AD-A250 690

(1)

UNITED STATES ARMY
COMMUNICATIONS-ELECTRONICS COMMAND
FORT MONMOUTH, NEW JERSEY 07703-5000

ADVANCE PLANNING BRIEFING FOR INDUSTRY

"COMPETITIVE ACQUISITIONS IN THE NEW STRATEGIC ENVIRONMENT"

DISTRIBUTION STATEMENT A
Approved for public release;
Distribution Unlimited

DTIC
ELECTE
MAY 28 1992
S B D

SHERATON EATONTOWN HOTEL &
CONFERENCE CENTER

12 - 13 MAY 1992

92-13907

92 5 2 116

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), I am pleased to present these proceedings of the CECOM 1992 Advance Planning Briefing for Industry (APBI).

The success of Desert Shield/Desert Storm has assured continued support to the acquisition of improved and next generation communications-electronics technologies. This support, however, is significantly impacted by the great changes in the world's geopolitical environment and the constraints on defense resources which mandate new and improved processes in the way the Department of the Army acquires and fields these technologies.

It is imperative that Government and Industry continue to work together to achieve the common goal of concentrating today's limited resources in areas that will most benefit the soldier. In this publication we share with you information concerning both long-term technological advances as well as near-term contractual opportunities in the Command, Control and Communications, Intelligence and Electronic Warfare (C3IEW) arena.

It is our hope that this symposium, and the entire Advance Planning Briefing for Industry program, will be beneficial to Industry in the planning effort required to provide continued quality support to the soldier in the field.

Sincerely,

Alfred J. Mallette
Major General, U.S. Army
Commanding

DISCLAIMER

The use of trade names in this report does not constitute official endorsement of any products. This report may not be cited for purposes of advertisement.

The information provided is accurate as of the time of publication, and may be subject to change.

THE OVERALL CLASSIFICATION

OF THIS PUBLICATION IS

UNCLASSIFIED.

ADVANCE PLANNING BRIEFING
FOR INDUSTRY

12-13 MAY 1992
SHERATON EATONTOWN HOTEL AND CONFERENCE CENTER
EATONTOWN, NEW JERSEY

MEETING CHAIRMAN
MG ALFRED J. MALLETTE
COMMANDING GENERAL, CECOM

AGENDA

TUESDAY, 12 MAY 1992

1000 EARLY REGISTRATION-SHERATON

1400 ADMINISTRATIVE REMARKS
Mr. Edward C. Thomas
Director, Program Analysis and Evaluation, CECOM

1405 WELCOMING REMARKS
MG Alfred J. Mallette
Commanding General, CECOM

1415 SESSION I: EMERGING ACQUISITION CONCEPTS

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

OPERATING & SUPPORT COST REDUCTION (OSCR)
LTC I. P. Barlow
Staff Officer, Programs & Plans Division, AMC

JOINT COMPUTER-AIDED ACQUISITION AND LOGISTIC SUPPORT (JCALS)
Dr. James E. Tomlinson
Project Manager, Joint Computer-Aided Acquisition and Logistic Support

1510 SESSION II: C3IEW TECH BASE

MODERATOR:
Mr. Anthony V. Campi
Director, Research, Development and Engineering Center, CECOM

ELECTRONICS TECHNOLOGY FOR THE FUTURE ARMY
Dr. Clarence G. Thornton
Director, US Army Electronics Technology and Devices Laboratory, LABCOM

NIGHT VISION & ELECTRO OPTICS CHALLENGES
Dr. James A. Ratches
Associate Director for Science and Technology, Night Vision and Electro-Optics Directorate
CECOM

C3 SYSTEMS TECHNOLOGY BASE PROGRAM
Mr. Joseph J. Pucilowski, Jr.
Director, Command, Control and Communications (C3) Systems Directorate, CECOM

OPPORTUNITIES IN EW AND RSTA PROGRAMS
Mr. Eugene Famolari, Jr.
Director, Electronic Warfare/Reconnaissance, Surveillance, and Target Acquisition Directorate, CECOM

1700 QUESTION AND ANSWER PERIOD

1715 RECEPTION

WEDNESDAY MAY 13, 1992

0800 ADMINISTRATIVE REMARKS

0805 SESSION II: (CONT'D)

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

SIGNALS WARFARE TECHNOLOGY INITIATIVES
Mr. G. William Mitchell, Jr.
Associate Director for Technology, Signals Warfare Directorate, CECOM

0845 QUESTION AND ANSWER PERIOD

0855 SESSION III: C3IEW

MODERATOR
Mr. Neal W. Atkinson
Deputy Program Executive Officer
PEO Communications Systems

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM (STACCS)
COL Carl L. Lambeth
Project Manager, Operations Tactical Data Systems

THE AWIS PROGRAM
Mr. Michael R. Verville
Chief, Acquisition Branch, Project Manager, Army World Wide Military Command and Control System and Information System

0945 BREAK

1010 DIGITAL TOPOGRAPHIC SUPPORT SYSTEM (DTSS)
Mr. Harold G. Britton, Jr.
Project Manager, Combat Terrain Information Systems

PEO COMMUNICATIONS SYSTEMS
Mr. John T. Benner
Chief, Systems Engineering Office
PEO Communications Systems

PRECISION LIGHTWEIGHT GPS RECEIVER (PLGR)
COL Bruce D. Sweeny
Project Manager, Global Positioning System

EMUT PROGRAMS
COL Thomas J. Stauffacher
Project Manager, Satellite Communications

PEO IEW ACQUISITION OPPORTUNITIES (93-97)
Mr. Edward T. Bair
Chief, Business Management Office
PEO Intelligence and Electronic Warfare

DTIC COPY INSPECTED 6

1155 QUESTION AND ANSWER PERIOD

1210 LUNCH

Statement A per telecon Eileen Webber
CECOM/AMSEL-PE-OD
Fort Monmouth, New Jersey 07707-5000

NWW 5/27/92

Accession For
NTIS GRA&I ☑
DTIC TAB ☐
Unannounced ☐
Justification
By per telecon
Distribution/
Availability Codes
Dist | Avail and/or Special
A-1

1340 SESSION IV: STRATEGIC & SUSTAINING BASE ACQUISITION OPPORTUNITIES

MODERATOR:
BG John M. Watkins
Program Manager, Army Information Systems and Commanding General, US Army Information Systems Management Activity

LIFE CYCLE SUPPORT FOR AT&T/GTE ELECTRONIC DIGITAL SWITCHED SYSTEMS
Mr. Thomas J. Michelli
Deputy Program Manager, Army Information Systems and Deputy, US Army Information Systems Management Activity

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

WHITE SANDS MISSILE RANGE-TEST SUPPORT NETWORK (WSMR-TSN)
COL Donald E. Brown
Project Manager, Defense Communications and Army Transmission Systems

COMMON USER INSTALLATION TRANSPORT NETWORK
COL John D. Hartman
Project Manager, Defense Communications and Army Switched Systems

1440 QUESTION AND ANSWER PERIOD

1450 BREAK

1515 SESSION V: FOREIGN MILITARY SALES (FMS) OPPORTUNITIES

MODERATOR:
Mr. James M. Skurka
Director, C3I Logistics and Readiness Center, CECOM

PENDING FOREIGN MILITARY SALES
Mr. Eugene P. Bennett
Director, Security Assistance Management Directorate, CECOM

1535 QUESTION & ANSWER PERIOD

1545 EXECUTIVE PANEL

MG Alfred J. Mallette
Commanding General
US Army Communications-Electronics Command

