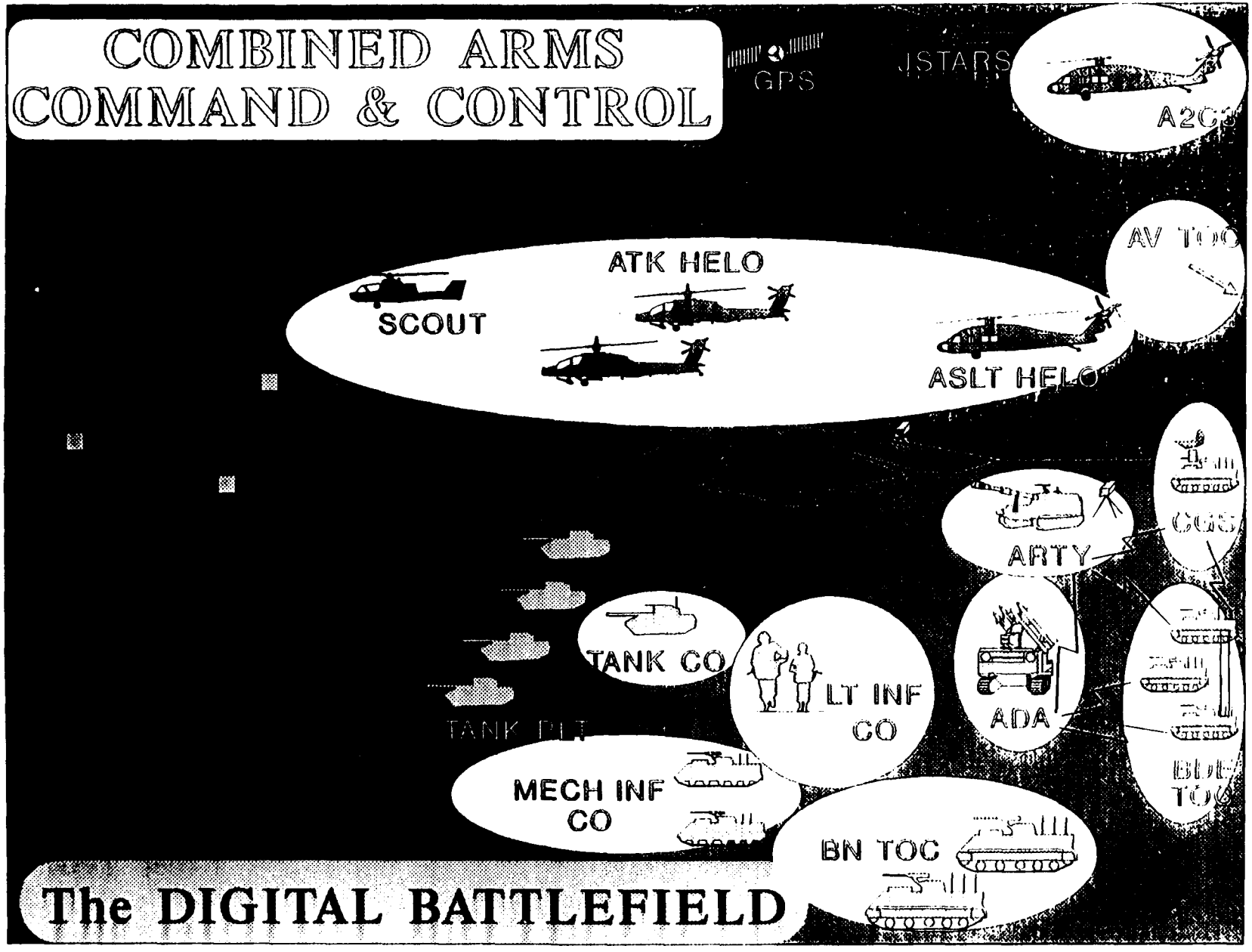

ADV AIR DEFENSE
ELECTRO-OPTIC SYS.
ATK HELO
SCOUT
TANK CO
TANK PLT
ADA
The DIGITAL BATTLEFIELD

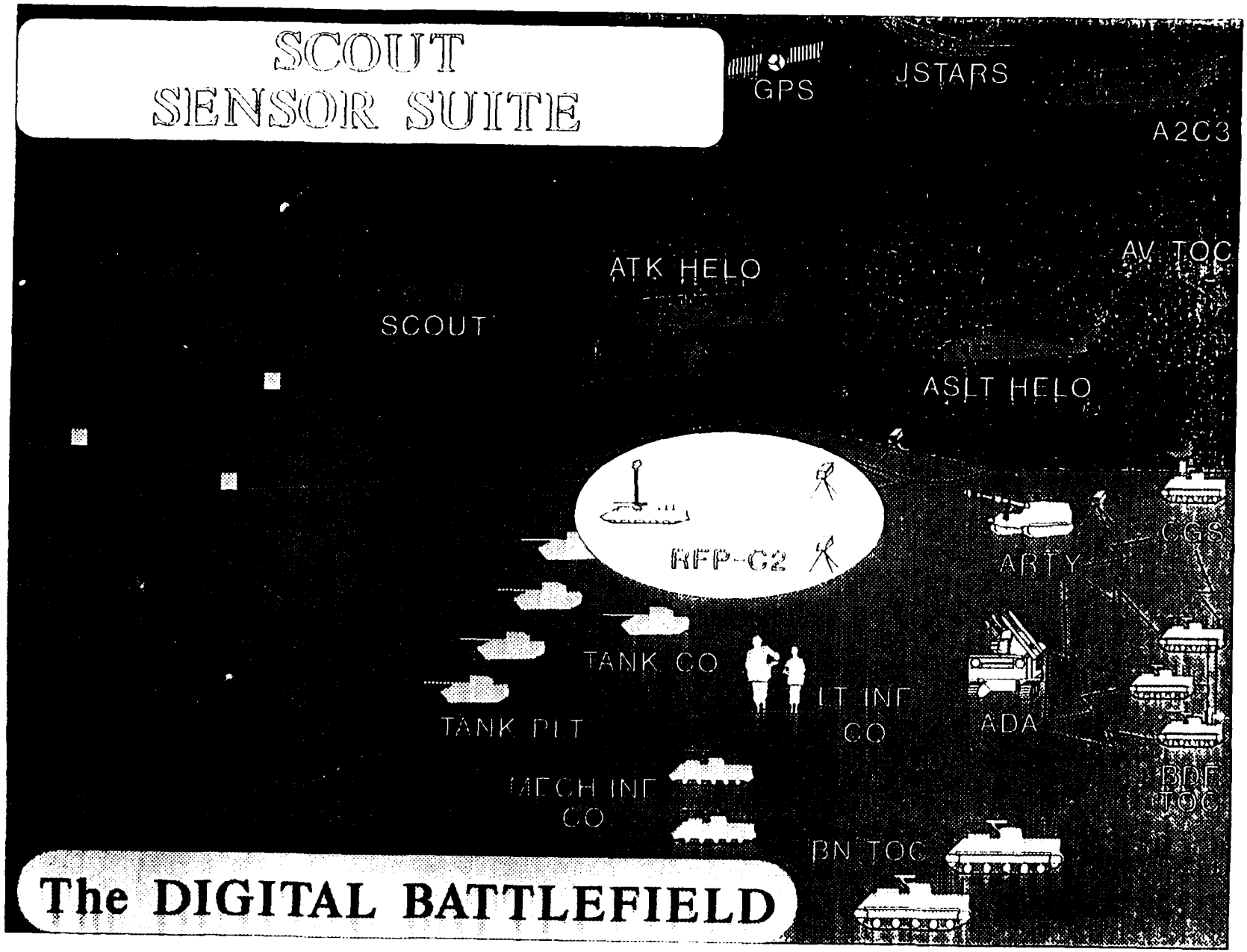

ADVANCED
PERSONNEL AID
ATK HELO
SCOUT
ASLT HELO
ARTY
TANK CO
ADA
The DIGITAL BATTLEFIELD

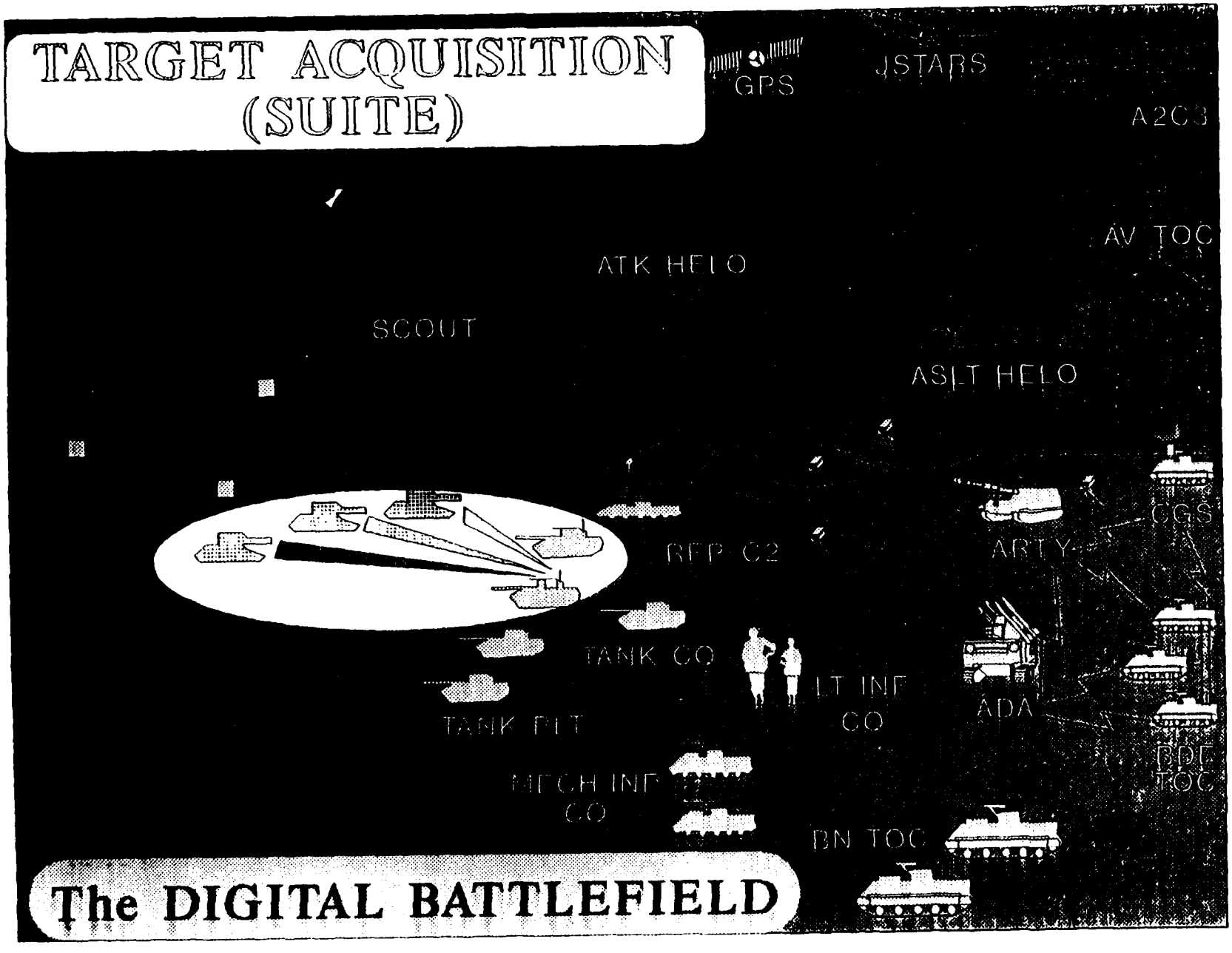

AIRLAND BATTLE MANAGEMENT
A2C3
ATK HELO
SCOUT
ASLT HELO
ARTY
TANK CO
TANK PLT
ADA
BDE TOC
BN TOC
The DIGITAL BATTLEFIELD

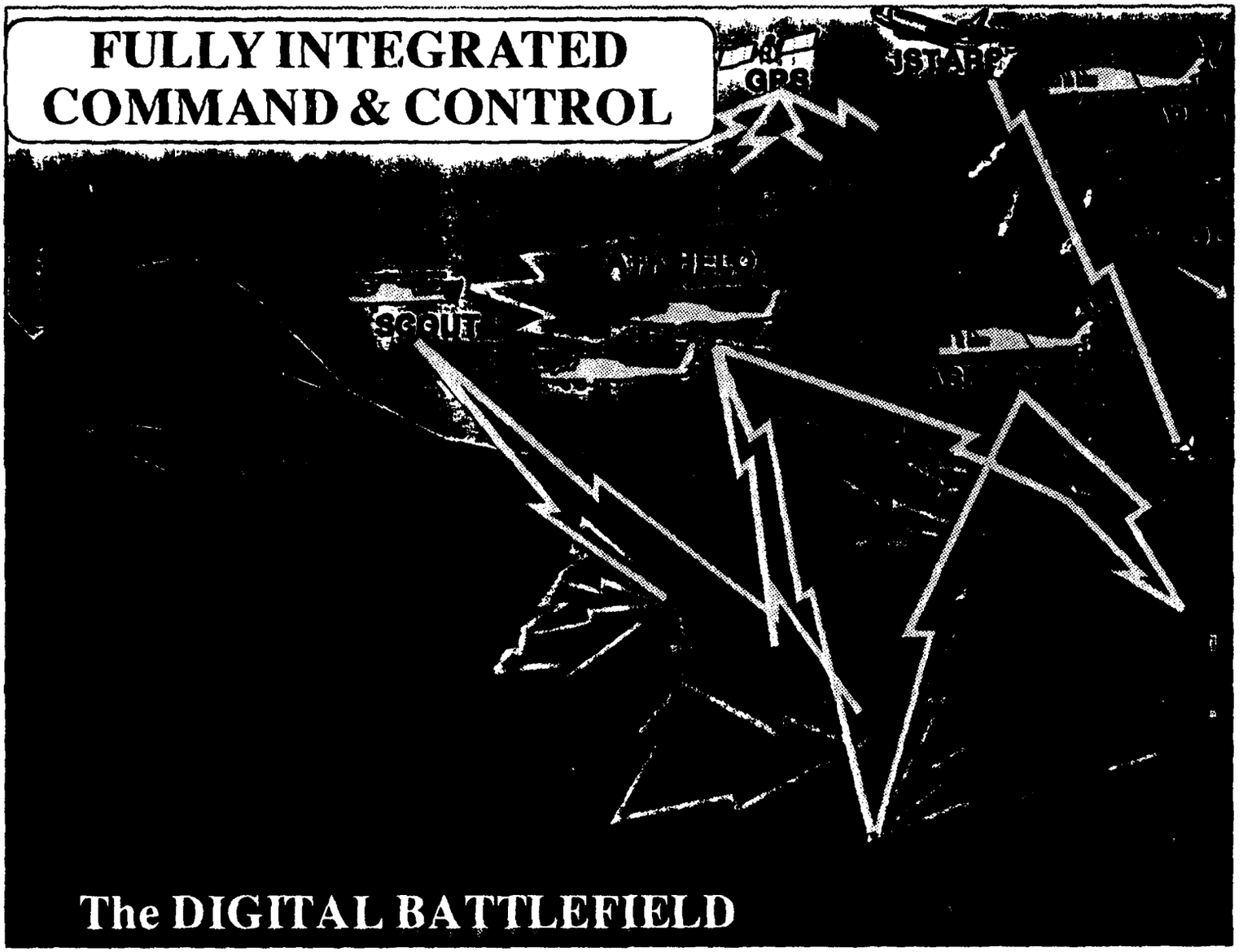

COMMON
GROUND STATION
GPS
JSTARS
A2C3
ATK HELO
SCOUT
ASLT HELO
ARTY
ADA
BDE
TOC
BN TOC
The DIGITAL BATTLEFIELD


SURVIVABLE
ADAPTIVE SYSTEMS
GPS
JSTARS
A2C3
AV TOC
ATK HELO
SCOUT
ASLT HELO
ARTY
ADA
TANK CO
TANK PLT
BN TOC
The DIGITAL BATTLEFIELD


COMBINED ARMS
COMMAND & CONTROL
GPS
JSTARS
A2C2
AV TOC
ATK HELO
SCOUT
ASLT HELO
ARTY
TANK CO
LT INF
CO
ADA
TANK PLT
MECH INF
CO
BN TOC
The DIGITAL BATTLEFIELD


SCOUT
SENSOR SUITE
GPS
JSTARS
A2C3
AV TOC
ATK HELO
SCOUT
ASLT HELO
RFP-C2
CGS
ARTY
TANK CO
TANK PLT
LT INF
CO
ADA
MECH INF
CO
BDE
TOC
BN TOC
The DIGITAL BATTLEFIELD


TARGET ACQUISITION
(SUITE)
GPS
JSTARS
A2C3
AV TOC
ATK HELO
SCOUT
ASLT HELO
CGS
ARTY
REP C2
TANK CO
LT INF
CO
ADA
TANK PLT
MECH INF
CO
BDE
TOC
BN TOC
The DIGITAL BATTLEFIELD


FULLY INTEGRATED
COMMAND & CONTROL
GPS
The DIGITAL BATTLEFIELD

ADVANCED TECHNOLOGY DEMOs (ATD)

CECOM TECHNOLOGIES

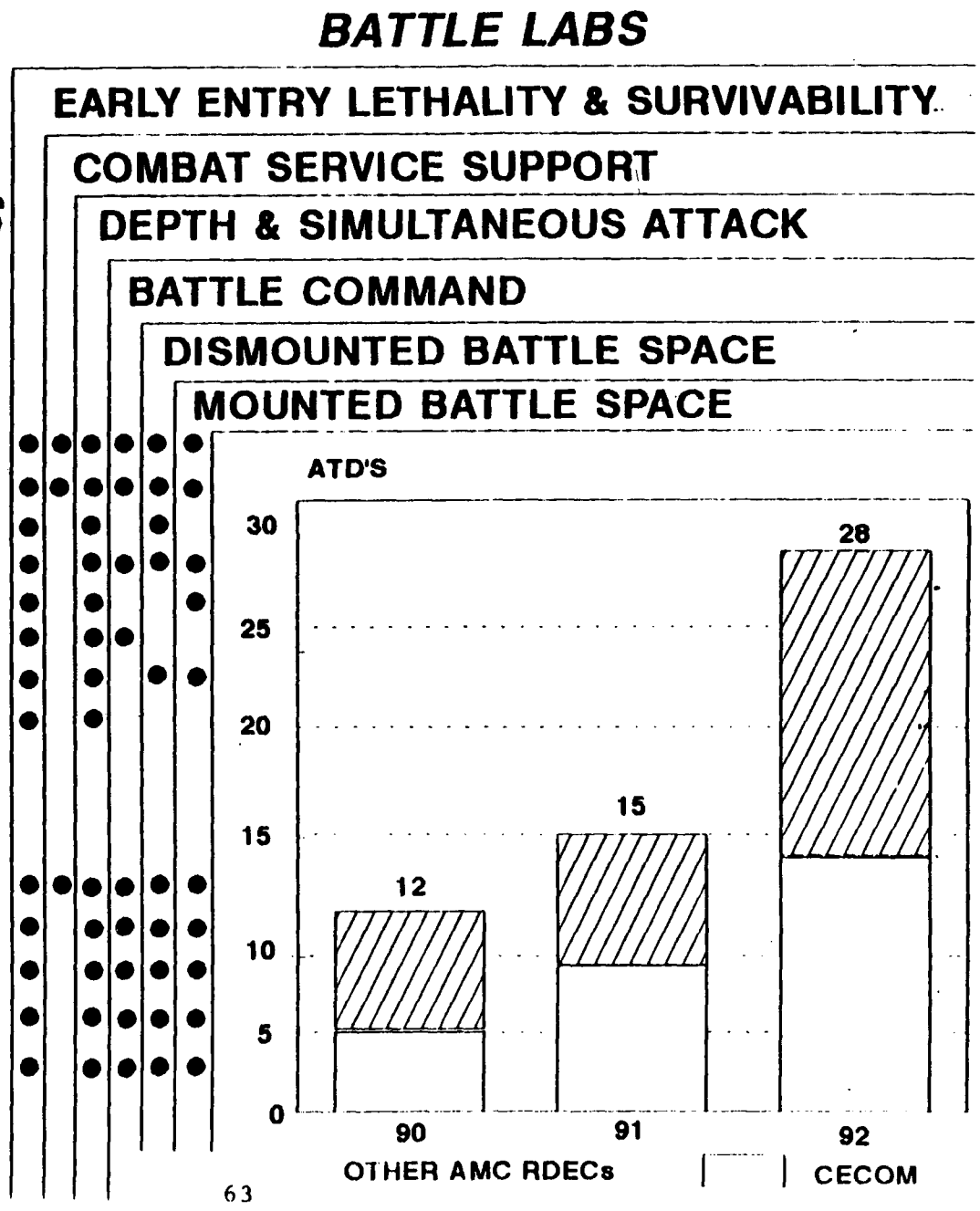
EXISTING APPROVED ATDs

SURVIVABLE ADAPTIVE SYSTEMS
AIRLAND BATTLE MANAGEMENT
BISTATIC RADAR FOR WPNS LOCATION
REMOTE SENTRY
MULTISENSOR TARGETING - AIR
RADAR DECEPTION & JAMMING
ADVANCED PERSONNEL AID
ADV AIR DEF ELECTRO-OPTICAL SYS

NEW APPROVED ATDs

COMBINED ARMS COMM & CONTROL
COMMON GROUND STATION
BATTLEFIELD COMBAT ID/IFF
SCOUT SENSOR SUITE
TARGET ACQUISITION

* ATD START DATES RUN 90-95



ADVANCED TECHNOLOGY DEMOs (ATD)

CECOM TECHNOLOGIES

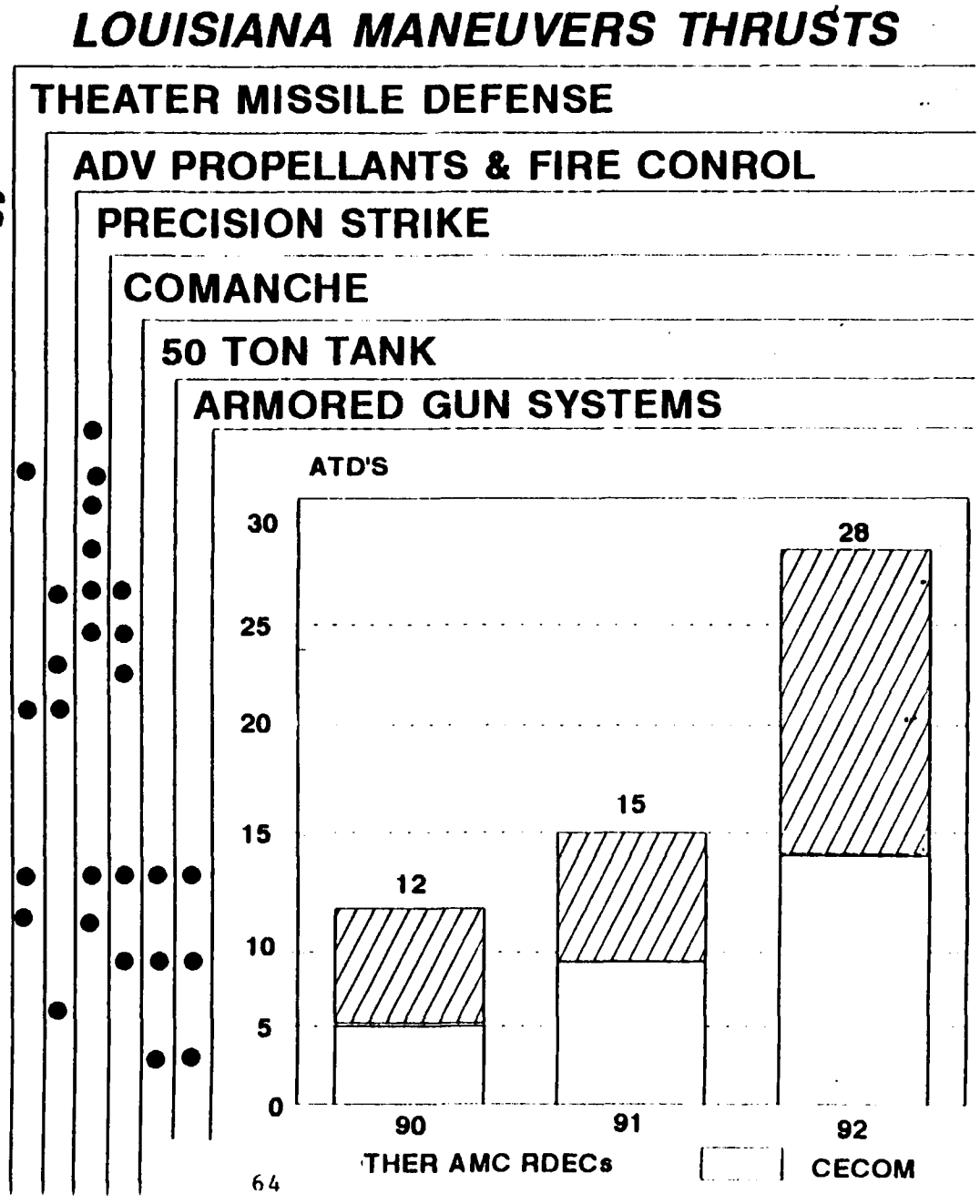
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SURVIVABLE ADAPTIVE SYSTEMS
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NEW APPROVED ATDs

COMBINED ARMS COMM & CONTROL
COMMON GROUND STATION
BATTLEFIELD COMBAT ID/IFF
SCOUT SENSOR SUITE
TARGET ACQUISITION

* ATD START DATES RUN 90-95



SUMMARY

THE PERVASIVE NATURE OF CECOM TECHNOLOGIES MAKES US AN IMPORTANT PARTNER WITH THE USER IN DEVELOPING PRODUCTS WHICH ENSURE DECISIVE VICTORY





US ARMY
RESEARCH LABORATORY

ELECTRONICS and POWER SOURCES

ELECTRONICS FOR THE FUTURE ARMY

PRESENTED AT: CECOM APBI

SESSION I: ARMY'S STRATEGIES FOR THE FUTURE

PRESENTED BY:

DR. C.G. THORNTON
DIRECTORATE EXECUTIVE
ELECTRONICS and POWER SOURCES DIRECTORATE
U.S ARMY RESEARCH LABORATORY
FORT MONMOUTH, NEW JERSEY

19 - 20 MAY 1993



ELECTRONICS and POWER SOURCES BUSINESS AREAS



US ARMY
RESEARCH LABORATORY

MICROWAVE/MILLIMETER/MIMIC DEVICES

ACOUSTO/FERROELECTRONICS

DESIGN/SIMULATION, MODELING, CONCURRENT ENGINEERING, AND PROTOTYPING

VIRTUAL ENVIRONMENT (DISPLAY) DEVICES

DEVICE RESEARCH

- NANO/OPTOELECTRONIC/PHOTONIC DEVICES
- OPTICAL MATERIALS/DEVICES AND FOCAL PLANE ARRAYS
- ADVANCED SENSOR/ACTUATOR DEVICES

POWER SOURCES (INCLUDING PULSE POWER)

RELIABILITY AND MANUFACTURING SCIENCE

ARL, ELECTRONICS AND POWER SOURCES DIRECTORATE FUTURE DIRECTIONS

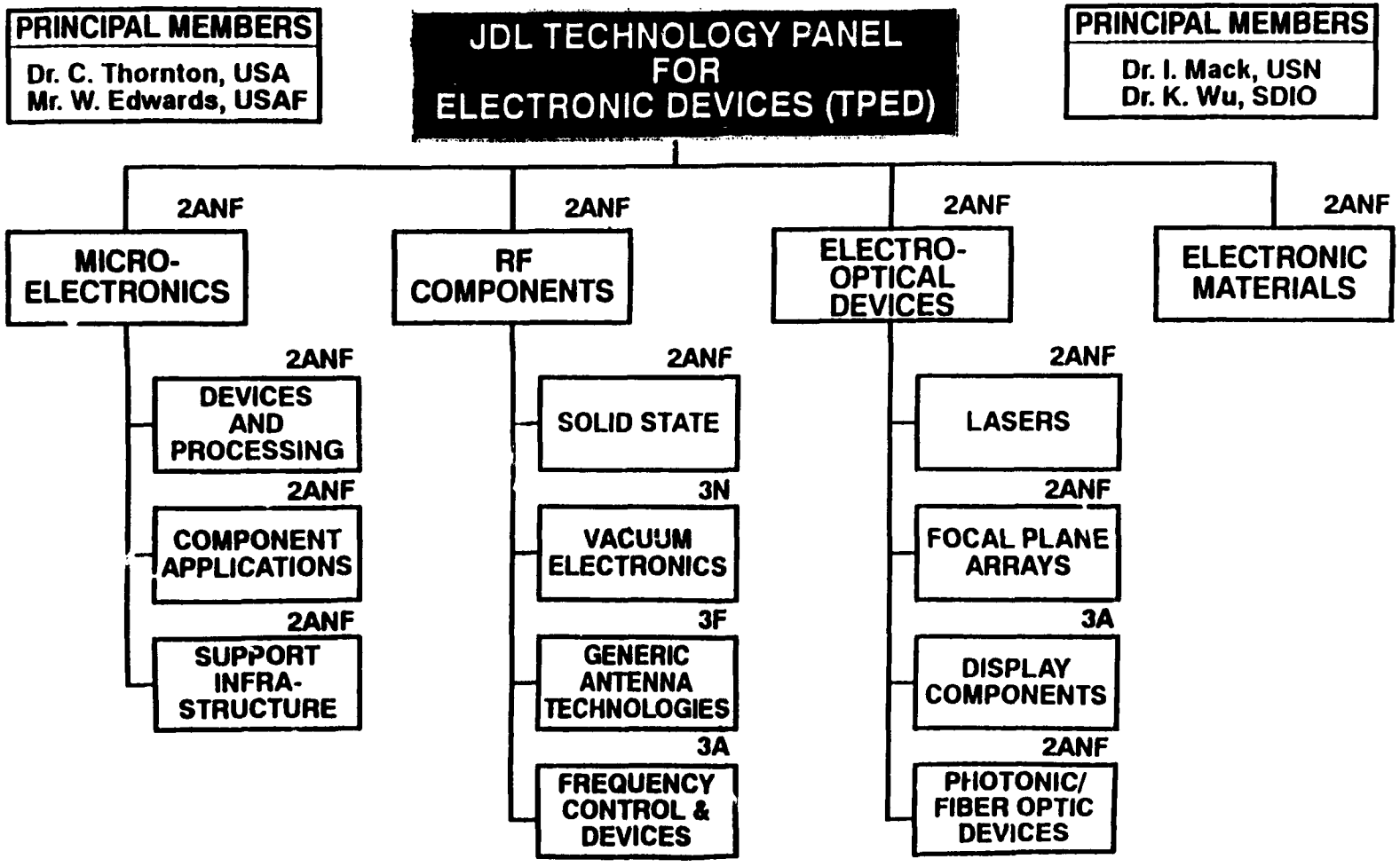
TODAY	*TOMORROW*	*BEYOND TOMORROW*
MICROELECTRONICS	NANO-OPTO ELECTRONICS GIGAFLOP PROCESSING	MONOLITHIC NANO/OPTO AND MICROPHOTONIC DEVICES TERAFLOP PROCESSING
MW/MMW MONOLITHIC ELECTRONICS AND PHOTONICS	MW/MMW/PHOTONIC ARRAYS QUASI-OPTICAL, OPTICAL MIMICs	WAFER SCALE QUASIOPTICAL TERAHERTZ BANDWIDTH
DISPLAYS, INFORMATION INTERFACE	VIRTUAL ENVIRONMENT DEVICES	RETINAL INTERFACE TELEPRESENCE ROBOTICS
POWER SOURCES	LOW COST PRIMARY & RECHARGEABLE BATTERIES	BATTERIES & FUEL CELLS WITH HUNDREDS OF WATT-HOURS/KG
PULSE POWER	HIGH POWER DENSITY COMPONENTS	COMPACT PULSERS/POWER CONDITIONING FOR KE/DE WEAPONS & COMBAT VEHICLES
DISCRETE/OPTO ELECTRONICS COOLED FPAs	MONOLITHIC OEICs LOW COST COOLED/UNCOOLED ARRAYS	HIGH-RESOLUTION, UNCOOLED SMART ARRAYS
ACOUSTOELECTRONICS AND SENSORS	INTEGRATED ACOUSTO-OPTICPROCESSORS, ENVIRONMENTAL SENSORS	SMART MICROSENSORS, BIOSENSORS, SELF CORRECTING CLOCKS

TRI-SERVICE RELIANCE

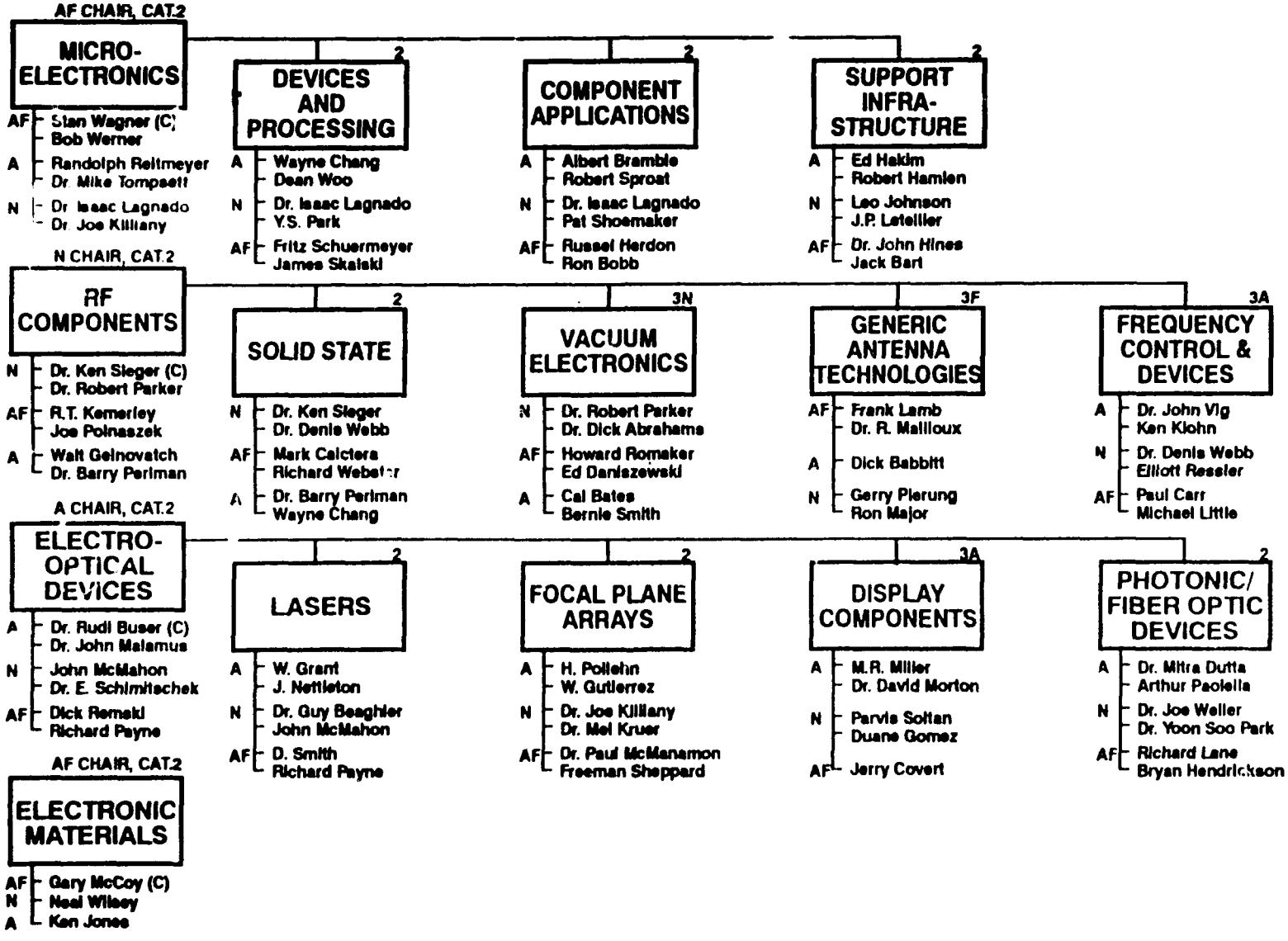
PROJECT RELIANCE ELECTRON DEVICES

JDL TECH PANEL ELECTRONIC DEVICES

ELECTRONICS and POWER SOURCES

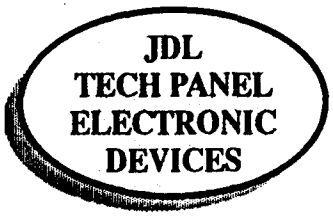


TRI-SERVICE CHAIRMEN AND MEMBERS OF TFED SUBPANELS AND SUB-SUBPANELS





ELEMENTS OF A JOINT EFFORT



- **SERVICE INTERDEPENDENT NEEDS**
- **JOINT WORK STATEMENT/BAA DESCRIPTOR**
- **JOINT PROPOSAL EVALUATION/SOURCE SELECTION**
- **SINGLE SERVICE CONTRACTS - "JOINTLY OWNED"**
- **JOINT CONTRACT MONITORING**
- **COMPLEMENTARY IN-HOUSE PROGRAMS**
- **TRI-SERVICE TECHNOLOGY INSERTION**



TRI SERVICE/DARPA MAJOR NEW PROGRAM INITIATIVES



US ARMY
RESEARCH LABORATORY

ELECTRONICS and POWER SOURCES

- MIMIC PHASE II
- MICROWAVE ANALOG FRONT-END TECHNOLOGY (MAFET)
- RAPID PROTOTYPING OF APPLICATION SPECIFIC SIGNAL PROCESSORS (RASSP)
- MICROWAVE HARDWARE DESCRIPTION LANGUAGE (MHDL)
- APPLICATION-SPECIFIC ELECTRONIC MODULES (ASEM)
- III-V MQW VOLTAGE TUNABLE DETECTOR FOR FOCAL PLANE ARRAYS

MICROWAVE/MILLIMETER WAVE DEVICES

TECHNOLOGY AREAS OF INTEREST

- INTEGRATED PHOTONIC - MMIC's
- QUASI-OPTICAL MILLIMETER WAVE ELECTRONICS
- MICROWAVE/MILLIMETER WAVE IMAGING TECHNOLOGY
- PHYSICS BASED MODELLING OF MW + PHOTONIC DEVICES
- MICROWAVE HARDWARE DESCRIPTION LANGUAGE (MHDL)
- MICROWAVE/MILLIMETER WAVE RELIABILITY

OBJECTIVES:

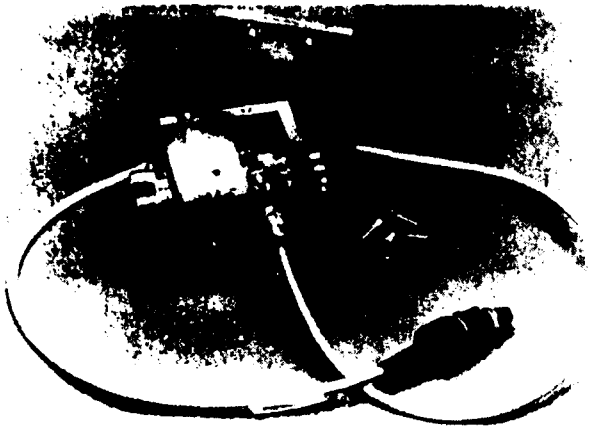
- MEET PERFORMANCE REQUIREMENTS OF MW/MMW ELECTRONICS FOR MISSILE GUIDANCE, RADAR, JAMMERS, AND SENSORS.
- DEVELOP OPTICAL/MW ICs FOR DISTRIBUTION OF CONTROL SIGNALS FOR NEXT GENERATION ACTIVE PHASED-ARRAY RADAR AND COMMUNICATIONS.
- DEVELOP MODELING AND SIMULATION TECHNIQUES FOR MW/MMW DEVICES AND PROCESSES.

MIMIC PROGRAM STATUS

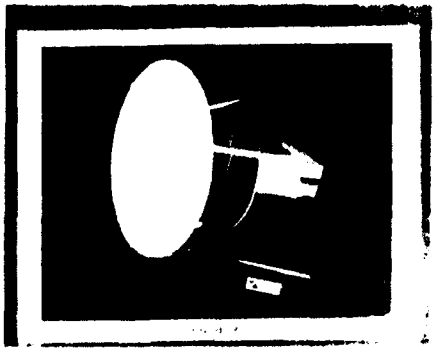
- **PHASE 1 - 93 UNIQUE CHIPS FOR 20 MILITARY SYSTEMS DESIGNED**
- **PHASE 2 - 76 COMPLEX CHIPS FOR MORE THAN 20 PRIMARY APPLICATIONS**
- **ADVANCED POWER PROCESSES (HBT, HEMT AND PHEMT) ARE INTRODUCED**
- **HBT TECHNOLOGY UTILIZED FOR LOW PHASE NOISE VCO APPLICATONS**
- **60% OF CHIP RF FUNCTIONAL ON FIRST PASS USING ADVANCED CAD TOOLS**
- **REDUCED ON-WAFER TESTING (FROM 5 hours, TO 6 minutes ON WAFER)**
- **COST OF QUALIFIED CHIPS REDUCED FROM $500 TO $3 PER MM SQUARE**
- **MORE THAN 100 CHIP TYPES OFFERED FOR SALE**

MICROWAVE/MILLIMETER WAVE

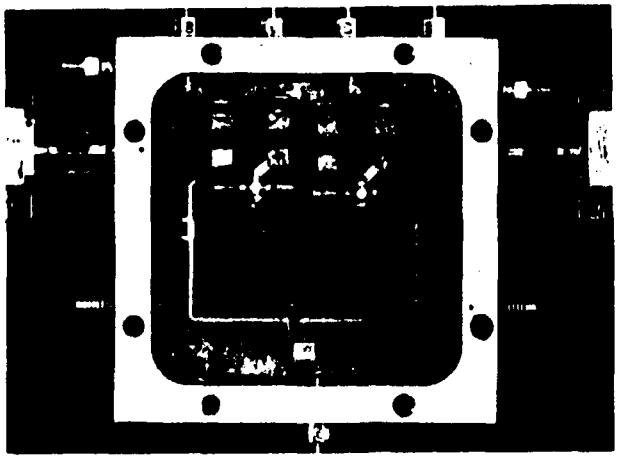
INTEGRATE
PHOTONIC TRANSMITTER



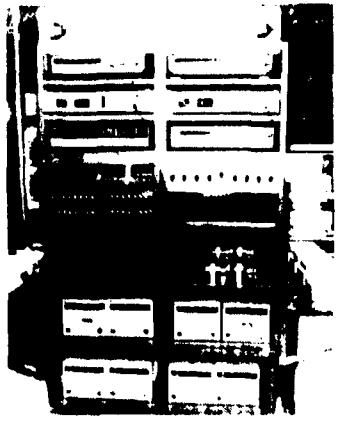
MILLIMETER WAVE 8x8
FOCAL PLANE ARRAY IMAGER



OPTICALLY CONTROLED
STABLE MICROWAVE SOURCE



AUTOMATIC MMIC
RELIABILITY TEST FACILITY



ACOUSTO/FERROELECTRONICS

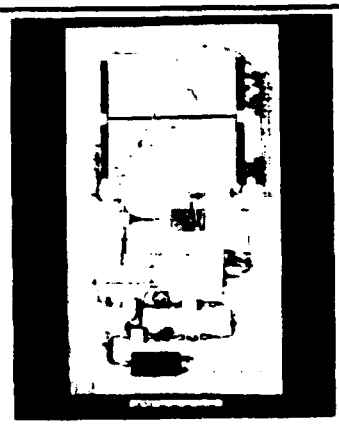
TECHNOLOGY AREAS OF INTEREST

- SURFACE ACOUSTIC WAVE DEVICES
  - SIGNAL PROCESSORS
  - LOW-NOISE OSCILLATORS
  - CHANNELIZERS
- FERROELECTRONIC DEVICES
  - SENSORS
- LOW-NOISE/VIBRATION-IMMUNE CRYSTAL OSCILLATORS
  - QUARTZ CRYSTAL RESONATORS
  - NEW PIEZOELECTRIC DEVICES/RESONATORS
- MICROSENSORS

OBJECTIVE:

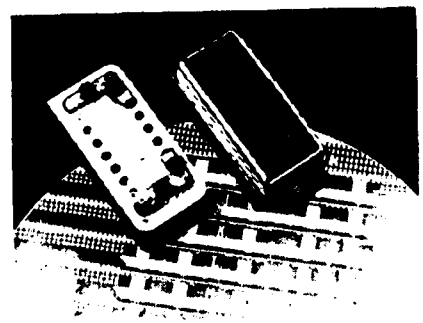
- DEVELOP ULTRA-STABLE, LOW NOISE FREQUENCY SOURCES AND CLOCKS FOR IFF, RADAR AND COMMUNICATIONS.
- PROVIDE ACOUSTIC-WAVE ANALOG SIGNAL PROCESSING DEVICES FOR REAL-TIME MULTIPLE EMITTER AND PASSIVE TARGET DETECTION IN HIGH DENSITY/HIGH-CLUTTER SIGNAL ENVIRONMENTS.

ACOUSTO/FERROELECTRONICS



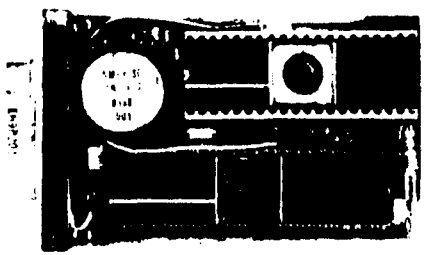
LOW NOISE EXCITER FOR TPQ-36 TRANSMITTER

- EXCELLENT CLUTTER SUPPRESSION
- REDUCED PROBABBILITY OF FALSE ALARMS
- ENHANCED TARGET DETECTION



SAW BANDPASS FILTER FOR ELINT CHANNELIZER

- LOW LOSS, LOW COST
- HIGH SPURIOUS REJECTION
- MONOLITHIC



PHASE II OF MCXO
GIVING 2 MILLISECOND PER DAY ACCURACY



DRO/FET TRANSMITTER SOURCE FOR SOF BEACON

- ±MHz FREQUENCY STABILITY
- INSTANT TURN-ON
- SMALL SIZE/WEIGHT/POWER CONSUMPTION

DESIGN/SIMULATION, MODELING, CONCURRENT ENGINEERING

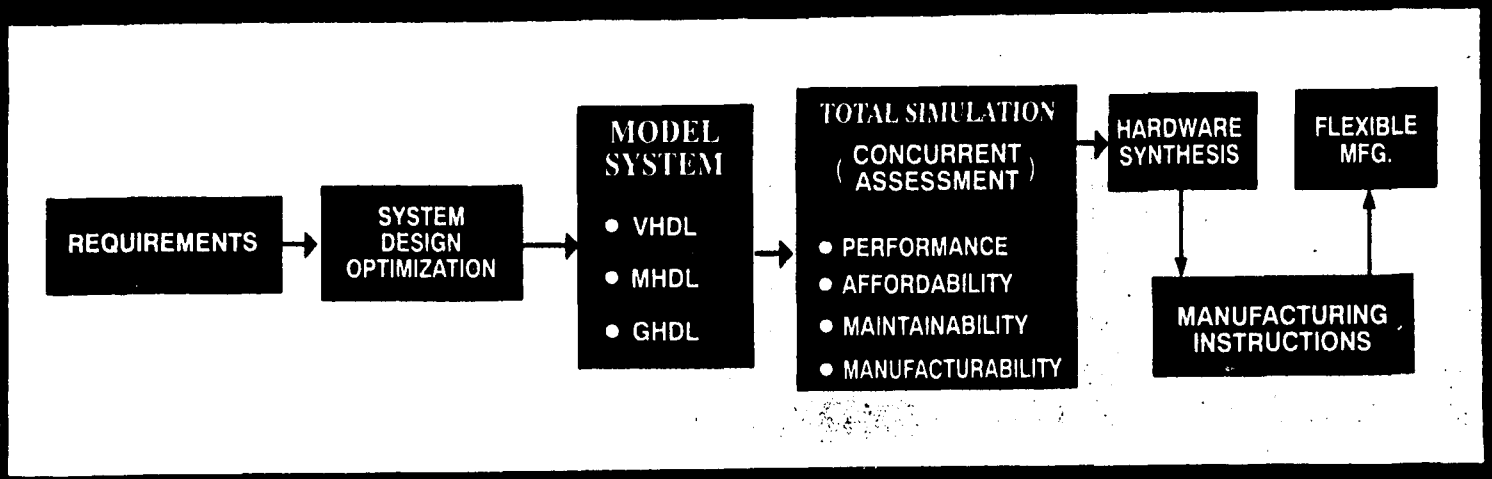
TECHNOLOGY AREAS OF INTEREST

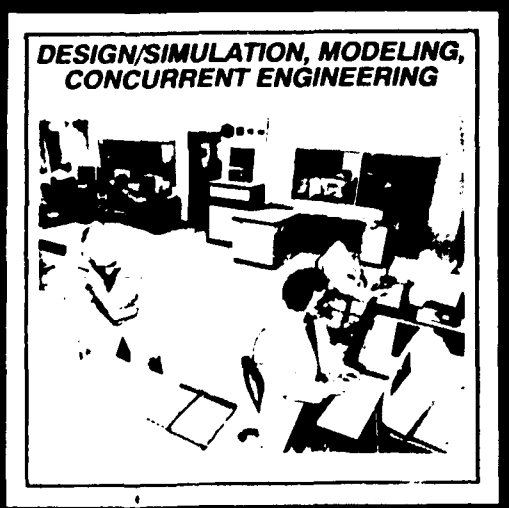
- **ELECTRONIC MODULES & COMPONENTS**
  - RAPID PROTOTYPING OF APPLICATON - SPECIFIC SIGNAL PROCESSORS (RASSP)
  - APPLICATION-SPECIFIC ELECTRONIC MODULES (ASEM)
  - DIRECT DIGITAL SYNTHESIZERS
  - NEURAL NETWORKS
- **DEVICES AND PROCESSING**
  - SILICON TECHNOLOGY
  - III - V DEVICES
- **PACKAGING**
  - 3-DIMENSIONAL PACKAGING
  - HIGH-POWER-MICROWAVE-IMMUNE PACKAGING

OBJECTIVE:

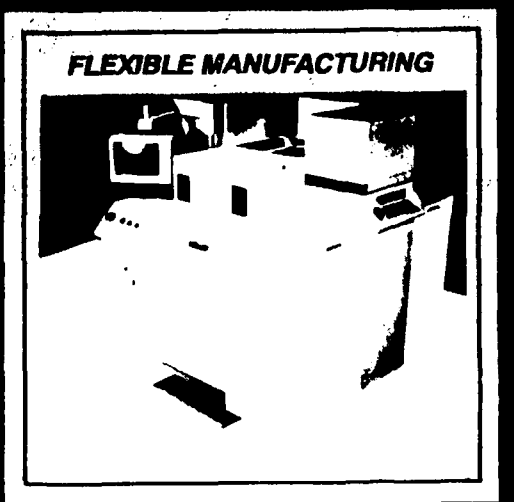
- **MAINTAIN DoD S&T LEAD IN APPLICATION OF THE NEXT MAJOR ADVANCES IN MICROELECTRONICS, REDUCING SIZE & WEIGHT BY A FACTOR OF 20 WHILE INCREASING THROUGHPUT TO MULTI-GIGAFLOP LEVELS. IMPLEMENT THE ARMY PORTION OF THE RASSP AND ASEM PROGRAMS.**
- **ACHIEVE FAILURE-FREE MICROELECTRONICS.**

THE SIX WEEK DEVELOPMENT CYCLE









VIRTUAL ENVIRONMENT (DISPLAY) DEVICES

TECHNOLOGY AREAS OF INTEREST

- ELECTRONIC MODULES AND HIGH RESOLUTION DISPLAY COMPONENTS
- HI-RESOLUTION MULTICOLOR DISPLAYS

OBJECTIVE:

- PROVIDE SOLDIER/DISPLAY INTERACTIVE INTERFACES TO SERVE AS A FORCE MULTIPLER IN INFORMATION INTENSIVE BATTLEFIELD APPLICATIONS.
- DEVELOP PROTOTYPE, HIGH-RESOLUTION, RUGGED, LOW POWER, DISPLAY PANELS IN SIZES RANGING FROM MINIATURE PERSONAL VIEWERS TO LARGE SCREEN DISPLAYS
- DEVELOP, DEMONSTRATE, AND EVALUATE PROTOTYPE MULTICOLOR, HIGH RESOLUTION FLAT PANEL INTERACTIVE DISPLAYS FOR MAN PORTABLE, VEHICLE, AIRCRAFT AND GROUND APPLICATIONS

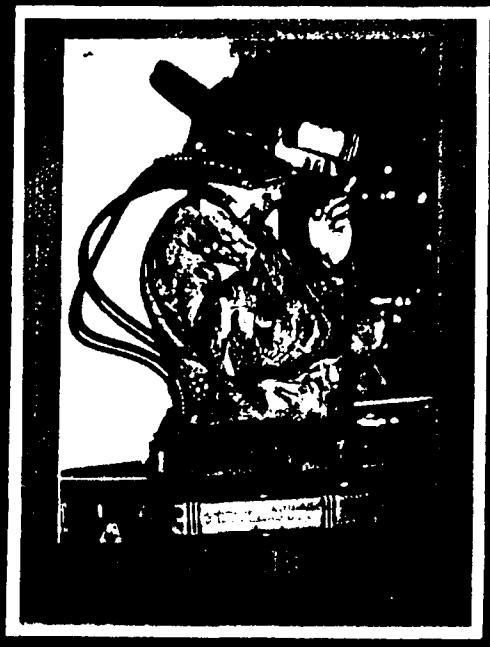
PRINCIPAL USERS:

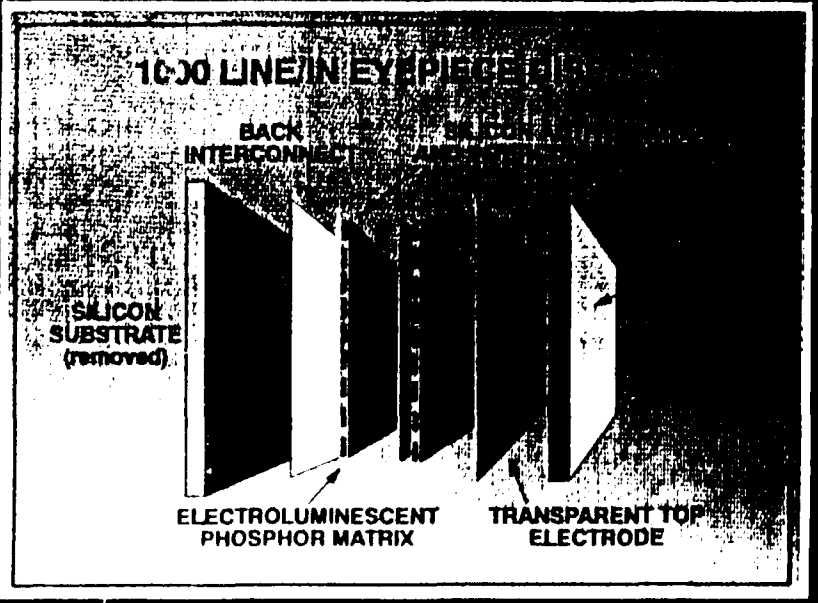
- CENTERS/LABS: CECOM, MICOM, TACOM, CACDA, HEL, NAVY, AIR FORCE, MARINES
- PMs: AMMOLOG, TMDE, OPTADS, AFATDS

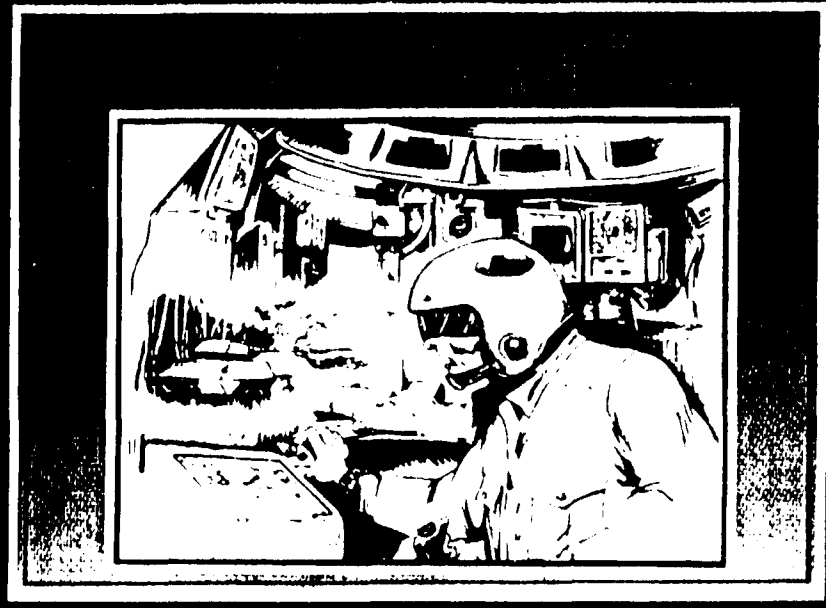
VIRTUAL ENVIRONMENTS



HELMET MOUNTED DISPLAY







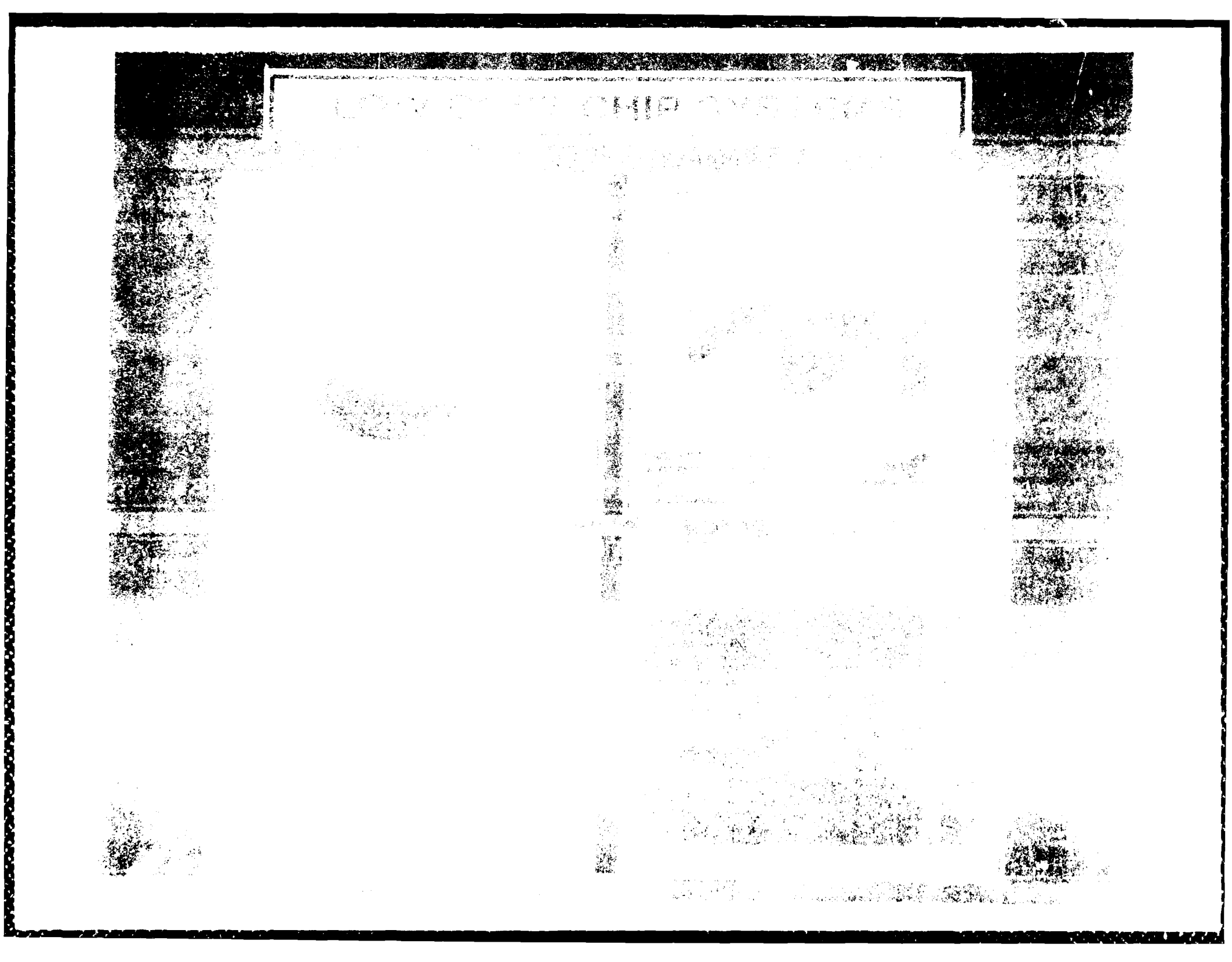
ELECTRONIC DEVICE RESEARCH

TECHNOLOGY AREAS OF INTEREST

- NANO/OPTO/PHOTOELECTRONIC DEVICES
- OPTICAL MATERIAL/DEVICES AND FOCAL PLANE ARRAYS
- ADVANCED SENSORS AND ACTUATORS (MEMs)
- INFRARED DETECTOR TECHNOLOGY
- HIGH TEMPERATURE SUPERCONDUCTING DEVICES
- PERMANENT MAGNET DESIGN

OBJECTIVE:

- DEVELOP THE MATERIAL AND DEVICE TECHNOLOGY FOR NANO SCALE ELECTRONIC AND OPTOELECTRONIC DEVICES REQUIRED FOR HIGH FREQUENCY MICROELECTRONICS, RADAR AND OPTICAL SIGNAL PROCESSING. CREATE BOTH COOLED AND UNCOOLED INFRARED TECHNOLOGY FOR LOW-COST LARGE MULTI-COLOR INFRARED STARING ARRAYS. PROVIDE HIGH TEMPERATURE SUPERCONDUCTING DEVICES FOR RADAR RECEIVERS.



POWER SOURCES (INCLUDING PULSE POWER)

TECHNOLOGY AREAS OF INTEREST

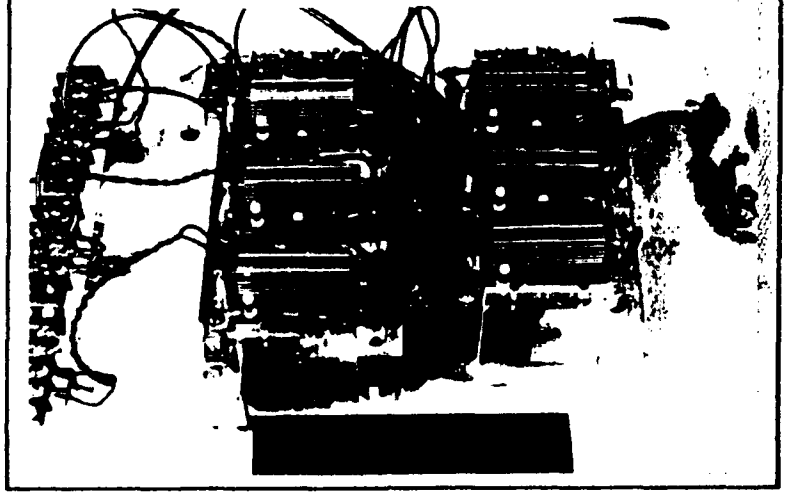
- HIGH-RATE, HIGH-ENERGY, ENVIRONMENTALLY-BENIGN THROWAWAY BATTERIES
- HIGH-ENERGY RECHARGEABLE (MULTICAPABLE) BATTERIES
- ADVANCED ENERGY STORAGE CONCEPTS
- HIGH-ENERGY, HIGH-REP RATE CAPACITORS
- HIGH-REP RATE, HIGH-ENERGY PULSER SWITCHES
- HIGH-ENERGY PULSER COMPONENTS

OBJECTIVE:

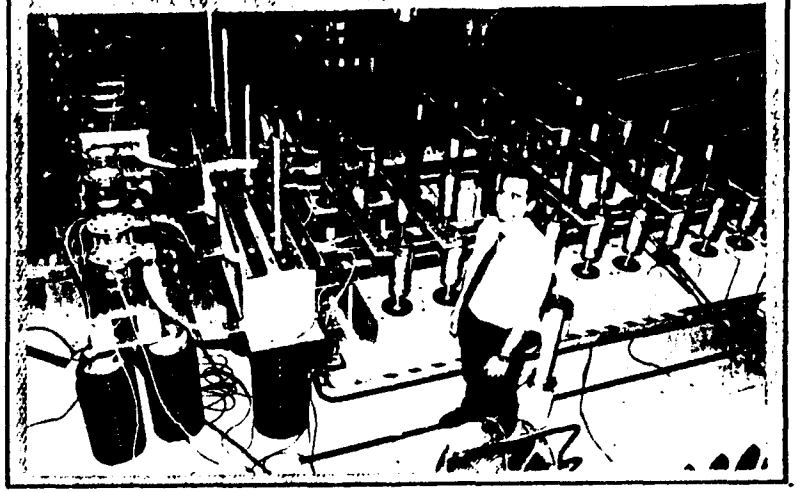
- PROVIDE PORTABLE POWER FOR THE FULL RANGE OF ARMY EQUIPMENTS.
- IMPROVE PULSE POWER CONDITIONING COMPONENTS AND TECHNIQUES FOR DIRECTED ENERGY/KINETIC ENERGY WEAPONS, AND ELECTRIC DRIVES/ACTUATORS FOR COMBAT VEHICLES.

POWER FOR THE SOLDIER

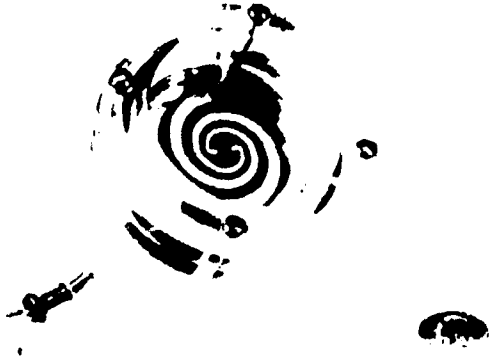
ADVANCED COMBAT VEHICLE ELECTRIC DRIVE/ACTUATOR TEST BED



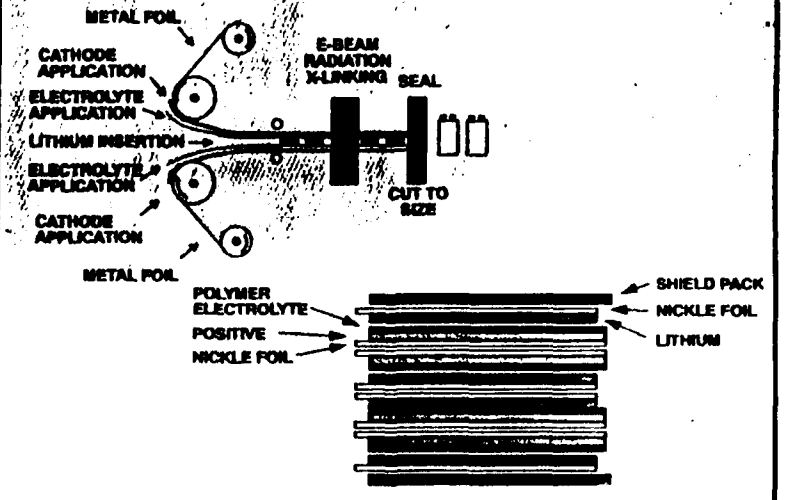
2 MEGAJOULE MODULE OF 6 MJ PULSER FOR (ETC) GUN TO EVALUATE COMPONENTS



WIDEBAND RADAR PULSER/ANTENNA

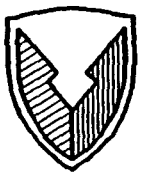


LOW-COST RECHARGEABLE LITHIUM BATTERY





PROPOSED POWER SOURCES BAA



US ARMY
RESEARCH LABORATORY

ELECTRONICS and POWER SOURCES

- LOW COST RECHARGEABLE PRIMARY BATTERY FOR GENERAL MILITARY APPLICATION
- RECHARGEABLE LITHIUM-LIKE BATTERIES (RLLB)
- IMPROVED MAGNESIUM BATTERIES
- PRIMARY BATTERY FOR SOLDIER SYSTEM, MAXIMUM ENERGY DENSITY
- PRIMARY BATTERY FOR SOLDIER SYSTEM, MAXIMUM POWER DENSITY

EPSD SPONSORED CONSORTIA/COOPERATIVES

SUBJECT	MEMBERS
• LOG R&D - COST REDUCTION	• AT&T, TRW, RTI, INTERMETRICS, IBM, HONEYWELL, GOULD
• METEOROLOGICAL DATA SYSTEM	• TRW, SAWTEK, TRACOR, BENDIX, VIZ
• SYSTEM DESIGN METHODOLOGY	• RTI, TELEDYNE BROWN, UVA, GTE, CSC, JERSEY CITY STATE COLLEGE
• TFEL COLOR DISPLAY	• PLANAR, SARNOFF, SUPERTEX, NORDEN, ELDEC
• ULTRAPURE QUARTZ CRYSTAL	• OK STATE U, LAWRENCE LIVERMORE LABORATORY, SAWYER RESEARCH
• PRECISION OSCILLATOR	• GE NEUTRON DEVICES, PIEZO TECH., INC.
• QUARTZ STUDIES	• PRINCETON U, RENSSELAER, MCI, RAYTHEON
• MLRS MM WAVE TRANSCEIVER	• TRW, HUGHES, (MARTIN MARIETTA, DIEHL, THOMPSON CSF, THORN)
• DUAL MODE SEEKER	• CHANG INDUSTRIES, NORTHROP, MICOM RDEC
• SADARM MM WAVE TRANSCEIVER MM WAVE ANTENNAS	• HONEYWELL, VARIAN, HUGHES, AEROJET, ALPHA, BALL AEROSPACE, TRW, FLAM & RUSSELL
• MM WAVE IMAGING RADARS	• WTD, MICOM RDEC
• SATCOM-SCOTT TRANSMITTER	• STEINBRECHER, M-A/COM, HUGHES, FLAM & RUSSELL, GE E-LAB
• NOISE SOURCE FOR 94 GHZ	• NOISE COM, M-A/COM
• TANK DEFENSE RADAR	• TACOM, TRW, TI, BALL, MILLITECH, MICOM, BRL, HUGHES, GEORGIA TECH, PREDICTION SYSTEMS, CHANG INDUSTRIES
• PARTS EMULATION	• ITD, SYNOPSYS, QUICKTURN, SIGNETICS, GD
• HIGH PERFORMANCE DAC	• RADC
• VEHICLE SELF-PROTECTION	• WTD, MICOM RDEC, ARMAMENTS RDEC
★ • MIMIC HDL	• ESSOF, INTERMETRICS, PERII

* NEWLY FORMED

EPS DIRECTORATE IMPLEMENTATION OF THE TECHNOLOGY TRANSFER ACT OF 1986

COOPERATIVE R&D AGREEMENTS (CRDAs) IN EFFECT

PARTICIPANTS	*AREA OF TECHNOLOGY TRANSFER*
EPSD - TRONTECH	New & improved high frequency oscillators & amplifiers
EPSD - MARTIN MARIETTA CORPORATION	Magnetic biasing system for microwave tubes
EPSD - MARTIN GOFFMAN ASSOCIATES	Millimeter wave superconductor thin film detectors
EPSD - CECOM, BELLCORE	Epitaxial lift-off procedures for fiber optic applications
EPSD - NORDEN	Development of portable flat panel display workstation
EPSD - NEOCERA CORPORATION	Superconductor film technology for microwave applications
EPSD - RTI	E-beam circuit analysis
EPSD - ADVANCED LITHOGRAPHY GROUP	Ion projection lithography for semiconductor fabrication
EPSD - ALPHA INDUSTRIES	Diodes & detectors based on planar doped barrier (PDB) structures
EPSD - ELECTRONIC CONCEPTS, INC.	High energy density capacitor technology
EPSD - SHIPLEY CORPORATION	Advanced E-beam resists for fine geometry electronic devices
EPSD - CECOM- RUTGERS UNIVERSITY	Ultra-hi speed & mm wave devices surface/interface studies
EPSD - RUTGERS UNIVERSITY	Ferroelectrics and high temperature superconducting thin films for MM wave & signal processing devices
EPSD - RUTGERS UNIVERSITY	Hermetic coatings for optical waveguides
EPSD - RUTGERS UNIVERSITY	Smart ceramic materials for adv sensing & actuating functions
EPSD - CECOM-PRINCETON UNIVERSITY	Photonic and optoelectronic devices for optical networks
EPSD - STEVENS INSTITUTE OF TECH.	High frequency external modulators for optoelectronic and microwave device applications

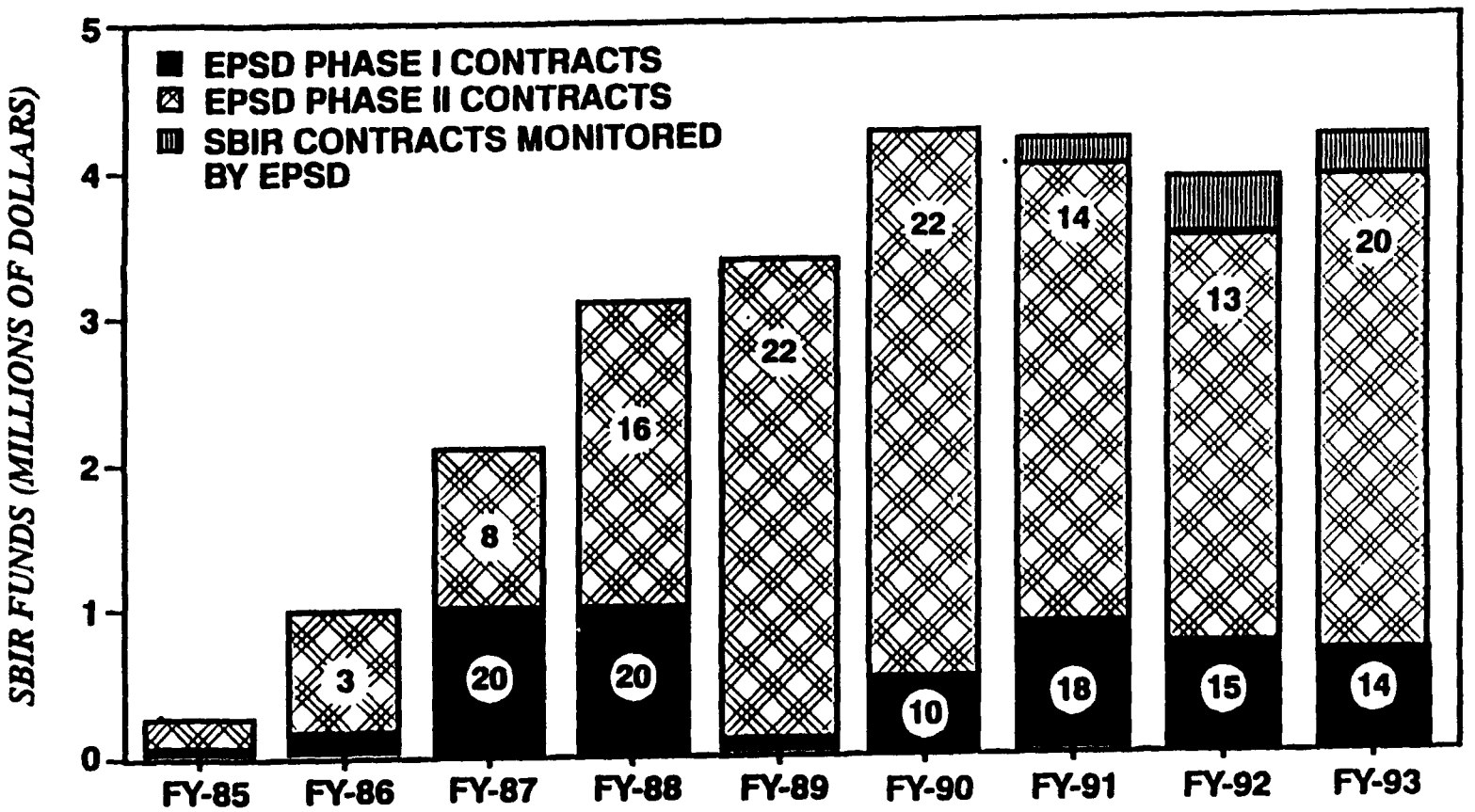
COOPERATIVE R&D AGREEMENTS (CRDAs) IN EFFECT

PARTICIPANTS	*AREA OF TECHNOLOGY TRANSFER*
EPSD - NJ. INSTITUTE OF TECHNOLOGY	Ultra-high speed MM wave/microwave electronic/photonic device development
EPSD - TECHTROL CYCLONETICS, INC.	Low noise dielectric resonator oscillators as high performance microwave sources
EPSD - NATIONAL INFO DISPLAY LAB	Dev of phosphor display technology & display eval procedures
EPSD - KEAN COLLEGE	Advance the development of nanoelectronic devices such as electron waveguides and coulomb blockade devices
EPSD - COLORADO SCHOOL OF MINES	R&D on high power systems, including power storage and switching elements, distribution components, etc.
EPSD - MICROELECTRONICS CTR. OF N. CAROLINA	Plasma assisted dry soldering procedures and equipment
EPSD - HARRIS CORPORATION	Sequential electrochemical reduction analysis technique for measuring solderability of electronic components
EPSD - MOTOROLA, INC.	Sequential electrochemical reduction analysis technique for measuring solderability of electronic components
EPSD - RAYNET CORPORATION	Surface oxide evaluation system
EPSD - UNIVERSITY OF MARYLAND	Computerized design models for solder behavior as a function of microstructure
EPSD - UNIVERSITY OF MARYLAND	Mossbauer spectroscopy as a process control tool for composite solders
EPSD - WASHINGTON UNIVERSITY	Development of composite solders
EPSD - DELCO ELECTRONICS	Sequential electrochemical reduction analysis procedures and equipment in a production environment
EPSD - TEXAS INSTRUMENTS	Sequential electrochemical reduction analysis procedures and equipment in a production environment
EPSD - JOHNS HOPKINS UNIVERSITY	Monitoring & control of printed circuit board plating thickness
EPSD - VHG LABS, INC.	Directly coupled Zeeman Atomic Absorption Spectroscopic Analysis Technique for semiconductor materials

EPSD - SBIR FUNDING

US ARMY
RESEARCH LABORATORY

ELECTRONICS and POWER SOURCES



ELECTRONICS AND POWER SOURCES LIST OF POC's

Fort Monmouth, New Jersey 07703-5601
Area Code (908) DSN (995/992)

DR. CLARENCE G. THORNTON
Directorate Executive
AMSRL-EP
(908) 544-2541 (995)

MR. VINCENT ROSATI
Program Coordination Office
AMSRL-EP-C
(908) 544-4651 (995)

MR. RICHARD STERN
Advanced Concepts and Plans
Directorate AMSRL-CP-TA
Technology-Transfer, Small Business,
SBIR Manager
(908) 544-4666 (995)

MS. REGINA R. VENEZIA
Operations Directorate
AMSRL-OP-PR-FM
Chief, Contracting and Acquisition
(908) 544-4919 (995)

MR. CHARLES D. BOYLAN
Operations Directorate
AMSRL-OP-PR-FM
Competition Advocate
(908) 544-3471 (995)

MS. MARY HAYES
Advanced Technology Management Office
AMSRL-EP-T
Unsolicited Proposals
(908) 544-4808 (995)

MS. CAROL A. WIDMAIER
Advanced Technology Management Office
Information/Publications/Exhibits
AMSRL-EP-T
(908) 544-4808 (995)

DR. MICHAEL TOMPSETT
Electronics Devices
AMSRL-EP-E
(908) 544-2452 (995)

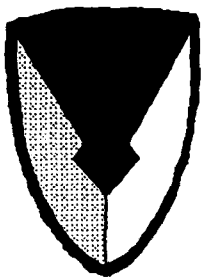
MR. RANDOLPH A. REITMEYER
Microcircuits Design and Components
Division
AMSRL-EP-I
(909) 544-3465 (995)

MR. VALDIMIR GELNOVATCH
Microwave/Lightwave Component Division
AMSRL-EP-M
(908) 544-4883 (995)

MR. JOSEPH KEY
Reliability and Manufacturing Science
Division
AMSRL-EP-R
(908) 544-4258 (995)

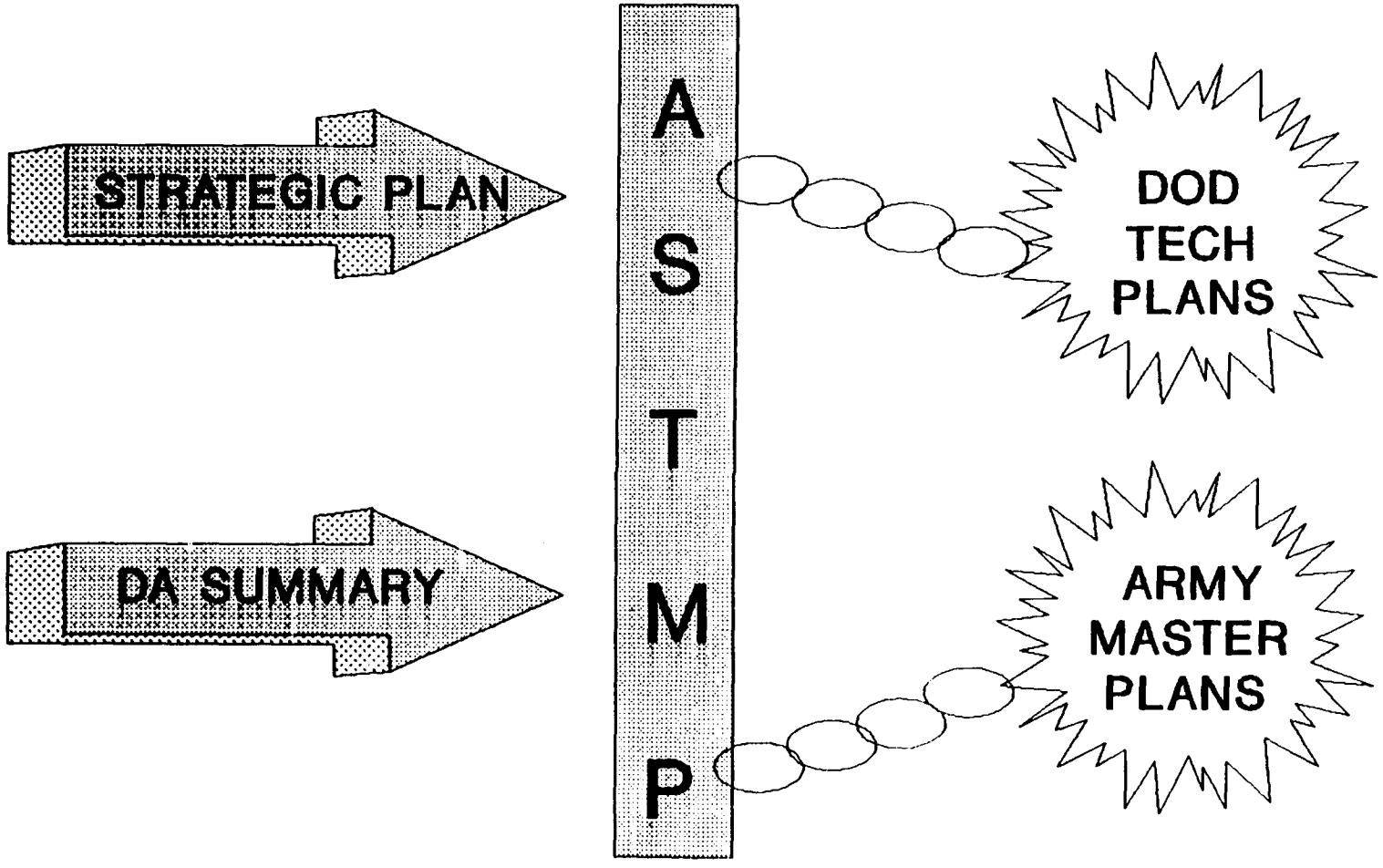
DR. ROBERT HAMLEN
Power Sources Division
AMSRL-EP-P
(908) 544-2084 (995)

CECOM



ARMY SCIENCE & TECHNOLOGY MASTER PLAN (ADVANCE PLANNING BRIEFING FOR INDUSTRY) 19 MAY 1993

CHUCK STRIMPLER, CHIEF
TECHNOLOGY PLANNING TEAM (AMSEL-RD-AS-PT)
CECOM ADVANCED SYSTEMS DIRECTORATE
DSN 995-2310, COM (908) 544-2310, FAX - X4168


STRATEGIC PLAN
DA SUMMARY
A
S
T
M
P
DOD
TECH
PLANS
ARMY
MASTER
PLANS

NOVEMBER 1992

ARMY SCIENCE AND TECHNOLOGY MASTER PLAN



Distribution authorized to U.S. Government Agencies and their contractors because of implications on operational readiness and advanced technology applications. Date of this determination is 22 December 1988. Other requests for this document shall be referred to Headquarters, Department of the Army, Deputy Assistant Secretary for Research and Technology (SARD-ZT), Washington, D.C. 20310-0103.