MG William E. Harmon
Program Executive Officer
Command and Control Systems

BG John M. Watkins
Program Manager, Army Information Systems and
Commanding General, US Army Information
Systems Management Activity

Mr. Neal W. Atkinson
Deputy Program Executive Officer
Communications Systems

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

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

1630 ADJOURN

CONTENTS

Page

WELCOMING REMARKS 1

PRESENTATIONS

SESSION I - EMERGING ACQUISITION CONCEPTS 3

Operating & Support Cost Reduction (OSCR) 15

Joint Computer-Aided Acquisition and Logistic Support (JCALS) 35

SESSION II - C3IEW TECH BASE 55

Electronics Technology for the Future Army 63

Night Vision & Electro Optics Challenges 137

C3 Systems Technology Base Program 171

Opportunities in EW and RSTA Programs 207

Life Cycle Software Engineering for Mission Critical Defense Systems 245

Signals Warfare Technology Initiatives 287

SESSION III - C3IEW 329

Standard Theater Army Command and Control System (STACCS) 331

The AWIS Program 353

Digital Topographic Support System (DTSS) 375

PEO Communications Systems 395

Precision Lightweight GPS Receiver (PLGR) 411

EMUT Programs 435

PEO IEW Acquisition Opportunities (93-97) 457

Page

SESSION IV - STRATEGIC & SUSTAINING BASE ACQUISITION OPPORTUNITIES 509

Life Cycle Support for AT&T/GTE Electronic Digital Switched Systems 511

Pentagon Renovation Project 523

White Sands Missile Range-Test Support Network (WSMR-TSN) 547

Common User Installation Transport Network 567

SESSION V - FOREIGN MILITARY SALES (FMS) OPPORTUNITIES 581

Pending Foreign Military Sales 583

EXECUTIVE PANEL 601

SYMPOSIUM PARTICIPANTS 607

WELCOMING REMARKS

MG ALFRED J. MALLETTE

COMMANDING GENERAL, CECOM

NOTES

SESSION I

EMERGING ACQUISITION CONCEPTS

MODERATOR

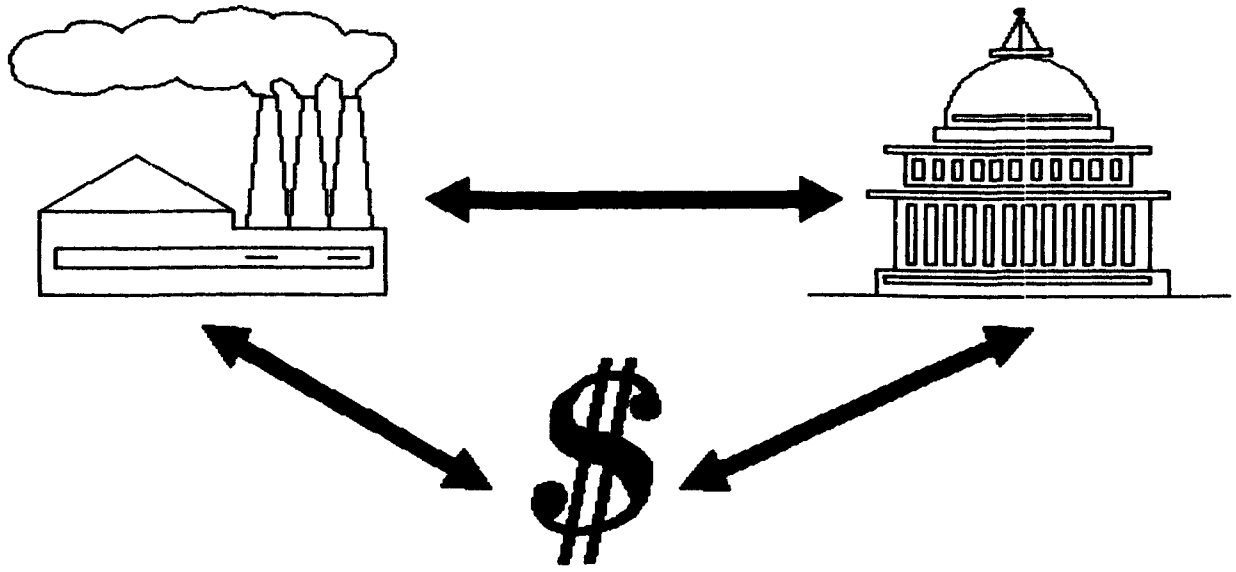
MR. EDWARD G. ELGART
DIRECTOR
C3I ACQUISITION CENTER
CECOM

COMMUNICATION/RELATIONS
INITIATIVES

- INCREASED USE OF BEST VALUE CONTRACTING
- EXPANSION OF ELECTRONIC CONTRACTING
- SMALL BUSINESS PARTICIPATION
- EXPANSION OF COMPETITIVE ENVIRONMENT
- AVAILABILITY OF INFORMATION/RESOLUTION OPTIONS
  - TILSPO
  - OMBUDSMAN

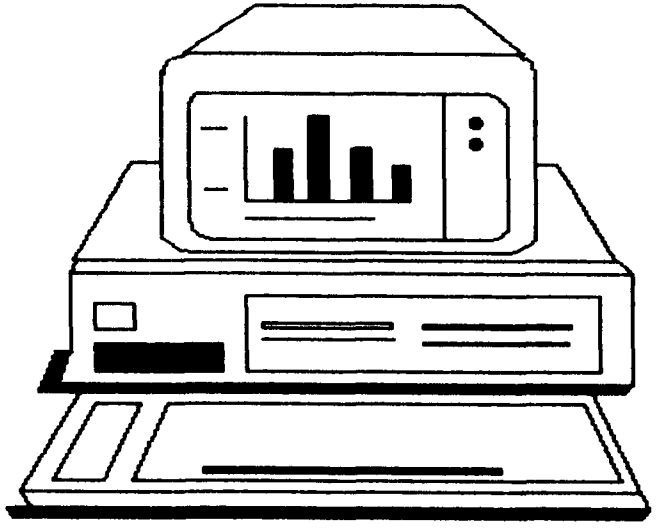
BEST VALUE SOURCE SELECTION

- OTHER THAN PRICE
- BEST OVERALL PROPOSAL
- MOTIVATES INDUSTRY INNOVATION
- PAST PERFORMANCE A "KEY"



ELECTRONIC BULLETIN BOARD SYSTEM STATUS TO DATE

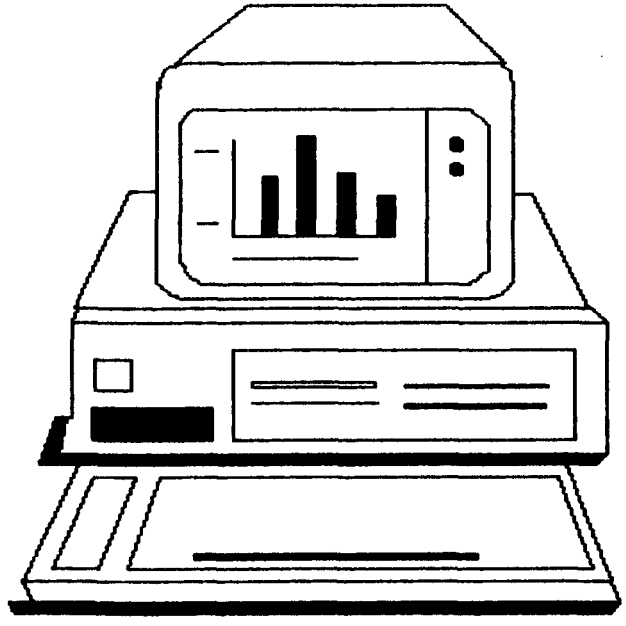
- INDUSTRY SPECIFIC USER ACCOUNTS
- EARLY INDUSTRY INVOLVEMENT
- COMPLETE ACQUISITION AUDIT TRAIL