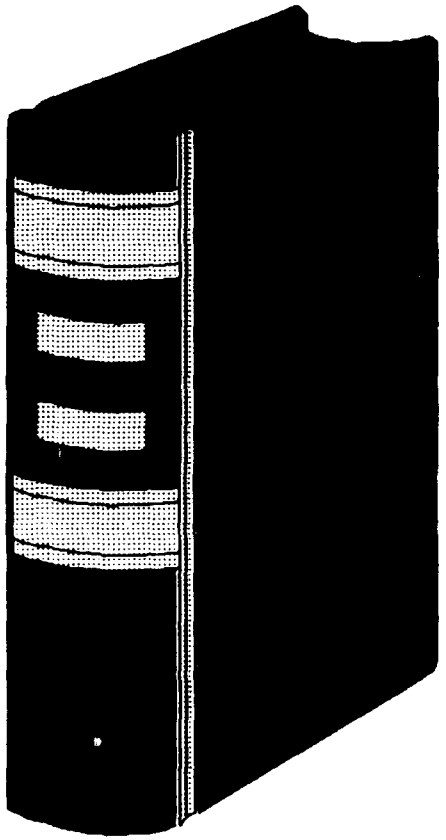
NOVEMBER 1992

ARMY SCIENCE AND TECHNOLOGY MASTER PLAN

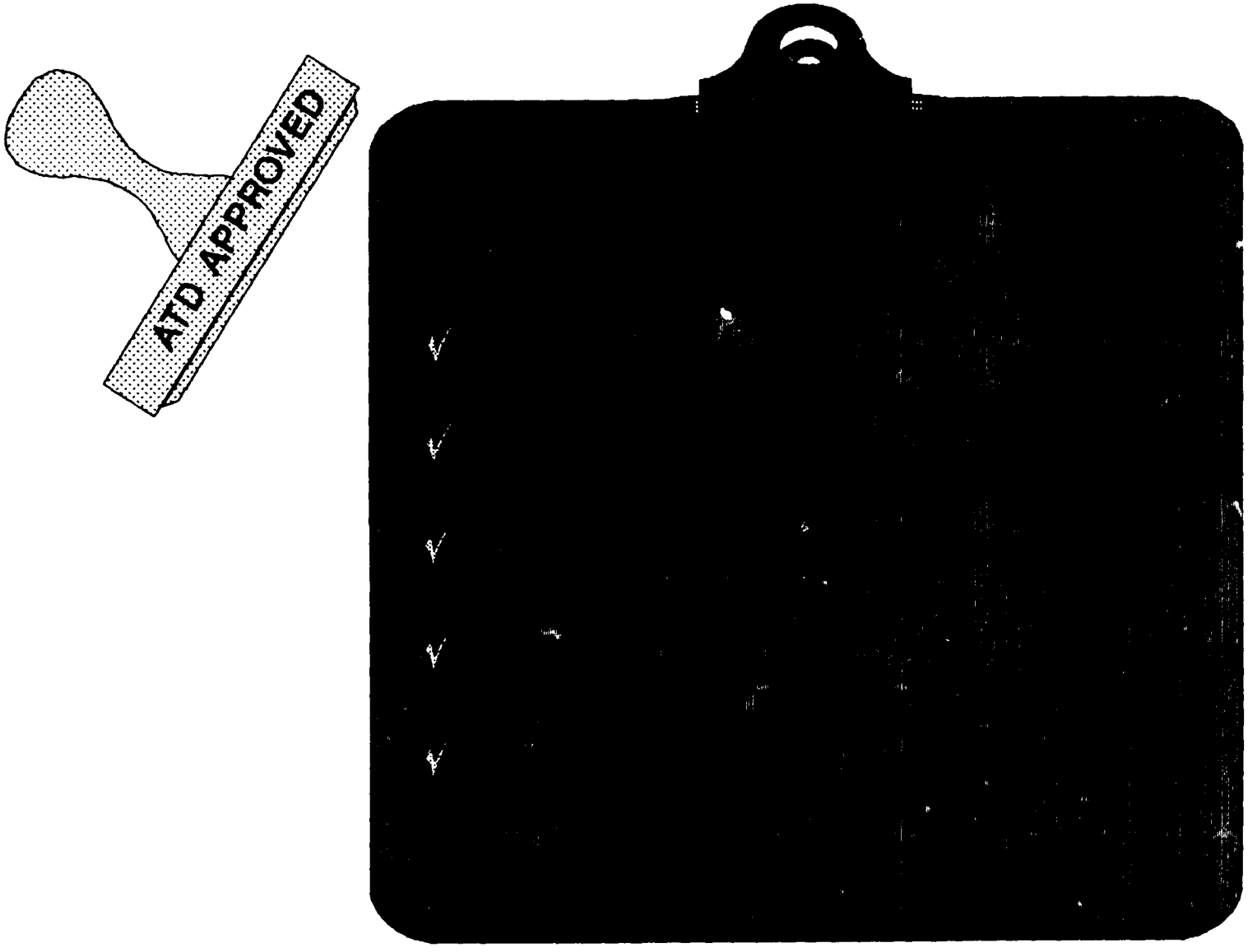
VOLUME II

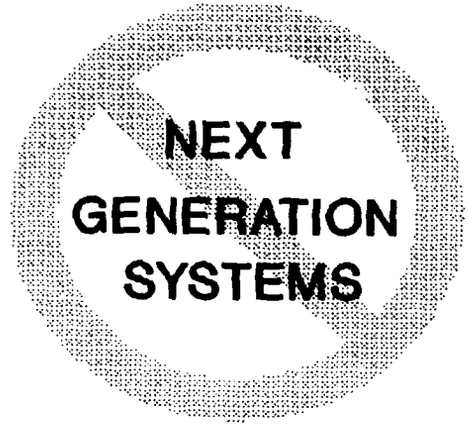


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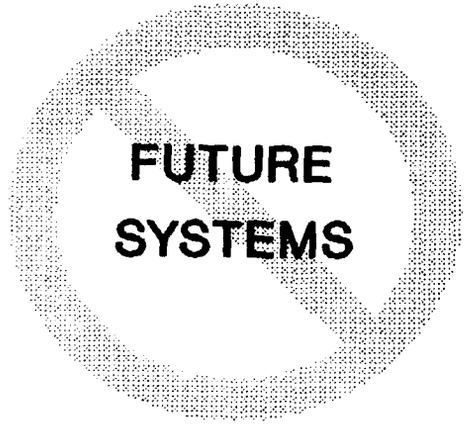
- CECOM CHAIRED
- TECHNOLOGY TRANSITION FOCUS
- ORGANIZED BY ARMY MOD PLAN ANNEX
- ADDRESSES SDC & NMD
- CROSSWALKS ATDs & THRUSTS


ATD APPROVED



SYSTEMS

SYSTEM UPGRADES



ADVANCED
CONCEPTS

ADVANCED TECHNOLOGY DEMOs (ATD)

CECOM TECHNOLOGIES

EXISTING APPROVED ATDs

- SURVIVABLE ADAPTIVE SYSTEMS
- AIRLAND BATTLE MANAGEMENT
- BISTATIC RADAR FOR WPNS LOCATION
- REMOTE SENTRY
- MULTISENSOR TARGETING - AIR
- RADAR DECEPTION & JAMMING
- ADVANCED PILOT'S AID
- ADV AIR DEF ELECTRO-OPTICAL SYS

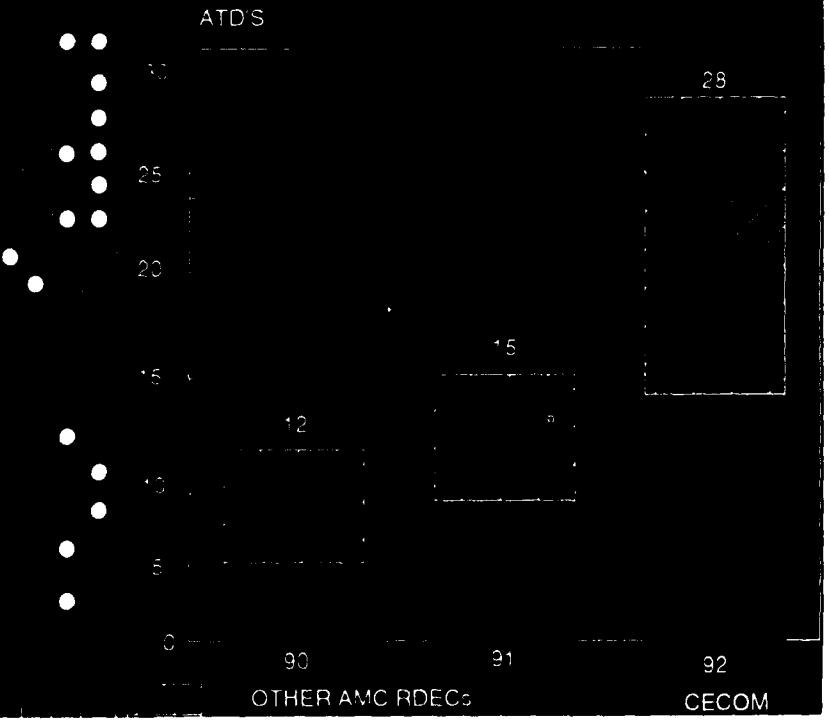
NEW APPROVED ATDs

- COMBINED ARMS COMM & CONTROL
- COMMON GROUND STATION
- BATTLEFIELD COMBAT IDAFF
- SCOUT SENSOR SUITE
- TARGET ACQUISITION

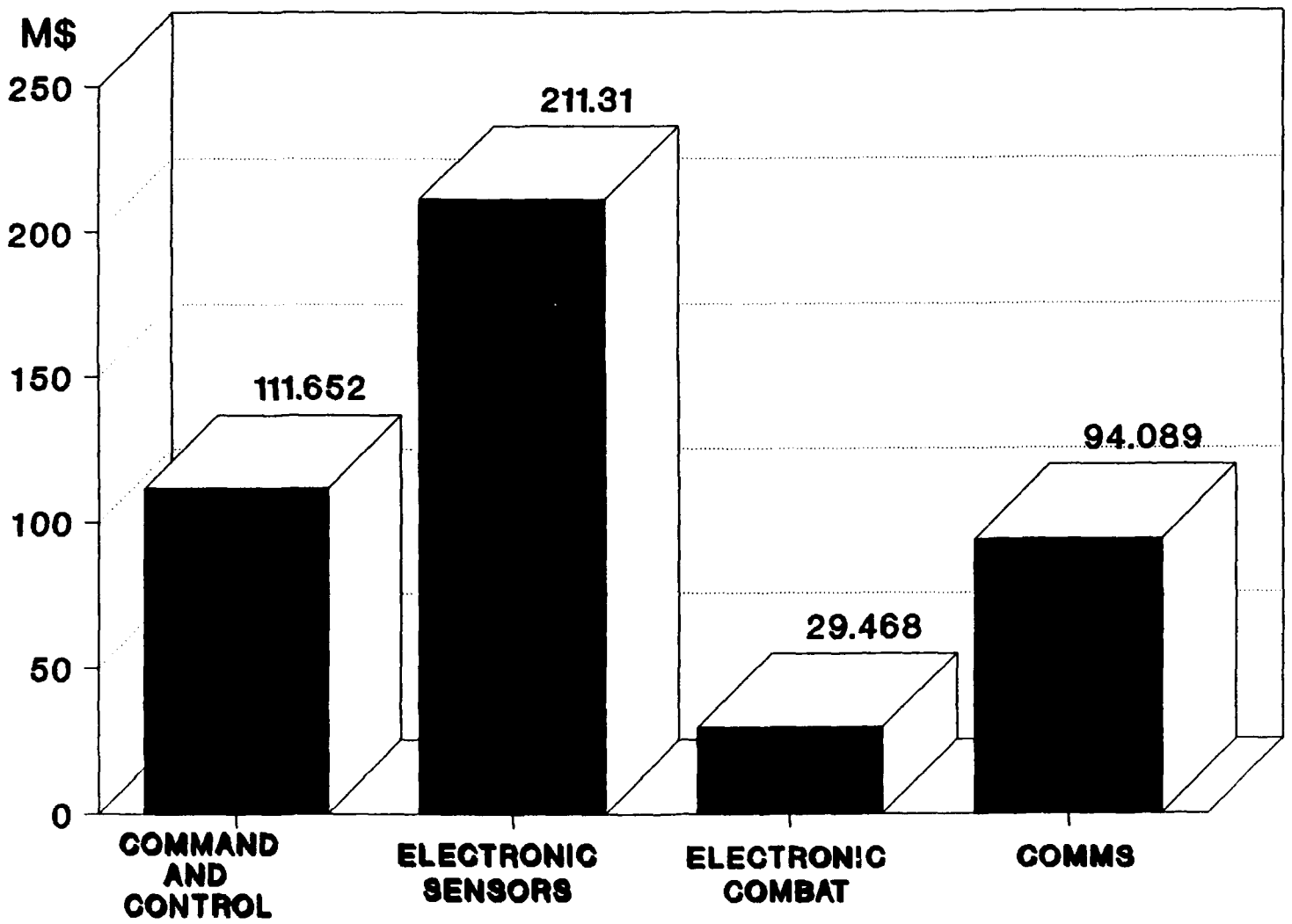
* ATD START DATES RUN 90-95

S&T THRUST AREAS

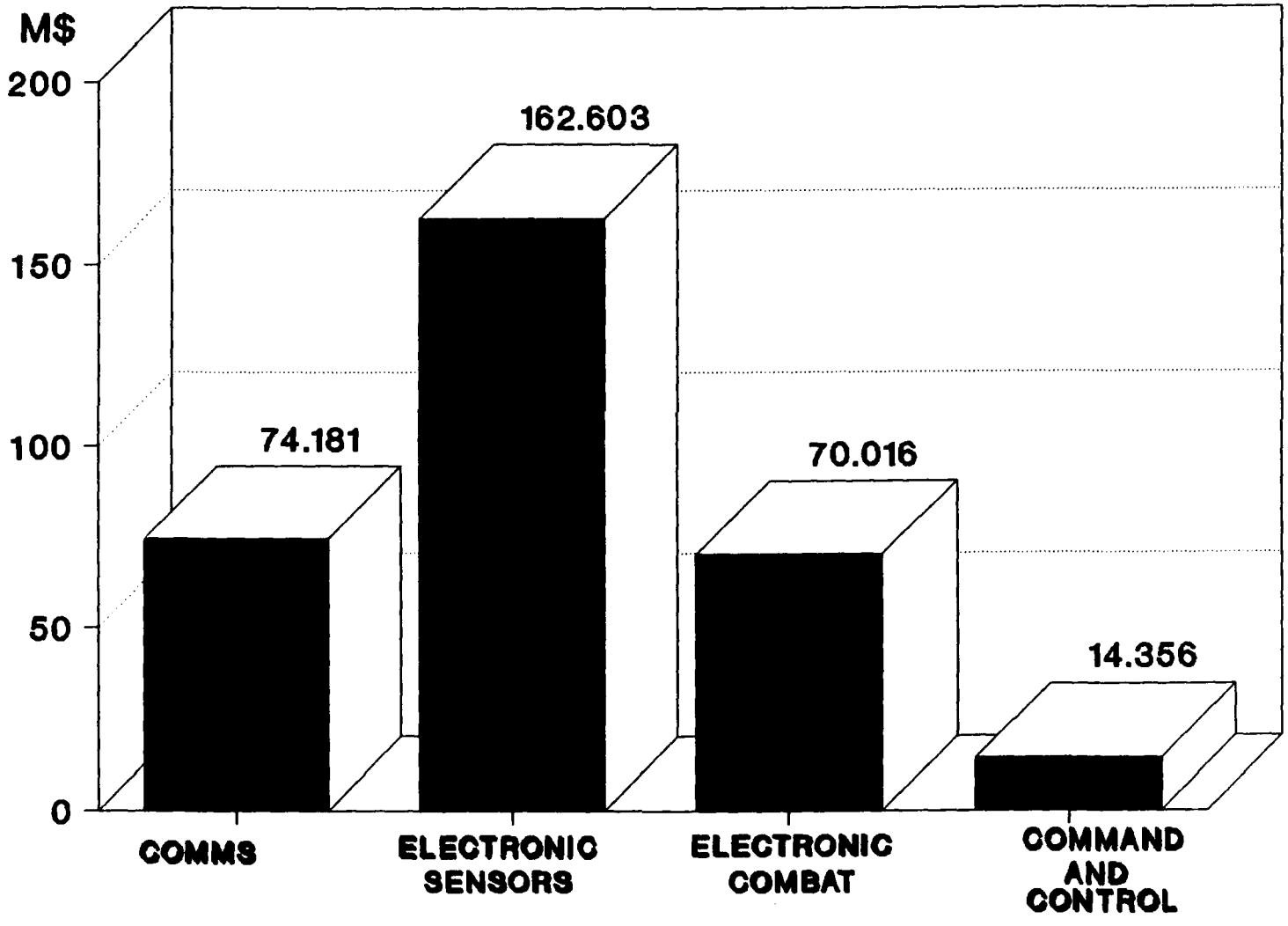
- GLOBAL SURVEILLANCE & COMMO
- SHARPENING THE WARRIOR'S EDGE
- AIR SUPERIORITY & AIR DEFENSE
- ADVANCED LAND COMBAT
- PRECISION AIR STRIKE



6.3A FUNDING BY BUSINESS AREA (94-99)



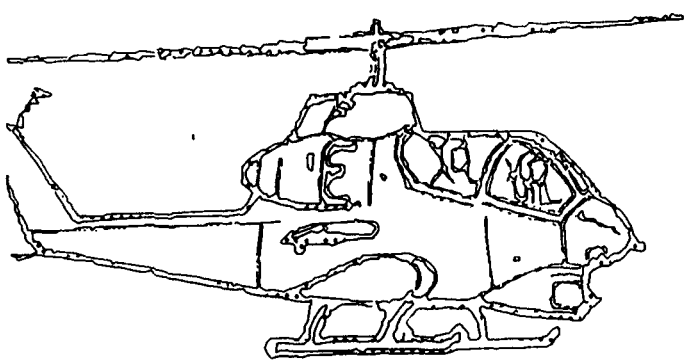
6.2 FUNDING BY BUSINESS AREA (94-99)



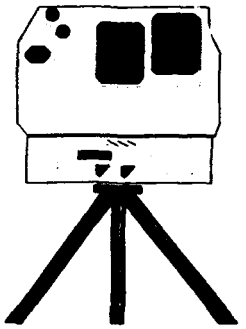
CECOM ATDs

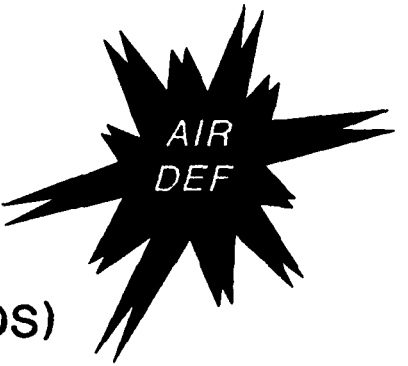
AVIATION

- RADAR DECEPTION & JAMMING (RD&J) (90-95) - $12.5M
- MULTISENSOR AIDED TARGETING (MSAT) - AIR (90-95) - $32.9M
- ADVANCED IMAGE INTENSIFICATION - (93-96) - $9.5M



CECOM ATDs

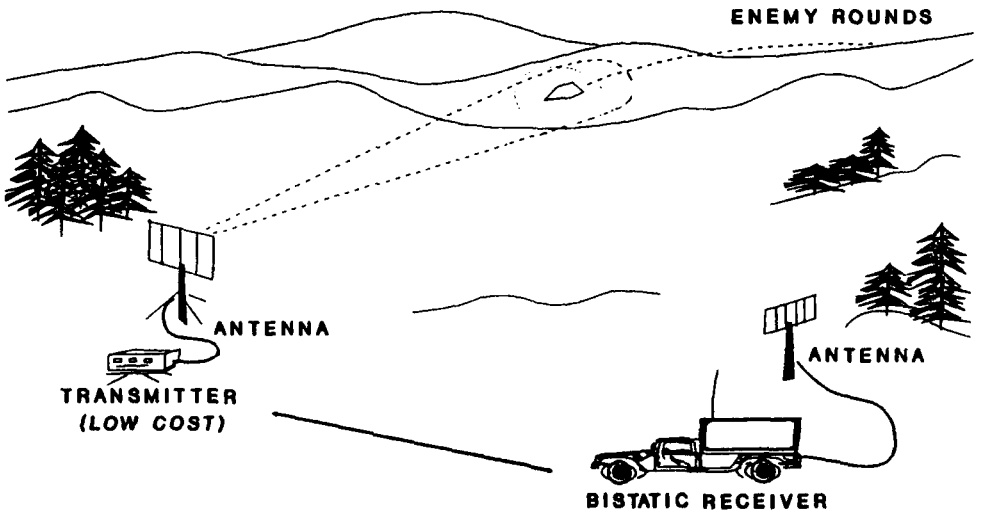




- ADVANCED AIR DEFENSE ELECTRO-OPTICAL SYSTEM (AADEOS) (90-93) - $11.2M

- BISTATIC RADAR FOR WEAPONS LOCATION (91-96) - $14.0M





CECOM ATDs

C3

- AIRLAND BATTLE MANAGEMENT (90-94) - $11.3M
- SURVIVABLE ADAPTIVE SYSTEMS (91-95) - $17.3M
- COMBINED ARMS COMMAND & CONTROL (93-96) - $41.5M
- BATTLEFIELD COMBAT ID (93-97) - $38.0M



IEW

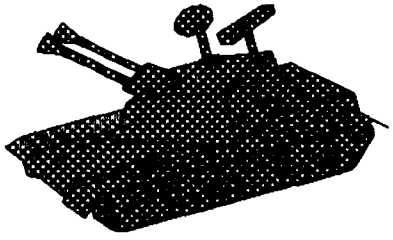
- COMMON GROUND STATION (93-95) - $10.2M

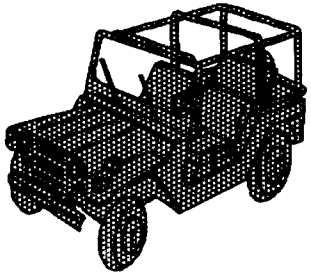


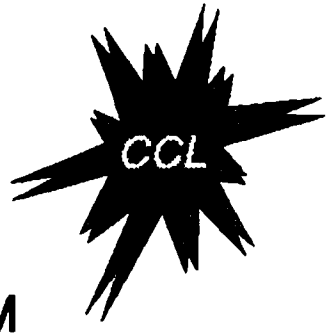
CECOM ATDs



- TARGET ACQUISITION (95-98) - $17.9M







- REMOTE SENTRY (93-96) - $10.0M
- SCOUT SENSOR (94-98) - $47.4M

CECOM

CALS INITIATIVES

MR. RAOUL C. CORDEAUX
DEPUTY CHIEF OF STAFF FOR INFORMATION MANAGEMENT
CECOM

UNCLASSIFIED

CALS: The Answer to the Paper Profusion



WHAT IS CALS ?

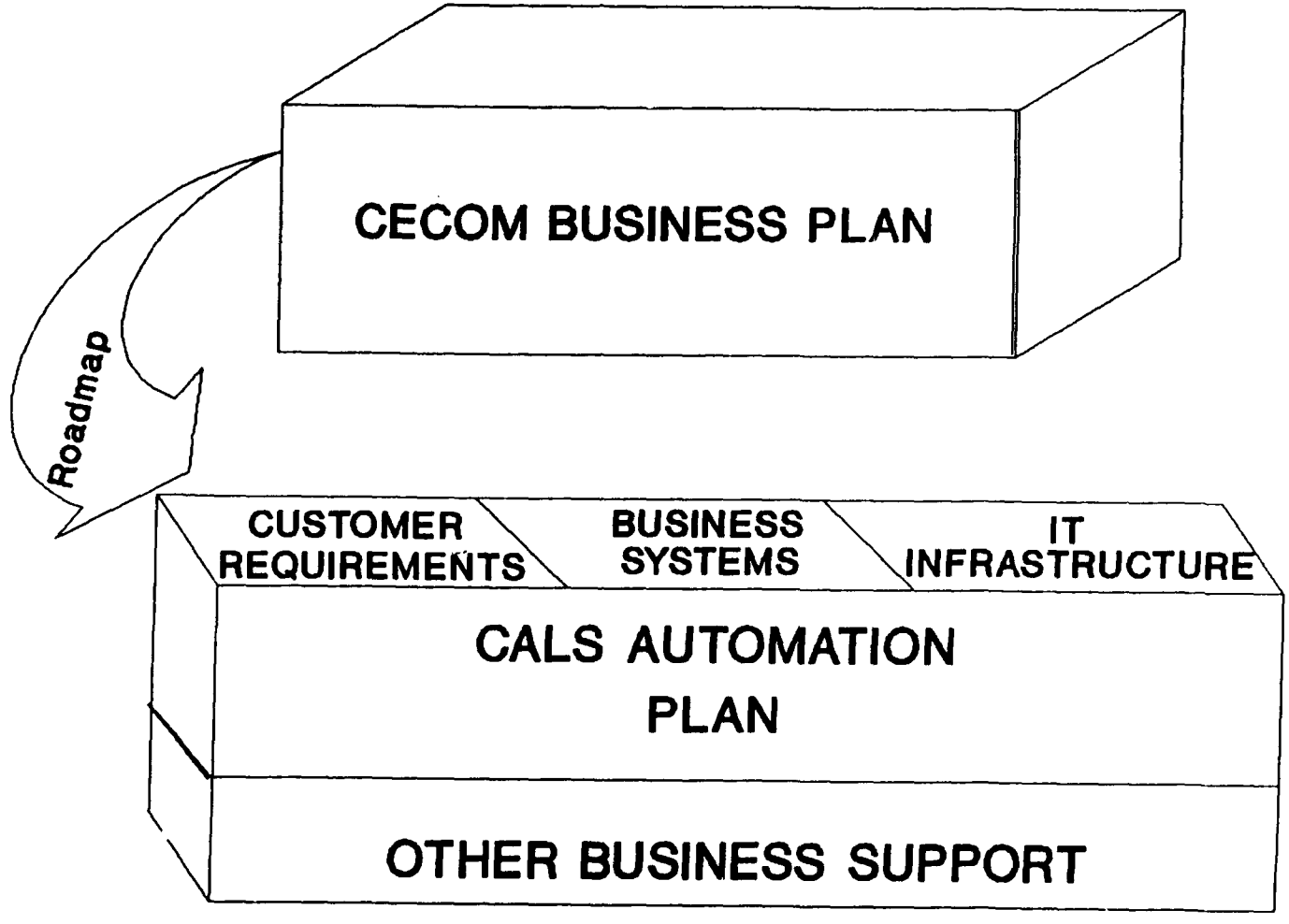
COMPUTER-AIDED ACQUISITION AND LOGISTICS SUPPORT

- REDUCE DOD'S ANNUAL $10 BILLION TECHNICAL DATA COSTS
- TRANSITION DOD FROM PAPER-INTENSIVE MANUAL PROCESSES TO AUTOMATED, INTEGRATED DIGITAL INFORMATION HANDLING

- TECHNICAL - LOGISTICS - ACQUISITION -



CECOM CALS INITIATIVES

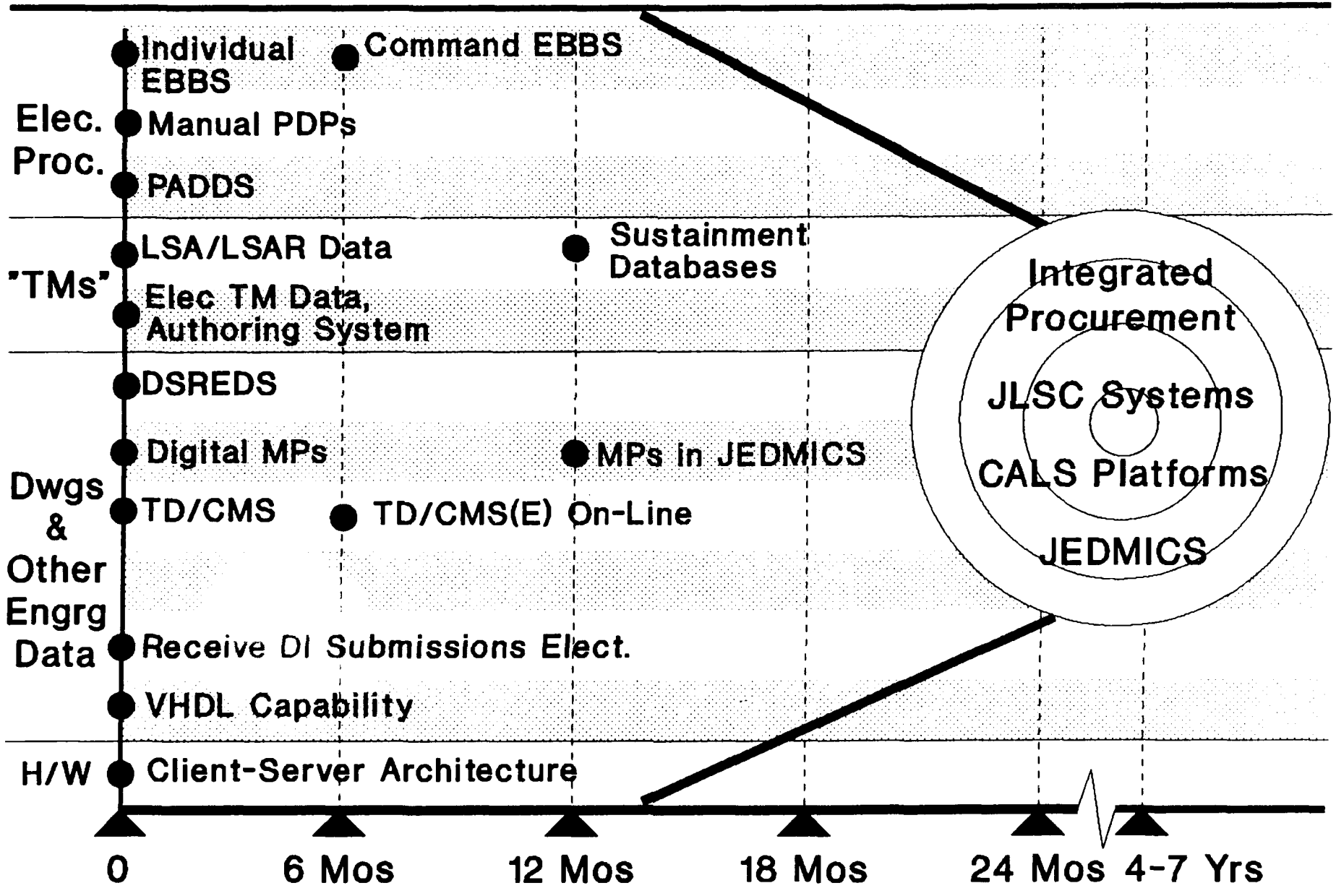


CECOM CALS INITIATIVES

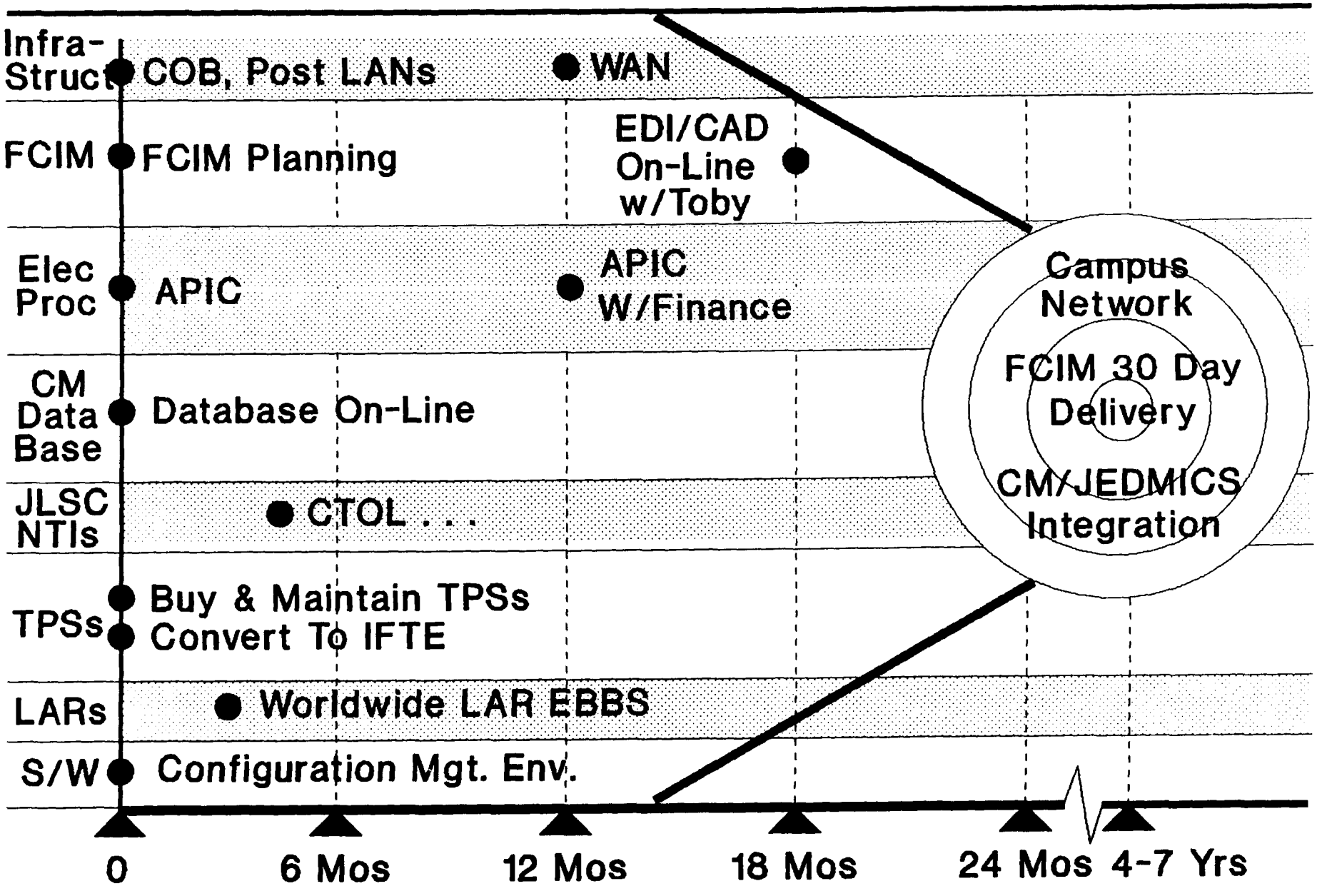
- TM'S
- ELECTRONIC PROCUREMENT
- DRAWINGS
- ENGINEERING DATA

- ACQUISITION PROCESS IMPROVEMENT CAMPAIGN
- INFRASTRUCTURE
- COMPUTERIZED MANUFACTURING
- OTHER BUSINESS AUTOMATION ENHANCEMENTS

CECOM CALS ROADMAP



CECOM CALS ROADMAP



CECOM CALS

LOCAL BUSINESS OPPORTUNITIES

- DIGITAL DRAWINGS
- DIGITAL MASTER PATTERNS
- TECHNICAL MANUALS
- WORKPLACE AUTOMATION

DIGITAL DRAWINGS
OPPORTUNITIES

TO BE COMPETITIVE:

FY94: MOST DRAWINGS PROVIDED FOR SOLICITATION IN DIGITAL FORM (ALL SOLICITATIONS BY FY95)

- **FORMAT IS MIL-R-28002, RASTER TYPE 1, CCITT GROUP 4 COMPRESSION**
- **TRANSPORT METHOD IS 9 TRACK MAG TAPE 1600/6250 BPI, MIL-STD-1840**

DIGITAL DRAWINGS
OPPORTUNITIES

POTENTIAL BUSINESS:

SOLUTIONS FOR PROCESSING DIGITAL DRAWINGS

- BUSINESS TO BUSINESS -

- **9 TRACK READERS TO PC OR MAC**
- **CONVERSION SOFTWARE (TO .PCX ETC.)**
- **CONVERSION SERVICES TO HARDCOPY**

POC: JIM BARBARELLO (908) 532-8037 FAX (908) 532-1413

DIGITAL MASTER PATTERNS (MPs) OPPORTUNITIES

TO BE COMPETITIVE:

FY94: MOST MPs PROVIDED FOR SOLICITATION IN DIGITAL FORM (ALL SOLICITATIONS BY FY95)

- **INFORMATION FILE (ASCII)**
- **GERBER MASTER PATTERN FILE**
- **GERBER APERTURE FILE**
- **EXCELLON DRILL FILE**
- **TRANSMISSION ON FLOPPY DISK OR VIA MODEM**

DIGITAL MASTER PATTERNS (MPs)
OPPORTUNITIES

POTENTIAL BUSINESS:

SERVICE CONTRACT TO CONVERT LEGACY DATA

- **APPROX 3,000 MPs PER YEAR**
- **FULL & OPEN COMPETITION**
- **AWARD SCHEDULED FOR CY93**

POC: JIM BARBARELLO (908) 532-8037 FAX (908) 532-1413

TM AUTHORING OPPORTUNITIES

TO BE COMPETITIVE:

FY94: TECHNICAL MANUALS NEED TO BE IN CALS-COMPLIANT DIGITAL FORM

- **INTERACTIVE ELECTRONIC TECHNICAL MANUALS (IETM) WILL BECOME COMMON WHERE A SOLID INDUSTRY BUSINESS CASE IS MADE**

TM AUTHORING
OPPORTUNITIES

POTENTIAL BUSINESS:

- **CONTRACT TO CONVERT LEGACY PAPER TMs TO DIGITAL FILES**
  - **EXISTING PAPER LIBRARY EXCEEDS 1.3 MILLION PAGES, 11 THOUSAND PUBLICATIONS**
  - **REQUIREMENTS WILL INCLUDE OPTICAL CHARACTER RECOGNITION, ERROR CHECKING, AND CALS MARKUP (SGML TAGGING)**

POC: FRED LOESER (908) 532-3016 FAX (908) 532-3421

WORKPLACE AUTOMATION
OPPORTUNITIES

TO BE COMPETITIVE:

FY94: MOST ORGANIZATIONS AT FT MONMOUTH WILL HAVE OFFICE LANS AND CONNECTIONS TO AN FDDI METROPOLITAN AREA NETWORK.

POTENTIAL BUSINESS:

PROVIDE VALUE-ADDED APPLICATIONS THAT WILL RUN OVER THESE NETWORKS.

POC: RAY RUSSOMANO (908) 534-2566 FAX (908) 532-0340

INDUSTRY DATA INTERCHANGE
SUMMARY

- CECOM WANTS:

  - STATEMENT OF WORK UPGRADES TO INCORPORATE INDUSTRY STANDARDS
  - INDUSTRY SOLUTIONS FOR TRANSMISSION AND CONTRACTOR USE OF DATA
  - INDUSTRY'S ACTIVE PARTICIPATION IN THESE PROCESSES

POC: JIM BARBARELLO (908) 532-8037 FAX (908) 532-1413

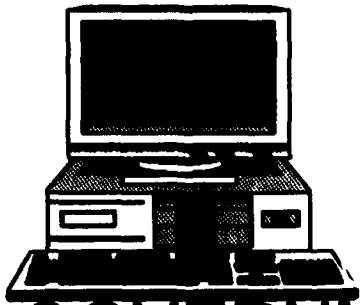
ELECTRONIC BULLETIN BOARD/ DIGITAL PROCUREMENTS

MR. EDWARD G. ELGART
DIRECTOR
C3I ACQUISITION CENTER
CECOM

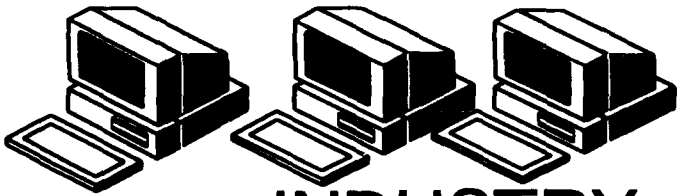
UNCLASSIFIED

ELECTRONIC BULLETIN BOARD

24 HOUR ACCESS

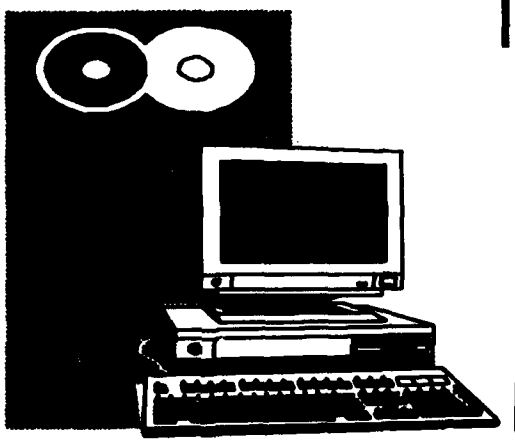


GOVERNMENT



INDUSTRY

FILES



FILES

MESSAGES

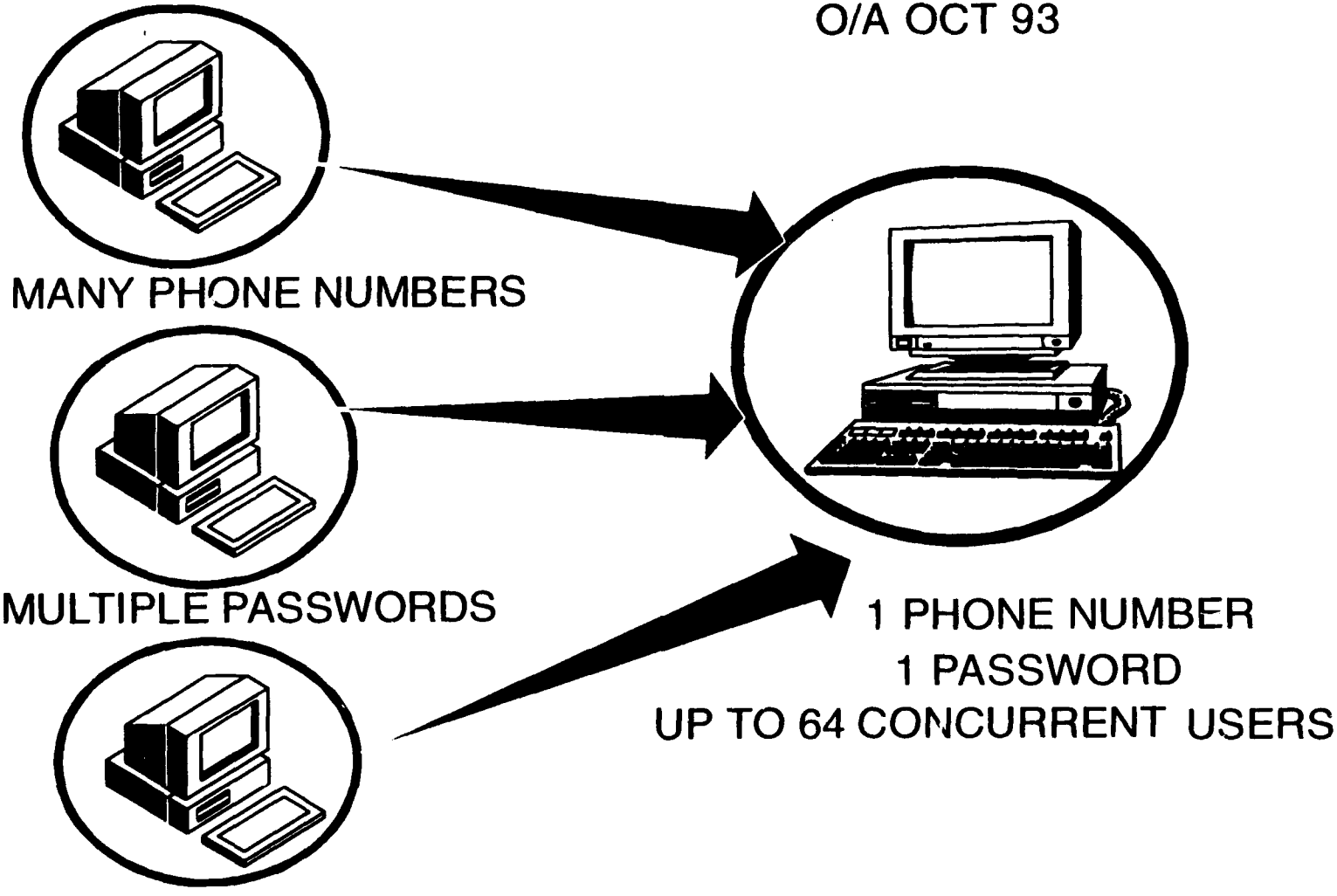
MESSAGES

1 TO 64 ROTARY-HUNT TELEPHONE LINES

ELECTRONIC BULLETIN BOARD

TODAY:
ISLANDS OF EBBS

O/A OCT 93

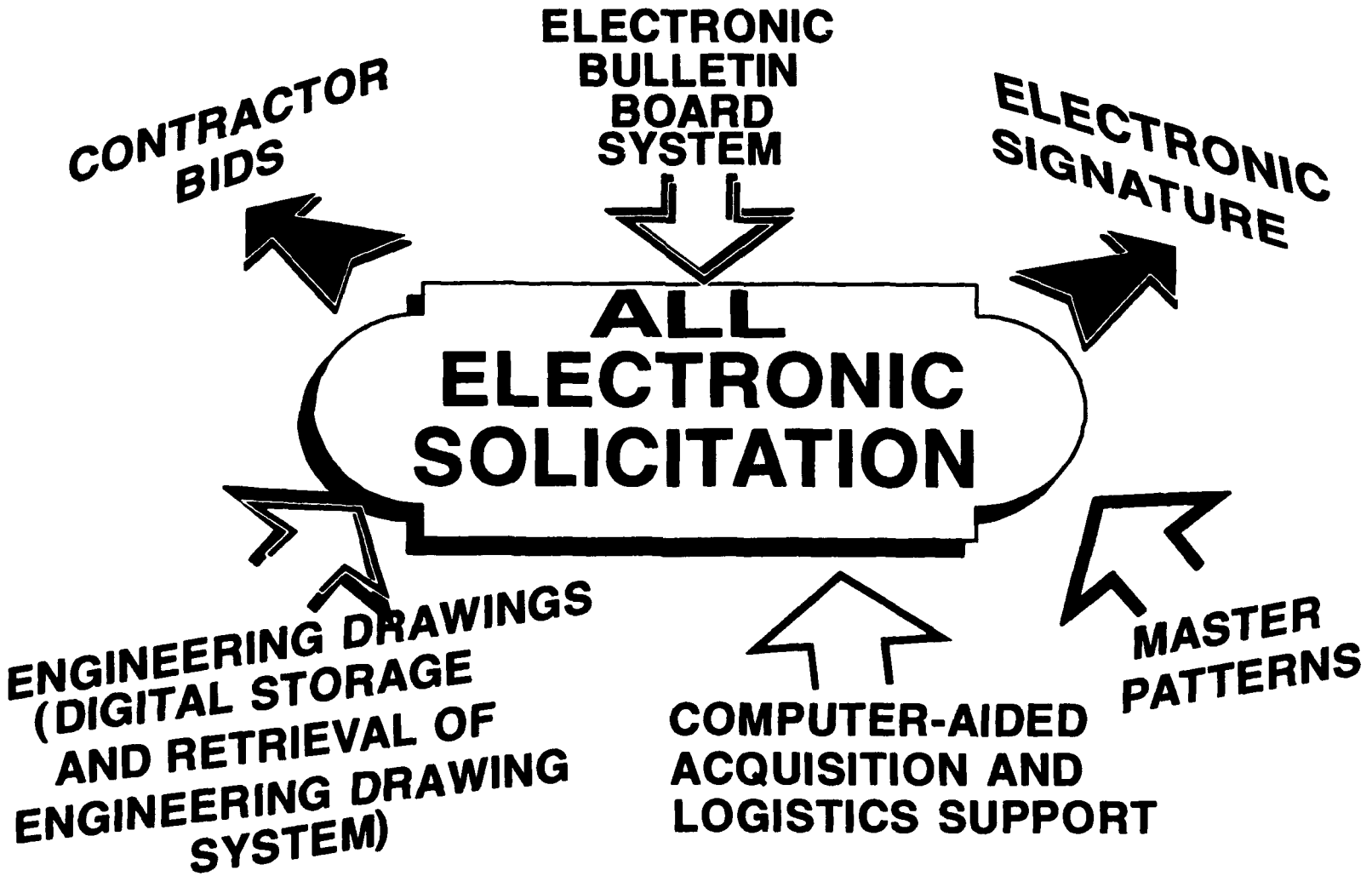


MANY PHONE NUMBERS

MULTIPLE PASSWORDS

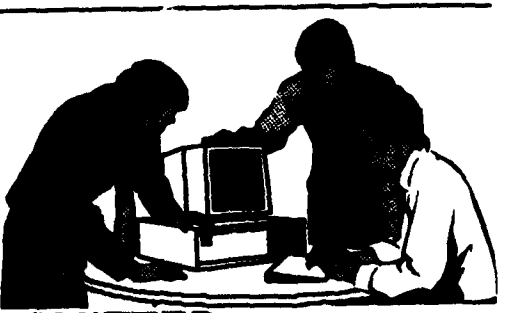
1 PHONE NUMBER
1 PASSWORD
UP TO 64 CONCURRENT USERS

ALL ELECTRONIC PROCUREMENT PROCESS



ELECTRONIC BULLETIN BOARD/
DIGITAL PROCUREMENTS

BENEFITS



- STREAMLINES THE TRANSFER OF ELECTRONIC DATA BETWEEN GOVERNMENT AND INDUSRTY
- INFORMATION CAN BE EXTRACTED AND TRANSMITTED VIA INDUSTRY'S NETWORK TO MATRIX ORGANIZATIONS AND SUBCONTRACTORS
- ENHANCED SOLICITATION CLARITY AND QUALITY
- REDUCED PROPOSAL PREPARATION THROUGH INDUSTRY'S EARLY INVOLVEMENT
- ALLOWS MULTIPLE USERS TO SIMULTANEOUSLY DOWNLOAD FILES, ACCESS E-MAIL, CDRL TRACKING AND CORRESPONDENCES
- 24 HOUR ACCESS ELIMINATES TIME-ZONE HINDRANCES

ELECTRONIC BULLETIN BOARD/ DIGITAL PROCUREMENTS

POINTS OF CONTACT

MR. DAVID FIELTSCH
(908)532-1912



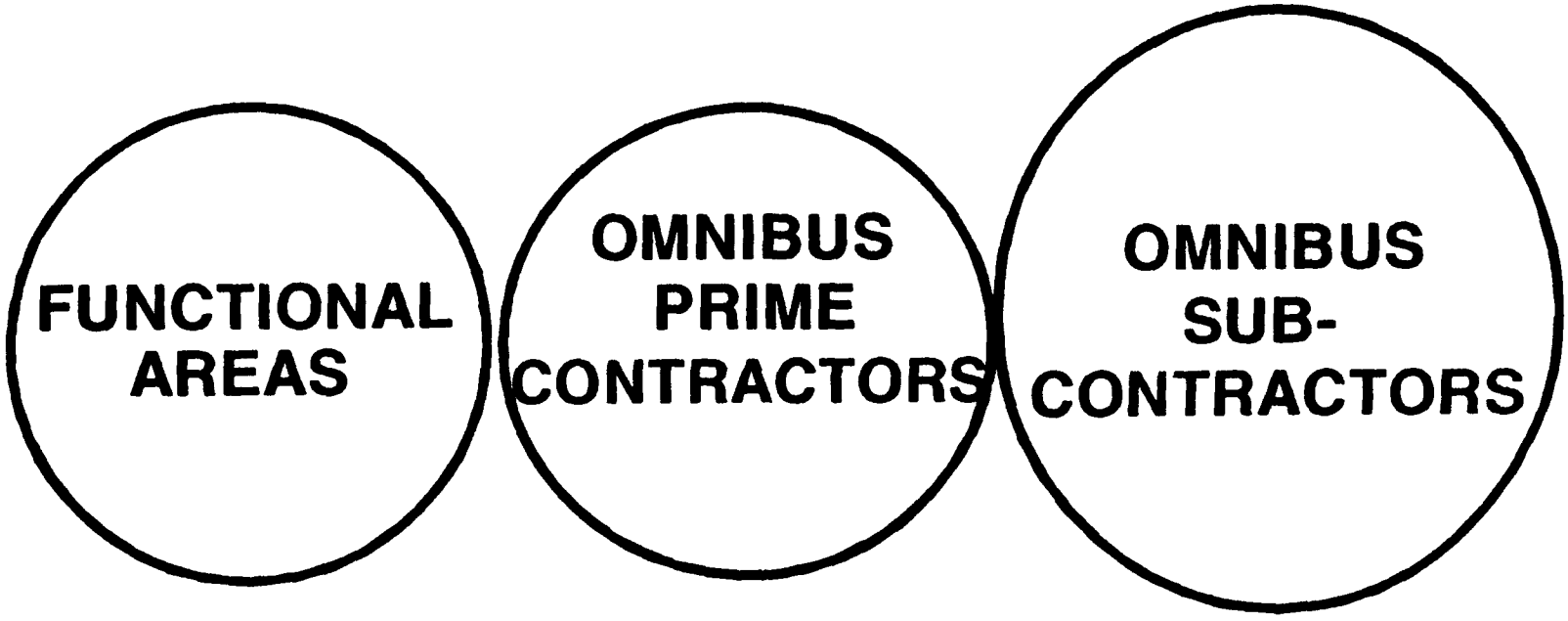
MR. ROGER BERGER
(908)532-1242

OMNIBUS CONTRACTING AT CECOM

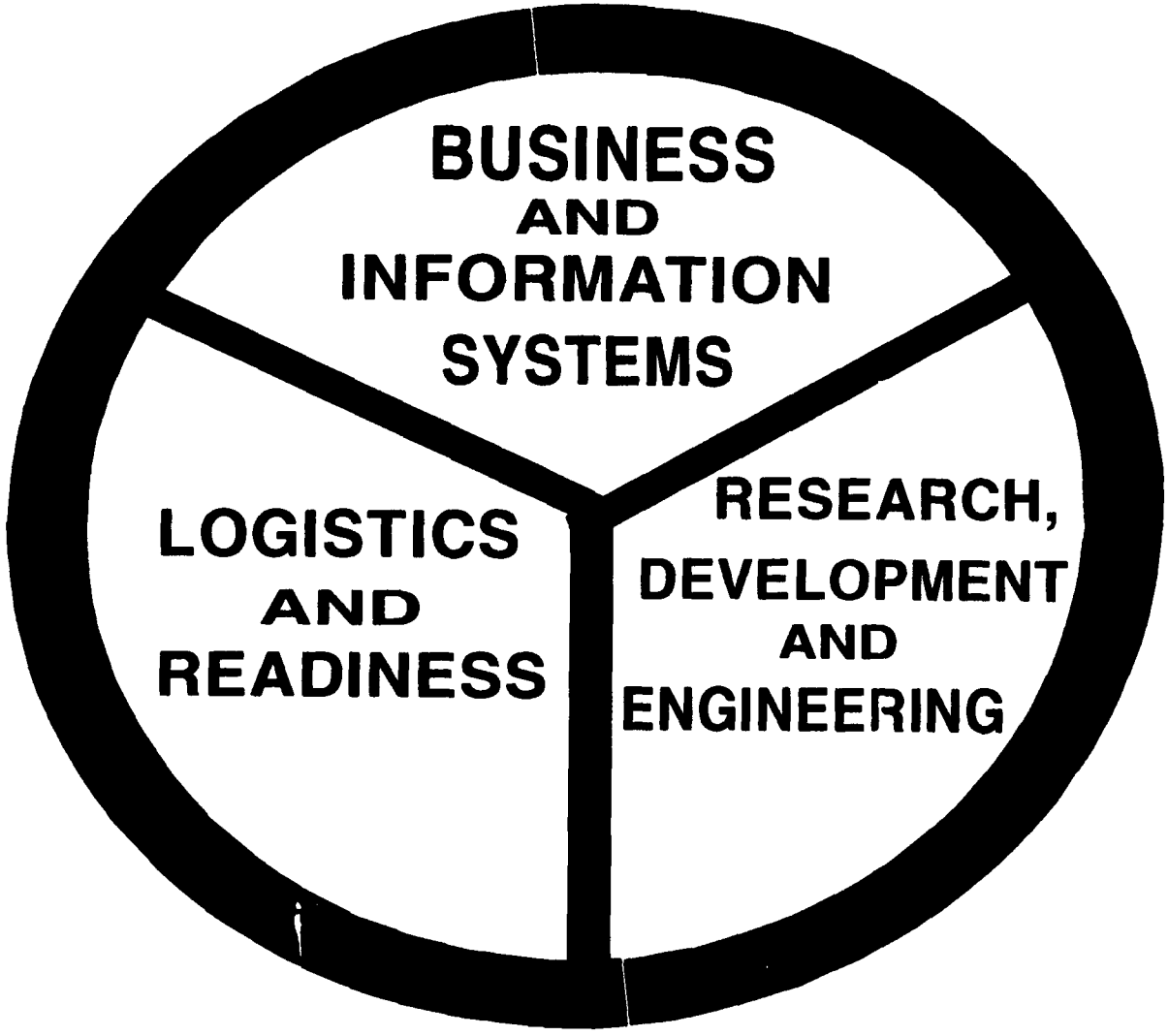
MR. EDWARD G. ELGART
DIRECTOR
C3I ACQUISITION CENTER
CECOM

UNCLASSIFIED

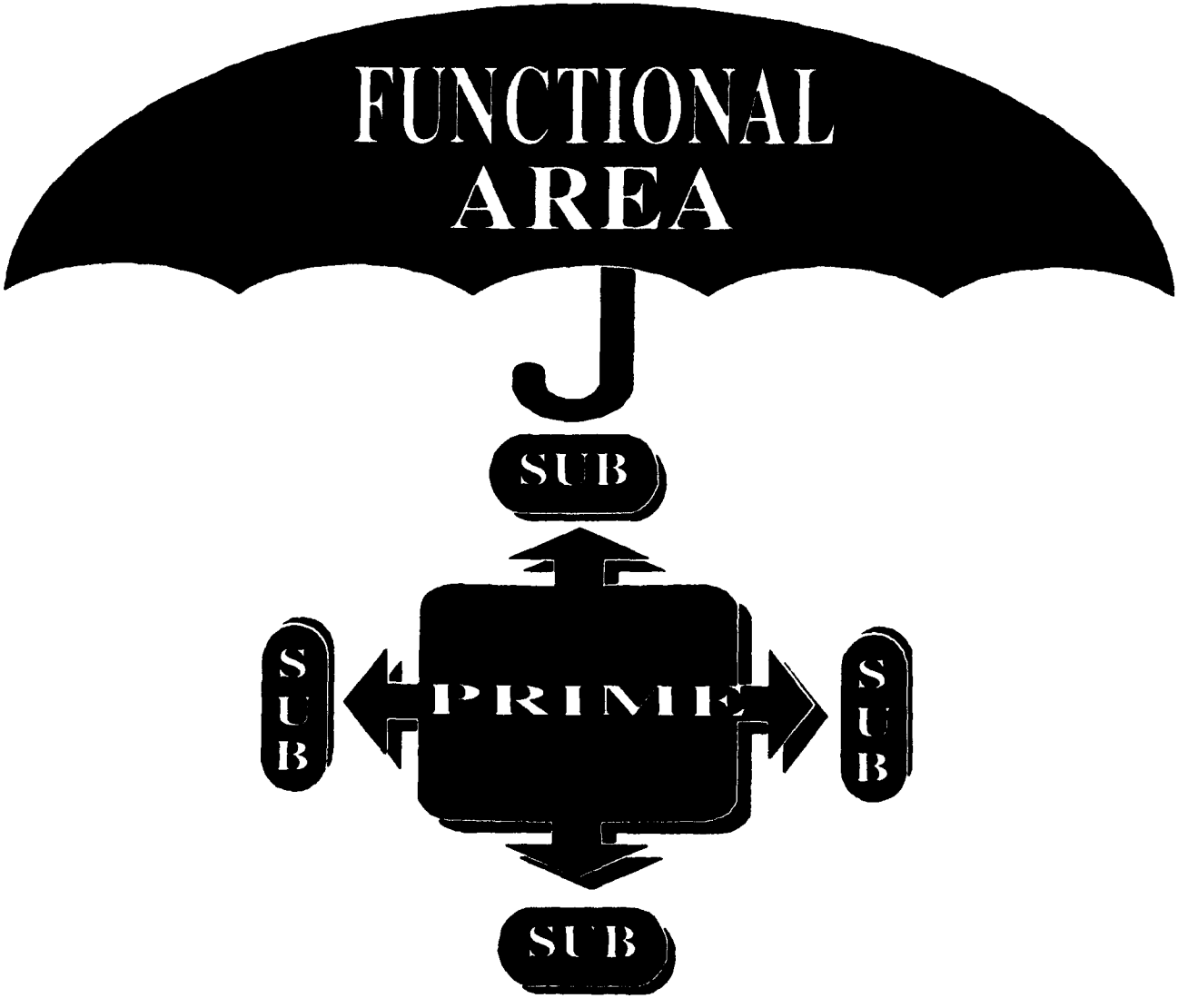
OMNIBUS
FUNCTIONAL CONCEPT



OMNIBUS CONTRACTING "3 DOMAINS"

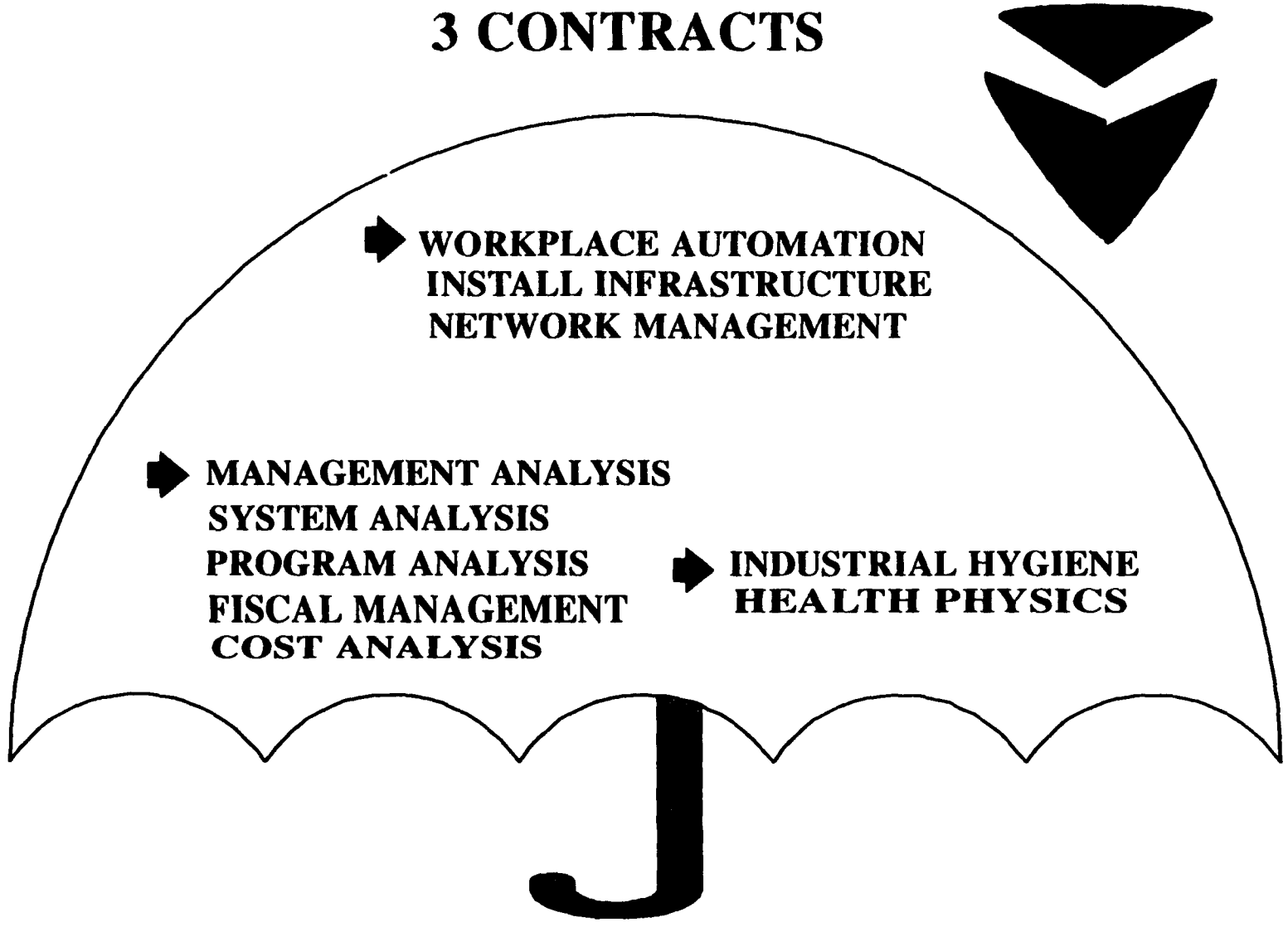


OMNI CONCEPT SAMPLE

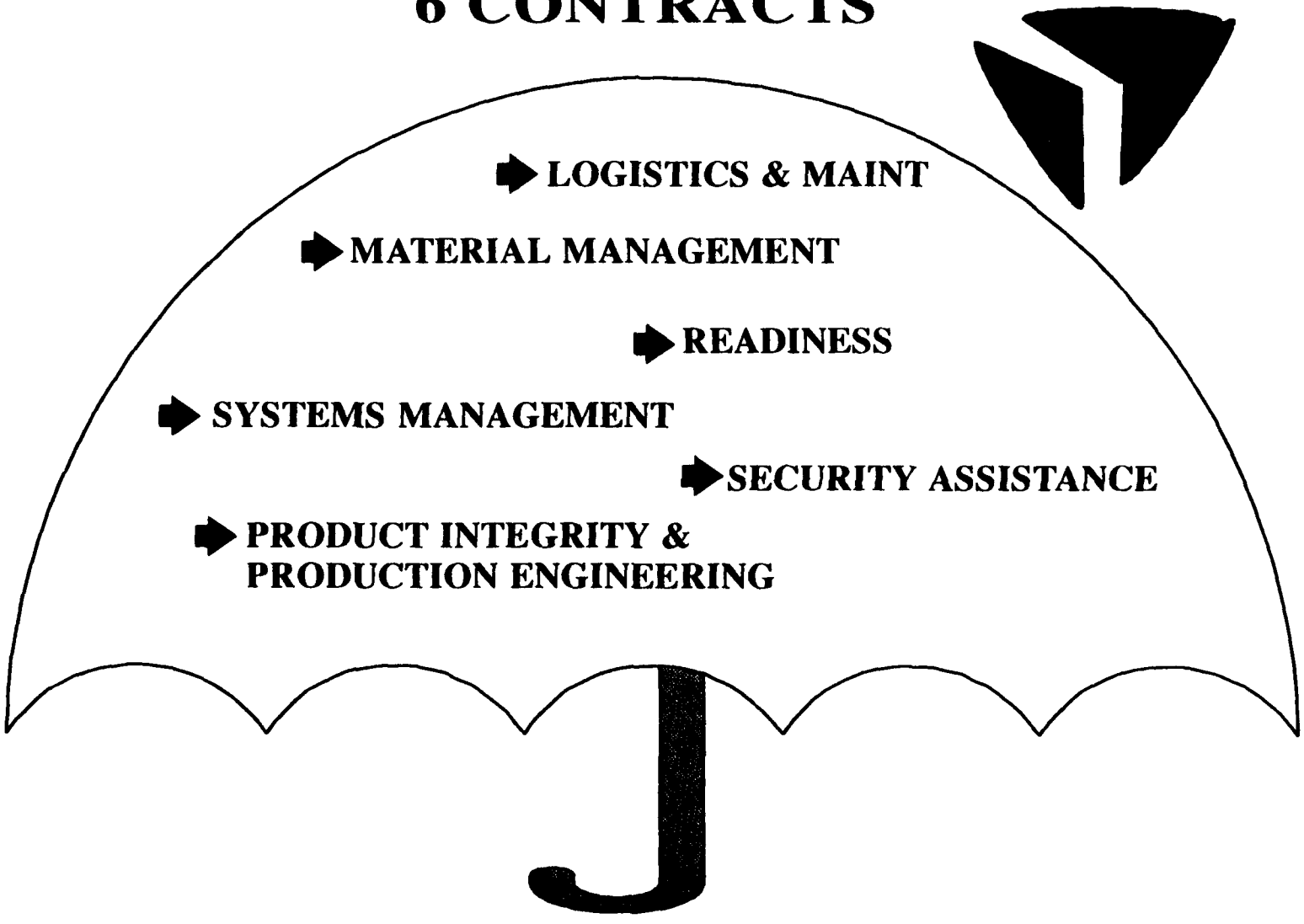


BUSINESS INFORMATION SYSTEMS DOMAIN

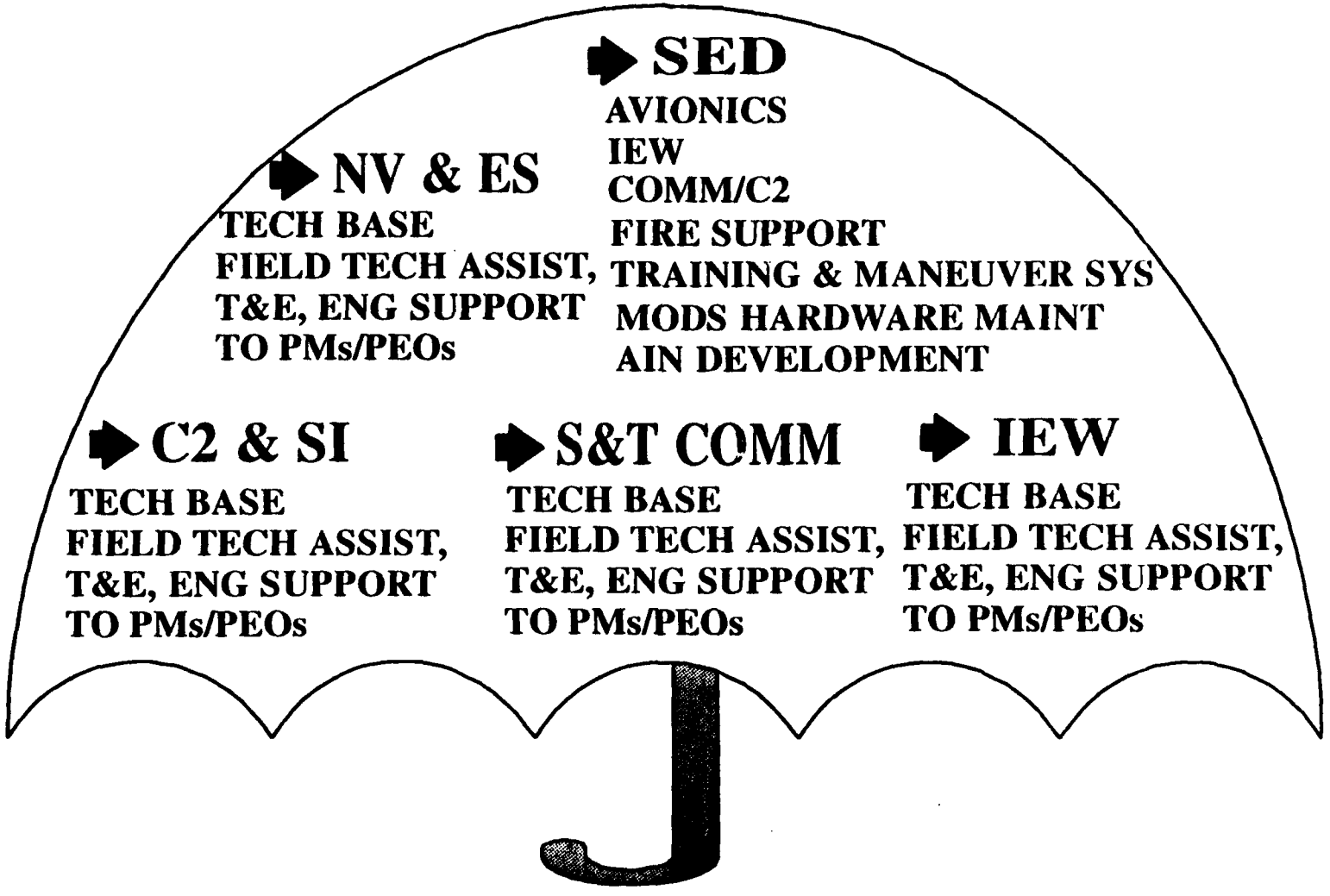
3 CONTRACTS



LOGISTICS READINESS DOMAIN
6 CONTRACTS



RESEARCH, DEVELOPMENT AND ENGINEERING DOMAIN
15 CONTRACTS



OMNIBUS CONTRACTING

SMALL BUSINESS CONSIDERATIONS

FULL AND OPEN - FUNCTIONAL AREAS

- INCENTIVIZE BUSINESSES TO SUBCONTRACT WITH SMALL BUSINESS AND 8A FIRMS
  - POINTS EARNED DURING INITIAL EVALUATION PHASE
  - CONTINUOUS EVALUATION OF PRIME CONTRACTOR'S EFFORTS TO MEET SUBCONTRACTING PLANS

OMNIBUS CONTRACTING

SMALL BUSINESS CONSIDERATIONS

SET ASIDE - FUNCTIONAL AREAS

- COMPETITIVE SET-ASIDES
  - SMALL BUSINESS
  - 8A

BUSINESS INFO SYS DOMAIN
NEAR TERM MILESTONES

FUNCTIONAL AREA	PROJ SOLICIT	PROJ AWD	$ YR/TOT	KIND OF AWD
• WORKPLACE AUTOMATION INSTALL INFRASTRUCTURE NETWORK MANAGEMENT	JUN 93	DEC 93	5M/25M	8A
• MANAGEMENT ANALYSIS SYSTEM ANALYSIS PROGRAM ANALYSIS FISCAL MANAGEMENT COST ANALYSIS	NOV 93	JUN 94	10M/50M	SBSA
• INDUSTRIAL HYGIENE HEALTH PHYSICS	OCT 93	APR 94	.4M/2M	SBSA

LOGISTICS READINESS DOMAIN
NEAR TERM MILESTONES

FUNCTIONAL AREA	PROJ SOLICIT	PROJ AWD	$ YR/TOT	KIND OF AWD
• LOGISTICS & MAINT	DEC 93	AUG 94	15M/75M	UNRESTRICTED
• MATERIAL MANAGEMENT	DEC 93	JUL 94	2.4M/12M	8A
• READINESS	DEC 93	SEP 94	25M/125M	UNRESTRICTED
• SYSTEMS MANAGEMENT	NOV 93	MAY 94	.5M/2.5M	8A
• SECURITY ASSISTANCE	OCT 93	APR 94	.4M/2M	8A
• PRODUCT INTEGRITY & PRODUCTION ENGINEERING	DEC 93	JUL 94	12M/60M	UNRESTRICTED

RESEARCH DEVELOPMENT & ENGINEERING DOMAIN

NEAR TERM MILESTONES

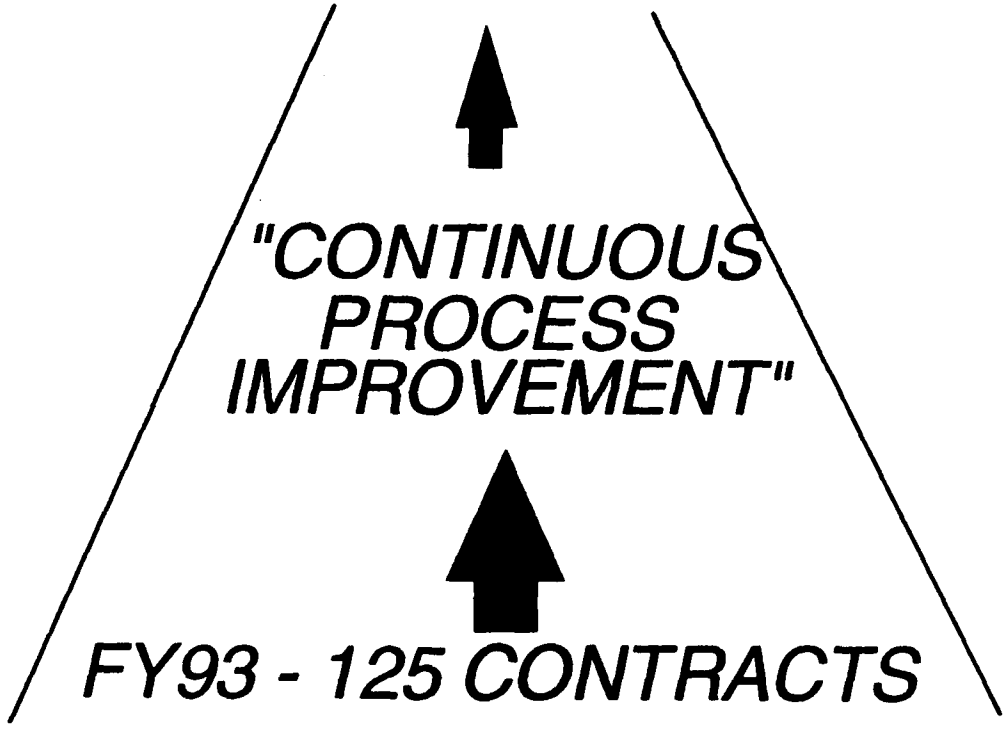
FUNCTIONAL AREA	PROJ SOLICIT	PROJ AWD	$ YR/TOT	KIND OF AWD
SED				
• AVIONICS	FEB 94	NOV 94	4M/20M	UNRESTR
• IEW	JAN 95	NOV 95	17.4M/87M	UNRESTR
• COMM/C2	JAN 95	NOV 95	20M/100M	UNRESTR
• FIRE SUPPORT	AUG 94	MAY 95	27M/135M	UNRESTR
• TRAINING & MANEUVER SYS	OCT 95	SEP 96	20M/100M	8A
• MODS HARDWARE MAINT	MAY 93	NOV 93	3M/15M	UNRESTR
• AIN DEVELOPMENT	MAR 93	SEP 93	6M/30M	UNRESTR
• NVEO	OCT 95	SEP 96	4M/20M	SBSA
S&T COMM				
• TECH BASE	MAR 94	DEC 94	5M/25M	UNRESTR
• FIELD TECH ASSIST T&E, ENG SUPPORT TO PMs/PEOs	MAR 94	DEC 94	6M/30M	UNRESTR

RESEARCH DEVELOPMENT & ENGINEERING DOMAIN (CON'T)

NEAR TERM MILESTONES

FUNCTIONAL AREA	PROJ SOLICIT	PROJ AWD	$ YR/TOT	KIND OF AWD
IEW				
• TECH BASE,FIELD TECH ASSIST,T&E ENG SUPPORT TO PMs/PEOs	JUN 93	DEC 93	50M/300M	UNRESTR
C2 & SI				
• TECH BASE	JAN 94	NOV 94	20M/100M	UNRESTR
• FIELD TECH ASSIST T&E, ENG SUPPORT TO PMs/PEOs	JAN 94	OCT 94	10M/50M	UNRESTR
NV & ES				
• TECH BASE	NOV 93	OCT 94	30M/150M	UNRESTR
• FIELD TECH ASSIST T&E, ENG SUPPORT TO PMs/PEOs	NOV 93	OCT 94	30M/150M	UNRESTR

OMNIBUS CONTRACTING
LONG TERM MILESTONES



FUTURE OMNIBUS WILL INCORPORATE LESSONS LEARNED

OMNIBUS CONTRACTING BENEFITS



- STANDARDIZATION OF CONTRACTUAL DOCUMENTS
- STREAMLINED CONTRACTUAL PROCESS
- QUICK REACTION TO INDUSTRY
- MAXIMUM INVOLVEMENT/PARTICIPATION OF SMALL BUSINESS AS PRIME/SUB CONTRACTORS
- COMMUNICATIONS WITH INDUSTRY VIA ELECTRONIC BULLETIN BOARD SYSTEMS
- LONG-TERM RELATIONSHIP

SESSION II

COMMAND AND CONTROL

MODERATOR

MR. ROBERT F. GIORDANO
DEPUTY PROGRAM EXECUTIVE OFFICER
COMMAND AND CONTROL SYSTEMS

SESSION II: COMMAND AND CONTROL OVERVIEW AND INTRODUCTION



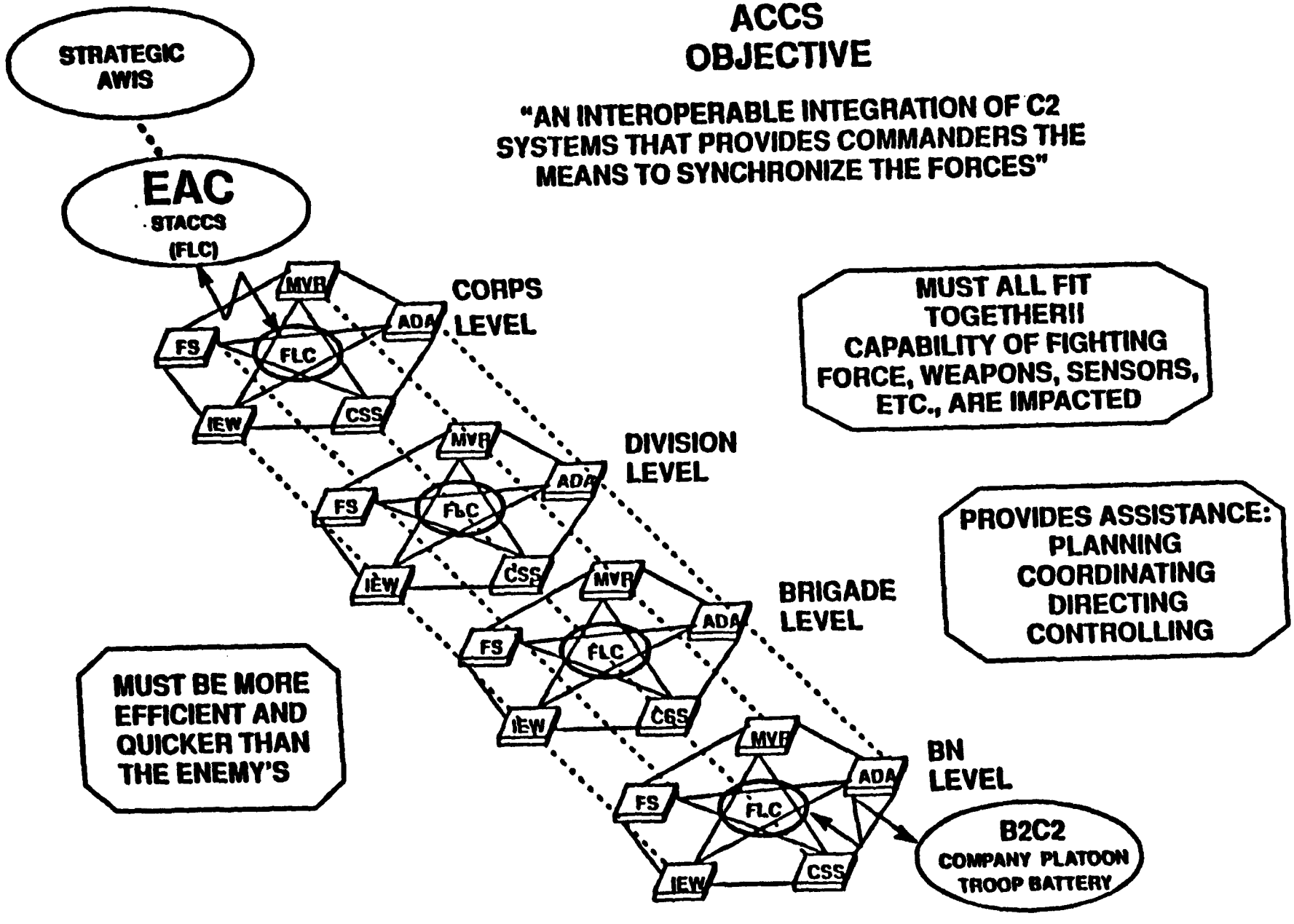
MODERATOR: MR. ROBERT F. GIORDANO
DEPUTY PROGRAM EXECUTIVE OFFICER
COMMAND AND CONTROL SYSTEMS

SESSION II BRIEFINGS

• OVERVIEW/IMPROVING SW ACQUISITION PROCESS	MR. ROBERT GIORDANO
• COMMON SOFTWARE	MR. RANDY KORICH
• MANEUVER CONTROL SYSTEM	MR. PAUL ULRICH
• COMBAT SERVICE SUPPORT CONTROL SYSTEM	COL JAMES STEVERSON
• ARMY WWMCCS INFORMATION SYSTEM	MR. JAMES BRAY, JR
• STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM	MR. FRANK NISSEN
• COMBINED ARMS COMMAND & CONTROL	DR. JAMES SOOS
• HIGH TECHNOLOGY RESEARCH AND DEVELOPMENT	MR. JOSEPH PUCILOWSKI, JR
• C3 SYSTEM ENGINEERING AND INTEGRATION	MR. JOSEPH JOHNSON

ACCS OBJECTIVE

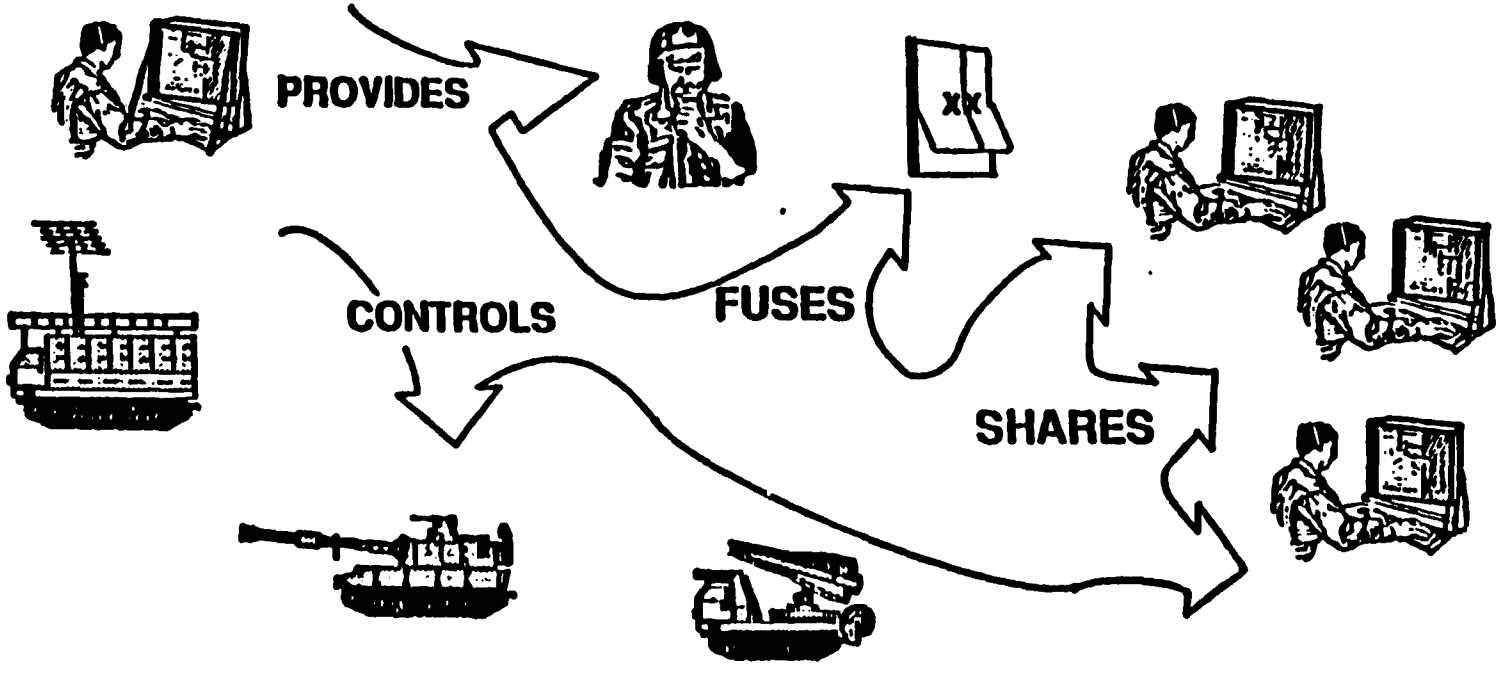
"AN INTEROPERABLE INTEGRATION OF C2 SYSTEMS THAT PROVIDES COMMANDERS THE MEANS TO SYNCHRONIZE THE FORCES"



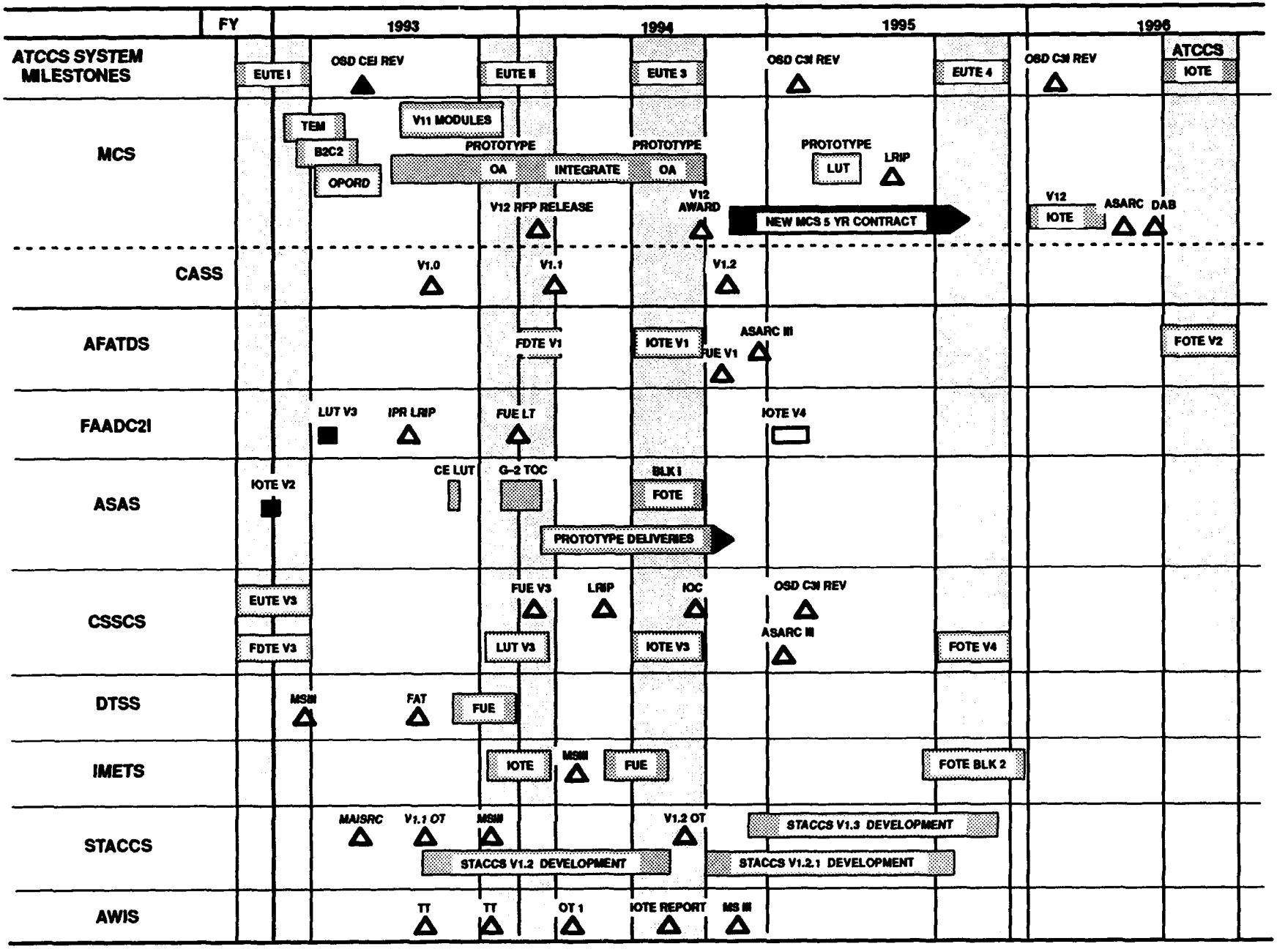
ATCCS OVERVIEW

- **EACH FUNCTIONAL AREA – IT'S OWN UNIQUE SYSTEM THAT**
  - **FUSES AND CORRELATES INFORMATION**
  - **CONTROLS ITS SUBORDINATE SYSTEMS**
  - **PROVIDES INTEGRATED INFO TO COMMANDER/UNIT LEADER**

  AND
- **SHARES INFO WITH OTHER FUNCTIONAL AREAS**



ACCS SCHEDULE



SUMMARY

- ATCCS WILL PROVIDE THE TACTICAL COMMANDER:
  - A TOOL FOR MANAGING LARGE AMOUNTS OF DATA
  - THE ABILITY TO TRACK BOTH FRIENDLY AND ENEMY STATUS ON A NEAR REAL TIME BASIS
  - THE ABILITY TO PREPARE, COORDINATE & DISSEMINATE PLANS, ORDERS AND REPORTS MUCH FASTER THAN EVER BEFORE
  - WITH A SHORTER PLANNING CYCLE WHICH WILL ALLOW EACH LOWER LEVEL ADDITIONAL TIME TO PLAN, PREPARE, AND EXECUTE COMBAT OPERATIONS
  - A MEANS TO IMPLEMENT ARTIFICIAL INTELLIGENCE DECISION TOOLS
- ACCS WILL MAKE A SMALLER ARMY MORE EFFECTIVE

ACCS COMPETITIVE PROCUREMENT OPPORTUNITIES

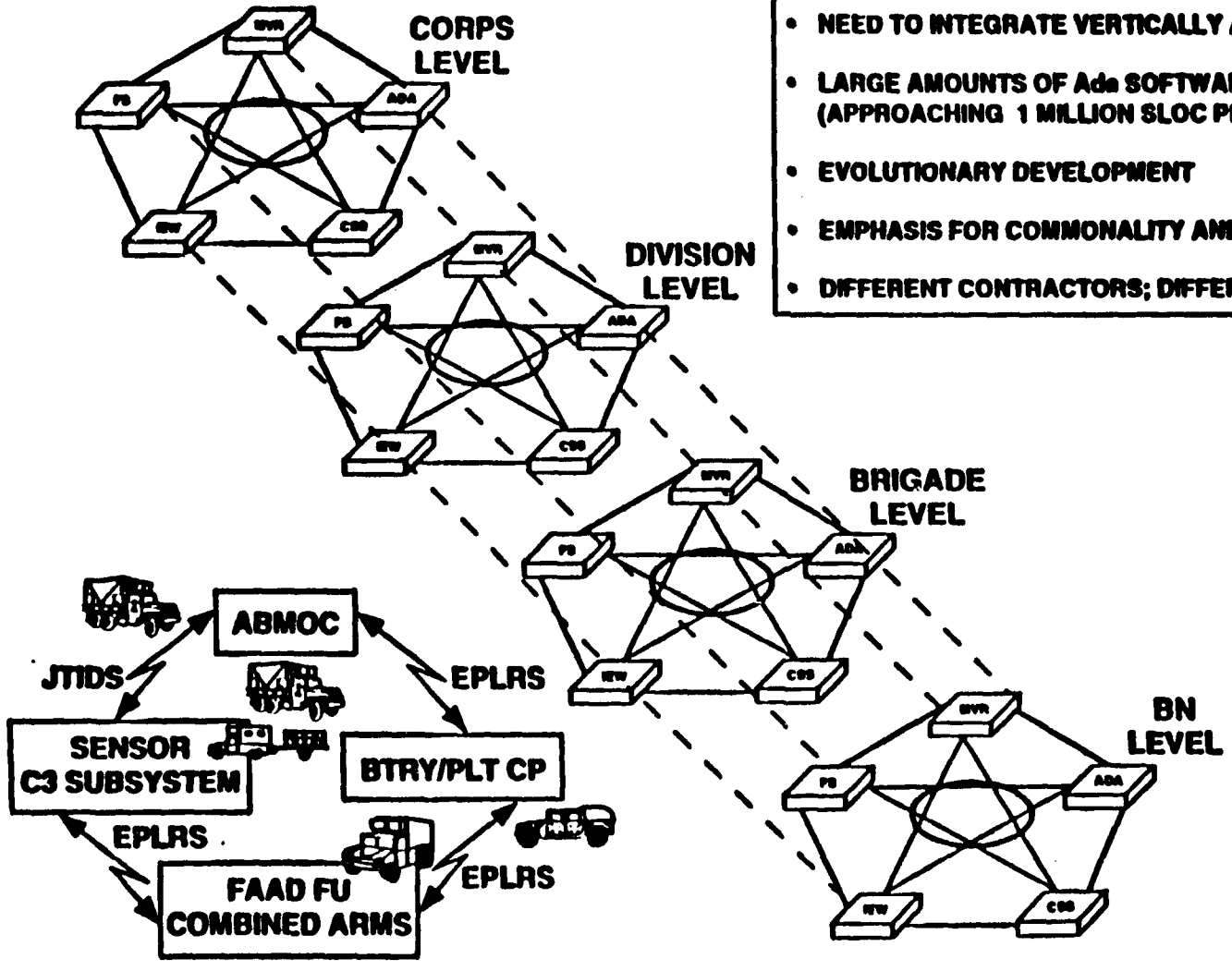
PROGRAM	EST. RFP RELEASE	EST AWARD	DURATION
COMMON SOFTWARE	INFORMATION		
MCS SW DEVELOP.	1ST QTR 94	3RD QTR 94	5 YEARS
CSSCS	MAR 95	SEPT 95	5 YEARS
AWIS SW DEVELOP.	DRAFT APR 93/FINAL JUN 93	1ST QTR 94	5 YEARS
STACCS SE&I	DRAFT DEC 92/FINAL 4TH QTR 93	4TH QTR 94	5 YEARS
CAC2	INFORMATION		
HIGH TECH R&D	2ND QTR 95	4TH QTR 95	5 YEARS
C3 SE & I	DEC 93	AUG 94	5 YEARS

IMPROVING OUR SOFTWARE ACQUISITION PROCESS

ROBERT F. GIORDANO
DPEO-CCS

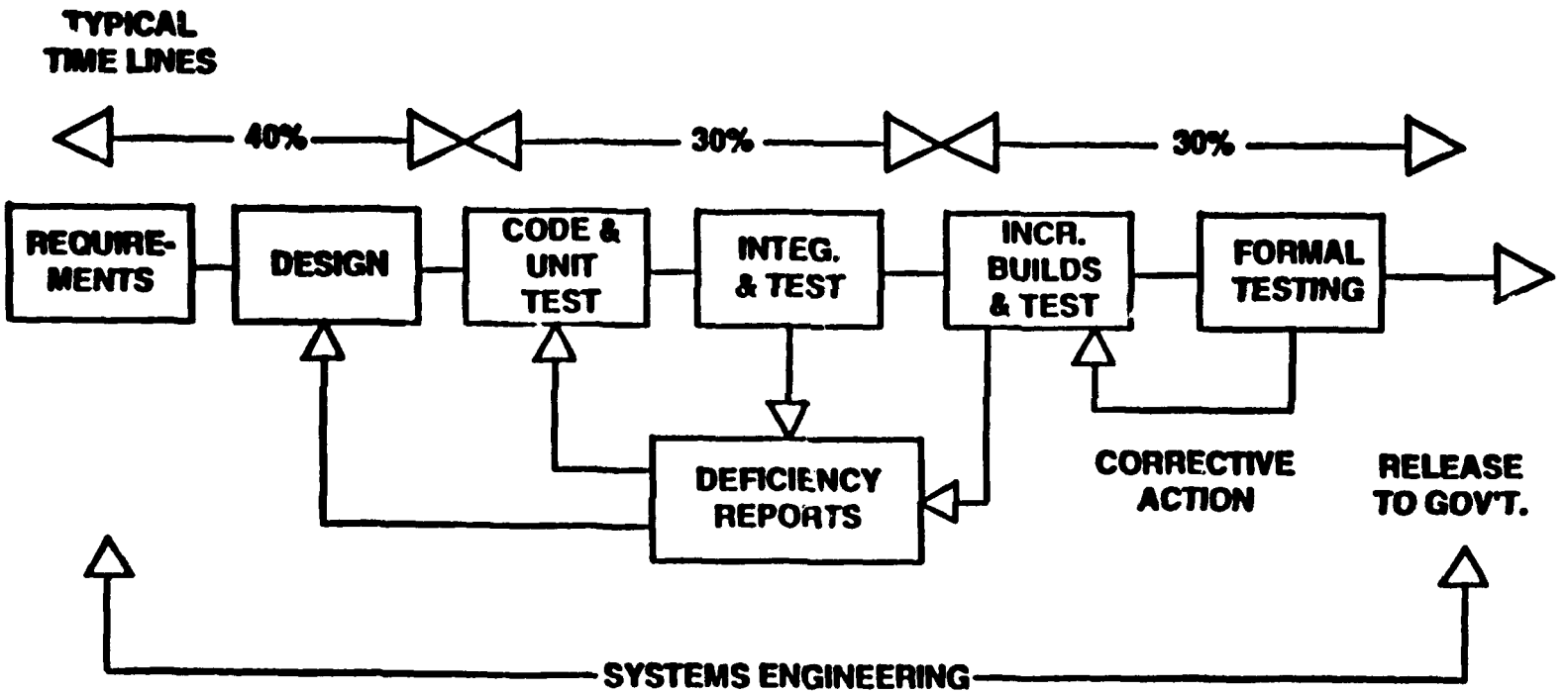
THE NEED: INTRODUCING AUTOMATION FOR TACTICAL COMMAND AND CONTROL

- LARGE DECENTRALIZED NETWORK
- NEED TO INTEGRATE VERTICALLY AND HORIZONTALLY
- LARGE AMOUNTS OF Ada SOFTWARE (APPROACHING 1 MILLION SLOC PER SYSTEM)
- EVOLUTIONARY DEVELOPMENT
- EMPHASIS FOR COMMONALITY AND REUSE
- DIFFERENT CONTRACTORS; DIFFERENT PROCESSES



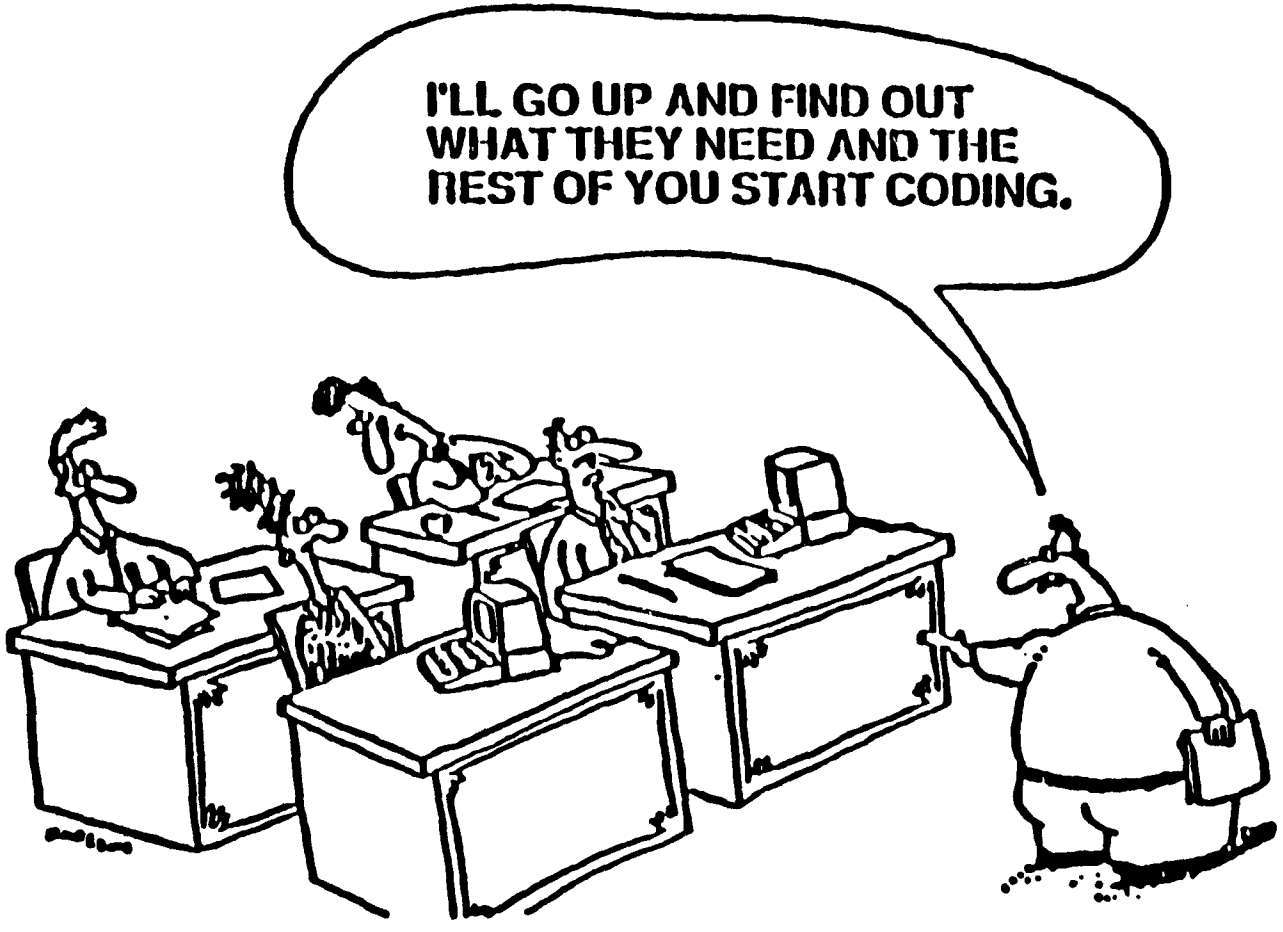
THE SOFTWARE DEVELOPMENT PROCESS
A SIMPLIFIED VIEW

TERMINOLOGY

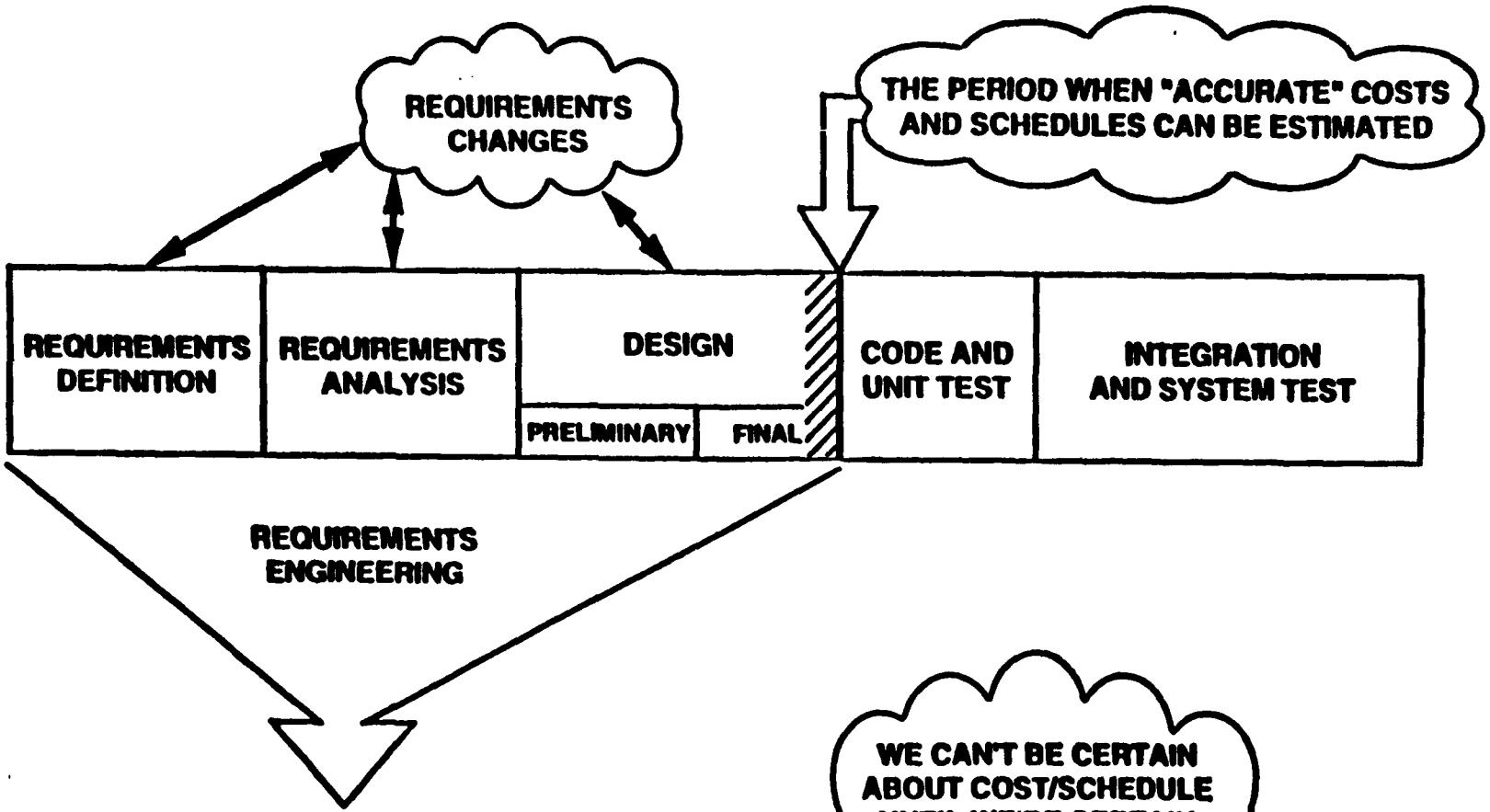


PEO/PM SIGNS A "CONTRACT" WITH THE ACQUISITION EXECUTIVE TO COMPLETE A TYPICAL 4-YEAR PROGRAM WITHIN COST, SCHEDULE, AND PERFORMANCE REQUIREMENTS

ASSUMPTION THAT THE FUNCTIONAL DESCRIPTION DEFINES THE REQUIREMENT IS INCORRECT



REQUIREMENTS ENGINEERING



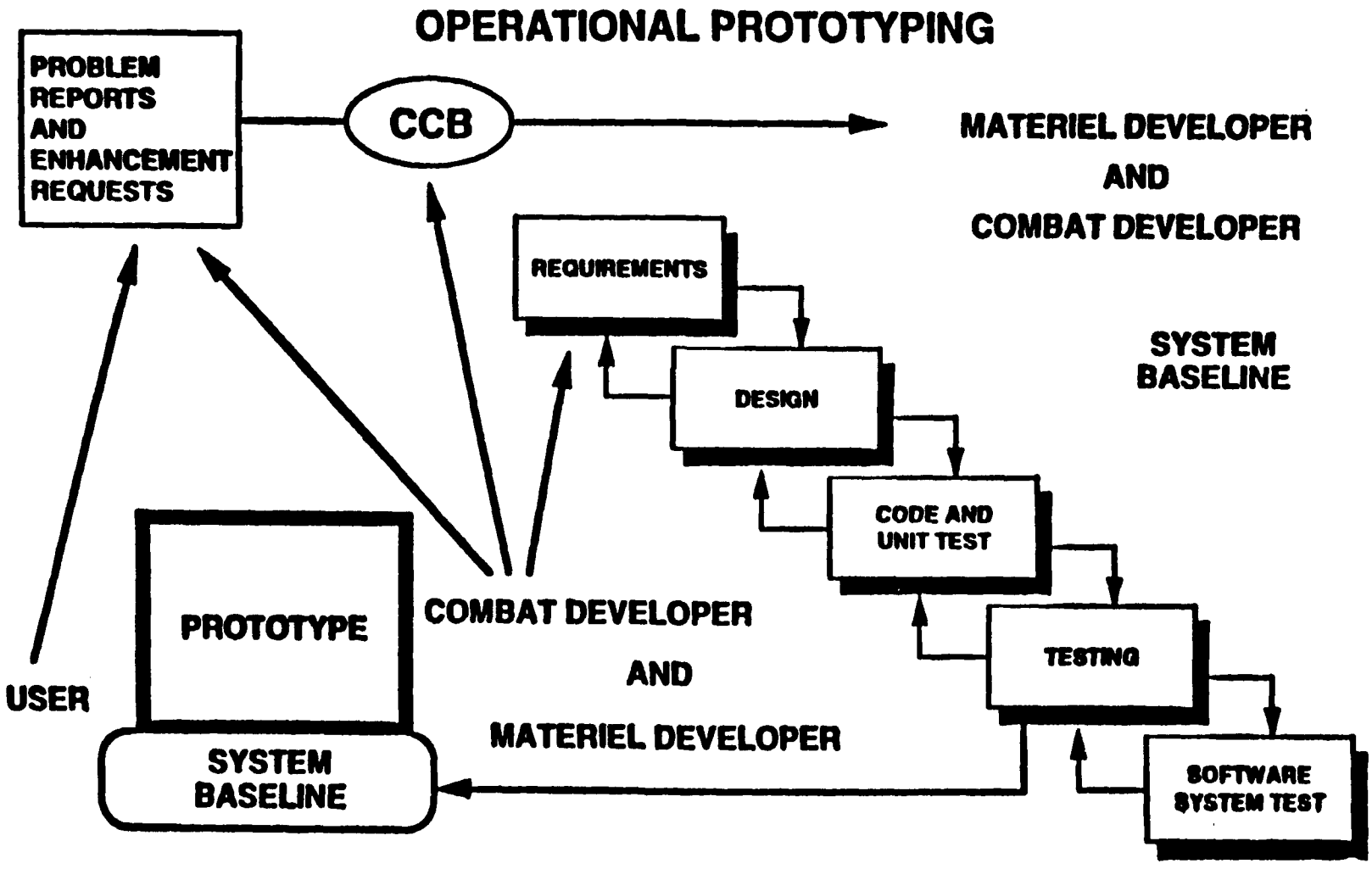
- THESE ACTIVITIES ARE NOT "SEQUENTIAL"
- THEY ARE "PARALLEL," "INTERACTIVE," AND "ITERATIVE"
- PROTOTYPING IS A KEY INGREDIENT IN THE PROCESS

WE CAN'T BE CERTAIN ABOUT COST/SCHEDULE UNTIL WE'RE CERTAIN ABOUT THE NATURE OF THE PRODUCT

PEO-CCS TYPICAL EXAMPLES

• PRE-SOURCE SELECTION LOC ESTIMATE	X SLOC
• LOC ESTIMATE AT CDR	2.2 X SLOC
• LOC ESTIMATE AT COMPLETION	2.7 X SLOC
• PERCENTAGE OF TIME IN DESIGN PHASE	53% - 70%
• PERCENTAGE OF COST CONSUMED IN DESIGN PHASE	50% - 60%
• STABILITY OF REQUIREMENTS	35% - 90%

HOW TO IMPROVE THE PROCESS: DO PRIOR TO OR PARALLEL WITH DEVELOPMENT CONTRACT



PEO-CCS ACTIONS

- CREATING PROTOTYPE TEAMS IN ASAS AND MCS
- DESIGNATED SINGLE ACTIVITY IN ARMY FOR INTEL FUSION; INCLUDES CINC INITIATIVES
- ADD PROTOTYPE ACTIVITIES TO CONTRACTS
- REQUIRE CAPABILITY PACKAGES FOR EARLY DELIVERIES VICE VERSIONS OF SOFTWARE
- 1st CAV HAS VOLUNTEERED TO BE BETA SITE FOR MCS/CSSCS; USAREUR FOR ASAS
- ALLOW FOR CODE GROWTH IN PROGRAM BASELINES
- WORK WITH TEST COMMUNITY TO REFINE CONCEPTS
- JOIN BATTLE LABS

SUMMARY

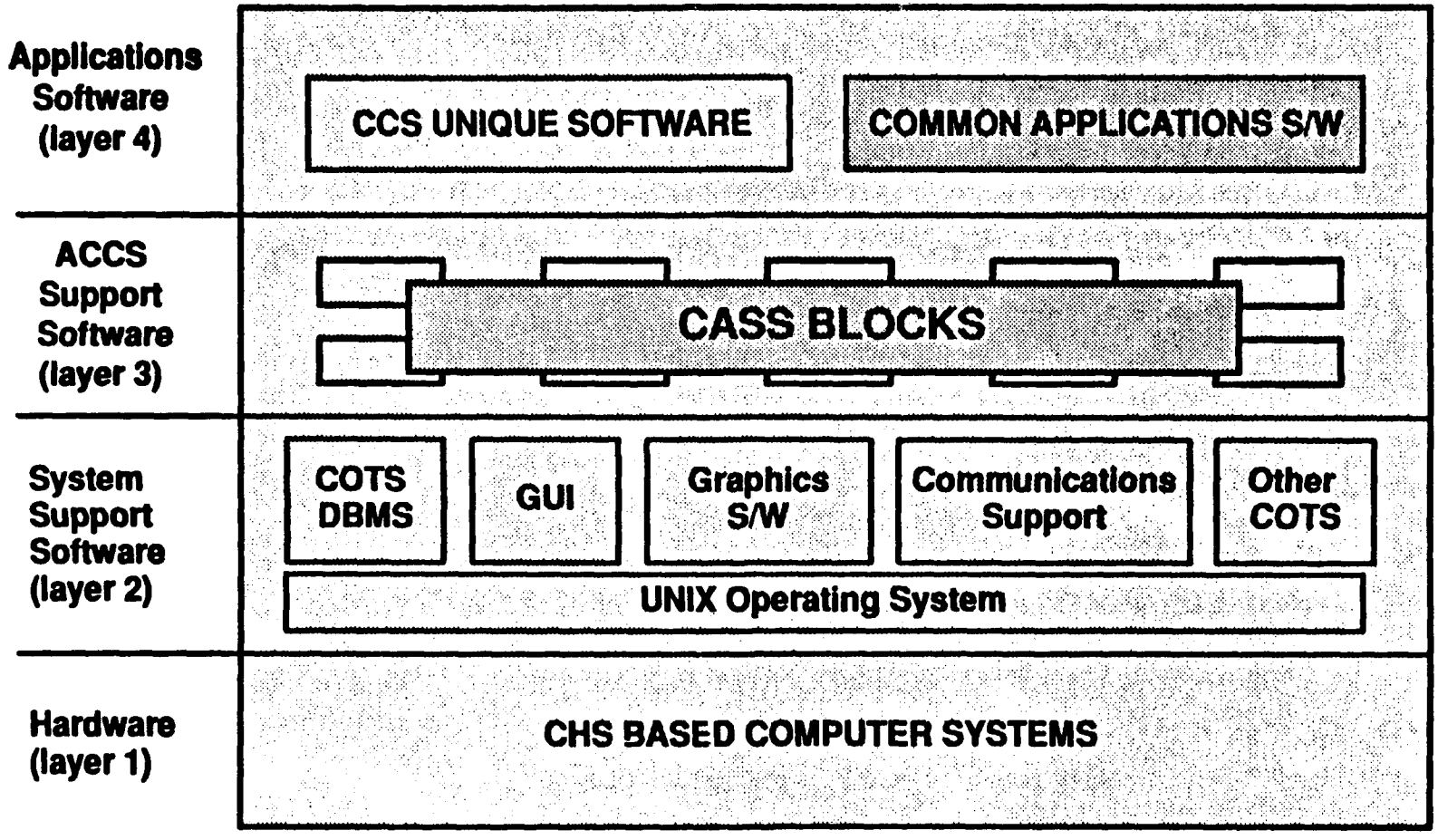
- THE CLASSICAL PROCESS IS NOT RESPONSIVE TO:
  - USER NEEDS
  - TECHNOLOGY UPGRADES
  - SOFTWARE CAPABILITIES
- NEED FLEXIBILITY DURING REQUIREMENTS DEFINITION
- USERS NEED TO HELP DESIGN THE PRODUCT
- NEED FASTER RESPONSES BY DEVELOPER
- PROTOTYPING SHOULD BE THE NORM
- A WELL-DEFINED SOFTWARE ARCHITECTURE WILL EXPEDITE TRANSITIONS

Advanced Planning Briefing for Industry

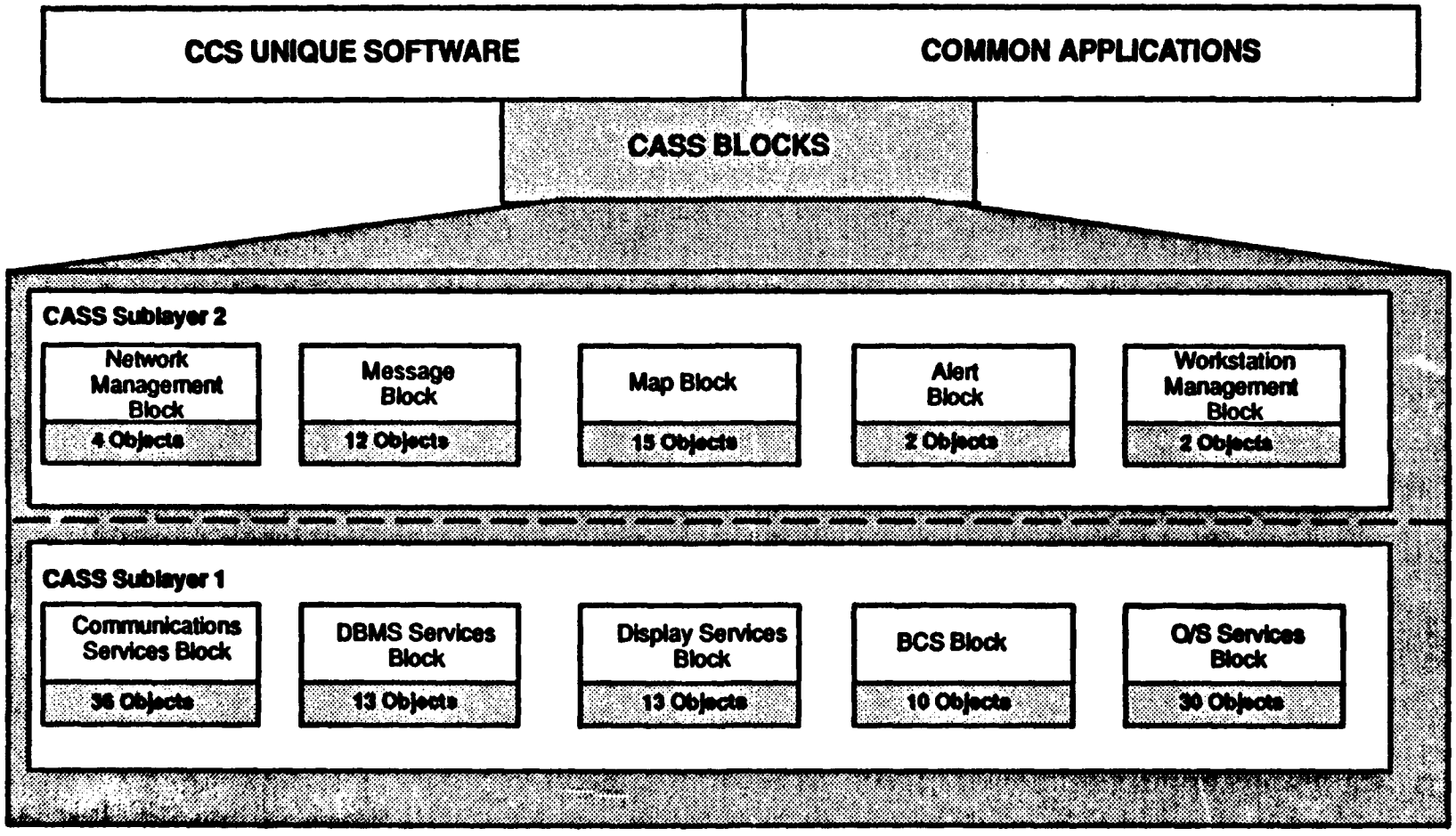
ACCS
COMMON SOFTWARE PROGRAM

MR. RANDY KORICH
PRODUCT MANAGER,
COMMON SOFTWARE

COMMON SOFTWARE ARCHITECTURE



CASS COMPONENT BREAKOUT



SUMMARY: 10 Blocks
137 Objects

WHERE WE ARE — WHERE WE'RE GOING

- **DOCUMENTATION PRODUCED**
  - **Requirements defined**
  - **Architecture established**
- **MOVED INTO EXECUTION PHASE**
  - **Leverage off BFA current development**
  - **Block developers identified for CASS**
  - **CASS SW will be available 4th QTR 93 with Associated Programmers Manuals**

FUTURE EFFORTS CONCENTRATING ON REUSABLE SOFTWARE CAPABILITY PACKAGES.

SOFTWARE CAPABILITY PACKAGES

OVERVIEW

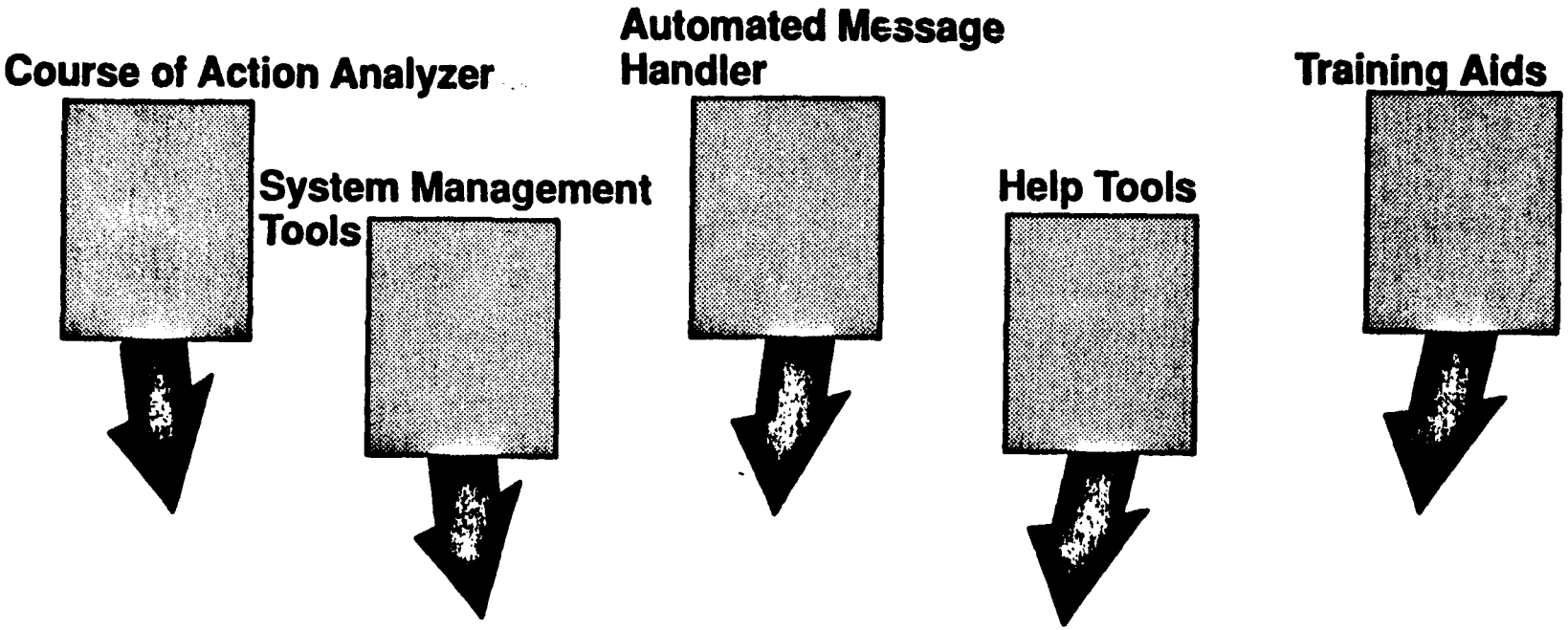
PURPOSE: APPLICATION SOFTWARE MODULES THAT PROVIDE FUNCTIONALITY TO MEET TODAY'S C2 REQUIREMENTS

KEY CHARACTERISTICS:

- STAND–ALONE AND/OR INTEGRATED MODULES
- BASED ON ACCS LAYERED ARCHITECTURE
- UTILIZE SERVICES PROVIDED BY CASS
- FOCUS ON HIGH PAY–OFF AREAS
- CONCENTRATE ON APPLICATIONS AND NOT SUPPORT SOFTWARE

DEVELOPMENT HAS BEGUN !

AREAS OF OPPORTUNITIES



- CS Program Provides The Foundation
- We Are Constantly Looking For Tools And Applications

OVERVIEW

THE COMMON SOFTWARE BULLETIN BOARD SYSTEM (CSBBS) WILL PROVIDE:

- EXCHANGE OF INFORMATION BETWEEN COMMON SOFTWARE DEVELOPERS, USERS, AND MAINTAINERS
- CENTRALIZED PROBLEM REPORTING
- DISTRIBUTION OF PROBLEM SOLUTIONS
- ACCESS TO COMMON SOFTWARE RELEASES
- ACCESS TO DOCUMENTATION
- PHONE # (908)532–8295

SCHEDULE HIGHLIGHTS

CASS Documentation & V0.4	Available today !
CS Bulletin Board	Available today !
CASS V1.0	Jul 93
Movement Control	Jul 93
Terrain Evaluation Module	Aug 93
OPLAN/OPORD	Aug 93
CASS V1.1	Nov 93

Future releases of CASS every six months.

INDUSTRY PARTICIPATION ??

To focus future S/W developments via rapid integration of software capability packages using the ACCS architecture!!

POC:

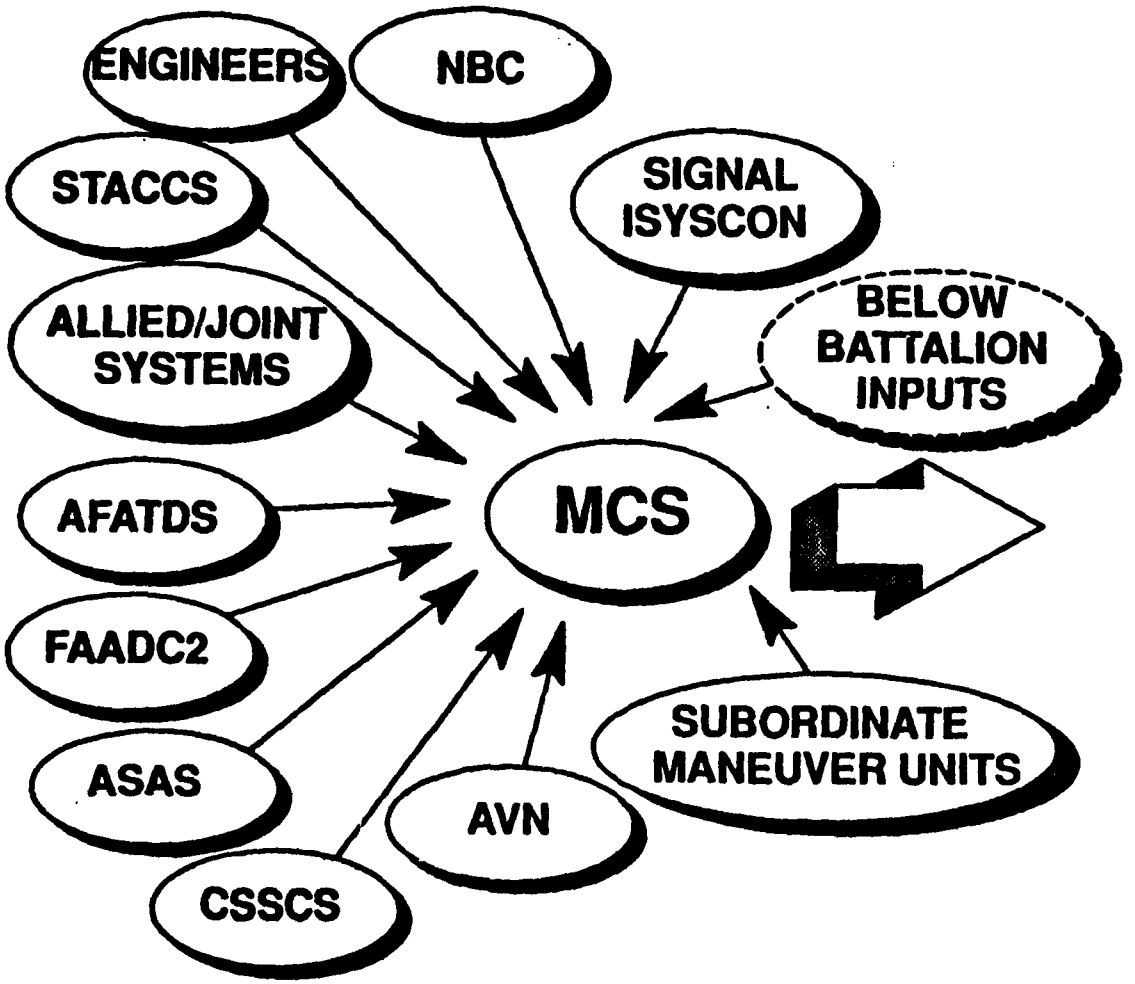
Product Manager, Common Software
ATTN: Mr. Randy Korich
SFAE–CC–CHS–CS
Albert J. Myer Center
Fort Monmouth, NJ 07703–5402

ADVANCE PLANNING BRIEFING TO INDUSTRY

MANEUVER CONTROL SYSTEM (MCS)

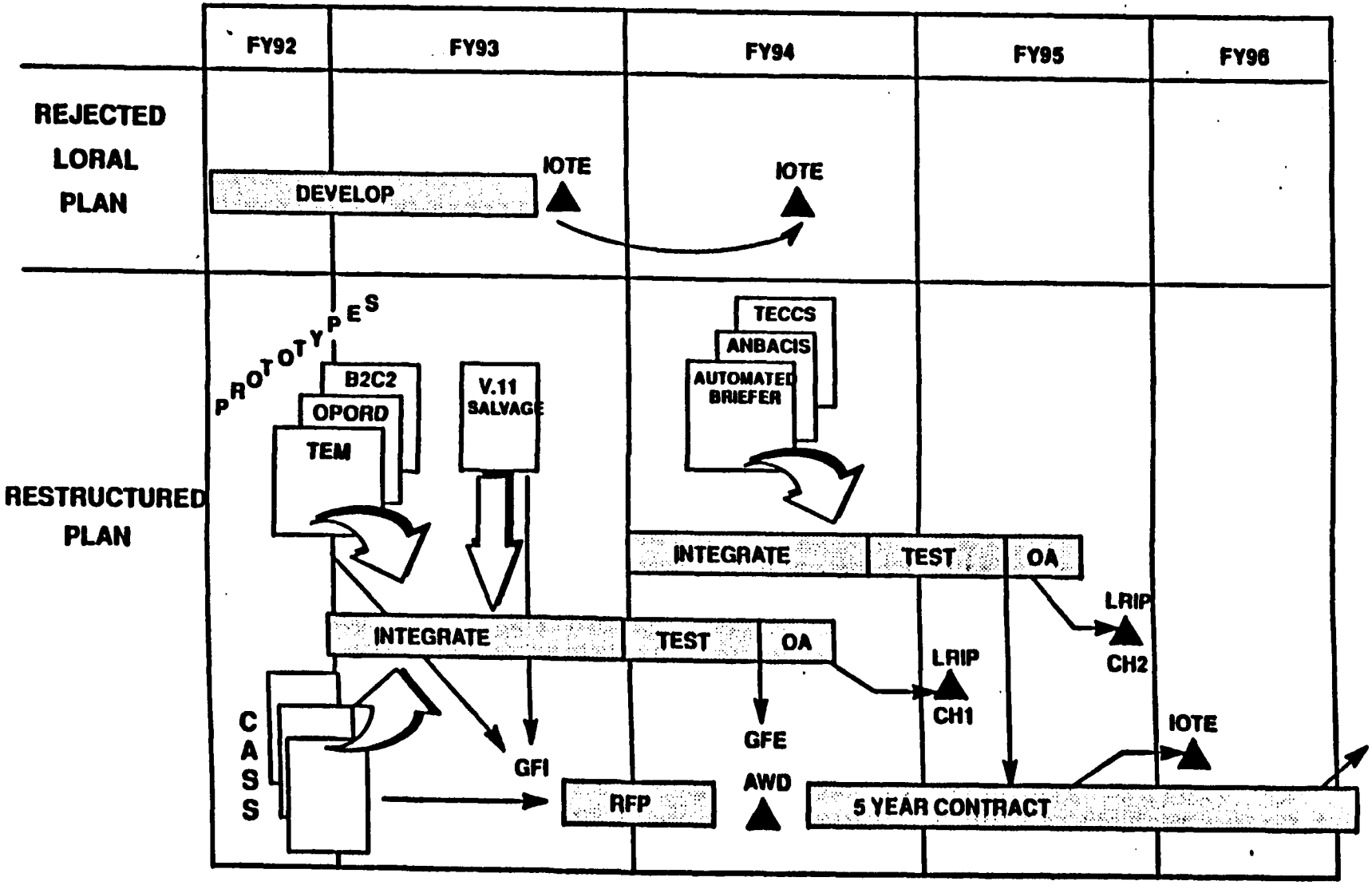
MR. PAUL ULRICH
OFFICE OF PROJECT MANAGER
OPERATIONS TACTICAL DATA SYSTEMS

MCS
MANEUVER CONTROL SYSTEM



- GENERATE AND TRANSMIT ELECTRONICALLY OPLANS/OPORDERS
- COMMON PICTURE OF THE BATTLEFIELD (ENEMY/FRIENDLY)
- MESSAGE TEMPLATES
- ROLLS UP INFO FROM SUBORDINATE UNITS
- DETAILED DATA ON STATUS OF UNITS, PERSONNEL, EQUIPMENT
- OPERATIONAL OVERLAYS
- GRAPHICAL TASK ORGANIZATION
- ABILITY TO PASS ORDERS/ OVERLAYS/PLANS/REPORTS TO HIGHER, LOWER AND WITHIN HQS ELECTRONICALLY

RESTRUCTURED MCS PLAN



MCS PROGRAM PLAN

- ESTABLISH DEVELOPMENTAL PROTOTYPE SUPPORT FACILITY AT FORT MONMOUTH.
- ESTABLISH ATCCS SE&I CONTRACTOR AS LEAD FOR MCS PROTOTYPE EFFORT.
- THE LORAL V.11 SOFTWARE WILL SERVE AS A SOURCE OF REUSE MODULES.
  - COMMUNICATIONS
  - DATABASE SCHEME
  - TASK ORGANIZATION
  - RESOURCE ROLL-UPS
- AN MCS V.12 WILL BE PROTOTYPED/BUILT USING CASS MODULES AS A FOUNDATION.
- REUSED MCS SOFTWARE PLUS EXISTING APPLICATION MODULES WILL BE ADDED TO THE CASS FOUNDATION.
- USE PRE RELEASES OF CASS FOR TESTING.
- EXPEDITE APPLICATION MODULES/PACKAGES.
- REBASELINE SOFTWARE, TECHNICAL BULLETIN, TRAINING AND SUPPORT DOCUMENTATION NEEDED FOR OPERATIONAL ASSESSMENTS.
- OUTPUT PROTOTYPE EFFORT TO BLOCK IV RFP EFFORTS.

PROTOTYPE SW TO BE EVALUATED IN 1ST CAV VIA BATTLE LABS IN FY 93

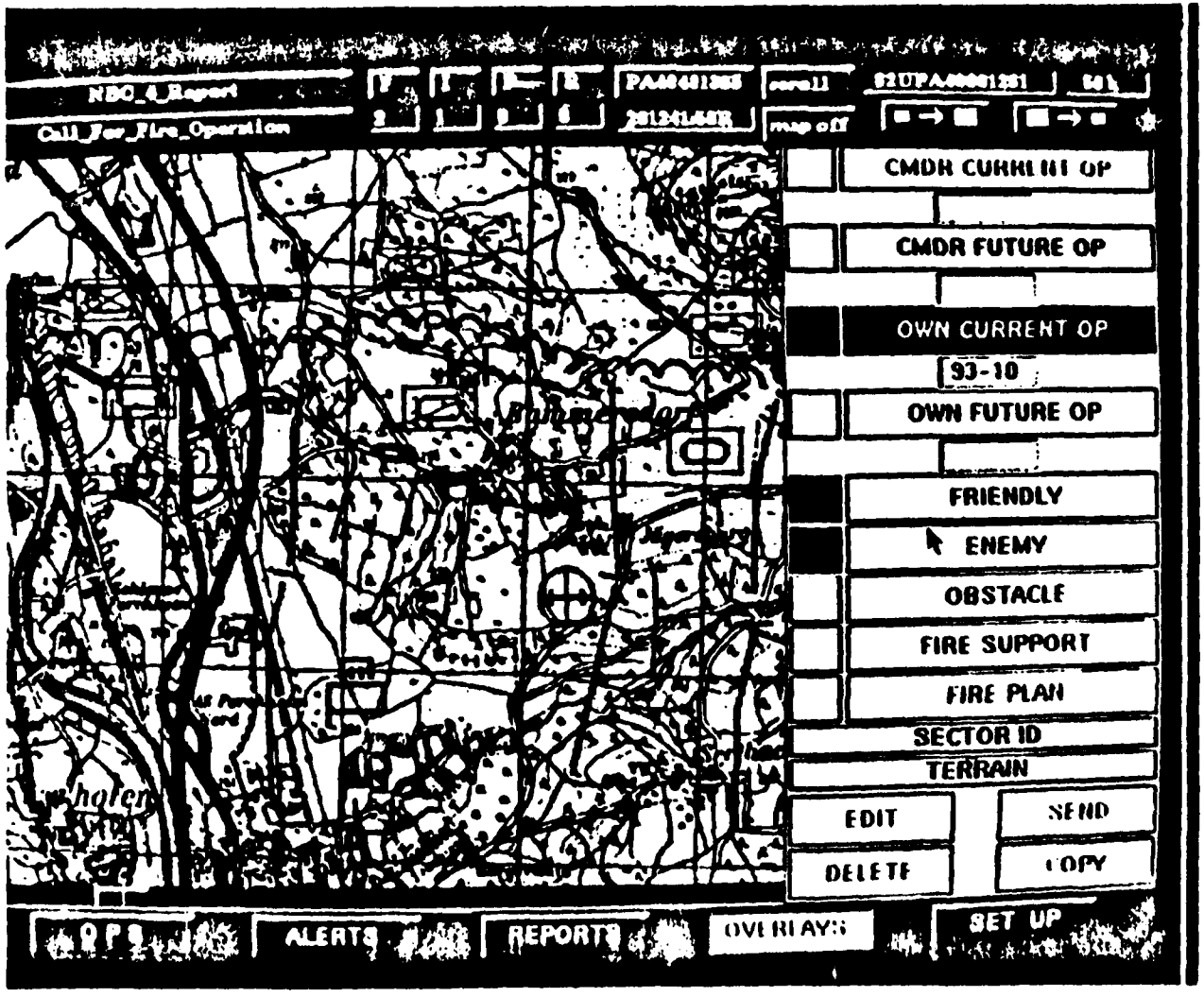
- B2C2 MODULE
- OPORD MODULE
- TERRAIN EVALUATION MODULE

CAPABILITIES – B2C2

GRAPHICS

Capabilities

- STANDARD MILITARY GRAPHICS
- TOGGLE OVERLAYS DISPLAY ON OR OFF
- TOGGLE MAP DISPLAY ON OR OFF
- INCOMING MESSAGES AUTOMATICALLY UPDATE UNIT POSITIONS
- POSITION DATA AVAILABLE FROM GPS
- SCROLL AND ZOOM
- POINTING DEVICE PLACES SYMBOLS ON MAP

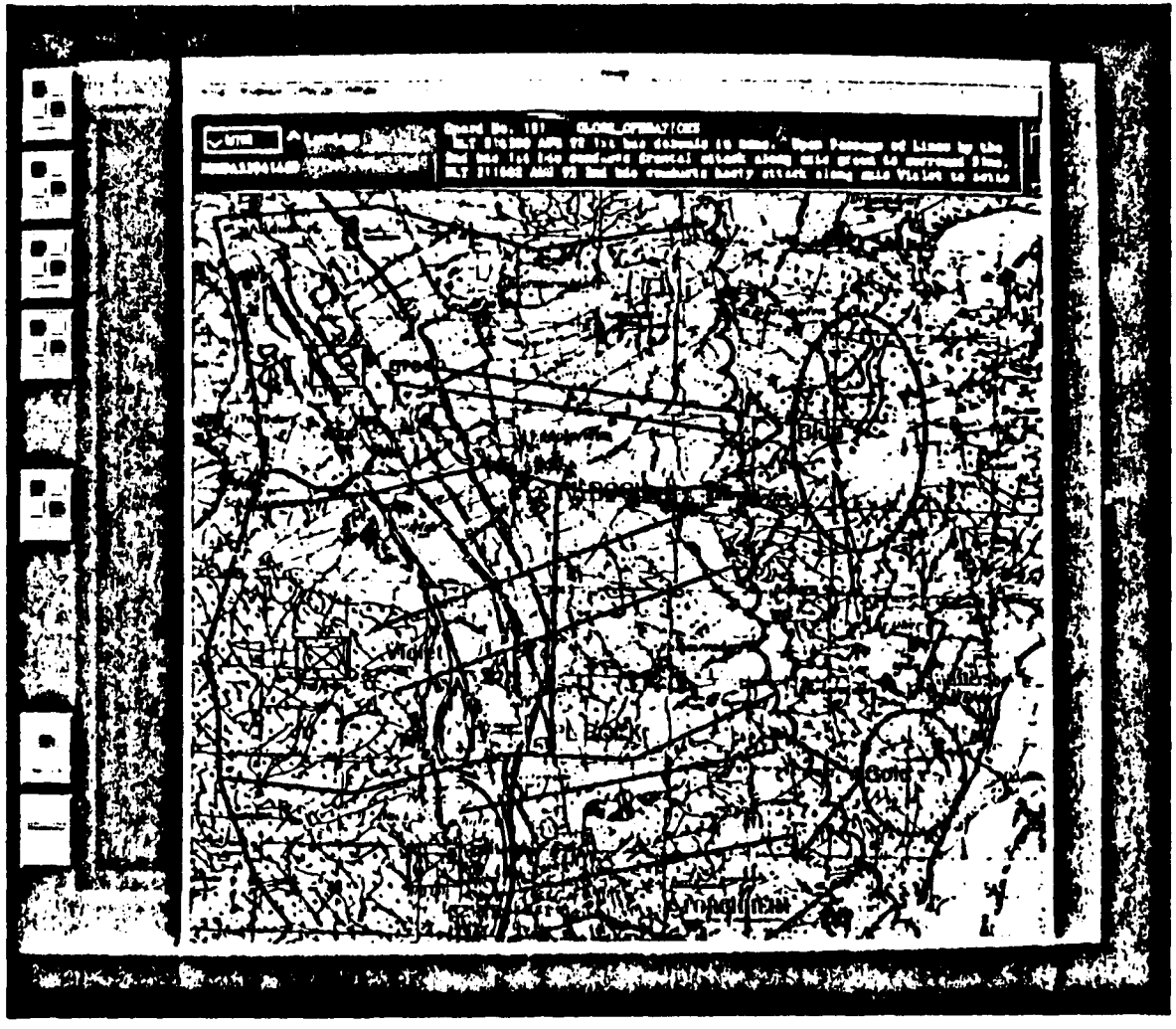


CAPABILITIES – OPORD

OPORD MAP SCREEN

Capabilities

- GRAPHICAL PORTRAYAL OF OPORD
- BATTLEFIELD GEOMETRY TIED TO OPORD DATABASE
- CHANGES TO GRAPHICS AUTOMATICALLY UPDATES TEXTUAL ORDER
- CHANGES TO TEXTUAL ORDER FORCES CHANGES TO GRAPHICS
- ADDITIONAL INFORMATION ON UNITS AND CONTROL MEASURES CAN BE OBTAINED BY CLICKING ON THE SYMBOL

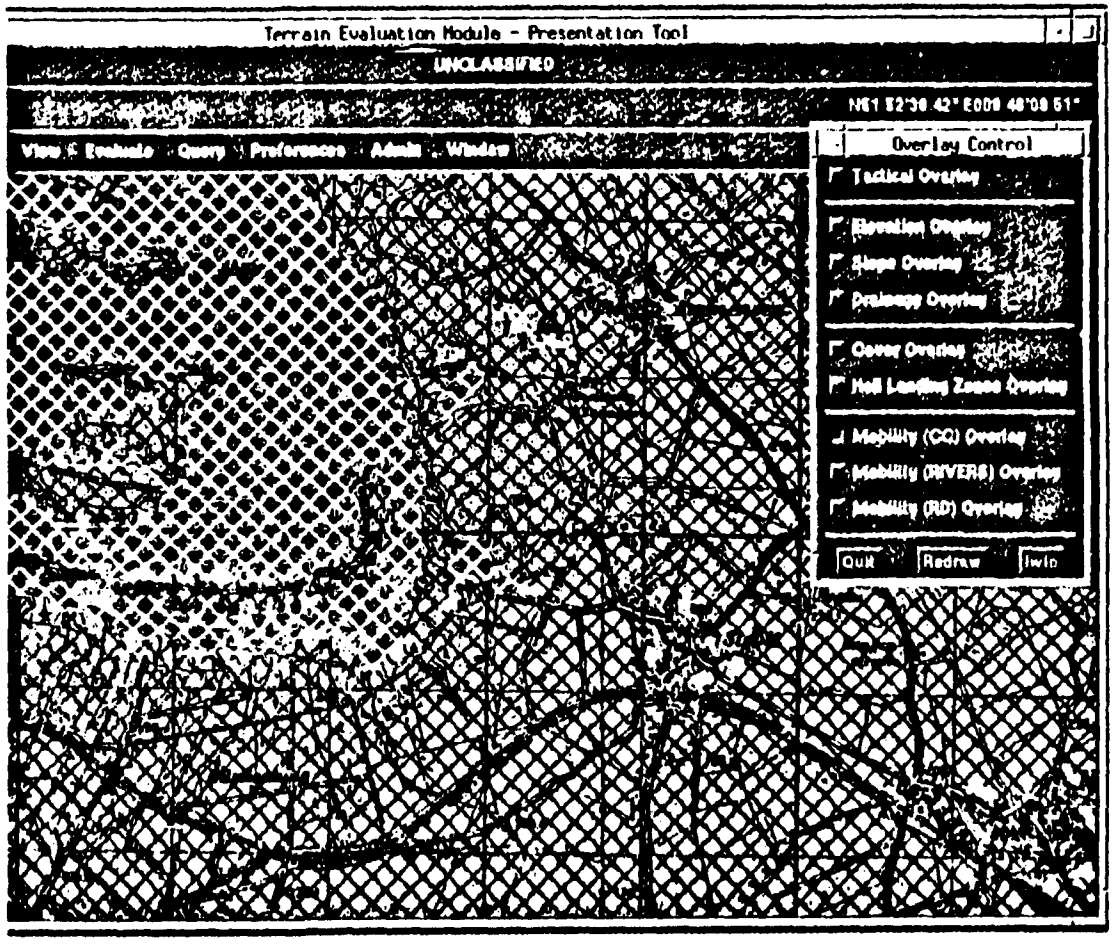


CAPABILITIES – TEM

Capabilities

- MOBILITY CORRIDORS/AVENUES OF APPROACH, SELECT UNIT ECHELON/COMPOSITION FROM DATABASE, SELECT WEATHER CONDITIONS, DETERMINE CROSS–COUNTRY MOVEMENT POTENTIAL, DETERMINE MOBILITY CORRIDORS/AVENUES OF APPROACH
- COMPUTE OVER THE GROUND DISTANCE, DETERMINE OVER THE GROUND DISTANCE, DETERMINE AS THE CROW FLIES DISTANCE
- COMPUTE TIME OF TRAVEL PREDICTIONS, SELECT VEHICLE TYPE AND RESTRICTIONS, DETERMINE TRAVEL TIME BETWEEN LOCATIONS
- PREPARE UNIT MOVEMENT PREDICTIONS, SELECT UNIT COMPOSITION, TRAVEL RESTRICTIONS, SHORTEST OR FASTEST PATH, REPORTING INTERVALS, AND WAY POINTS, DETERMINE MOVEMENT PATH (TIME STAMPED)
- IDENTIFY AVENUES OF APPROACH FOR HELICOPTERS

TERRAIN (MOBILITY) SCREEN IMAGE



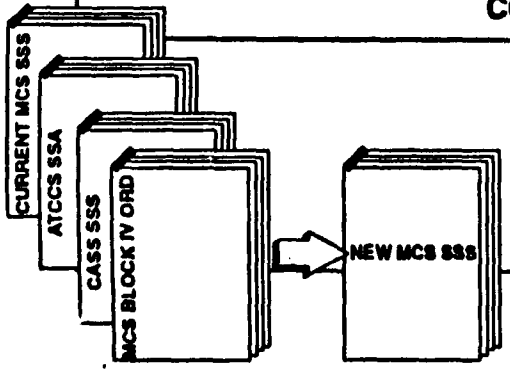
MCS EVOLUTION

MCS PROGRESSION TO MEET BLOCK IV ORD REQUIREMENTS

PROTOTYPES

BLOCK III	BLOCK IV		
V12.0 Prototype NDI CHS-1 TCU LCU	**V12.1** NDI CHS-1 TCU LCU CHS-2 TCU CHS-2 HTU	**V12.2** NDI CHS-1 TCU LCU CHS-2 TCU CHS-2 HTU	**V12.3** NDI CHS-1 TCU LCU CHS-2 TCU CHS-2 HTU
-CHS-1 TCU -LCU -NDI (TCP/AC) -CASS FOUNDATION -PRIOR MCS V.11 REUSE -BASIC MAP GRAPHICS (TEM) -BASIC OPLAN/OPORD -BASIC B2C2	V12.01 FROM PREVIOUS + -PORT TO CHS-2 TCU -DEVELOP CHS-2 HTU -EMBEDDED TRAINING -NATURAL QUERY OF dB -INTEROP APPLICATION -MESSAGE ENHANCEMENTS -DIRECT dB MANIPULATION -CDRs TRACKED ITEM LIST -dB STRUCTURE UPGRADES -GEO REF APPLICATION -TASK ORG/SYS MGR I/F -VOICE RECOG/SYN APP -GPS PROCESSING -BRIEFING GENERATOR -"TELESTRATOR" APP -C2 SECURITY	V12.1 FROM PREVIOUS + -ENHANCED MAP GRAPHICS -ENHANCED OPLAN/OPORD -COA APPLICATION -MULTIPLE SCREEN CONTROL -MOVEMENT CONTROL APP -DTSS/IMETS I/F -JOINT/ALLIED I/F UPGRADE -B1 SECURITY APPLICATION	V12.2 FROM PREVIOUS + -FINAL MAP GRAPHICS -FOREIGN LANGUAGE XLATE -PURGE BY CLASSIFICATION -FINAL B2C2 -ALBM -B2 SECURITY
V12.01 Prototype NDI CHS-1 TCU LCU CHS-2 TCU CHS-2 HTU V12.0 FROM ABOVE + -CHS-2 TCU -CHS-2 HTU -STACCS ABG -ANBACIS -TECCS (MCS-ENG)			

COMMON ELEMENTS OF DEVELOPMENT (FOUNDATION)



-BUILD ON CASS FOUNDATION
-REUSE MCS V.11 MODULES
-UPDATE MCS SSS
-EXTENSIVE USE OF EXISTING PROTOTYPES
-EXTENSIVE FIELD PROTOTYPING OF PRE RELEASES
-MAINTAIN DoD 2167A DEVELOPMENT STANDARDS

MCS RECOMPETE RFP

- CONTINUE THE EVOLUTIONARY DEVELOPMENT AND FIELDING OF MCS
- PERFORM SW DEVELOPMENT, INTEGRATION AND SE&I EFFORTS
- 5 YEAR COST PLUS AWARD FEE
- TIMEFRAME

RFP RELEASE*	1ST QTR FY94
PROJECT AWARD	3RD QTR FY94

- ESTIMATED VALUE $65 - $85M
- POC: PETER JOHNSON
  (908) 532-6483

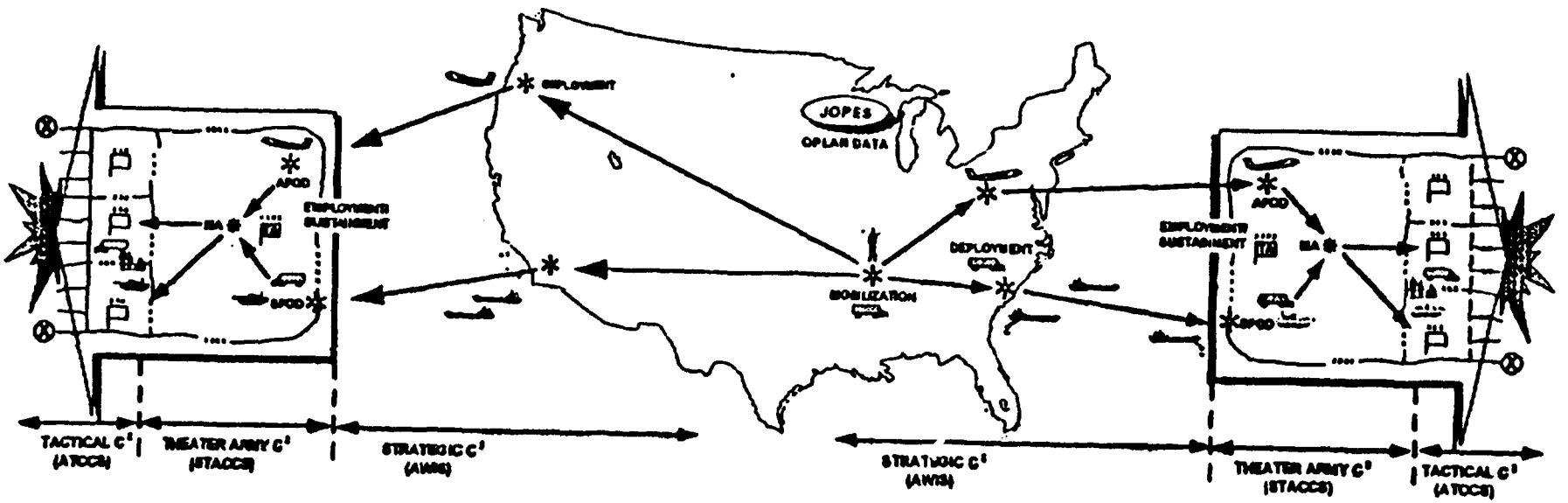
*REQUIRES OSD RELEASE

ADVANCE PLANNING BRIEFING TO INDUSTRY

ARMY WWMCCS INFORMATION SYSTEM (AWIS)

MR. JAMES H. BRAY
PROJECT MANAGER, AWIS

WHERE AWIS FITS



AWIS MISSION

- SUPPORT THE ARMY'S IMPLEMENTATION OF THE JOINT OPERATION PLANNING AND EXECUTION SYSTEM (JOPES)
- DEVELOP SOFTWARE AND FIELD HARDWARE TO:
  - SUPPORT THE NCA; UNIFIED AND SPECIFIED COMMANDS; TRANSPORTATION OPERATING COMMANDS; ARMY COMPONENTS; HQDA
  - PERMIT CENTRALIZED DIRECTION AND DECENTRALIZED PLANNING AND EXECUTION
  - PERMIT ARMY COMPONENT COMMAND TO SUPPORT UNIFIED COMBATANT COMMAND IN DEVELOPMENT OF COURSE OF ACTION AND MANAGEMENT OF CRITICAL RESOURCES
- SUPPORT SITES ASSIGNED TO THE ARMY AND PROVIDE INTERFACES TO SUBORDINATE LOCATIONS

AWIS ACQUISITION STRATEGY



CORE BLOCK FORSCOM

HOST
DME
WWS
LAN

MOBILIZATION (MOB/ODEE
ASORTS (UNIT STATUS)
LOGISTICS (ALOG)
PERSONNEL

MAISRC IPR

BLOCK 1 HQDA/USARPAC

HOST
DME
WWS
LAN

MOBILIZA
ASORTS
LOGISTIC

OT 1 MDR III

BLOCK 2 EUCOM/USAREUR AMC (SIMA)

HOST
DME
WWS
LAN

MOBILIZATION
ASORTS
LOGISTICS

OT 2 MAISRC IPR

BLOCK 3 MTMC/SOUTHCOM

HOST
DME
WWS
LAN

LOGISTICS
OPERATIONS
TRANSPORTATION
PERSONNEL

OT 3 MAISRC IPR

BLOCK 4 AWC

HARDWARE UPGRADES

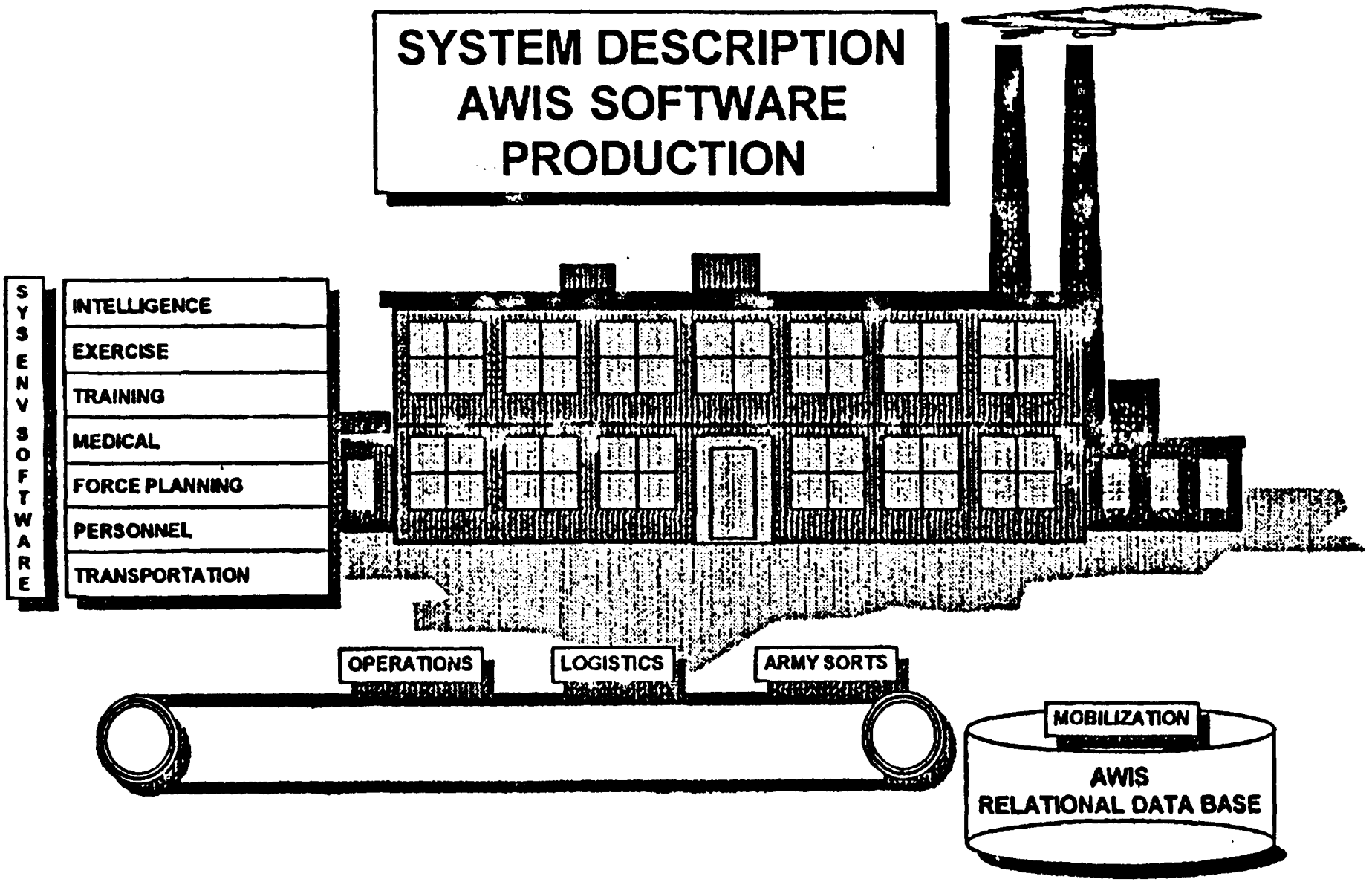
PERSONNEL
FORCE PLANNING
MEDICAL
TRAINING
EXERCISE
INTELLIGENCE

OT 4

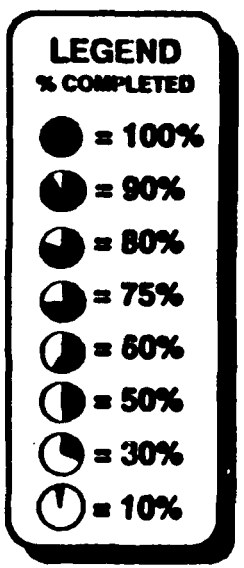
LEGEND

HOST = WWMCCS HOST
DME = DATABASE MANAGEMENT ENVIRONMENT
WWS = WIS WORKSTATION
LAN = LOCAL AREA NETWORK
ASORTS = ARMY STATUS OF RESOURCES AND TRAINING SYSTEM
MOB/ODEE = MOBILIZATION/OPERATIONS DEPLOYMENT/EMPLOYMENT EXECUTION
ALOG = AWIS LOGISTICS

SYSTEM DESCRIPTION
AWIS SOFTWARE
PRODUCTION

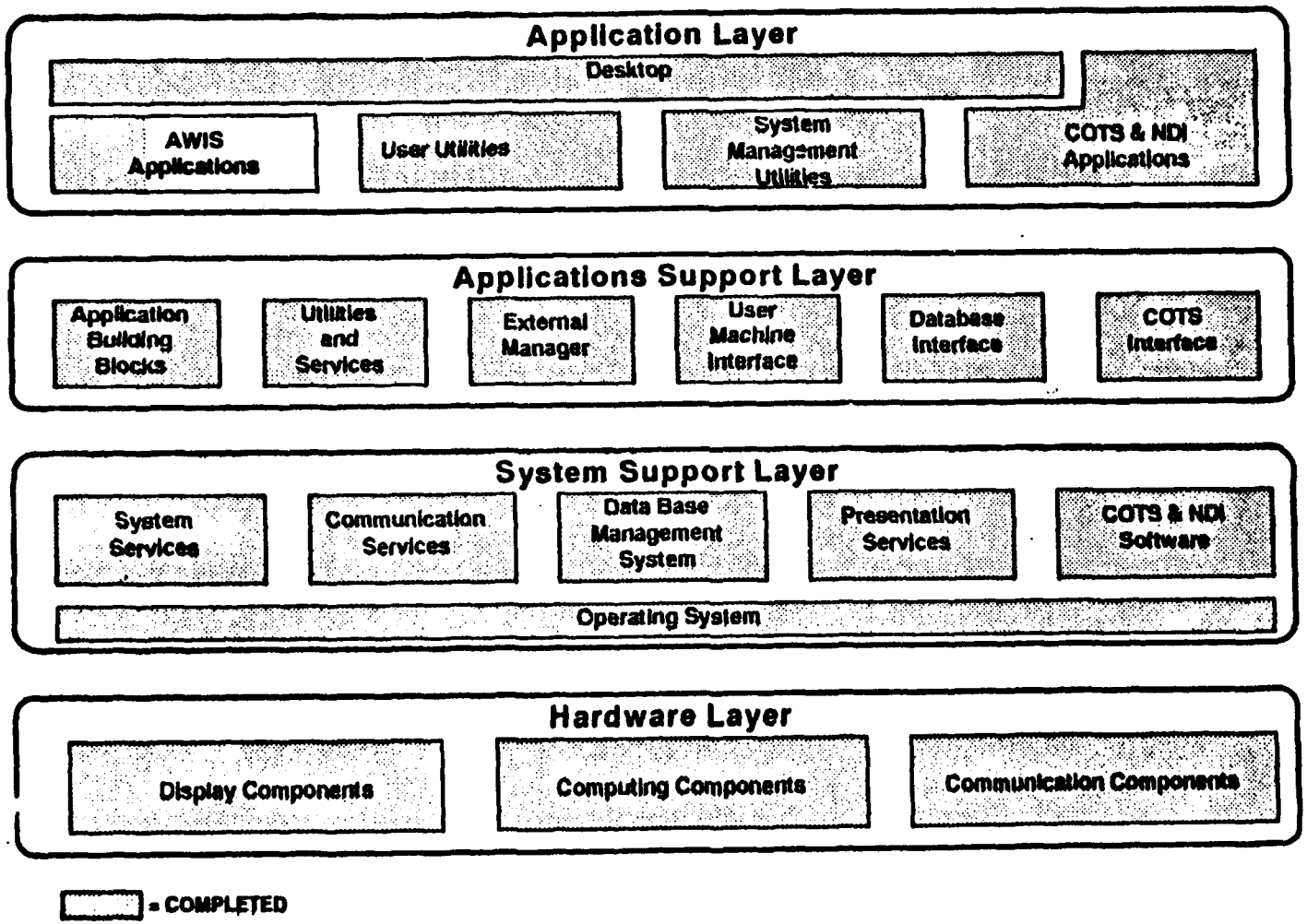


AWIS STRATEGIC COMMAND AND CONTROL SOFTWARE



PRODUCT LINES	FY88-92 CORE BLK	FY91-93 BLOCK 1	FY92-94 BLOCK 2	FY94-96 BLOCK 3	FY96-99 BLOCK 4
MOBILIZATION	◑	◕	●		
ASORTS	◔	◕	●		
LOGISTICS	◑	◕	◕	●	
OPERATIONS				●	
TRANSPORTATION				●	
PERSONNEL	◔			◕	●
FORCE PLANNING					◑
MEDICAL					◑
TRAINING					◑
EXERCISE					◑
INTELLIGENCE					◑

AWIS ARCHITECTURAL COMPONENTS



CONTRACT OPPORTUNITY

TITLE: AWIS SOFTWARE DEVELOPMENT CONTRACT

OBJECTIVE: ADA SOFTWARE

SCOPE: DEFINE, DESIGN, DEVELOP, DOCUMENT AND DEPLOY A FULLY OPERATIONAL ARCHITECTURE TO AWIS SITES IAW DCSOPS PRIORITIES

TYPE: CPAF 5 YEARS -- FOR PRODUCT LINE DEVELOPMENT
FFP -- FOR EXISTING PRODUCT LINE DEVELOPMENT

STATUS: DRAFT RFP RELEASED 23 APR 93, RFP DUE OUT MID JUNE 93

SCHEDULE: EXPECTED AWARD 1ST QTR FY94

APPROX. VALUE: $55 - 75M

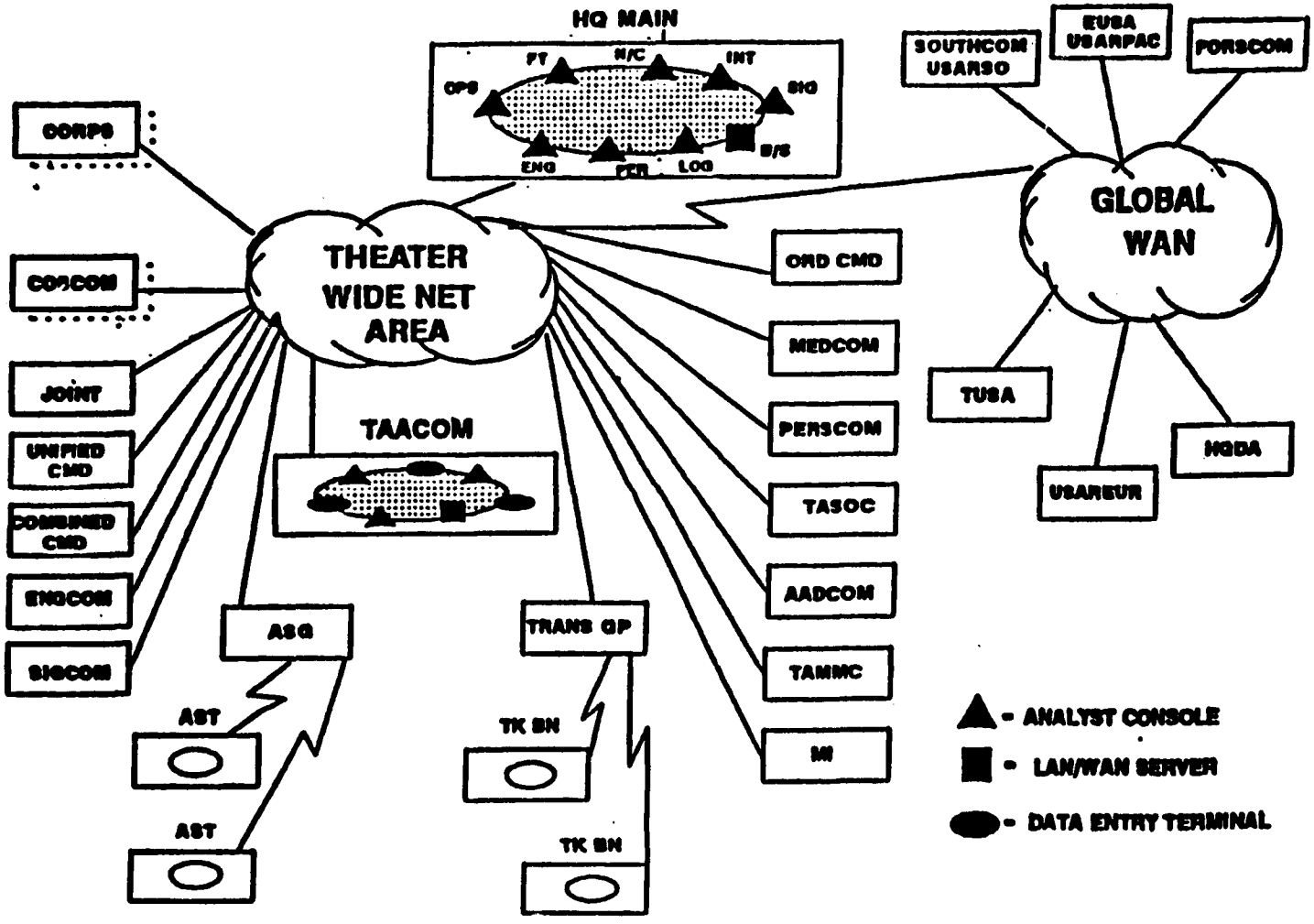
POC: JEANINE LATTIN
(703) 325-4998

ADVANCE PLANNING BRIEFING TO INDUSTRY

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM (STACCS)

FRANK NISSEN
OFFICE OF PRODUCT MANAGER
STACCS

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM NOTIONAL SYSTEMS ARCHITECTURE



STACCS SYSTEM CONCEPT

- PROVIDE AUTOMATED DECISION AIDS AND DATABASE APPLICATIONS TO SUPPORT THE COMMANDER AND HIS STAFF ELEMENTS AT ECHELONS ABOVE CORPS.
- PROVIDE A LINK BETWEEN STRATEGIC SYSTEMS AND TACTICAL SYSTEMS (ATCCS).
  - -- TRACKS MOVEMENT OF TROOPS AND EQUIPMENT INTO THEATER.
  - -- INTERFACES TO TRANSPORTATION, LOGISTICS AND OTHER COMMANDS.
- ELECTRONICALLY LINKS UNITS WITH COMMON, ARMY STANDARD HARDWARE AND SOFTWARE INTO A WIDE AREA NETWORK SHARING COMMON DATA.
  - -- LOCAL AREA NETWORKS WITHIN EACH HEADQUARTERS PROVIDE ACCESS BY FUNCTIONAL USERS TO COMMON DATABASES AND CONNECTIVITY TO OTHER STAFF ELEMENTS.
  - -- SYSTEM ALSO OPERATES ON LOW COST, COMMERCIAL PERSONAL COMPUTERS TIED TO THE LAN.

STACCS PROGRAM STRATEGY

- FREQUENT (SHORT CYCLE) FUNCTIONAL CAPABILITY RELEASES
- ANNUAL INCREMENTAL (SPIRAL) RELEASES
  - -- CAC (USER) PRIORITIZATION OF CAPABILITY
  - -- USABLE IN ALL THEATERS
  - -- RAPIDLY PROVIDE INCREASING CAPABILITY TO USERS
  - -- PROVIDE FOR USER FEEDBACK INTO THE DEVELOPMENT PROCESS
- MINOR RELEASES MID YEAR
  - -- CORRECTION OF CRITICAL PROBLEMS
  - -- RESPONSIVE TO USER TESTING/OPTEC ASSESSMENT
  - -- PRIORITIES ESTABLISHED BY CCB
  - -- EVOLUTIONARY DEVELOPMENT
- USES ATCCS COMMON HARDWARE
- REUSES NDI, COTS AND PREVIOUSLY DEVELOPED SOFTWARE

STACCS CAPABILITY

ORD REQUIREMENT	FY 94	FY 95	FY 96
INF MGT SYS RESOURCE MONITOR	IU	F	
MEMORY RETENTION		P	IOC
VOICE SYNTHESIS	P	IU	IOC
NATURAL QUERY			P
COMMANDER'S FORCE ANALYZER	IU	F	
COMMANDER'S LOG ANALYZER	IOC	IU	F
ADVANCED MAINT SYSTEM	P	IOC	F
ARTIFICIAL INTELLIGENCE DECISION SUP			P
MULTI-MEDIA DECISION SUPPORT SYSTEM	P	IU	IOC
NAVIGATIONAL AID OVERLAY		P	IOC
MEMORY DEVICE PURGE	P	IOC	F
VISUAL/AUDIBLE ALERTS	IOC	IU	IU

P-PROTOTYPE
IOC-INITIAL OPERATIONAL CAPABILITY
IU-INCREMENTAL UPGRADE
F-FINAL OPERATIONAL CAPABILITY

STACCS CAPABILITY

ORD REQUIREMENT	FY 94	FY 95	FY 96
AUTOMATED MSG HANDLING	P	IOC	IU
DATA DISTRIBUTION SYSTEM	IU	IU	F
MULTIPLE LOGICAL NETWORKS	IOC	IU	F
DEF MAPPING AGENCY COMP ADRG	IOC	F	
GRAPHICS EDITOR FOR OVERLAYS	IU	F	
BRIEFING SYSTEM	IU	F	
MEDICAL	IU	F	
END-TO-END FORCE TRACKING	IU	F	
BASES (REAR AREA)	F		
STAFF JOURNAL	F		
AUTOMATED RESOURCE DIRECTORY	F		
TARGET MGT DEVELOPMENT APPS	IOC	F	

P-PROTOTYPE
IOC-INITIAL OPERATIONAL CAPABILITY
IU-INCREMENTAL UPGRADE
F-FINAL OPERATIONAL CAPABILITY

STACCS CAPABILITY

ORD REQUIREMENT	FY 94	FY 95	FY 96
INFORMATION MANGEMENT	F		
PROVOST MARSHALL	F		
HOST NATION SUPPORT	P	IU	IOC
PERSONNEL	F		
FORCE MOVEMENT PLANNER	IOC	IU	F
ENGINEER	F		
ATCCS INTERFACE	F		
WWMCCS INTERFACE	F		
AF, NAVY AND USMC INTERFACES		F	
MAP STANDARDIZATION/TEM		F	
EMBEDDED TRAINING		F	
DUAL LANGUAGE			F
ADVANCED PLANNING (ARTIFICAL INTELLIGENCE) AND MSC COA ANALYSIS			F
BATTLEFIELD SIMULATION INTERFACE			F

P-PROTOTYPE

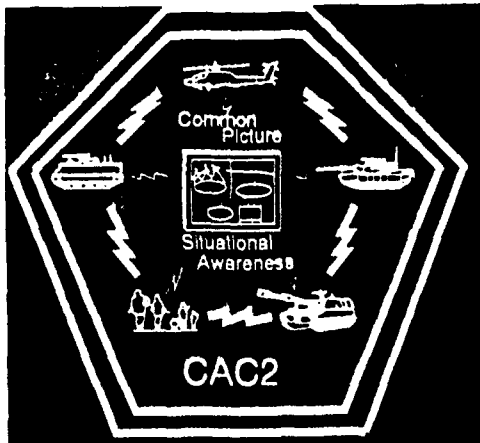
IOC-INITIAL OPERATIONAL CAPABILITY

IU-INCREMENTAL UPGRADE

F-FINAL OPERATIONAL CAPABILITY

STACCS RECOMPETE RFP

- CONTINUE THE EVOLUTIONARY DEVELOPMENT AND FIELDING OF STACCS
- PERFORM SYSTEM ENGINEERING, SOFTWARE DEVELOPMENT, TEST, INTEGRATION, UPGRADE AND MAINTAIN SOFTWARE AND HARDWARE FOR THE THEATER ARMIES
- 5 YEAR COST PLUS FIXED FEE CONTRACT (FUNDED INCREMENTALLY)
- TIMEFRAME
  - DRAFT RFP RELEASED ON ELECTRONIC BULLETIN BOARD, 15 DEC 92
  - RFP RELEASE 4TH QTR FY93
  - PROJECTED AWARD 4TH QTR FY94
- ESTIMATED VALUE - $80-100M
- CONTRACTING OFFICER: HOMER OKREPKI (908) 532-4634



CAC2 - ATD

COMBINED ARMS COMMAND AND CONTROL ADVANCED TECHNOLOGY DEMONSTRATION

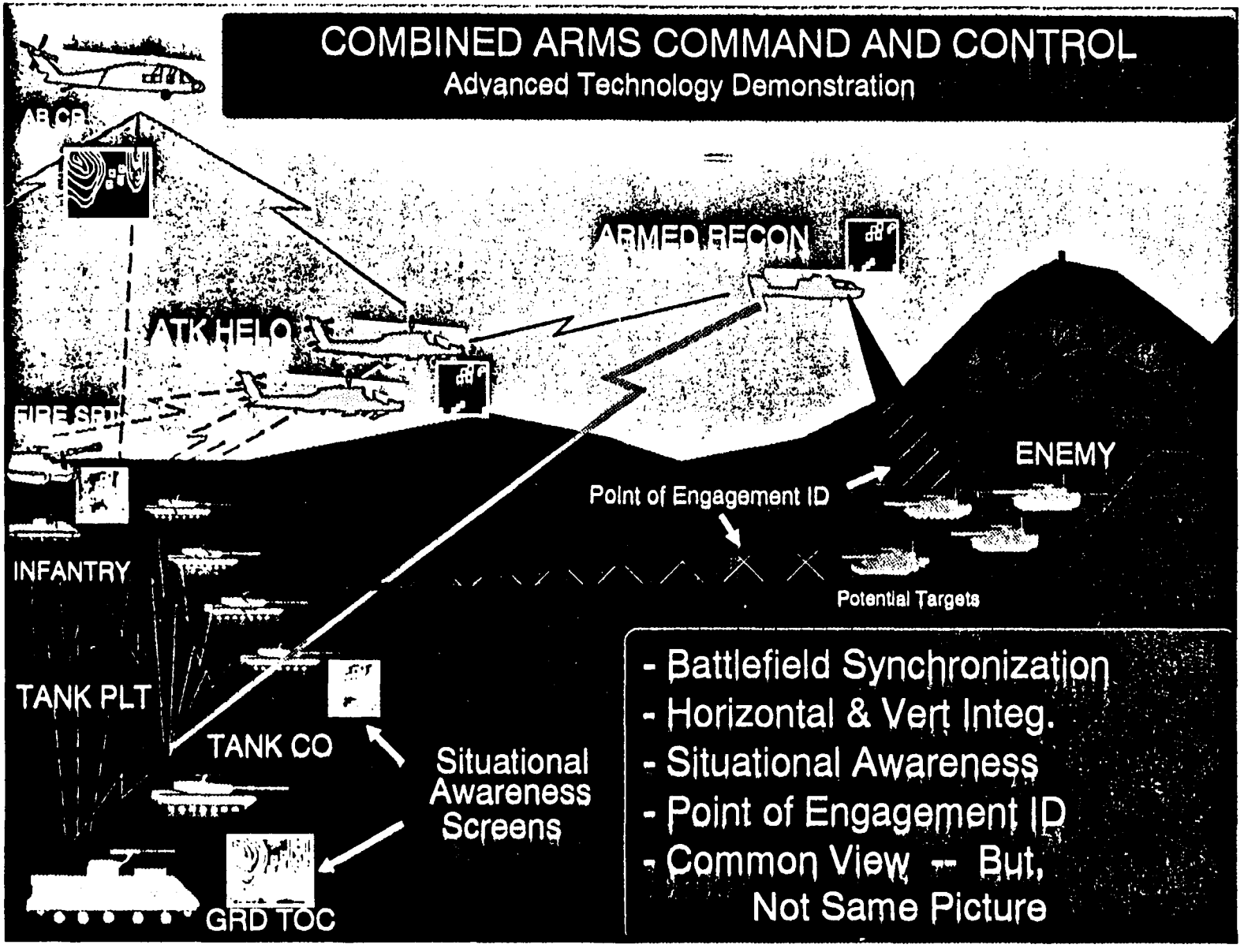
CECOM RESEARCH, DEVELOPMENT & ENGINEERING CENTER

Advanced Planning Briefing

19 May 1993

Dr. James Soos
CECOM RDEC
Ft. Monmouth, N.J.

18 May 93


COMBINED ARMS COMMAND AND CONTROL
Advanced Technology Demonstration
ARMED RECON
ATK HELO
ENEMY
Point of Engagement ID
Potential Targets
INFANTRY
TANK PLT
TANK CO
Situational Awareness Screens
GRD TOC
- Battlefield Synchronization
- Horizontal & Vert Integ.
- Situational Awareness
- Point of Engagement ID
- Common View -- But, Not Same Picture

ENHANCED CAC2-ATD ARCHITECTURE & SYSTEMS ENGINEERING

INCLUDES

- Front end analysis
- Modeling
- Communications System Design
- Data Base System Design
- Network Management
- Interface Design & Specification
- Sub System and System specifications
- Demo Design & Test Plans
- Configuration Management

ENHANCED CAC2-ATD
DIS ENHANCEMENTS & SIMULATIONS

INCLUDES

- SAFORS enhancements
- System Performance Models developements
- Simulator enhancements and integration (screens, additional simulators)
- Infrastructure enhancements (1.e. comm)
- Software development for DIS
- Simulation Plans
- Training
- Site use
- Data Collection and Analysis

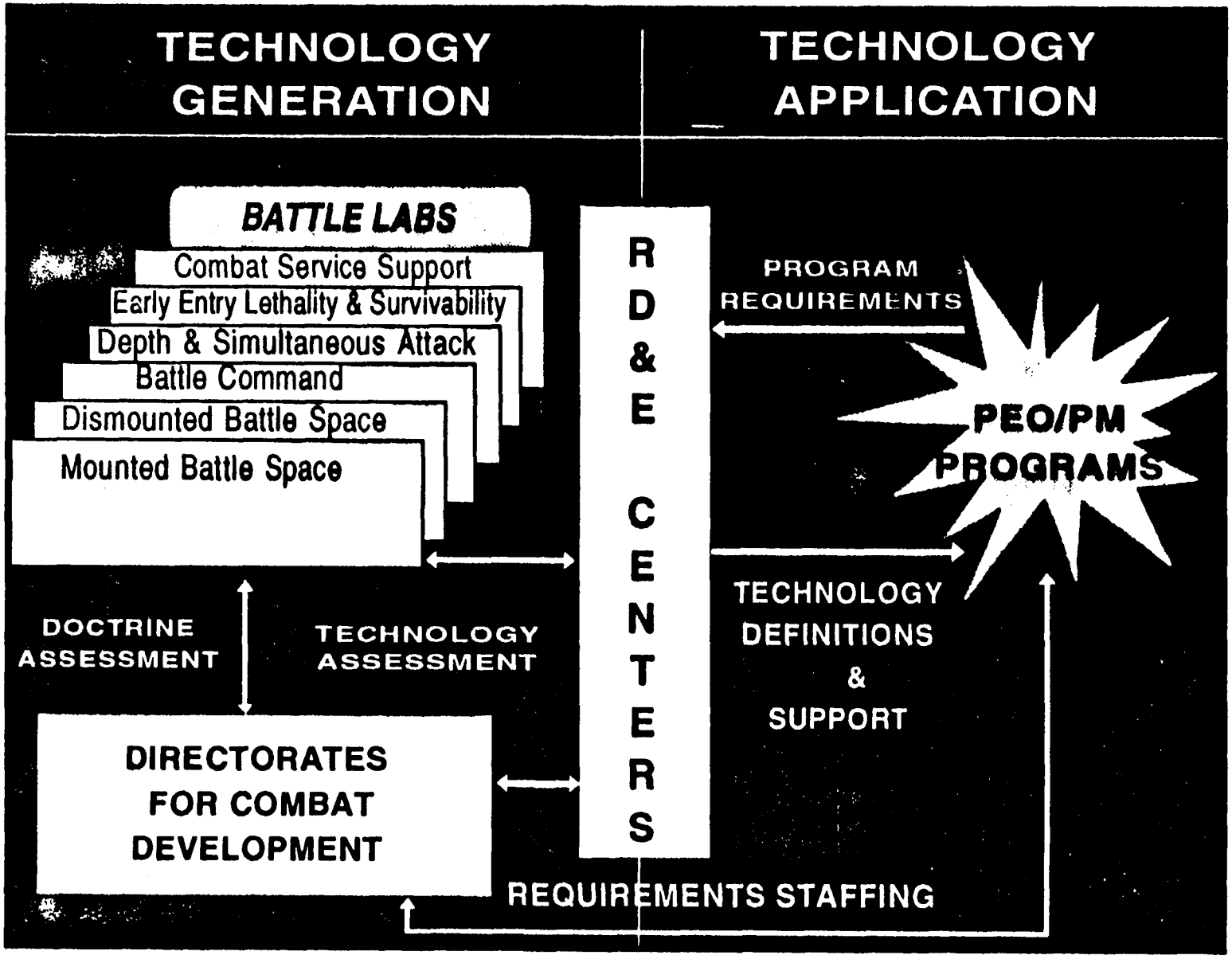
ENHANCED CAC2-ATD
ATD DEMO, SOFTWARE DEV, INTEGRATION

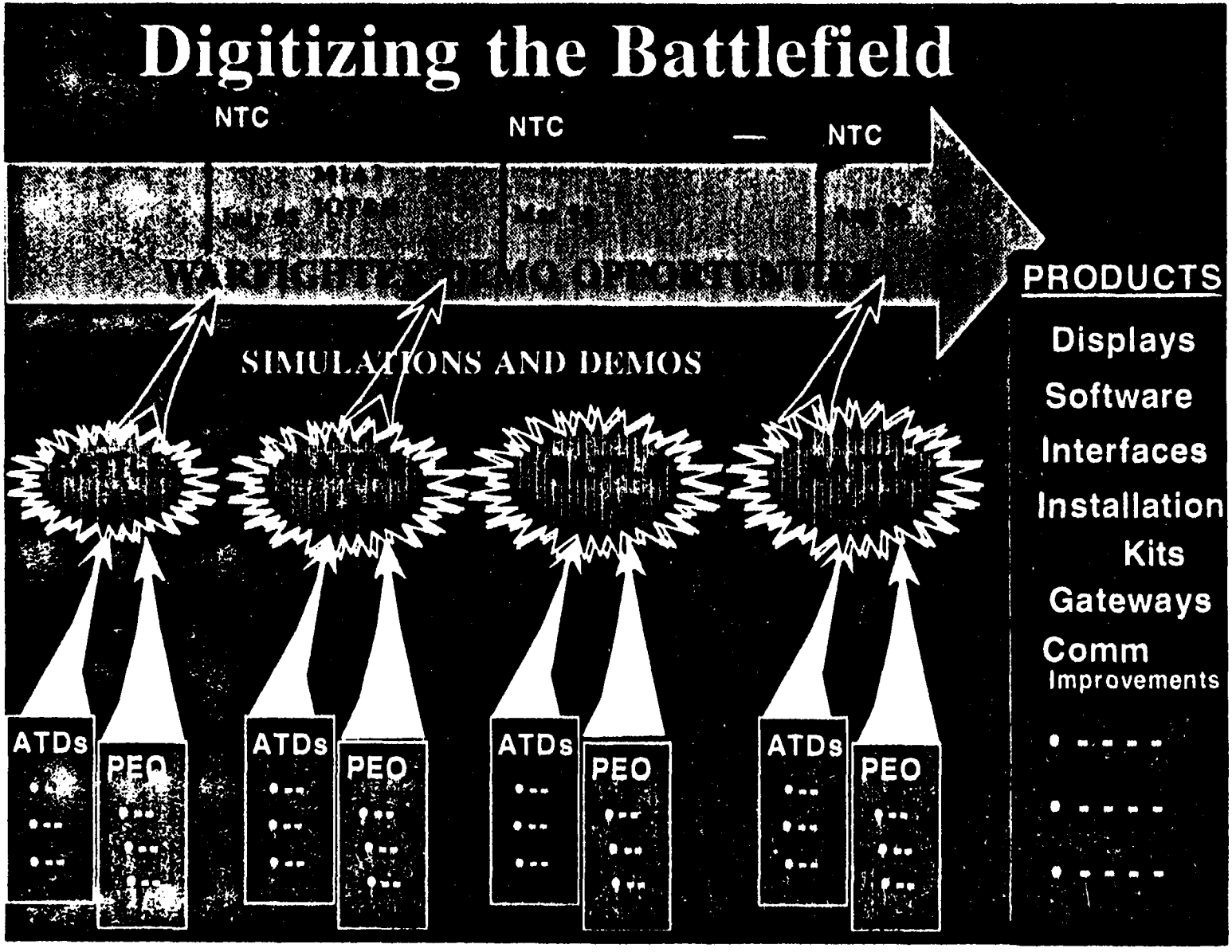
INCLUDES

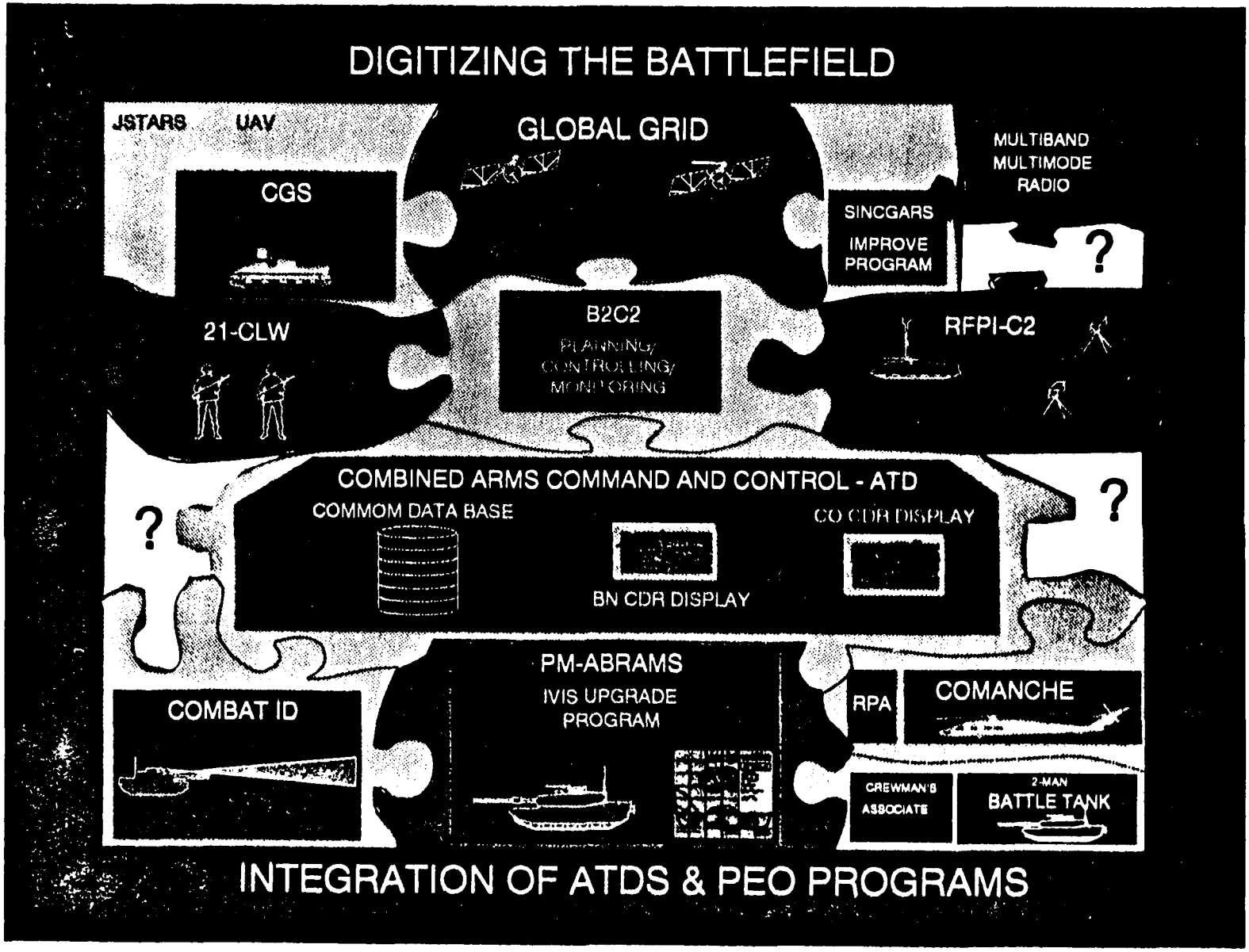
- Software Dev (Data Base, Screens, Interfaces, Msgs, etc) *
- Hardware/Software Integration
- Platform Integration
- Interface Implementation:
  MIA2, APACHE, BRADLEY, M2, MIAI, TOC, FS, CID, Comanche, Soldier, Crew Man's Associate, Hit Avoidance, Target Acquisition
- Sub System Testing
- ATD Testing
  Facilities, Training, Data Collection, Report

* The software developed for the ATD will be identical to the software used in the platform simulators

Note: The ATD is a combination of Warfighting Simulation and Hardware Demonstration


TECHNOLOGY GENERATION
TECHNOLOGY APPLICATION
BATTLE LABS
Combat Service Support
Early Entry Lethality & Survivability
Depth & Simultaneous Attack
Battle Command
Dismounted Battle Space
Mounted Battle Space
R D & E C E N T E R S
PROGRAM REQUIREMENTS
PEO/PM PROGRAMS
TECHNOLOGY DEFINITIONS & SUPPORT
DOCTRINE ASSESSMENT
TECHNOLOGY ASSESSMENT
DIRECTORATES FOR COMBAT DEVELOPMENT
REQUIREMENTS STAFFING


Digitizing the Battlefield
NTC
NTC
NTC
SIMULATIONS AND DEMOS
PRODUCTS
Displays
Software
Interfaces
Installation
Kits
Gateways
Comm
Improvements
ATDs
PEO
ATDs
PEO
ATDs
PEO
ATDs
PEO


DIGITIZING THE BATTLEFIELD
JSTARS
UAV
GLOBAL GRID
MULTIBAND
MULTIMODE
RADIO
CGS
SINCGARS
IMPROVE
PROGRAM
?
B2C2
PLANNING/
CONTROLLING/
MONITORING
21-CLW
RFPI-C2
COMBINED ARMS COMMAND AND CONTROL - ATD
COMMOM DATA BASE
CO CDR DISPLAY
BN CDR DISPLAY
?
?
PM-ABRAMS
IVIS UPGRADE
PROGRAM
COMBAT ID
RPA
COMANCHE
CREWMAN'S
ASSOCIATE
2-MAN
BATTLE TANK
INTEGRATION OF ATDS & PEO PROGRAMS

HIGH TECHNOLOGY RESEARCH AND DEVELOPMENT

Joseph J. Pucilowski, Jr.
Director
Space and Terrestrial Communications Directorate

UNCLASSIFIED

AMSEL-RD-ST

POINT PAPER

SUBJECT: High Technology Research and Development

OBJECTIVE: Obtain High Technology Research and Development Support to be provided to the Space and Terrestrial Communications Directorate. This will involve tasks covering virtually the entire spectrum of high technology research and development for distributed command, control and communications systems.