100% PAPERLESS ACQUISITION "GOAL"

ELECTRONIC BULLETIN BOARD SYSTEM
FUTURE OUTLOOK

- PROPOSAL SUBMISSION
- PROPOSAL EVALUATION
  - •• COMPETITIVE RANGE
  - •• NEGOTIATIONS
- CONTRACT EXECUTION AND ADMINISTRATION
  - •• ELECTRONIC SIGNATURE
  - •• DELIVERY
  - •• LOGISTICS
  - •• FINANCIAL
  - •• CLOSEOUT



CECOM/AMC PROTOTYPE DEVELOPMENT

COMPETITION

- REDUCTION IN NON-COMPETITIVE ACTIONS FROM 858 TO 741 AND DOLLARS FROM $4.7 BILLION TO $2.9 BILLION FROM FY89 TO FY91
- SPARE PARTS BREAKOUT PROGRAM INCREASED COMPETITIVE AWARD DOLLARS FOR SPARES FROM 45% (FY83) TO 69% (FY91)
- REVERSE ENGINEERING PROGRAM RESULTS IN 27 NEW SOURCES OF SUPPLY SINCE FY88
- COMPETITION ADVOCATE'S SHOPPING LIST PUBLICATIONS RESULTED IN 72 NEW POTENTIAL SOURCES OF SUPPLY

SMALL BUSINESS

- COMPREHENSIVE REVIEW OF REQUIREMENTS BY CECOM COMMUNITY HAS INCREASED SMALL BUSINESS CONTRACT OPPORTUNITIES
- RESULTS FOR FY91:
  - 66% OF DOLLARS AVAILABLE FOR COMPETITION CAPTURED BY SMALL BUSINESS
  - COMMAND GOALS FOR SMALL AND SMALL AND DISADVANTAGED BUSINESS EXCEEDED
- INCREASE IN SMALL BUSINESS INDUSTRIAL BASE PROMOTING COMPETITION AND ALTERNATE SOURCES OF SUPPLY FOR PRIME CONTRACTORS

INFORMATION/RESOLUTION
OPTIONS

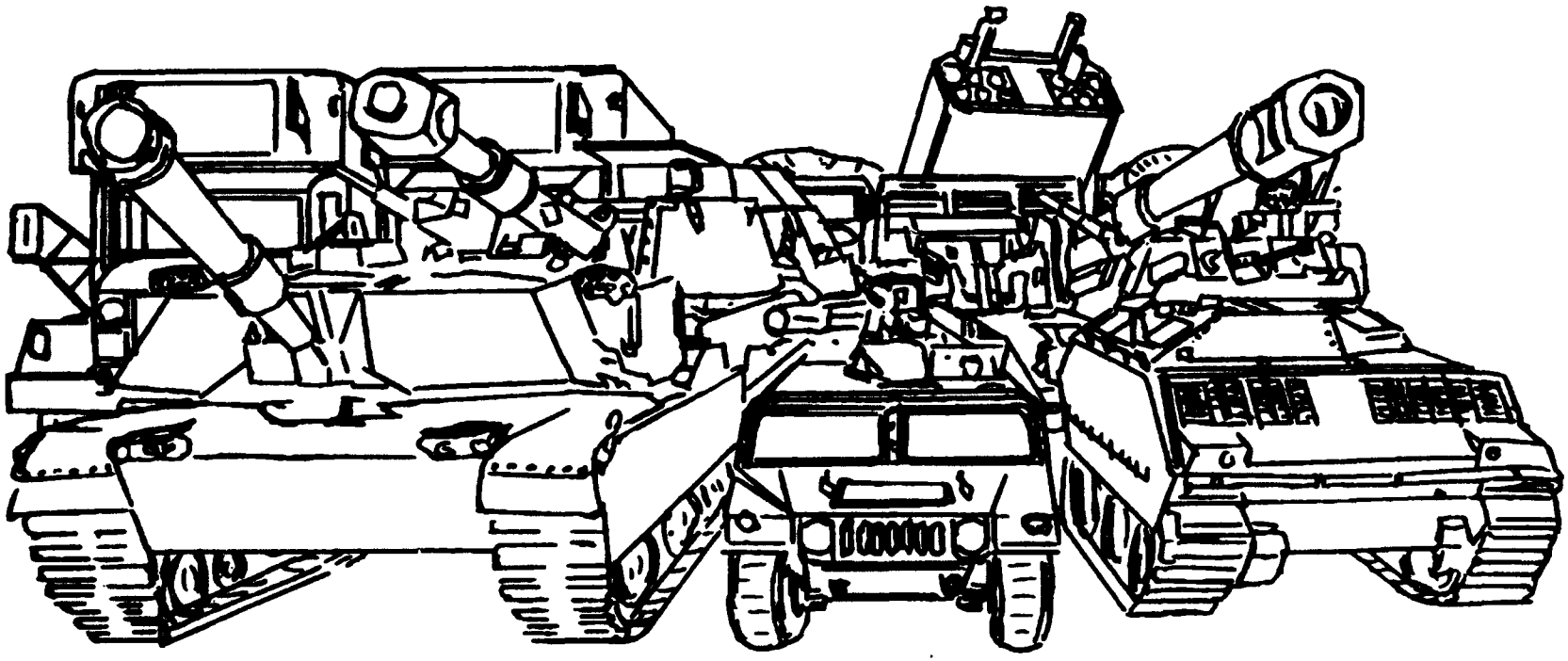
- TILSPO
  - UNSOLICITED PROPOSALS
  - DESCRIPTIVE SUMMARY INFORMATION
  - VIP INDUSTRIAL VISITS
  - INDUSTRIAL PRODUCT DEMONSTRATION
  - ARMY REQUIREMENTS DOCUMENT PROGRAM
  - ARMY POTENTIAL CONTRACTOR PROGRAM
- OMBUDSMAN
  - NEUTRAL PARTY
  - STREAMLINED SOLICITATION
  - PROPER ACQUISITION PRACTICE
  - SOUND BUSINESS JUDGEMENT
  - ADD COST-EFFECTIVENESS CRITERIA

POINTS OF CONTACT

- OMBUDSMAN: MR. JOHN J. GOODBODY
  (908) 532-9414
- COMPETITION ADVOCATE: MR. ROBERT CRAWFORD
  (908) 532-5056
- SMALL AND DISADVANTAGED BUSINESS
  UTILIZATION OFFICE (SADBU): MR. ART WIDMAIER
  (908) 532-4511
- TECHNICAL INDUSTRIAL LIAISON AND SPECIAL
  PROJECTS OFFICE (TILSPO):
  MS. NANETTE MULLENAX
  (908) 532-2671

NOTES

OSCR Operating & Support Cost Reduction



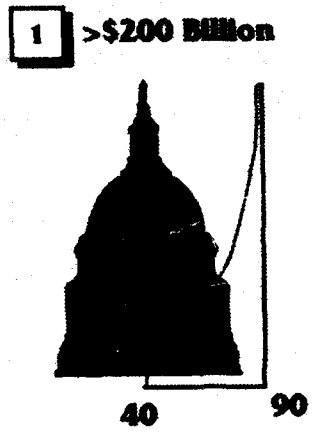
OSCR, Where We Are . . . Where We're Going