FACTS:

- Method of Acquisition: Competitive
- Period of Performance: 60 Months
- Milestones: RFP issued 2nd Qtr 94
  Award 4th Qtr 94

BRIEFER: Joseph J. Pucilowski, Jr., Director, Space & Terrestrial Communications Directorate, AMSEL-RD-ST, (908) 544-4449.

ACTION OFFICER
Larry Levine
Chief, Local Area Networks
Branch
(908) 544-4506

HIGH TECHNOLOGY RESEARCH AND DEVELOPMENT DESCRIPTION

The objective of this solicitation is to obtain High Technology Research and Development Support to be provided to the Space and Terrestrial Communications Directorate. This will involve tasks covering virtually the entire spectrum of high technology research and development for distributed command, control and communications systems.

HIGH TECHNOLOGY RESEARCH AND DEVELOPMENT REQUIREMENTS

The Contractor shall be required to perform tasks within the framework of the following activities:

1. Research and Development in the field of distributed communications and distributed processing

2. Application of current and future Military Command and Control Techniques

3. System engineering

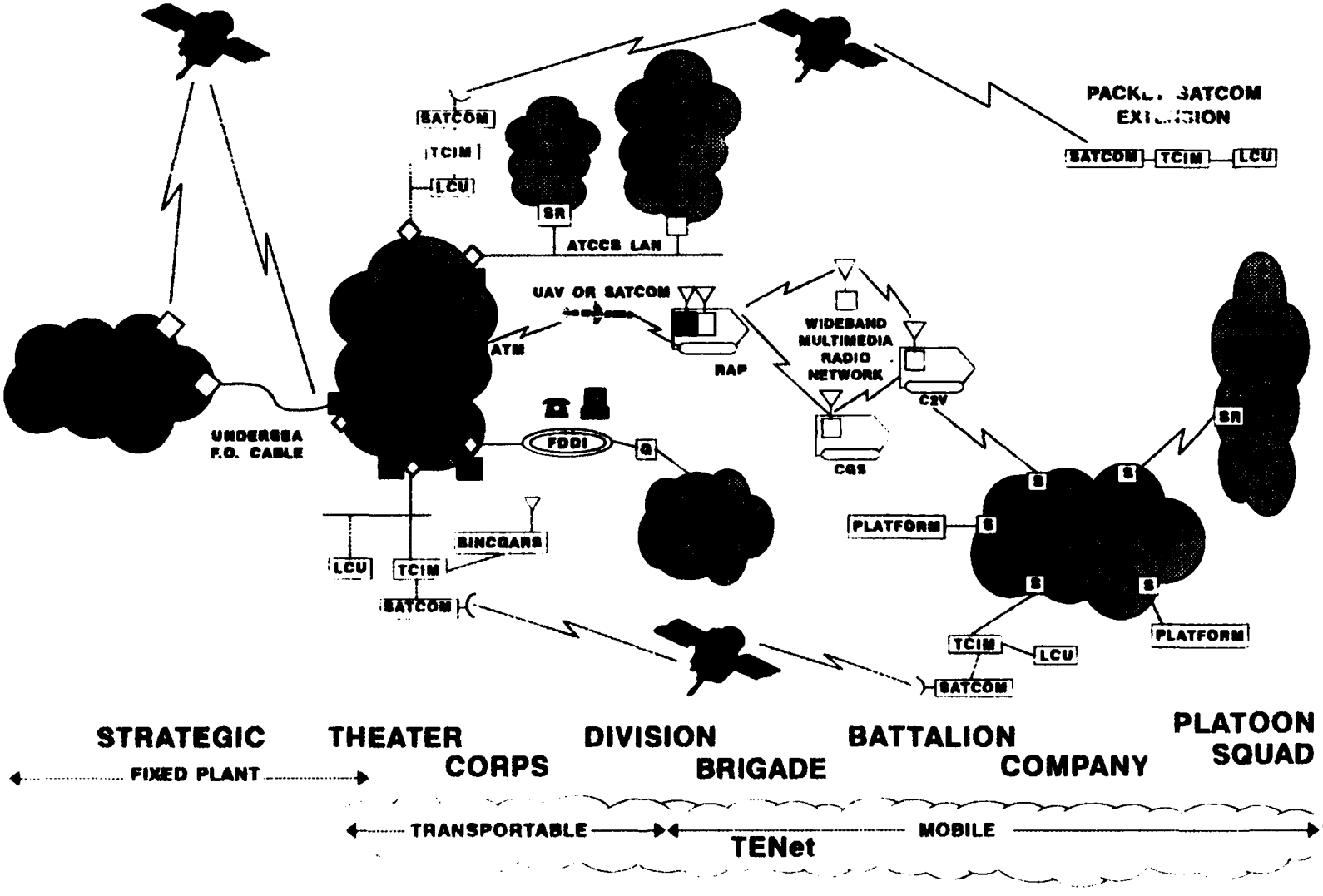
HIGH TECHNOLOGY RESEARCH AND DEVELOPMENT REQUIREMENTS (CONTINUED)

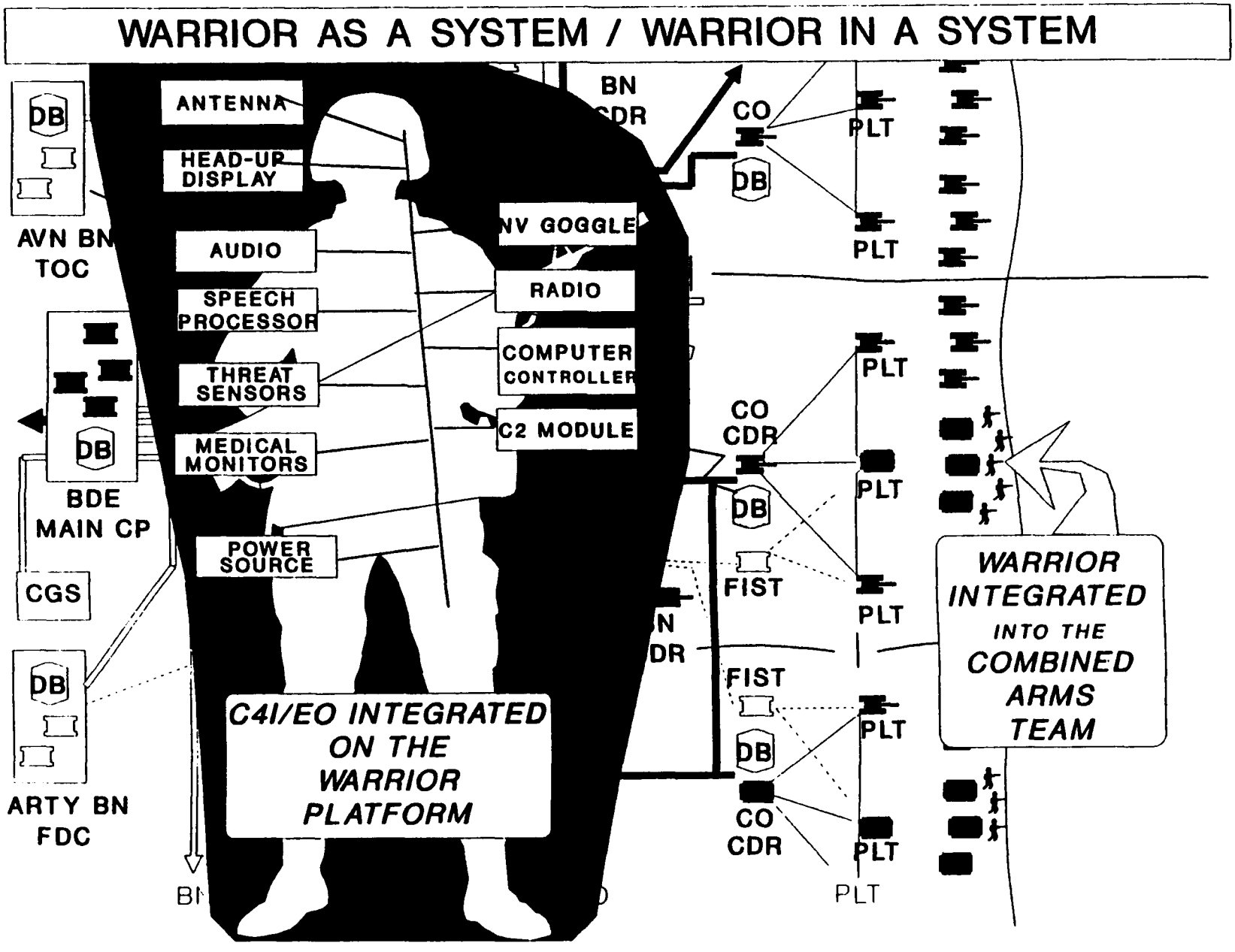
4. Integration of new technologies into command, control and communications systems for evaluation by users

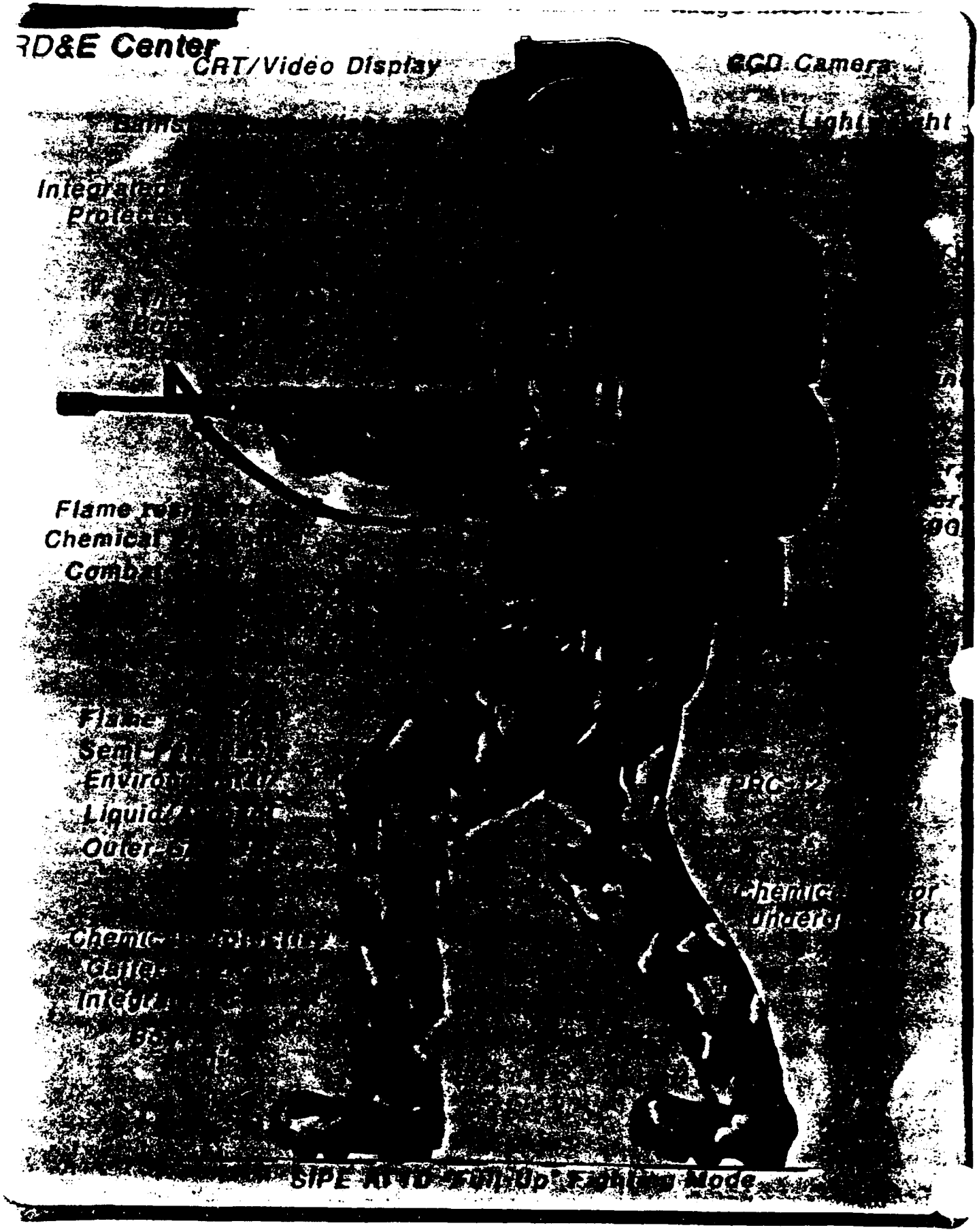
5. Support in transitioning the above technologies into fielded systems

6. On site resident field office testbed support at various worldwide locations

CECOM GLOBAL GRID
PROPOSED ARCHITECTURE




WARRIOR AS A SYSTEM / WARRIOR IN A SYSTEM
ANTENNA
HEAD-UP DISPLAY
AUDIO
SPEECH PROCESSOR
THREAT SENSORS
MEDICAL MONITORS
POWER SOURCE
NV GOGGLE
RADIO
COMPUTER CONTROLLER
C2 MODULE
C4I/EO INTEGRATED ON THE WARRIOR PLATFORM
WARRIOR INTEGRATED INTO THE COMBINED ARMS TEAM
DB
AVN BN TOC
BDE MAIN CP
CGS
ARTY BN FDC
BN CDR
CO
PLT
CO CDR
FIST


RD&E Center
CRT/Video Display
CCD Camera

HIGH TECHNOLOGY RESEARCH AND DEVELOPMENT CONTRACT OPPORTUNITY

- TITLE: High Technology Research and Development
- OBJECTIVE: To provide the Space and Terrestrial Communications Directorate with research and development support in virtually the entire spectrum of command, control and communications systems
- PROPOSED CONTRACT TYPE: Indefinite Delivery/Quantity
- KEY MILESTONES: RFP - 2Q95 , Award - 4Q95 OMNIBUS
- ESTIMATED VALUE: $20M/year for 5 years
- POC/TELEPHONE: Larry Levine/(908) 544-4506

ADVANCE PLANNING BRIEFING TO INDUSTRY

C3 SYSTEM ENGINEERING & INTEGRATION

MR. JOSEPH JOHNSON
PROGRAM EXECUTIVE OFFICE
COMMAND AND CONTROL SYSTEMS

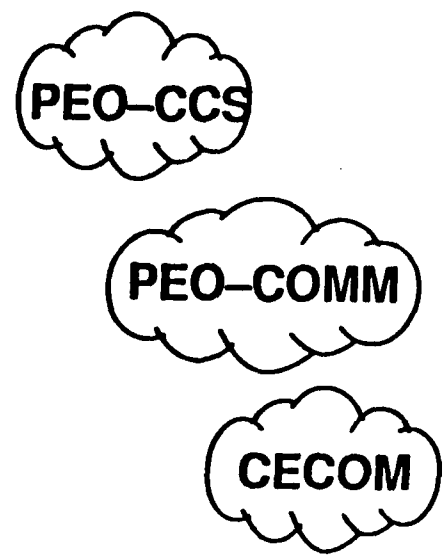
C3 SYSTEM ENGINEERING & INTEGRATION

DESCRIPTION

THE C3 SE&I PROGRAM IS TO PROVIDE THE SYNCHRONIZATION OF MULTIPLE BATTLEFIELD FUNCTIONAL AREA REQUIREMENTS AND DEVELOPMENTS INTO AN INTEGRATED, FOCUSED, AND RESPONSIVE COMMAND, CONTROL, AND COMMUNICATION SYSTEM

TO ACCOMPLISH THIS, ARMY C3 SYSTEM INTEGRATOR REQUIRES:

HORIZONTAL/VERTICAL INTEGRATION
MESSAGE STANDARDIZATION
COMMON SOFTWARE/HARDWARE INTEGRATION
COMMUNICATION INTERFACE
INTEGRATED TESTING
TECHNOLOGY INSERTION
EVOLVING REQUIREMENTS



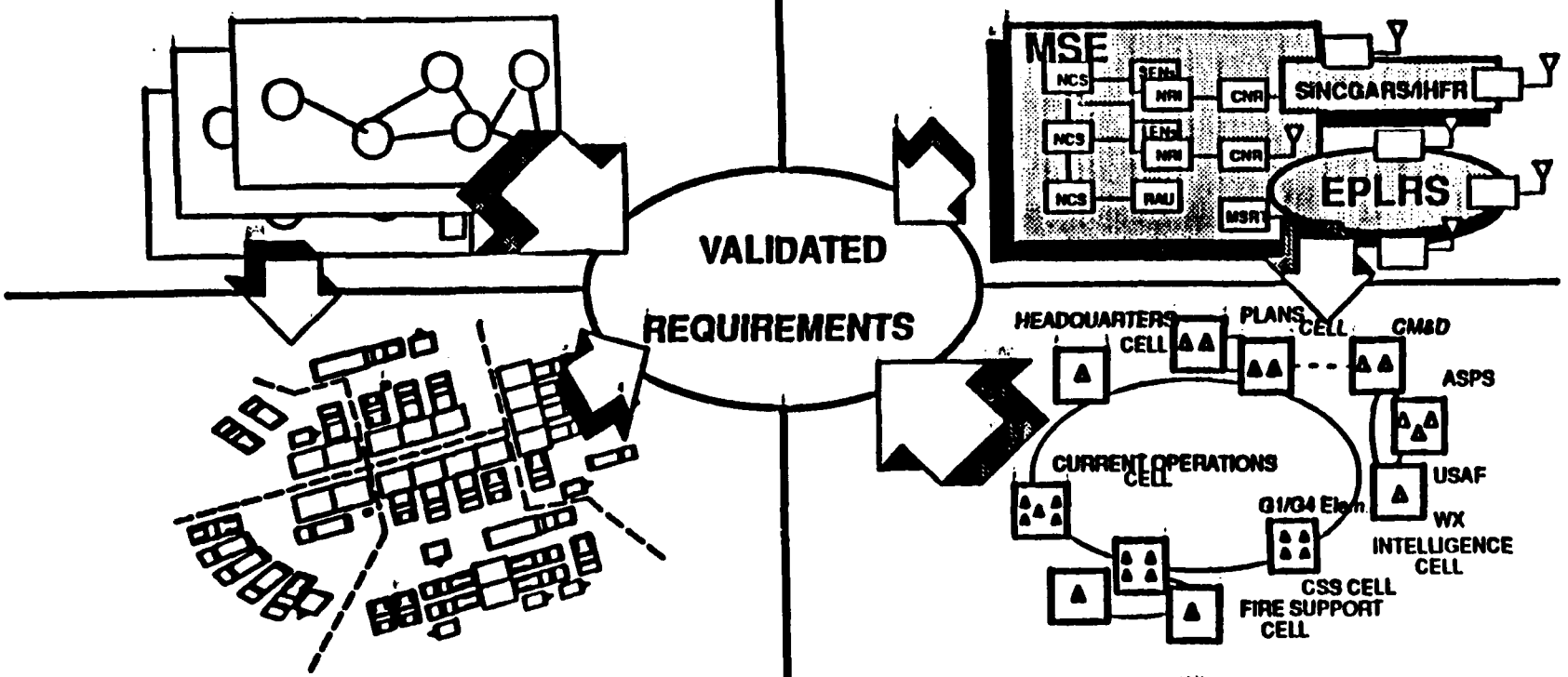
SYSTEM ENGINEERING & INTEGRATION

FUNCTIONAL ANALYSIS

- Functional Requirements
- Interface Definition
- Timeline Analysis

COMMUNICATION LOADS ASSESSMENT

- Comm Performance Shortfalls
- Improvement Techniques
- Networking Requirements



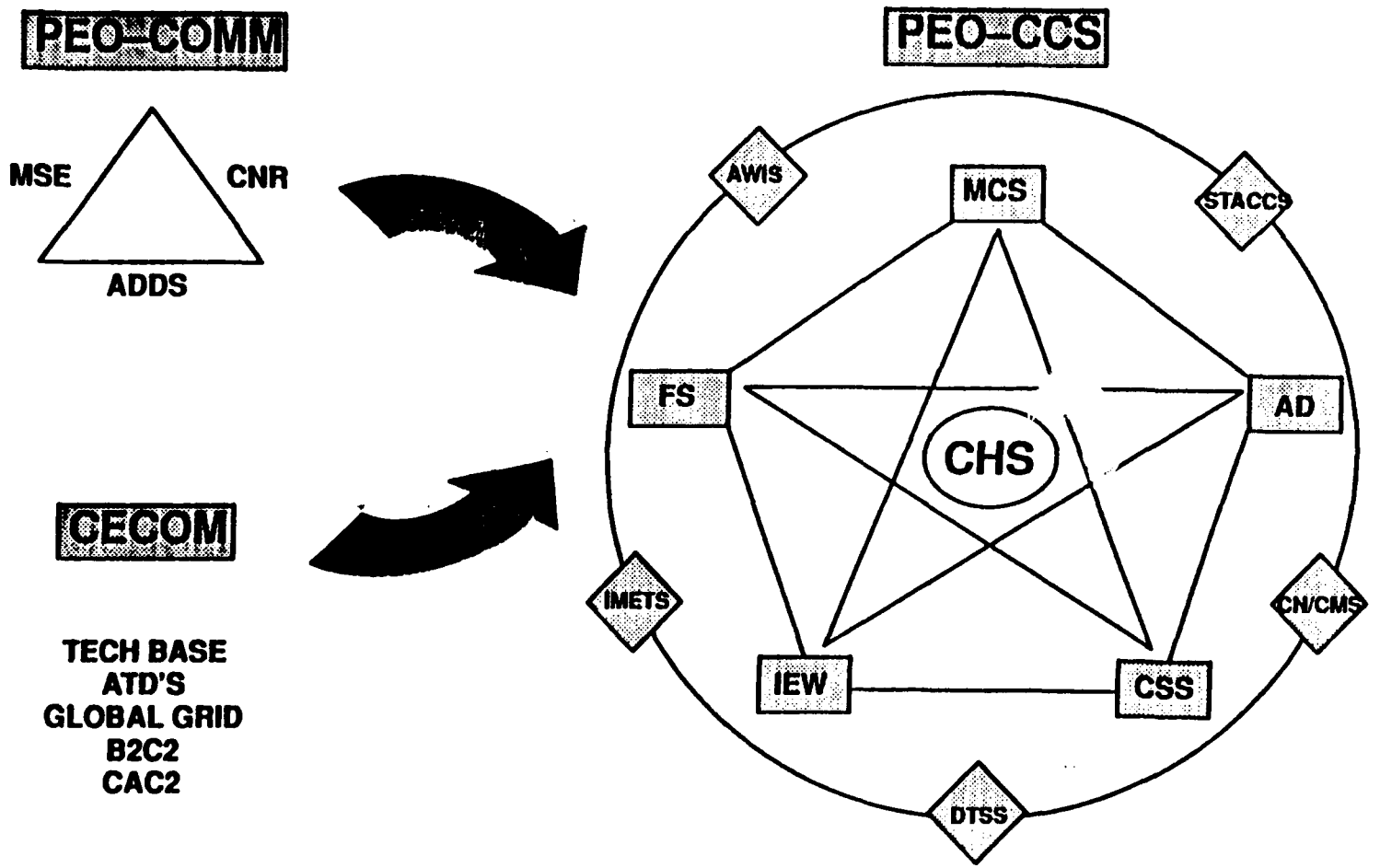
COMMAND POST ANALYSIS

- Standardized CP Configurations
- Uniform Training Plans
- System Management Rqmts

MODELING AND SIMULATION

- Performance Evaluation
- EUT&E Support

C3 SYSTEM ENGINEERING & INTEGRATION
"THE SINGLE INTEGRATOR CONCEPT"



HORIZONTAL INTEGRATION OF TECHBASE, ATD'S, PEO PROGRAMS

C3 SYSTEM ENGINEERING & INTEGRATION

FUNDING PROFILE

	RDTE $M
FY94	$ 5–15M
FY95	15–35M
FY96	15–35M
FY97	15–35M
FY98	15–35M
FY99	10–25M
TOTAL	$ 75–180M

C3 SYSTEM ENGINEERING & INTEGRATION

CONTRACT OPPORTUNITY

TITLE:	**C3 SYSTEM ENGINEERING AND INTEGRATION**
OBJECTIVE:	**ENGINEERING SERVICES TO SUPPORT INTEGRATION AND FIELDING OF ARMY C3 HARDWARE AND SOFTWARE**
PROPOSED CONTRACT TYPE:	**CPAF AND T&M**
KEY MILESTONES:	**RELEASE RFP – DEC 93** **CONTRACT AWARD – AUG 94**
ESTIMATED VALUE:	**$75M – $180M**
POC TELEPHONE:	**MR. ROBERT CARNEVALE, (908) 532–0161**

ACCS COMPETITIVE PROCUREMENT OPPORTUNITIES

PROGRAM	EST. RFP RELEASE	EST AWARD	DURATION
COMMON SOFTWARE	INFORMATION		
MCS SW DEVELOP.	1ST QTR 94	3RD QTR 94	5 YEARS
CSSCS	MAR 95	SEPT 95	5 YEARS
AWIS SW DEVELOP.	DRAFT APR 93/FINAL JUN 93	1ST QTR 94	5 YEARS
STACCS SE&I	DRAFT DEC 92/FINAL 4TH QTR 93	4TH QTR 94	5 YEARS
CAC2	INFORMATION		
HIGH TECH R&D	2ND QTR 95	4TH QTR 95	5 YEARS
C3 SE & I	DEC 93	AUG 94	5 YEARS

COMBAT SERVICE SUPPORT CONTROL SYSTEM (CSSCS)

COL JAMES R. STEVERSON
PM, CSSCS
OFFICE PROJECT MANAGER CSSCS, FT BELVOIR, VA

UNCLASSIFIED

POINT PAPER

SUBJECT: Combat Service Support Control System (CSSCS)

OBJECTIVE: Develop and field the objective configuration (Version 5) of the Combat Service Support Control System.

FACTS: CSSCS will assist the CSS commander and his staff in rapidly collecting, storing, analyzing, and disseminating CSS information to support the functions of command, control and resource management. CSSCS will automate the CSS node of the Army Tactical Command and Control System (ATCCS), and will be organic to CSS units and headquarters staffs within the maneuver brigades, separate brigades, armored cavalry regiments, divisions, corps, and echelons above corps (EAC).

- The CSSCS is currently in engineering and manufacturing development.

- Program development has been structured to evolve over five versions of software.

- In February 1991, the development contract for Versions 3 and 4 was awarded to TRW, Systems Engineering & Development Division, Carson, California. Version 3 is to be completed and tested by the end of FY 93. Version 4 will be completed and tested by the end of FY 95. Fielding of the CSSCS is scheduled to begin in June 1994.

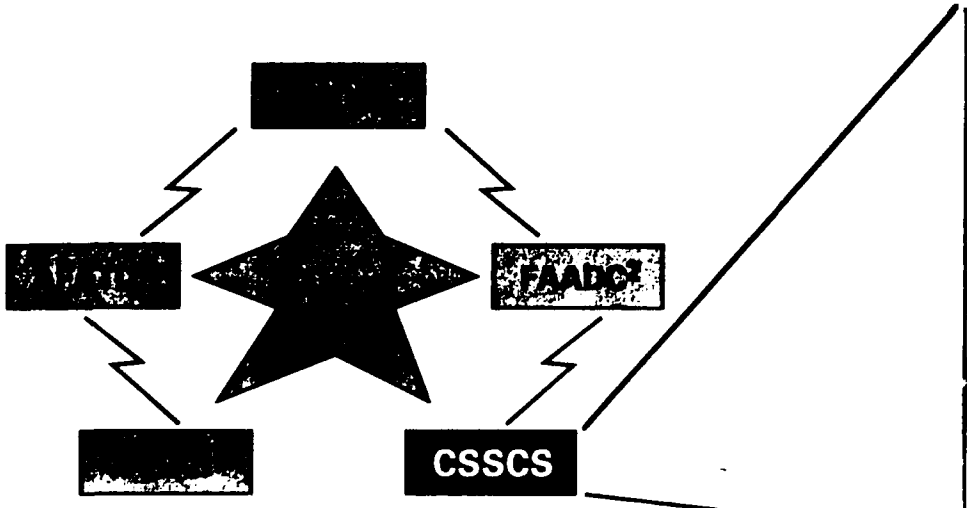
- Version 5 will be separately contracted in FY 95, and is scheduled to be tested in FY 97.

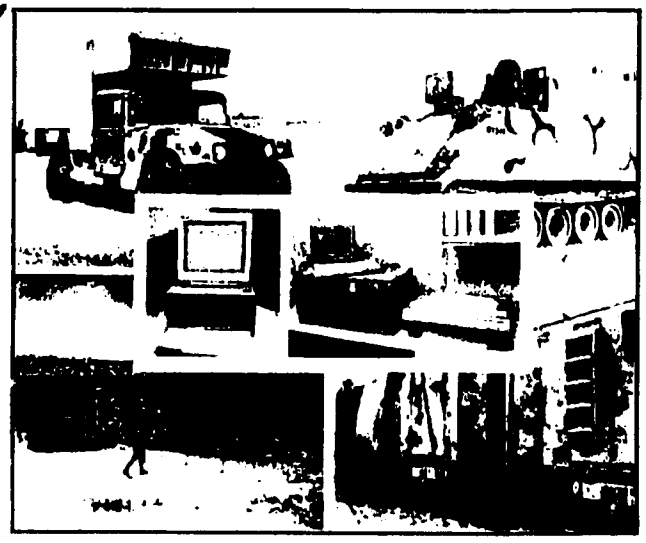
- Improvements to the CSSCS software planned for Version 5 include E-Maps, Expert Systems, EAC Standard Army Management Information System (STAMIS) interoperability, Civil-Military Cooperation (CIMIC), and Postal and Legal interfaces. New capabilities include Joint and Allied interoperability, Reserve Component Automation System (RCAS) interface, and Contracting and Procurement interfaces.

BRIEFER: Colonel James R. Steverson
Project Manager, CSSCS
ATTN: SFAE-CC-CSS
Building 1908
Fort Belvoir, VA 22060-5375
(703) 806-6312

COMBAT SERVICE SUPPORT CONTROL SYSTEM OBJECTIVES

- CSSCS INPUT TO "COMMON PICTURE"
- AUTOMATED C^2 SUPPORT FOR THE CCS COMMANDER



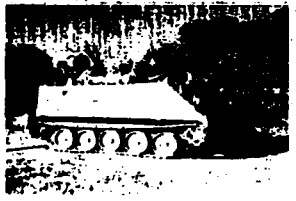


COMBAT SERVICE SUPPORT CONTROL SYSTEM DESCRIPTION





XM1068



+

AND/OR

+

INSTALLATION

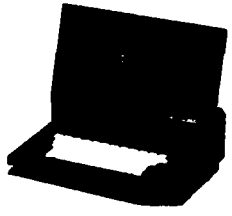
TEST

TOOL KIT

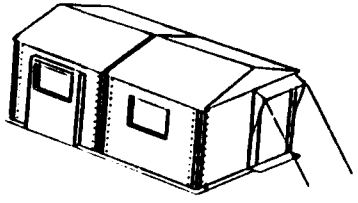
EXPANSIBLE VAN W/ATCCS COMMON HARDWARE



LCU

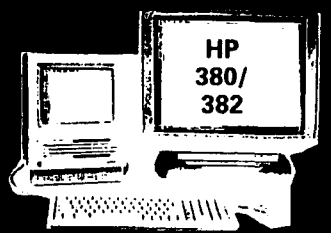


TENT



COMBAT SERVICE SUPPORT CONTROL SYSTEM IOTE CONFIGURATION



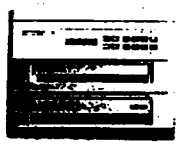




PRINTER (COTS)

TRANSPORTABLE COMPUTER UNIT (TCU-V2) 2 SOLDIER PORTABLE 32 MB RAM

COMMUNICATIONS INTERFACE

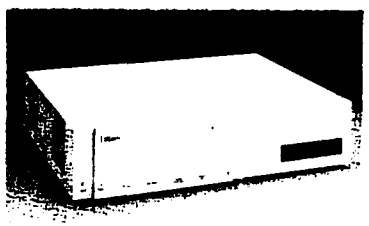


MASS STORAGE EXPANSION UNIT (MSEU)

650 MB OPTICAL DISK DRIVE
600 MB CD-ROM DRIVE
380 MB HARD DISK DRIVE

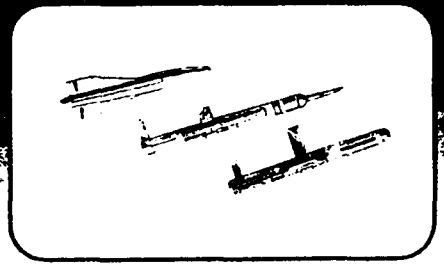


5.25" EXTERNAL FLOPPY DISK DRIVE



ADAPTIVE PROGRAMMABLE INTERFACE UNIT (APIU)

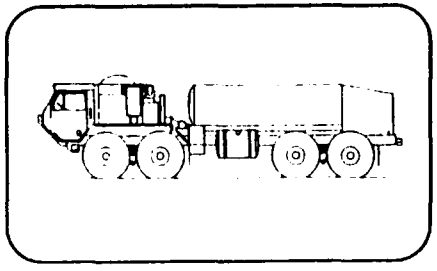
COMBAT SERVICE SUPPORT CONTROL SYSTEM REQUIREMENTS



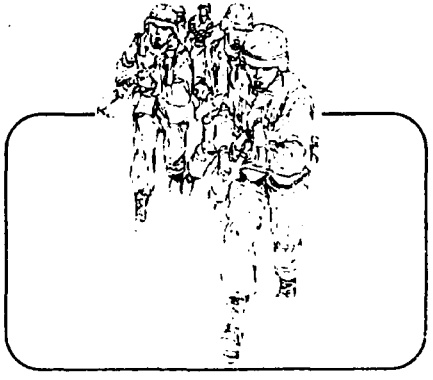
ARMING THE FORCE



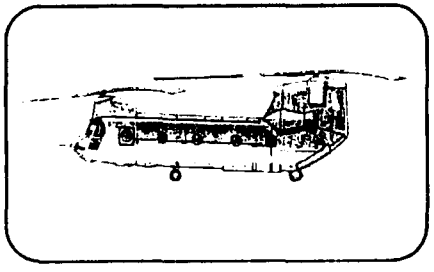
FIXING THE FORCE



FUELING THE FORCE



MANNING THE FORCE



MOVING THE FORCE

COMBAT SERVICE SUPPORT CONTROL SYSTEM REQUIREMENTS



- TRANSPORTATION RESOURCES
- MAINTENANCE RESOURCES
- PERSONNEL RESOURCES
- MEDICAL RESOURCES

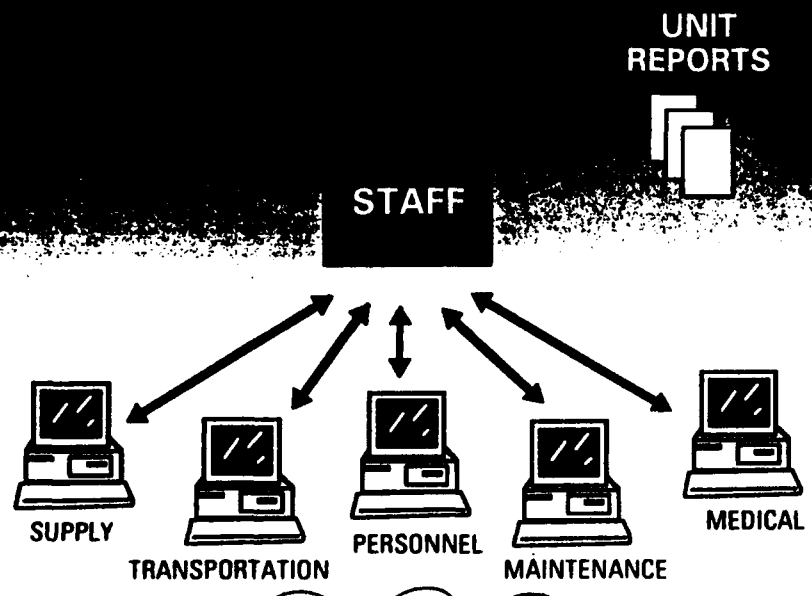
• **SUPPORTABILITY OPTIONS**

WHICH LEADS THE CDR TO DECIDE

WHEN, WHERE, AND HOW MANY RESOURCES TO ALLOCATE TO COUNTER THE THREAT

COMBAT SERVICE SUPPORT CONTROL SYSTEM SUSTAINMENT PLANNING

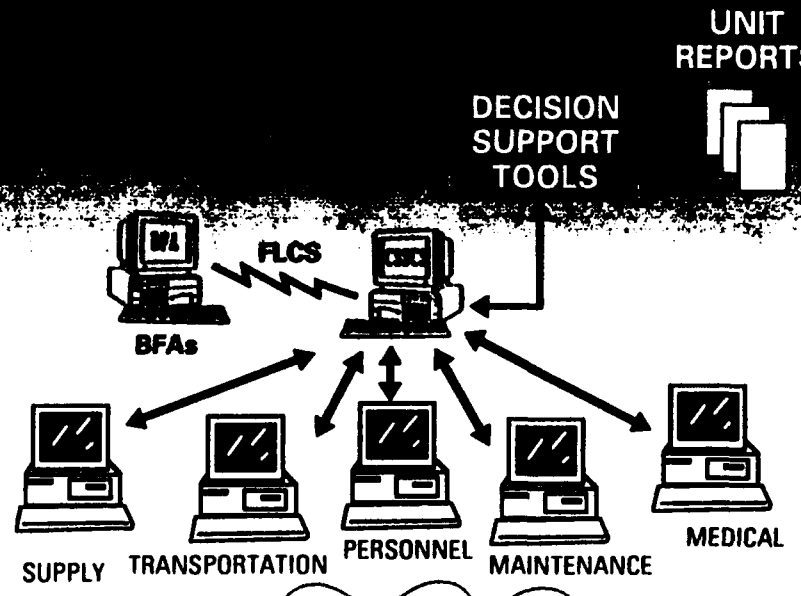
CURRENT



PROBLEMS

- MULTIPLE SOURCES
- STOVEPIPED
- MASSIVE AMOUNTS OF DATA
- NOT TIMELY
- ANALYSIS DIFFICULT

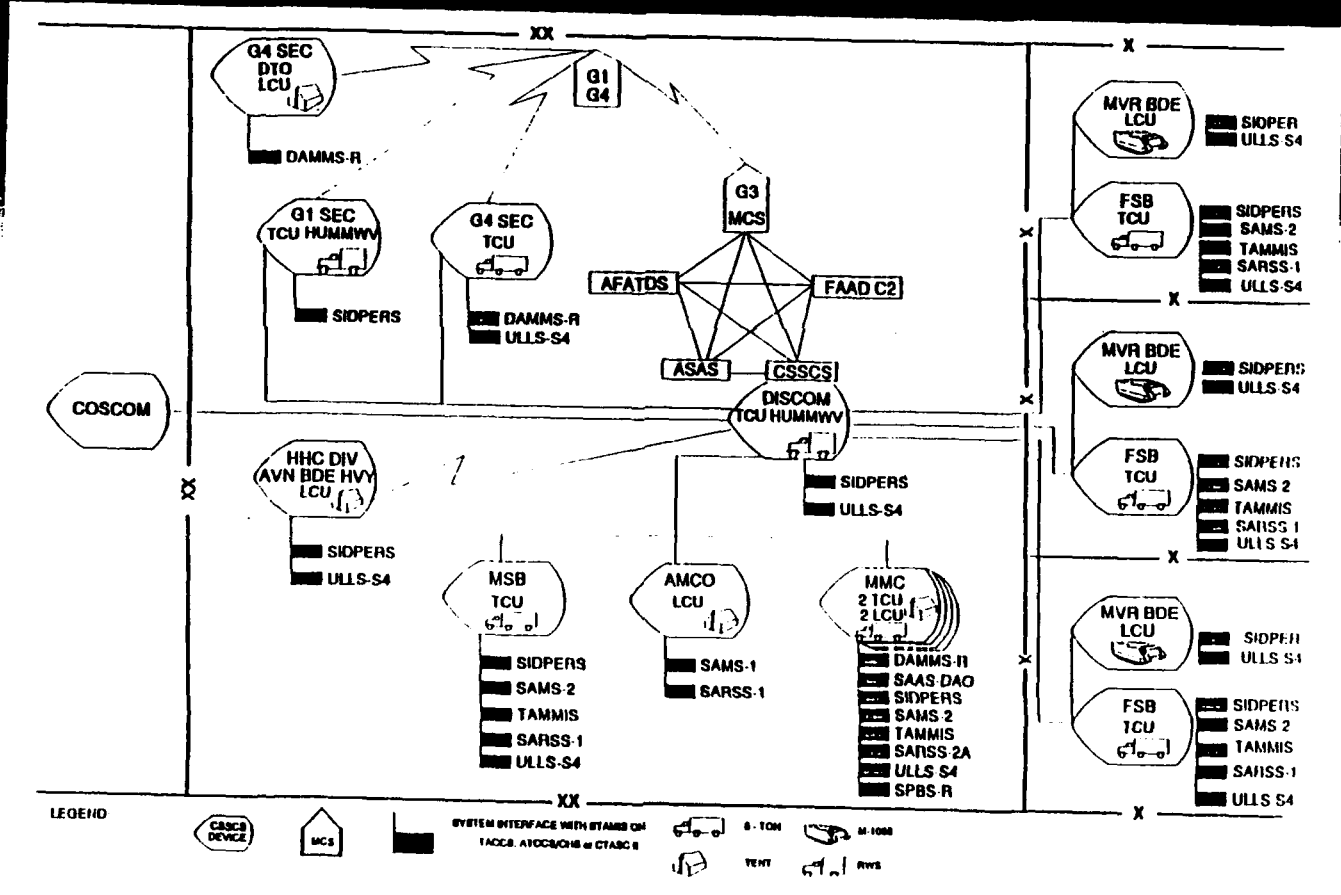
WITH CSSCS



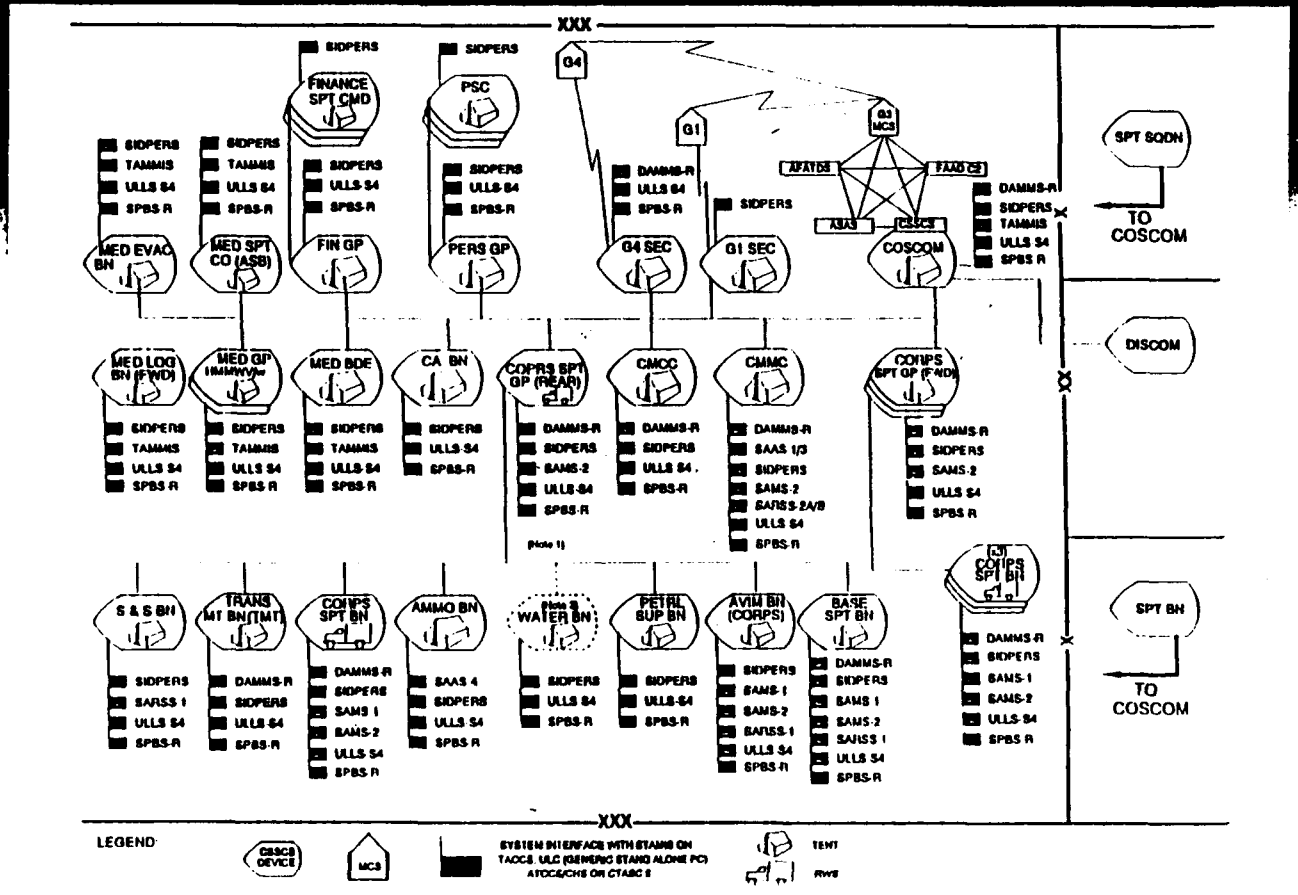
CAPABILITY PROVIDED

- ANTICIPATION
- INTEGRATION
- CONTINUITY
- RESPONSIVENESS
- IMPROVISATION

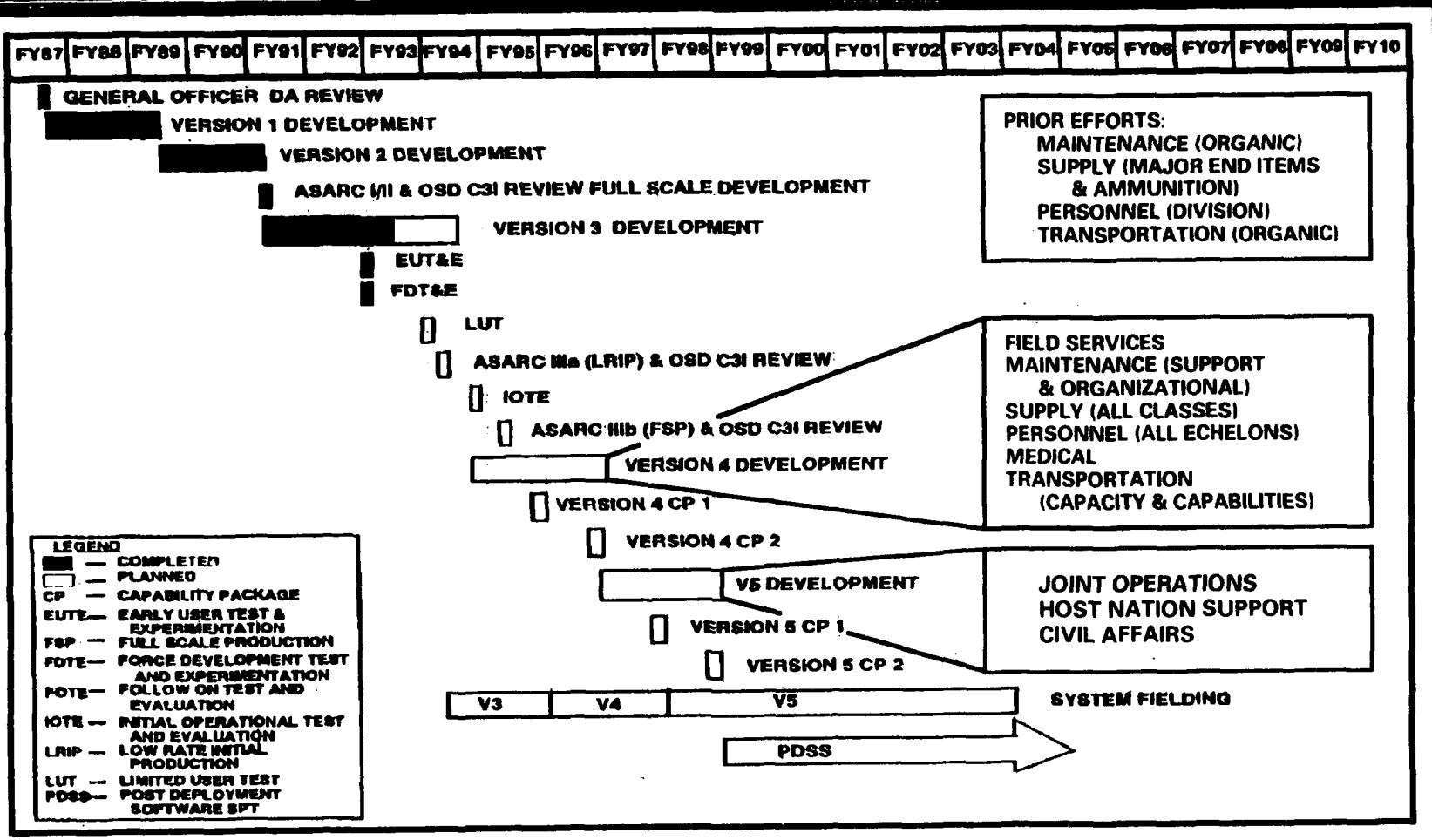
COMBAT SERVICE SUPPORT CONTROL SYSTEM
CSSCS DIVISIONAL OPERATIONS



COMBAT SERVICE SUPPORT CONTROL SYSTEM
CSSCS CORPS OPERATIONS



COMBAT SERVICE SUPPORT CONTROL SYSTEM
SYSTEM LIFE CYCLE SCHEDULE

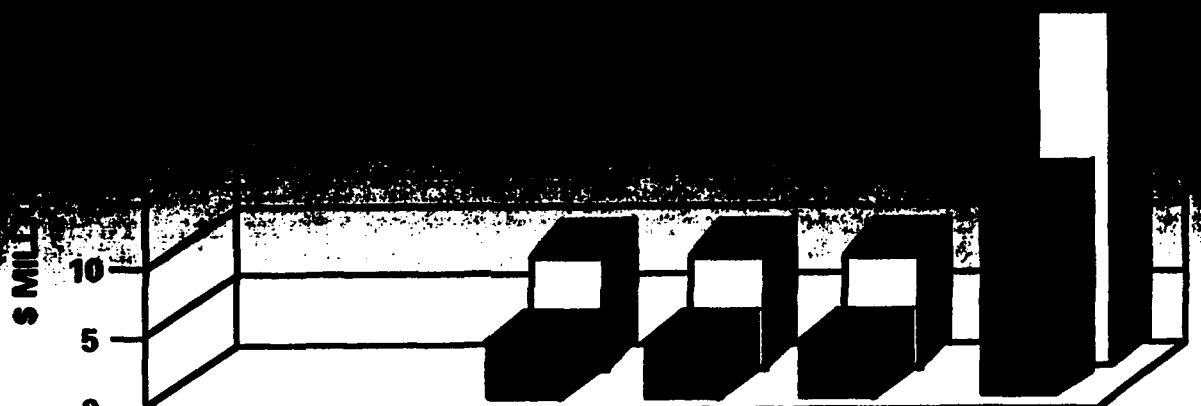


COMBAT SERVICE SUPPORT CONTROL SYSTEM CONTRACT OPPORTUNITY

VERSION 4 AND 5 TO ACTIVE ARMY AND RESERVE COMPONENTS

PROPOSED CONTRACT TYPE:	**CPAF AND TIME & MATERIALS**
KEY MILESTONES:	**RELEASE RFP – MAR 95** **PROPOSALS DUE – MAY 95** **CONTRACT AWARD – SEP 95**
ESTIMATED VALUE:	**$31 – 47 MILLION**
POC TELEPHONE:	**COLONEL JAMES R. STEVERSON, (703) 806-6312**

COMBAT SERVICE SUPPORT CONTROL SYSTEM FUNDING PROFILE



	FY 94	FY 95	FY 96	FY 97	ETC.	TOTAL
PROCUREMENT	0	0	3.75	3.75	7.5	15
RDTE	0	0	9	9	9	27
OMA	0	0	0	0	0	0

PROCUREMENT
RDTE

SESSION III

COMMUNICATIONS

MODERATOR

BG DAVID R. GUST
PROGRAM EXECUTIVE OFFICER
COMMUNICATIONS SYSTEMS

ADVANCE PLANNING BRIEFING FOR INDUSTRY

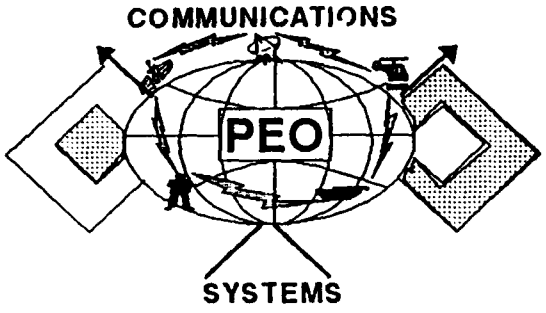
COMMUNICATIONS



SYSTEMS

OVERVIEW

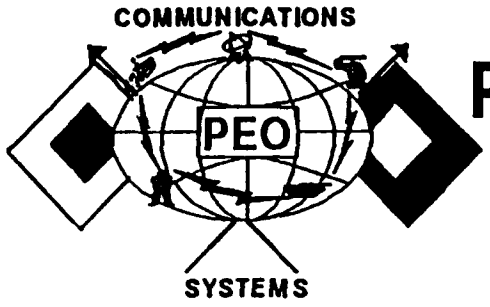
BG DAVID R. GUST
PROGRAM EXECUTIVE OFFICER
COMMUNICATIONS SYSTEMS



PEO COMMUNICATIONS SYSTEMS MISSION

- ACQUIRE AND FIELD AFFORDABLE, EFFECTIVE AND INTEROPERABLE COMMUNICATIONS SYSTEMS TO SUPPORT ARMY COMMANDERS AND UNITS IN THE FIELD

- PROVIDE CENTRALIZED MANAGEMENT AND OVERSIGHT TO COMMUNICATIONS SYSTEMS PMs FOR IMPLEMENTATION, FIELDING AND SUPPORT



PEO COMMUNICATIONS SYSTEMS STRUCTURE

SERVICE

AAE

PEO COMM SYS

PM MSE

PM SINCGARS

PM ADDS

PM GPS

PM SATCOM

PM MILSTAR

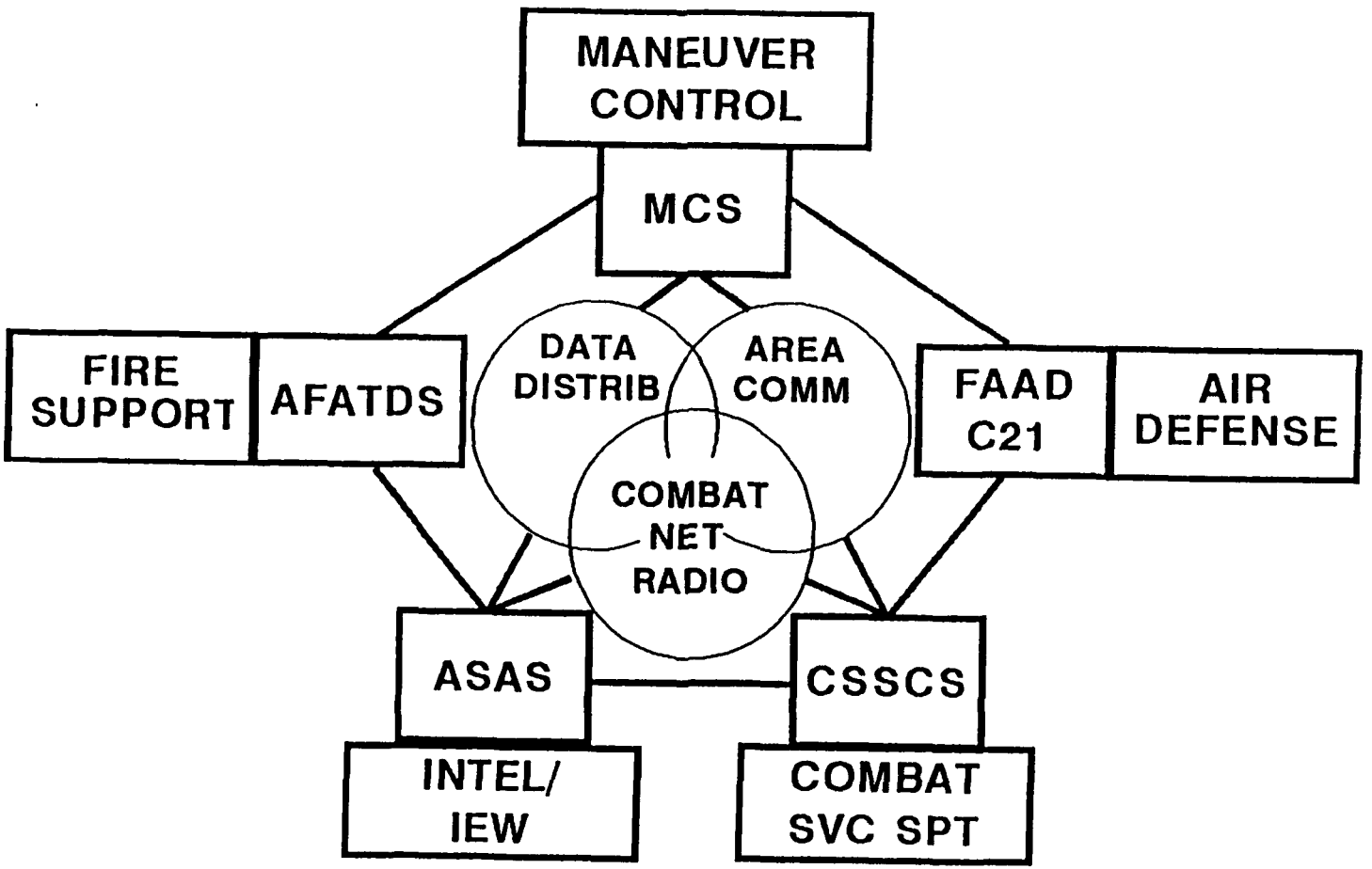
PM MSCS

COMMUNICATIONS

PEO

SYSTEMS

COMMUNICATIONS SUPPORTING COMMAND & CONTROL

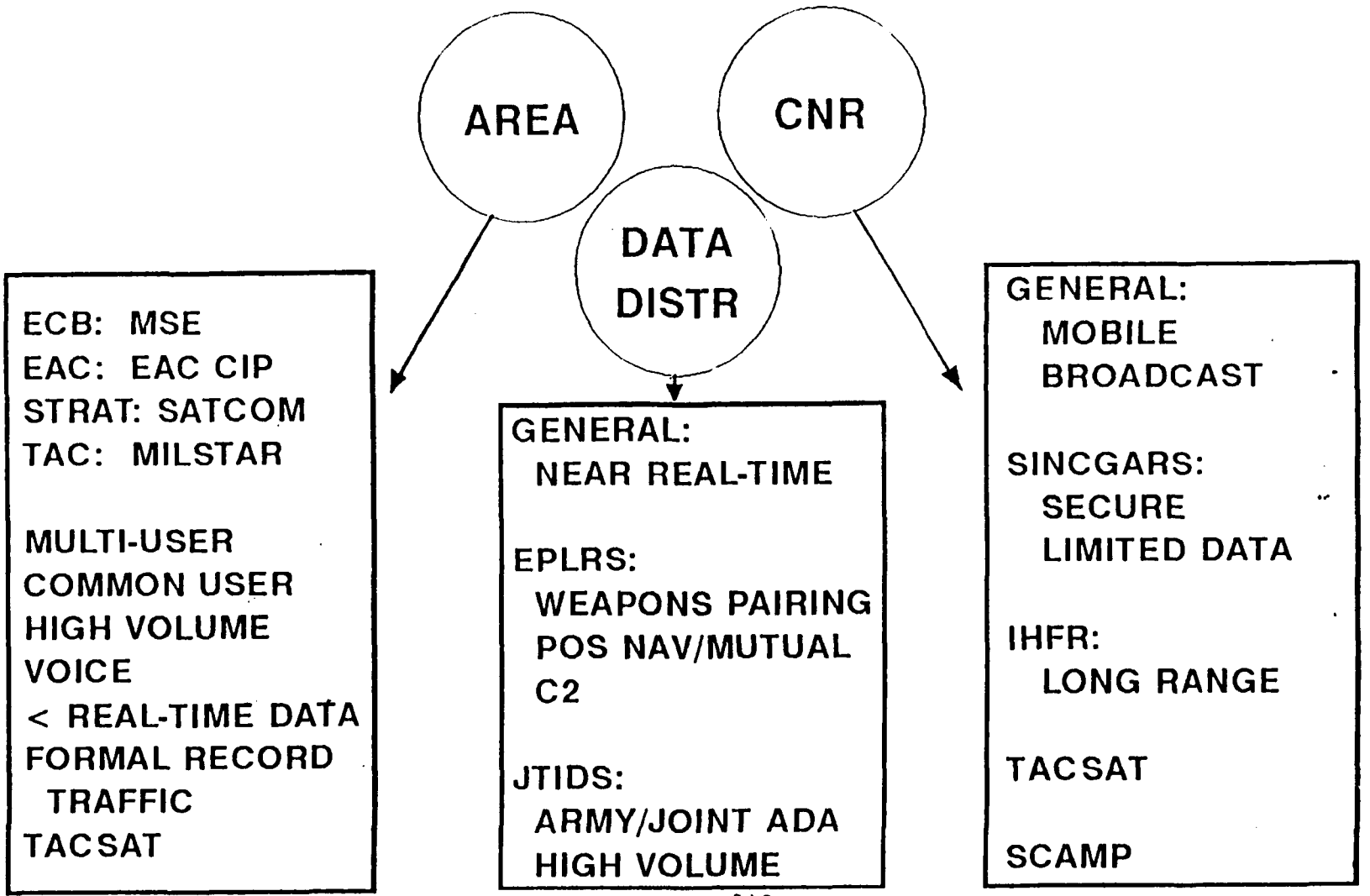


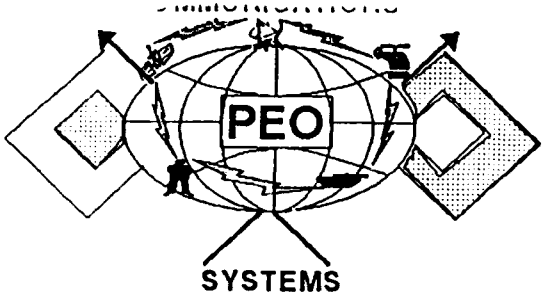
COMMUNICATIONS

PEO

SYSTEMS

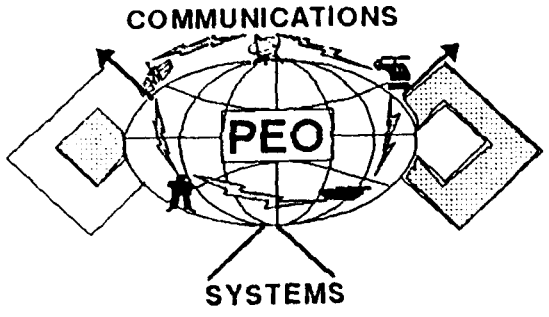
COMMUNICATIONS SUPPORTING COMMAND & CONTROL





PROJECT MANAGER

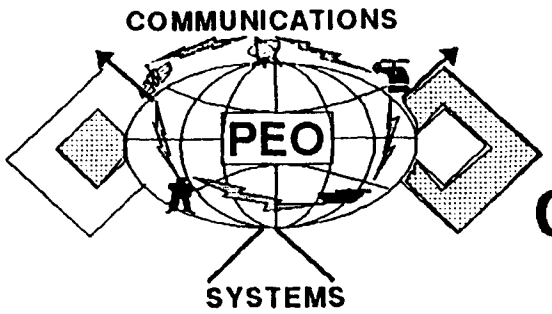
PROGRAMS BUSINESS OPPORTUNITIES



BATTLEFIELD INFORMATION ARCHITECTURE

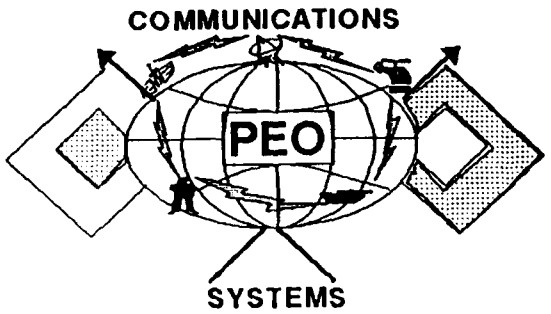
SEAMLESS BATTLEFIELD INFORMATION ARCHITECTURE (SBIA)

SBIA IS A CONCEPT RATHER THAN A FORMAL PROGRAM. IT PROVIDES AN UNENCUMBERED FLOW OF CRITICAL COMMAND, CONTROL, AND INTELLIGENCE INFORMATION IN A VARIETY OF MEDIA FORMATS FROM THE FORWARD AREAS OF A THEATER OF OPERATIONS TO THE NATIONAL COMMAND AUTHORITY.



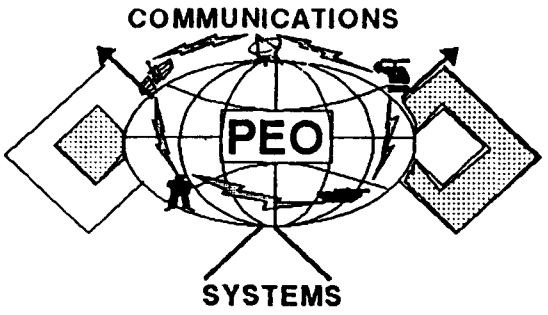
REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT

THE PROPOSED RSCCE PROCUREMENT IS A COMPETITIVE MODIFIED NDI WITH R&D IN FY 95 - 96 AND FOLLOW-ON PRODUCTION OPTIONS IN FY 97, 98 AND 99. THE EFFORT WILL INCLUDE REPLACING 1970 VINTAGE MODCOMP COMPUTERS WITH VAX WORKSTATIONS. REVERSE ENGINEERING THE CONTINGENCY SCCE TELEMETRY AND COMMAND SUBSYSTEM (TCS) RACKS AND INTEGRATING SCCE AND CSCCE FUNCTIONALITY INTO THE RSCCE SOFTWARE.



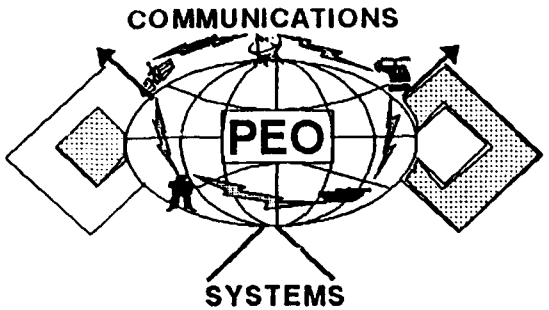
QUICK REACTION SATELLITE ANTENNA

THE UNITED STATES ARMY HAS IDENTIFIED A REQUIREMENT FOR A TACTICAL SATELLITE ANTENNA WITH A GAIN SIMILAR TO THE EXISTING QUICK REACTION SATELLITE ANTENNA (QRSA) EMPLOYED BY THE UNITED STATES AIR FORCE. THIS QRSA TYPE ANTENNA IS CURRENTLY NAMED THE HIGH GAIN MULTI-BAND SATELLITE ANTENNA (HMSA)



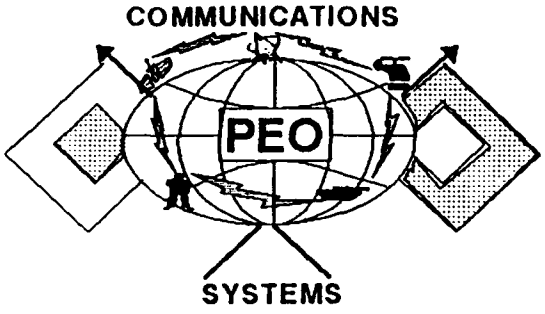
FUTURE TECHNOLOGIES

BUSINESS OPPORTUNITIES



VEHICULAR CONFORMAL ANTENNAS

AN EXPLORATORY DEVELOPMENT AND FEASIBILITY DEMONSTRATION EFFORT TO PROVIDE AN ASSESSMENT OF TACTICAL VEHICLES, RADIO SYSTEMS (BOTH HIGH FREQUENCY (HF) AND VERY HIGH FREQUENCY (VHF)), AND CONFORMAL ANTENNAS FOR USE IN THE TACTICAL ENVIRONMENT.



SCAMP BLOCK II

THE SINGLE CHANNEL ANTI-JAM MANPORTABLE TERMINAL (SCAMP) BLOCK II PROGRAM IS INTENDED TO DEVELOP THE TECHNOLOGIES NECESSARY TO PROVE THE FEASIBILITY OF A 12-15 POUND EHF SATELLITE TERMINAL WHICH MEETS ALL OF THE REQUIREMENTS STATED IN THE APPROVED ORD FOR THE BLOCK II TERMINAL.

SEAMLESS BATTLEFIELD INFORMATION ARCHITECTURE

MR. JOHN T. BENNER
DPM, SYSTEMS & ENGINEERING
PROJECT MANAGER, MOBILE SUBSCRIBER EQUIPMENT

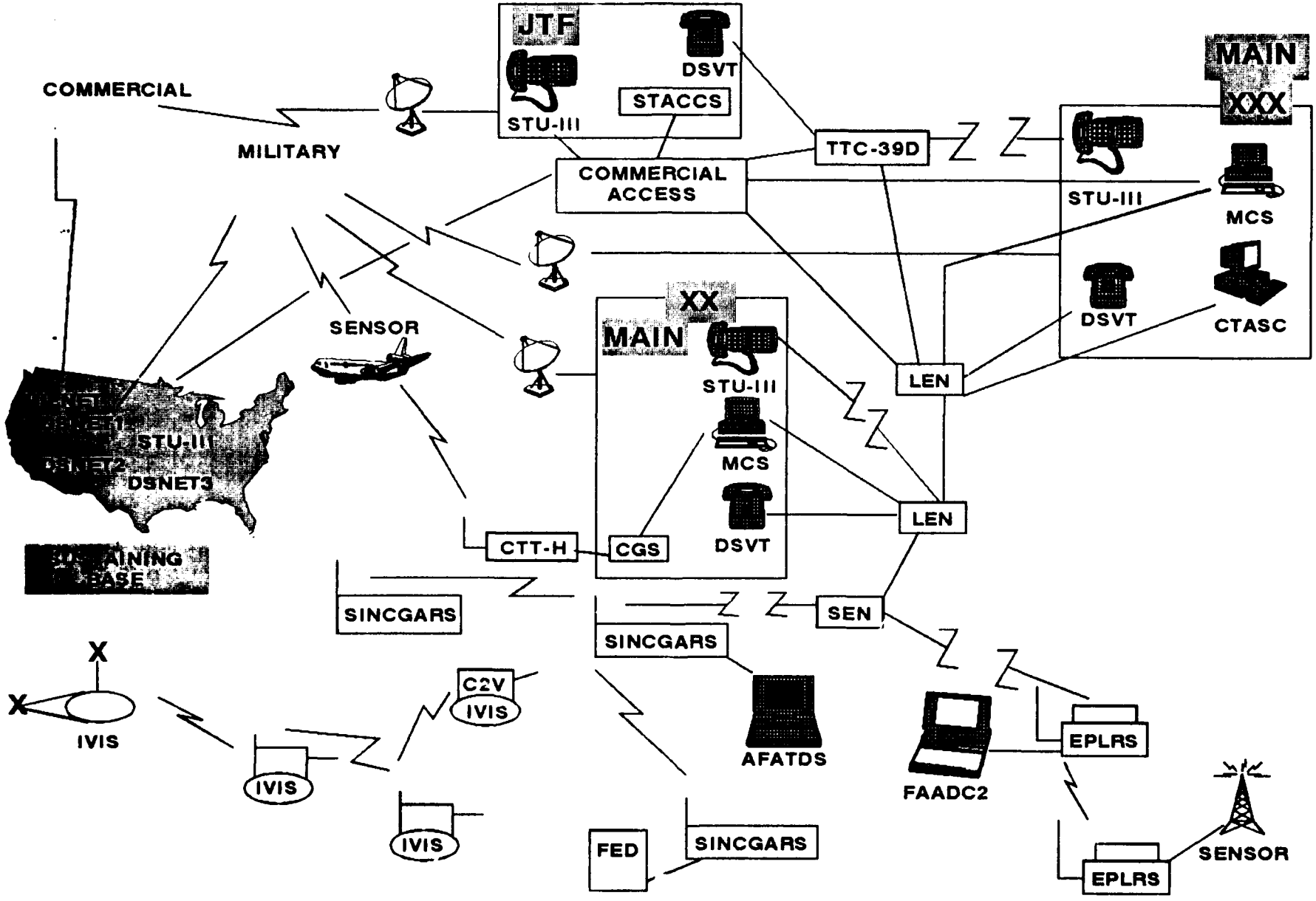
SEAMLESS BATTLEFIELD INFORMATION ARCHITECTURE (SBIA)

DEFINITION: *SBIA* IS A CONCEPT RATHER THAN A FORMAL PROGRAM. PROVIDE AN UNENCUMBERED FLOW OF CRITICAL COMMAND, CONTROL, AND INTELLIGENCE INFORMATION IN A VARIETY OF MEDIA FORMATS FROM THE FORWARD AREAS OF A THEATER OF OPERATIONS TO THE NATIONAL COMMAND AUTHORITY.

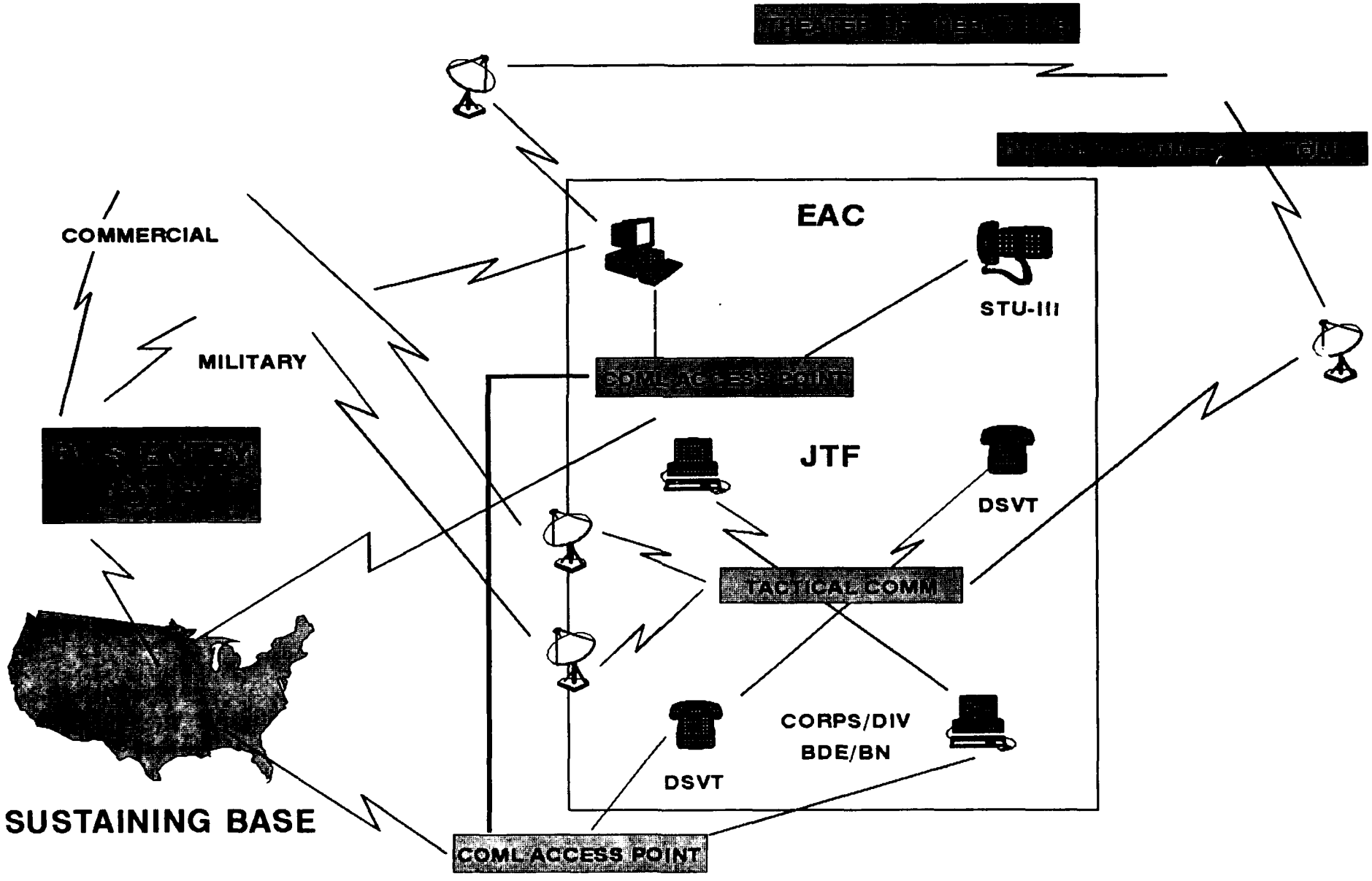
SEAMLESS BATTLEFIELD INFORMATION ARCHITECTURE (SBIA)

DESCRIPTION: ENCOMPASSES BOTH VOICE AND DATA COMMUNICATIONS. TO ACCOMPLISH THIS, *NDI* AND *COTS* SOLUTIONS MUST BE FOUND FOR THE TRANSFER OF DATA, INCLUDING IMAGING, OVER MULTI-MEDIA TRANSMISSION AND SWITCHING SYSTEMS, ACROSS EXTENDED DISTANCES, IN AN ENVIRONMENT OF MULTIPLE LEVELS OF SECURITY CLASSIFICATIONS. IT MUST ALSO PROVIDE THE ABILITY TO SPEAK SECURELY BETWEEN CURRENTLY FIELDED TACTICAL, STRATEGIC, AND PUBLIC SWITCHED NETWORKS.

SEAMLESS BATTLEFIELD INFORMATION ARCHITECTURE
CONCEPTUAL SEAMLESS ARCHITECTURE



SEAMLESS BATTLEFIELD INFORMATION ARCHITECTURE
CONCEPTUAL SEAMLESS ARCHITECTURE



SEAMLESS BATTLEFIELD INFORMATION ARCHITECTURE STATUS

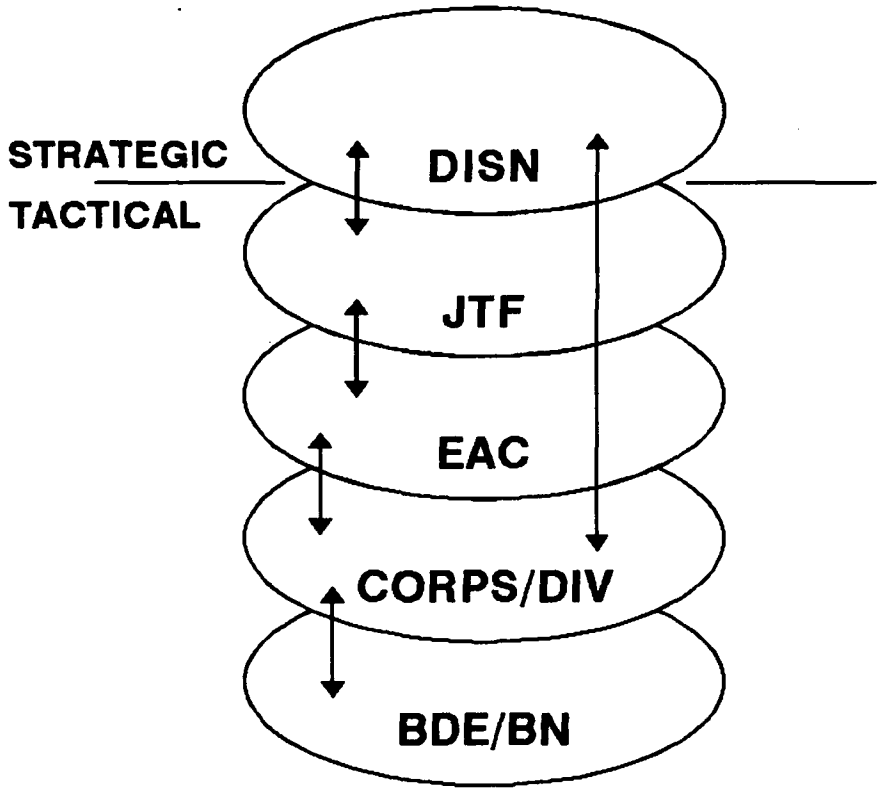
INFORMATION EXCHANGE DIFFICULTIES ENCOUNTERED IN RECENT CONFLICTS OVER THE LAST DECADE (MOST RECENTLY DESERT STORM)

SEAMLESS BATTLEFIELD INFORMATION ARCHITECTURE REQUIREMENTS

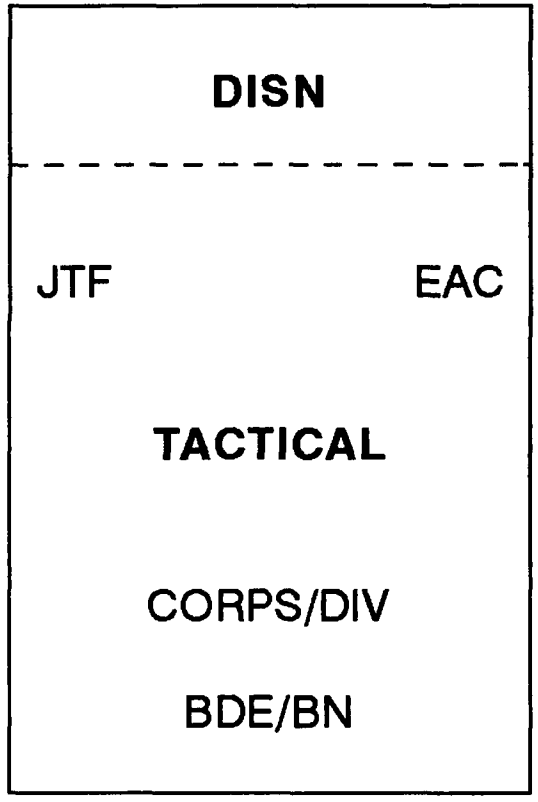
- MODERN RAPID EXPANSION OF BATTLEFIELD AUTOMATION
- INCREASINGLY JOINT AND COMBINED NATURE OF TODAY'S WARFARE
- UNIQUE SECURITY RESTRICTIONS IN SOME NETWORKS
- HIGHER USER EXPECTATIONS FOR SERVICE
- MULTIPLE STANDARDS

SEAMLESS BATTLEFIELD INFORMATION ARCHITECTURE
ARCHITECTURES NOW AND FUTURE

NOW-MULTILAYERED



FUTURE-SEAMLESS



SEAMLESS ARCHITECTURE ISSUES

DATA

- INTERNET ADDRESSING
- MULTI-LEVEL SECURITY
- DATA TRANSMISSION BANDWIDTH
- OVERALL NETWORK CONTROL
- SECURITY ACCREDITATION

SECURE VOICE

- A/D & D/A CONVERSIONS
- DATA COMPRESSION TECH.
- VOCODER COMPATIBILITY

VOICE

- CONTROL SIGNALING
- NUMBERING SCHEME

IN-THEATER CHALLENGE: INCREASED RATE OF MOVEMENT AND COMMUNICATIONS RANGE EXTENSION

IN-THEATER SYSTEMS MANAGEMENT & CONTROL

LOCAL AREA NETWORK ADMINISTRATION

SEAMLESS BATTLE FIELD INFORMATION ARCHITECTURE

STATUS OF CURRENT PROGRAMS

- MOST TACTICAL COMMUNICATIONS AND INFORMATION SYSTEMS ARE ALREADY IN MATURE STAGES OF DEVELOPMENT OR ARE IN THE PROCESS OF FIELDING.
- IN THE CURRENT BUDGETING ENVIRONMENT, REQUESTS FOR NEW STARTS ARE LAST RESORT

SEAMLESS BATTLE FIELD INFORMATION ARCHITECTURE
POTENTIAL SOLUTIONS

NEAR AND MID TERM

- TRANSITION FROM MULTI - LAYERED TO
  - SEAMLESS ARCHITECTURE

- LEVERAGE OFF
  - CURRENT COMM AND INFO SYSTEMS
  - COTS PRODUCTS

EXAMPLES OF SPECIFIC AREAS OF INTEREST

[redacted]

- STU-III/DSVT INTEROPERABILITY

[redacted]

- GPS/C3 SYSTEM INTEGRATION

[redacted]

- EPLRS/TACTICAL PACKET NETWORK INTERFACE

[redacted]

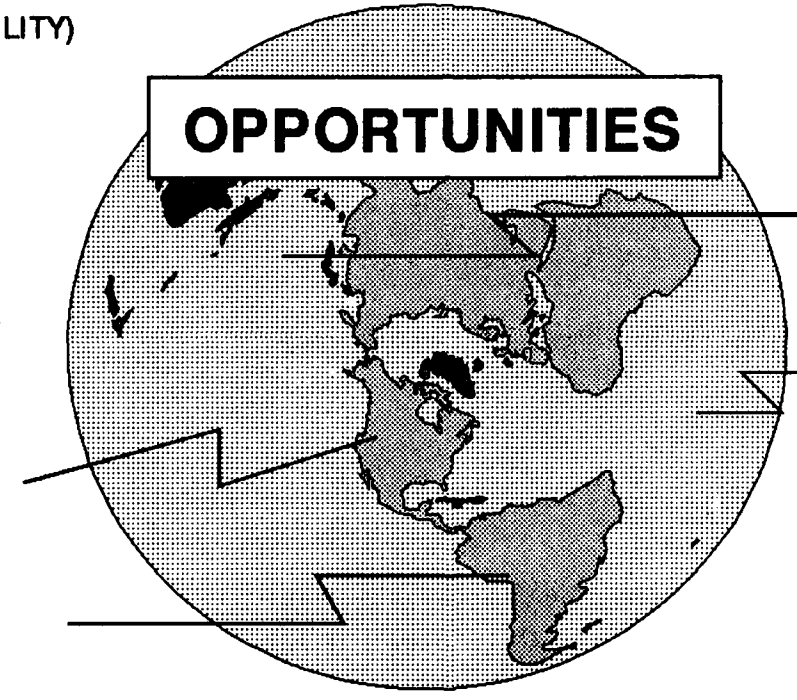
- MULTI-BAND/MULTI-FUNCTION RADIOS

SUMMARY

FOCUS: SEAMLESS, GLOBAL, INFORMATION DISTRIBUTION ARCHITECTURE

INTERCONNECTION OF DISSIMILAR DATA NETWORKS
(SINCGARS/TPN INTEROPERABILITY)

TACTICAL/STRATEGIC SECURE VOICE INTEROPERABILITY
(STU-III/DSVT INTEROPERABILITY)



NETWORK MANAGEMENT AND CONTROL
(ISYSCON)

TACTICAL COMMUNICATIONS RANGE EXTENSION
(BALLOON TECHNOLOGY, UAV RELAYS, ETC.)

MULTI-LEVEL SECURITY OPERATION
(TRUSTED GUARD GATEWAYS)

SECURITY ACCREDITATION
(TPN & TPN/DDN INTERFACE)

INFORMATION EXCHANGE ON HIGHLY MOBILE BATTLEFIELD
(B2C2, CAC2, ETC.)

REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT (RSCCE)

MR. RONALD F. JOHNSON
PRODUCT MANAGER
DSCS CONTROL

UNCLASSIFIED

SFAE-CM-SC

POINT PAPER

SUBJECT: Replacement Satellite Configuration Control Element (RSCCE)

PURPOSE: To Provide Satellite Control thru the End of the DSCS III Life

FACTS:

1. DSCS II/III Satellite monitoring and control is currently provided by the SCCE at the fixed site DSCSOC's and by the mobile Contingency SCCE (CSCCE). The SCCE was developed in the late 70s and utilized Modcomp computers. The CSCCE was developed in the late 80s and uses VAX computers.

2. It is becoming increasingly difficult to maintain the SCCE as the Modcomps reach their end of life. We therefore, plan to capitalize on the CSCCE baseline and replace the fixed site SCCEs.

3. The proposed RSCCE procurement is a competitive modified NDI with R&D in FY95-96 and follow-on production options in FY97, 98 and 99. The effort will include replacing the Modcomps with VAX Workstations, reverse engineering the CSCCE Telemetry and Command Subsystem (TCS) racks and integrating SCCE and CSCCE functionality into the RSCCE software.

BRIEFER: Colonel THOMAS J. STAUFFACHER, Project Manager
Satellite Communications (908) 532-5305.

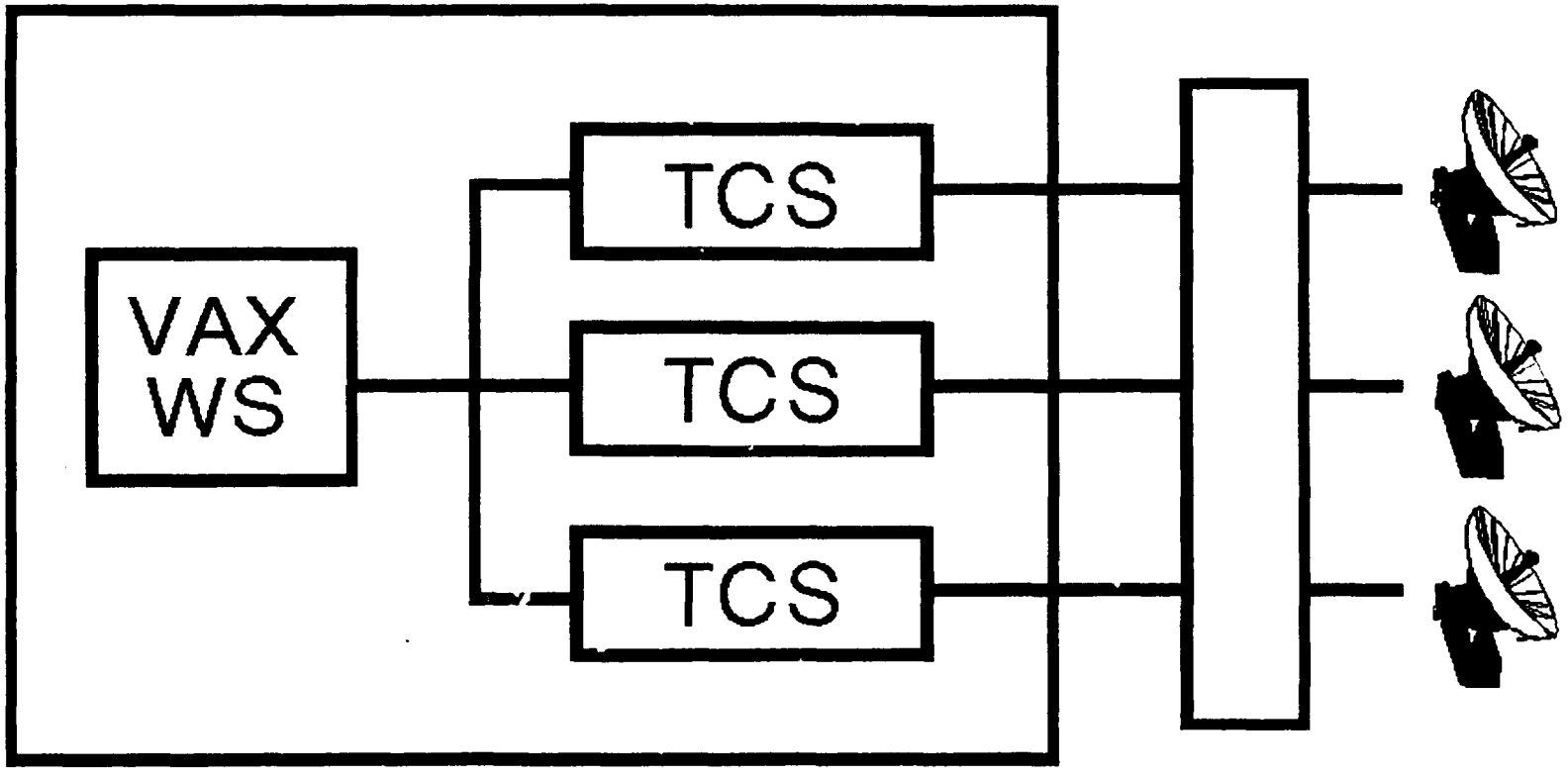
ACTION OFFICER:
JOHN COUMERI, X23169

REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT (RSCCE)

DESCRIPTION

THE RSCCE WILL PROVIDE REAL-TIME MONITORING AND CONTROL OF THE DEFENSE SATELLITE COMMUNICATION SYSTEM SATELLITE (DSCS III) PLATFORM AND COMMUNICATIONS PAYLOAD

REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT (RSCCE)



TCS = TELEMETRY & COMMAND SUBSYSTEM

REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT (RSCCE)

STATUS

- CONTROL CURRENTLY PROVIDED BY:
  - SATELLITE CONFIGURATION CONTROL ELEMENT (SCCE)
  - CONTINGENCY SATELLITE CONFIGURATION CONTROL ELEMENT
- SCCE REACHING END OF LIFE

REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT (RSCCE)

OBJECTIVE

PROCURE REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT (RSCCE) TO PROVIDE SATELLITE CONTROL THRU THE END OF THE DSCS III SATELLITE LIFE

REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT (RSCCE)

REQUIREMENTS

- UPGRADE TO VAX COMPUTERS
- FABRICATE CSCCE TCS RACKS
- INTEGRATE SCCE & CSCCE FUNCTIONALITY INTO RSCCE SOFTWARE

REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT (RSSCE)

PAYOFFS

- REDUCE LIFE CYCLE COSTS
- INCREASE OPERATIONAL EFFECTIVENESS

REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT (RSSCE)

SHORT-TERM MILESTONES

FY–94

- RELEASE RFP 2QFY94
- MILESTONE DECISION IPR 3QFY94

REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT (RSCCE)

LONG-TERM MILESTONES

FY–95 AND BEYOND

- AWARD DEV CONTRACT — FY95
- EXERCISE PROD OPTION 1 — FY97
- EXERCISE PROD OPTION 2 — FY98
- EXERCISE PROD OPTION 3 — FY99
- FIRST DELIVERY — FY99

CONTRACT OPPORTUNITY

TITLE: REPLACEMENT SATELLITE CONFIGURATION CONTROL ELEMENT (RSCCE)

OBJECTIVE: ONE TIME BUY OF 7 RSCCE's

TYPE: COMPETITIVE MODIFIED NDI DEVELOPMENT CONTRACT WITH THREE FIXED PRICE PRODUCTION OPTIONS

KEY MILESTONES:

RFP RELEASE	2QFY94
DEVELOPMENT CONTRACT AWARD	FY95
EXERCISE PRODUCTION OPTIONS	FY97/98/99
FIRST DELIVERY	FY99

ESTIMATED VALUE: $40-50M

POC TELEPHONE: JOHN COUMERI, 908-532-3169

HIGH GAIN MULTI BAND SATELLITE ANTENNA

LTC MAZZUCCHI
PRODUCT MANAGER TACTICAL SATELLITE TERMINALS

UNCLASSIFIED

SFAE-CM-SC-TT 26 MAR 93

POINT PAPER

SUBJECT: High Gain Multi-Band Satellite Antenna (HMSA)

OBJECTIVE: To provide industry with advance information concerning future HMSA requirement.

FACTS: The United States Army has identified a requirement for a tactical satellite antenna with a gain similar to the existing Quick Reaction Satellite Antenna (QRSA) employed by the United States Air Force. This QRSA type antenna is currently named the High Gain Multi-Band Satellite Antenna (HMSA).

In addition to the high gain of the QRSA, the HMSA will have the following improved capabilities:

a. Multiband (X, C, Ku) vice the QRSA's single X band

b. A smaller diameter; 18 ft or less vice 20 ft

c. Quicker set-up and tear down time of 30 minutes vice the QRSA's 60 to 90 minute time

d. Improved transportability and mobility

PM SATCOM plans on awarding a firm fixed price contract for a Non-Developmental Item (NDI) with a Request for Proposal (RFP) in FY 96 and a contract award in FY 97. The value of the effort is estimated at 15 - 18 million.

BRIEFER: COL Thomas J. Stauffacher Project Manager Satellite Communications.

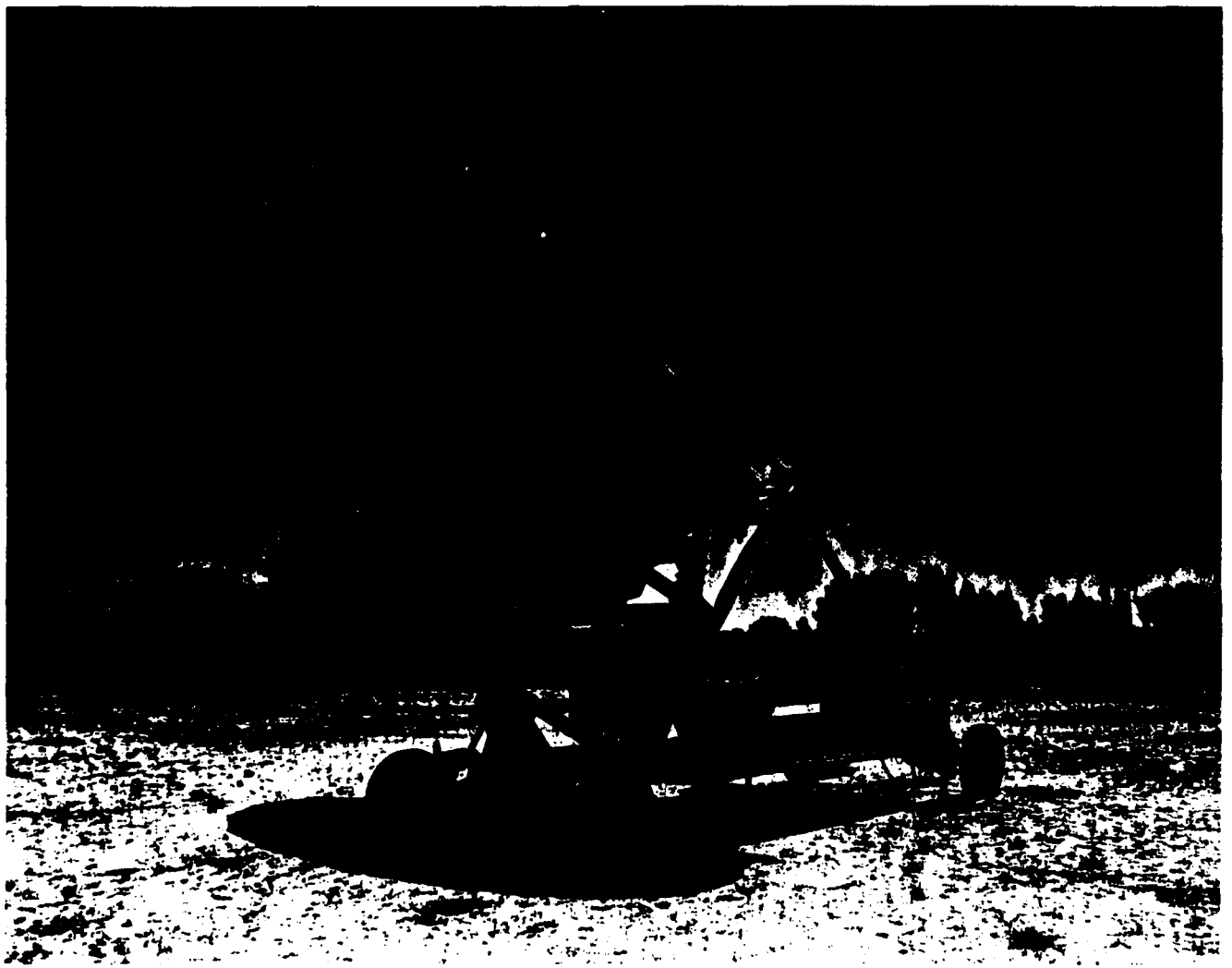
ACTION OFFICER
Robert F. Annett
PM TACSAT
(908) 532-0994

HIGH GAIN MULTI BAND SATELLITE ANTENNA

HIGH PERFORMANCE SUPER HIGH FREQUENCY TACTICAL SATELLITE TERMINAL ANTENNA

HIGH GAIN, HIGH MOBILITY, FAST DEPLOYMENT THAT IS EQUAL TO OR BETTER THAN EXISTING QUICK REACTION SATELLITE ANTENNA

HIGH GAIN MULTI BAND SATELLITE ANTENNA



OE-361 (V)/G

HIGH GAIN MULTI BAND SATELLITE ANTENNA
STATUS

SINGLE BAND

1-1.5 HR DEPLOYMENT TIME

20 FT DIAMETER

LIMITED MOBILITY

HIGH GAIN MULTI BAND SATELLITE ANTENNA
OBJECTIVES

- PROCURE AT LEAST 55 ANTENNAS BETWEEN FY 97 & FY 99
- IMPROVE SATELLITE COMMUNICATIONS PERFORMANCE
- ALLOW SATELLITE COMMUNICATIONS IN "FRINGE AREAS"
- UTILIZE NDI

HIGH GAIN MULTI BAND SATELLITE ANTENNA
REQUIREMENTS

MULTI-BAND (C, Ku, X)

HIGH TRANSPORTABILITY AND MOBILITY

SMALL SIZE - 18 FT DIAMETER OR LESS

HIGH GAIN

LOW SET-UP AND TEAR DOWN TIME APPROXIMATELY 30 MIN

HIGH GAIN MULTI BAND SATELLITE ANTENNA
PAYOFFS

- BETTER EQUIPMENT FOR TROOPS IN FIELD
- REDUCE COSTS THROUGH USE OF NDI
- IMPROVED TRANSPORTABILITY & MOBILITY
- REDUCED MAINTENANCE COSTS
- REDUCED SATELLITE AND TERMINAL POWER

HIGH GAIN MULTI BAND SATELLITE ANTENNA
LONG TERM MILESTONES

- FY95 AND BEYOND
- FY96: RFP RELEASED
- FY97: CONTRACT AWARD
- FY97 AND BEYOND: HARDWARE DELIVERIES

CONTRACT OPPORTUNITY

TITLE: HIGH GAIN MULTI BAND SATELLITE ANTENNA

OBJECTIVE: PROCURE HIGH GAIN NDI ANTENNA TO SUPPORT MILITARY SATELLITE COMMUNICATIONS

PROPOSED CONTRACT TYPE: FFP

KEY MILESTONES: RFP - FY96, AWARD - FY97

ESTIMATED VALUE: 15 - 18 MIL (PRODUCTION)

POC TELEPHONE: LTC MAZZUCCHI, (908) 532-0994/6

VEHICULAR CONFORMAL ANTENNAS

Joseph J. Pucilowski, Jr.
Director
Space and Terrestrial Communications Directorate

UNCLASSIFIED

AMSEL-RD-ST

POINT PAPER

SUBJECT: Vehicular Conformal Antennas

OBJECTIVE: An exploratory development and feasibility demonstration effort to provide an assessment of tactical vehicles for radio systems (both high frequency (HF) and very high frequency (VHF)), and conformal antennas for use in the tactical environment. Conformal antennas are those which by their mechanical configuration are an integral part of the vehicle. As an example the antenna could be the handrail, as in the case of a tracked vehicle, or part of the fender or canopy support in the case of a wheeled vehicle. The technical assessment would identify candidate structures and candidate vehicles (i.e. HMMWV - high mobility multi-purpose wheeled vehicles, M1,M2), followed by a feasibility demonstration phase and evaluation of models on respective tactical vehicles.

FACTS:

- The state-of-the art in conformal antenna technology can be pushed to assess the feasibility of replacing existing tactical vehicular antennas (HF and VHF) with a conformal antenna without a major reduction in communication range.

- The benefit realized from this action is a lower profile antenna which presents less of a visible signature for identification of command post vehicles, as well as a safety margin from high voltage power lines.

- Reduction in thermal, optical, and visible profiles, as well as radar cross section is a goal.

MILESTONES: FY-94 Initiate and complete technical assessment and initiate feasibility modeling phase.

FY-95 Complete feasibility models and conduct evaluation tests on candidate vehicles.

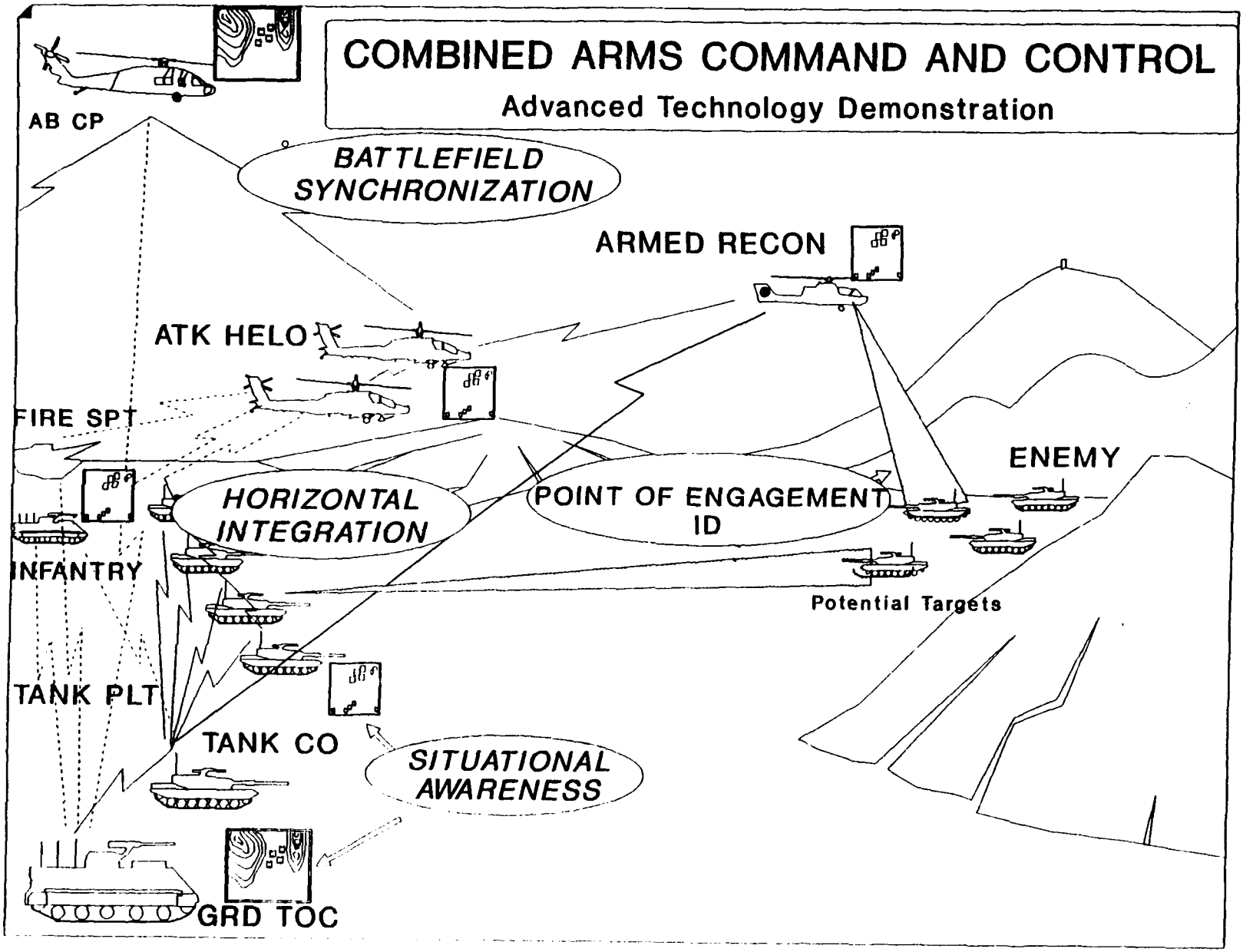
BRIEFER: Joseph J. Pucilowski, Jr., Director, Space & Terrestrial Communications Directorate, AMSEL-RD-ST, (908) 544-4449.

ACTION OFFICER
Frank Kurian
Radio Ancillaries Branch
(908) 532-4200

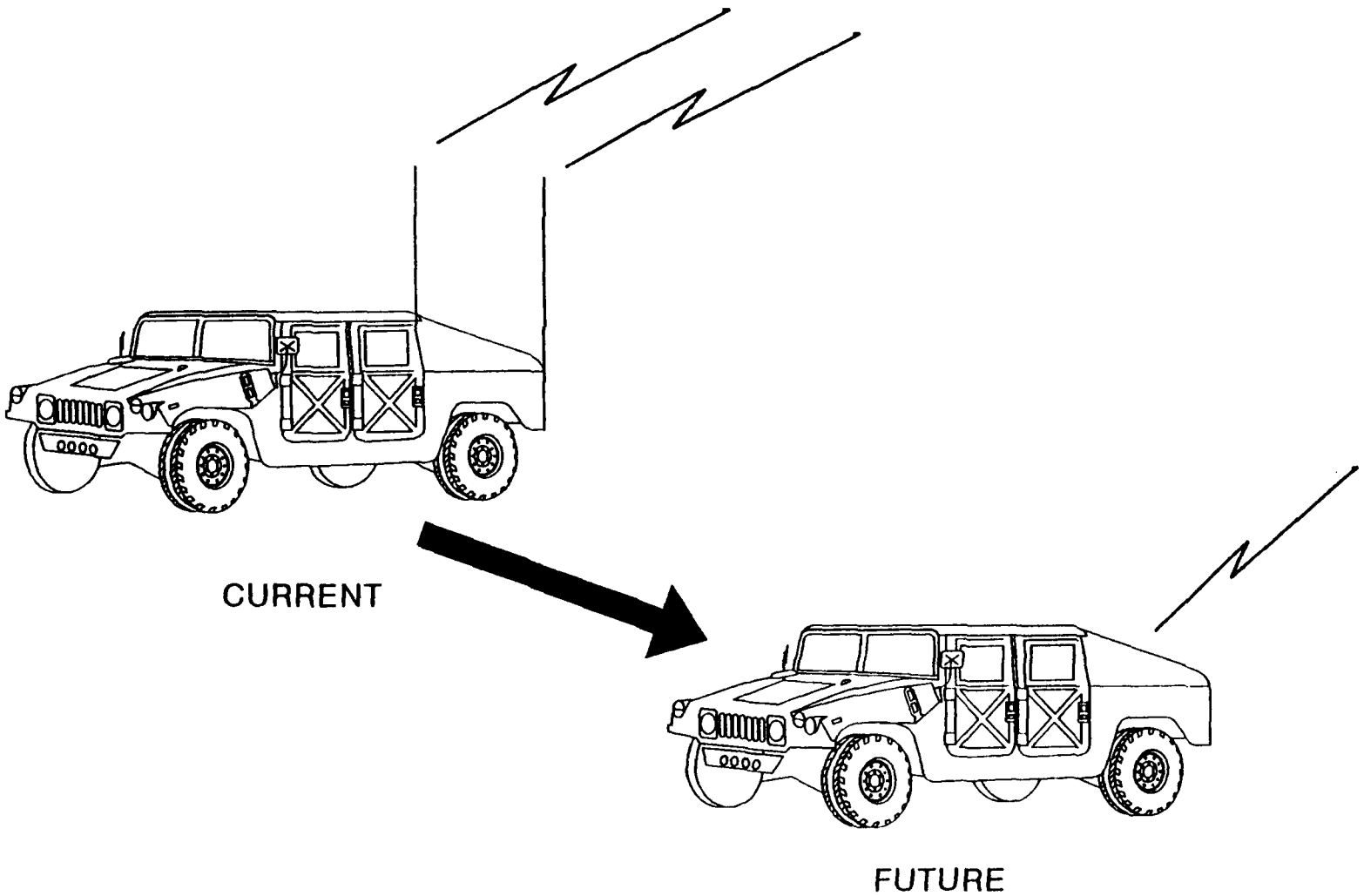
VEHICULAR CONFORMAL ANTENNAS
DESCRIPTION

Conformal antennas are those which by their mechanical configuration are an integral part of the structure. This exploratory development and feasibility demonstration effort is to identify candidate tactical vehicles that may be suitable for the application of conformal antenna technology, and to provide feasibility models of High Frequency (HF) and Very High Frequency (VHF) conformal antennas for demonstration on the respective vehicle.

Definition: Antennas by their Mechanical Configuration are an Integral Part of the Vehicle


COMBINED ARMS COMMAND AND CONTROL
Advanced Technology Demonstration
AB CP
BATTLEFIELD SYNCHRONIZATION
ARMED RECON
ATK HELO
FIRE SPT
ENEMY
HORIZONTAL INTEGRATION
POINT OF ENGAGEMENT ID
INFANTRY
Potential Targets
TANK PLT
TANK CO
SITUATIONAL AWARENESS
GRD TOC

VEHICULAR CONFORMAL ANTENNAS



VEHICULAR CONFORMAL ANTENNAS
STATUS: PRE-AWARD

A. EXISTING OPERATIONAL CAPABILITIES

HF: 16 Foot Whip

VHF: 10 Foot Whip (AS3900)

B. EXISTING CONCEPTS/TECHNOLOGIES FOR R&D

- Microstrip Antenna
- Pin-diode Antenna
- Thin Metal Antenna (e.g. car antenna)
- Active Antenna
- Etched Antenna

VEHICULAR CONFORMAL ANTENNAS
OBJECTIVES

- Develop antennas that by their mechanical configuration are an integral part of the vehicle
- Reduce visible signature and high profile of existing Command Posts and increase safety
- Reduce thermal and optical profiles
- Reduce radar cross-section

VEHICULAR CONFORMAL ANTENNAS
REQUIREMENTS

- HF = 2-30 MHz, VHF = 30-88 MHz
- Radiation pattern:
  - Omni-Directional - VHF
  - Near Vertical Incident Skywave - HF
- Gain: TBD
- Input impedance: 50 Ohms
- Voltage Standing Wave Ratio $\leq$ 3:1

VEHICULAR CONFORMAL ANTENNAS
PAYOFFS

- Low profile antennas
- Inconspicuous antennas
- Safety
- Reduce visible signature
- Reduce mechanical complexity
- Reduce thermal and optical profile

VEHICULAR CONFORMAL ANTENNAS
SHORT-TERM MILESTONES

FY-94

- Award 6.2 exploratory development contract
- Receive technical assessment report which identifies specific conformal antennas targeted for specific candidate tactical vehicles

VEHICULAR CONFORMAL ANTENNAS
LONG-TERM MILESTONES

FY-95

- Complete fabrication of feasibility models
- Demonstrate capabilities on respective tactical vehicles

VEHICULAR CONFORMAL ANTENNAS
FUNDING PROFILE

	RDTE $M	PROC $M	OMA $M
FY 94	.3-.6	--	--
FY 95	.8-1.2	--	--
FY 96	--	--	--
FY 97	--	--	--
ETC.	--	--	--
TOTAL:	1.1-1.8	--	--

VEHICULAR CONFORMAL ANTENNAS CONTRACT OPPORTUNITY

- TITLE: Vehicular Conformal Antennas
- OBJECTIVE: Assess, Develop and Demonstrate Conformal Antenna Technology for Tactical Vehicular use
- PROPOSED CONTRACT TYPE: Cost-Plus-Fixed-Fee (CPFF)
- KEY MILESTONES: Award Date - 1QFY94
  Contract Length - 24 months
- POC/TELEPHONE: Frank Kurian/(908) 532-4200

SCAMP BLOCK II TECHNOLOGY DEVELOPMENT PROGRAM

Joseph J. Pucilowski, Jr.
Director
Space and Terrestrial Communications Directorate

UNCLASSIFIED

AMSEL-RD-ST

POINT PAPER

SUBJECT: SCAMP Block II

EXECUTIVE SUMMARY:

The Single Channel Anti-Jam Manportable Terminal (SCAMP) Block II program is intended to develop the technologies necessary to prove the feasibility of a 12-15 pound EHF Satellite terminal which meets all of the requirements stated in the approved ORD for the Block II terminal. There are a number of requirements for the Block II terminal which are in addition to all existing requirements of the Block I terminal. These include lower overall weight (which includes system batteries), a doubling of the battery mission duration (from 12 hours worst-case to 24 hours worst case, but with an objective of 96 hours), an added requirement for a voice interface to the Army Common User System rather than data only as in the Block I terminal, a paging requirement for manportable systems, and an objective (not a requirement) for a vehicular mounted full Comm on the Move (COTM) configuration.

The objective is a low-cost, easily manufactureable terminal which meets all ORD requirements. The Block II Program Plan is designed to generate technologies for insertion into two prototype Block II SCAMP terminals, which Lincoln Labs will integrate in FY96. This plan has been designed such that the technology insertion tasks which will be developed will typically enable multiple, competitive sources to manufacture the components for subsequent SCAMP Block II production, when a decision to manufacture the 12-15 pound SCAMP Block II is made. The methodologies for achieving these objectives is through the development of Government sponsored standard chip sets, standard Multi-Chip Module (MCM) integration, a standard Integrated Input/Output and Control Device (IIOCD) interface device, investigations of smaller, lower cost antenna structures and methodologies, power source alternatives, more capable transmitters and receivers, and lighter, less expensive mechanical structures.

The SCAMP Block II program is designed to develop and prototype technologies necessary to prove the feasibility of these requirements by the end of FY95. This program does not include efforts to integrate all of these advances into a prototype SCAMP Block II terminal in FY96. It is anticipated that this will take place at Lincoln Labs beginning in FY96 and will be funded by an additional budgetary process.

SCAMP Block I EMD terminals are currently being developed by General Electric (now Martin Marietta) and Lockheed Corporation in a competitive fly-off for subsequent production of approximately 450 Block I terminals.

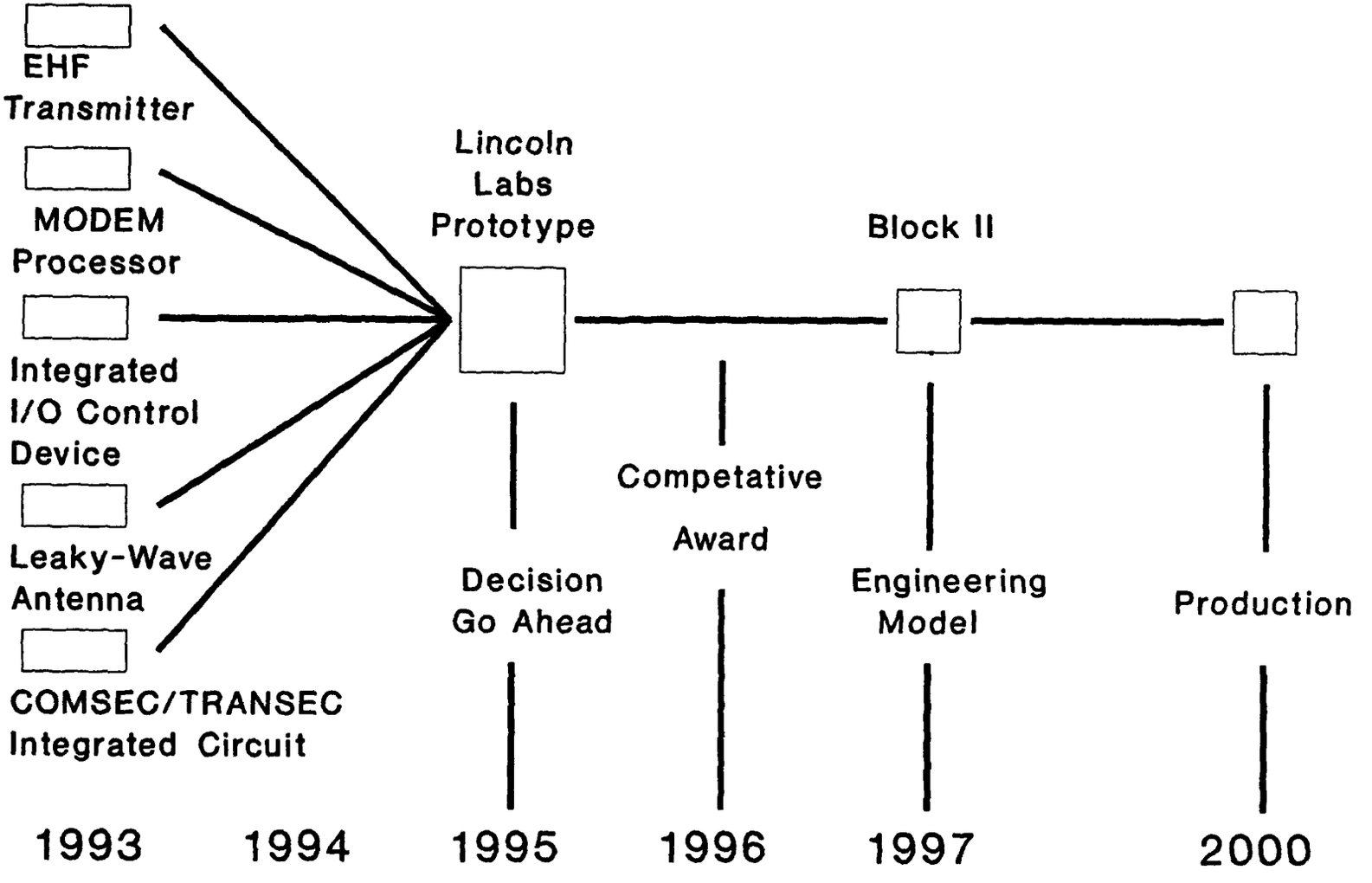
BRIEFER: Joseph J. Pucilowski, Jr., Director, Space & Terrestrial Communications Directorate, AMSEL-RD-ST, (908) 544-4449.

ACTION OFFICER
Steven Waugh
SCAMP Block II Project Leader
(908) 532-2240

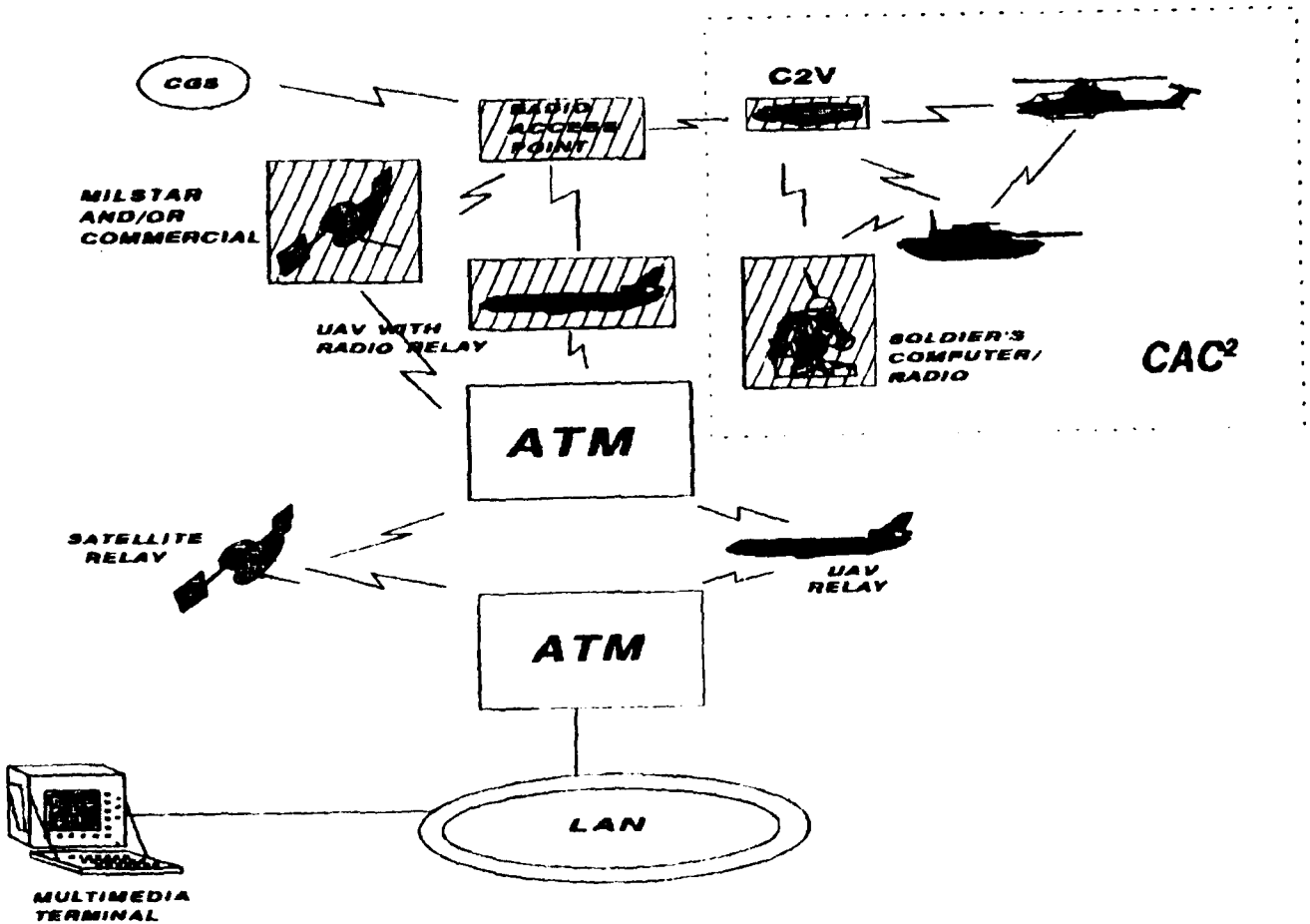
SCAMP BLOCK II
DESCRIPTION

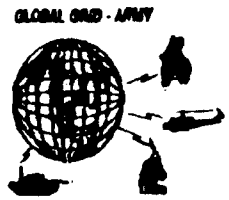
The SCAMP Block II technology insertion program is a three-year effort which involves the development of technologies that will prove the feasibility of the Block II terminal by lowering terminal weight, improving power efficiency, achieving the additional user requirements for the Block II terminal, and ultimately yielding cost effective technologies applicable to the ultimate development of approximately 2500 SCAMP Block II terminals.

BLOCK II - New Technology Insertion



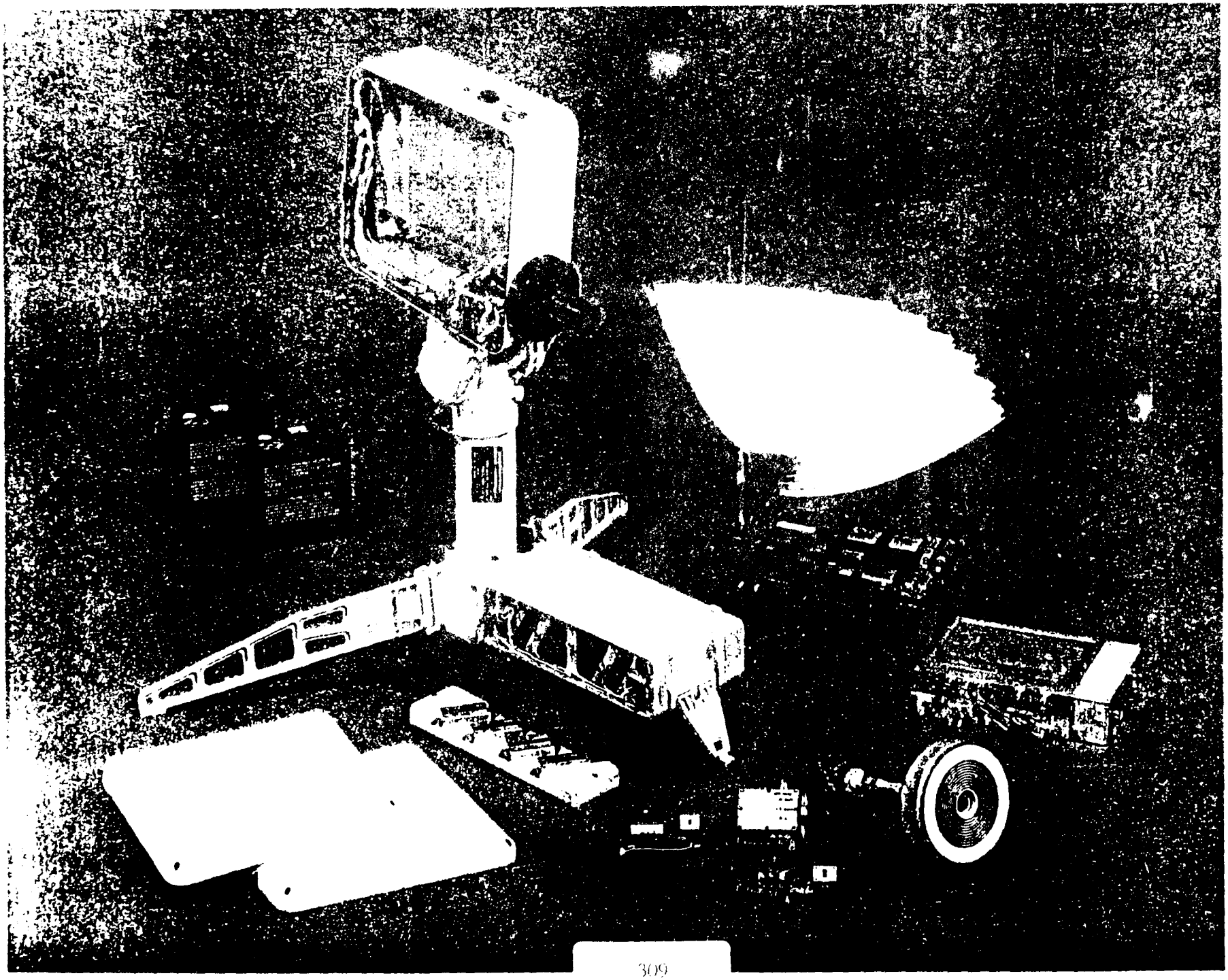
PHASE III (FY98 - FY99)





US ARMY
COMMUNICATIONS
ELECTRONICS COMMAND





SCAMP BLOCK II
OBJECTIVES

- Develop Technologies to meet the increased SCAMP Block II requirements
- Ensure the Transfer of Technology to Industry
- Maintain perspective on developing low-cost, functionally compliant terminal technologies

SCAMP BLOCK II
REQUIREMENTS

	Block I	Objective Block II
WEIGHT	30 Lbs	12-15 Lbs
COMMUNICATION MODE	LDR Data 75-2400 bps	LDR Data 75-2400 bps
	LDR Voice 2400 bps (STU-III Voice Quality)	High Quality Voice Interface to ACUS (MSE System)
BATTERY DURATION	12 Hours (worst case)	24 Hours (worst case) Objective 96 Hours
EMBEDDED GPS	YES	YES
OPERATOR SET-UP TIME	10 Minutes	Objective 5 Minutes
ENVIRONMENTALS	Full Mil-Qualified MIL-STD-810E	Full Mil-Qualified MIL-STD-810E

SCAMP BLOCK II
REQUIREMENTS (cont)

	Block I	Objective Block II
MTBOMF	600 hrs	1250-3000 hrs
COMM ON THE MOVE	NO	Objective Vehicular Mounted
PAGING	NO	YES
IOC	FY98	1QFY02
APPROX TOTAL PRODUCTION UNITS	456	2549

SCAMP BLOCK II
FUNDING PROFILE

	RDTE $M	PROC $M	OMA $M
FY 93	1-2	--	--
FY 94	7-9	--	--
FY 95	5-7	--	--
FY 96	TBD	--	--
ETC.	--	--	--
TOTAL:	13-18	--	--

SCAMP BLOCK II CONTRACT OPPORTUNITIES

- TITLE: EHF Transmitter
- OBJECTIVE: Develop a 2.5W, >20% efficient EHF transmitter module for technology insertion. Potential for two or more contracts of parallel development effort.
- PROPOSED CONTRACT TYPE: Competitive, CPFF
- EBB ACTIVE DATE: May 93
- PROJECTED SOLICITATION DATE: September 93
- ESTIMATED VALUE: $2.5M
  CONTRACT LENGTH: 36 months
- POC/TELEPHONE: Steven Waugh/(908) 532-2240

SCAMP BLOCK II CONTRACT OPPORTUNITIES

- TITLE: Hand-held Integrated Input/Output and Control Device (IIOCD) Prototype
- OBJECTIVE: Develop a prototype hand-held IIOCD incorporating new vocoding and ACUS interface solution.
- PROPOSED CONTRACT TYPE: Competitive, TBD/BAA
- PROJECTED SOLICITATION DATE: Early 94
- ESTIMATED VALUE: $2+M
  CONTRACT LENGTH: 20 months
- POC/TELEPHONE: Steven Waugh/(908) 532-2240

SCAMP BLOCK II
CONTRACT OPPORTUNITIES

- TITLE: Modem Processor
- OBJECTIVE: To develop a minimum power, low weight modem processor for insertion into EHF man-portable, battery operated satellite terminal.
- PROPOSED CONTRACT TYPE: TBD
- PROJECTED SOLICITATION DATE: Mid-late FY94
- ESTIMATED VALUE: $1.5M
  CONTRACT LENGTH: 34 months
- POC/TELEPHONE: Steven Waugh/(908) 532-2240

SCAMP BLOCK II CONTRACT OPPORTUNITIES

- TITLE: Minimize Comsec/Transec Integrated Circuit Hybrid (CDH) TRANSEC
- OBJECTIVE: To minimize the size, weight, and power consumption of the CDH TRANSEC devices for application to battery operated, man-portable communications equipment.
- PROPOSED CONTRACT TYPE: Competitive, TBD/BAA
- PROJECTED SOLICITATION DATE: Mid-late FY94
- ESTIMATED VALUE: $1+M
  CONTRACT LENGTH: 27 months
- POC/TELEPHONE: Steven Waugh/(908) 532-2240

SCAMP BLOCK II CONTRACT OPPORTUNITIES

- We will respond to any unsolicited white-paper/ proposal to reduce the size/weight/power consumption of technology components for insertion into the SCAMP Block II Terminal. Suggestions include:
  - High W-Hr/lb Battery Technology. (Low Cost per unit)
    - Disposable
    - Re-chargeable
  - Antenna assemblies
  - Structural materials
  - Internal circuits
  - DC/DC Converter efficiency improvements (>90%)

SESSION IV

INTELLIGENCE AND ELECTRONIC WARFARE

MODERATOR

MR. ANDREW R. D'ANGELO
PROGRAM EXECUTIVE OFFICER
INTELLIGENCE AND ELECTRONIC WARFARE

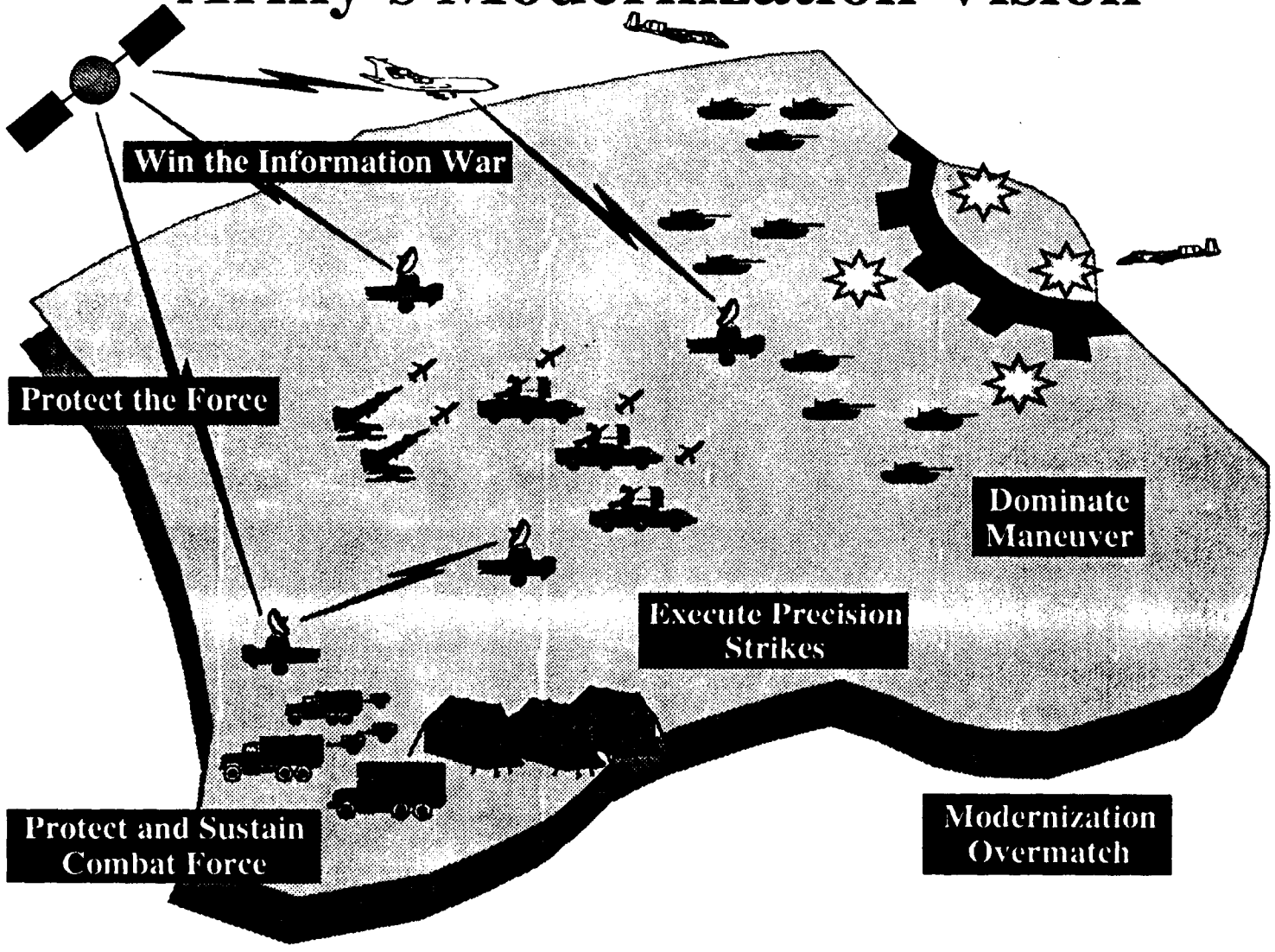
PEO IEW OVERVIEW

A. R. D'ANGELO
PROGRAM EXECUTIVE OFFICER
PROGRAM EXECUTIVE OFFICE FOR INTELLIGENCE AND ELECTRONIC WARFARE

UNCLASSIFIED

IEW
PROGRAM EXECUTIVE OFFICE

Army's Modernization Vision



5/17/93

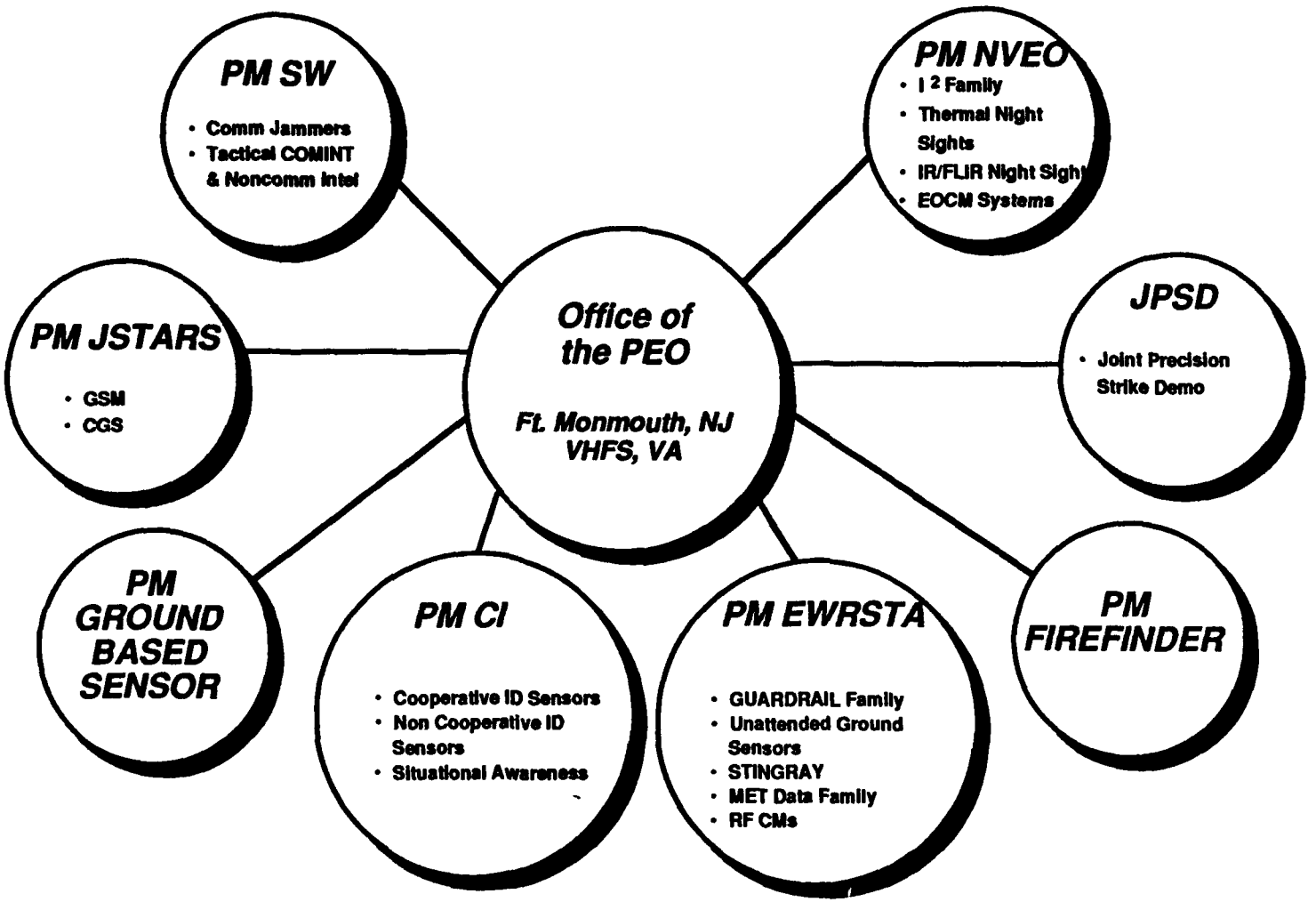
87Misc.07.02

PEO IEW MISSION

Develop, test, produce and field operationally ready, interoperable and supportable systems and equipment to accomplish the Army's mission for:

- *COMBAT IDENTIFICATION*
- *TACTICAL GROUND and AIRBORNE SURVEILLANCE*
- *SIGNALS INTELLIGENCE*
- *NIGHT VISION*
- *TARGET ACQUISITION*
- *ELECTRONIC WARFARE*
- *HOSTILE WEAPONS LOCATION*

TEAM IEW


PM SW
• Comm Jammers
• Tactical COMINT & Noncomm Intel
PM NVEO
• I 2 Family
• Thermal Night Sights
• IR/FLIR Night Sight
• EOCM Systems
PM JSTARS
• GSM
• CGS
Office of the PEO
Ft. Monmouth, NJ
VHFS, VA
JPSD
• Joint Precision Strike Demo
PM GROUND BASED SENSOR
PM CI
• Cooperative ID Sensors
• Non Cooperative ID Sensors
• Situational Awareness
PM EWRSTA
• GUARDRAIL Family
• Unattended Ground Sensors
• STINGRAY
• MET Data Family
• RF CMs
PM FIREFINDER

PEO IEW INTENT

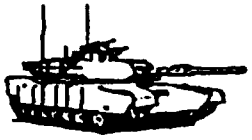
To provide IEW Systems to the Army Commanders and their Soldiers that are second to none. These IEW Systems will be reliable, available and easily maintained.

To execute a coherent IEW strategy using an evolutionary concept which focuses on Open Systems Architecture, Common Modules, and Technology Insertion. This will, in turn, result in lower procurement and O&S related costs while keeping IEW Systems at the cutting edge of technology.

PEO IEW STRATEGY IS FORWARD LOOKING AND FULLY SUPPORTS HORIZONTAL INTEGRATION

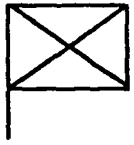
- STREAMLINED ACQUISITION PROCESS
- OPEN SYSTEMS ARCHITECTURE
- SYSTEM OF SYSTEMS SOLUTION
- SUPPORT BFA INTEROPERABILITY INITIATIVES
- LEVERAGE TECHNOLOGY INSERTION
- REDUCE PROLIFERATION OF SYSTEMS/PLATFORMS

IEW SUPPORTS
ARMY BATTLEFIELD FUNCTIONS



MANEUVER

TARGETING
SITUATION DEVELOPMENT



COMMAND & CONTROL

INTELLIGENCE PREPARATION
OF THE BATTLEFIELD



AVIATION

TARGETING
CROSS-FLOT DEEP ATTACK



FIRE SUPPORT

TARGETING



AIR DEFENSE

EARLY WARNING
TARGETING



THEATER MISSILE DEFENSE

TARGETING
TACTICAL BALLISTIC MISSILE

- HORIZONTAL INTEGRATION OF TARGETING CAPABILITY

IEW SYSTEMS PROVIDE THE ARMY WITH TARGETING CAPABILITY

- JOINT STARS
- GUARDRAIL
- IEW COMMON SENSORS
- FIREFINDER
- FAAD GROUND BASED SENSOR

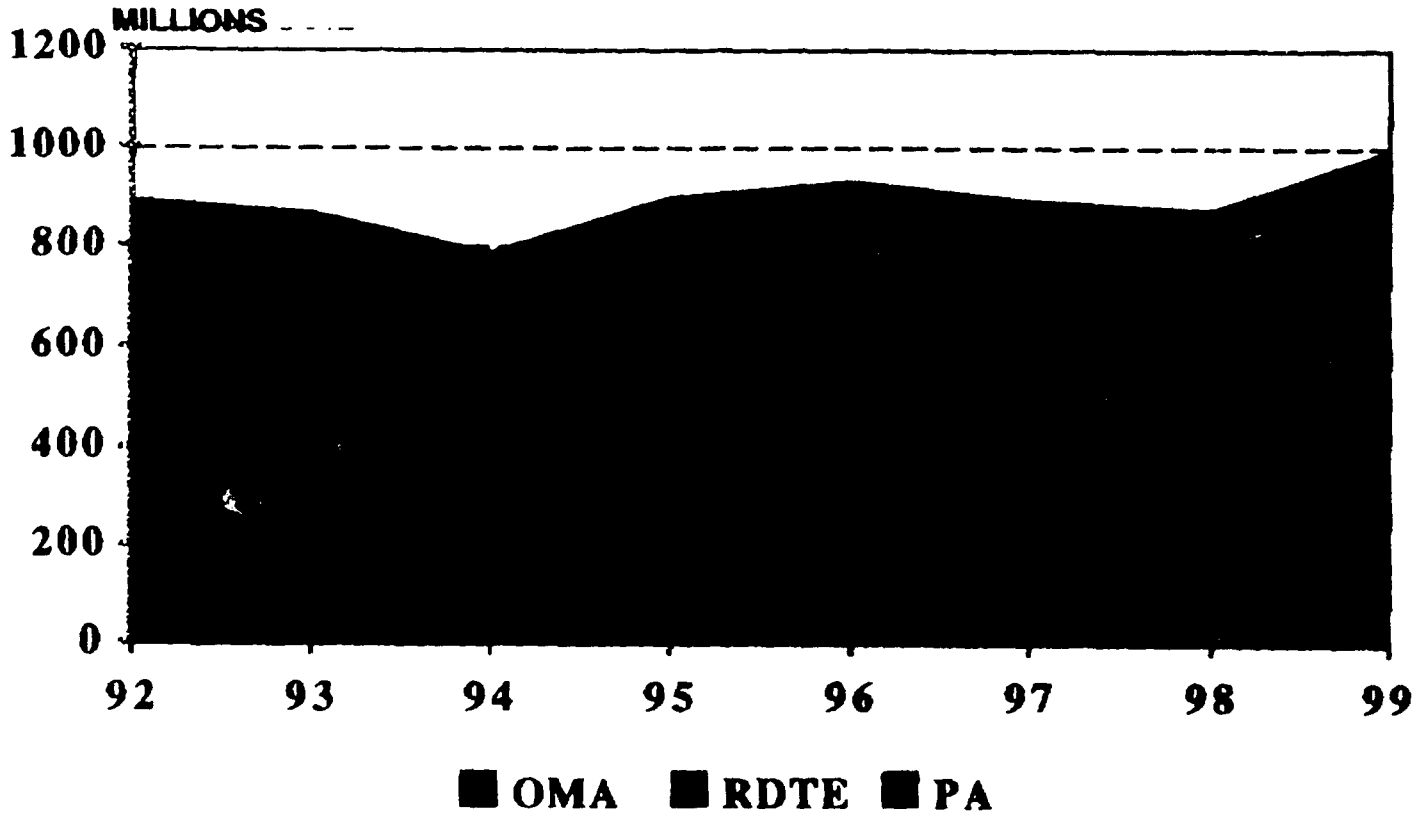
IEW SYSTEMS
WILL
HELP PREVENT FRATRICIDE

- NCTR
- IFF
- BCIS

IEW

PEO IEW TOA PROFILE

DOLLARS IN MILLIONS



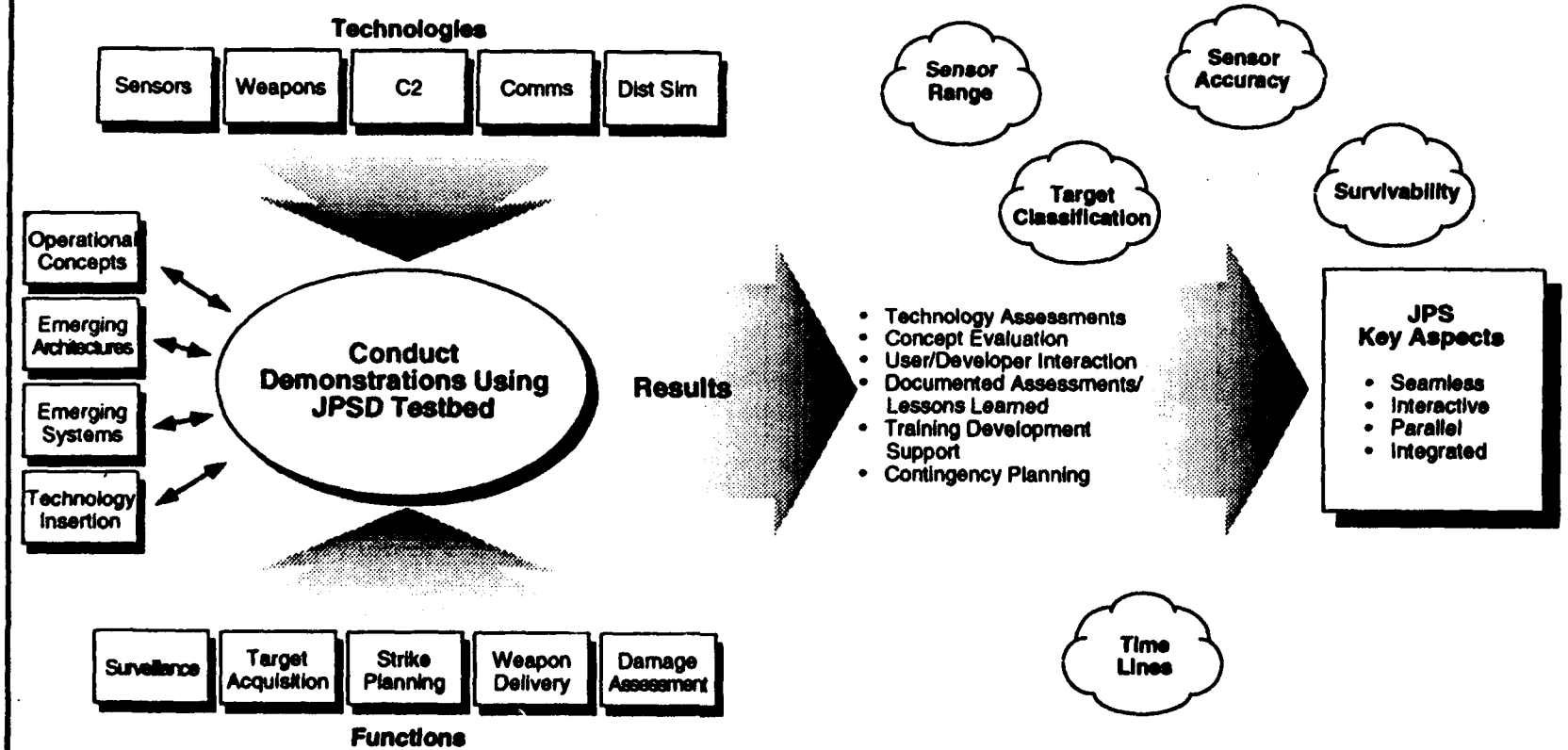
PEO IEW OVERVIEW

FUNDING PROFILE
Fiscal Years 1994 - 1999

PM	RDTE $M	PROC $M
PM JSTARS		
•GSM	$120 - 170	$715 - 775
PM SW		
•IEW COMMON SENSOR	205 - 235	460 - 560
PM CI		
•COMBAT ID	60 - 80	140 - 170
•PM NVEO		
•LASER / THERMAL SYSTEMS	85 - 120	320 - 390
TOTAL	$470 - 605	$ 1635 - 1895

IEW

JPSD


Technologies
Sensors
Weapons
C2
Comms
Dist Sim
Operational Concepts
Emerging Architectures
Emerging Systems
Technology Insertion
Conduct Demonstrations Using JPSD Testbed
Surveillance
Target Acquisition
Strike Planning
Weapon Delivery
Damage Assessment
Functions
Results
• Technology Assessments
• Concept Evaluation
• User/Developer Interaction
• Documented Assessments/ Lessons Learned
• Training Development Support
• Contingency Planning
Sensor Range
Sensor Accuracy
Target Classification
Survivability
Time Lines
JPS Key Aspects
• Seamless
• Interactive
• Parallel
• Integrated

OPEN SYSTEMS ARCHITECTURE

BRIEFING

ADVANCED PLANNING BRIEFING FOR INDUSTRY

19-20 MAY 1993

PRESENTED BY
MR. FRANK SCHRENK
CHIEF, SYSTEMS ENGINEERING DIVISION
PROGRAM EXECUTIVE OFFICE FOR INTELLIGENCE AND ELECTRONIC WARFARE

CONCEPT OF OPEN SYSTEMS ARCHITECTURE

- DESIGNED FOR EVOLUTIONARY GROWTH AND EXPANSION
- NO NEED FOR RADICAL MODIFICATIONS OR REDESIGN
- EVOLUTIONARY LAN DESIGN (ETHERNET → FDDI → ATM)
- DESIGNED AROUND GU VME CCA FROM MULTIPLE VENDORS
- CONFORMS TO INDUSTRIAL STANDARDS/PROTOCOLS
- SENSORS AND EXTERNAL COMMS INTERFACE THRU SERVERS (CLIENT/SERVER DESIGN)

IMPLEMENTING THE ARCHITECTURE

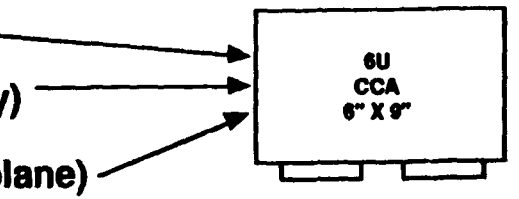
- REQUIRES COMMERCIAL/INDUSTRY STANDARDS
- MANDATES A "HORIZONTAL VIEW" AND MANAGING A SYSTEM OF SYSTEMS
- COMMON MODULES - PLUG-IN/PLUG-OUT LRU's, STANDARD DATA LINKS/INTERFACES, COMMON SOFTWARE/FIRMWARE WRITTEN IN ADA
- MORE "NDI", BETTER WARRANTIES, THROW-AWAY COMPONENTS SUPPORTED BY SUPPLY VICE MAINTENANCE
- MULTI-SENSOR PLATFORMS WITH EMBEDDED ON-BOARD PREPROCESSORS AND DATA COMPRESSION FEATURES

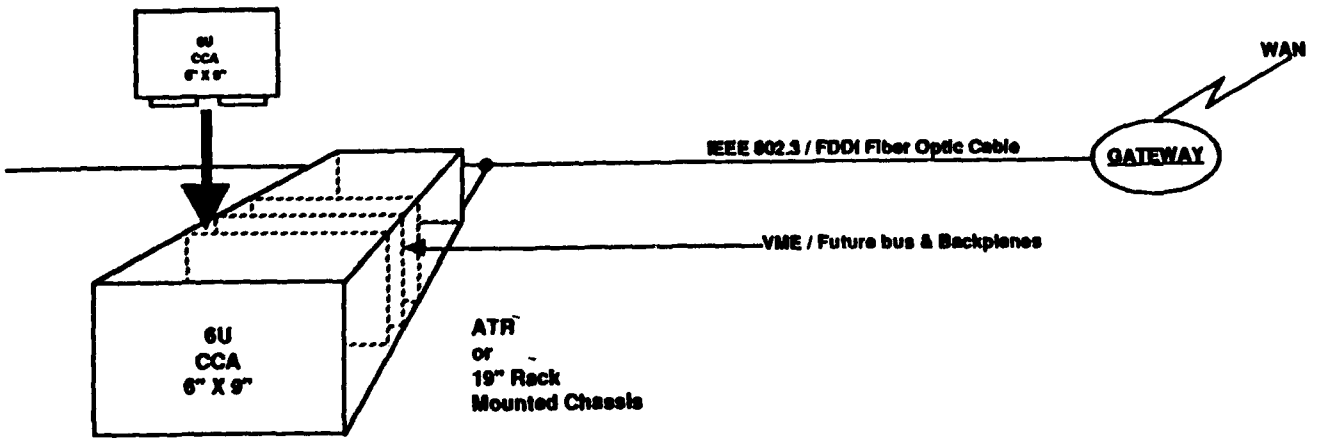
COMMON OPEN SYSTEMS HARDWARE STANDARDS

- STANDARD CIRCUIT CARD ASSEMBLY (CCA)
  - VERSA MODULE EUROCARD (VME) IEEE 1014
- STANDARD LOCAL AREA NETWORKS (LANs)
  - ETHERNET IEEE 802.3
  - FIBER DISTRIBUTED DATA INTERFACE ANSI X3T9.5
  - SMALL COMPUTER SYSTEM INTERFACE (SCSI) ANSI X3.131-199X
  - MIL-STD-1553/1773 NAVAL/AVIONICS TDMA BUS
- STANDARD ELECTRONIC INTERCONNECTS
  - EIA RS-232C, 422, 485, 170, 330, 343

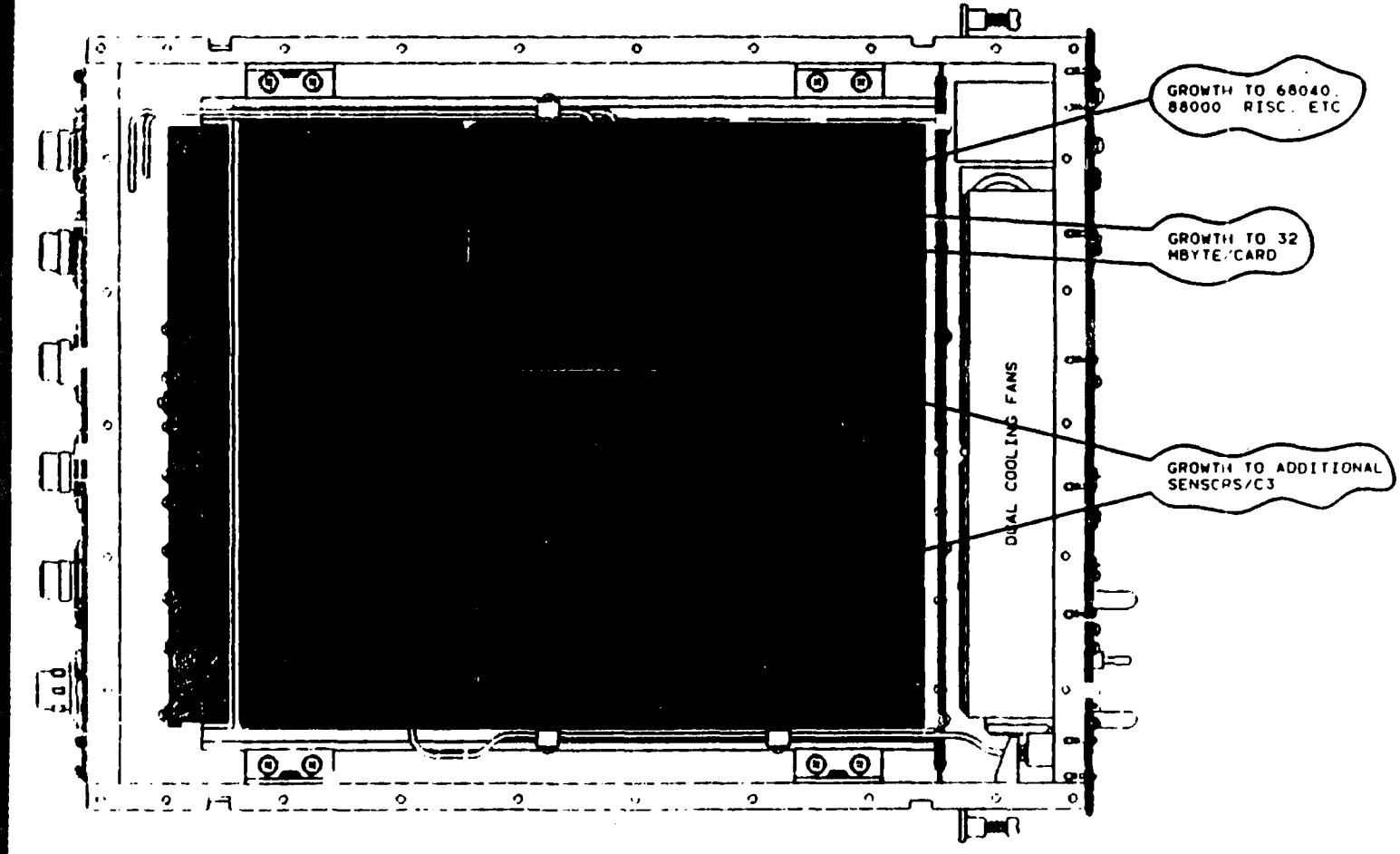
COMMERCIAL TECHNOLOGY

- RISC / CISC / DSP (Processors)
- SRAM / DRAM / VRAM (On-Board Memory)
- VME / FUTURE BUS & (6U CCAs w/Backplane)
- IEEE 802.3 / ETHERNET / ANSI X3T9.5 FDDI (LANs)
- Gateways (WANs)





Joint STARS
UNIVERSAL COMMUNICATION PROCESSOR (UCP)



COMMON OPEN SYSTEMS SOFTWARE STANDARDS

OPERATING SYSTEMS

- (POSIX) PORTABLE OPERATING SYSTEM INTERFACE FOR COMPUTER ENVIRONMENT FIPS PUB 151-1
- UNIX SYSTEMS V RELEASE 4 (SVR4) (COTS)
- "VX WORKS" BY WIND RIVERS (COMMERCIAL OFF THE SHELF/REALTIME)

HIGHER ORDER LANGUAGES

- ADA PREFERRED FIPS PUB 119, ANSI/MIL-STD-1815A-1983, ISO STD 8652-1987

DATA BASE MANAGEMENT SYSTEM

- STRUCTURED QUERY LANGUAGE (SQL) ANSI 86, FIPS PUB 127-1
- SYBASE (COTS)
- ORACLE (COTS)

MAN MACHINE INTERFACE (MMI)/GRAPHICAL USER INTERFACE (GUI)

- "X WINDOWS" (RELEASE 11.5) FEDERAL INFORMATION PROCESSING STANDARDS PUBLICATIONS FIPS PUB 158
- MOTIF IV GRAPHICS USER INTERFACES (GUI) (COTS)

COMMON OPEN SYSTEMS STANDARDS

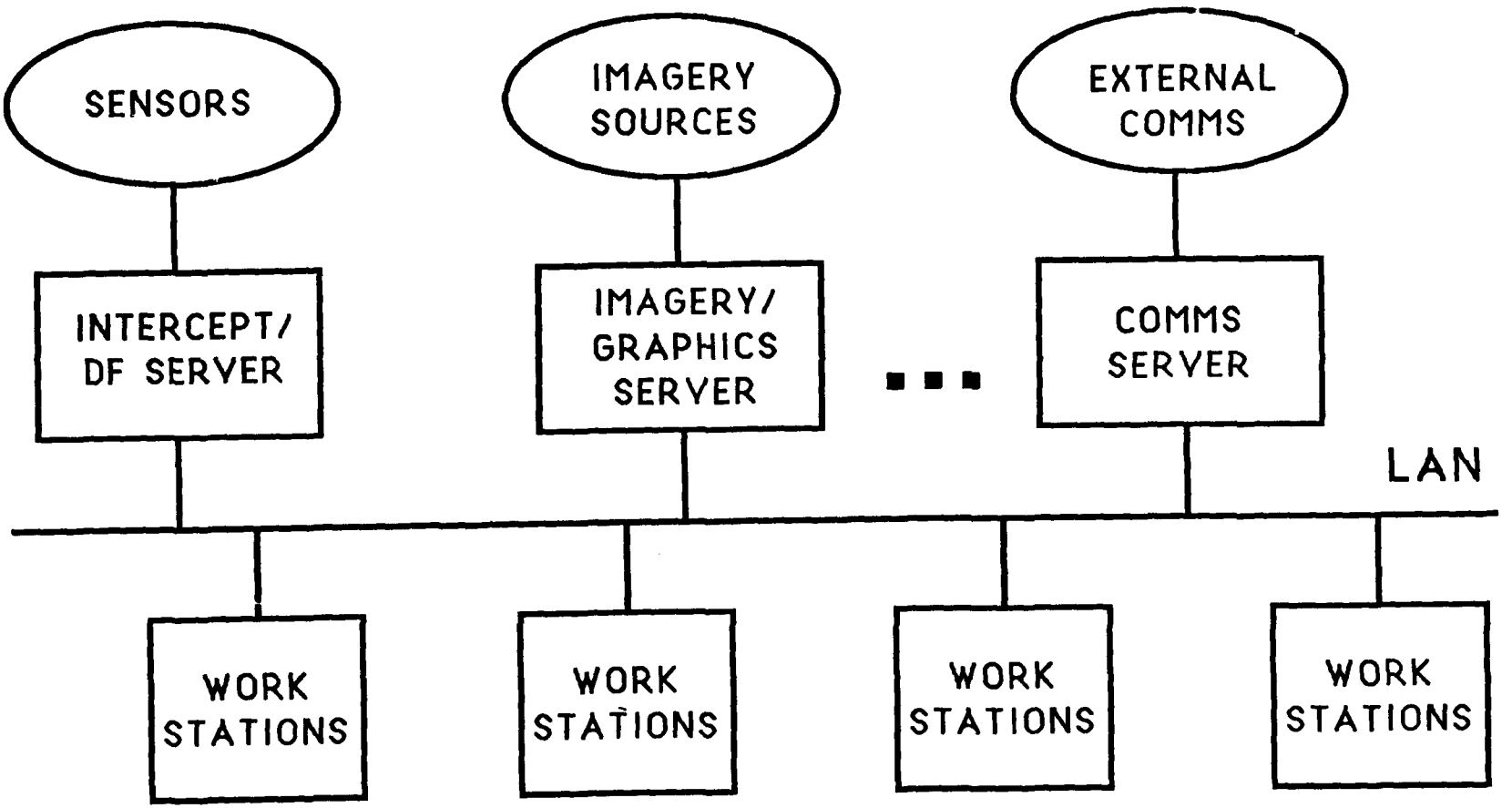
GRAPHICS

- GRAPHICAL KERNEL SYSTEM (GKS) 2D ANSI X3.124.3-1985, ISO 7942, FIPS PUB 120
- GKS FOR THREE DIMENSIONS (GKS-3D) ISO 8805
- PROGRAMMER'S HIERARCHICAL INTERACTIVE GRAPHICS SYSTEM (PHIGS) ANSI X3.144-1988, FIPS PUB 153, ISO 9592-1988
- COMPUTER GRAPHICS METAFILE (CGM) ANSI X3.122-1986, ISO 8632, FIPS PUB 128-1987
- FHIGS EXTENSION TO X (PEX) WINDOWS

IMAGERY

- NATIONAL IMAGERY TRANSMISSION FORMAT STANDARD (NITFS) (VERSION 2.0)
- IMAGERY PROCESSING AND INTERCHANGE (IPI) ISO/IEC PROJECT 1.24.10

CLIENT/SERVER INTERFACE



BUSINESS OPPORTUNITIES

- VME CCAs (I/O MEMORY, LAN, ATM, FFT's, etc.)
- 19" RACK MOUNTED VME CHASSIS AND ATR VME CHASSIS
- FIBER OPTIC LANS (ETHERNET, FDDI, ATM)
- RUGGEDIZED VME WORKSTATIONS (e.g., 1024 x1280, 19", COLOR MONITORS, QWERTY KEYBOARD, TRACKBALL, etc.)
- COMMERCIAL OFF THE SHELF (COTS) SOFTWARE (e.g., RDBMS, ODBMS, OS, X WINDOWS/GUI)
- GRAPHICS / IMAGERY PROCESSING (e.g., NITFS 2.0, ELECTRONIC LIGHT TABLES).

BUSINESS OPPORTUNITIES

- ADVANCED SENSORS (e.g., MULTI-SPECTRAL IMAGERY (UV TO FAR IR), FOLIAGE / GROUND PENETRATING RADARS, 2ND/3RD GENERATION FLIRS/IRLS)
- TACTICAL DISTRIBUTED PARALLEL PROCESSING (e.g., 6U VME DESIGN)
- HIGH RESOLUTION A/D CONVERTERS (e.g., 16-20 BIT RESOLUTION, 160-200 MSPS)
- C/X/Ku BAND PHASE ARRAY ANTENNAS FOR SMALL FIXED WING AIRCRAFT (e.g., RC-12, SR-UAV)
- COMPOSITE 19" RACKS, ATRS AND CHASSIS
- FLAT PANEL 19" DIAGONAL FULL COLOR ELECTROLUMINESCENT (1280 X 1024) DISPLAYS TO REPLACE CRTS.

FUTURE TECHNOLOGIES

NETWORKING

- ASYNCHRONOUS - TRANSFER MODE (ATM)
- SYNCHRONOUS OPTICAL NETWORK (SONET) (OC-1 TO OC-48)
- BROADBAND INTEGRATED SERVICES DIGITAL NETWORK (B-ISDN)

WORKSTATIONS

- HI RESOLUTION FLAT PANEL DISPLAYS (HIGH DEFINITION TV)
- VOICE COMMANDS

SMART DATABASES

- OBJECT DBMS WITH EXPERT SYSTEMS FOR RAPID CORRELATION OF INFORMATION

Joint STARS Ground Station Module

COL James L. Mitchell
Project Manager - Joint STARS
PEO-IEW

UNCLASSIFIED

SFAE-IEW-JS 17 March 93

POINT PAPER

SUBJECT: Joint STARS Ground Station Module

OBJECTIVE: To provide development and follow-on production models of the Joint STARS Ground Station Module.

FACTS:

- o Type of Contracts: Competitive
  Fixed Price
- o Schedule: FY96
- o Efforts will involve tasks relating to Engineering Development and Full Scale Production

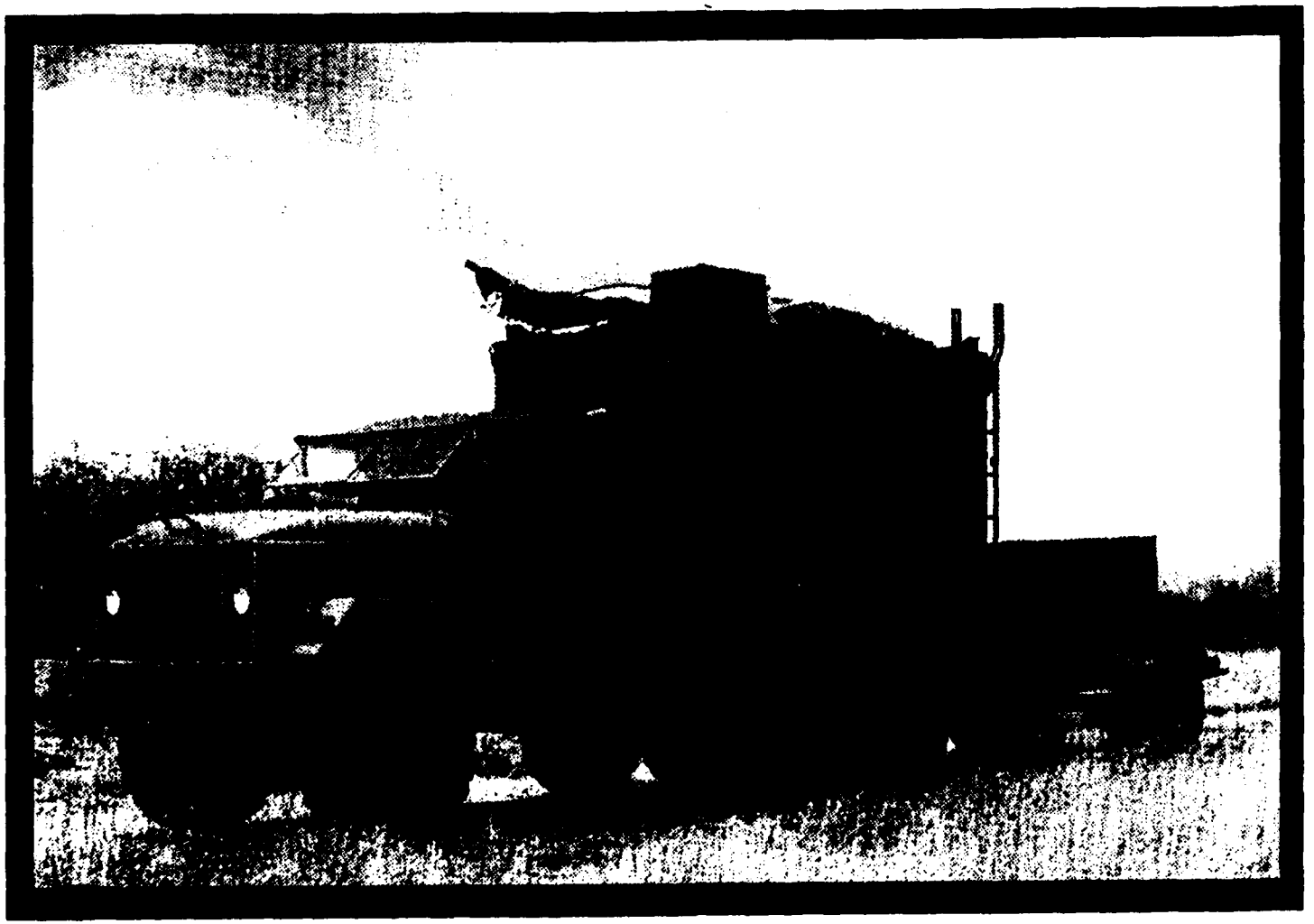
BRIEFER: COL James L. Mitchell, Army Project Manager, Joint STARS, SFAE-IEW-JS, (908)544-5041.

ACTION OFFICER:
Perry J. Gnos
PM Joint STARS
(908)544-4971

JOINT STARS Ground Station Module Description

The Ground Station Module is an Element of The Joint Army Air Force Surveillance Target Attack Radar System. Using Common Subsystems in Different Carriers (5 Ton Truck, Enhanced Electronic Fighting Vehicle System and HMMWV) the System Disseminates Intelligence and Target Data in Near Real-Time to Army C3I Nodes Via Wire or Radio. GSM's Will Support Situation Development, Targeting and Battle Management Functions at All Echelons Where Fielded.

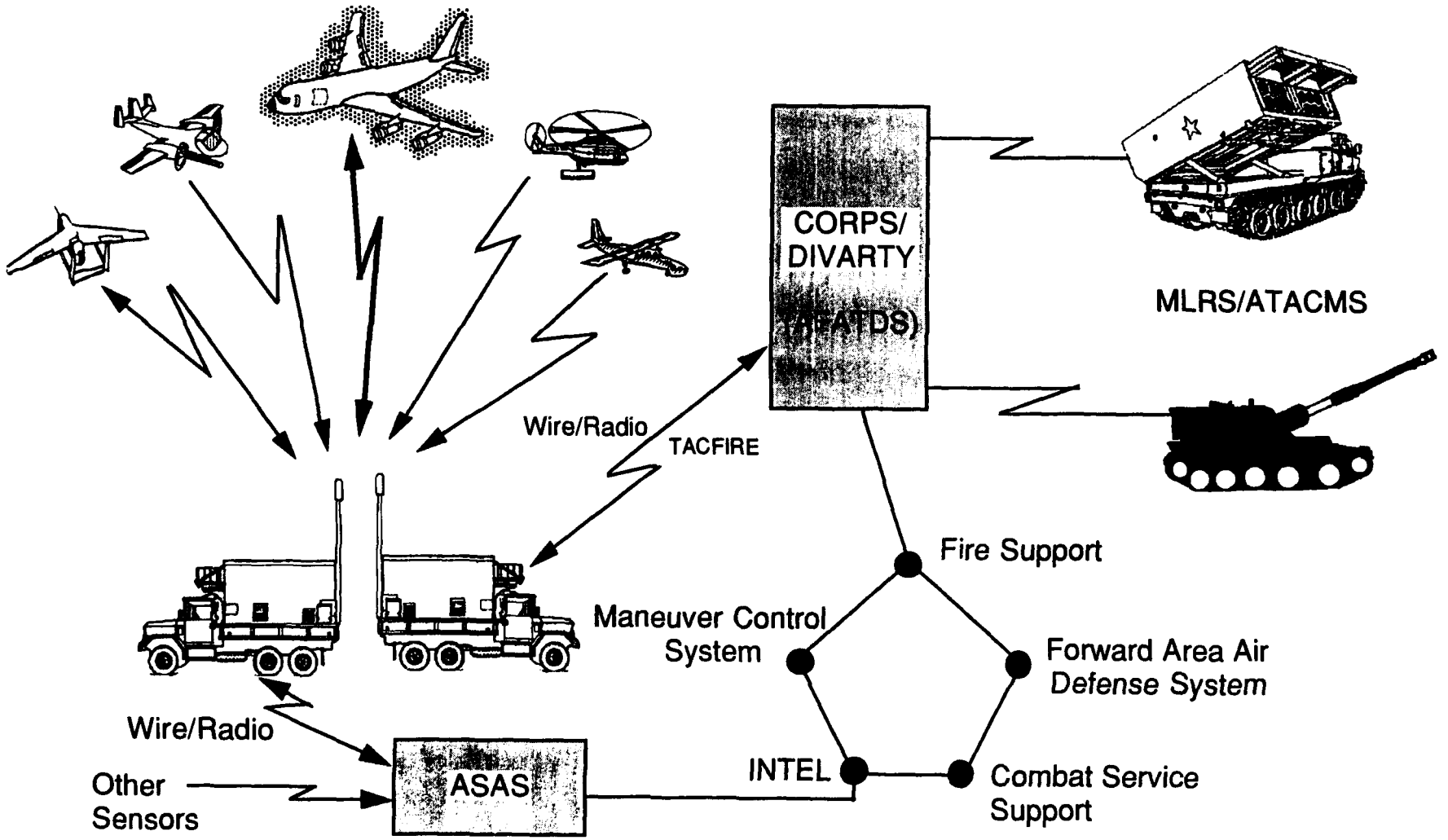
Joint STARS Ground Station Module



Joint STARS E-8 Aircraft



Joint STARS Ground Station Module
Status: Operational Capabilities

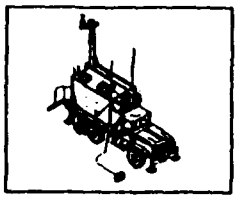


IEW
PROGRAM EXECUTIVE OFFICE

JOINT STARS

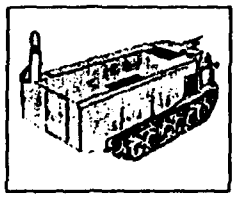
Joint STARS System

The Army Developing Ground Station Modules (GSMs):



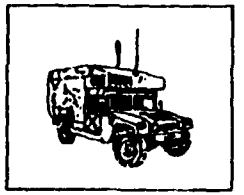
Block I Medium

- 5 Ton Mounted
- Simultaneous Multi-Sensor Operations



Block I Heavy

- Bradley Variant
- Simultaneous Multi-Sensor Operations



Block I Light

- HMMWV Mounted
- Simultaneous Multi-Sensor Operations

Joint STARS Has Both Airborne and Ground Components:

- **Air Force Developing**
  - **E-8 Aircraft**
  - **Multi-Mode Radar**
  - **Required C2 Systems**
  - **Self-Defense Suite**
  - **Surveillance Control Data Link**

Joint STARS Ground Station Module Objectives

- Receive, Process, Analyze, and Disseminate JSTARS Radar Data
- Receive, Process, Analyze, and Disseminate Additional Sensor Data
- Will be Configured to Support All Army Forces
- Evolve Into a Common Ground Station at Tactical & Operational Echelons

Joint STARS Ground Station Module Requirements

- Flat Panel MIL/Rugged Color Displays
- Moderate Cost, NDI, AJ Data Links
- Near Real Time UNIX Standards & Products
- Multi-Band/Multi-Sensor/On-The-Move Antennas

Joint STARS Ground Station Module Long Term Milestones

FY-96 and Beyond

- **Award Competitive Contract For Block I Light Ground Station Module Production (FY96)**
- **Award Competitive Contract For Block I Heavy Ground Station Module Production (FY96)**
- **Award Competitive Contract For Block II Common Ground Station Development (FY96)**
- **Award Competitive Contract For Common Ground Station Production (FY99)**

Joint STARS Ground Station Module Funding Profile

	RDTE $M	PROC $M	OMA $M
FY 94	25-35	60-70	1-5
FY 95	15-25	70-80	1-5
FY 96	15-25	80-90	1-5
FY 97	20-30	75-85	1-10
ETC.	45-55	430-450	1-40
Total	120-170	715-775	5-65

Joint STARS Ground Station Module Contract Opportunity

Title:	**Joint STARS Ground Station Modules (Heavy & Light)**
Objective:	**Procure 52 Block I Production Models**
Proposed Contract Type:	**Competitive Firm Fixed Price**
Key Milestones:	**Contract Award 2Q FY96**
Estimated Value:	**$345-365M**
POC Telephone:	**Bill Barron (908) 544-5167 (Light)** **Min Lee (908) 544-5171 (Heavy)**

Joint STARS Ground Station Module Contract Opportunity

Title:	**Joint STARS Common Ground Station (CGS)**
Objective:	**Development of CGS**
Proposed Contract Type:	**Cost Plus**
Key Milestones:	**Contract Award 2Q FY96**
Estimated Value:	**$50-80M**
POC Telephone:	**Bill Gebele (908) 544-5122**

Joint STARS Ground Station Module Contract Opportunity

Title:	**Joint STARS Common Ground Station (CGS)**
Objective:	**Procure 31 (Heavy & Light) Production Models of CGS**
Proposed Contract Type:	**Competitive Firm Fixed Price**
Key Milestones:	**Contract Award 3Q FY99**
Estimated Value:	**$240-260M**
POC Telephone:	**COL James L. Mitchell** **(908) 544-5165**

IEW COMMON SENSOR

COL Thomas L. Vollrath

Project Manager Signals Warfare

UNCLASSIFIED

SFAE-IEW-SG 2 Apr 1993

POINT PAPER

SUBJECT: Procurement of CHALS-X Precision Emitter Location Subsystems

OBJECTIVE: To procure CHALS-X subsystems for Ground Based Common Sensor-Light, Ground Based Common Sensor-Heavy, Advanced QUICK-FIX, and the United States Marine Corps Marine Electronic Warfare Support System. Subsystems to be provided to a separate contractor for integration into the appropriate systems.

FACTS:

Type of Contract: Competitive
Fixed Price

Schedule: Contract Award FY95

Effort: Contract award will be for procurement of subsystems for FY 1995 with options for 4 additional years.

BRIEFER: Thomas L. Vollrath, COL, AV, Project Manager Signals Warfare.

ACTION OFFICER:
Jim Walker
Manager CHALS-X
PM Signals Warfare
(703) 349-6810

SFAE-IEW-SG 2 Apr 1993

POINT PAPER

SUBJECT: Procurement of EFVS Enclosures

OBJECTIVE: To procure enclosures for the Electronic Fighting Vehicle Systems, which is the for the Ground Based Common Sensor-Heavy. The enclosures to be provided to a separate contractor for integration with the EFVS carrier and subsequent integration of mission equipment.

FACTS:

Type of Contract: Competitive
Fixed Price

Schedule: Contract Award FY96

Effort: Contract award will be for procurement of EFVS carriers for FY 1995 with options for 4 additional years.

BRIEFER: Thomas L. Vollrath, COL, AV, Project Manager Signals Warfare.

ACTION OFFICER:
LTC Reeves
PM GBCS-H
PM Signals Warfare
(703) 349-6771

SFAE-IEW-SG 2 Apr 1993

POINT PAPER

SUBJECT: Procurement of IEWCS Systems

OBJECTIVE: To provide for integration of production units of Ground Based Common Sensor-Light, Ground Based Common Sensor-Heavy, Advanced QUICKFIX, and the United States Marine Corps Marine Electronic Warfare Support System. Subsystems will be provided by separate contractors for integration into the appropriate systems.

FACTS:

Type of Contract: Competitive
Fixed Price

Schedule: Contract Award FY96

Effort: Contract award will be for integration of systems for FY 1995 with options for 4 additional years.

BRIEFER: Thomas L. Vollrath, COL, AV, Project Manager Signals Warfare.

ACTION OFFICER:
Tom Hurt
Business Manager
PM Signals Warfare
(703) 349-5212

SFAE-IEW-SG 2 Apr 1993

POINT PAPER

SUBJECT: RDT&E of Block II TACJAM-A ESM/COMINT Subsystems

OBJECTIVE: To provide for RDT&E of Block II TACJAM-A ESM/COMINT subsystems for Ground Based Common Sensor-Light, Ground Based Common Sensor-Heavy, Advanced QUICKFIX, and the United States Marine Corps Marine Electronic Warfare Support System. Subsystem to be provided to a separate contractor for integration into the appropriate systems.

FACTS:

Type of Contract: Competitive
Cost Plus

Schedule: Contract Award FY95
24 month effort followed by 12 month integration and test.

Effort: Necessary RDT&E of TACJAM-A to provide for the following improvements to the IEWCS systems:

Airborne VHF/UHF single platform target development
Onboard ELINT/COMINT real time correlation
Maintenance/Operator trainer
Embedded training
Remote ground sensor/split base ops
QUICKFIRE connectivity
Area defense Countermeasures
Paperless TMs/CD-ROM
Frequency/signal types extension

BRIEFER: Thomas L. Vollrath, COL, AV, Project Manager Signals Warfare.

ACTION OFFICER:
Tom Robertson
Manager TACJAM-A
PM Signals Warfare
(703) 349-7085

SFAE-IEW-SG 2 Apr 1993

POINT PAPER

SUBJECT: RDT&E of Block II CHALS-X Subsystems

OBJECTIVE: To provide for RDT&E of Block II CHALS-X subsystems for Ground Based Common Sensor-Light, Ground Based Common Sensor-Heavy, Advanced QUICKFIX, and the United States Marine Corps Marine Electronic Warfare Support System. Subsystem to be provided to a separate contractor for integration into the appropriate systems.

FACTS:

Type of Contract: Competitive
Cost Plus

Schedule: Contract Award FY95
24 month effort followed by 12 month integration and test.

Effort: Necessary RDT&E of CHALS-X to provide for the following improvements to the IEWCS systems:

Airborne VHF/UHF single platform target development
Onboard ELINT/COMINT real time correlation
Maintenance/Operator trainer
Embedded training
Remote ground sensor/split base ops
QUICKFIRE connectivity
Area defense Countermeasures
Paperless TMs/CD-ROM
Frequency/signal types extension

BRIEFER: Thomas L. Vollrath, COL, AV, Project Manager Signals Warfare.

ACTION OFFICER:
Jim Walker
Manager CHALS-X
PM Signals Warfare
(703) 349-6810

SFAE-IEW-SG 2 Apr 1993

POINT PAPER

SUBJECT: RDT&E of Block II IEWCS Systems

OBJECTIVE: To provide for RDT&E of BLOCK II Ground Based Common Sensor-Light, Ground Based Common Sensor-Heavy, Advanced QUICK-FIX, and the United States Marine Corps Marine Electronic Warfare Support System. RDT&E of subsystems will be conducted by separate contractors for integration into the appropriate systems.

FACTS:

Type of Contract: Competitive
Cost Plus

Schedule: Contract Award FY95
24 month effort followed by 12 month integration and test.