Briefing Outline

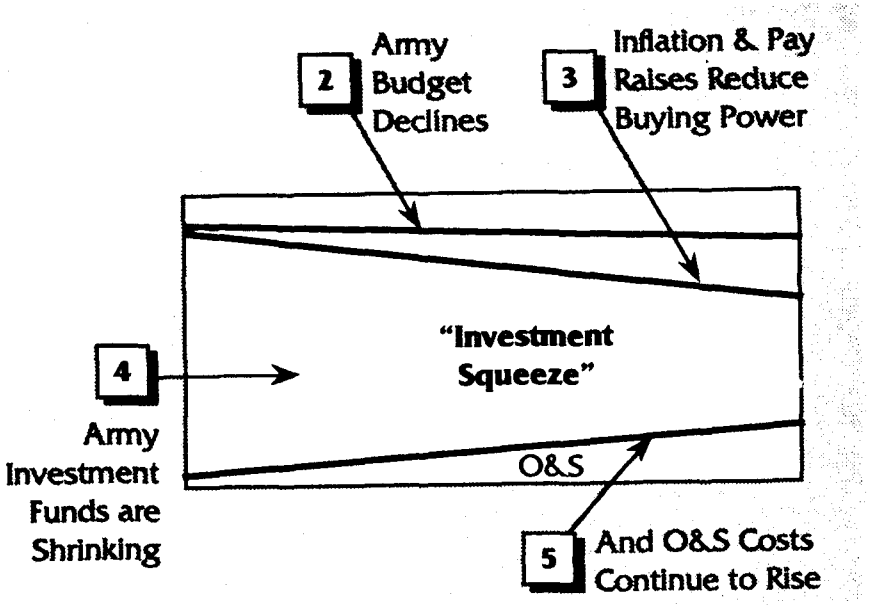
- **Where We Are**
- **What We're Doing**
  - **Decision Systems**
  - **Marketing Strategy**
  - **Infrastructure**
  - **Initiatives**
- **What to Do . . . Remedy**
  - **Opportunities**
  - **Institutionalize OSCR**

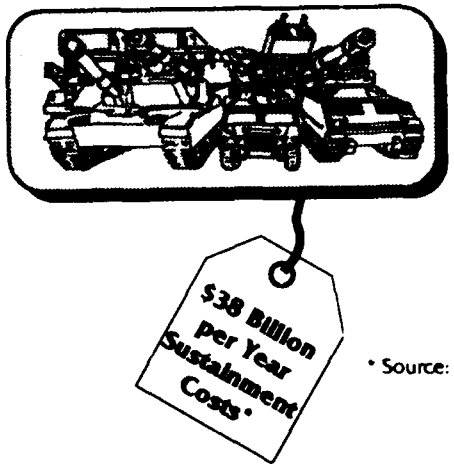
Where We Are . . .

We're Facing the Facts!

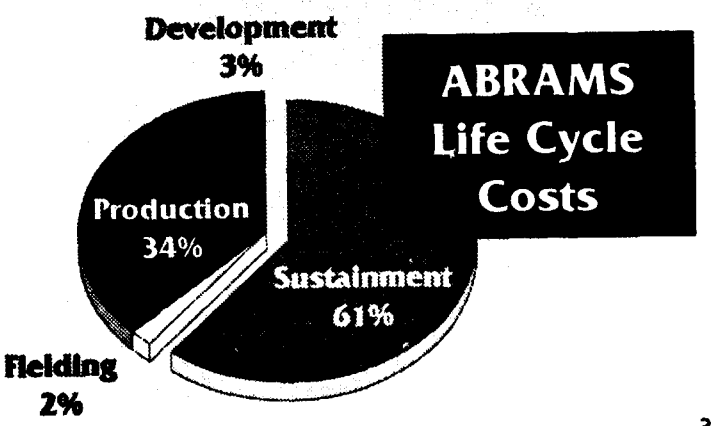


Annual Federal Deficit Continues to Rise . . .





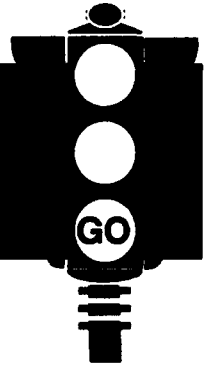
* Source: Army Science Board, FY90



We're Getting The Word Out . . .

To Government
- **Regulations**
  - **Conferences/ Workshops**
    - **White Paper**

O&S cost reductions must be realized quickly!



To Government & Industry
- **Atlanta XVI**
  - **OSCR Panel**
    - **National Army OSCR Conference**

What We're Doing

OSCR Action Plan

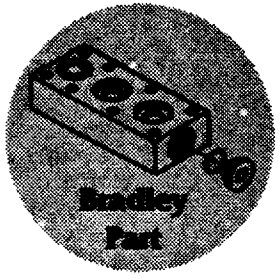
The New "OSCR" Thrust is...

Invest in All Life Cycle Phases

Stock Fund

- Quickest Return

Value Engineering

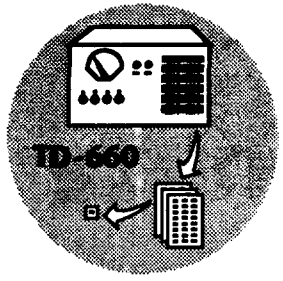


- Quick Return

Retiring Obsolete Equipment

- High Return

Materiel Change Management

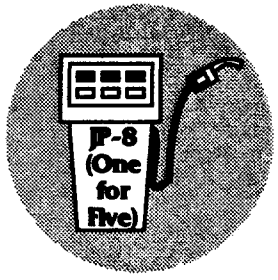


- High Return

Major Mods New Starts

- Strict Policy Enforcement
- Higher Return

Tech Base



- Highest Return

13 v.2B

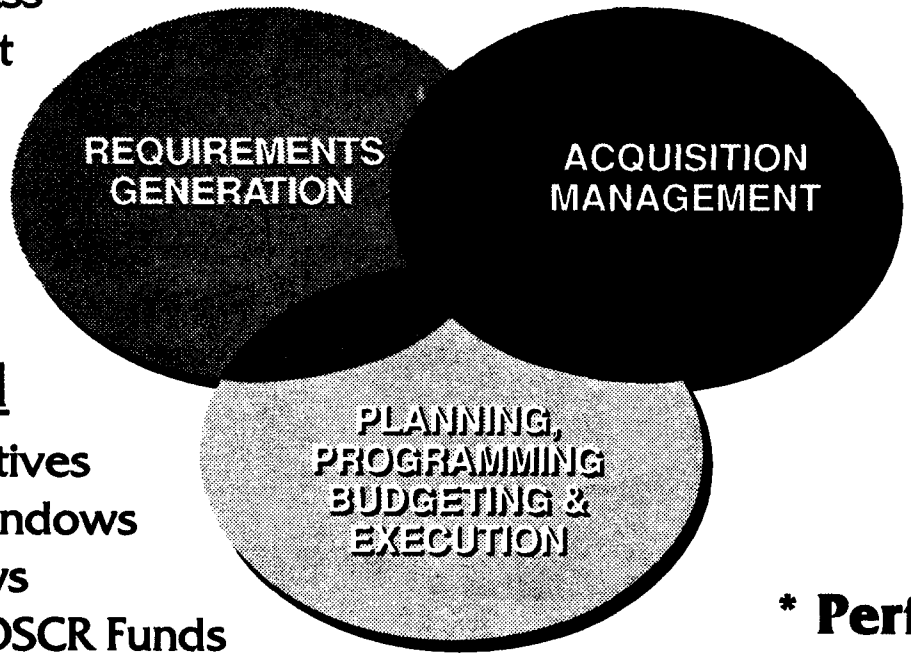
We're Driving OSCR Into Decision Making Systems