Effort: Necessary RDT&E of IEWCS systems to provide for the following improvements:

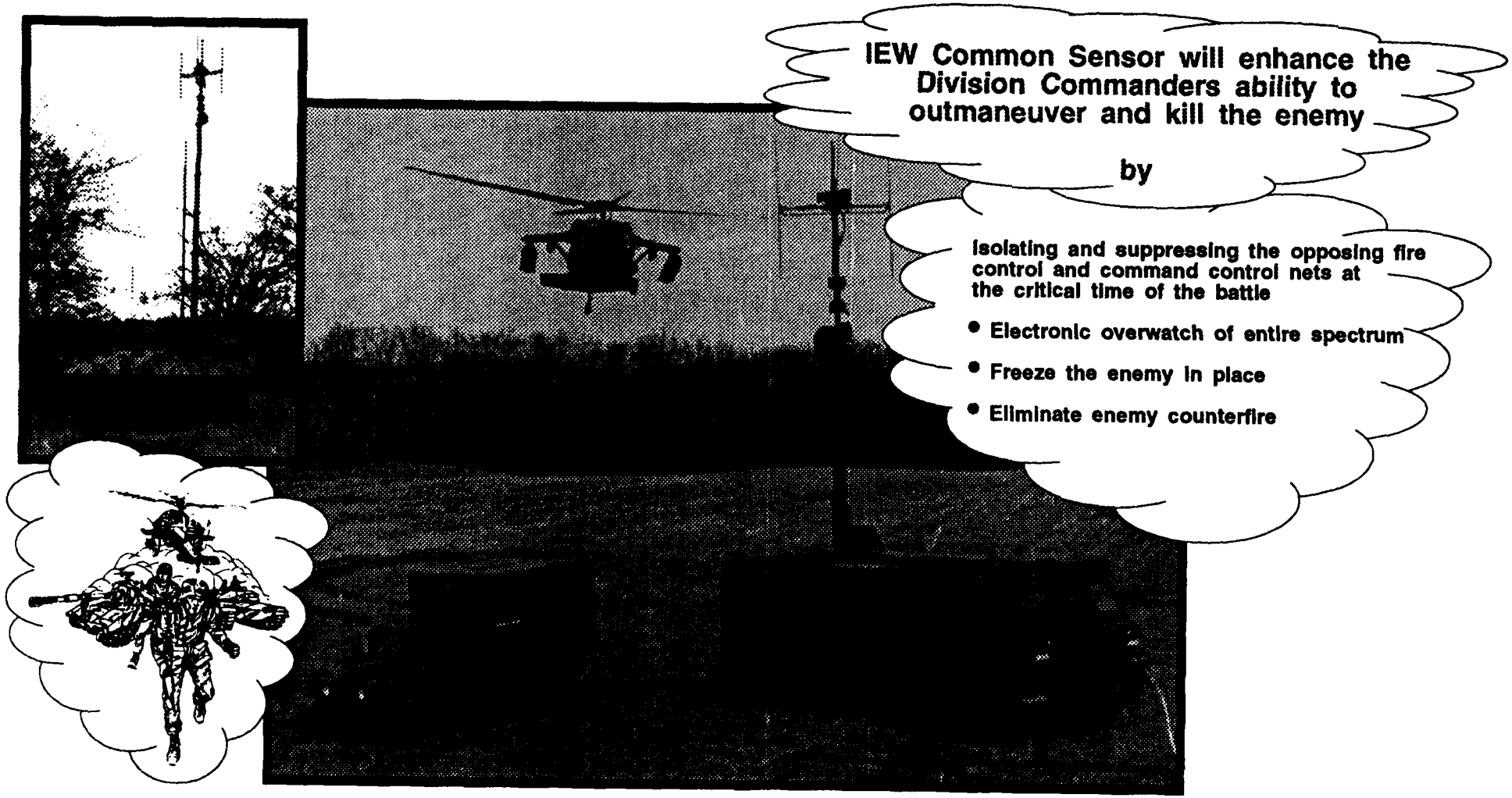
Airborne VHF/UHF single platform target development
Onboard ELINT/COMINT real time correlation
Maintenance/Operator trainer
Embedded training
Remote ground sensor/split base ops
QUICKFIRE connectivity
Area defense Countermeasures
Paperless TMs/CD-ROM
Frequency/signal types extension

BRIEFER: Thomas L. Vollrath, COL, AV, Project Manager Signals Warfare.

ACTION OFFICER:
Tom Hurt
Business Manager
PM Signals Warfare
(703) 349-5212

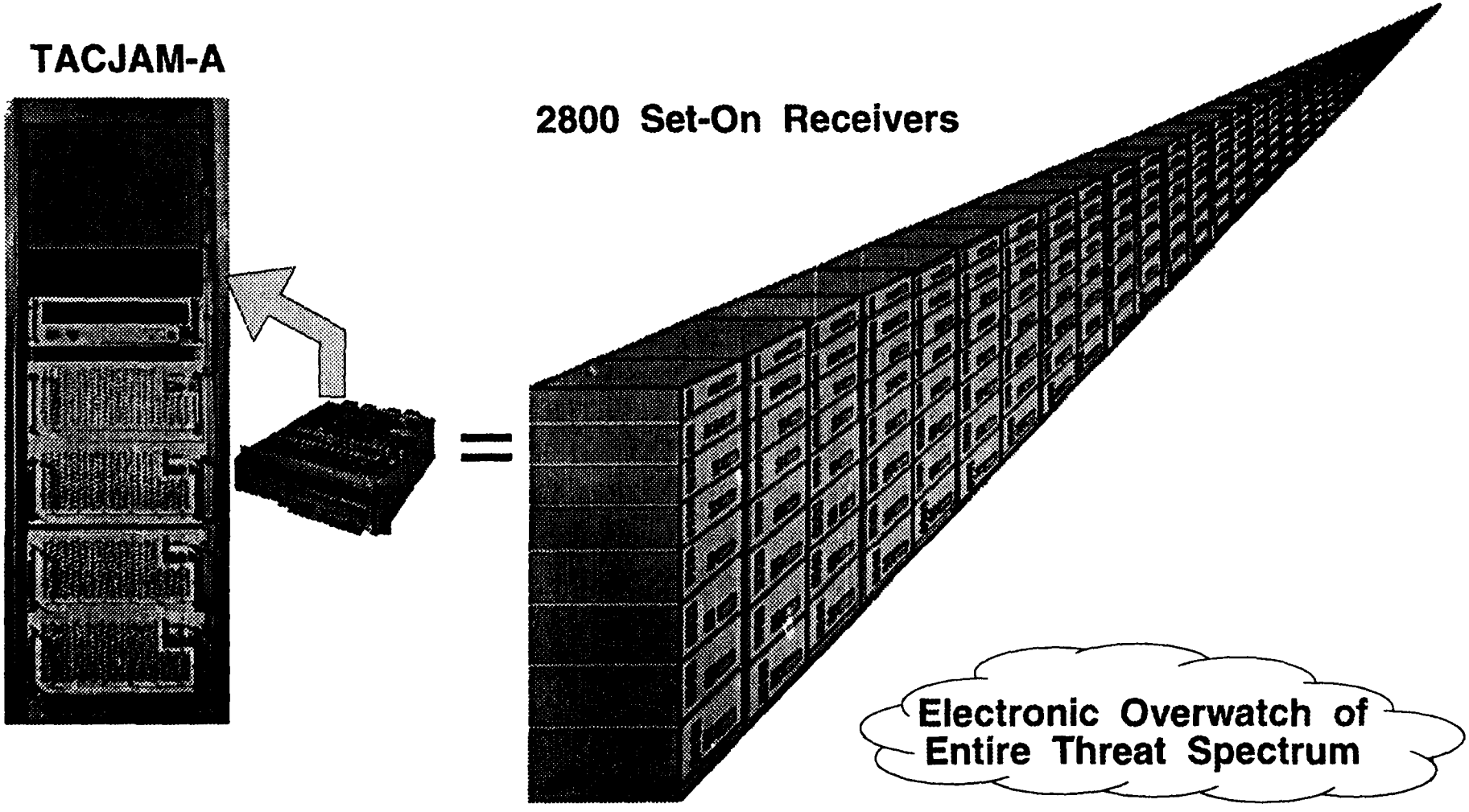
IEW COMMON SENSOR

(GBCS-L, AQF, GBCS-H, MEWSS)



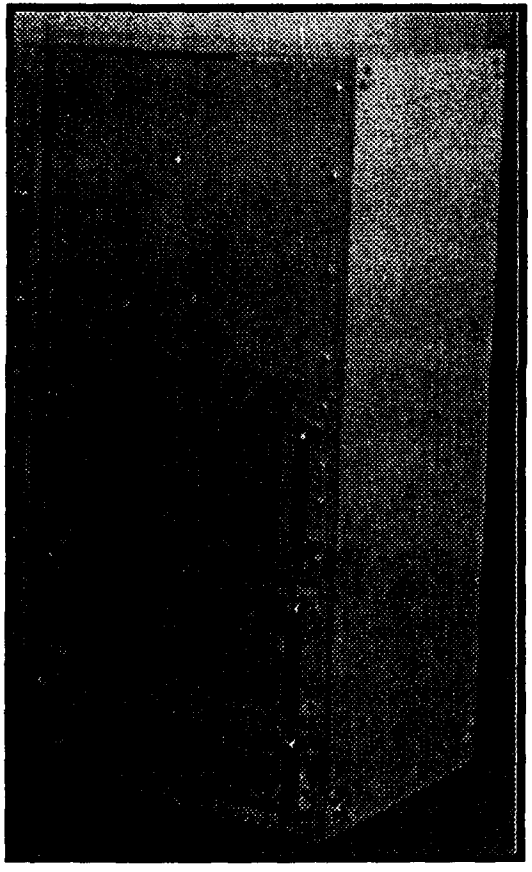
IEW COMMON SENSOR

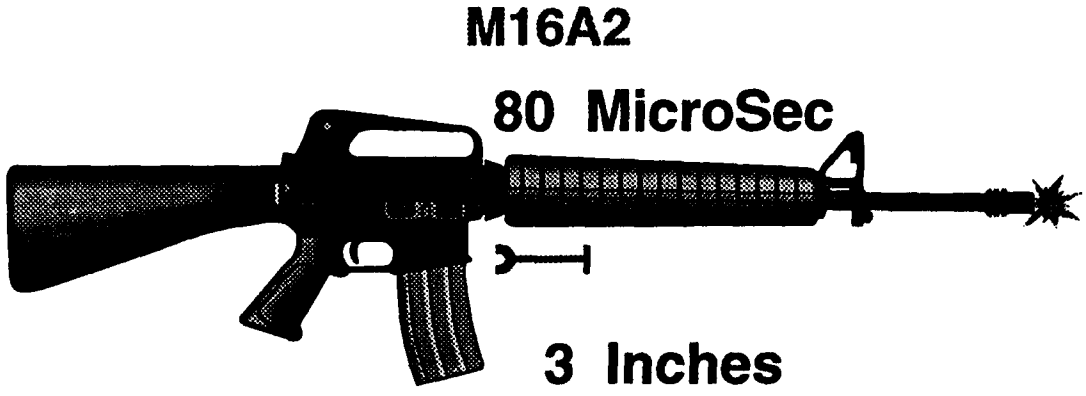
TACJAM-A ESM/COMINT Subsystem



IEW COMMON SENSOR

TACJAM-A ECM Subsystem



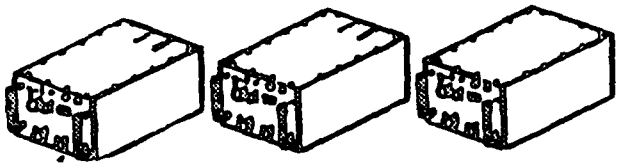


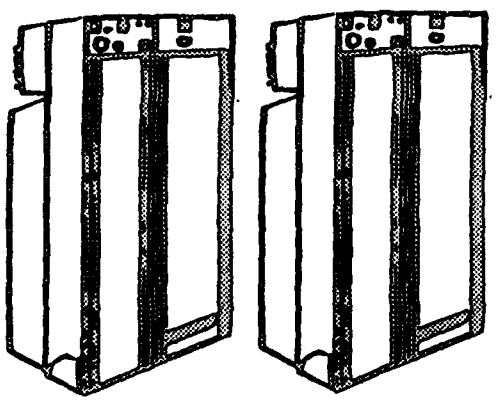
- Eliminate enemy counterfire
- Provide area protection and automated EC
- The ESM subsystem can process all emitters in the ENTIRE VHF band in just 80 microseconds. To put this in perspective, by the time a bullet fired from an M16A2 travels three inches, the ESM subsystem has analyzed the entire VHF band! Clearly, with the speed of the acquisition and recognition functions, it is evident that the ECM subsystem has sufficient time to jam the threat transmission with precision surgical.

IEW COMMON SENSOR

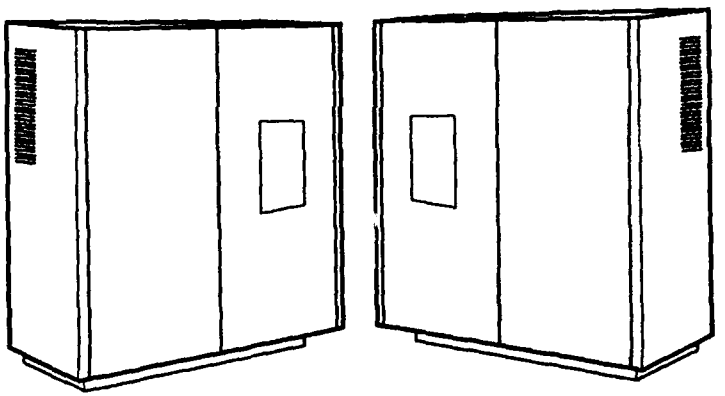
CHALS-X Precision Targeting Subsystem

Provides Precision Targeting of all Communications Emitters and Jammers

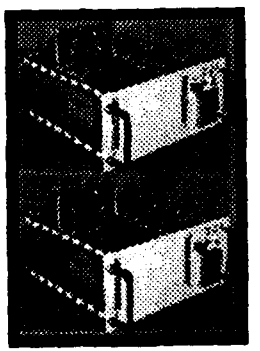




AN/UYS-3 AN/UYS-4



Perkin Elmer 3252



CHAALS

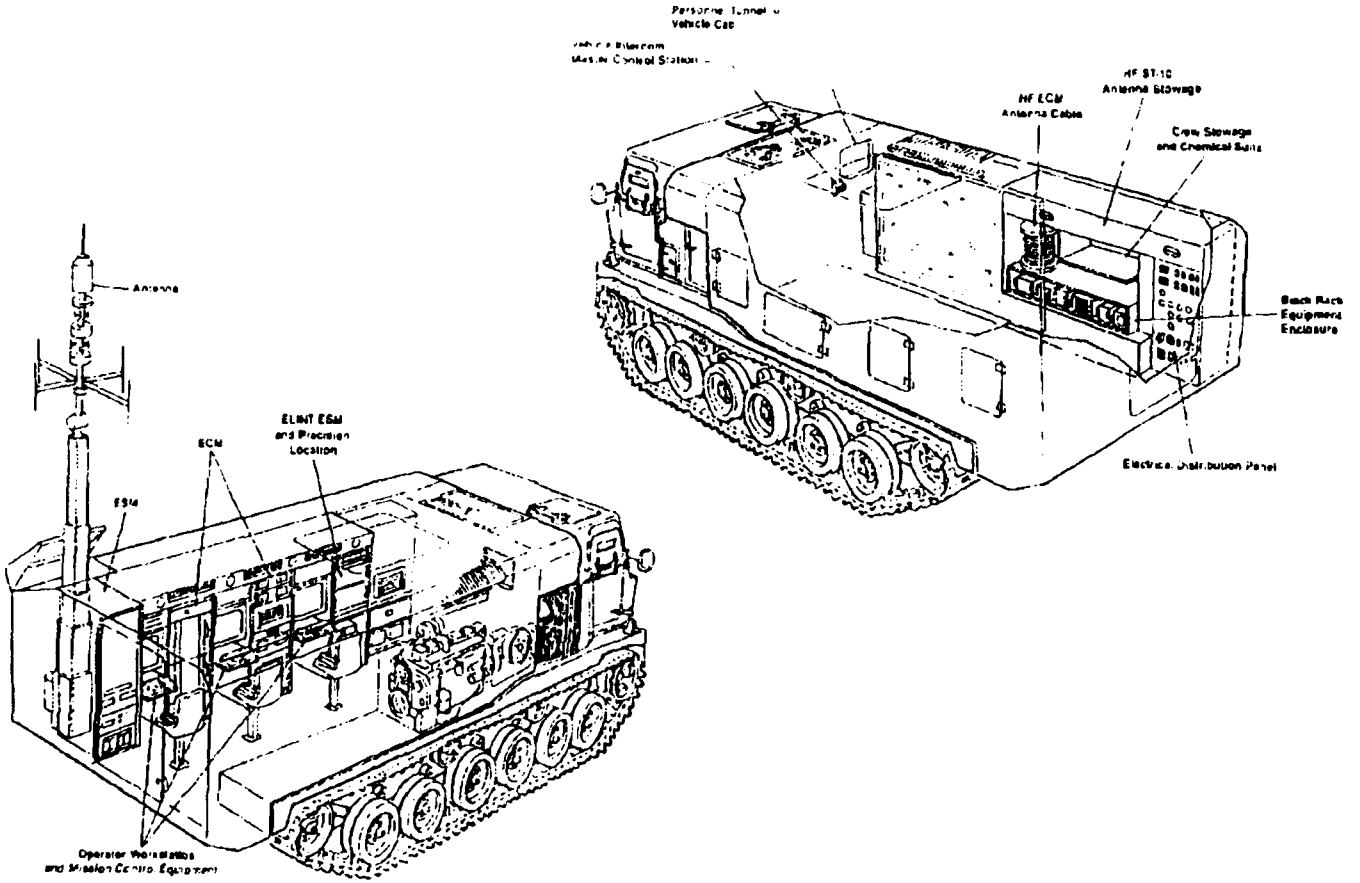
75 cu feet	2.1 MIPS
1300 pounds	50 MFLOPS
8500 watts	

CHALS-X

2.5 cu feet	5.0 MIPS
149 pounds	100 MFLOPS
764 watts	

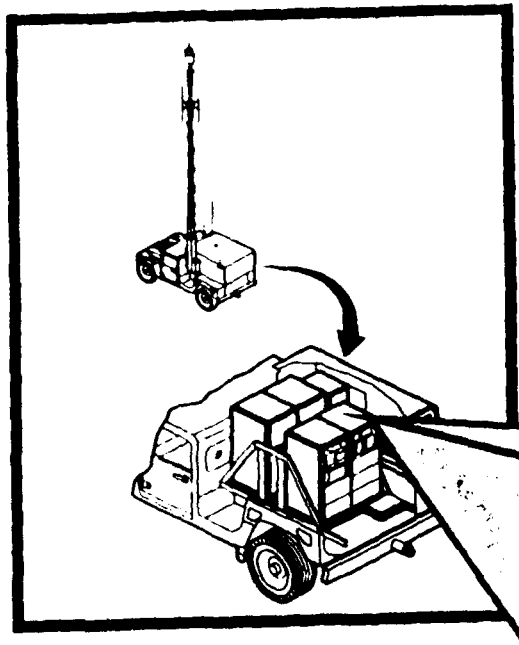
IEW COMMON SENSOR

Electronic Fighting Vehicle System

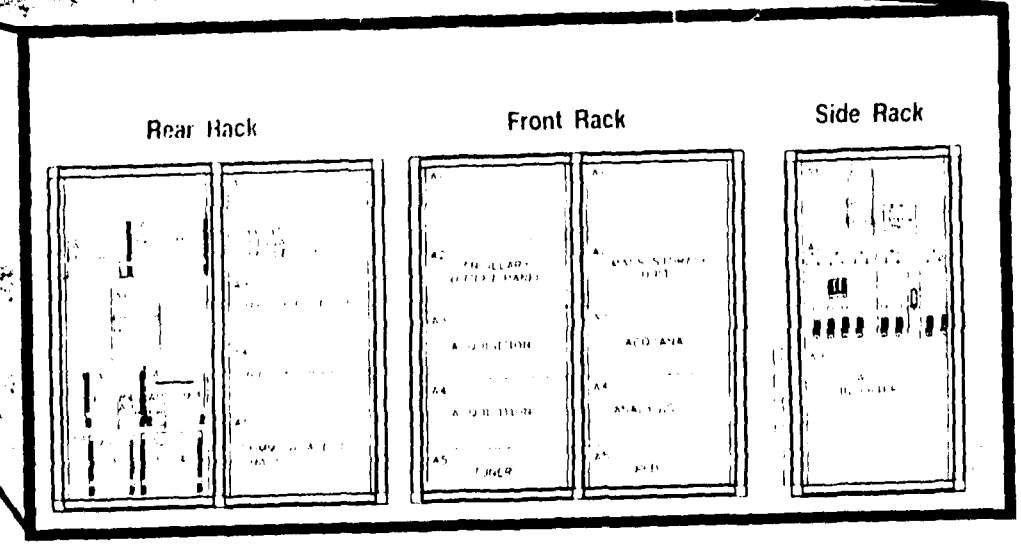


IEW COMMON SENSOR

Ground Based Common Sensor - Light



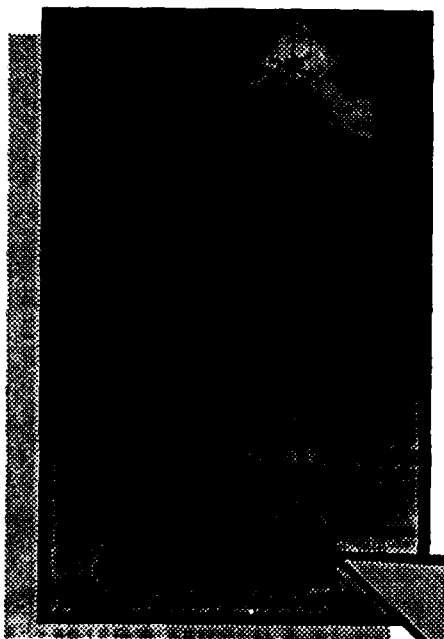
The Ground Based Common Sensor-Light is an element of the IEW Common Sensor System. Using common subsystems in the platform, the system intercepts both single channel and LPI signals and when netted with AQF provides targeting information to the battlefield commanders. The common ELINT subsystem intercepts non-communications emitters and provides geolocation for target development.



- TACJAM-A COMINT Subsystem
- CHALS-X Geolocation Subsystem
- Common ELINT Subsystem
- GPS (MAGR/PLGR)
- Light Workstation
- SINCGARS Combat Net Radio
- Under the Hood Power
- Self-erecting Mast
- Mission Equipment Data Link
- HHV (M1097) w/Electronics Enclosure

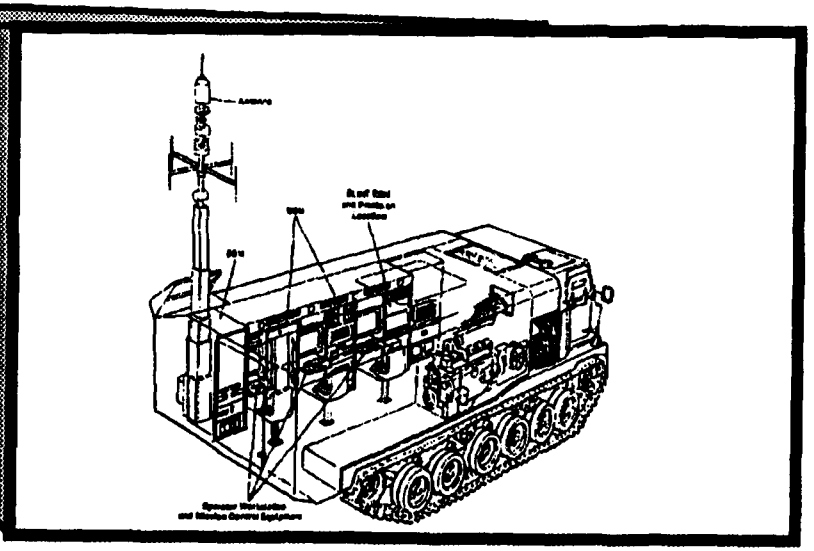
IEW COMMON SENSOR

Ground Based Common Sensor - Heavy



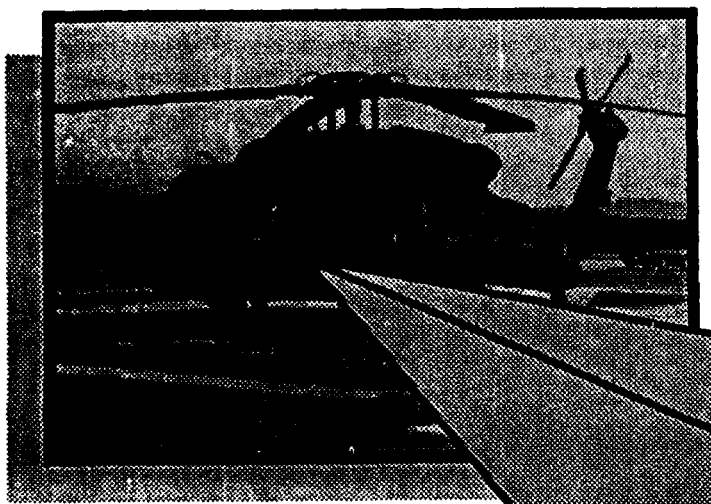
The Ground Based Common Sensor-Heavy is an element of the IEW Common Sensor System. Using common subsystems in the platform, the system intercepts and jams both single channel and LPI signals and when netted with AQF provides targeting information to the battlefield commanders. The common ELINT subsystem intercepts non-communications emitters and provides geolocation for target development.

- TACJAM-A ESM/ECM Subsystem
- CHALS-X Geolocation Subsystem
- Common ELINT Subsystem
- SINCGARS Combat Net Radio
- RF Distribution Subsystem
- Mission Equipment Data Link
- Host Interface Unit
- Common Workstation
- AN/UYH-15 DTSR
- GPS (MAGR and INS)
- Electronic Fighting Vehicle System Joint w/C2V and JSTARS GSM
- 60kw Primary Power Unit
- 20m Self-erecting Mast
- Environmental Control Unit
- Biological/Chemical Protection



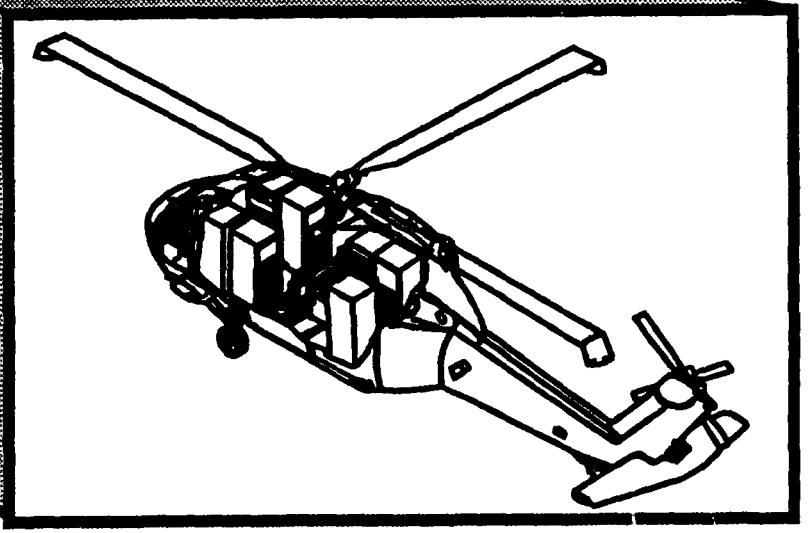
IEW COMMON SENSOR

Advanced QUICKFIX



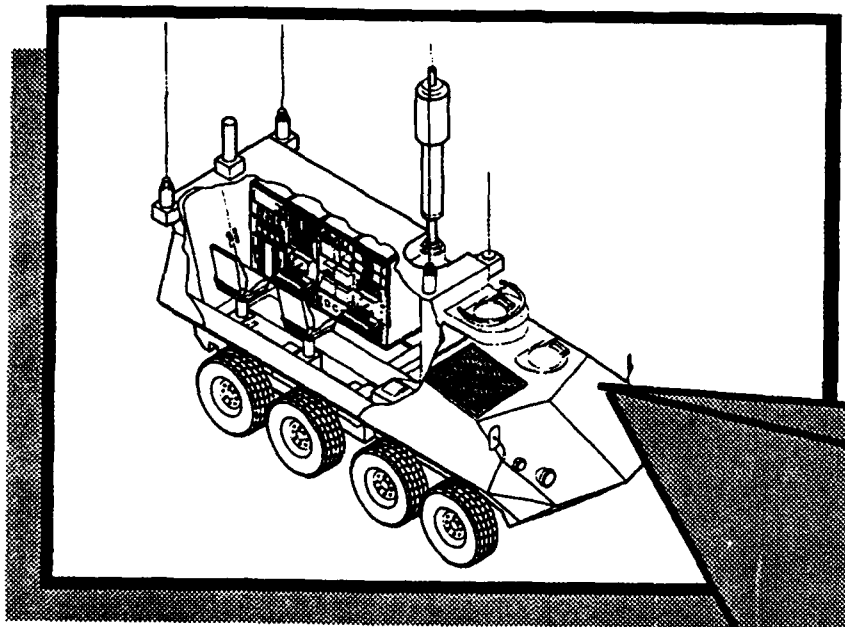
As an element of the IEWCS, Advanced Quickfix (AQF) is a heliborne collection, emitter location, and Electronic Countermeasures (ECM) system for use in gaining intelligence, locating and jamming enemy tactical emitters. The AQF is operated in single or multiple aircraft missions in an Army divisional area typically 30 KM behind the FLOT and interoperates with Ground Based Common Sensor - Heavy (GBCS-H), GBCS-Light (GBCS-L), and other AQF assets in a network to obtain accurate emitter locations. Each system provides the capabilities to detect, locate, collect, analyze, and exploit fixed frequency and LPI communications. Each system provides an ECM capability against communications emitters and electronics intelligence (ELINT) capability against non-communications emitters.

- TACJAM-A ESM/ECM Subsystems
- CHALS-X Geolocation Subsystem
- Common ELINT Subsystem
- SINCGARS Combat Net Radio
- RF Distribution Subsystem
- Mission Equipment Data Link
- Host Interface Unit
- Common Workstation
- AN/UYH-15 DTSR
- GPS (MAGR and INS)
- BLACKHAWK Helicopter EH-60A
- Aircraft Survivability Equipment (ASE)
- Environmental Control Unit

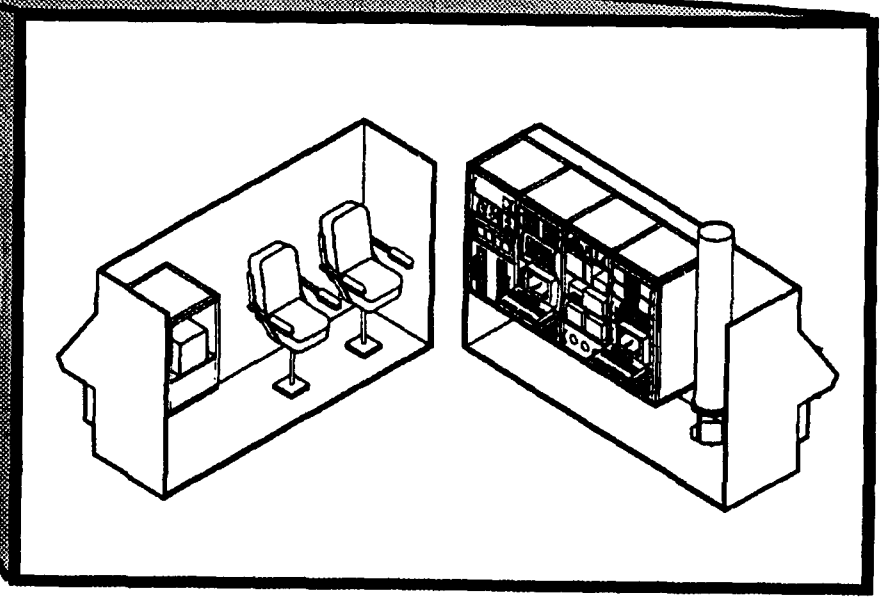


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Mobile Electronic Warfare Support System (MEWSS)



As an element of the IEW Common Sensor System, MEWSS is a ground collection, emitter location, targeting and Electronic Attack (EA) system for use in gaining intelligence, locating and jamming enemy tactical emitters. The MEWSS is operated in single or multiple platforms in a USMC MAGTF area typically at or beyond the FLOT and interoperates with all other IEWCS platforms. The MEWSS provides COMINT, ELINT, EW and targeting against communications and non-communications emitters.

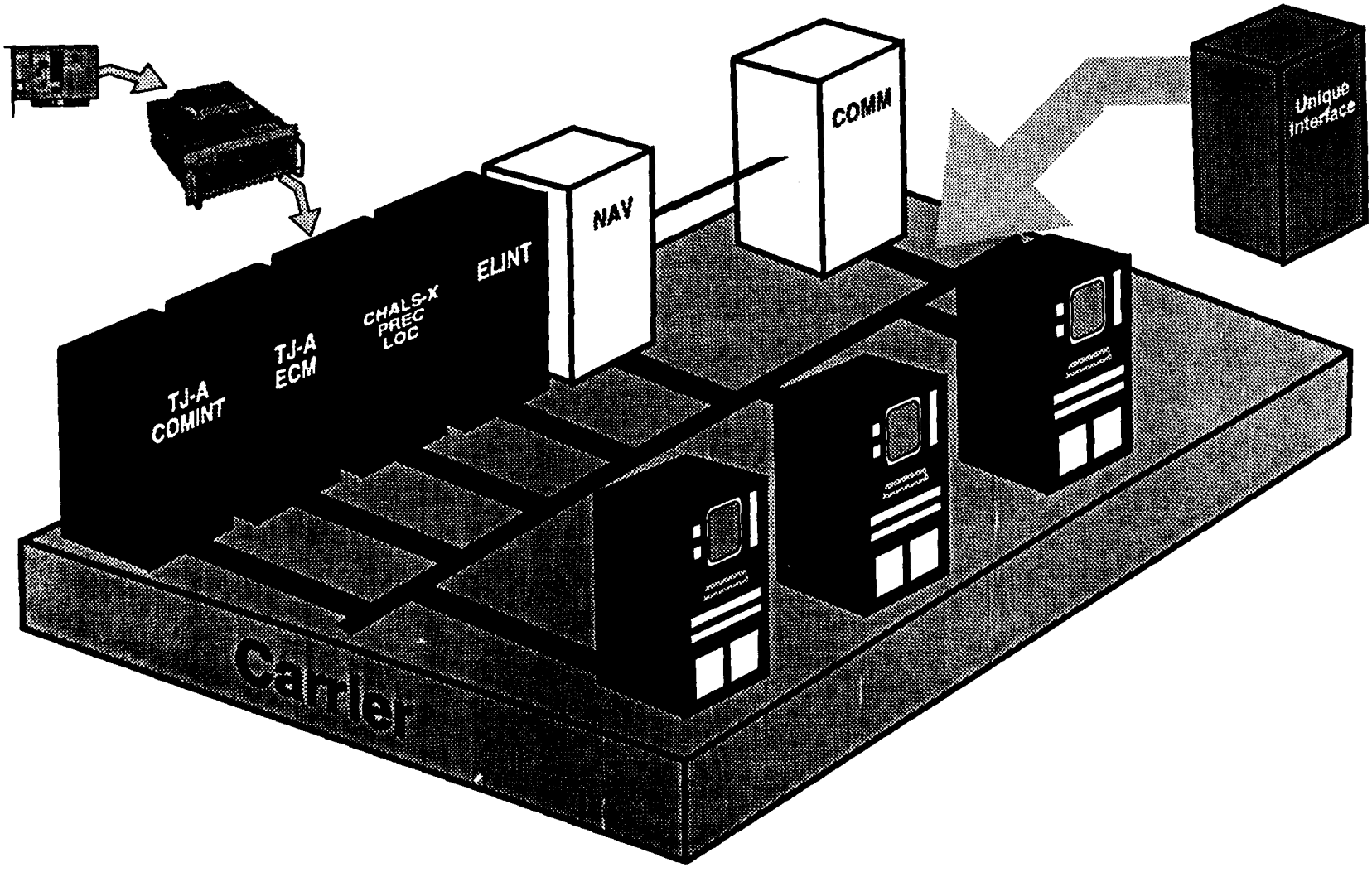


- TACJAM-A COMINT Subsystem
- CHALS-X Geolocation Subsystem
- Common ELINT Subsystem
- GPS (MAGR/PLGR)
- Light Workstation
- SINCGARS Combat Net Radio
- Under the Hood Power
- Self-erecting Mast
- Mission Equipment Data Link
- Light Armoured Vehicle (LAV)
- HF Command-radio subsystem

IEW COMMON SENSOR

Objectives

Open Systems Architecture



IEW COMMON SENSOR

Objectives

- Software modules/CCAs vice re-design of hardware to counter new threats
- Expansion of ECM for identified "need" areas
- Rapid sensor re-programming capabilities in near real time
- Complementary platform payload integration
- Continued refinement and implementation of rapid information dissemination

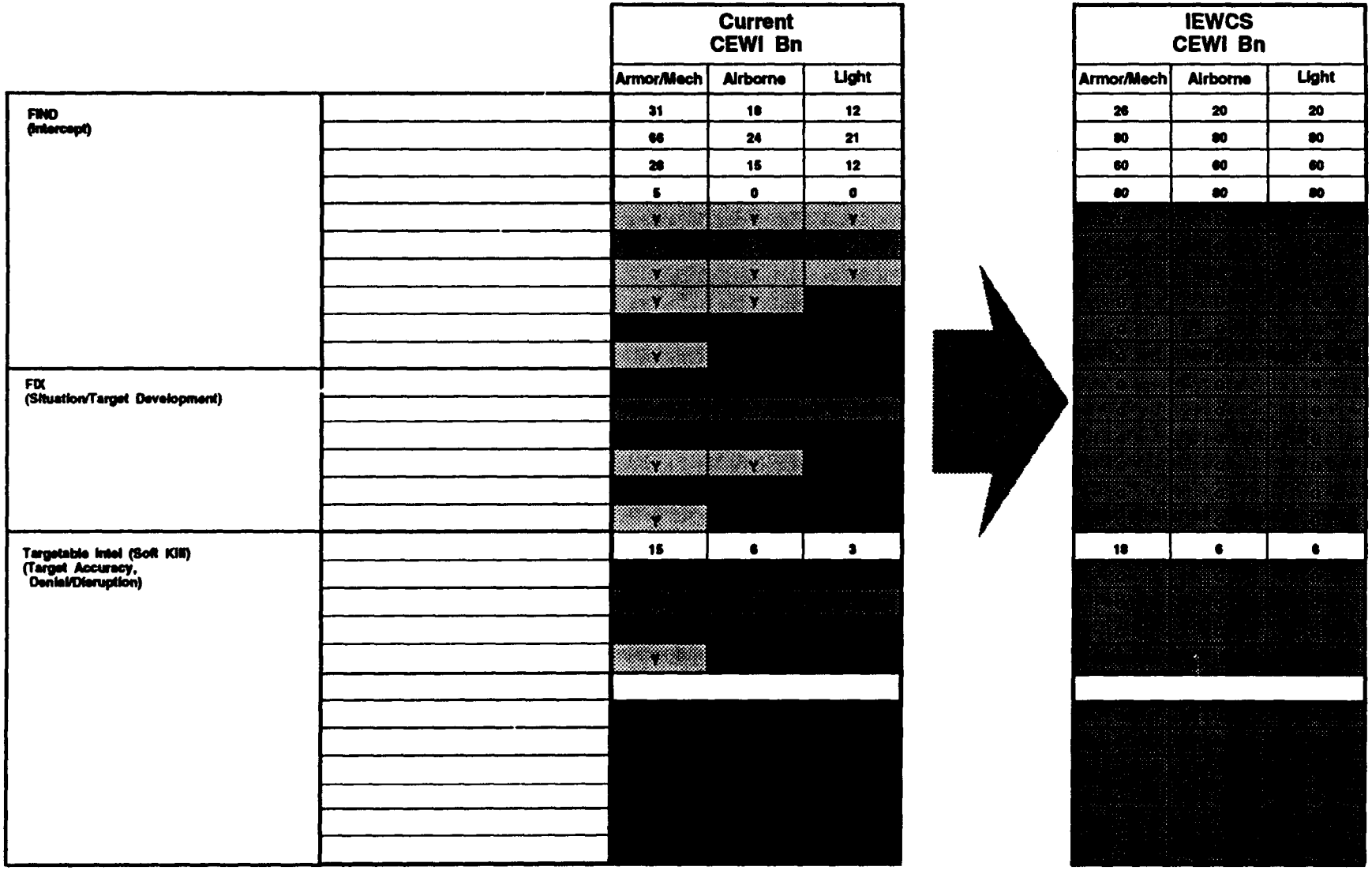
IEW COMMON SENSOR

Requirements

- **Production**
  - **TACJAM-A**
    - **ESM/COMINT Subsystem**
    - **ECM Subsystem**
  - **CHALS-X Precision Targeting Subsystem**
  - **Advanced QUICKFIX System Integration**
  - **GBCS-L System Integration**
  - **GBCS-H System Integration**
  - **MEWSS System Integration**
- **RDT&E**
  - **Airborne VHF/UHF single platform target development**
  - **Onboard ELINT/COMINT real time correlation**
  - **Maintenance/Operator Trainer**
  - **Embedded Training**
  - **Remote ground sensor/split base ops**
  - **QUICKFIRE Connectivity**
  - **Area defense Countermeasures**
  - **Paperless TMs/CD-ROM**
  - **Frequency/signal types extension**

IEW COMMON SENSOR

Payoffs



IEW COMMON SENSOR

Payoffs
Commonality

- **Features**

  Common System on all platforms

  Employs US Army's IEW open system architecture

  Self-calibration

  Built-in simulator/test

  Field-proven NDI

- **Benefits**

  Reduced manpower and ILS requirements

  Accommodates growth & interoperability

  Simplifies unit interchange

  Embedded training

  Reduced maintenance costs

  Proven performance & reliability

  Reduced life cycle costs

IEW COMMON SENSOR

Short - Term Milestones

- FY - 94
- Complete IEWCS customer test
- Complete IEWCS development test
- Complete IEWCS operational test
- Field GBCS-L R&D systems

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Long - Term Milestones

- **FY - 95**
- **Award TACJAM-A production contract**
- **Award CHALS-X production contract**
- **Award IEWCS block 2 E&MD contracts**

FY96

- **Award IEWCS production contract**

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Funding Profile

	RDTE ($M)	PROC ($M)
FY 94	$40 - 45	0
FY 95	$45 - 50	$45 - 60
FY 96	$30 - 35	$75 - 100
FY 97	$30 - 35	$100 - 120
FY 98	$30 - 35	$120 - 140
FY 99	$30 - 35	$120 - 140

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Contract Opportunity

Title:	**TACJAM-A ESM/COMINT Subsystem**
Objective:	**Procurement of TACJAM-A subsystems**
Proposed Contract Type:	**FP**
Key Milestones:	**Contract award FY95**
Estimated Value:	**$30.0M to $50.0M**
POC Telephone:	**Tom Robertson (703) 349-7085**

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Contract Opportunity

Title:	**CHALS-X Precision Targeting Subsystem**
Objective:	**Procurement of CHALS-X subsystems**
Proposed Contract Type:	**FP**
Key Milestones:	**Contract award FY95**
Estimated Value:	**$15.0M to $30.0M**
POC Telephone:	**Jim Walker (703) 349-6810**

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Contract Opportunity

Title:	**EFVS Enclosure**
Objective:	**Procurement of EFVS enclosures**
Proposed Contract Type:	**FP**
Key Milestones:	**Contract award FY96**
Estimated Value:	**$25.0M to $40.0M**
POC Telephone:	**LTC Reeves (703) 349-6771**

IEW COMMON SENSOR

Contract Opportunity

Title:	**IEWCS Systems Integration**
Objective:	**Production of IEWCS systems**
Proposed Contract Type:	**FP**
Key Milestones:	**Contract award FY96**
Estimated Value:	**$90.0M to $120.0M**
POC Telephone:	**Tom Hurt (703) 349-5212**

IEW COMMON SENSOR

Contract Opportunity

Title:	**TACJAM-A Block I**
Objective:	**TACJAM-A improvements**
Proposed Contract Type:	**CP**
Key Milestones:	**Contract award FY95**
Estimated Value:	**$10.0M to $15.0M**
POC Telephone:	**Tom Robertson (703) 349-7085**

IEW COMMON SENSOR

Contract Opportunity

Title:	**CHALS-X Block I**
Objective:	**CHALS-X improvements**
Proposed Contract Type:	**CP**
Key Milestones:	**Contract award FY95**
Estimated Value:	**$10.0M to $15.0M**
POC Telephone:	**Jim Walker (703) 349-6810**

IEW COMMON SENSOR

Contract Opportunity

Title:	**IEWCS Block I**
Objective:	**IEWCS improvements**
Proposed Contract Type:	**CP**
Key Milestones:	**Contract award FY95**
Estimated Value:	**$60.0M to $70.0M**
POC Telephone:	**Tom Hurt (703) 349-5212**

INTELLIGENCE AND ELECTRONIC WARFARE TECHNOLOGY INITIATIVES

Mr. Ronald J. Dlugosz
Deputy to the Director
CECOM RDEC
Intelligence and Electronic Warfare Directorate

UNCLASSIFIED

AMSEL-RD-SW-DT 29 March 1993

POINT PAPER

SUBJECT: Intelligence and Electronic Warfare Technology Initiatives

OBJECTIVE: To provide information on the CECOM Intelligence and Electronic Warfare Directorate's (IEWD's) interest and contract opportunities in the areas of Intercept Technology, Electronic Warfare Technology and Tactical Data Fusion Technology.

FACTS: IEWD is developing the technologies necessary for U.S. Army systems to locate and exploit hostile command, control, communications (C^3) and electronic systems; and, to process, analyze and report battlefield intelligence.

This briefing describes the technology programs that support these three areas. It also provides general timelines for industry involvement and current funding ranges.

BRIEFER: Mr. Ronald J. Dlugosz, Deputy to the Director, AMSEL-RD-IEW-DD-M, (908) 554-5556; DSN: 996-5556

ACTION OFFICER:
Linda S. Monroe
GS-9/PA
Industrial Liaison
(703) 349-7370;
DSN: 229-7370

ELECTRONIC WARFARE TECHNOLOGY

ELECTRONIC WARFARE (EW) TECHNOLOGY
DESCRIPTION

Deny hostile units use of their command, control and communications (C3); and radar systems

EW TECHNOLOGY
STATUS

- Conducting research and exploratory development in new signals electronic warfare and critical components
- Developing demonstration programs for new stand-in and stand-off communications jamming concepts
- Developing for non-communications countermeasures for non-platform protection applications
- Transitioning to gaining tactical electronic warfare systems, such as, Ground Based Common Sensor - Heavy (GBCS-H) Advanced QUICKFIX

EW TECHNOLOGY
OBJECTIVES

- Jam modern signals
- Deceive electronic systems
- Avoid fratricide
- Automate the jamming process
- Develop more efficient, smaller jammer components

EW TECHNOLOGY
REQUIREMENTS

- Multiband coverage
- Effective operation in dense signal environment
- Efficient power requirements
- Technologies must be suitable for mobile tactical implementation
- Less dependence on operators

EW TECHNOLOGY
PAYOFFS

- Small tactical antenna systems for ESM and jamming applications
- Fratricide avoidance
- Ability to surgically jam
- Ability to jam from remote and mobile platforms
- Deceive hostile systems

EW TECHNOLOGY
SHORT-TERM MILESTONES

- FY-94
  - Initiate additional antenna technology efforts for efficient tactical and multiband antennas
  - Continue stand-in jammer demonstration
  - Explore other innovative electronic warfare technologies

EW TECHNOLOGY
LONG-TERM MILESTONES

- FY-95 AND BEYOND

  - Initiate Electronic Countermeasures (ECM) against modern mobile communications

  - Explore additional expert controller technologies for jammers

  - Explore other innovative electronic warfare technologies

  - Initiate electronic intelligence and support measures against highly agile and low probability of intercept emitters

EW TECHNOLOGY
CONTRACT OPPORTUNITIES

- Title: Electronic Warfare Techniques
- Objectives:
  - Communication jammer components, including small HF antennas
  - Automated techniques for jammer control techniques
  - Electronic warfare against new signals
  - Application of breakthrough technologies to communications EW
- Type: Multiple Competitive - CPFF contracts from BAA and SBIR solicitations
- Schedule - Award dates - FY94-95
  (BAA closes Jan 94 for FY94 award)
- Estimated Value: $5M total for FY94-95
- POC/Telephone No.: Jim Yolda (703) 349-6911

EW TECHNOLOGY
CONTRACT OPPORTUNITIES

- Title: Digital Microscan
- Objectives: Develop a digital receiver which utilizes special architecture to implement real time reprogrammable digital filters to optimize conventional performance and implement special processing.
- Type: CPFF
- Schedule: Award dates: FY94-95
- Estimated Value: $1M total for FY94-95
- POC/Telephone No.: Dr. Frank Elmer (908) 544-5956

INTERCEPT TECHNOLOGY

INTERCEPT TECHNOLOGY
DESCRIPTION

Detect, demodulate and geo-locate hostile command, control and communications (C3); and radar systems

INTERCEPT TECHNOLOGY
STATUS

- Utilizing narrow bandwidth communication links
- Exploiting modern modulations
- Intercepting architectures and hardware adaptable for wideband and narrowband modulations

INTERCEPT TECHNOLOGY
OBJECTIVES

- Develop interference rejection and suppression techniques
- Develop small, efficient and broadband receiving antennas
- Improve super-resolution direction finding algorithms
- Improve direction finding accuracies
- Develop exploitation techniques against modern signals
- Increase on-board sensor processing
- Explore other innovative intercept techniques

INTERCEPT TECHNOLOGY
REQUIREMENTS

- Increase range of ground based intercept systems
- Handle current and projected target signals
- Automate the signal intercept process
- Reduce size and power requirements of intercept equipment
- Increase emitter geo-location accuracy

INTERCEPT TECHNOLOGY
PAYOFFS

- Maximum use of commercial specification (COM-SPEC) testbeds and prototypes
- Cost effective proof-of-concept demonstrations
- Transition technology to Army intercept systems, such as family of IEW Common Sensors
- Common hardware/software modules for rapid integration into the R&D community.

INTERCEPT TECHNOLOGY
PAYOFFS (Continued)

- Maximum use of common modules
- Automated collection
- Maximum processing on-board the sensor
- Capability for quick fire reporting

INTERCEPT TECHNOLOGY
SHORT-TERM MILESTONES

- FY-94
  - Interference reduction utilizing super-resolution techniques
  - Wideband modulation exploitation
  - Multiple cooperative receivers producing coordinated pulse descriptor word

INTERCEPT TECHNOLOGY
LONG-TERM MILESTONES

- FY 95 AND BEYOND
  - Automated signals intercept, recognition and collection
  - Accurate geo-location of advanced communications and non-communications signals

INTERCEPT TECHNOLOGY
CONTRACT OPPORTUNITY

- Title: Advanced Intercept Techniques
- Objectives:
  - Improve direction finding accuracies
  - Exploitation of modern signals
  - Automate the signal intercept process
- Type: Multiple Competitive - CPFF contracts from BAA and SBIR solicitations
- Key Milestones: Award date - FY94-96
- Estimated Value: $1M total for FY94-96
- POC/Telephone No.: Jim Mulligan (703) 349-5275

INTERCEPT TECHNOLOGY
CONTRACT OPPORTUNITY

- Title: Next Generation ESM Processor
- Objectives: Develop digital processor for next generation of ELINT/ESM processor. It will utilize all of the additional parameters for each pulse measured by the state-of-the-art ELINT/ESM receivers (e.g. intrapulse, chirp/chip rate, etc.) and provide real time TACELINT reports.
- Type: Competitive CPFF
- Schedule: Award dates: FY94-95
- Estimated Value: $1M prototype phase FY94-95
- POC/Telephone No.: Dr. Frank Elmer (908) 544-5956

TACTICAL INTELLIGENCE DATA FUSION

TACTICAL INTEL DATA FUSION
DESCRIPTION

Association, correlation, and combination of data and information from multiple sources to generate battlefield intelligence

TACTICAL INTEL DATA FUSION
STATUS

- General Fusion
  - Dynamic fusion system control techniques
  - Terrain analysis server/parallel processing
  - Correlation algorithm module
  - Initial release of testbed products
  - Defining fusion processing flows

TACTICAL INTEL DATA FUSION
STATUS (Continued)

- Sensor Placement
  - Developed user friendly - soldier machine interface
  - Optimized supporting propagation models
  - Ported software to database shell, JPL-MAP's, IPC and MMI
  - Sensor placement annealing algorithm
  - Host software on Sun SPARC
  - Demonstrated software at USAICS

TACTICAL INTEL DATA FUSION
OBJECTIVES

- Transition data fusion research products into testbed efforts and tactical intelligence data fusion systems
- Provide maturing products to technology demonstrations and user driven prototypes
- Automate the intelligence generation process
- Efficient intelligence data base management systems

TACTICAL INTEL DATA FUSION
REQUIREMENTS

- Sensor allocation/Sensor management
- Multiple hypothesis management
- Computational geometry
- Hybrid data base management techniques
- IPB overlay generation
- Prototype user requirements for field evaluation

TACTICAL INTEL DATA FUSION
REQUIREMENTS (Continued)

- Technologies to support Common Ground Station and All Source Analysis System
- Plan generation and recognition/threat assessment
- Explore other innovative intelligence data fusion technologies

TACTICAL INTEL DATA FUSION
PAYOFFS

- Provide more timely and accurate tactical intelligence
- Lower soldier skills required
- Increase productivity via automation
- Provide the Commander with information required to make timely decisions on the battlefield

TACTICAL INTEL DATA FUSION
SHORT-TERM MILESTONES

- FY-94
  - Spatial/map reasoning algorithms
  - IEW synchronization matrix approaches
  - Map/overlay management module - IPB overlays
  - Complete Jump-Reconstitution Manager
  - Acquisition on N-Cube-2 parallel processor
  - Port terrain reasoning tools to N-Cube
  - Integrate "what if" tools with map module
  - Integrated threat demo - 18th Airborne Corps
  - Integrate with ASAS, IEWCS and ETW software
  - Add ECM capability

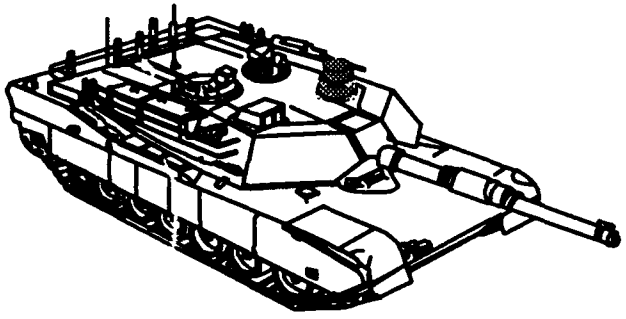
TACTICAL INTEL DATA FUSION
LONG-TERM MILESTONES

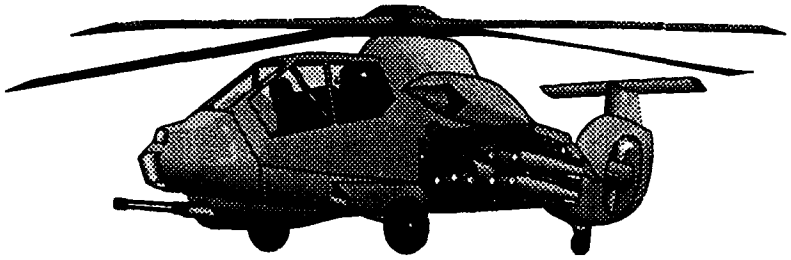
- FY-95 AND BEYOND
  - Tactical multi-media and virtual reality MMI techniques
  - Layered fusion service security access techniques
  - Multi-media IPB intelligence products
  - Complete AMBISS AI module
  - Fusion data base software enhancements

TACTICAL INTEL DATA FUSION
CONTRACT OPPORTUNITIES

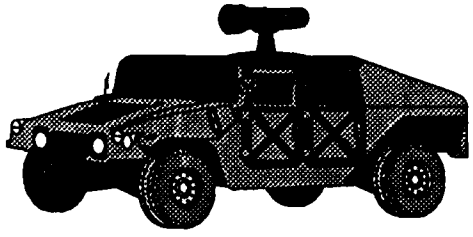
- Title: Tactical Intelligence Data Fusion Techniques
- Objectives:
  - Automate the intelligence generation process
  - Object, Situation, Threat and Process Refinement
  - Situational awareness
  - Efficient intelligence database management techniques
- Type: Multiple Competitive - CPFF contracts from BAA and SBIR solicitations
- Schedule: Award Dates - FY94-95
- Estimated Value: $2M total for FY94-95
- POC/Telephone No.: Dave Grubb, 703-349-7566

Night Vision and Electronic Sensors Technology









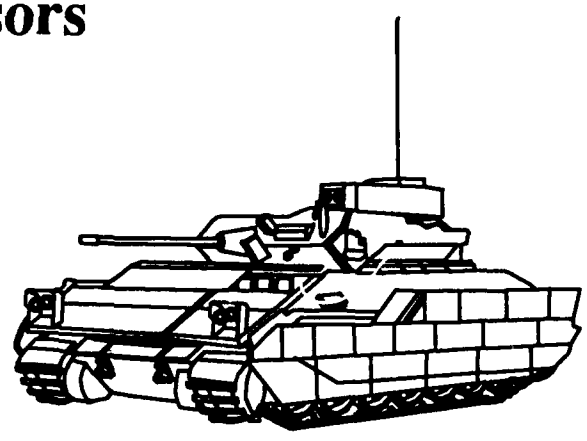
Night Vision and Electronic Sensors Directorate

US Army CECOM RDEC

Mr.Larry L. Fillian

Director, Resource Management Division





UNCLASSIFIED

AMSEL-RD-NV 1 Apr 93

POINT PAPER

SUBJECT: Advance Planning Briefing for Industry (APBI)

OBJECTIVE: Provides Industry with Upcoming Business Opportunities within the Night Vision and Electronic Sensors Technology Area for Advanced Planning.

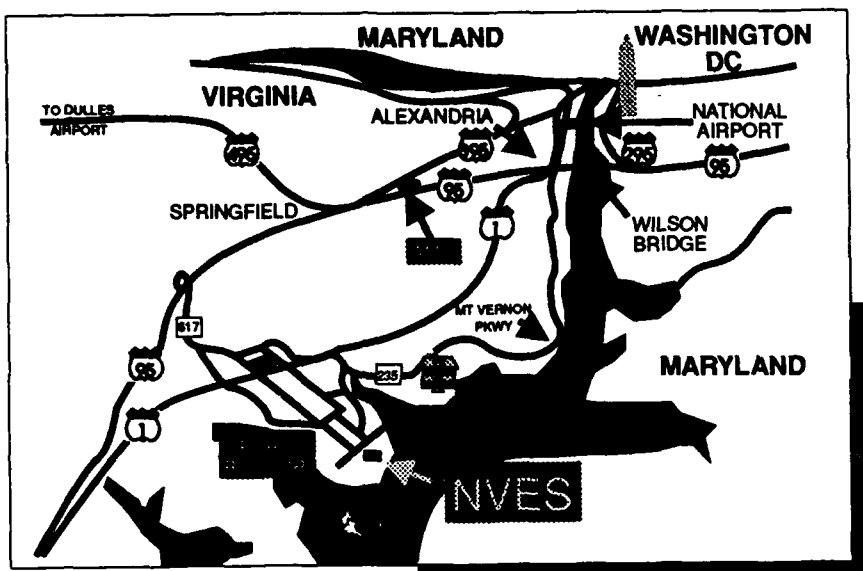
FACTS:

- Night Vision and Electronic Sensors Technology has a high level of Department of Defense and Department of the Army Support.
- Electro Optics Technology is a major participant in the Department of Defense Science and Technology Thrust Areas with several Advanced Technology Demonstrations.
- The Radar, Survivability, and Combat Identification Program Areas of CECOM have been consolidated under the Night Vision and Electronic Sensors Directorate.
- Thermal Infrared Sensor Technology is advancing into the Design and Fielding of its Second Generation of Hardware with a 40% increase in Detection, Recognition, and Identification Capability. This new hardware will be developed, integrated, and fielded into US Army Weapon Systems in accordance with the Horizontal Technology Integration (HTI) Plan for 2nd Generation FLIR Systems.

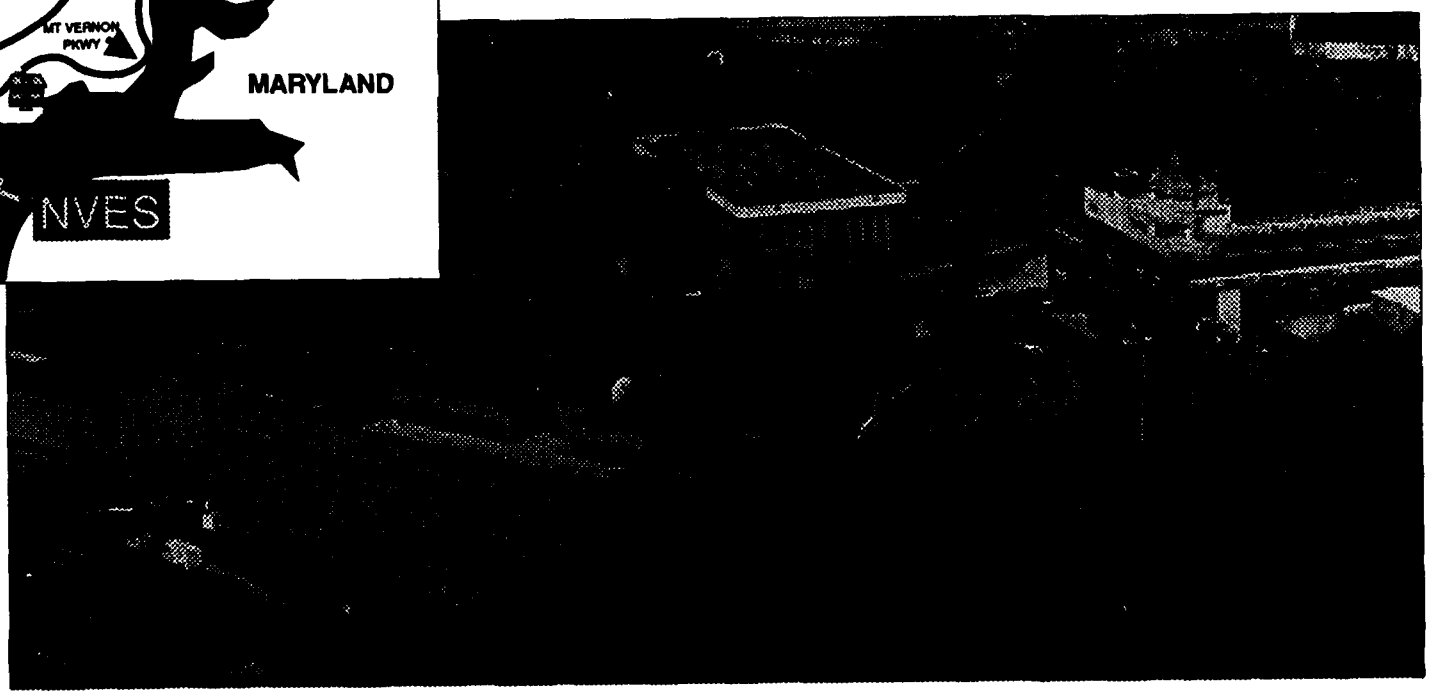
BRIEFER: Mr. Larry Fillian
Chief, Resource Management Division
ATTN: AMSEL-RD-NV-D
COMM: 703-704-1166

ACTION OFFICER
THOMAS T. STECK
Resource Management Division
COMM: 703-704-1188

Night Vision and Electronic Sensors Technology



Location of the Night Vision and Electronic Sensors Directorate



Night Vision and Electronic Sensors Technology

MISSION FOCUS: "OWNING THE NIGHT"

- CONDUCT RESEARCH, DEVELOPMENT AND ACQUISITION OF NIGHT VISION AND ELECTRONIC SENSORS AND SENSOR SUITES TO:
  - SEE THE BATTLE
  - CONTROL THE BATTLE
  - ASSESS THE BATTLE

"AROUND THE CLOCK"

"FAIR WEATHER AND FOUL"

Night Vision and Electronic Sensors Technology

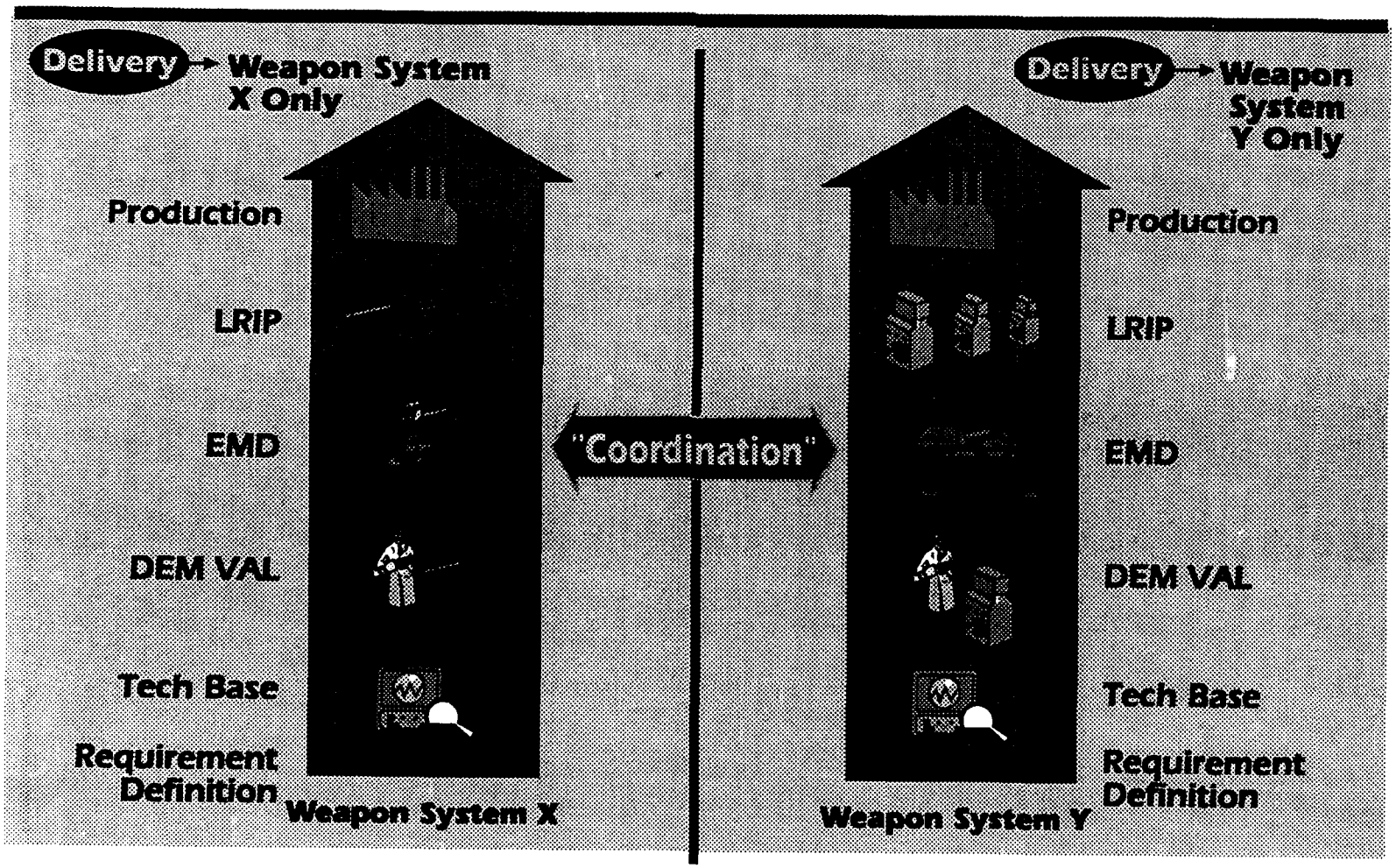
Key Development Areas for the Mid 90s

1. Horizontal Integration of 2nd Gen FLIR Technology
2. Automated Surveillance and Target Acquisition
3. Aircraft/Combat Vehicle Survivability Equipment

Night Vision and Electronic Sensors Technology

Horizontal Technology Integration of 2nd Generation FLIR Systems

Current Business Strategy: "Stovepipe"



Night Vision and Electronic Sensors Technology

Description: Horizontal Technology Integration of 2nd Generation FLIR Systems

What is it?

Coordinated:

Requirements Definition
Thermal Imaging Sensor Definition
Acquisition Concept

To Allow:

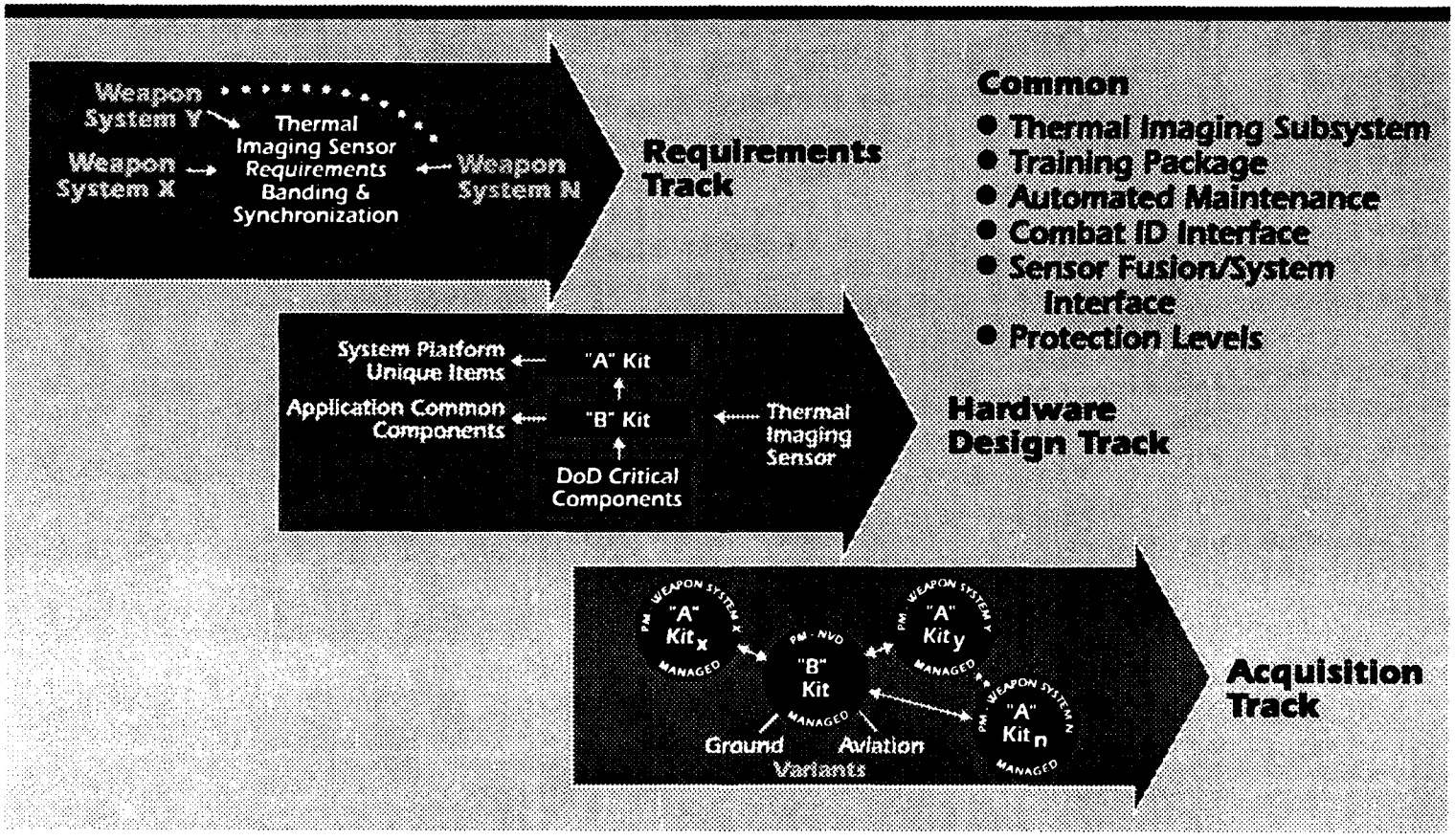
- **Common Thermal Imager Sub-systems to Address Classes of Functional Applications**
- **Economies of Scale Across Multiple Applications**
- **Combined arms team Performance Compatibility**
- **Product Improvement of Current Weapon Systems**
- **Future Performance Growth**

Night Vision and Electronic Sensors Technology

Horizontal Technology Integration of 2nd Generation FLIR Systems

New Business Strategy: Horizontal Integration

A Synchronized Approach



Night Vision and Electronic Sensors Technology

Horizontal Technology Integration of 2nd Generation FLIR Systems

- **Objective**
  - — Minimize Development Duplication
  - — Leverage On Going Developments
  - — Ensure Consistent Requirements
  - — Exploit Commonality in Production
  - — Preplanned Product Improvement
  - — Reduce Support Costs

Concept for Upgrades

- System Specific Integration Packages ("A Kits")
- Common Lower Level "Works-In-A-Drawer" for Similar System Requirements (Tank "B Kits", Aviation "B Kits", etc.)

"A Kits"

- System/Platform "Unique" Components (e.g., Optics)
- Interfaces to
  - Standard Input/Output
  - Sub-Level Packaging

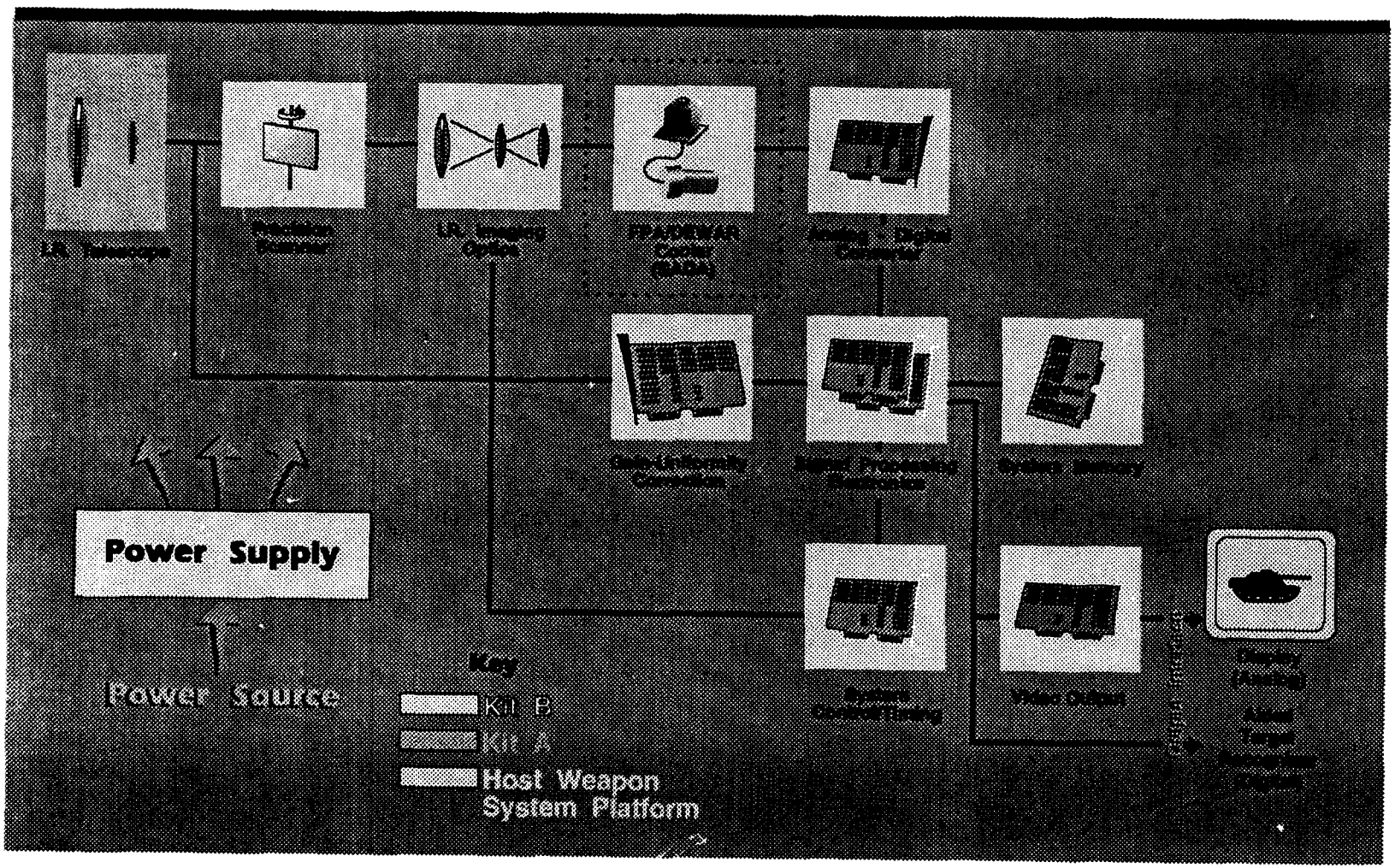
"B Kits"

- Standard Critical Components (e.g., SADA)
- Application - Common Components (e.g., Electronics, Display)
  - Standard Input/Output
  - Sub-Level Packaging

Night Vision and Electronic Sensors Technology

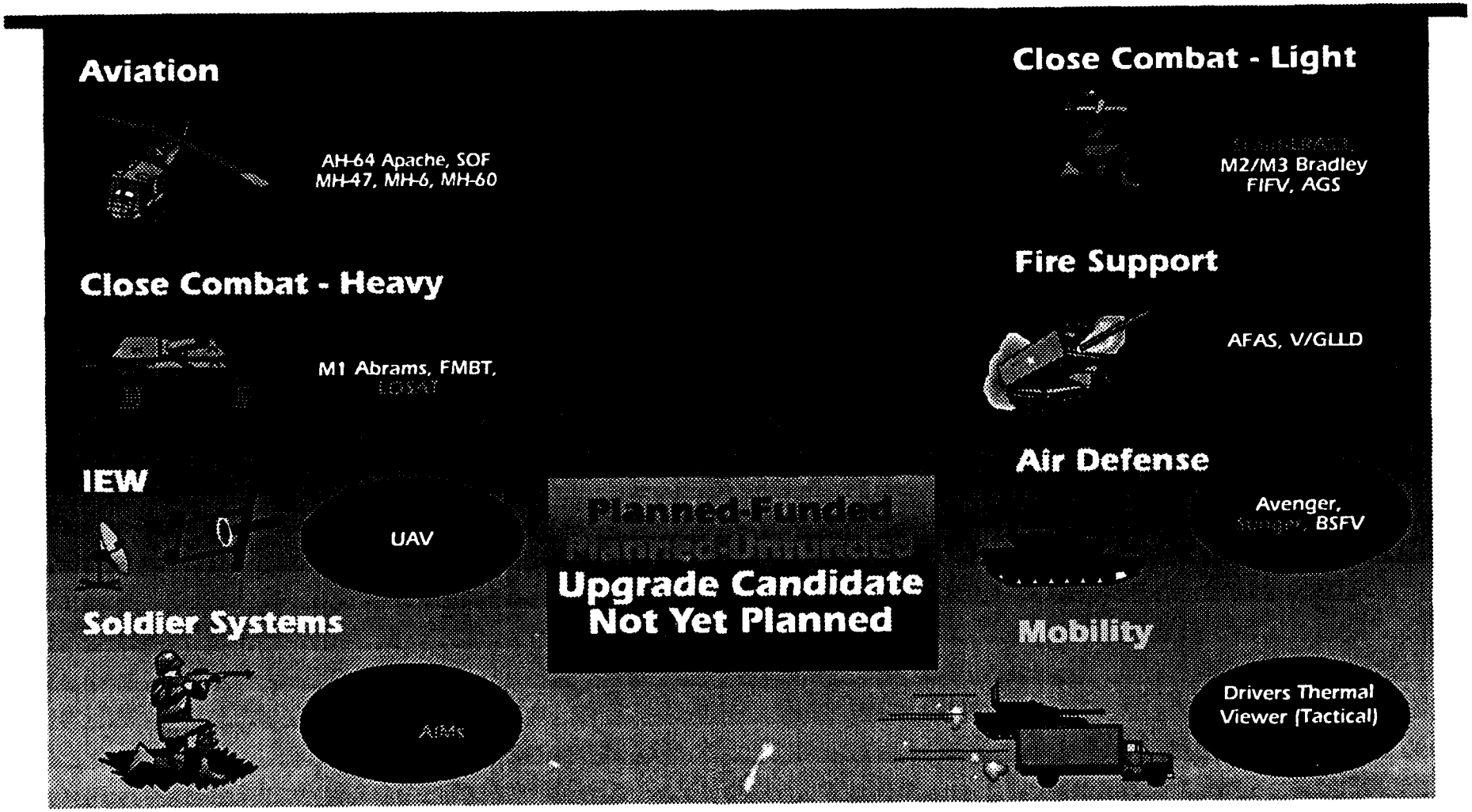
Horizontal Technology Integration of 2nd Generation FLIR Systems

Representative 2nd Gen AVB Kit Def & Boundaries



Night Vision and Electronic Sensors Technology

Emerging Army 2nd General Thermal Imager Upgrade Candidates



Night Vision and Electronic Sensors Technology

Horizontal Technology Integration of 2nd Generation FLIR Systems

NEAR TERM SCHEDULE

15 May 93	**Outline Draft Performance Specification**
01 Jul 93	**Final Draft Performance Specification**
01 Aug 93	**Draft RFP Release**
01 Nov 93	**RFP Release**
01 Apr 94	**EMD Award**

Night Vision and Electronic Sensors Technology

Horizontal Technology Integration of 2nd Generation FLIR Systems

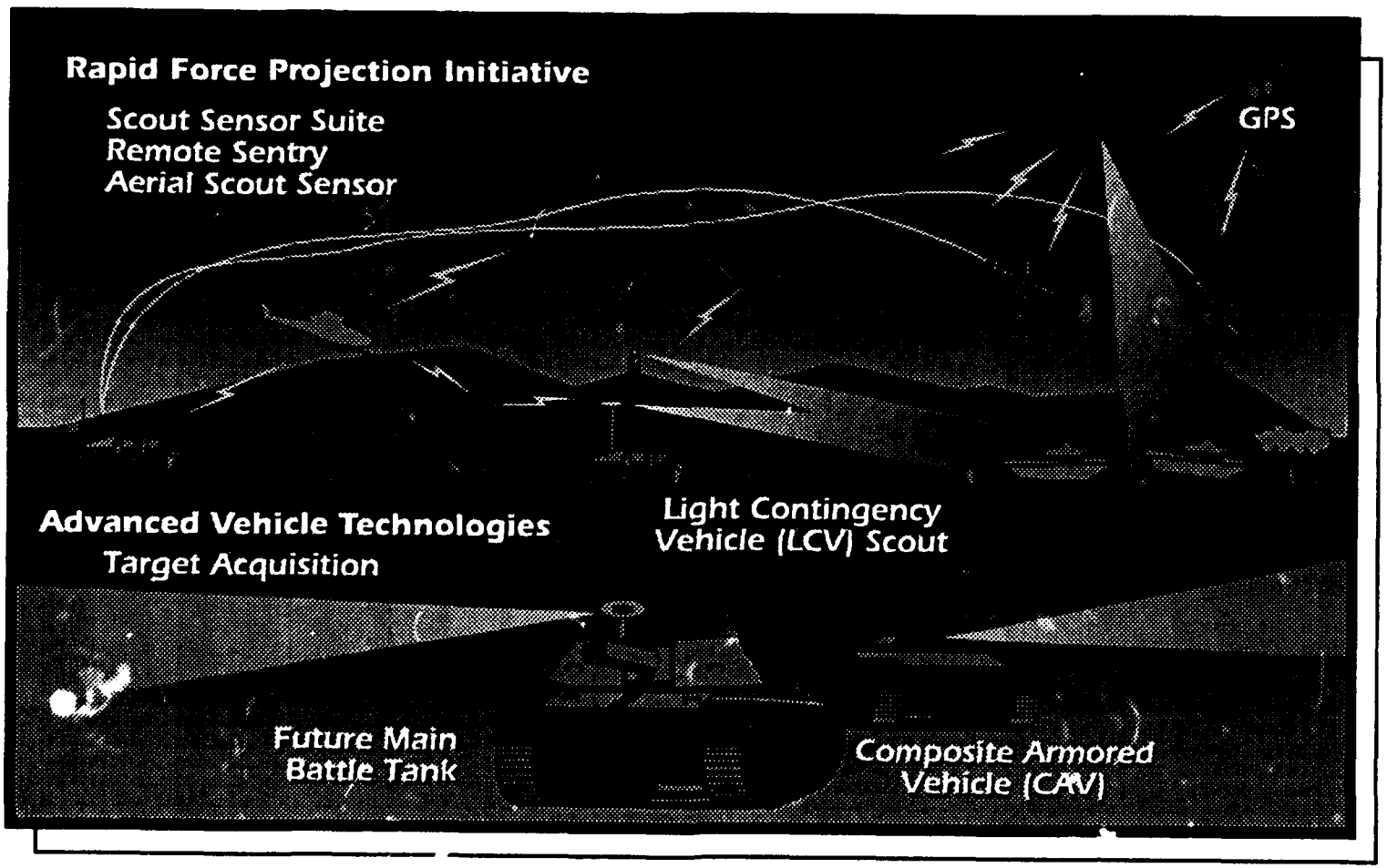
STATUS

- **Broad Concept for 2nd Gen Thermal Imaging Sensor HTI Defined**
- **Detailed Design Concepts & Specifications**
  - **Will be an Iterative Process**
  - **Must be Aware of Weapon System Platform Constraints**
  - **Requires Continuous User Input**
  - **Requires Weapon System PM Participation**
- **2nd Gen HTI is an Army-Wide Coordinated Requirements, Technical Design, and Acquisition Thrust**

Night Vision and Electronic Sensors Technology

Automated Surveillance and Target Acquisition

Advanced Land Combat - DOD Thrust Area 5



Night Vision and Electronic Sensors Technology

Automated Surveillance and Target Acquisition

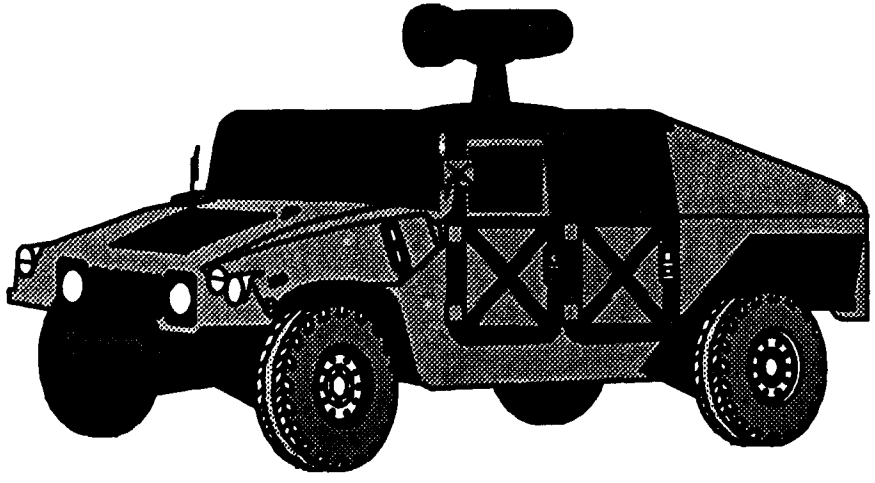
SCOUT SENSOR SUITE ATD

OBJECTIVE

THIS ATD WILL PROVIDE A LONG RANGE SENSOR SUITE FOR THE ADVANCED SCOUT VEHICLE WITH AIDED TARGET RECOGNITION FOR ACQUIRING MULTIPLE TARGETS AND ENHANCED TARGET HANDOVER SUPPORTING THE RAPID FORCE PROJECTION INITIATIVE DEMO OF DOD THRUST 5

APPROACH

A 48 MONTH PROGRAM UTILIZING STATE-OF-THE-ART IR FOCAL PLANE ARRAYS INTEGRATED WITH A LASER RANGEFINDER/DESIGNATOR & PROCESSOR TECHNOLOGY TO PRODUCE A LONG RANGE ACQUISITION SUITE WITH AN ATR IN AN OPERATIONAL CONFIGURATION TO BE TESTED & DEMONSTRATED IN A HUNTER/KILLER ROLE



Night Vision and Electronic Sensors Technology

Automated Surveillance and Target Acquisition

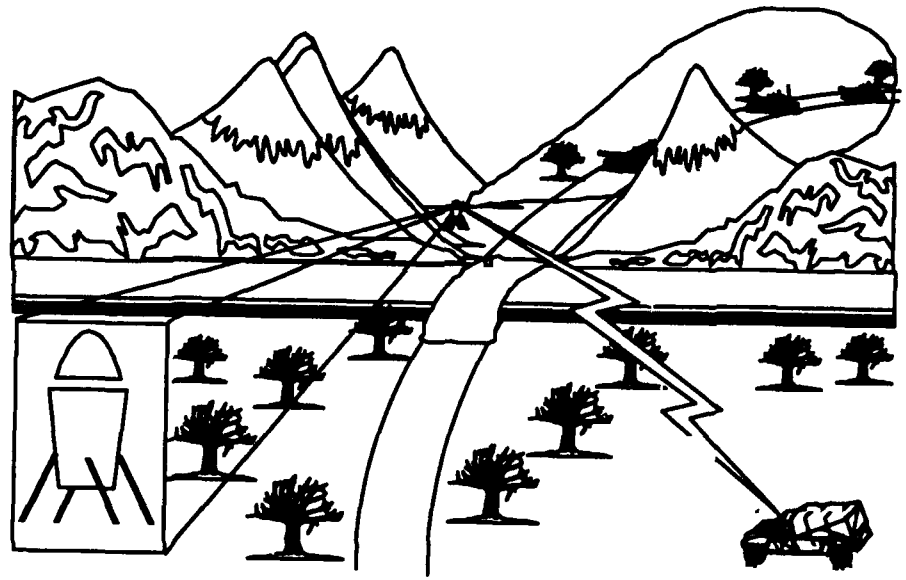
Remote Sentry ATD

OBJECTIVE

THIS ATD WILL PROVIDE UNATTENDED, REMOTELY OPERATED, WIDE AREA SURVEILLANCE AND TARGET ACQUISTION DURING DAY/NIGHT, LIMITED VISIBILITY CONDITIONS SUPPORTING THE RAPID FORCE PROJECTION INITIATIVE DEMO OF DOD THRUST 5.

APPROACH

A 36 MONTH PROGRAM UTILIZING STATE-OF-THE-ART AFFORDABLE, LIGHTWEIGHT, MODULAR SENSORS WITH IMAGE COMPRESSION/TRANSFER TO PRODUCE A REMOTE AREA SURVEILLANCE AND RECONNAISSANCE SYSTEM IN AN OPERATIONAL CONFIGURATION TO BE TESTED AND DEMONSTRATED



Night Vision and Electronic Sensors Technology

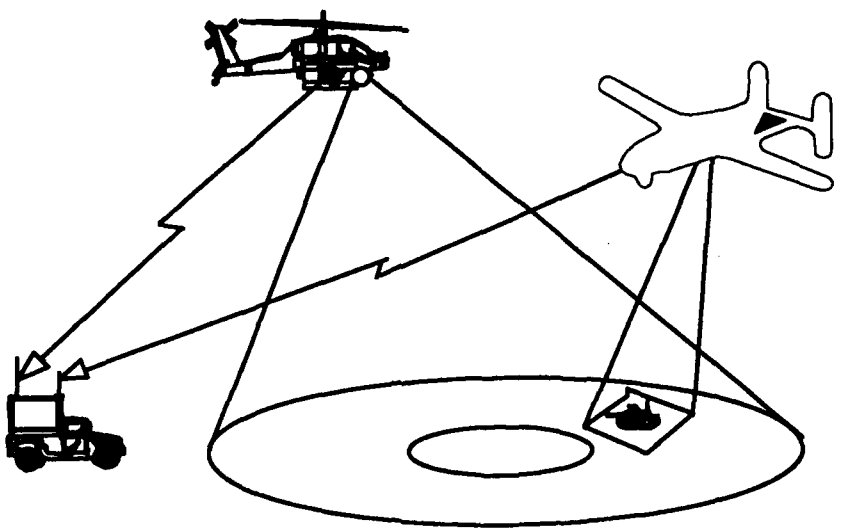
Aerial Scout Sensors ATD

OBJECTIVE

DEMONSTRATE NEAR REAL TIME PROCESSING OF AERIAL SCOUT SENSOR DATA PROVIDING SURVEILLANCE, TARGETING AND BATTLE DAMAGE ASSESSMENT (BDA); EXTENDING THE RANGE OF FORWARD DEPLOYED SCOUTS AND SUPPORTING THE RAPID FORCE PROJECTION INITIATIVE DEMO OF DOD THRUST 5

APPROACH

- UTILIZE LIGHTWEIGHT/LOW COST FLIRS, IR LINESCANNER, DAY TV, MOVING TARGET INDICATION RADARS, AND ELECTROMAGNETIC SIGNAL MEASUREMENT (ESM)
- DEMONSTRATE ADVANCED MULTI-SENSOR PROCESSING IN NEW SMART WORKSTATION ATR ALGORITHMS CAPABLE OF NEAR- REAL-TIME INFORMATION FUSION/CORRELATION/ DISSEMINATION



Night Vision and Electronic Sensors Technology

Automated Surveillance and Target Acquisition

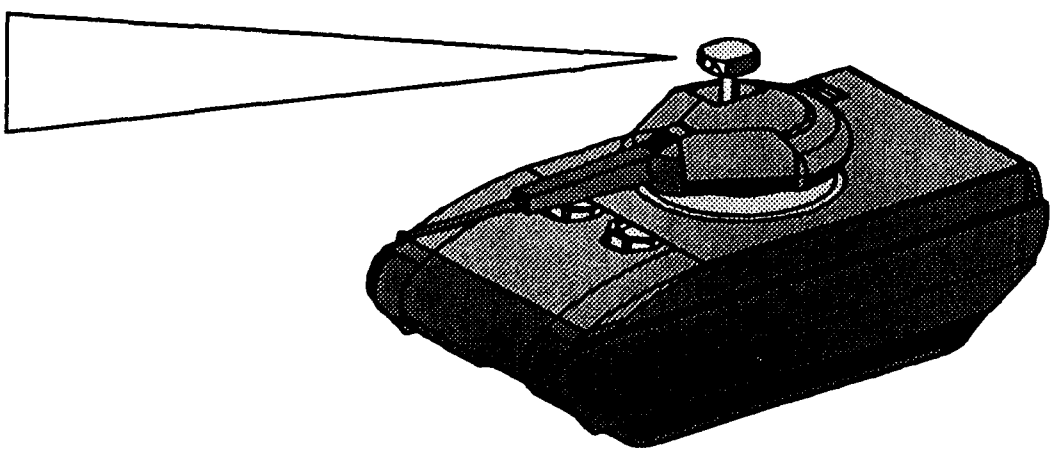
TARGET ACQUISITION ATD

OBJECTIVE

THIS ATD WILL PROVIDE AIDED TARGET ACQUISITION AND PRIORITIZATION AT EXTENDED RANGES TO ALLOW REDUCED CREW WORKLOAD/SHORT TIMELINES IN SUPPORT OF LETHAL, DEPLOYABLE COMBAT VEHICLES UNDER THE ADVANCED VEHICLE TECHNOLOGY (AVT) DEMO OF DOD THRUST 5

APPROACH

A 36 MONTH PROGRAM UTILIZING STATE-OF-THE-ART INFRARED FOCAL PLANE ARRAYS IN A SECOND GENERATION FLIR INTEGRATED WITH OTHER SENSORS AND PROCESSOR TECHNOLOGY PROVIDING A STANDOFF ACQUISITION CAPABILITY IN AN OPERATIONAL CONFIGURATION TO BE TESTED & DEMONSTRATED



Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: Scout Sensor Suite ATD

OBJECTIVE: Demonstrate an Advanced Long range Sensor Suite with Aided Target recognition & Image Compression/Transfer Capability Providing Multiple Target Acquisition and Enhanced Target Handoff for the Advanced Scout Vehicle.