Combat Developer

- Doctrine, Training, Org & Leader Dev
- Requirements Documents*
- Materiel Change Mgt - Prioritization
- "Best in Class"
- User Impact

Materiel Developer

- Quickest/Highest Return
- Specifications*
- Life Cycle Processes:
  - Stock Fund
  - Value Engineering
  - Retiring Obsolete Equipment
  - Materiel Change Mgt – Technical
  - Major Mods/New Starts
  - Tech Demos
  - Tech Base



All

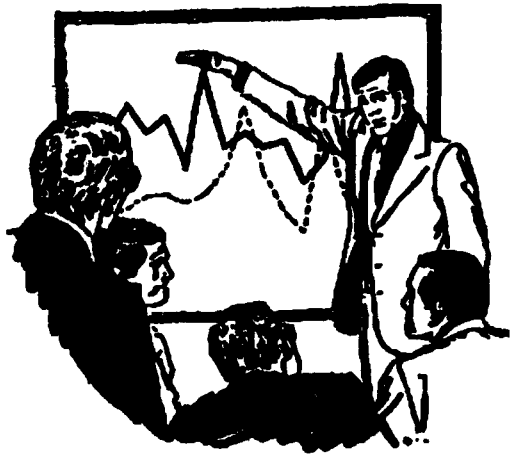
- OSCR Initiatives
- Funding Windows
- PBC Reviews
- 6.4 & 6.7 OSCR Funds

*** Performance Vs OSCR**

Marketing Strategy

Established:

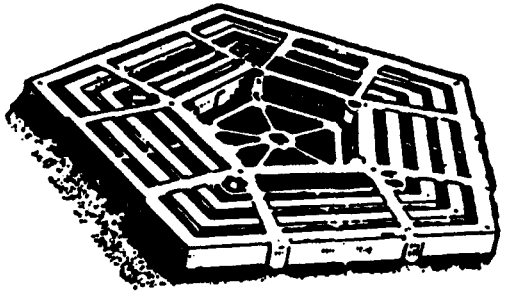
- Task Force
- AMC-TRADOC Permanent Offices
- Functional Channels



Developed:

- Concept
- Briefing
- White Paper

Obtained Army Leadership Endorsement:



- GOSC, RRC, PBC
- AAE, VCSA, CSA, USA, SA

Publish Policy and Procedures:

- Overarching
- Implementing Policy
- Stock Fund
- RDA Initiatives

Infrastructure

Government:

- CSA/SA Full Endorsement
- ARSTAF:
  - DCSOPS - Proponent
  - SARDA - RDA Initiatives
  - DCSLOG - Stock Fund
- MACOM:
  - AMC & TRADOC Matrix Support
- MSC: Action Officer Working Groups

Operatives:

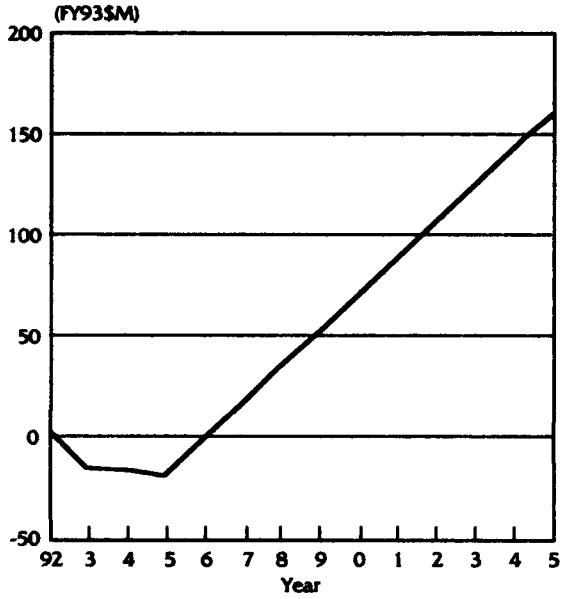
- Corporate Oversight
- Implement Through Tech Channels
- Periodic Checks, e.g., National Army OSCR Conference

Industry:

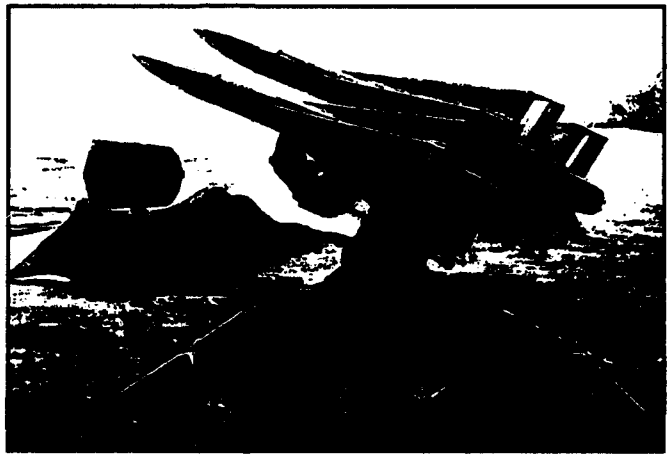
- Atlanta XVI Endorsement
- ADPA Panel - Explore Initiatives
- Value Engineering - Collateral Savings
- Warranty Clause - Accurate O&S Costs

We're Surfacing OSCR Initiatives

HAWK Test Program Set



HAWK IFTE/Test Program Set



With High Return

Using Standard Cost Metrics

***BIR/SIR: 5:1**
Breakeven: 6 years

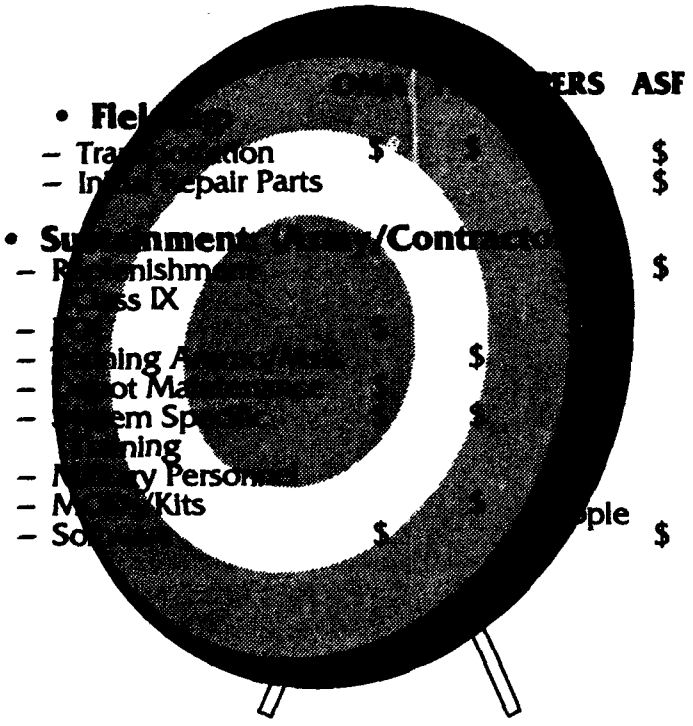
- **Up-Front Investment = $18.4M Over 3 Years**
- **Total Net Savings = $146.6M Over 10 Years**

And We've Identified "Top 10" Generic Cost Drivers

Benefit/Investment Ratio = (Real Savings + Cost Avoidance)/Investment

We've Targeted O&S Cost Elements for Reduction . . .

User's (Retail) and Supplier's (Wholesale) O&S Cost Elements*



And We're Using Existing Systems to . . .

Compile,
Analyze,
Track,
and Report

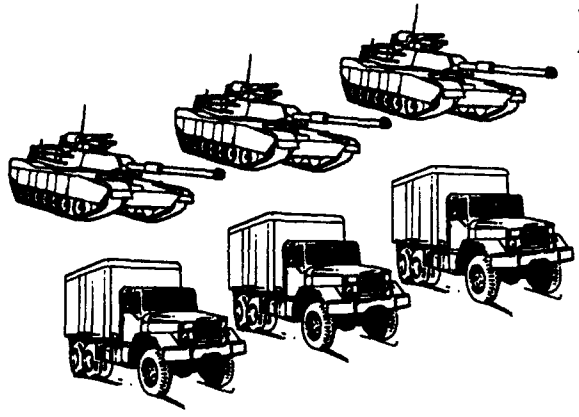
O&S Cost Data

*Source: DoDD 7220.33, Reporting of O&S Costs of Major Defense Systems
DA PAM 11-4, Operating & Support Cost Guide
DCA-P-92(R), Instructions for Reformatting the BCE/ICE

What to Do . . Remedy

OSCR Corporate Approach

What to Do . . . Remedy



Reduce Fleet Costs

- Retire Old/Obsolete Equipment
- Buy/Dispose in Quantity

Fund RDA Projects

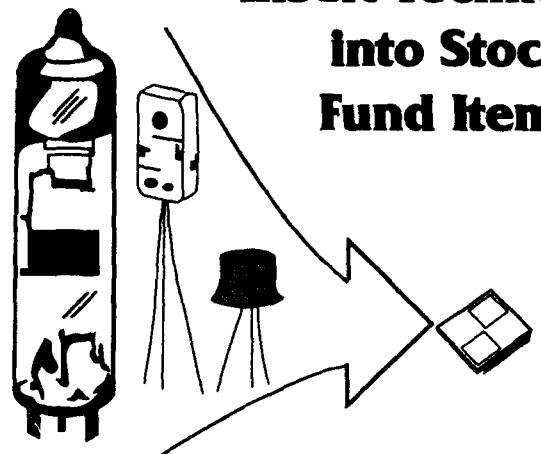
- LRAMRP/LRRDAP/POM
- Budget/Execution
- Benefiting Accounts (e.g. OMA) Share Savings with Investment Accounts (e.g. RDA)

What to Do (Continued)

Government and Industry

- Develop Generic Warranty Clause

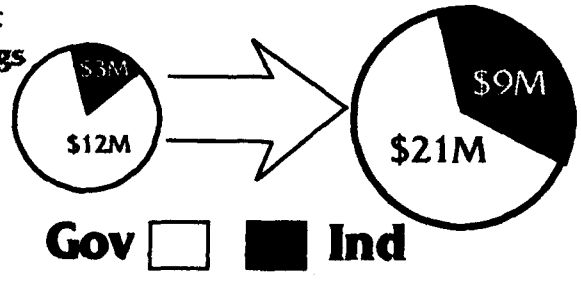
Insert Technology into Stock Fund Items



- Maintain Just-In-Time Inventory

Increase VE Collateral Savings Government and Industry

20% of 1st year's savings



30% per year over 3 to 5 years

026C - V.9-9

Institutionalize OSCR

- OSCR Policy*:
  - AAE & VCSA Overarching Policy Memo
  - CSA/SA Endorsement
  - DCSLOG Stock Fund Memo
  - Implementing Plan

- Army Regs:
  - AR 70-1, Acquisition
  - AR 700-127, Logistics

- Handbooks
  - DA PAM 70-2, Materiel Acquisition
  - Tech Insertion in Stock Fund
  - Value Engineering Master Plan
  - OSCR

*Coordinated with ARSTAF, PEOs, & MACOMs

Near-Term Objectives . . .

- Apply Total Quality Management Principles
- Flesh Out the Concept
- Develop and Conduct Training Program
- Jump Start OSCR Projects (Fund at Execution Review) . . . Include OSCR Increments in Long-Range RDA Planning
- Get Word Out to Defense Contractors
- Promote NDI Solutions

Long Term . . .

- Institutionalize OSCR
- Continue TQM . . . Process Improvement . . . Include Industry
- Develop OSCR Depot Maintenance Program (Phase II Effort)
- Incentivize Defense Contractors with Collateral Savings
- Reduce O&S Cost of Future Systems and Spares
- Plow O&S Savings Back into
  - Investment Accounts
  - Training
  - More OSCR
  - Infrastructure
  - Inflation Offset

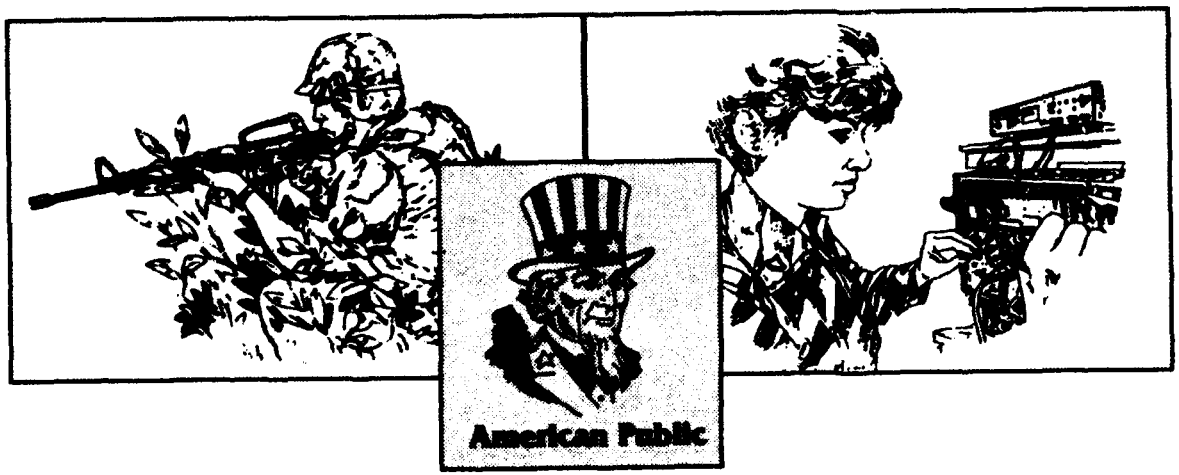
Summary: Bottom Line is . . .

★ We ***Will*** Realize O&S Cost Reductions Quickly

★ We'll ***Act Now*** on OSCR/Initiatives with High Return

★ We'll Institutionalize OSCR in Government/ Industry Decision Forums and Processes

We Owe It to Our Customers . . .