PROPOSED CONTRACT TYPE: CPIF

KEY MILESTONES: Contract Award: 2QFY94
Contract Length: 48 months

ESTIMATED VALUE: $10 - 20M

POC TELEPHONE: Mr. Michael St. Peter
703-704-1231

All contract actions are dependent upon receipt of FY94 funds.

Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: Remote Sentry

OBJECTIVE: Provide automated, remote, wide area surveillance to the Advanced Scout Vehicle during day-night, limited visibility conditions

PROPOSED CONTRACT TYPE: CPAF

KEY MILESTONES: Contract Award: 1QFY94
Contract Length: 30 months

ESTIMATED VALUE: $6 - 12M

POC TELEPHONE: Mr. Joseph Brooks
703-704-1251

All contract actions are dependent upon receipt of FY94 funds.

Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: Advanced Image Intensifier ATD

OBJECTIVE: Demonstrate Advanced Night Vision Goggles for Aviators and Ground Soldiers for Improved Effectiveness and Safety.

PROPOSED CONTRACT TYPE: CPIF

KEY MILESTONES: Contract Award: 4QFY93
Contract Length: 30 months

ESTIMATED VALUE: $2 - 10M

POC TELEPHONE: Mr. J. Brian Gillespie
703-704-1214

All contract actions are dependent upon receipt of FY94 funds.

Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: Advanced Helicopter Pilotage Sensor

OBJECTIVE: Develop a Dual Spectrum, Wide Field of View Pilotage Sensors.

PROPOSED CONTRACT TYPE: CPIF

KEY MILESTONES: Contract Award: 1QFY94
Contract Length: 30 months

ESTIMATED VALUE: $10 - 20M

POC TELEPHONE: Mr. Philip Perconte
703-704-1369

All contract actions are dependent upon receipt of FY94 funds.

Night Vision and Electronic Sensors Technology

Description: Aircraft and Combat Vehicle Survivability Systems

What is it?

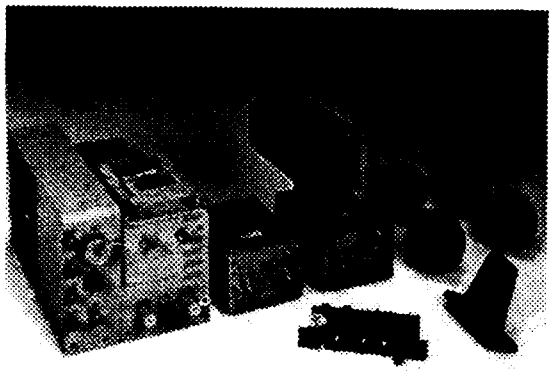
- Develop Sensor Protection Suites for Aircraft and Ground Vehicles
- Detect and Counter Emerging Munition Threats (Radar, IR, Laser)

To Allow:

- Enhanced Lethality by Assisting Survivability
- Integration of Detection and Counter Measure Systems (formerly separate)
- Multiple Platform Applications
- Increase Combined Arms Team Survivability

Night Vision and Electronic Sensors Technology

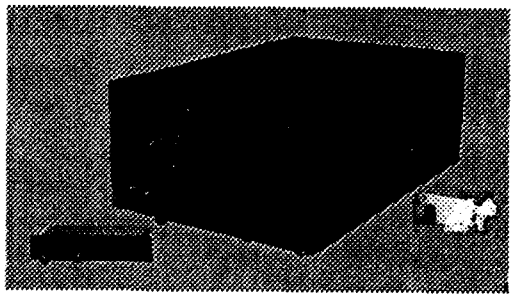
Aircraft/Combat Vehicle Survivability Systems



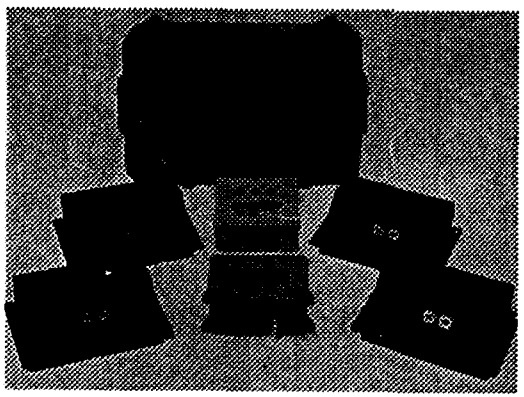
APR-39



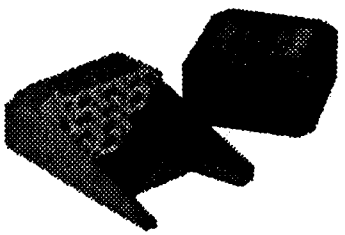
AN/ALQ-156



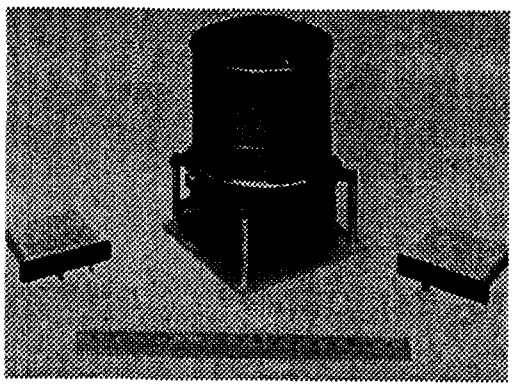
AN/ALQ-136(V)2



AVR-2



M-130

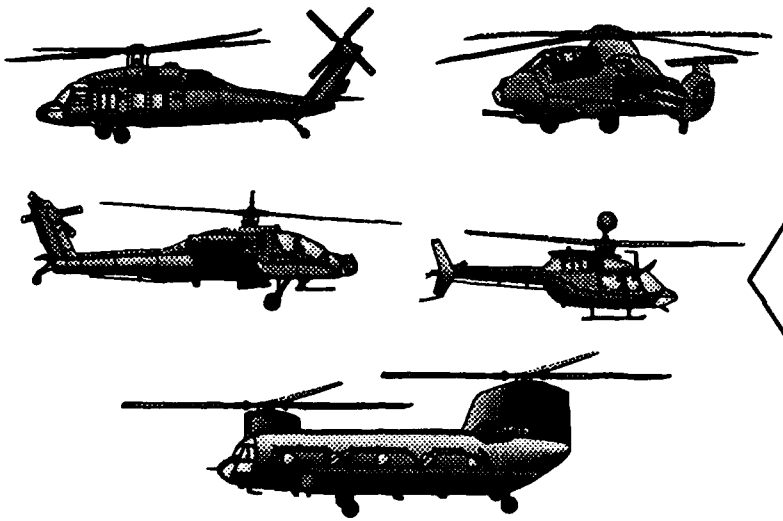


AN/ALQ-144

Night Vision and Electronic Sensors Technology

Aircraft/Combat Vehicle Survivability Systems

Aircraft Survivability Suites



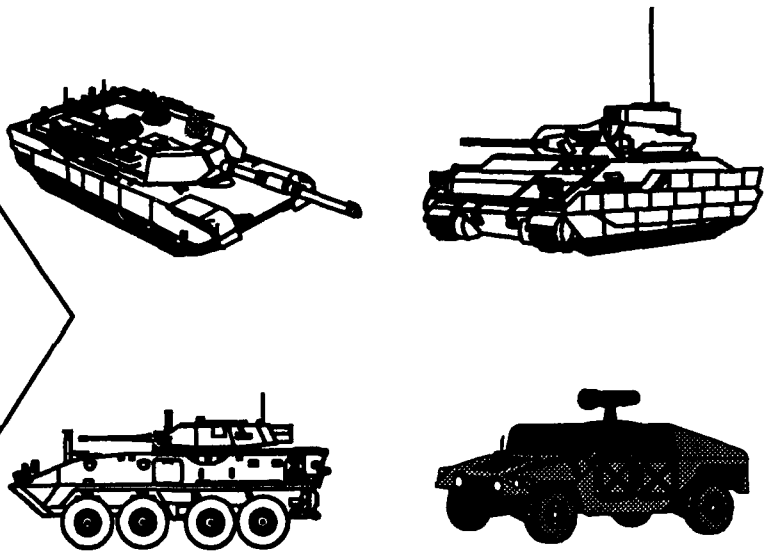
- Advanced Radar Detection & Jamming
- Advanced Missile Launch Detection
- Advanced Infrared Jamming
- Detection of Laser Energy
- Lightweight Design
- Integrated Sensors & CM

B-Kit Concept

Technology Commonality

A-Kit Application Concept

Ground Vehicle Survivability Suites



- Enhanced Vehicle Protection
- Detection of Missile Launch
- Detection of Laser Energy
- Rugged Design
- Integrated Sensors & CM

Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: Advanced Radar Countermeasures Techniques

OBJECTIVE: Develop and Test Advanced ECM Modulators and False Target Generators to Deceive and Jam Phased Array Search, Acquisition, and Tracking Radars.

PROPOSED CONTRACT TYPE: T&M

KEY MILESTONES: Contract Award: 1QFY94
Contract Length: 34 months

ESTIMATED VALUE: $2 - 8M

POC TELEPHONE: Mr. Peter Kaunzinger, 908-544-3536
Mr. Steve Oshel, 908-544-3222

All contract actions are dependent upon receipt of FY94 funds.

Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: Multi-Octave/Multi-Spectral Precision Direction Finding (DF) Sensor

OBJECTIVE: Develop A through M Band single Sensor Module with Growth Apertures for Laser Warning and Passive Missile detectors. A study will be performed and hardware will be developed. Sensors will be integrated with Radar Deception & Jamming (RD&J) Testbed for Testing in FY96.

PROPOSED CONTRACT TYPE: CPFF via BAA

KEY MILESTONES: Contract Award: 2QFY94
Contract Length: 33 months

ESTIMATED VALUE: $3 - 10M

POC TELEPHONE: Mr. Steve Oshel
908-544-3222

All contract actions are dependent upon receipt of FY94 funds.

Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: Milli-Meter wave Solid State Transmitter

OBJECTIVE: Develop and Field Test Solid State K & M Band Jammer Transmitter Modules for the Protection of Air and Ground Vehicles.

PROPOSED CONTRACT TYPE: CPFF via BAA

KEY MILESTONES: Contract Award: 2QFY94
Contract Length: 24 months

ESTIMATED VALUE: $2 - 10M

POC TELEPHONE: Mr. Rick Ivone
908-544-4218

All contract actions are dependent upon receipt of FY94 funds.

Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: Multi-Spectral Environment Generator (MSEG) IR/UV/Laser Upgrade

OBJECTIVE: Upgrade MSEG with IR/UV Missile Plume Simulators and Band 2 Lasers for Development and Testing of Integrated Aircraft and Ground Vehicle Protection Equipment.

PROPOSED CONTRACT TYPE: CPFF via BAA

KEY MILESTONES: Contract Award: 1QFY94
Contract Length: 22 months

ESTIMATED VALUE: $3 - 10M

POC TELEPHONE: Mr. Richard Ivone, 908-544-4218
Mr. Richard Nowicki, 908-544-3536

All contract actions are dependent upon receipt of FY94 funds.

Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: Multi-Spectral Environment Generator (MSEG) Complex Emitter and Milli-Meter Wave Upgrade

OBJECTIVE: Upgrade the Amherst CEESIM RF Environment Simulator with MMW and Complex Emitters to Support Tri-Service Development and Testing of Advanced Radar Warning Receivers, Antennas, and Multi-Spectral Sensors.

PROPOSED CONTRACT TYPE: CPFF via BAA

KEY MILESTONES: Contract Award: 1QFY94
Contract Length: 24 months

ESTIMATED VALUE: $3 - 9M

POC TELEPHONE: Mr. Rick Ivone, 908-544-4218

All contract actions are dependent upon receipt of FY94 funds.

Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: M-Band Radar Warning Receiver (RWR) Upgrade

OBJECTIVE: Develop an M-Band Module Upgrade for the Ground Vehicle Warning Receiver to Automatically Cue Countermeasures vs. Top Attack Munitions..

PROPOSED CONTRACT TYPE: CPFF via BAA

KEY MILESTONES: Contract Award: 2QFY94
Contract Length: 20 months

ESTIMATED VALUE: $4 - 10M

POC TELEPHONE: Mr. Rich Ivone
908-544-4218

All contract actions are dependent upon receipt of FY94 funds.

Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: Advanced Top Attack Countermeasure

OBJECTIVE: Develop and Test Passive Sensors Cued Countermeasures to Top Attack. Passive RF Sensors, the Wind Sensor, and IR Chaff developed by PM-SS will be Integrated and Field Tested Against Top Attack Munitions. Computer Simulation Modeling will be performed to Develop Time Lines and Optimum CM vs. various Vehicle Tactics and Wind Conditions.

PROPOSED CONTRACT TYPE: CPFF via BAA

KEY MILESTONES: Contract Award: 1QFY94
Contract Length: 21 months

ESTIMATED VALUE: $2 - 8M

POC TELEPHONE: Mr. Steve Comer, 908-532-6565

All contract actions are dependent upon receipt of FY94 funds.

Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: Advanced Threat Radar Jammer

OBJECTIVE: Proceed with the Engineering and Manufacturing Development of a Light Weight, Modular RF Jammer for Aircraft Self-Protection

PROPOSED CONTRACT TYPE: CPAF

KEY MILESTONES: CONTRACT AWARD: 2QFY94
LENGTH OF CONTRACT: 30 MONTHS

ESTIMATED VALUE: $10 to 35M

POC TELEPHONE: Mr. Robert M. Zanzalari
908-544-4676

All contract actions are dependent upon receipt of FY94 funds.

Night Vision and Electronic Sensors Technology

CONTRACT OPPORTUNITY

TITLE: Advanced Threat IR Countermeasures

OBJECTIVE: Provide Army Aircraft an Advanced System that Detects IR & RF Missiles and Provides Protection from IR Missile Threats

PROPOSED CONTRACT TYPE: CPIF/CPAF

KEY MILESTONES: CONTRACT AWARD: 2QFY95
LENGTH OF CONTRACT: 36 MONTHS

ESTIMATED VALUE: $10 to 35M

POC TELEPHONE: Mr. Adam Bogner
908-544-2143

All contract actions are dependent upon receipt of FY94 funds.

LASER/THERMAL SYSTEMS

COL MARTIN J. MICHLIK
PROJECT MANAGER
PROJECT MANAGER FOR NIGHT VISION
AND ELECTRO-OPTICS

UNCLASSIFIED

SFAE-IEW-NV 17 Mar 93

POINT PAPER

SUBJECT: R & D and Production Award for Project Manger, Night Vision and Electro-Optics (PM-NVEO), New Term

OBJECTIVE: To provide all interested parties with information on PM-NVEO near term contracting opportunities.

FACTS:

- Types of Contracts: Competitive
  R & D Production
  CPIF/CS and CM/FFP
- Schedule: FY93 - FY95 Milestones
- Systems:
  - Sniper Night Sight
  - 3rd Gen 25MM Image Intensifier
  - Laser Countermeasure System
  - Lightweight Laser Designator Rangefinder
  - Gen II FLIR Horizontal Integration

BRIEFER: Martin J. Michlik, Colonel, Project Manager, Night Vision and Electro-Optics, SFAE-IEW-NV, 703-806-3275.

ACTION OFFICER:
Martin J. Michlik
COL, PM-NVEO
(703) 806-3279

SNIPER NIGHT SIGHT

DESCRIPTION

- GEN III IMAGE INTENSIFICATION DEVICE TOTALLY PASSIVE, LIGHTWEIGHT, BATTERY POWERED

SNIPER NIGHT SIGHT

SYSTEM WILL CONSIST OF:

- GEN III SIGHT
- MOUNTING ATTACHMENT
- CARRYING CASE
- ANCILLARY EQUIPMENT

SNIPER NIGHT SIGHT

OBJECTIVES

- PROCURE DEVICE AS NDI
- MEET OR EXCEED REQUIREMENTS
- RAPID FIELDING

SNIPER NIGHT SIGHT

REQUIREMENTS

A. PROVIDE CAPABILITY AT OR NEAR OF DAY SIGHT

B. 4.5 LBS MAX (DAY/NIGHT SIGHT)
3.5 LBS MAX FOR CLIP-ON

SNIPER NIGHT SIGHT

PAYOFFS

- PROVIDE NIGHT OPERATIONS CAPABILITY TO SNIPERS (NONE CURRENTLY EXIST)
- LOW COST ACHIEVED VIA NDI PROCUREMENT

SNIPER NIGHT SIGHT

SHORT TERM MILESTONES

FY-94

- OCT 93 - MSI/III DECISION PRODUCTION
- OCT 93 - PRODUCTION CONTRACT AWARD
- AUG 94 - PQT COMMENCES

SNIPER NIGHT SIGHT

FUNDING PROFILE

	RDTE $M	PROC $M	OMA $M
FY 94		10-20	
FY 95		10-20	
FY 96			
FY 97			
ETC			
TOTAL:		20-40	

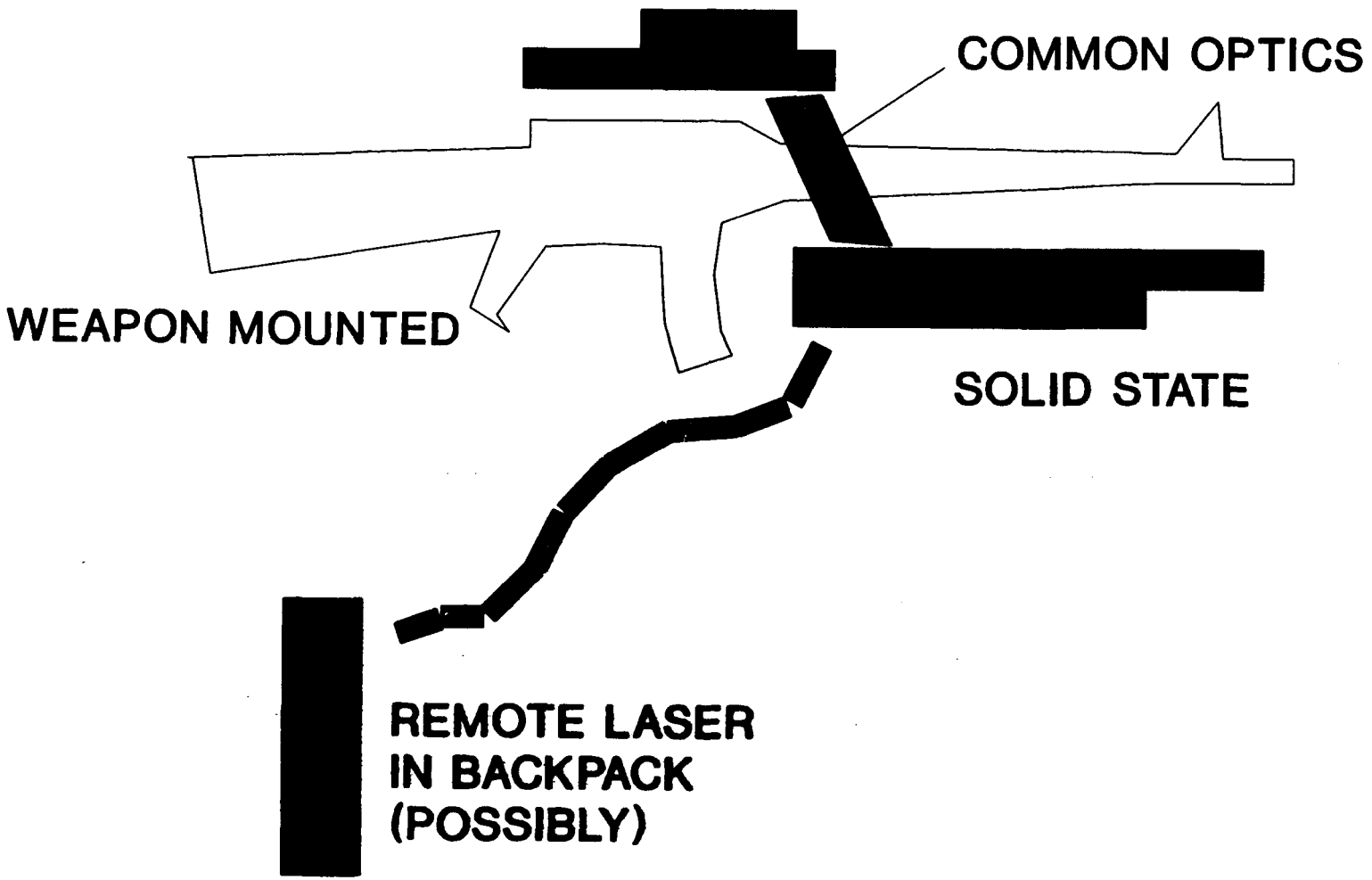
CONTRACT OPPORTUNITY

TITLE:	AN/PVS-XX SNS
OBJECTIVE:	PRODUCTION AWARD FOR 2000 NDI SIGHTS
PROPOSED CONTRACT TYPE:	CM FFP (2YR)
KEY MILESTONES:	RFP RELEASE JUN FY93 2YR MY AWARD OCT FY94
ESTIMATED VALUE:	20-40M
POC TELEPHONE:	JENNIFER MCCORMICK, PM-NVEO 703-806-4280

LASER COUNTERMEASURE SYSTEM (AN/PLQ-4)
DESCRIPTION

- LASER SYSTEM DESIGNED TO PROVIDE INFANTRY SOLDIER THE CAPABILITY TO FIND AND DISRUPT GROUND AND AERIAL THREAT OPTICAL AND ELECTRO-OPTICAL SURVEILLANCE DEVICES

LASER COUNTERMEASURE SYSTEM
CONCEPT



LASER COUNTERMEASURE SYSTEM (AN/PLQ-4)

STATUS

A. AN/PLQ-5 BASIC SYSTEM COMPLETING INTEGRATION EFFORT - FUE FY95

B. AN/PLQ-4 OBJECTIVE PROGRAM IN TECHNOLOGY MATURATION EFFORT BY CECOM NVESD

C. RESEARCH AND TECHNOLOGY DEVELOPED BY NVESD TO BE SHARED WITH INDUSTRY

LASER COUNTERMEASURE SYSTEM (AN/PLQ-4)

OBJECTIVES

- DECREASED WEIGHT
- INCREASED RANGE
- WAVELENGTH DIVERSITY
- IMPROVED TARGET ACQUISITION

DESIRE

- •• IFF CAPABILITY
- •• LASER RANGEFINDING

LASER COUNTERMEASURE SYSTEM (AN/PLQ-4)

REQUIREMENTS

A. LASER DISRUPTION OF VISIBLE OPTICAL SYSTEMS

B. LASER DISRUPTION OF 12 SYSTEM

C. LASER DESIGNATION

D. LASER AIMING

E. ACTIVE TARGET ACQUISITION

F. SUPER IR SPOTLIGHT

LASER COUNTERMEASURE SYSTEM (AN/PLQ-4)

PAYOFFS

- GREATER MOBILITY AND CAPABILITY FOR LIGHT FORCES AND SCOUTS TO DEFEND AGAINST AND ATTACK ARMORED TARGETS
- LOWER RISK OF ENGAGEMENT BY THREAT ARMOR

LASER COUNTERMEASURE SYSTEM (AN/PLQ-4)

SHORT TERM MILESTONES

FY-94

- IN-HOUSE EFFORTS
- RESULTS TO BE PRESENTED TO INTERESTED INDUSTRY

- PREPARATION OF E&MD RFP POSSIBLY ISSUE BY LATE FY94

LASER COUNTERMEASURE SYSTEM (AN/PLQ-4)

LONG-TERM MILESTONES

FY-95 AND BEYOND

- CONDUCT SOURCE SELECTION FOR FY-95 AWARD OF E&MD CONTRACT
- FY-98 PRODUCTION START

LASER COUNTERMEASURE SYSTEM (AN/PLQ-4)
FUNDING PROFILE

	RDTE $M	PROC $M	OMA $M
FY 94	0		
FY 95	15-25		
FY 96	10-15		
FY 97	5-10		
FY 98		30-50	
TOTAL:	30-50	30-50	

FUNDING FOR PRODUCTION CONTINUES THRU FY 2004

GEN II FLIR HORIZONTAL INTEGRATION
DESCRIPTION

- THE GEN II FLIR PROGRAM WILL HORIZONTALLY INTEGRATE GEN II FLIR TECHNICAL CAPABILITY INTO CRITICAL, HIGH PRIORITY COMBAT PLATFORMS. IT WILL ENABLE THE ARMY TO INSERT KEY TECHNOLOGY INTO THE HIGHEST PRIORITY FORCES RATHER THAN STOVEPIPE SUCH IMPROVEMENTS PIECEMEAL.

GEN II FLIR HORIZONTAL INTEGRATION

OBJECTIVES

- ACHIEVE GEN II FLIR PERFORMACE ACROSS THE BATTLEFIELD
- STRESS COMMON ARCHITECTURE (A KIT/B KIT)
- FIELD TO PRIORITY FORCES

GEN II FLIR HORIZONTAL INTEGRATION

REQUIREMENTS

A. HORIZONTAL INTEGRATION OF GEN II FLIR ACROSS THE FORCE

B. BANDED PERFORMANCE RANGES

C. COMMON MANAGEMENT/ DEVELOPMENT

D. A KIT/B KIT APPROACH

E. ECONOMIES OF SCALE

GEN II FLIR
HORIZONTAL INTEGRATION
PAYOFFS

- SIMPLIFY TASKS THROUGH INCREASE IN COMMONALITY
- MORE AUTOMATION
- STANDARD CRITICAL COMPONENTS
  - STANDARD ADVANCED DEWAR ASSEMBLY (SADA)
  - DISPLAYS
  - INPUT/OUTPUT

GEN II FLIR
HORIZONTAL INTEGRATION
SHORT TERM/LONG TERM MILESTONES

FY-94 AND BEYOND

KEY MILESTONES BEING DEVELOPED

GEN II FLIR
HORIZONTAL INTEGRATION
FUNDING PROFILE

	RDTE $M	PROC $M	OMA $M
FY 94	15-20		
FY 95	35-40		
FY 96	5-10	90-100	
FY 97		90-100	
ETC		90-100	
TOTAL:	55-70	270-300	

CONTRACT OPPORTUNITY

TITLE:	GEN II FLIR HTI
OBJECTIVE:	6.4 RDTE
PROPOSED CONTRACT TYPE:	FULL AND OPEN CPIF/CS
KEY MILESTONES:	RFP RELEASE FY93, AWARD FY94
ESTIMATED VALUE:	325-370M
POC TELEPHONE:	DENNIS VANDERLASKE 703-704-1258

COMBAT IDENTIFICATION PROGRAM

MR. ROBERT DOTO
DEPUTY PROJECT MANAGER, COMBAT IDENTIFICATION

UNCLASSIFIED

SFAE-IEW-RD

POINT PAPER

SUBJECT: Combat Identification Program

OBJECTIVE: The Combat Identification Program will provide identification of friendly vehicles to reduce fratricide on the battlefield. The Near Term Program (Battlefield Combat Identification System) is a query-answer system utilizing millimeter wave technology for ground vehicles and potentially an alternate technology for aviation platforms. The Mid and Far Term Programs will evaluate enhancements to the Near Term System and assess the application of new technologies to provide enhanced active and passive identification capability along with situation awareness. A combat identification architecture study is presently being performed from which the future Target Identification and Situation Awareness contractual thrusts will be determined.

FACTS:

. Contract opportunity: Future Target Identification and Situation Awareness technology and systems

. Type of contract: Competitive

. Schedule: RFP release in early FY-94

. Efforts will involve tasks related to:

.. Emerging ID technologies
.. Integration of ID and Situation Awareness Technologies
.. System Design and Engineering
.. Prototype Development
.. Modeling Analysis and Simulation
.. Software Development

BRIEFER: COL Thomas V. Rosner, Project Manager, Combat Identification, SFAE-IEW-RD, (301) 621-9573

ACTION OFFICER:
Brian Hughes
PM Combat Identification
(301) 621-9573

COMBAT IDENTIFICATION PROGRAM

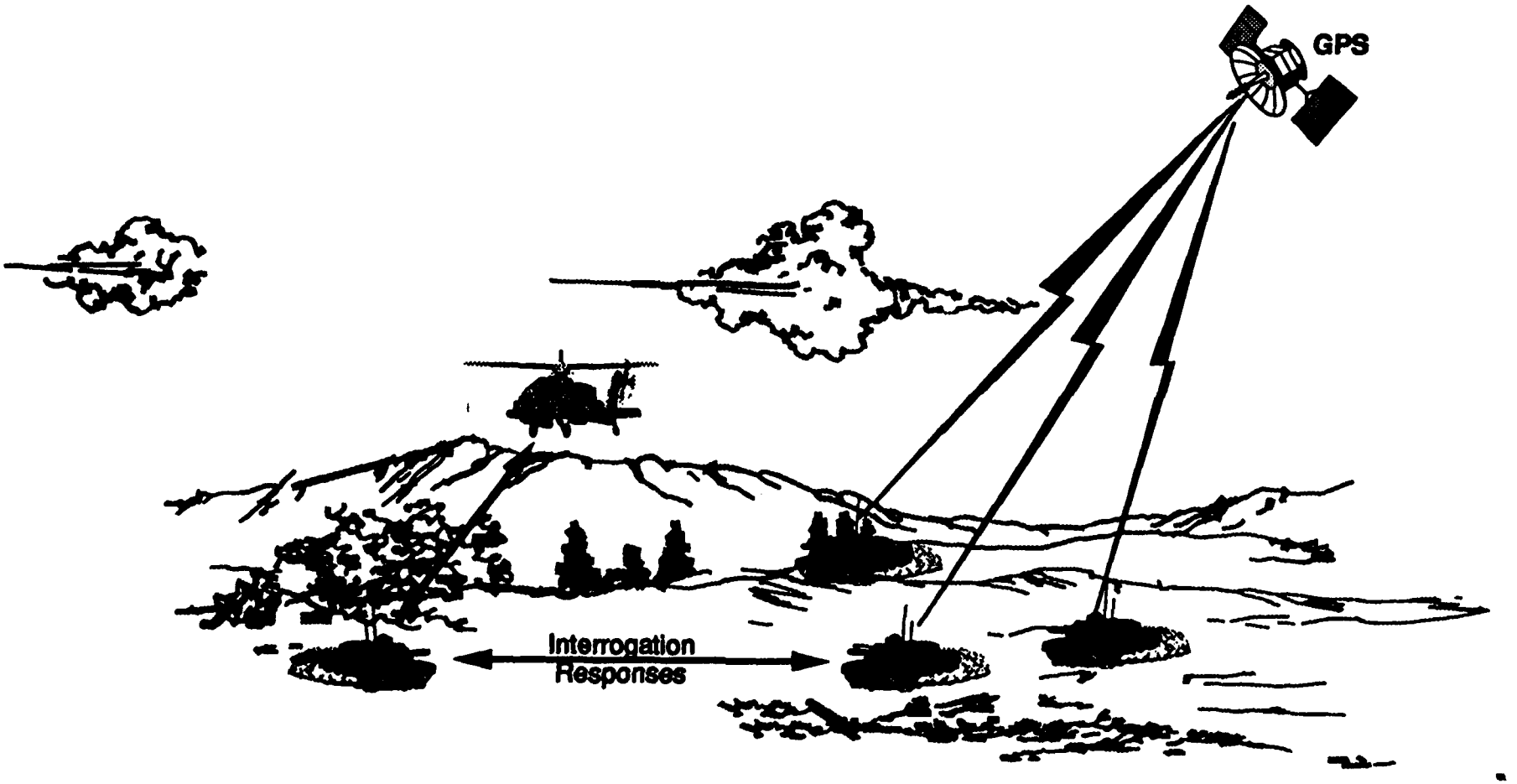
Near Term Program

- **Provide Initial Combat ID Capability**
- **Battlefield Combat Identification System (BCIS)**

Mid/Far Term Programs

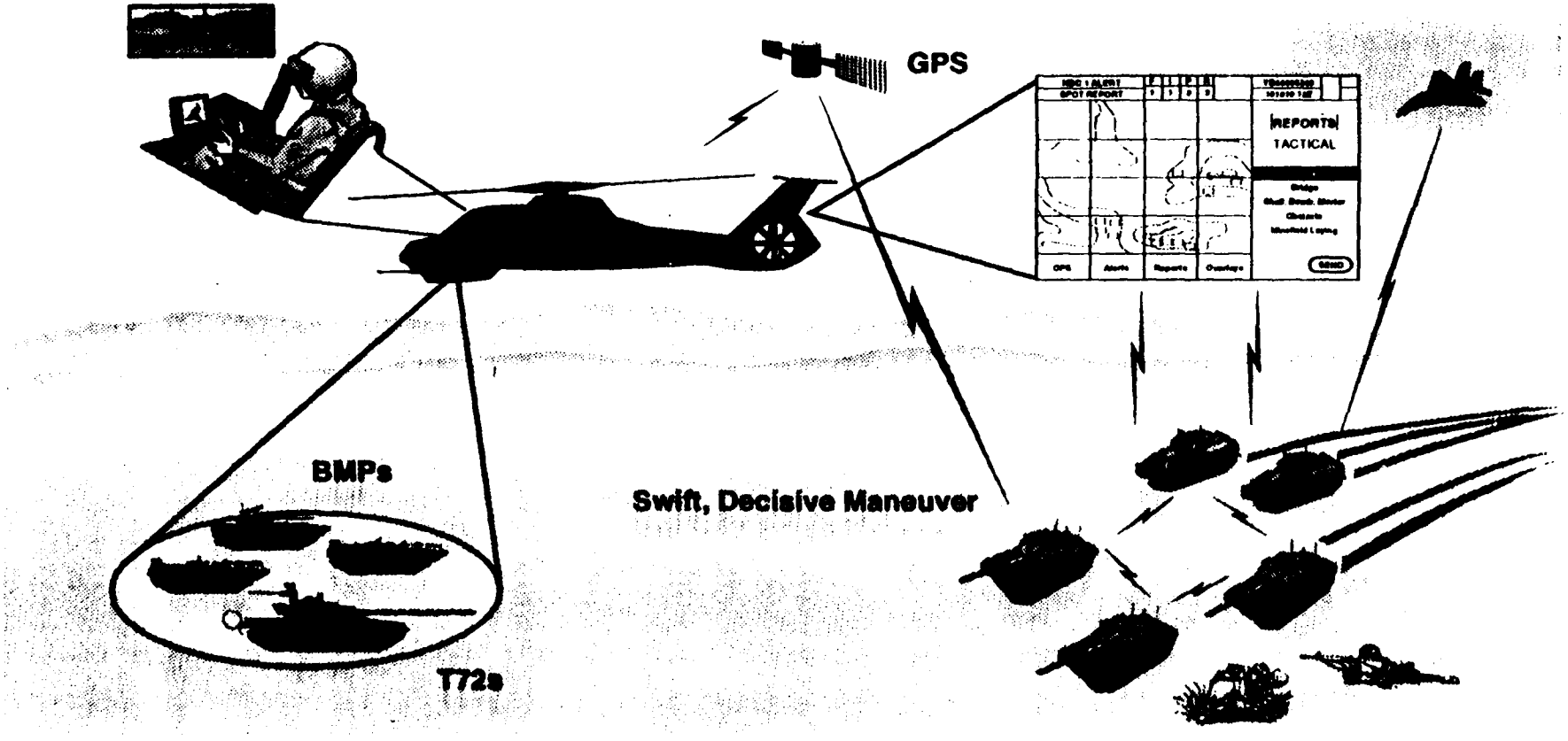
- **Incremental Improvements to Achieve an Integrated Situational Awareness/Target Identification Capability**

COMBAT IDENTIFICATION PROGRAM
NEAR TERM OPERATIONAL CONCEPT



COMBAT IDENTIFICATION PROGRAM

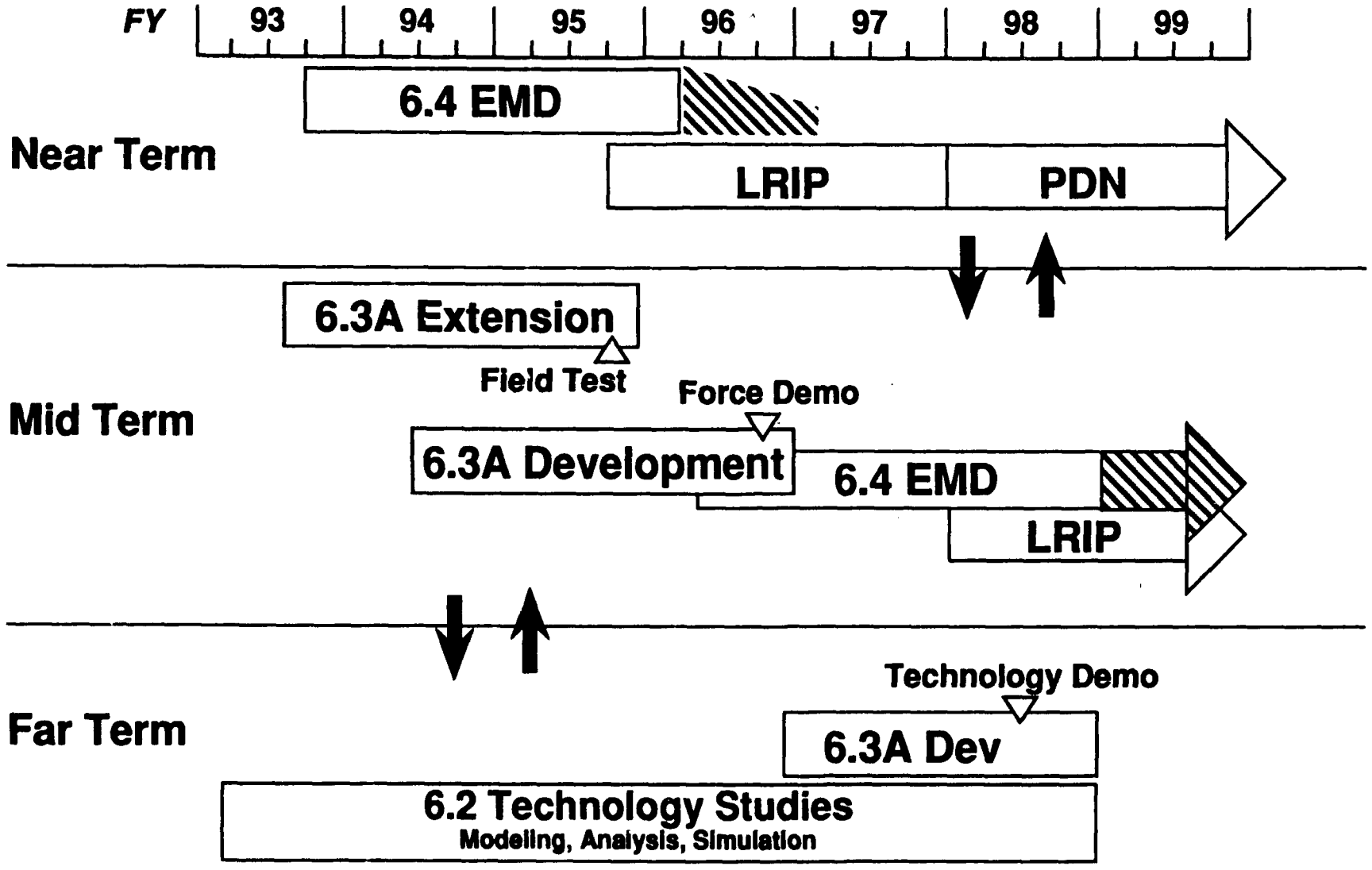
MID/FAR OPERATIONAL CONCEPT



05BCIS.01.09

COMBAT IDENTIFICATION PROGRAM

Materiel Plan



COMBAT IDENTIFICATION PROGRAM
MID/FAR TERM DESCRIPTION

Mid Term (FY93-FY96)

- Enhance Covert, Secure Active Cooperative mmW Q&A System
- Covert, Secure, Cooperative ID System
- Dismounted Soldier Capabilities
- Fixed Wing Capability
- Indirect Fire Weapon Capabilities
- Situation Awareness and Sensor Integration
- Joint Service Participation

Far Term (FY96-FY98)

- Active Non-Cooperative Systems to Provide Friendly, Foe and Non-Combatant ID Capabilities (to a Limited Number of Weapon Platforms With Active Sensors)
- Robust Cooperative System
- Passive Non-Cooperative Systems to Provide Friend, Foe and Non-Combatant ID Capabilities to Generic Weapon Platforms

COMBAT IDENTIFICATION PROGRAM
MID/FAR TERM REQUIREMENTS

- Enhanced Target ID Technologies Which Provide Improved Performance and Survivability
- Integration of ID and Situation Awareness Technologies
- Integration With Dismounted Soldiers, Ground Vehicle, Aircraft Sensor and Weapon Systems

COMBAT IDENTIFICATION PROGRAM
MID/FAR TERM STATUS

- Architecture Study in Progress
- Study Results Will be Used to Define Future Target ID and Situation Awareness Contractual Programs

COMBAT IDENTIFICATION PROGRAM
MID/FAR TERM PAYOFFS

- Reduced Fratricide
- Increased Combat Effectiveness
- Key Component in Digitizing the Battlefield
- Horizontal Technology Integration Across the Force

COMBAT IDENTIFICATION PROGRAM
FUNDING PROFILE

	RDTE $M	PROC $M
FY94	20-30	0
FY95	20-30	10-20
FY96	20-30	20-30
FY97	20-30	30-40
TOTAL	80-120	60-90

COMBAT IDENTIFICATION PROGRAM
CONTRACT OPPORTUNITY

Title: Mid/Far Term Battlefield Combat Identification

Objective: Develop Target ID and Situation Awareness Technology as Determined by Architecture Study

Proposed Contract Type: Competitive

Key Milestone: RFP Release Early FY94

Estimated Value: $3-5M

POC Telephone: Brian Hughes, (301) 621-9573

COOPERATIVE AIRCRAFT IDENTIFICATION (CAI)

UNCLASSIFIED

POINT PAPER

SUBJECT: Cooperative Aircraft Identification

OBJECTIVE: Develop improved Cooperative Identification System which will positively identify friendly platforms in order to maximize effective use of weapons and to reduce fratricide.

FACTS:

Contract Opportunity: Competitive Procurement for Engineering Prototypes and Low Rate Initial Production Units

Schedule: RFP Release FY 95

Efforts will involve tasks related to:

- Emerging cooperative identification technologies to include:
  - Improved Command and Control and Situational Awareness
  - Air Traffic Control and NATO Interoperability Requirements
- Platform Integration Analysis
- Systems Engineering
  - Hardware/Software Design
  - Prototype Development
- Limited Production Units
- Potential for Future Full Scale Production

Briefer: Thomas V. Rosner, COL, USA, Project Manager, Combat Identification, SFAE-IEW-CI, (908) 544-5324.

ACTION OFFICER:
Garrett A. Kretzler
(513) 255-6341

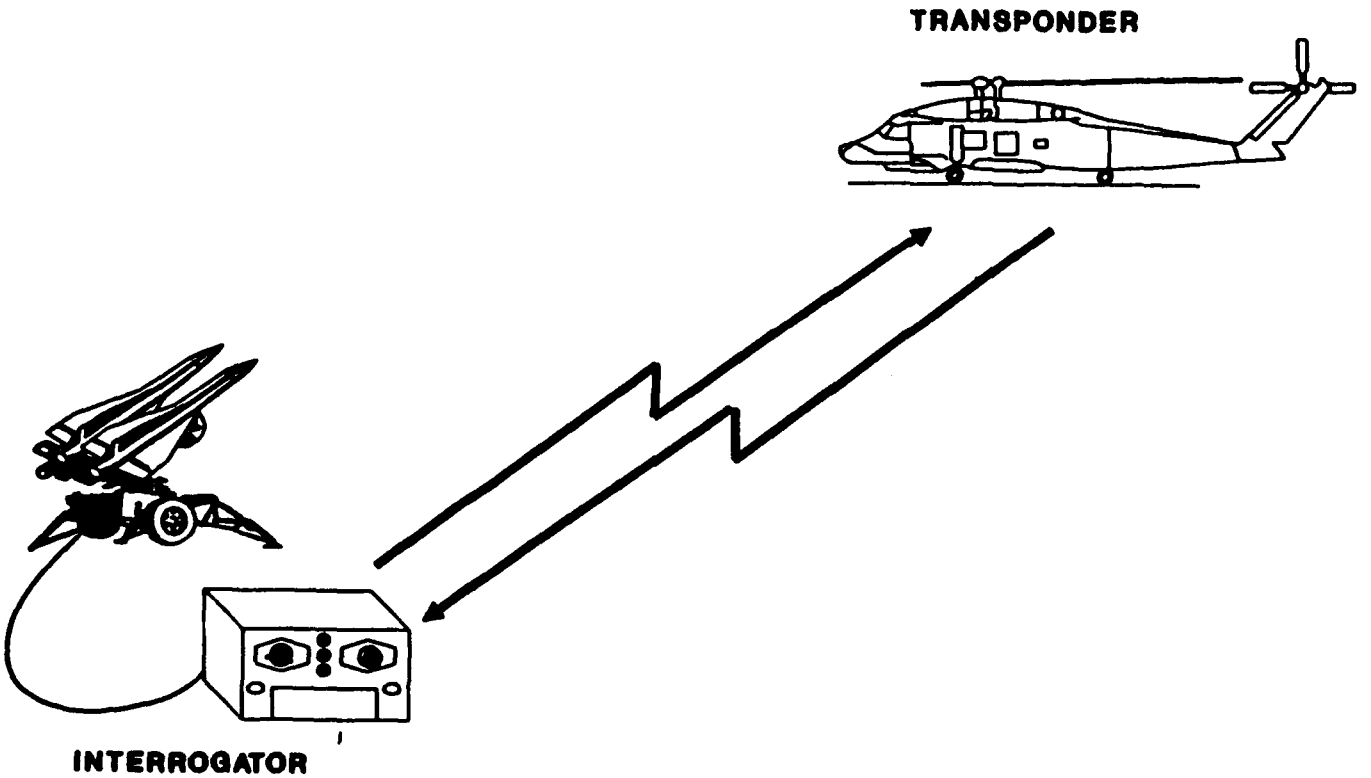
COOPERATIVE AIRCRAFT IDENTIFICATION (CAI)

DESCRIPTION

- A question and answer system which will provide
  - Positive Secure Identification of Friends
  - MKXII compatibility
  - NATO Interoperability

COOPERATIVE AIRCRAFT IDENTIFICATION (CAI)

OPERATIONAL CONCEPT



COOPERATIVE AIRCRAFT IDENTIFICATION (CAI)

STATUS

- Joint Service Program (Navy lead)
- Concept Exploration & Definition Phase Underway:
  - Define Requirements
  - Conduct Cost and Operational Effectiveness Analysis (COEA)
  - Define Program Boundaries/Strategy for Service Unique Platform Adaptation

COOPERATIVE AIRCRAFT IDENTIFICATION (CAI)

OBJECTIVES

- Develop improved Cooperative identification system which will
  - positively identify friendly platforms
  - maximize effective use of weapons systems
  - reduce fratricide

COOPERATIVE AIRCRAFT IDENTIFICATION (CAI)

REQUIREMENTS

- Joint Mission Need Statement for Combat Identification Approved March 92

- Joint Operational Requirements Document (Draft) in Coordination Mar 93

COOPERATIVE AIRCRAFT IDENTIFICATION (CAI)

PAYOFFS

- Improved Identification capability for air, surface, and ground platforms
- Compatibility with new Air Traffic Control Standards (Mode S)
- Improved Supportability
- Interoperability with Allies

COOPERATIVE AIRCRAFT IDENTIFICATION (CAI)

MILESTONES

- Milestone I/II Review tentatively planned for late 2QFY94

COOPERATIVE AIRCRAFT IDENTIFICATION (CAI)

FUNDING PROFILE

	RDTE $M	PROC $M	OMA $M
FY 94-97	TBD	-	-

CONTRACT OPPORTUNITY

TITLE: Cooperative Aircraft Identification (CAI)

OBJECTIVE: Development and production of Cooperative Identification Devices upon completion of DoD requirements definition program.

CONTRACT AWARD: PLANNED FY95

PROPOSED CONTRACT TYPE/VALUE: TBD

POC TELEPHONE: Gary Kretzler (513) 255-6341

SESSION V

STRATEGIC AND SUSTAINING BASE ACQUISITION OPPORTUNITIES

MODERATOR

MR. THOMAS J. MICHELLI
DEPUTY PROGRAM MANAGER, ARMY INFORMATION SYSTEMS AND
DEPUTY, US ARMY INFORMATION SYSTEMS MANAGEMENT ACTIVITY

STRATEGIC AND SUSTAINING
BASE
ACQUISITION OPPORTUNITIES

THOMAS J. MICHELLI
DEPUTY, INFORMATION SYSTEMS MANAGEMENT ACTIVITY
20 MAY 1993

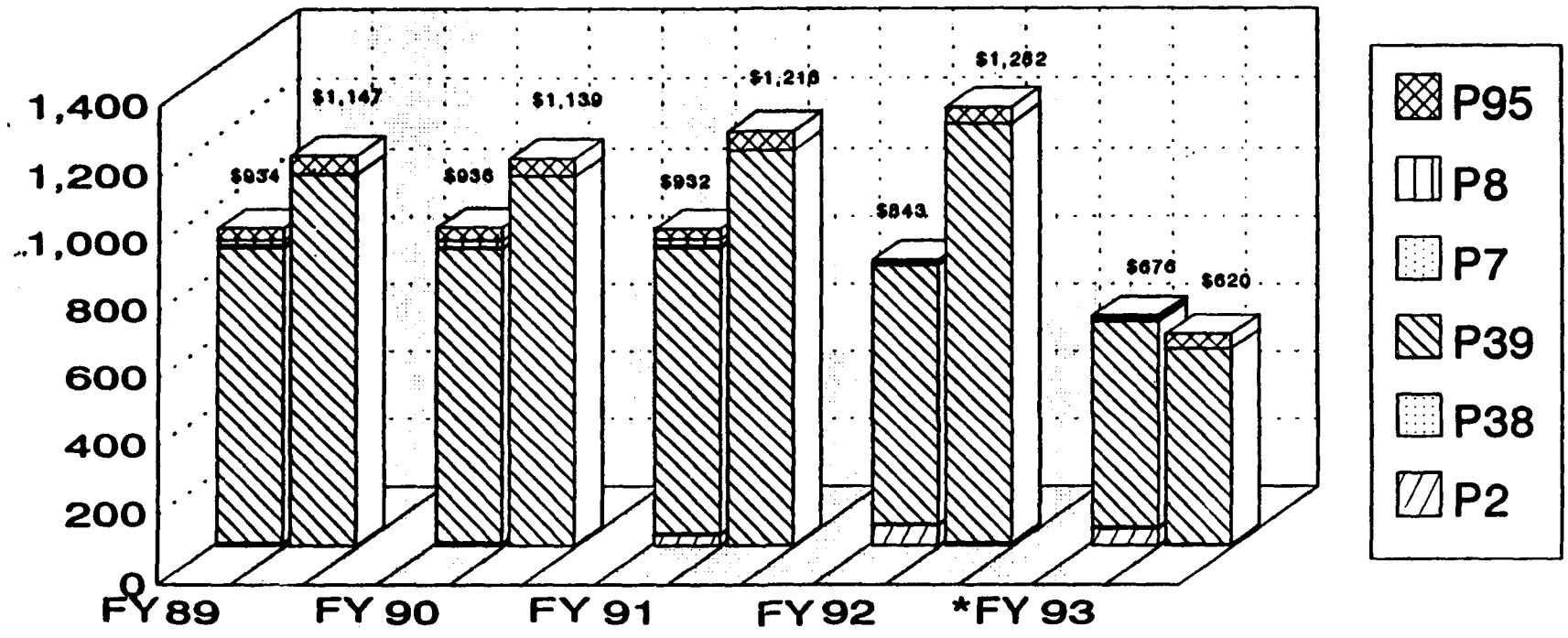
USAISC

INVESTMENT RESOURCE LEVELS

($M)

FY	OPA
89	$151
90	196
91	154
92	235
93	211
94	240
95	211
96	189
97	158

USAISC
OPERATIONS RESOURCE LEVELS
DIRECT AND REIMBURSABLE ($M)



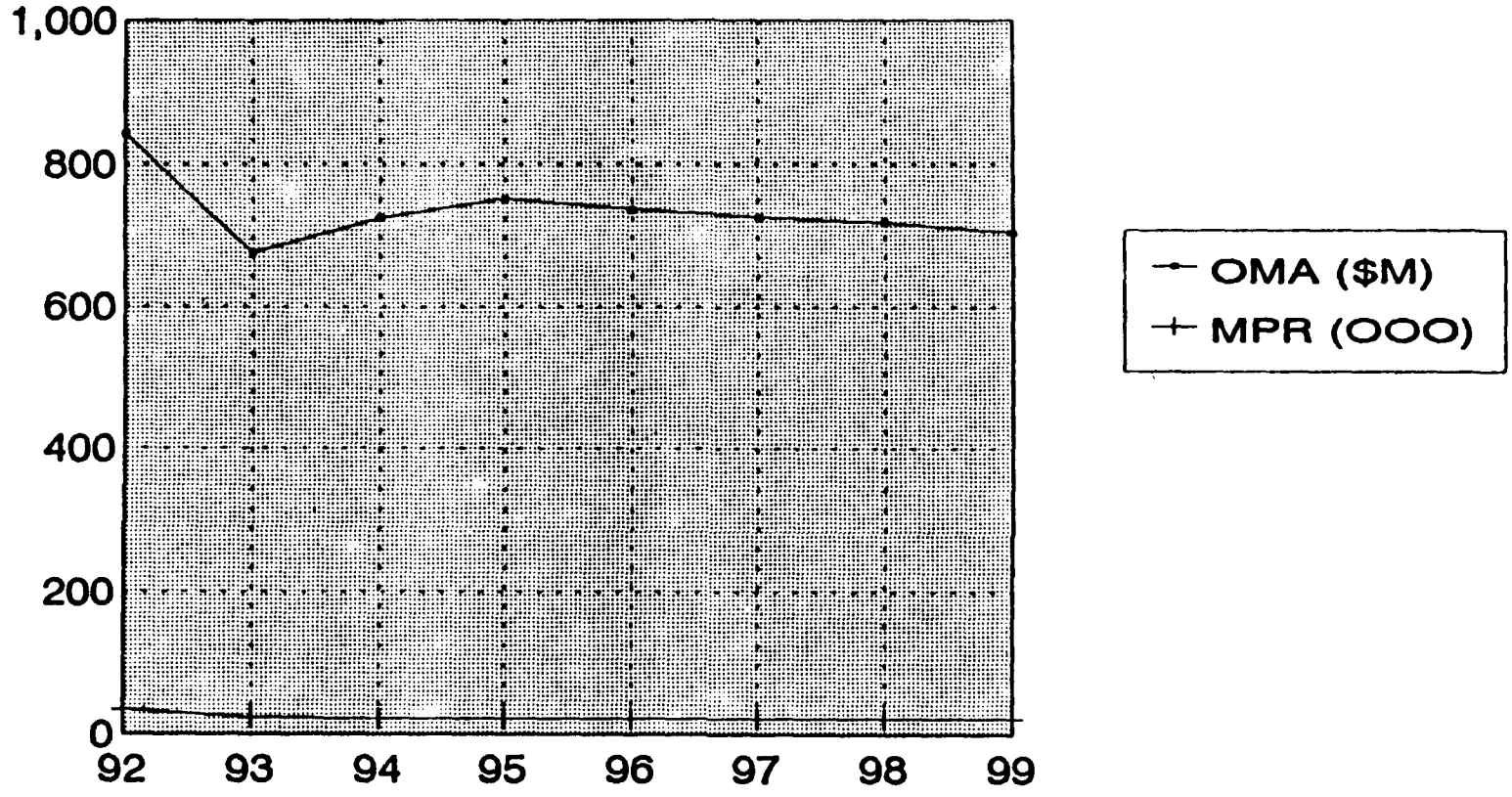
MILITARY	19,213	19,291	18,592	18,027	12,663
CIVILIANS (D)	12,236	11,809	9,027	7,932	6,730
CIVILIANS (R)	10,771	9,372	9,685	8,982	3,375

Source: $-Direct & reimbursable 218 Actuals FY89-FY92. FY93 HQDA Funding Letter & FY94/95 CBE.
Decrease between FY92 & FY93 due to transfer to support MACOM IAW IMA-Future Concept.

*Prior to DMRD 918 Stage One Transfer

Military Authorized End Strength/Civilian Actual End Strength FY89-92. FY93 Projected.

USAISC
PROJECTED OMA RESOURCE STREAM



$'s	843,108	676,146	725,555	751,710	737,240	726,167	719,276	704,246
MIL	18,027	12,663	12,127	11,612	11,535	11,507	11,474	11,474
CIV (D)	7,932	6,730	6,487	6,541	6,539	6,539	6,533	6,533
CIV (R)	8,982	3,375	3,385	3,218	3,249	3,249	3,250	3,250

SOURCE: $'s - Jul 92 Program Budget Guidance (PBG)

INDEFINITE DELIVERY - INDEFINITE QUANTITY
ACQUISITIONS UNDER CONSIDERATION

- Small Telephone Switches - Key Systems
- Outside Cable Requirements
- Wireless Local Area Networks
- Software Packages
- Gateways

PEO STANDARD ARMY MANAGEMENT INFORMATION SYSTEMS COMPUTER CONTRACT (SCC)

COL DENNIS M. MOEN
PROJECT MANAGER
DEFENSE COMMUNICATIONS
AND
ARMY SWITCHED SYSTEMS

UNCLASSIFIED

ASQM-SWM 19 March 93

POINT PAPER

SUBJECT: PEO STAMIS Computer Contract (SCC)

OBJECTIVE: To Provide an Advance Planning Briefing to Industry (APBI) on the SCC Procurement.

FACTS:

* This workstation contract will provide a single source of Commercial-Off-The-Shelf (COTS) computer systems, software, and peripherals, as well as engineering services, training and maintenance to support the battlefield and garrison requirements of various tactical programs under the purview of PEO STAMIS.

* Identified requirements call for a Network Server configuration, a Personal Computer configuration and a Notebook system. All configurations are to be compliant with the Open Systems architectures required by the DoD. A significant range of peripherals, Network and Communications products, software, services and training are also required.

* An objective of SCC is to offer PEO STAMIS users a "one-stop" source for all their development and fielding needs. The contract will not be open to other Army users, or other services and agencies. The scope of the contract will require the winning vendor to support fielded equipment in-theater during contingency or national emergency.

* This procurement will be a Firm-Fixed-Price, Best Value, Indefinite Delivery/Indefinite Quantity (IDIQ) contract over 6 years. The first 3 years will allow for product ordering and maintenance, with the final 3 years to provide maintenance support only. Product warranty will be for one year. Initial award will be for one year, renewable yearly.

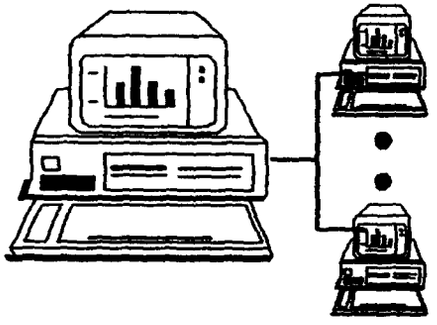
* An important requirement of this effort is to have the SCC provide PEO STAMIS with the best technologies currently available in the commercial marketplace at contract award. SCC will also allow continuing technology refreshment over the balance of the contract life. RFP release is scheduled for 3rd Qtr FY 93. Contract Award is scheduled for 1st Qtr FY 94. Anticipated contract value is - $50M to $100M.

BRIEFER: COL Dennis M. Moen, Project Manager, Defense Communications and Army Switched Systems, ASQM-SW

SCC

ACQUISITION OF COMMERCIAL OFF-THE-SHELF (COTS) COMPUTER EQUIPMENT AND SOFTWARE, ENGINEERING SERVICES, TRAINING, AND MAINTENANCE TO SUPPORT PEO STAMIS' FIELDING REQUIREMENTS IN BOTH GARRISON AND BATTLEFIELD ENVIRONMENTS.

SCC

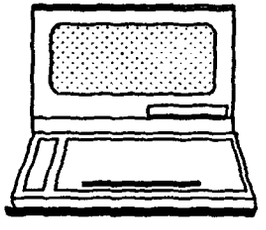


NETWORK SERVER



PC

SCOPE



NOTEBOOK



UPGRADES, LANS, MAINTENANCE

SCC
OBJECTIVES

- SUPPORT PEO STAMIS/PM TACMIS - GARRISON TO BATTLEFIELD SMALL COMPUTER RQMTS
- ALL COTS FFP IDIQ-TYPE CONTRACT
- 3 YR-HW/SW ORDERING/6 YR-WARRANTY/MAINTENANCE SUPPORT

SCC
OBJECTIVES

- COMPLETE SOLUTION-SINGLE SOURCE
- LIMITED TO PEO STAMIS/PM TACMIS USE
- CONTINGENCY/NATIONAL EMERGENCY IN-THEATER SUPPORT REQUIRED

SCC
REQUIREMENTS

- STATE-OF-THE-ART - COTS
  - HARDWARE
  - SOFTWARE

- OPEN SYSTEMS STANDARDS COMPLIANCE
  - GOVERNMENT OPEN SYSTEMS INTERCONNECTION PROFILE (GOSIP)
  - PORTABLE OPERATING SYSTEM INTERFACE FOR COMPUTER ENVIRONMENT (POSIX)

SCC
REQUIREMENTS

- SYSTEMS CONFIGURATIONS:
  - NETWORK SERVER
  - PC
  - NOTEBOOK
- PERIPHERALS - FULL RANGE
- NETWORK COMMUNICATIONS
- TRANSIT CASES

SCC
SHORT TERM MILESTONES

- RFP RELEASE - 3RD QTR - FY93
- CONTRACT AWARD - 1ST QTR - FY94

CONTRACT OPPORTUNITY

TITLE:	PEO STAMIS COMPUTER CONTRACT (SCC)
OBJECTIVE:	PEO STAMIS/PM TACMIS - GARRISON TO BATTLEFIELD SMALL COMPUTER RQMTS
PROPOSED CONTRACT TYPE:	FFP IDIQ - COTS, COMPUTER HW/SW, ENGINEERING SERVICES, TRAINING, MAINTENANCE
KEY MILESTONES:	RFP RELEASE - 3RD QTR FY93; AWARD - 1ST QTR FY94
ESTIMATED VALUE:	$50 - $100M
POC TELEPHONE:	MS. ANGELEEN HINES (703) 325-6067

OUTSIDE CABLE REHABILITATION II (OSCAR II)

COL DENNIS M. MOEN
PROJECT MANAGER

DEFENSE COMMUNICATIONS
AND
ARMY SWITCHED SYSTEMS

UNCLASSIFIED

ASQM-SWD 25 March 93

POINT PAPER

SUBJECT: Outside Cable Rehabilitation (OSCAR) II

OBJECTIVE: Provide the multi-service user with a flexible, easy to use contract vehicle to upgrade and rehabilitate the outside cable plant at sites in CONUS and OCONUS.

FACTS:

* The program will have a limited capability of initiating new work (ie: have OPA funding) in order to allow engineering, installation and testing of new equipment which will allow the cable system to tie into existing and proposed communications networks.

* The program will also have limited engineering to allow the resolution of unforseen problems which may arise during the installation of the equipment and be able to utilize products developed after the contract award.

* The program is envisioned to be supported on a multi-service basis.

* The estimated value is in excess of $ 150M.

* Actions to be taken in FY93 include:

  - Receiving tasking approval from DISA and ISC HQ

  - Determining and coordinating the acquisition strategy to be utilized with the local (ISMA) personnel, and subsequently, with the other services

  - Preparing and receiving approval of the Acquisition Requirements Package (ARP)

* Actions to be taken in FY94 include:

  - Issuance of the Request For Proposal (RFP)

  - Proposal Evaluation

* Actions to be taken in FY95 include:

  - Contract Award

BRIEFER: COL Dennis M. Moen, Project Manager, Defense Communications and Army Switched Systems, ASQM-SW

OSCAR II

PROVIDE AN FFP ID/IQ CONTRACT FOR THE REPAIR, REPLACEMENT AND REHABILITATION OF OUTSIDE CABLE PLANT IN CONUS.

OSCAR II
OBJECTIVES

- COMPREHENSIVE CABLE PACKAGE
- SINGLE VENDOR
- FIRM FIXED PRICED CLINS - INDEFINITE DELIVERY / INDEFINITE QUANTITY
- BASE YEAR / 4 OPTION YEARS
- CONUS BASED
- MULTI-SERVICE ACCESS

OSCAR II
REQUIREMENTS

- STATE-OF-THE-ART COMMERCIAL OFF THE SHELF TECHNOLOGY
- COPPER CABLE
- FIBER OPTIC CABLE (SINGLE MODE/ MULTI MODE)

OSCAR II
REQUIREMENTS

- ASSOCIATED END EQUIPMENT
  - MULTIPLEXERS
  - SUBSCRIBER CARRIER AND CHANNEL BANK SYSTEMS

- LIMITED ENGINEERING SUPPORT

OSCAR II
SHORT TERM MILESTONES

- REQUEST FOR PROPOSAL - 2ND QTR FY94

- CONTRACT AWARD - 2ND QTR FY95

CONTRACT OPPORTUNITY

TITLE: OUTSIDE CABLE REHABILITATION II (OSCAR II)

OBJECTIVE: PROVIDE A COMPREHENSIVE PACKAGE FOR THE REPLACEMENT & UPGRADE OF CONUS BASED CABLE PLANT

PROPOSED CONTRACT TYPE: FIRM FIXED PRICE - INDEFINITE DELIVERY / INDEFINITE QUANTITY

KEY MILESTONES: AWARD 2ND QUARTER FY95

ESTIMATED VALUE: EXCESS OF $ 150M

POC TELEPHONE: MR. DENNIS BRADLEY (908) 532-2362/63

Pentagon Renovation

Information Management and Telecommunications

COL John W. Barnes, Jr.

Project Manager

ASQM-PO 5 April 1993

POINT PAPER

SUBJECT: Pentagon Renovation Information Management and Telecommunications

OBJECTIVE: To replace/upgrade all information and telecommunication systems while assuring continuity of operation for critical command and control facilities; maintaining a high caliber of services; and preventing information systems costs from escalating.

FACTS: This will be a 10 year effort. Executed by the Washington Headquarter Services, assisted by the U.S. Army Corps of Engineers and the U.S. Army Information Systems Command (U.S. Army Information Systems Management Activity).

BRIEFER: COL John W. Barnes, Jr.; Project Manager, Pentagon Renovation IM&T Program

The Pentagon - Construction

• Original cost	$62 Million
• Construction authorized	Aug 25, 1941
• Working drawings and specifications started	Sep 1, 1941
• Construction contract awarded	Sep 11, 1941
• First 500,000 sq ft occupied	Apr 30, 1942
• Building completed	Nov 15, 1942
• Fifth floor completer	Jan 15, 1943
• Duration	Sixteen months

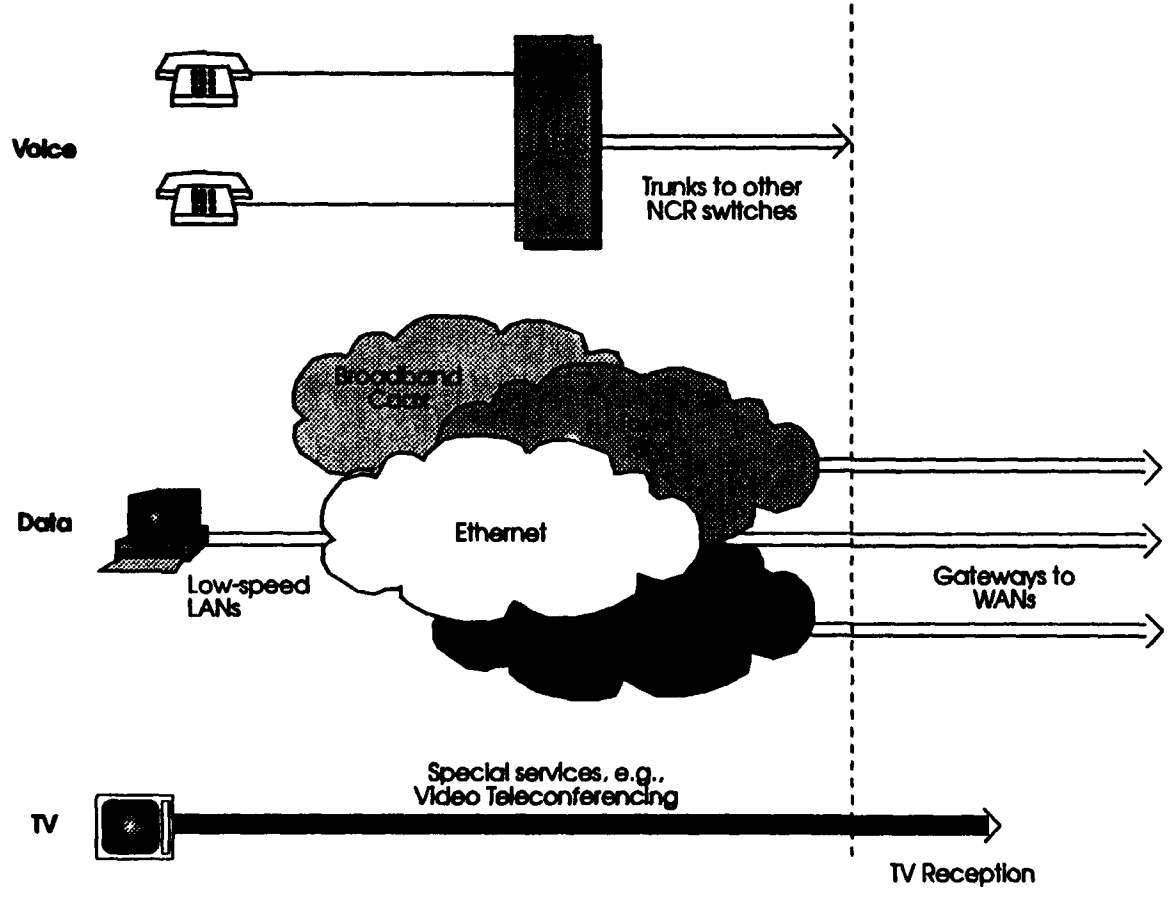
Pentagon - Background

- **Factors precipitating Pentagon renovation**
  - Building neglected over fifty-year life and needs comprehensive renovation
  - Building deficiencies
    - » Experiences 20-40 localized power outages daily
    - » Heat/Refrigeration/Power plant has failed
    - » Utility systems inefficient
    - » Inefficient use of existing space
    - » Serious deterioration of asbestos in plaster/insulation

Pentagon - Background Cont'd

- **IM&T deficiencies**
  - Some communications systems outdated and overworked
  - Wiring system inadequate
  - Data systems user oriented and independent of building wiring system
  - Wire closets, ceiling access, riser shafts inadequate
  - Communications pathways extremely congested
  - Cable records almost non-existent
  - Cable plant access limited due to asbestos problems
  - Riser system is obsolete and over utilized
  - Protected wire distribution systems congested
  - Grounding systems of poor quality

Current Pentagon IM&T



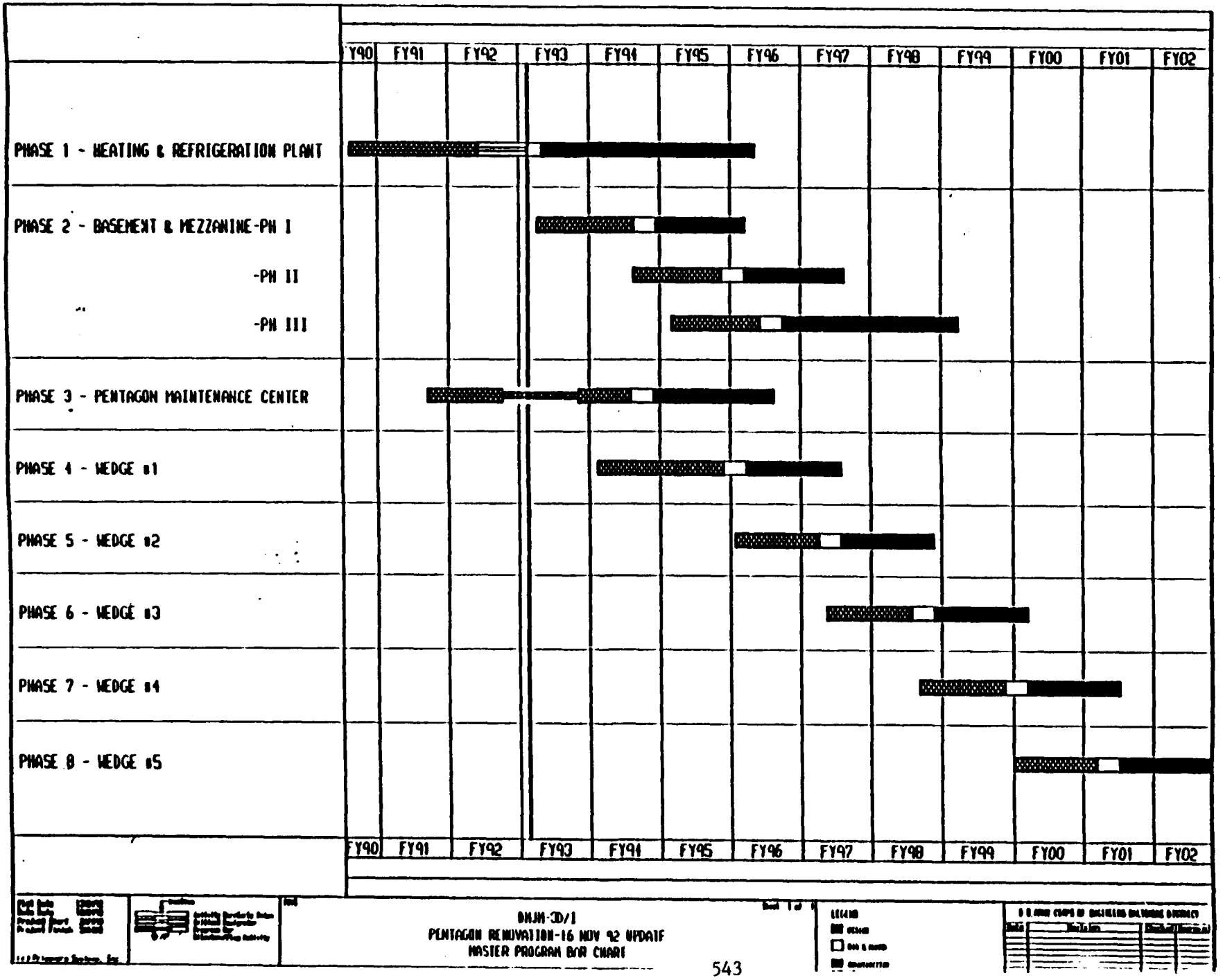
- **Separate Multiple Systems:**
  - **1AESS for analog voice telephony**
  - **Multiple types of different low speed LANs for data communications**
  - **RF broadband TV distribution**
  - **Special access arrangements for outside data services**

Mission

The Washington Headquarter Services, assisted by the U.S. Army Corps of Engineers and the U.S. Army Information Systems Command will execute a comprehensive renovation of the Pentagon to transform the facility, including all Information Management and Telecommunications services, into a modern office environment.

Renovation Concept

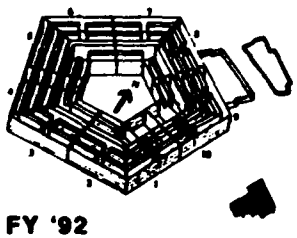
- **Eight Phase Program**
  - Heating and Refrigeration Plant
  - Basement/Mezzanine
  - Pentagon Maintenance Center
  - Building (Phase 4 - 8)
    - » Five Wedge Approach



DNJM-3D/1
PENTAGON RENOVATION-16 NOV 92 UPDATE
MASTER PROGRAM BAR CHART

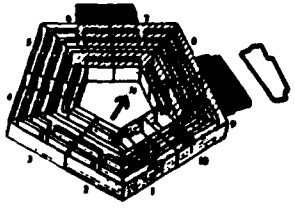
Program Concept - Construction Sequencing

1



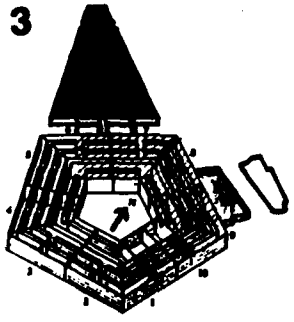
FY '92
Heating and
Refrigeration Plant

2



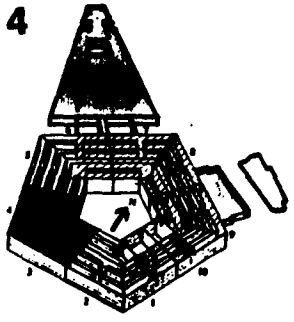
FY '94
Basement

3



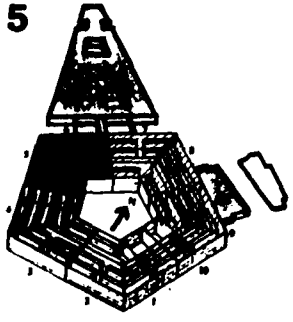
FY '94-'95
Pentagon Maintenance Facility

4



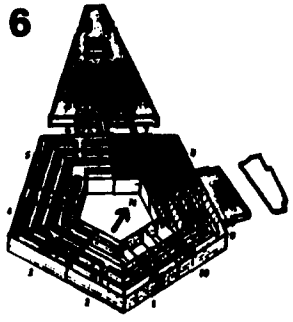
FY '96

5



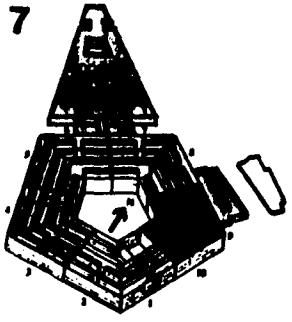
FY '97

6



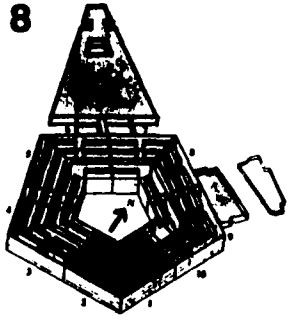
FY '98

7



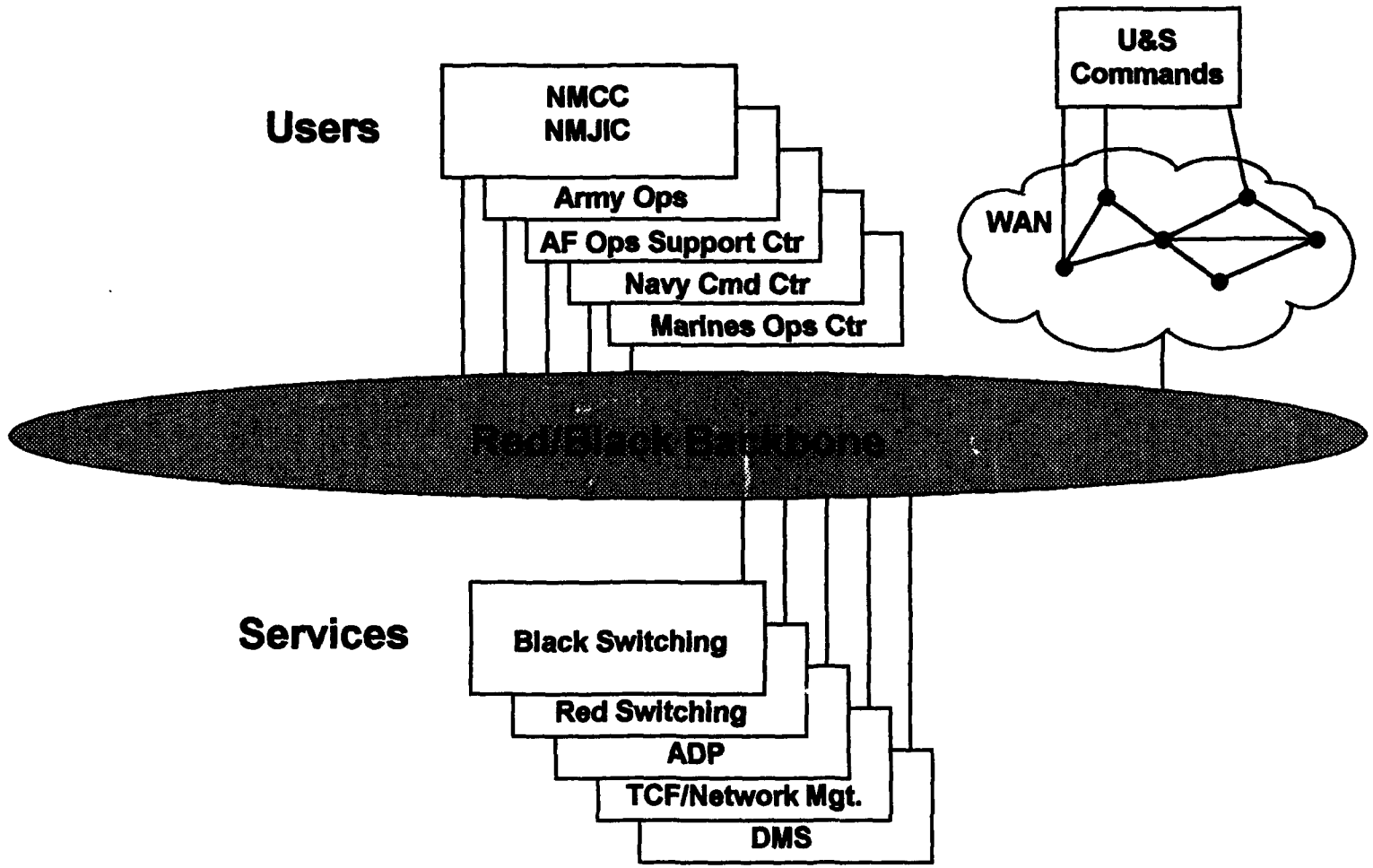
FY '99

8



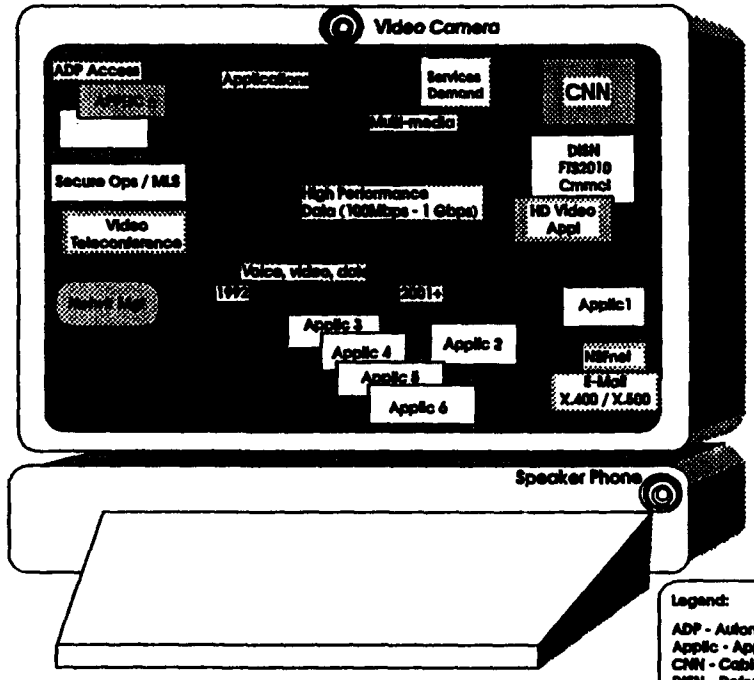
FY 2000

IM&T Notional Architecture



- Single agency network management control
- Reconfigurable
- Scalable
- Fault tolerant
- Cost effective
- Standard compliant

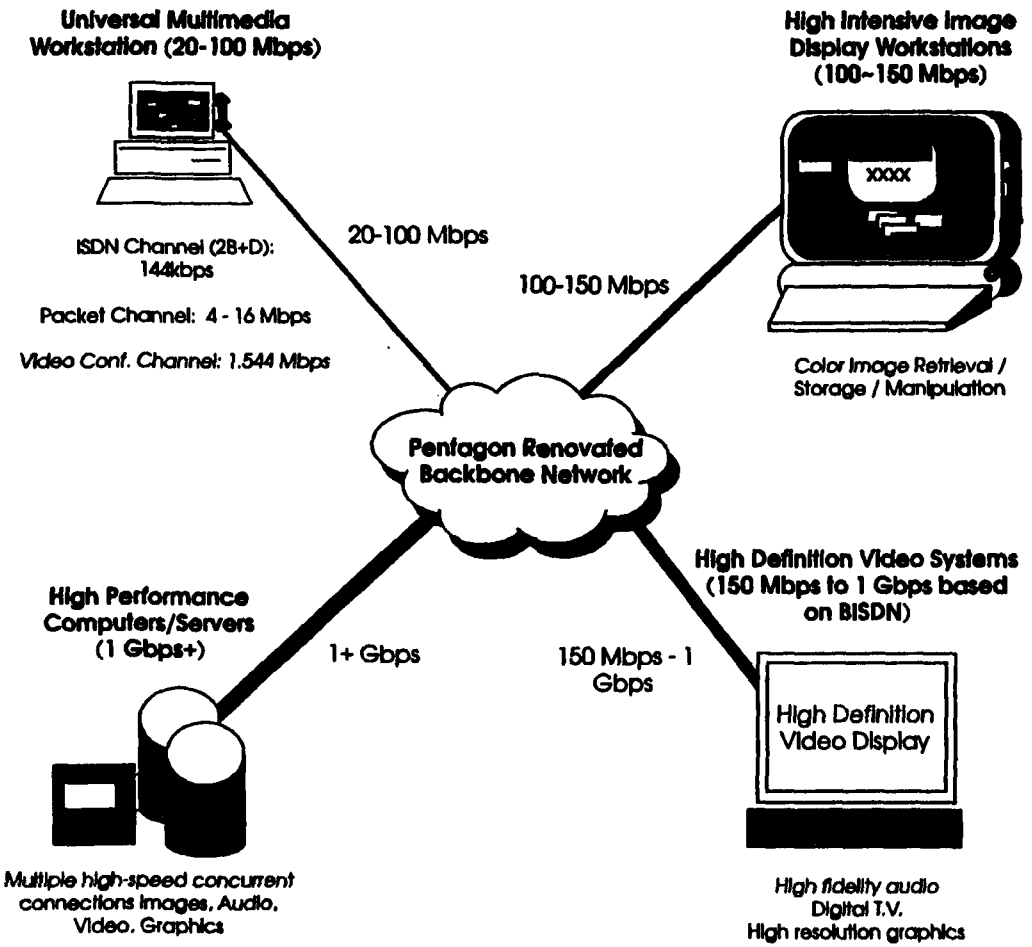
- Easy to use
- Single integrated service workstations
- Multimedia access



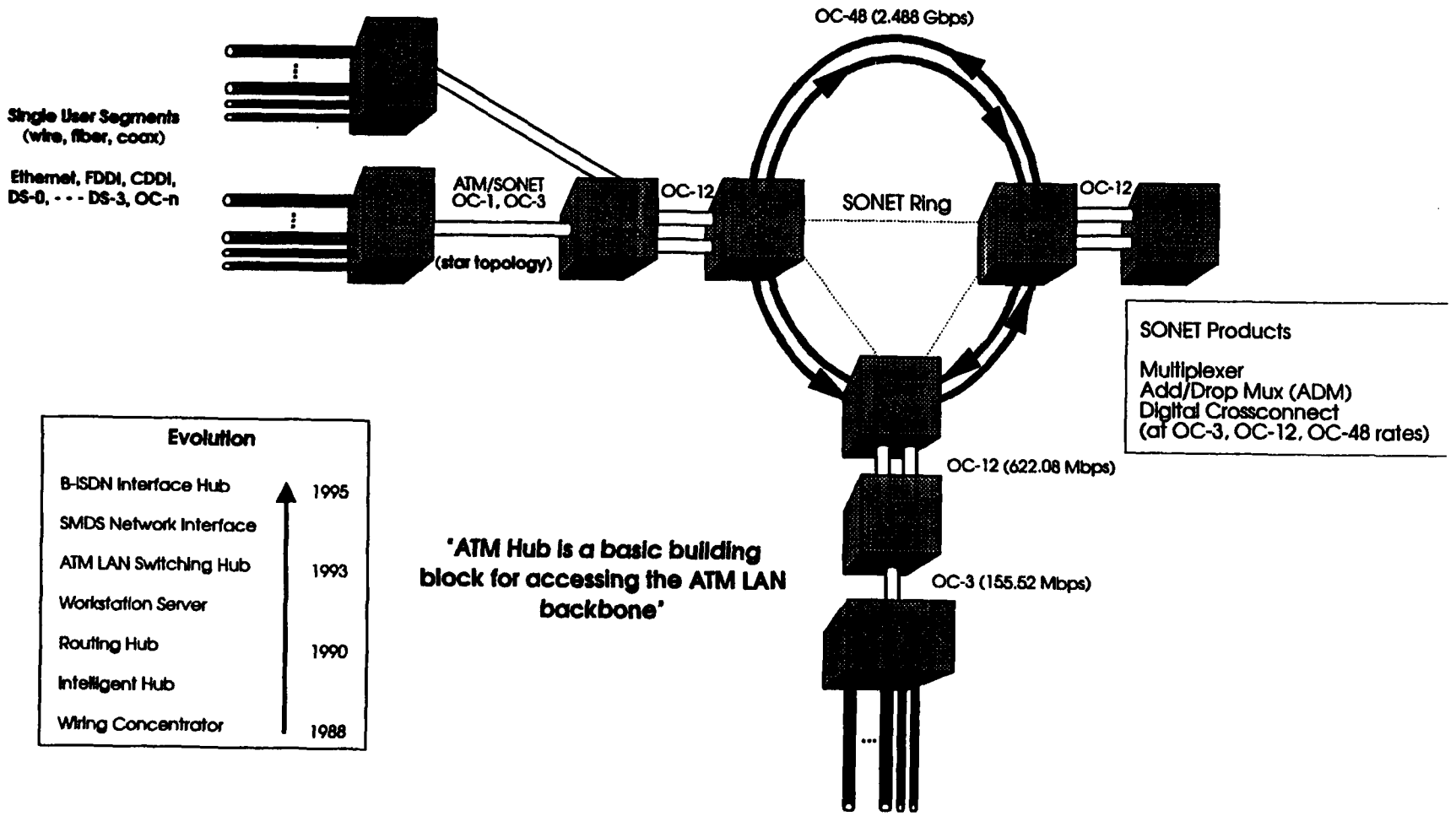
Legend:

ADP - Automated Data Processing
Applic - Applications
CNN - Cable News Network
DSN - Defense Information System Network
E- MAIL - Electronic Mail Services (international standard X.400, Directory Service Standard X.500
HD - High Definition
MLS - Multilevel Security
Netwk Mgt - Network Management
NSFnet - National Science Foundation Network

Projected User Bandwidth Requirements



ATM/SONET: Core Technologies for Renovated Pentagon



Potential Contract Opportunities

- **Existing Contracts**
  - TEMPO
  - SMC
  - Navy Super-Mini Contract
  - Others
- **Combined Construction and Information Management Contracts**
  - Design/Buildout of Information Management Centers
  - Cable Path and Media Installation
- **Separate Information Management Contracts**
  - Command Center Relocation
  - ADP Center Relocation
  - Tenant LAN Relocation
  - Command and Control Switch Relocation
  - Network Management

Potential RFP Dates (calender year)

• AF Combat Ops Support Ctr Relocation	1Q 94
• Army Ops Center Relocation	2Q 97
• Command and Control ADP Relocation	1Q 94
• Command and Control Switch Relocation	4Q 94
• Marine Corp Ops Center Relocation	1Q 96
• DMS Implementation (PTC Relocation)	4Q 96
• Navy Command Center Relocation	1Q 96
• Nat'l Military Command Center Relocation	4Q 95
• Network Management Center (TCF)	2Q 94

CONTRACT OPPORTUNITY

TITLE:	PENTAGON RENOVATION IM&T
OBJECTIVE:	NETWORK MANAGEMENT CENTER
PROPOSED CONTRACT TYPE:	ID/IQ
KEY MILESTONES:	RFP RELEASE - 2Q 94
ESTIMATED VALUE:	$60M - $150M
POC TELEPHONE:	GLEN PORTER (703)693-8947

CONTRACT OPPORTUNITY

TITLE:	PENTAGON RENOVATION IM&T
OBJECTIVE:	COMMAND CENTER RELOCATION
PROPOSED CONTRACT TYPE:	ID/IQ
KEY MILESTONES:	RFP RELEASE - 1Q 94
ESTIMATED VALUE:	$20M - $70M
POC TELEPHONE:	GLEN PORTER (703)693-8947

SESSION VI

ADDITIONAL C3I BUSINESS OPPORTUNITIES

MODERATOR

MR. MARTIN J. BURGER
DEPUTY DIRECTOR
C3I LOGISTICS AND READINESS CENTER, CECOM

SESSION VI

ADDITIONAL C3I BUSINESS OPPORTUNITIES

SESSION OVERVIEW AND INTRODUCTION

MODERATOR
MR.MARTIN J. BURGER
DEPUTY DIRECTOR

C3I LOGISTICS AND READINESS CENTER
CECOM

SESSION VI: ADDITIONAL C3I BUSINESS OPPORTUNITIES

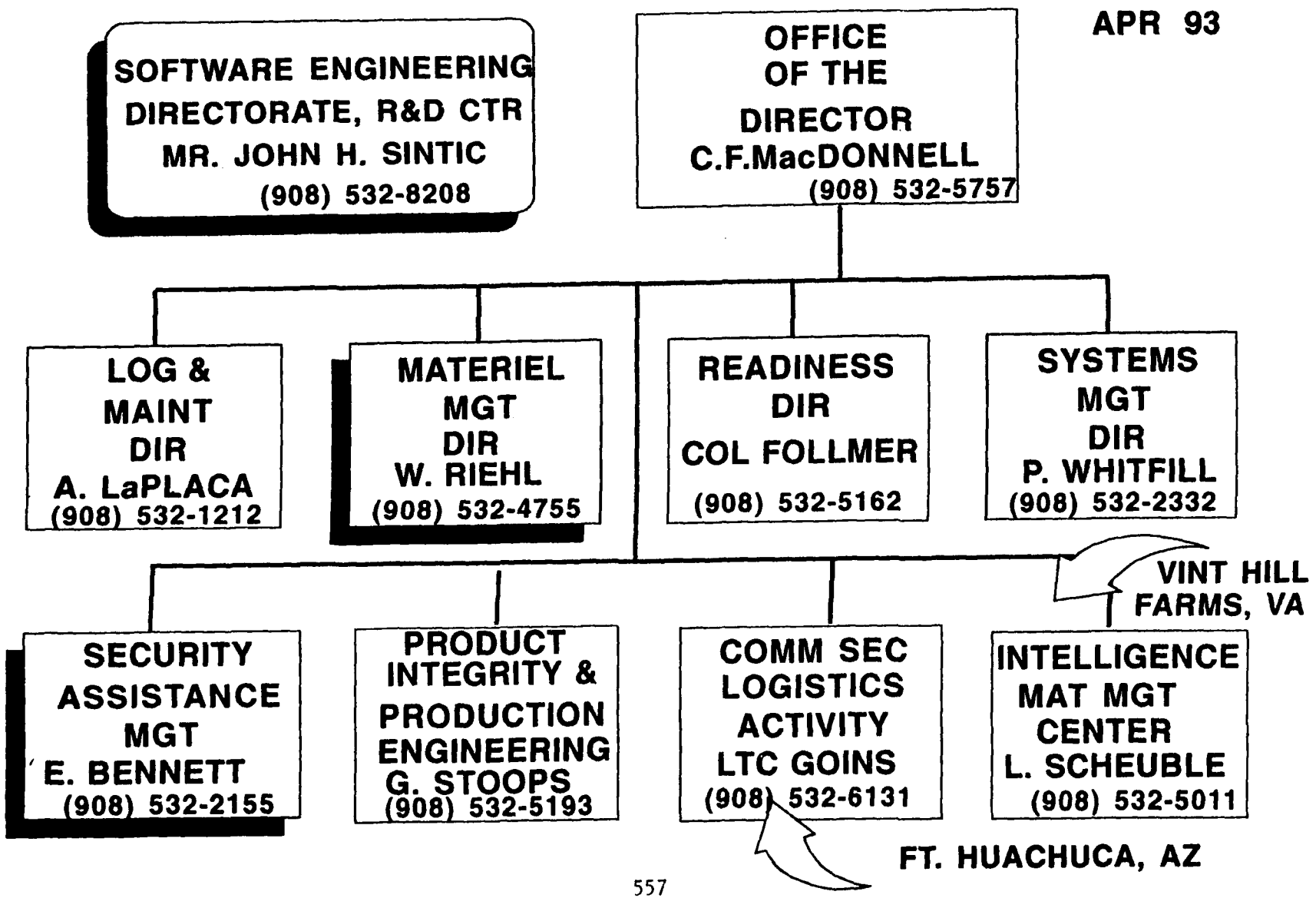
MARTIN BURGER, DEPUTY DIRECTOR C3I, LRC

- **LIFE CYCLE SOFTWARE ENGINEERING FOR MISSION CRITICAL DEFENSE SYSTEMS**
  Mr. John H. Sintic
  Director, Software Engineering, CECOM, R&D Ctr

- **FUTURE FMS OPPORTUNITIES**
  Mr. Eugene P. Bennett
  Director, Security Assistance Management, CECOM,
  Log Readiness Ctr

- **FUTURE OF THE SPARE REPAIR PARTS**
  Mr. William C. Riehl
  Deputy Director, Resources, Materiel Management, CECOM,
  Log Readiness Ctr

C3I LOGISTICS AND READINESS CENTER



MAJOR FUNCTIONS

- LOGISTICS & MAINTENANCE DIRECTORATE (LMD)
  - •• ILS MANAGEMENT
  - •• MAINTENANCE ENGINEERING
  - •• TECHNICAL PUBLICATIONS
  - •• PROVISIONING/CATALOGING

- DIRECTORATE OF MATERIEL MANAGEMENT (DMM)
  - •• NATIONAL INVENTORY CONTROL POINT (NICP)
  - •• ITEM MANAGEMENT
  - •• DEPOT PROGRAMS
  - •• DISTRIBUTION & TRANSPORTATION

- DIRECTORATE OF READINESS
  - •• NEW EQUIPMENT TRAINING (NET)
  - •• FIELDING
  - •• LOGISTICS ASSISTANCE

MAJOR FUNCTIONS
(CONT)

- SYSTEMS MANAGEMENT DIRECTORATE (SMD)
  - LEVEL II MANAGERS
  - EXTERNAL MANAGERS
- SECURITY ASSISTANCE MGMT DIRECTORATE (SAMD)
  - FOREIGN MILITARY SALES
- COMMUNICATIONS SECURITY LOGISTICS ACTIVITY (CSLA)
  - COMSEC HARDWARE
  - KEYS AND CODES
- INTELLIGENCE MATERIAL MGMT CENTER (IMMC)
  - SIGINT
  - IEW

MAJOR FUNCTIONS
(CONT)

- PRODUCT INTEGRITY & PRODUCTION ENGINEERING DIRECTORATE (PIPE)
  - PRODUCTION PLANNING AND PRODUCIBILITY ENGINEERING
  - DEVELOPMENTAL ITEM SUPPORT
  - PRODUCTION AND SUSTAINMENT SUPPORT
  - PRODUCT QUALITY MANAGEMENT PRODUCT ACCEPTANCE
  - COMMAND LEVEL PROGRAM MANAGEMENT

LIFE CYCLE SOFTWARE ENGINEERING FOR MISSION CRITICAL DEFENSE SYSTEMS

JOHN H. SINTIC

DIRECTOR
CECOM RDEC SOFTWARE ENGINEERING DIRECTORATE (SED)

UNCLASSIFIED

AMSEL-RD-SE-D 26 March 1993

POINT PAPER

SUBJECT: Software Engineering Directorate (SED)

OBJECTIVE: The SED, through its three areas of activity (Life Cycle Software Engineering (LCSE), Software Process Technology, and Army Interoperability Network forms the Army center of excellence for software engineering. This mission provides various opportunities for contractor participation in projects assigned to the SED.

FACTS:

o Life Cycle Software Engineering is committed to worldwide Army readiness, providing weapon system software engineering and support, from the initial system concept through development and production to deployment and support of fielded systems.

o Software Process Technology utilizes state-of-the-art software engineering techniques to improve the productivity of the Software Life Cycle Process.

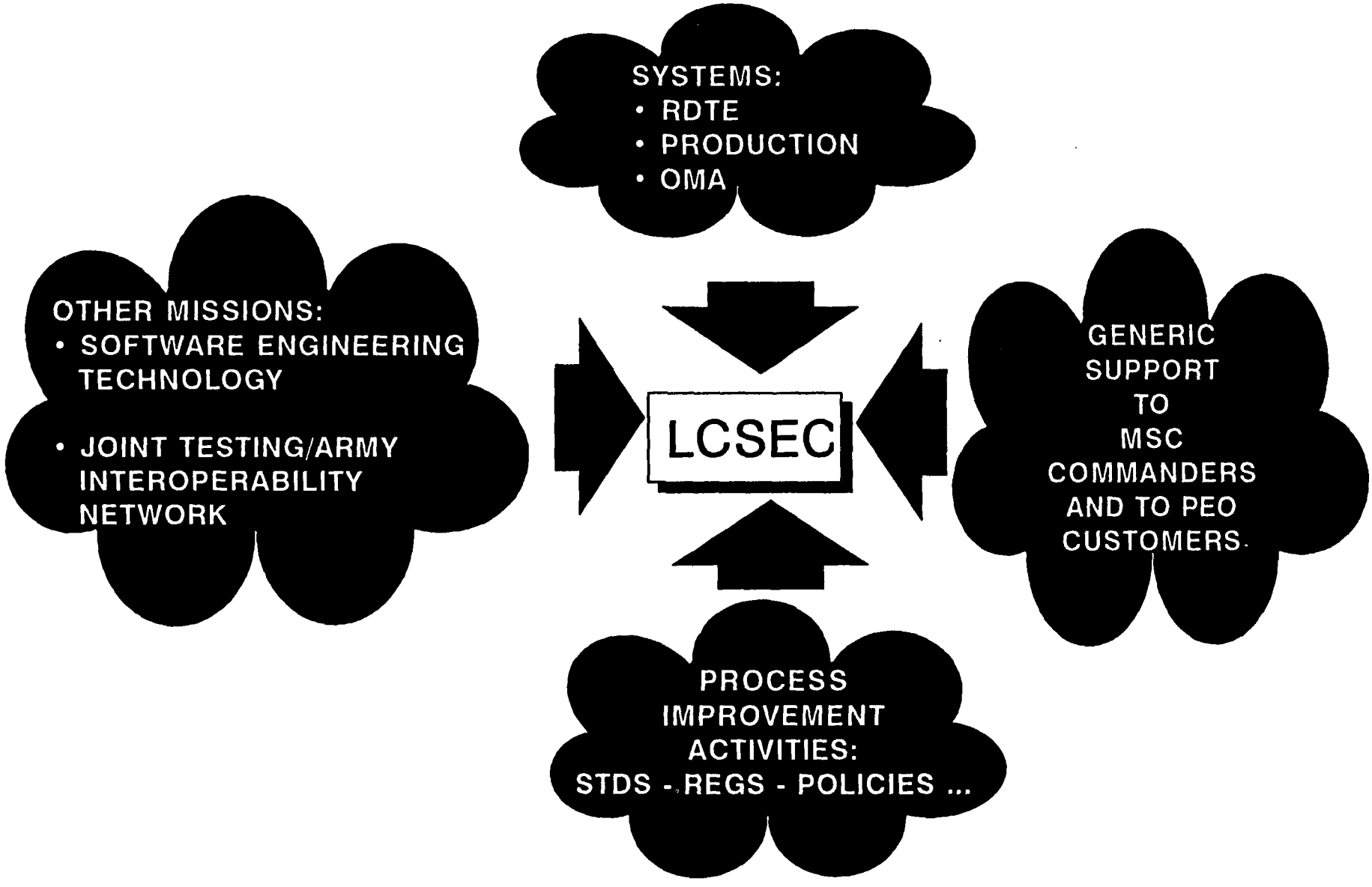
o Army Interoperability Network involves development of systems and processes to enable testing of Mission Critical Defense Systems in all phases of the life cycle.

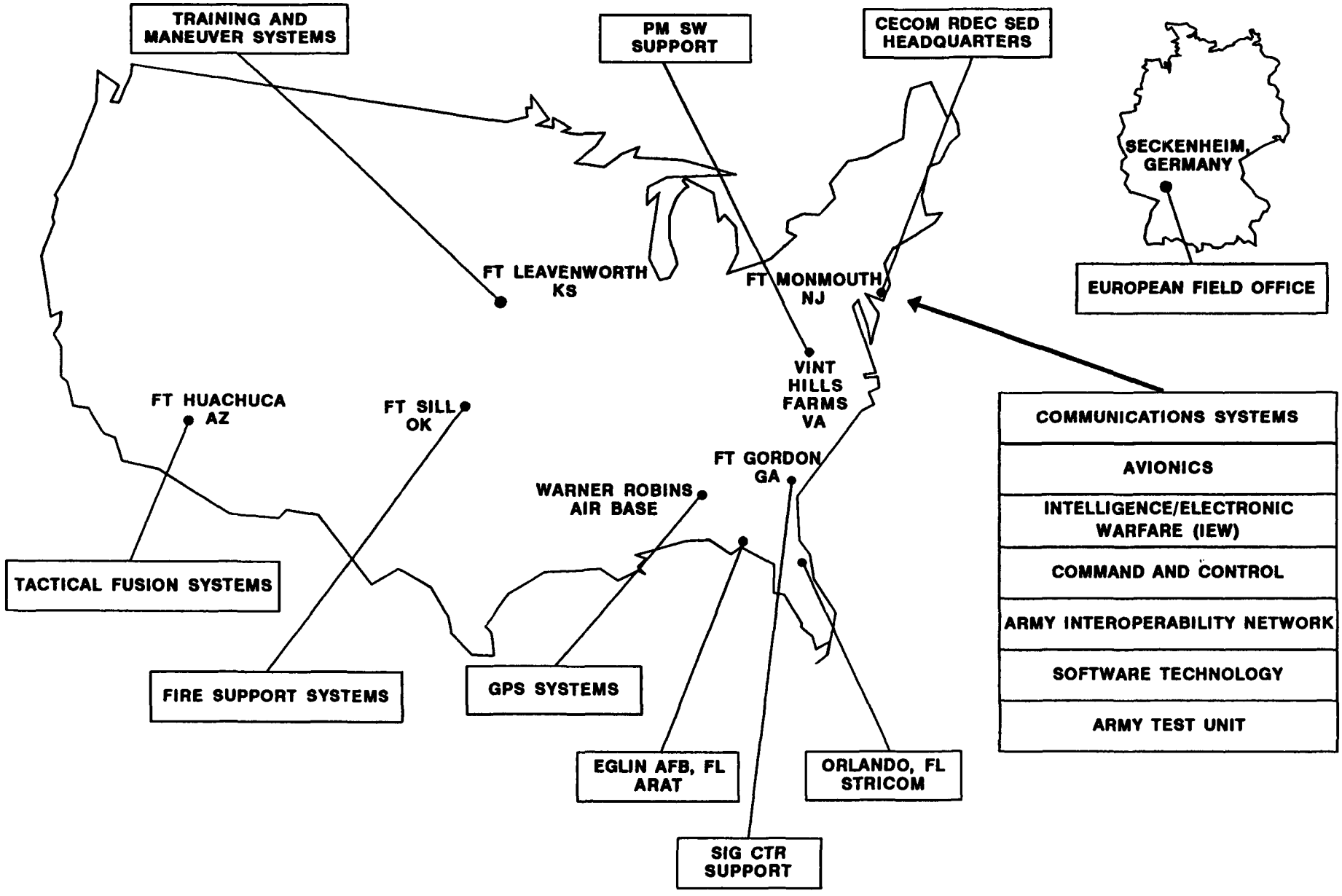
o The SED contractual program represents approximately 1250 man-years of support disbursed throughout the various CONUS and OCONUS locations maintained by SED, and over 227 MCDSs in various stages of development/deployment. The value of the program exceeds $120 million per year. The SED team comprised of military, civilian, and contractor personnel strives to provide quality support to the soldier in the field through application of state-of-the-art software engineering practices and constant improvement to the software development process.

BRIEFER: John H. Sintic, Director, SED, AMSEL-RD-SE-D, (908) 532-8208.

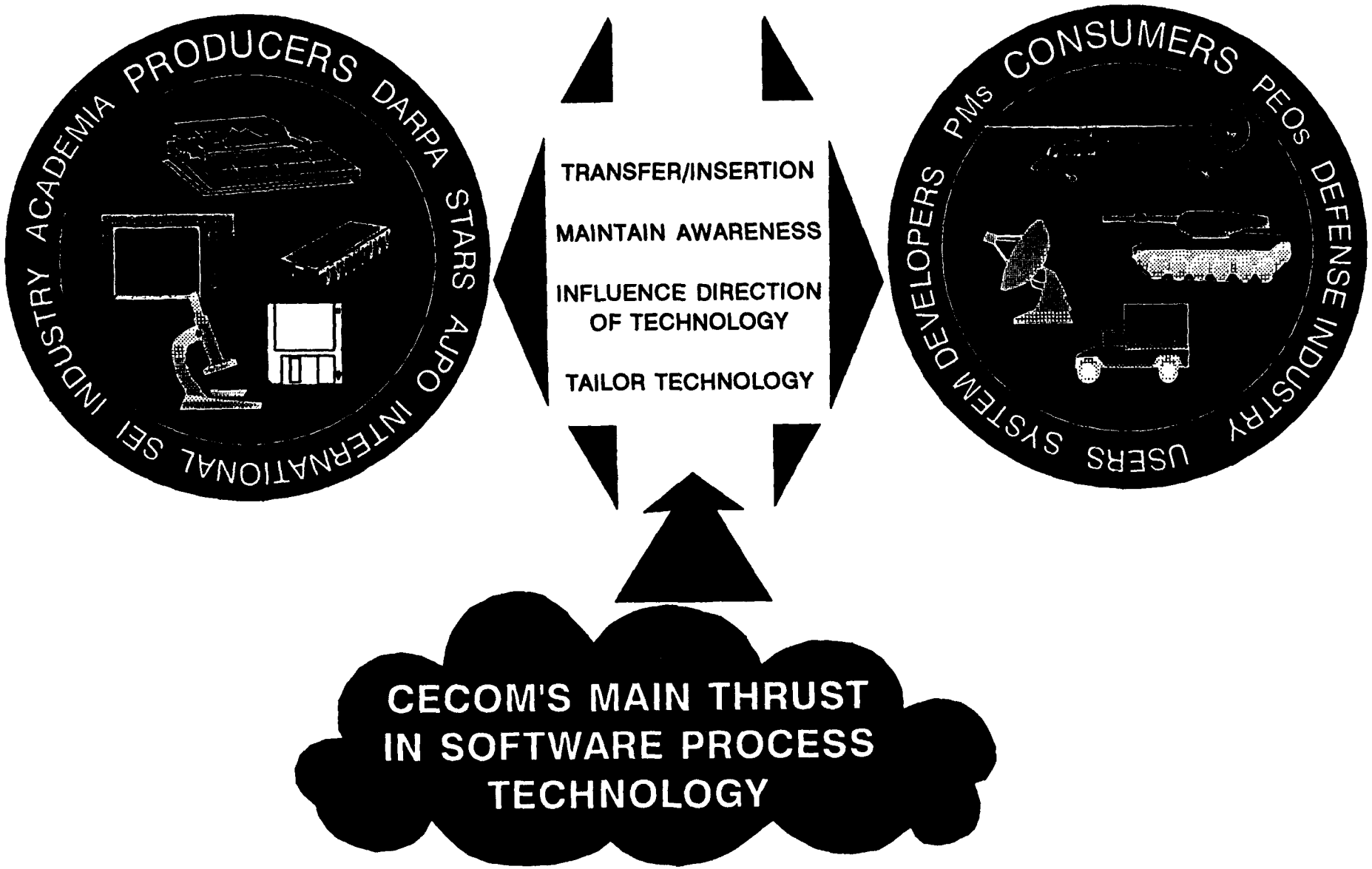
ACTION OFFICER:
Eugene J. Boyle
Chief
SED Contract Branch
(908) 532-8220

SED WORKLOAD DRIVERS

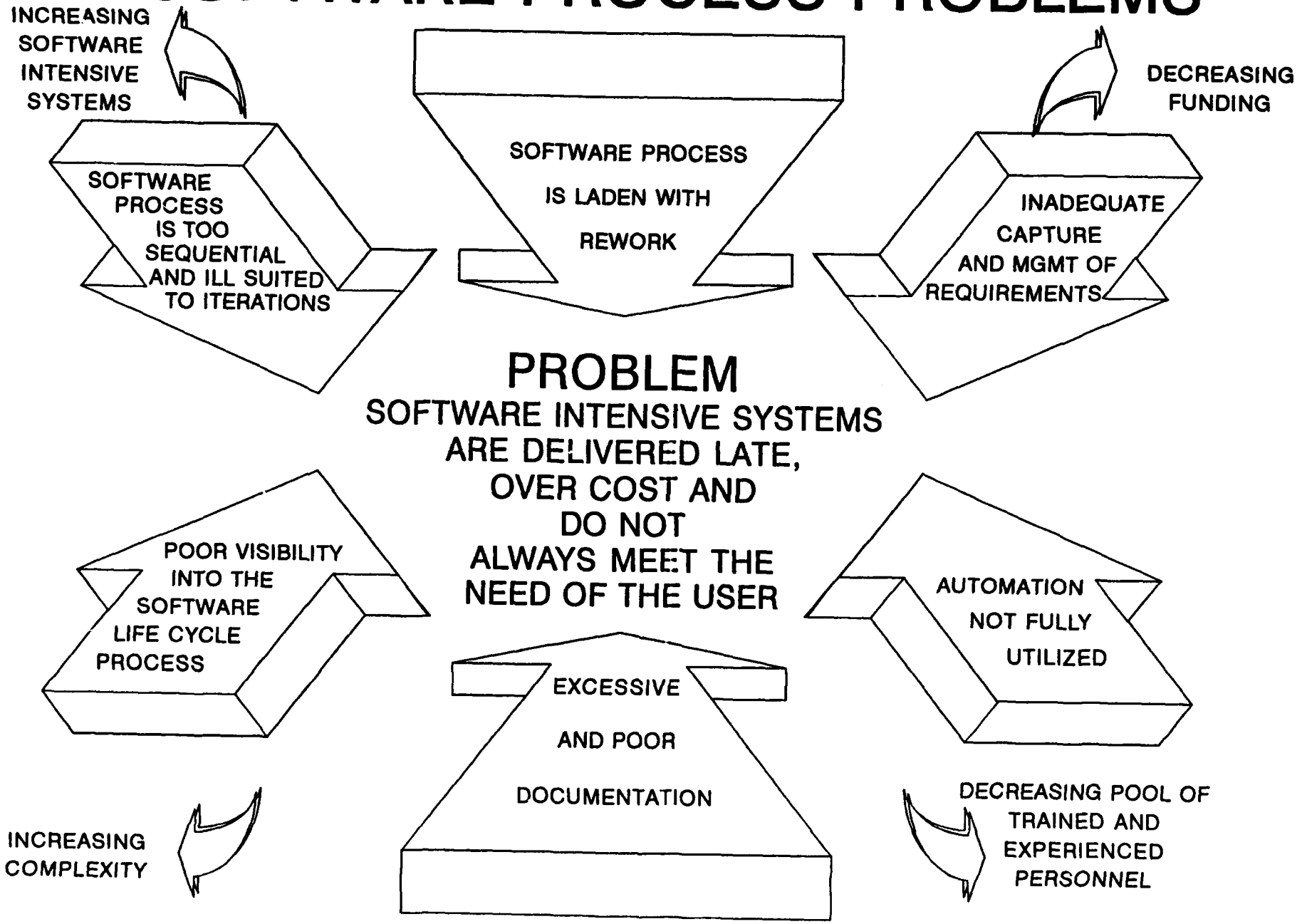



TRAINING AND MANEUVER SYSTEMS
PM SW SUPPORT
CECOM RDEC SED HEADQUARTERS
SECKENHEIM, GERMANY
EUROPEAN FIELD OFFICE
FT LEAVENWORTH KS
FT MONMOUTH NJ
VINT HILLS FARMS VA
FT HUACHUCA AZ
FT SILL OK
FT GORDON GA
WARNER ROBINS AIR BASE
TACTICAL FUSION SYSTEMS
FIRE SUPPORT SYSTEMS
GPS SYSTEMS
EGLIN AFB, FL ARAT
ORLANDO, FL STRICOM
SIG CTR SUPPORT
COMMUNICATIONS SYSTEMS
AVIONICS
INTELLIGENCE/ELECTRONIC WARFARE (IEW)
COMMAND AND CONTROL
ARMY INTEROPERABILITY NETWORK
SOFTWARE TECHNOLOGY
ARMY TEST UNIT

SOFTWARE PROCESS TECHNOLOGY GLOBAL PERSPECTIVE



SOFTWARE PROCESS PROBLEMS



SOFTWARE PROCESS TECHNOLOGY

- STREAMLINED ACQUISITION PRACTICES
  - REDUCED DOCUMENTATION
  - REDUCED DIDs
  - IMPROVED REVIEWS
- DOMAIN-SPECIFIC SOFTWARE REUSE
- Ada 9X
- SOFTWARE MANAGEMENT METRICS
- RISK ABATEMENT
- ARMY STARS DEMONSTRATION PROJECT

SOFTWARE PROCESS IMPROVEMENTS PAYOFFS

SOFTWARE PROCESS TECHNOLOGY

AVOID REWORK

- Reuse
- Requirements Engineering
- Documentation Engineering

WORK SMARTER

- Metrics
- Process Assessment
- Risk Management

WORK FASTER

- CASE Tools
- Environments Frameworks

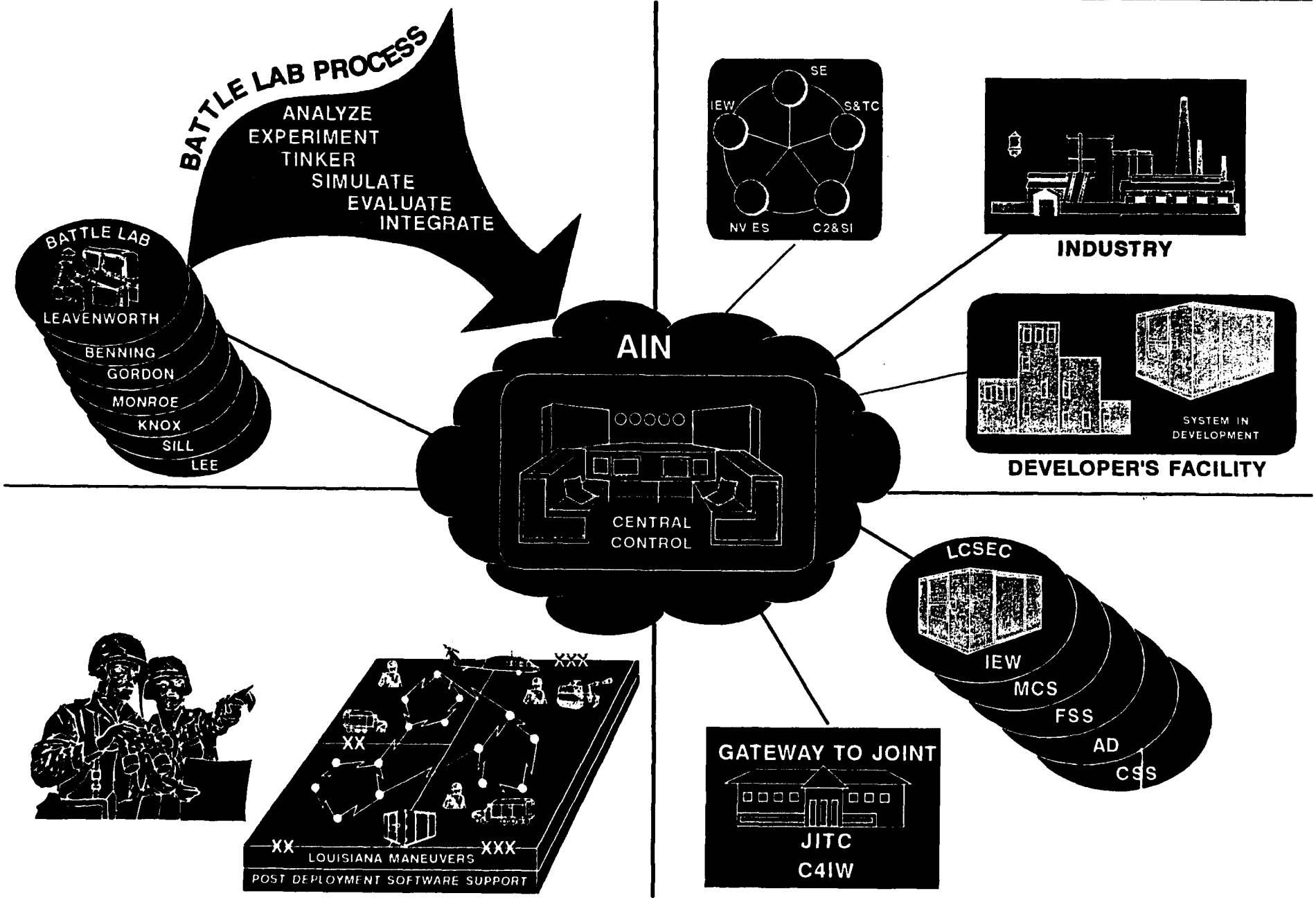
IMPROVE PRODUCTIVITY OF SW LIFE CYCLE PROCESS



ARMY INTEROPERABILITY NETWORK (AIN)

THE ARMY INTEROPERABILITY NETWORK (AIN) IS A NETWORK OF DISTRIBUTED COMMUNICATIONS, CAPABILITIES, SERVICES, AND CENTRAL AND REMOTE FACILITIES SUPPORTING INTEROPERABILITY AND SOFTWARE DEVELOPMENT FOR ARMY SYSTEMS THROUGHOUT THEIR LIFE CYCLE

SYNERGIZING LIFE-CYCLE ACTIVITIES



USES OF AIN THROUGHOUT THE LIFE-CYCLE

- **RESEARCH & EXPERIMENTATION:**
  - CONCEPT EXPLORATION
  - FEASIBILITY
  - RAPID PROTOTYPING
  - REMOTE TRAINING
  - AFFORDABLE ATTD SUPPORT
  - DISTRIBUTED SIMULATION
  - SYNTHETIC ENVIRONMENTS
- **DEVELOPMENT:**
  - SOFTWARE INTEGRATION
  - EARLY DEVELOPMENT INTEGRATION
  - SOFTWARE/SYSTEM TESTING
  - SYSTEM INTEROPERABILITY
  - STRATEGIC-TACTICAL INTERFACES
  - PRELIMINARY SERVICE TESTING
  - ARMY'S JOINT INTERFACES
- **SUSTAINMENT/PDSS:**
  - SAME SUPPORT AS DEVELOPMENT
  - SOFTWARE VERSION RELEASE TESTING
  - QUICK RESPONSE TO FIELD PROBLEMS
  - SOFTWARE REPLICATION & DISTRIBUTION

USES OF AIN THROUGHOUT THE LIFE-CYCLE (Continued)

- **FIELD SUPPORT:**
  - REQUIREMENTS INVESTIGATION
  - REMOTE/DISTRIBUTED TRAINING
  - RAPID PROBLEM REPLICATION & FIX
  - PROBLEM INVESTIGATION FOR FIELD OPERATIONS

- **TEST SUPPORT:**
  - INSTRUMENTATION DEVELOPMENT & PROOF
  - EVOLUTIONARY TEST SUPPORT
  - COMMON TEST-SUPPORT SYSTEMS ACCESS
  - OT SUPPORT

AIN PAYOFFS

- THE AIN IS AN INVESTMENT MULTIPLIER THAT LEVERAGES LIMITED RESOURCES BY LINKING:

  LABS
  TEST BEDS
  FIELD TEST SITES
  INDUSTRY FACILITIES
  LIFE-CYCLE SOFTWARE ENGINEERING CENTERS

- AVOIDING COSTLY AND NEEDLESS DUPLICATION OF SUPPORTING RESOURCES

AIN PAYOFFS (Continued)

- PROVIDING SHARED ACCESS TO:

  EMERGING TECHNOLOGIES
  TEST/EVALUATION CAPABILITIES
  FIELDED EQUIPMENTS
  DEVELOPMENT SYSTEMS
  EVOLUTIONARY SOFTWARE SUPPORT

- FURNISHING THE EXPERTISE & TOOLS TO:

  IDENTIFY PROBLEMS
  DEVELOP SOLUTIONS

AIN PAYOFFS (Continued)

- RESPONDING RAPIDLY TO SOFTWARE INTEROPERABILITY ISSUES ARISING IN FIELDED SYSTEMS DURING TACTICAL OPERATIONS
- THEREBY REDUCING RISK, COST, AND TIME, AND INCREASING CONFIDENCE IN THE INTEGRATION AND TESTING OF SYSTEMS SOFTWARE AND INTEROPERABILITY

LIFE CYCLE SOFTWARE ENGINEERING

- SINGLE FOCAL POINT FOR DEVELOPMENT, PRODUCTION, AND MAINTENANCE OF SOFTWARE FOR MISSION CRITICAL DEFENSE SYSTEMS (MCDSs)
  - COMMUNICATIONS (ALL TACTICAL AND SATELLITE)
  - FIRE SUPPORT
  - AVIONICS-INTELLIGENCE/ ELECTRONIC WARFARE (I/EW)
  - TACTICAL FUSION
  - COMMAND AND CONTROL
  - TRAINING, SIMULATION, AND INSTRUMENTATION

LIFE CYCLE SOFTWARE ENGINEERING

OBJECTIVES

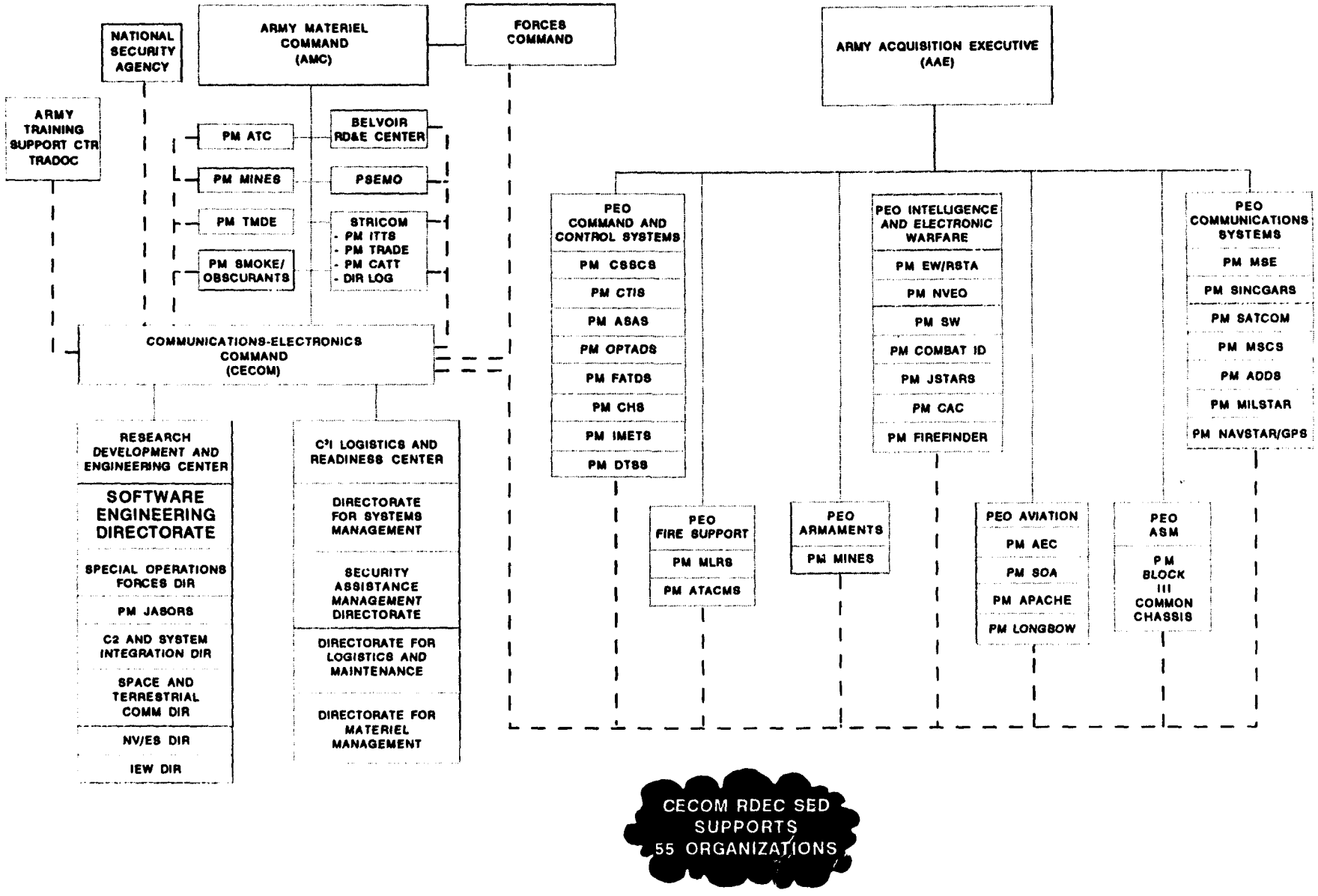
- DURING ACQUISITION PHASE (DEVELOPMENT AND PRODUCTION), ENSURE THAT MCDS SOFTWARE IS:
  - SUITABLE FOR MISSION REQUIREMENTS
  - SUPPORTABLE AFTER FIELDING

LIFE CYCLE SOFTWARE ENGINEERING

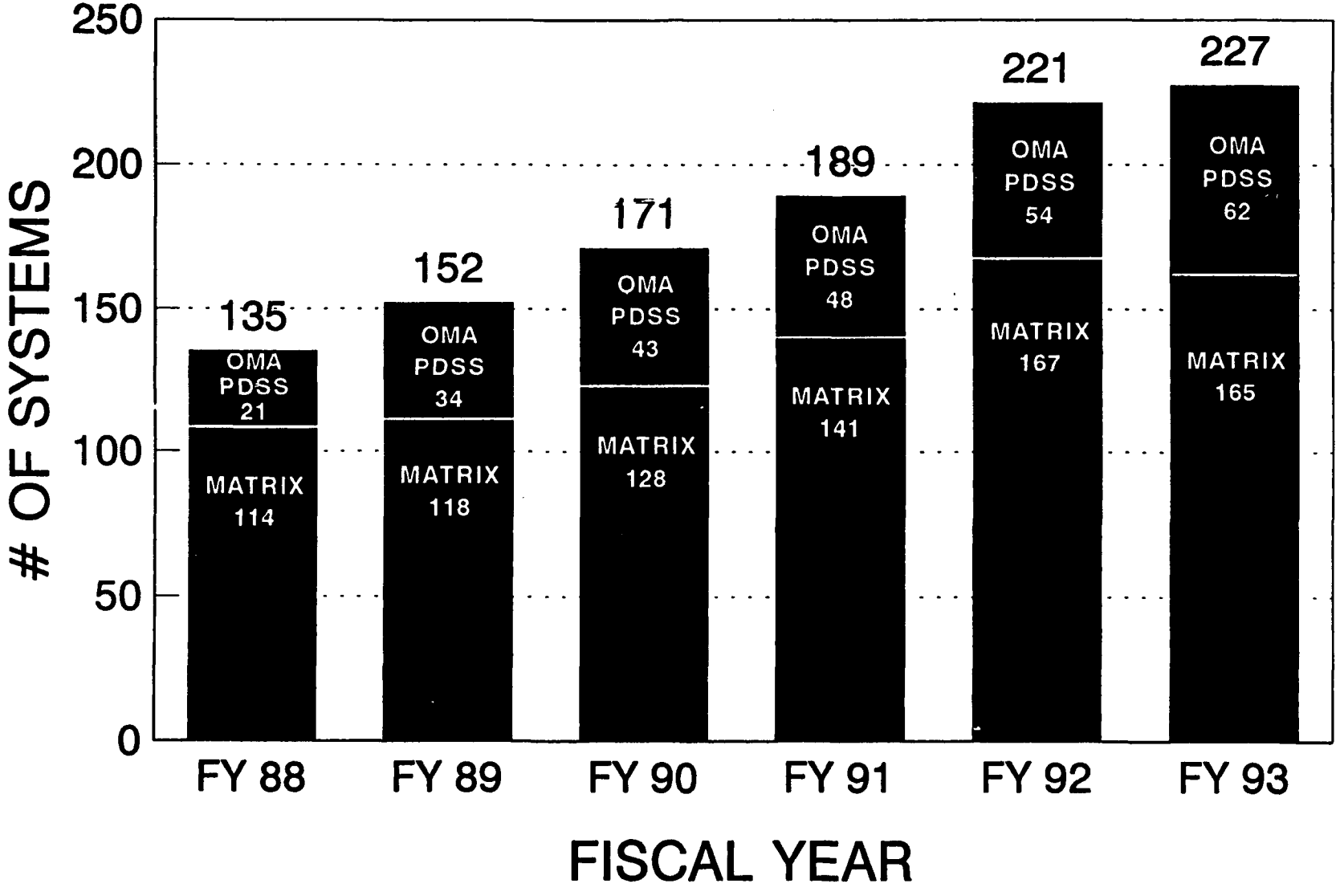
OBJECTIVES (Continued)

- DURING OPERATIONS AND SUPPORT PHASE (AFTER FIELDING), MODIFY MCDS SOFTWARE TO:
  - CORRECT LATENT DEFECTS
  - IMPLEMENT REFINEMENTS/ENHANCEMENTS TO SATISFY EVOLVING DOCTRINE, MISSION CHANGES, THREAT CHANGES, AND NEW INTEROPERABILITY REQUIREMENTS

SOURCES OF CECOM RDEC SED MCDS WORKLOAD



CECOM RDEC SED GROWTH IN SYSTEMS



LIFE CYCLE SOFTWARE ENGINEERING

REQUIREMENTS

- SYSTEM AND SOFTWARE ENGINEERING IN TACTICAL COMMUNICATIONS, SATELLITE COMMUNICATIONS, FIRE SUPPORT, AVIONICS-I/EW, TACTICAL FUSION, COMMAND AND CONTROL; AND TRAINING, SIMULATION, AND INSTRUMENTATION

LIFE CYCLE SOFTWARE ENGINEERING

REQUIREMENTS (Continued)

- APPLICATION OF Ada LANGUAGE
- 105 LANGUAGES AND 144 TARGET COMPUTERS USED IN CECOM SED-SUPPORTED SYSTEMS
- MANAGEMENT OF TECHNOLOGINCAL CHANGE/PROCESSS IMPROVEMENTS

LIFE CYCLE SOFTWARE ENGINEERING

PAYOFFS

- REDUCED COST AND TIME FOR DEVELOPMENT AND SUPPORT OF MCDS SOFTWARE
- INCREASED QUALITY OF FIELDED SOFTWARE
- REDUCTION IN RESPONSE TIME TO MODIFY FIELDED SOFTWARE IN RESPONSE TO DOCTRINE, MISSION, THREAT, OR INTEROPERABILITY CHANGES

SED CONTRACTUAL PROGRAM
FUNDING PROFILE
($ IN MILLIONS)

	RDTE $M	PROC $M	OMA $M
FY 94	13-23	27-37	97-112
FY 95	14-24	26-36	97-112
FY 96	12-22	25-35	104-119
TOTAL:	39-69	78-108	298-343

AVIONICS SYSTEMS AND SOFTWARE ENGINEERING CONTRACT

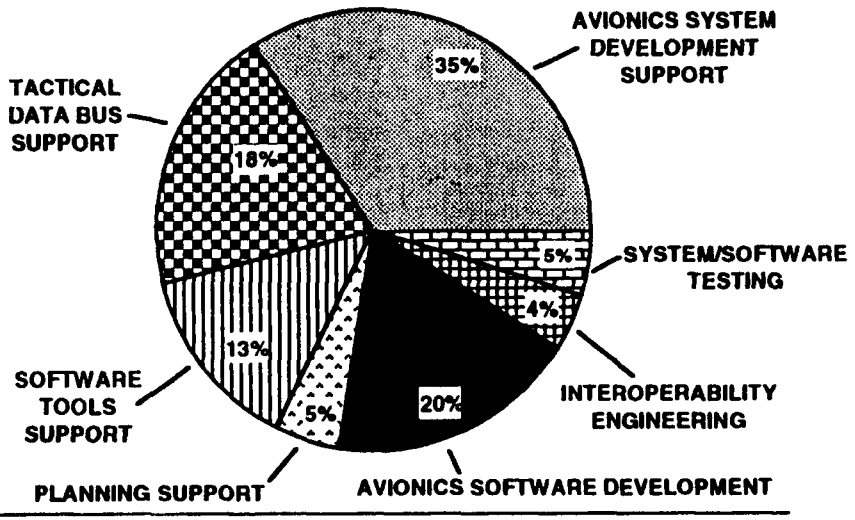
CONTRACT DATA

• RFP RELEASE	FEBRUARY 1994
• CONTRACT AWARD	JANUARY 1995
• CONTRACT DURATION	5 YEARS
• CONTRACT VALUE	$20 MILLION
• TYPE OF CONTRACT	T&M
• PLACE OF PERFORMANCE	FORT MONMOUTH ST. LOUIS (ATCOM)

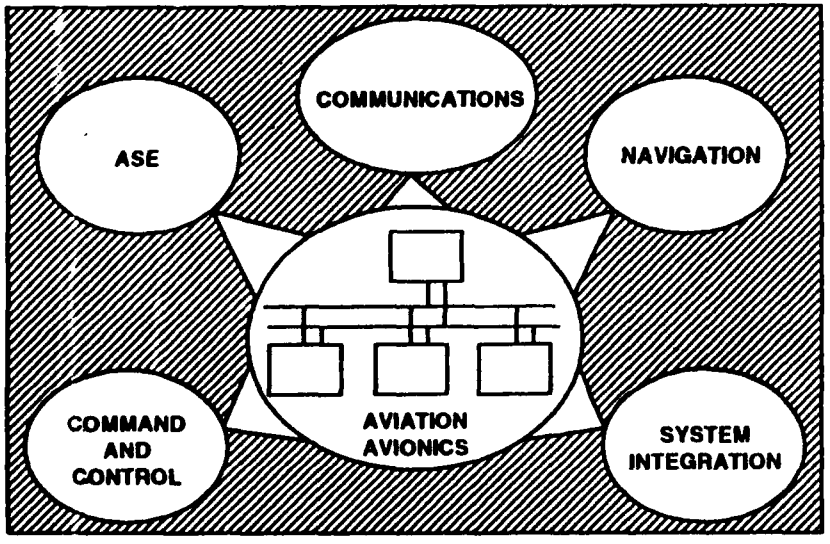
POINT OF CONTACT

- MR. EUGENE BOYLE SED 532-8220

THE WORK
AVIONICS BRANCH SUPPORT



AVIONICS SYSTEMS SUPPORTED



REQUIRED KNOWLEDGE

- MIL-STD-1553 INTEGRATION/TESTING/DOCUMENTATION
- HIGH SPEED DATA BUS TECHNOLOGIES
- INTEROPERABILITY ENGINEERING
- AVIONICS SYSTEMS/SOFTWARE ENGINEERING
- AIRCRAFT/AIR TRAFFIC CONTROL SYSTEMS
- PROGRAMMING LANGUAGES (Ada, JOVIAL, C, ASSEMBLY, ETC.)
- CONFIGURATION MANAGEMENT
- SOFTWARE QUALITY ASSURANCE
- TOTAL QUALITY MANAGEMENT
- SOFTWARE TOOL MAINTENANCE

INTELLIGENCE/ELECTRONIC WARFARE SYSTEMS & SOFTWARE ENGINEERING CONTRACT

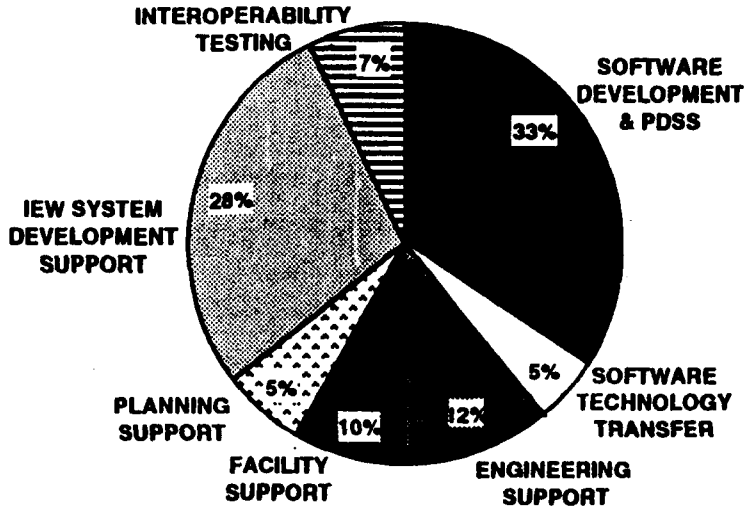
CONTRACT DATA

• RFP RELEASE	JANUARY 1995
• CONTRACT AWARD	SEPTEMBER 1995
• CONTRACT DURATION	FIVE YEARS
• CONTRACT VALUE	$87 MILLION
• TYPE OF CONTRACT	T&M
• PLACE OF PERFORMANCE	FORT MONMOUTH FORT HUACHUCA FORT BELVOIR GERMANY & KOREA

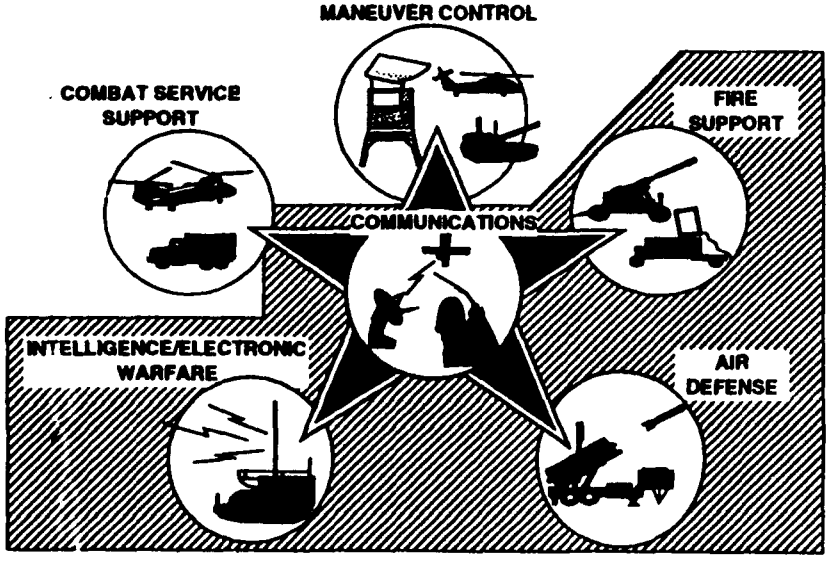
POINT OF CONTACT

• MR. EUGENE BOYLE	SED	532-8220

THE WORK



ATCCS BFAs SUPPORTED



REQUIRED KNOWLEDGE

- Ada LANGUAGE
- IEW SYSTEMS & TECHNOLOGIES
- INTELLIGENCE, SIGNALS & THREAT ANALYSIS
- INTERCEPT, DF, CM, ECM & ECCM
- TACTICAL DATA FUSION
- ELECTRO-OPTICS
- DIGITAL SIGNAL PROCESSING
- RADAR & SEISMIC/ACOUSTIC ALGORITHMIC PROCESSING
- TRUSTED COMPUTER SYSTEMS
- EMBEDDED & MULTI-PROCESSOR SYSTEMS
- PROGRAM DESIGN & LANGUAGE TOOLS
- COMPUTER SYSTEMS (SUN, DEC, PCs)
- SIMULATORS & EMULATORS
- CONFIGURATION MANAGEMENT, SOFTWARE QUALITY ASSURANCE, MIL-STDs & TOTAL QUALITY MANAGEMENT

COMMUNICATIONS AND COMMAND & CONTROL SYSTEMS AND SOFTWARE ENGINEERING CONTRACT

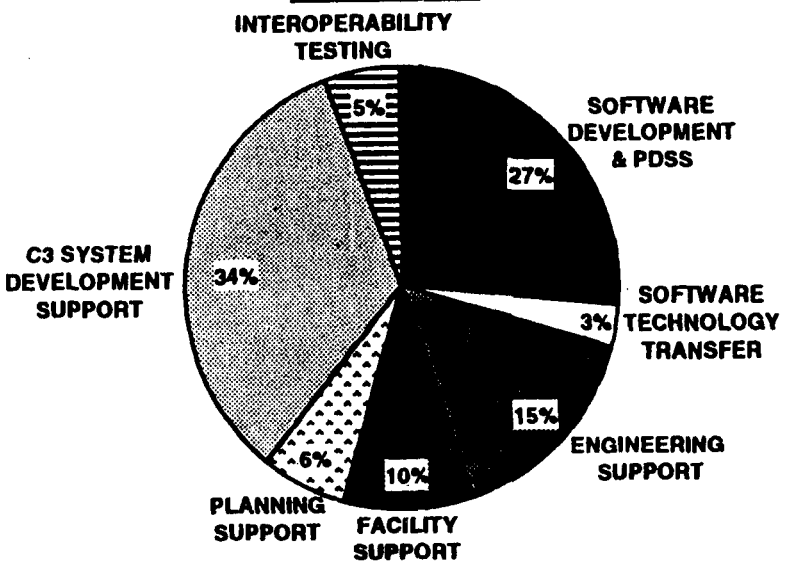
CONTRACT DATA

• RFP RELEASE	JANUARY 1995
• CONTRACT AWARD	SEPTEMBER 1995
• CONTRACT DURATION	FIVE YEARS
• CONTRACT VALUE	$100 MILLION
• TYPE OF CONTRACT	T&M
• PLACE OF PERFORMANCE	FORT MONMOUTH GERMANY FORT GORDON

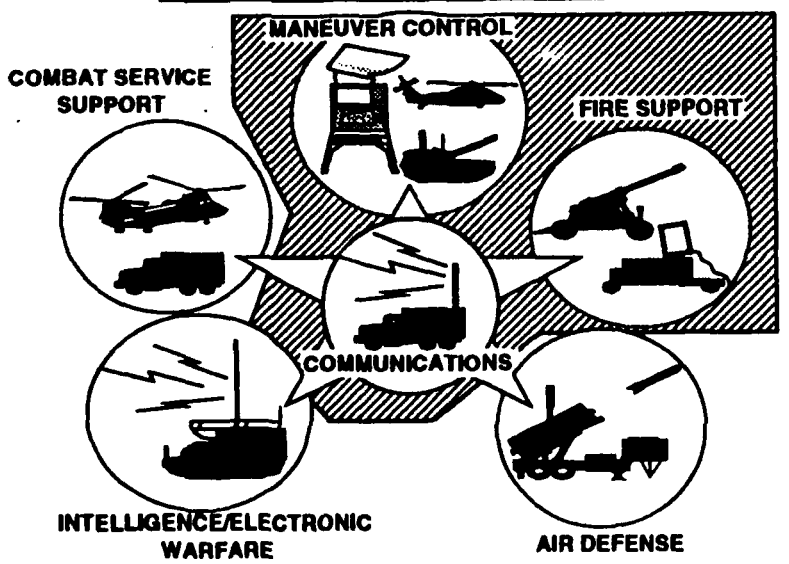
POINT OF CONTACT

• MR. EUGENE BOYLE	SED	532-8220

THE WORK



ATCCS BFAs SUPPORTED



REQUIRED KNOWLEDGE

- TACTICAL COMMUNICATIONS SYSTEMS
- SATELLITE COMMUNICATIONS SYSTEMS
- ATCCS COMMAND & CONTROL SYSTEMS
- TMDE SYSTEMS
- Ada LANGUAGE
- ARMY INTEROPERABILITY NETWORK
- JOINT INTEROPERABILITY TESTING
- HOST SYSTEM OPERATIONS (VAX, DG, IBM)
- CONFIGURATION MANAGEMENT
- SOFTWARE QUALITY ASSURANCE
- TOTAL QUALITY MANAGEMENT

FIRE SUPPORT
SYSTEMS & SOFTWARE ENGINEERING CONTRACT

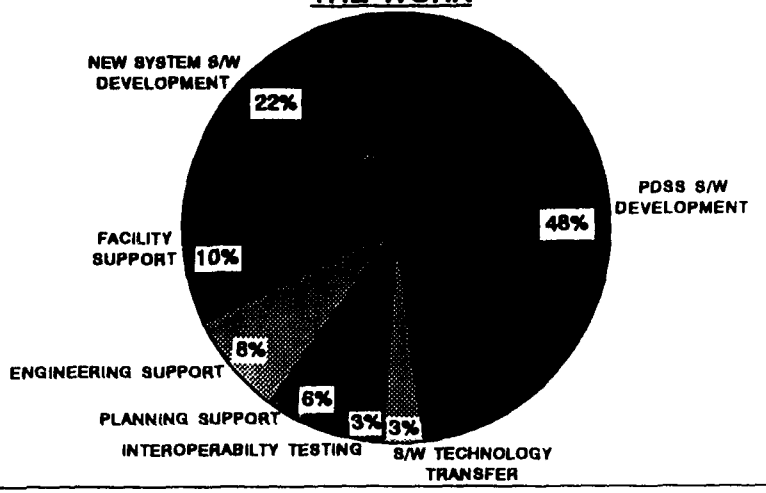
CONTRACT DATA

• RFP RELEASE	MAY 1993
• CONTRACT AWARD	OCTOBER 1993
• CONTRACT DURATION	FIVE YEARS
• CONTRACT VALUE	$135M
• TYPE OF CONTRACT	CPAF
• PLACE OF PERFORMANCE	FORT SILL
• MANDATORY 15% GOAL FOR SMALL BUSINESS SUBCONTRACTING	

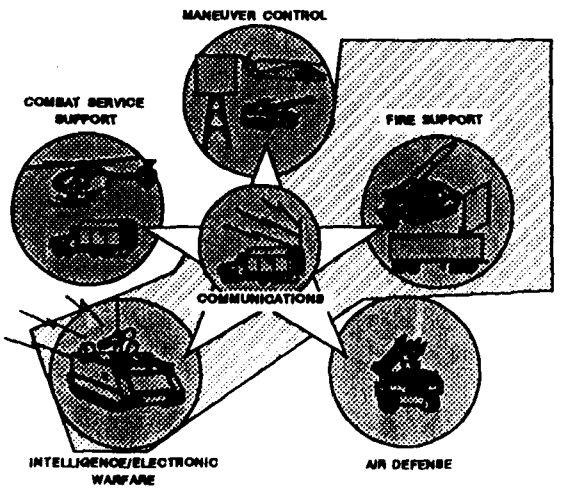
POINT OF CONTACT

• MR. EUGENE BOYLE	SED	532-8220

THE WORK



ATCCS BFAs SUPPORTED



#387 4MAY93

REQUIRED KNOWLEDGE

- SYSTEM & SOFTWARE ENGINEERING
- COMMAND & CONTROL SYSTEMS
- TACTICAL SYSTEMS
- COMMUNICATIONS & INTEROPERABILITY
- ATCCS COMMON HARDWARE/SOFTWARE
- Ada PROGRAMMING LANGUAGE
- C PROGRAMMING LANGUAGE
- HOST COMMERCIAL SYSTEMS (VAX, HP, LAN)
- OPERATING SYSTEMS (UNIX, DOS)
- SOFTWARE QUALITY ASSURANCE & TESTING
- CONFIGURATION MANAGEMENT

NIGHT VISION ELECTRO OPTICS
SYSTEMS & SOFTWARE ENGINEERING CONTRACT

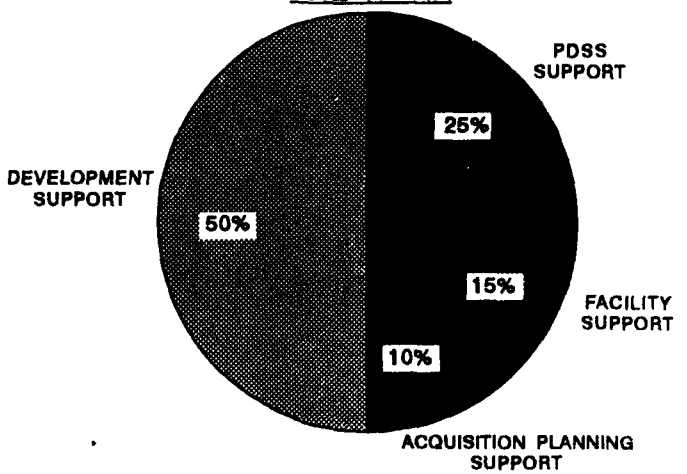
CONTRACT DATA

• RFP RELEASE	AUGUST 1994
• CONTRACT AWARD	MAY 1995
• CONTRACT DURATION	FIVE YEARS
• CONTRACT VALUE	$14M
• TYPE OF CONTRACT	T&M
• PLACE OF PERFORMANCE	FORT MONMOUTH FORT BELVOIR

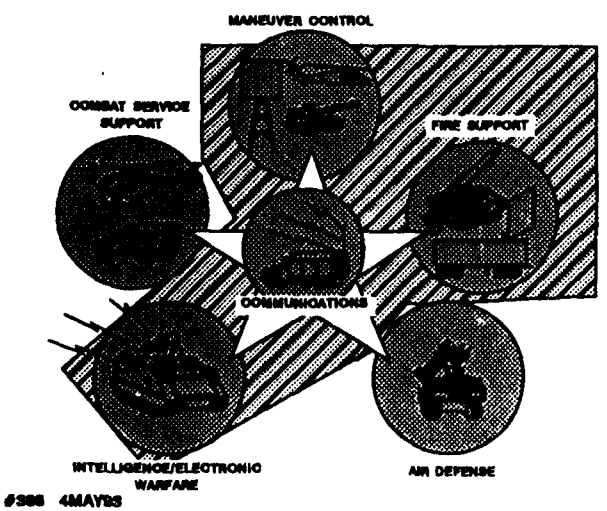
POINT OF CONTACT

• MR. EUGENE BOYLE	SED	532-8220

THE WORK



ATCCS BFAs SUPPORTED



4MAY93

REQUIRED KNOWLEDGE

- SOFTWARE ENGINEERING PRACTICES
- ELECTRO OPTICS
- DIGITAL SIGNAL PROCESSING
- RADAR AND SEISMIC/ACOUSTIC ALGORITHMIC PROCESSING
- FOCAL PLANE ARRAYS
- IMAGERY EXPLOITATION
- Ada LANGUAGE
- HOST SYSTEMS OPERATIONS (VAX, IBM)
- MICROPROCESSOR PROGRAMMING
- TOTAL QUALITY MANAGEMENT
- CONFIGURATION MANAGEMENT

MISSION CRITICAL DEFENSE SYSTEM MAINTENANCE

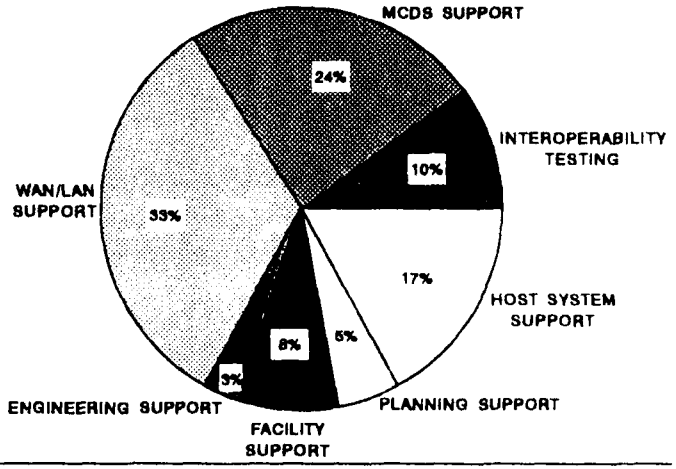
CONTRACT DATA

• RFP RELEASE	JUNE 1993
• CONTRACT AWARD	NOVEMBER 1993
• CONTRACT DURATION	FIVE YEARS
• CONTRACT VALUE	$15 MILLION
• TYPE OF CONTRACT	CPAF
• PLACE OF PERFORMANCE	FORT MONMOUTH FORT HUACHUCA

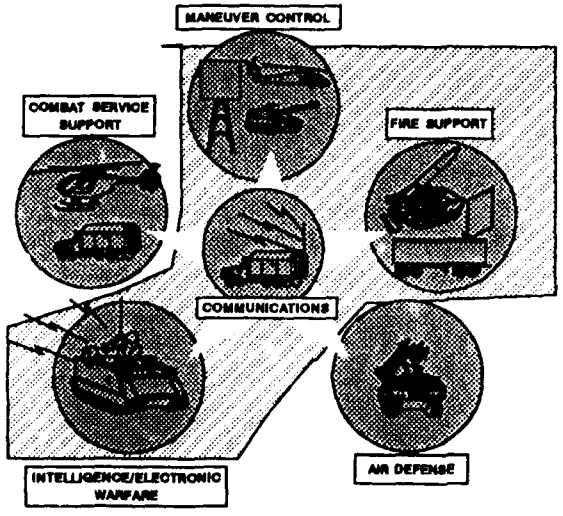
POINT OF CONTACT

• MR. EUGENE BOYLE	SED	532-8220

THE WORK



ATCCS BFAs SUPPORTED



#380 4MAY93

REQUIRED KNOWLEDGE

- TACTICAL COMMUNICATIONS SYSTEMS
- SATELLITE COMMUNICATIONS SYSTEMS
- TACTICAL FUSION
- TMDE SYSTEMS
- TECHNICAL CONTROL FACILITY
- ARMY INTEROPERABILITY NETWORK
- JOINT INTEROPERABILITY TESTING
- HOST SYSTEM MAINTENANCE (VAX, DG, IBM)
- CONFIGURATION MANAGEMENT
- WIDE AREA NETWORK/LOCAL AREA NETWORK
- SOFTWARE QUALITY ASSURANCE
- TOTAL QUALITY MANAGEMENT
- SPARE PARTS PROVISIONING & MANAGEMENT

SED SECURITY SUPPORT

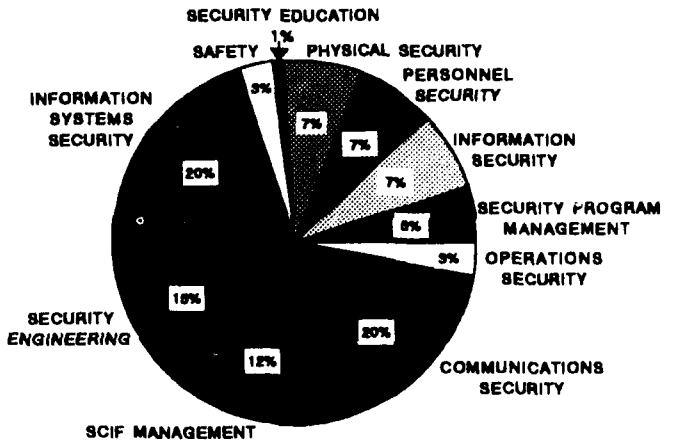
CONTRACT DATA

• RFP RELEASE	JUNE 1993
• CONTRACT AWARD	OCTOBER 1993
• CONTRACT DURATION	FIVE YEARS
• CONTRACT VALUE	$10 MILLION
• TYPE OF CONTRACT	T&M
• PLACE OF PERFORMANCE	FORT MONMOUTH FORT HUACHUCA

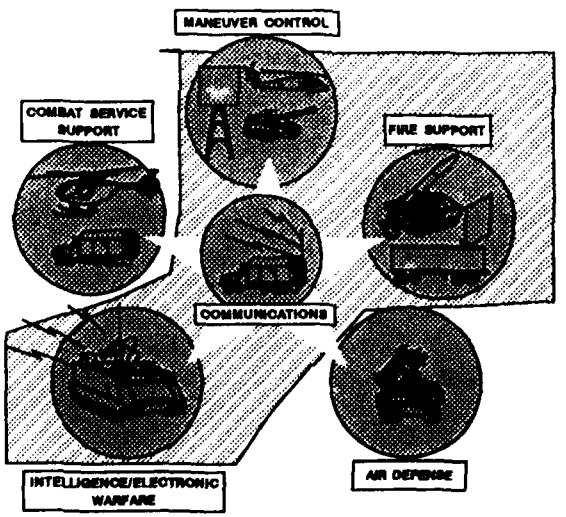
POINT OF CONTACT

• MR. EUGENE BOYLE	SED	532-8220

THE WORK



ATCCS BFAs SUPPORTED



#390 4MAY93

REQUIRED KNOWLEDGE

- INDUSTRIAL SECURITY REGULATIONS (DoD 5220-22R)
- DEPARTMENT OF THE ARMY SECURITY REGULATIONS (AR 380-5)
- INFORMATION SYSTEMS SECURITY (AR 380-19)
- TEMPEST (AR 380-19-1)
- COMMUNICATION SECURITY (COMSEC) EQUIPMENT ACCOUNTABILITY PROCEDURES
- RED/BLACK ENGINEERING PRINCIPLES
- SENSITIVE COMPARTMENTED INFORMATION FACILITY (SCIF) MANAGEMENT
- SCIF DESIGN PRINCIPLES
- NETWORKS AND NETWORK SECURITY

FUTURE FOREIGN MILITARY SALES OPPORTUNITIES

EUGENE P. BENNETT
DIRECTOR
SECURITY ASSISTANCE MANAGEMENT

UNCLASSIFIED

AMSEL-LC-SA-D-SY 18 MAR 1993

POINT PAPER

SUBJECT: Advanced Planning Briefing for Industry

PURPOSE: To provide Industry with a comprehensive overview of future Foreign Military Sales opportunities based on requirements for Security Assistance customers.

FACTS:

- o The Foreign Military Sales process will be addressed.
- o Topics will include opportunities in the following areas: avionics support, electronics, communications, night vision, target acquisition radars, and fire direction systems.
- o Payoffs include allowing us to gain access and influence abroad and to sustain the U.S. Defense Industrial Base.

RELEASED BY:
EUGENE P. BENNETT Eugene P Bennett
GM-15, DIRECTOR
SECURITY ASSISTANCE MANAGEMENT
X22155

ACTION OFFICER:
MARY JO MARUKA Mary Jo Maruka
GS-11, LOGISTICS
MANAGEMENT SPECIALIST
X28650

FMS PROCESS

CUSTOMER



RQMTS
(LOR)*

LOO**

3 MONTHS
TO REVIEW

LOA***

7 MONTHS
TO IMPLEMENT

$

SOLI-
CITA-
TION

INDUSTRY

BIDS

*LETTER OF REQUEST
**LETTER OF OFFER
***LETTER OF ACCEPTANCE

AVIONICS SUPPORT PROGRAM
APACHE

SUPPORT EQUIPMENT	QTY	$VAL
AN/APR-39	75	4.5M
AN/ALQ-144	75	1.5M
AN/ALQ-136	75	24M
AN/ASN-137	75	3M
AN/APN-209	75	1M

AVIONICS SUPPORT PROGRAM
APACHE (Cont'd)

SUPPORT EQUIPMENT	QTY	$VAL
AN/ARN-149	70	700K
AN/ARC-164	75	975K
AN/ARC-186	150	1.5M

EST. CONTRACT AWARD FY 95-96

Competitive

POC: NANCY CRESSEY - COMM. 908-532-8626

AVIONICS SUPPORT PROGRAM
COBRA

SUPPORT EQUIPMENT	QTY	$VAL
AN/APR-39	32	1.9M
AN/ASN-128	32	1.3M
AN/ARC-164	32	416K
AN/ARC-186	60	600K

EST. CONTRACT AWARD FY 95-96

Competitive

POC: NANCY CRESSEY - COMM. 908-532-8626

AVIONICS SUPPORT PROGRAM
CH-47D (CHINOOK) AND UH-1H (HUEY)

SUPPORT EQUIPMENT	QTY	$VAL
AN/APR-39	15	900K
AN/ARC-164	15	195K
AN/ARC-186	30	300K
AN/APN-209	15	200K
AN/ASN-128	15	600K

EST. CONTRACT AWARD FY 95-96

Competitive

POC: VERNELL DANIELS - COMM. 908-532-8634

ELECTRONICS EQUIPMENT

NOMENCLATURE	EQUIPMENT/QTY		$VAL
RADIAC SET	AN/VDR-2	2409	2.6M
RADIAC SET	IM-93A/UD	1000	284K
RADIAC DETECTOR CHARGER	PP-1578	111	16K
IREMBASS		106	11.5M

EST. CONTRACT AWARD FY 93-94

Competitive

POC: GEORGE BASS - COMM. 908-532-8645(RADIAC SETS & CHARGER)

POC: CLARENCE OWENS - COMM. 908-532-8647 (IREMBASS)

ELECTRONICS EQUIPMENT

NOMENCLATURE	EQUIPMENT/QTY		$VAL
BATTERY	BA-5567/U	27,419	143K
BATTERY	BA-4386/U	71,991	941K
BATTERY	BA-1568/U	9,177	153K

EST. CONTRACT AWARD FY 93-94

Competitive

POC: GEORGE BASS - COMM. 908-532-8645 (BATTERIES)
POC: NANCY CRESSEY - COMM. 908-532-8626

COMMUNICATIONS EQUIPMENT

NOMENCLATURE	EQUIPMENT/QTY		$VAL
DIGITAL NONSECURE VOICE TELEPHONE SET	TA-1035	846	12.3M
TROPOSCATTER RADIO TERMINAL	AN/TRC-170(V)4	4	25.9M
FREQUENCY HOPPING VHF RADIOS	SINCGARS	2000	25M

EST. CONTRACT AWARD FY 94-95

Competitive

POC: KATHY NOVAK - COMM. 908-532-0703 (TELE. SET & TERMINAL)
POC: JOAN MYATT - COMM. 908-532-8746 (SINCGARS)

NIGHT VISION EQUIPMENT

NOMENCLATURE	EQUIPMENT/QTY		$VAL
GOGGLES	AN/PVS-7B	1000	4.4M
LASER RANGEFINDER	AN/PVS-6	41	400K
NIGHT VISION SIGHT	AN/TVS-5	400	2.0M

EST. CONTRACT AWARD FY 93-96

Competitive

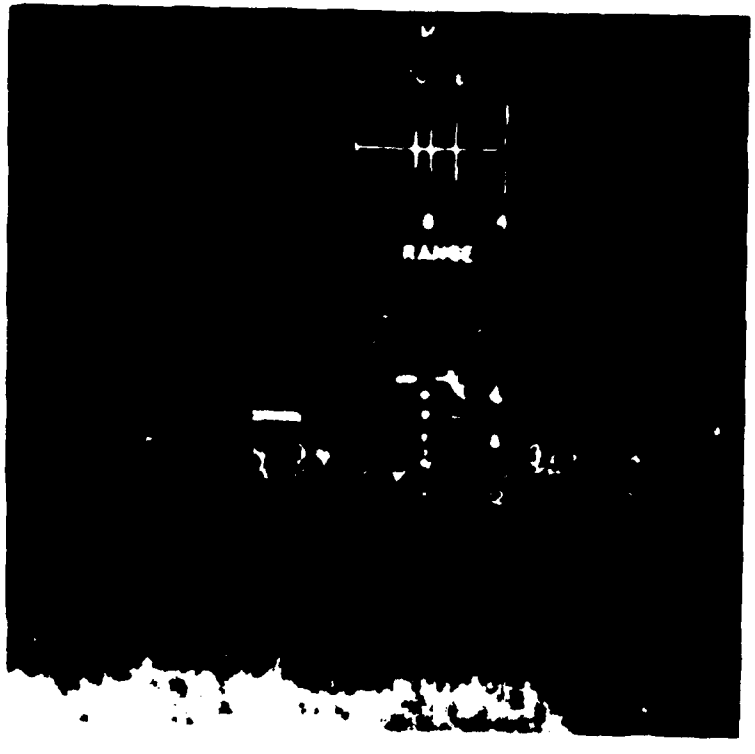
POC: DAVE SHUMAN - COMM. 908-532-5577

CREW SERVED WEAPON SIGHT

2nd GENERATION IMAGE INTENSIFIER

AN/TVS-5

TYPICAL IMAGERY



TARGET RANGE: 175 M
ILLUMINATION: 1/4 MOONLIGHT

SYSTEM CHARACTERISTICS

WEIGHT: 8 LBS
MAGNIFICATION: 5.8 x
STARLIGHT RECOGNITION RANGE:
1000 M (VEHICLE TARGETS)
FIELD OF VIEW: 9°



NIGHT VISION EQUIPMENT

NOMENCLATURE	EQUIPMENT/QTY		$VAL
AVIATOR NV IMAGING SYSTEM	AN/AVS-6(V)2	101	859K
AVIATOR NV IMAGING SYSTEM	AN/PAS-7A	57	907K

EST. CONTRACT AWARD FY 93-94

Competitive

POC: DAVE SHUMAN - COMM. 908-532-5577

PROCUREMENT OF NON-STANDARD EQUIPMENT

	$VAL
UHF/VHF HANDHELD RADIOS	690K
UHF/VHF REPEATERS/BASE STATIONS	1.9M
GLOBAL POSITIONING SYSTEMS	46K
DIGITAL COMMUNICATION SYSTEMS	20K
SECURE VOICE UHF/VHF COMM. SYSTEMS	80K
HF SHIPBOARD RADIOS	750K
HF/SSB RADIOS	117K
ANTENNAS	30K
HF MANPACK RADIOS	750K

EST. CONTRACT AWARD FY 93-95

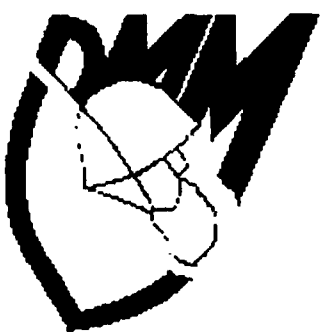
Competitive

FOREIGN MILITARY SALES
PAYOFFS

- EXPECT UPWARD TREND IN SALES
- NEED FOR CUSTOMERS TO BECOME MORE SELF SUFFICIENT
- ENABLES US TO GAIN ACCESS & INFLUENCE ABROAD
- SUSTAIN THE U.S. DEFENSE INDUSTRIAL BASE

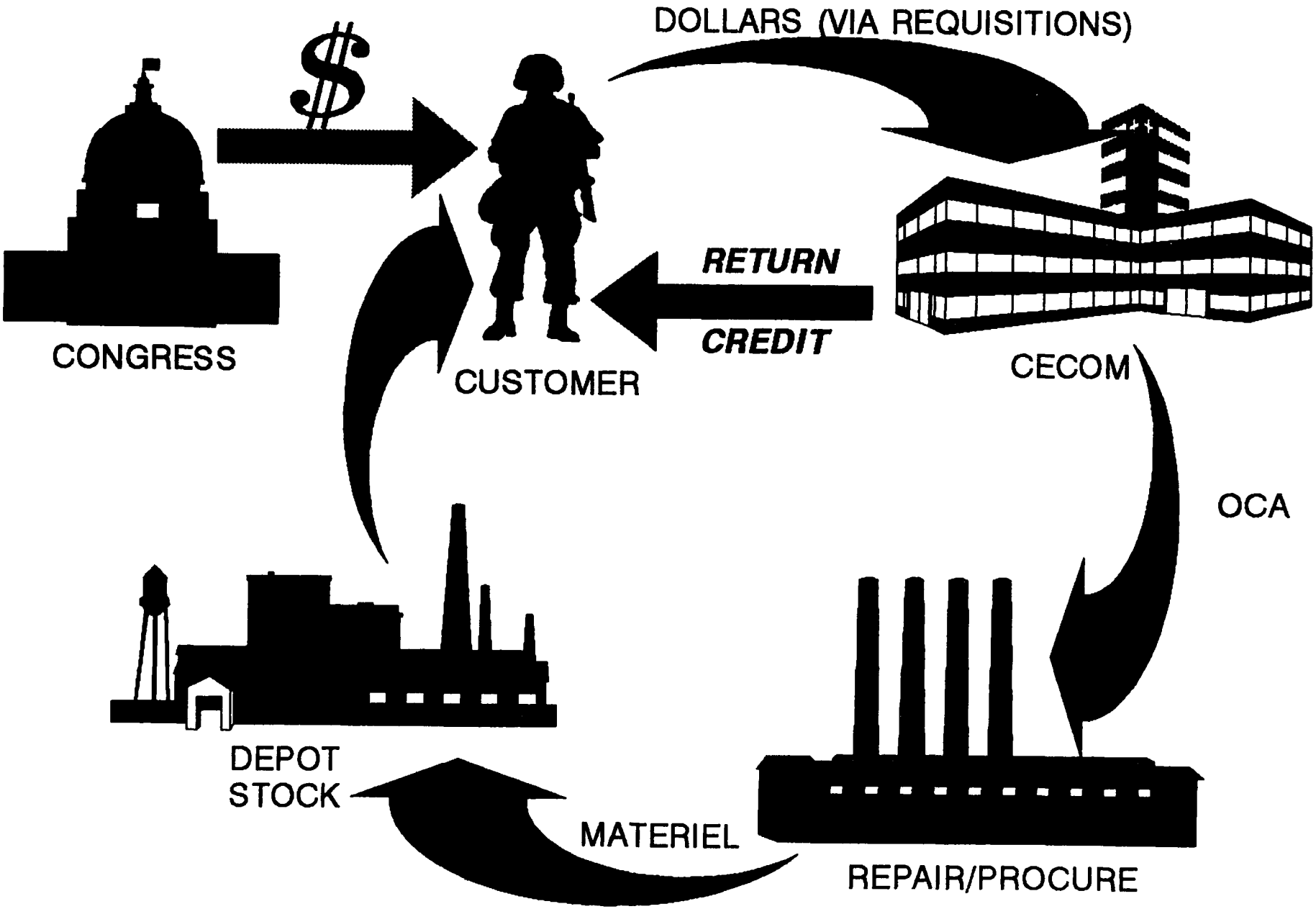
Future of the Spare/Repair Parts Business at CECOM

William Riehl
Acting Director
Directorate of Materiel Management

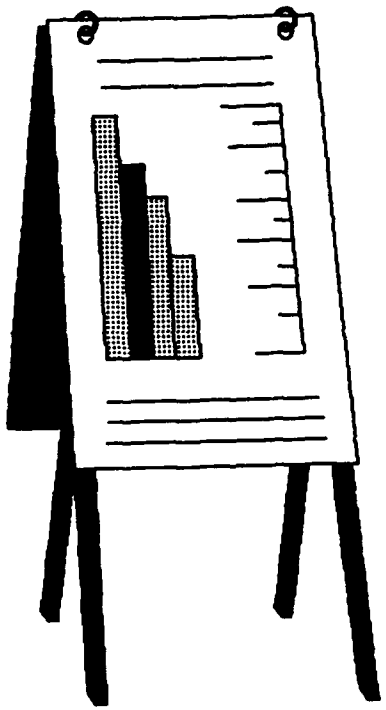


UNCLASSIFIED

ARMY STOCK FUND--REVOLVING FUND

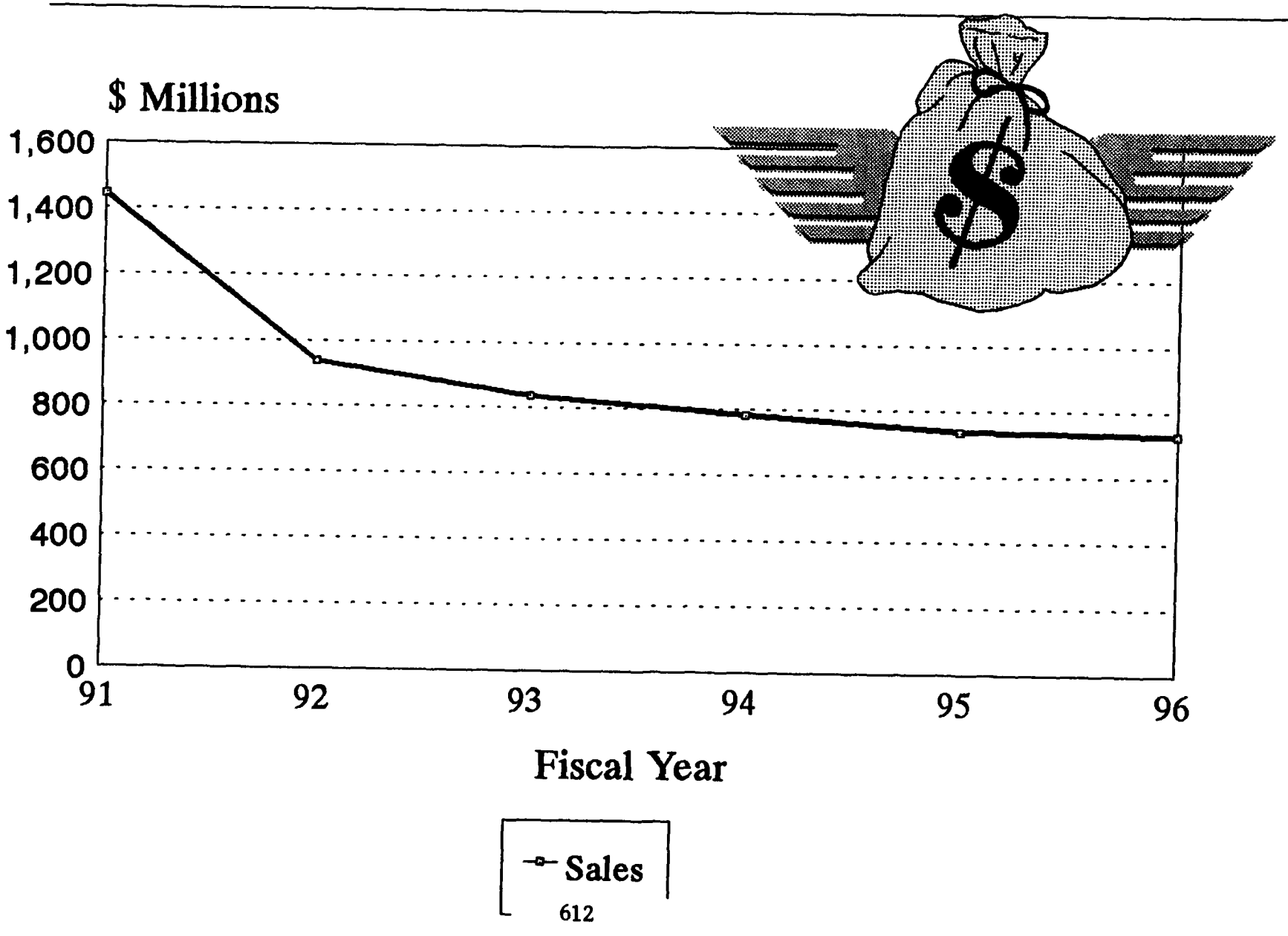


CURRENT/FUTURE BUSINESS INDICATORS



- Force Structure ↓
- Income (Sales) ↓
- Acquisition Dollars ↓
- # of Procurements/ Repair Contracts ↑
- Inventory Levels ↓

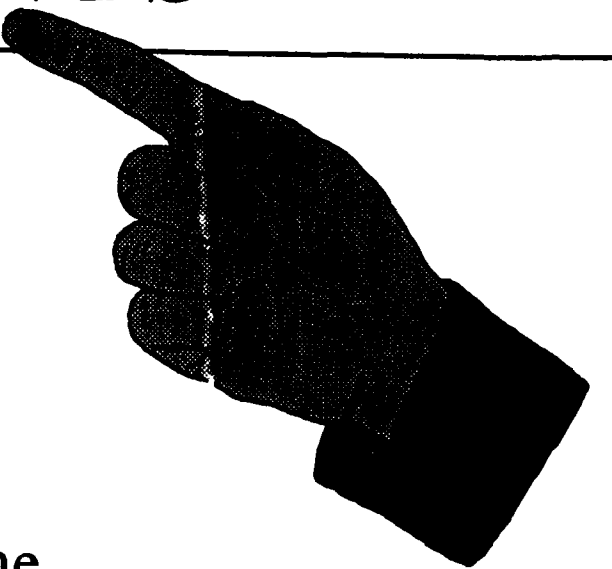
SPARE/REPAIR PARTS
SALES DOLLARS



FORECASTED REQUIREMENTS PROFILE
FY94 SPARES ($IN MILLIONS)

WEAPON SYSTEMS	$ RANGE
COMM/ADP	$70 -108
(incl switches,MSE,Radio,	
TRI-TAC, etc.)	
AVIONICS	$40 - 66
SATELLITE COMM	$23 - 34
RADAR/SENSOR	$36 - 54
NIGHT VISION	$20 - 31
BATTERIES	$35 - 49
TOTAL	$224 -342

REQUIREMENTS



- Flexibility in contracts to allow for changing environment
- Become more efficient (e.g., Just In Time Inventory/Direct Vendor Deliveries concepts)

POC: William Riehl, Acting Director, Materiel Management Directorate (908)532-4755, Fort Monmouth, New Jersey

IMPLEMENTING STRATEGIES

- Group spares by weapon system or technical commonality
- Buy 3-5 years on one contract with range quantities
- Electronic Bulletin Board to solicit spares buys
  * Digitized drawings/master plans
- Push Technology Insertion to reduce O&S costs

ADDITIONAL BUSINESS OPPORTUNITIES

BROAD AGENCY ANNOUNCEMENTS (BAA'S)

- COMPETITIVE SELECTION OF RESEARCH AND DEVELOPMENT PROPOSALS

- SELECTED PROPOSALS ARE CONSIDERED TO BE THE RESULT OF FULL AND OPEN COMPETITION

- CECOM RDEC HAS 5 ACTIVE BAA'S, 1 OF WHICH IS A HBCU & MI SET ASIDE

CECOM RDEC BROAD AGENCY ANNOUNCEMENTS (BAA) (*)

BAA	ORG	ISSUE DATE	PERIOD OPEN	PROC POC
1. DAAB07-92-R-B009	RDEC	April 92	2 Years	Judith Anderson (908) 542-4295

a. Conditions: $ 25K to $ 500K. Open to all except (*) areas of research set aside for HBCU and MI

b. Areas of Research and Development Interest.

- Antenna Research
- Network Management
- EM Wave Propagation and Media Modeling
- A1 for Army C2 Decision Aid Tech.
- C2 Modeling and Simulation
- Network ECCM Research
- Fiber Optics
- Human Computer Symbolsis
- Information Survivability in a Military Environment
- Modeling and Simulation of Large Military Systems
- Survivable Adaptive Systems Technology Demo.
- Computer Aided SW Engineering (*)
- Global Positioning System Position Tracking
- Requirements Engineering
- Methodology for In-House Research to Support C3IEW
- Simulation Experiment Design & Control
- Cosite Interference Reduction
- Reliable HF Communications
- Voice and Data Integration in Narrowband Comm
- Adaptive Planning and Management
- Tactical Gateway Protocols & Algorithms
- Narrowband Packet Technology
- Automated Network Management
- Advanced Optical Networks
- EHF Wireless LAN Antenna Technology
- Information Transport Systems
- ADA Bindings to A1 Programming and Data Query (*)
- Miniature/Conformal/Convert Mobile Antenna Concepts
- Research in C3IEW Modeling & Simulation

BAA	ORG	ISSUE DATE	PERIOD OPEN	PROC POC
2. DAAB07-90-R-BAA1	IEW	3 Aug. 90	3 Years	John Buccigrossi (908) 532-5249

a. Coditions: Max. 24 months, $ 500K max. no $ set aside.

b. Areas of Research and Development Interest:

- Infrared countermeasures (IRCM) Technology
- Signals Intelligence (SIGINT) Electronic Support Measures (ESM)
- Radar countermeasures (CM)/Warning/Deception
- Laser Warning

BAA	ORG	ISSUE DATE	PERIOD OPEN	PROC POC
3. DAAB07-92-R-J665	RDEC	1 Oct. 92	2 Years	Ronette Brower (23570)

a. Conditions: 100% set aside for HBCU and MI.

b. Areas of Research and Development Interest:

- Computer Science and Artificial Intelligence
- Artificial Intelligence Logic Research
- Cartographic Map Data Bases for Simulation
- Generation of Prime Power
- Neural Network Appl to Auto Target Recog Sys.
- Infrared materials growth and Detector proc.
- Speech Coding
- 20 GHz Solid State Power Amplifiers
- Real Time Video Imagery Dissemination
- Topics in Optical Fiber Technology
- Modeling Environ (Radio Propagation Reliability)
- Model Abstraction Workbench
- Efficient Statical Estimators
- Aircraft Computer Power Supplies
- Adaptive Vector Quantization for Waveform Coding
- Adaptive Coding & Error Correction Techniques
- Time Code Modulation for Waveform Coding
- Data Communications using Vector Quantization

BAA	ORG	ISSUE DATE	PERIOD OPEN	PROC POC
I. DAAB07-92-R-K763	NV/ES	27 May 93	26 May 93	Mrs. Messler (908) 532-3506

a. Conditions: None

b. Areas of Research and Development Interest

- Advanced Pilotage Aid Capabilities

BAA	ORG	ISSUE DATE	PERIOD OPEN	PROC POC
5. DAAB10-91-Q-2036	IEW	Jan 91	3 Years	Kathy Cogley (703) 349-5717

a. Conditions: $ 50K to $ 1M; $ 150K set aside for HBCU

b. Areas of Research and Development Interest:

- Direction Finding
- Emitter Intercept
- Asset Management
- Intelligence Data Fusion
- Communications Electronic Countermeasures

THE SBIR PROGRAM

On October 28, 1992, the Small Business Innovation Research Program (SBIR) was reauthorized until October 1, 2000 with the enactment of the Small Business Research and Development Enhancement Act of 1992, (Public Law 102-564)

Congress found that the SBIR Program - established under the Small Business Innovation Development Act of 1982 - had not only been successful as a method of involving small business concerns in federal research and development, but had effectively stimulated commercialization of the resulting technology to the benefit of both private and public sectors of the nation.

The new legislation provides for the gradual increase from 1.25 percent of each participating federal agency's extramural R/R&D budget in FY 92 to 2.5 percent in FY 97 and each fiscal year thereafter as required expenditure amounts specifically for the SBIR program.

At the present time, there are eleven agencies of the federal governement that participate in the SBIR Program. They are:

- Department of Agriculture
- Department of Commerce
- Department of Defense
- Department of Education
- Department of Energy
- Department of Health and Human Services
- Department of Transportation
- Enviromental Protection Agency
- National Aeronautics & Space Administration
- National Science Foundation
- Nuclear Regulatory Commission

THE THREE PHASES OF THE SBIR PROGRAM

SBIR is a competitive award system consisting of the following three phases:

Phase I - is to evaluate the scientific technical merit and feasability of an idea. Awards are for periods of up to six months in amounts up to $100,000.

ONLY PHASE I AWARDEES ARE ELIGIBLE FOR CONSIDERATION OF AWARD OF PHASE II.

Phase II - is to expand on the results of and further pursue the devlopment of Phase I. Awards are for periods of up to two years in amounts up to $750,000.

Phase III - is for the commercialization of the results of Phase II and requires the use of private or non-SBIR federal funding

THE ARMY DOLLAR CAPS FOR PHASE I AND PHASE II ARE AS FOLLOWS:

PHASE I The maximum dollar amount from the SBIR budget, for Army phase 1 awards is $70,000. To reduce the funding gap between Phase I and Phase II, firms may submit an option task not to exceed $30,000 with the Phase I proposal. Exercise of such an option would be intended to allow Phase II preparatory work to be initiated; however, the option does not obligate the Army to make a Phase II award. Firms who are awarded the option should reflect the funds as a deduction on the total cost of their Phase II proposal.

PHASE II Future Army Phase IIs will average about $600,000. Cost sharing options are encouraged if the Phase II proposal amount is over 600K.

SBIR PROGRAM SCHEDULE OF SBIR SOLICITATIONS

FISCAL YEAR 1993

AGENCY	*RELEASE DATE*	*CLOSING DATE*
Department of Agriculture	June 1, 1993	September 1, 1993
Department of Commerce	October 15, 1992	January 15, 1993
Department of Defense	October 1, 1992	January 15, 1993
Department of Defense	June 1, 1993	August 2, 1993
Department of Education	January 11, 1993	March 15, 1993
Department of Energy	December 8, 1992	March 8, 1993
Department of Energy	April 15, 1992	June 28, 1993

AGENCY	RELEASE DATE	CLOSING DATE
Department of Health & Human Services:		
1. Public Health Service (PHS)	September 22, 1992	December 7, 1992
2. Public Health Service (PHS)	January 15, 1992	April 15, 1993 August 15, 1993 December 15, 1993
3. Public Health Service (PHS)	September 15, 1993	December 6, 1993
Department of Transportation	February 16, 1993	May 3, 1993
Enviromental Protection Agency	October 23, 1992	January 11, 1993
National Aeronautics & Space Foundation	May 17, 1993	July 27, 1993
National Science Foundation	March 19, 1993	June 14, 1993
Nuclear Regulatory Commission	November 30, 1992	February 19, 1993

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