To Reduce Operating & Support Costs

4-v.3

NOTES

JOINT COMPUTER-AIDED ACQUISITION AND LOGISTIC SUPPORT (JCALS)

DR. JAMES E. TOMLINSON
PROJECT MANAGER
PM JCALS

UNCLASSIFIED

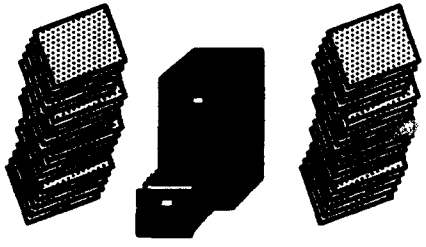
BRIEFING OUTLINE

- Current Situation, Policy, and Standards
- CALS Initiatives and User Requirements
- Functional System Transition
- Integrated Weapon System Data Base (IWSDB)
- User Capability
- Effects on Industry
- Putting CALS Requirements in Weapon System Solicitations
- What You Can Do
- Summary

JCALS

CURRENT SITUATION

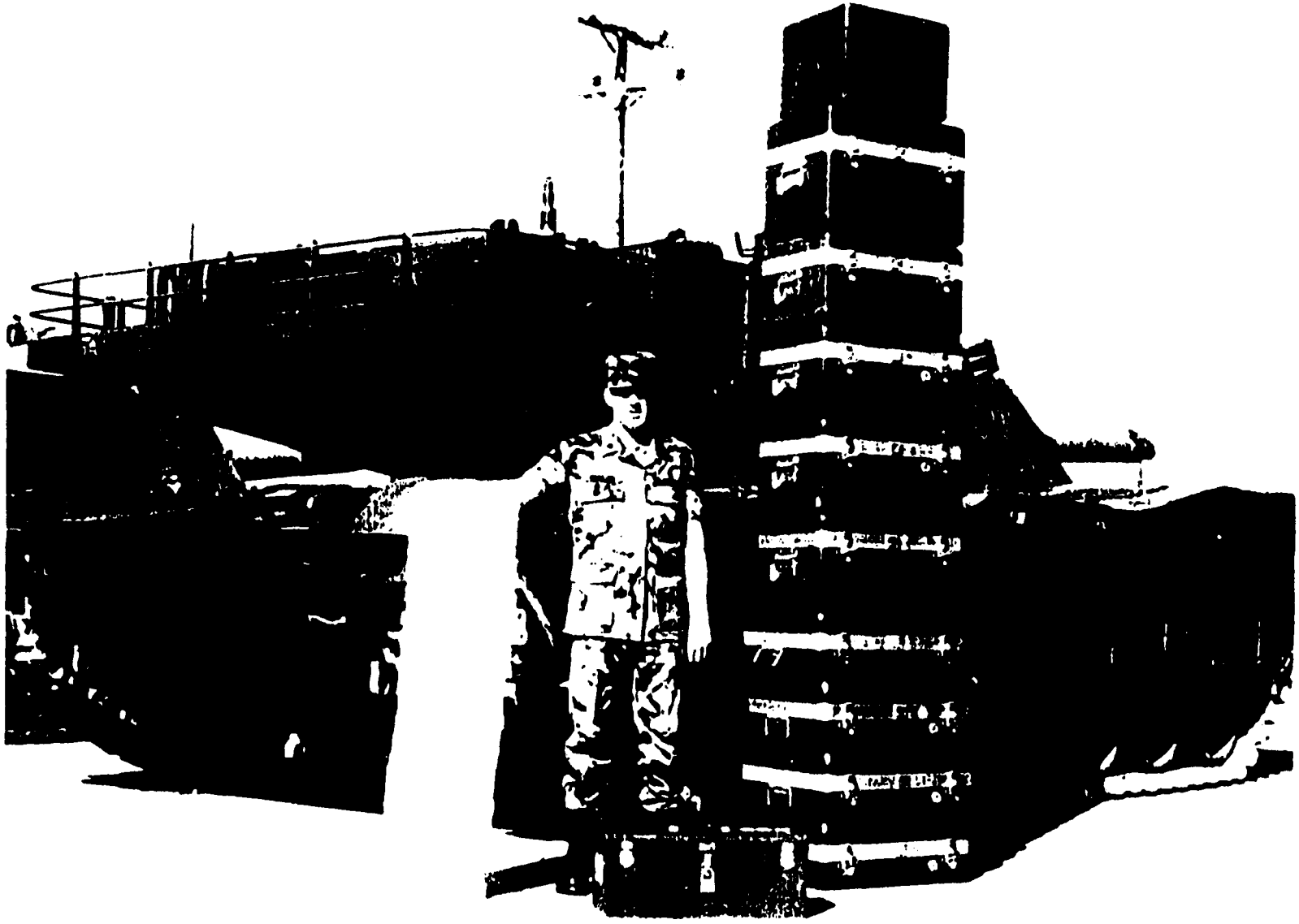
The Army spends approximately $7.5 billion annually on processing of technical and engineering information



These processes, which are paper-based, are inefficient

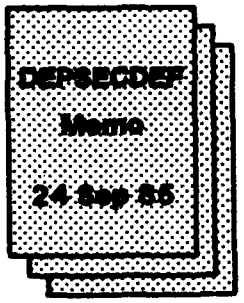
The result is information which

- ☒ **Is frequently acquired multiple times**
- ☒ **Is often out of date**
- ☒ **Contains errors**
- ☒ **Is not easily shared**
- ☒ **Is presented in inconsistent formats**
- ☒ **Can lead to fatal accidents when in error**

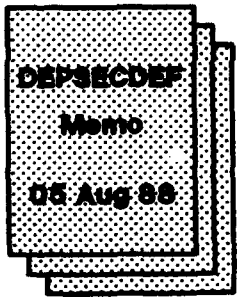


JCALS

OSD CALS POLICY

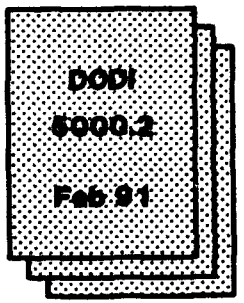


"By 1990, new major weapon systems will acquire technical information in digital form."



After Sep 88, " plans for new weapon system related equipment items should include use of the CALS standards."

" DoD components shall program for automated systems to receive, store, distribute, and use digital weapon system technical information."



A system will be developed to

- Manage technical information data bases
- Integrate technical information data bases
- Trace design changes to logistics products
- Share data base analysis tools
- Share process and product models

JCALS
STANDARDS

DOD Standard	National/ International Standard	Application
MIL-STD-1840A		Data Interchange, File Management
MIL-STD-1388-1A/2A/2B		LSA/LSAR
MIL-D-28000	IGES	CAD, Vector Graphics
MIL-M-28001	SGML	Automated Publishing
MIL-R-28002	CCITT GP 4 RASTER	Raster Scanned Images
MIL-D-28003	CGM	Vector Graphics
PDES		Product Data Exchange
MIL-HDBK-59A		CALS Implementation Guide

JCALS

CALS INITIATIVES

- Implement DOD Policy and Standards
- Increase the efficiency by which weapon system life cycle support is provided
- Provide integrated digital logistic and technical information handling
- Permit access to information by authorized users throughout the Services
- Provide the capability to incorporate and use automated tools

JCALS

USER REQUIREMENTS

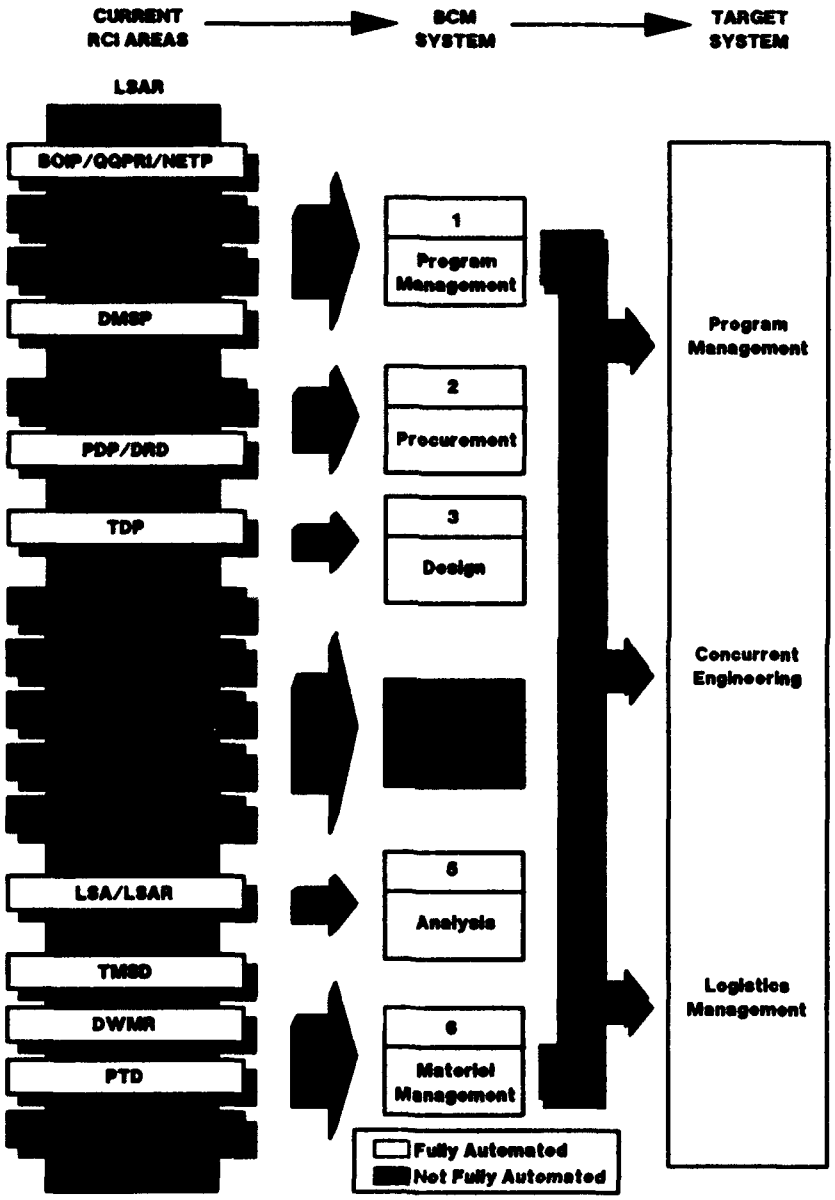
1. LOGISTIC SUPPORT ANALYSIS/LOGISTIC SUPPORT ANALYSIS RECORD (LSA/LSAR)
2. PROVISIONING TECHNICAL DOCUMENTATION (PTD)
3. DATA REQUIREMENT DOCUMENTATION/PROCUREMENT DATA PACKAGE/ TECHNICAL DATA PACKAGE (DRD/PDP/TDP)
4. NEW EQUIPMENT TRAINING PLAN / QUALITATIVE AND QUANTITATIVE PERSONNEL REQUIREMENT INFORMATION / BASIS OF ISSUE PLAN FEEDER DATA (NETP/QQPRI/BOIPFD)
5. TECHNICAL MANUAL SOURCE DATA (TMSD)
6. DEPOT MAINTENANCE WORK REQUIREMENT (DMWR)
7. DEPOT MAINTENANCE SUPPORT PLAN (DMSP)

JCALS

USER REQUIREMENTS
(CONTINUED)

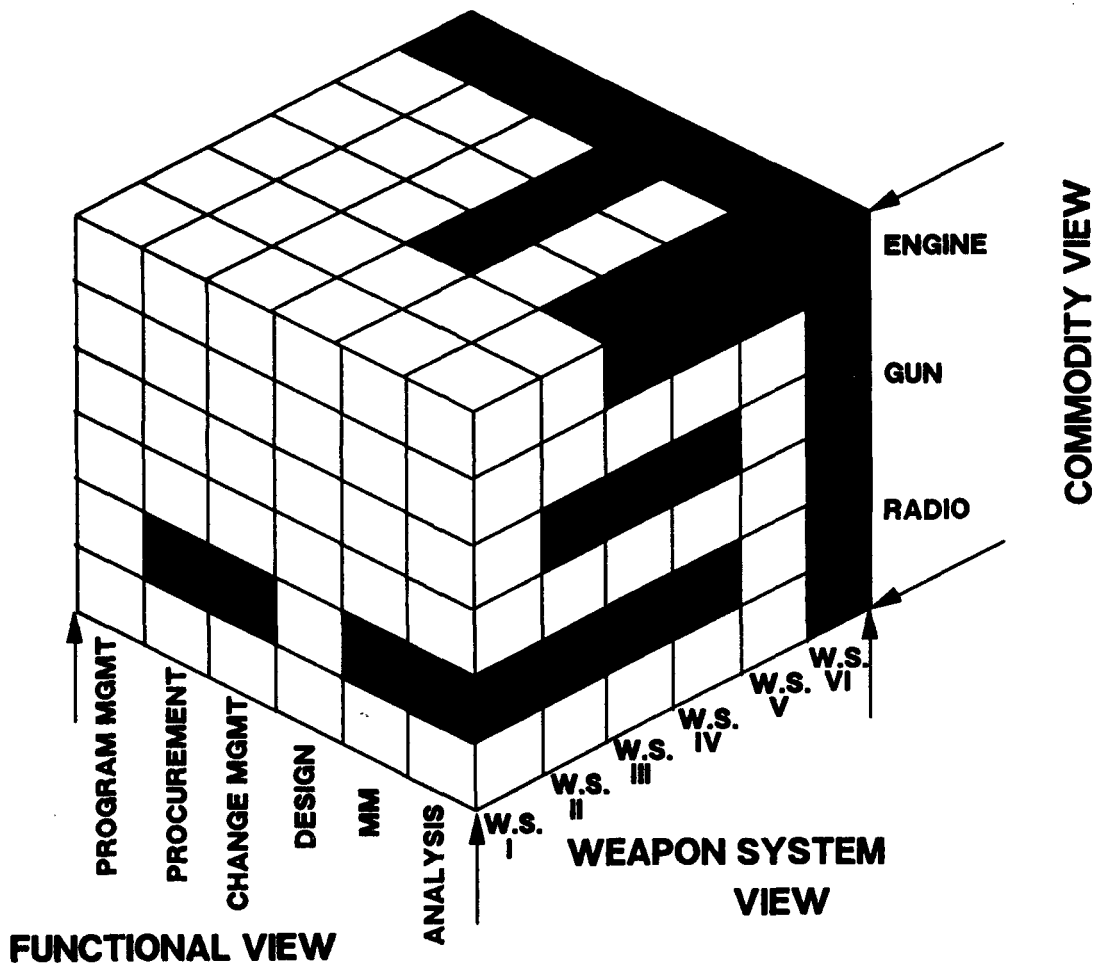
8. ENGINEERING CHANGE PROPOSAL (ECP)
9. EQUIPMENT IMPROVEMENT RECOMMENDATION (EIR)
10. EQUIPMENT PERFORMANCE REPORT (EPR)
11. SAMPLE DATA COLLECTION (SDC)
12. CATALOGING PROVISIONING SYSTEM (CPS)
13. MATERIEL FIELDING PLAN (MFP)
14. PRODUCT IMPROVEMENT MANAGEMENT INFORMATION REPORT (PRIMIR)
15. ACQUISITION PLAN (AP)
16. INTEGRATED LOGISTIC SUPPORT PLAN (ILSP)

Functional System Transition



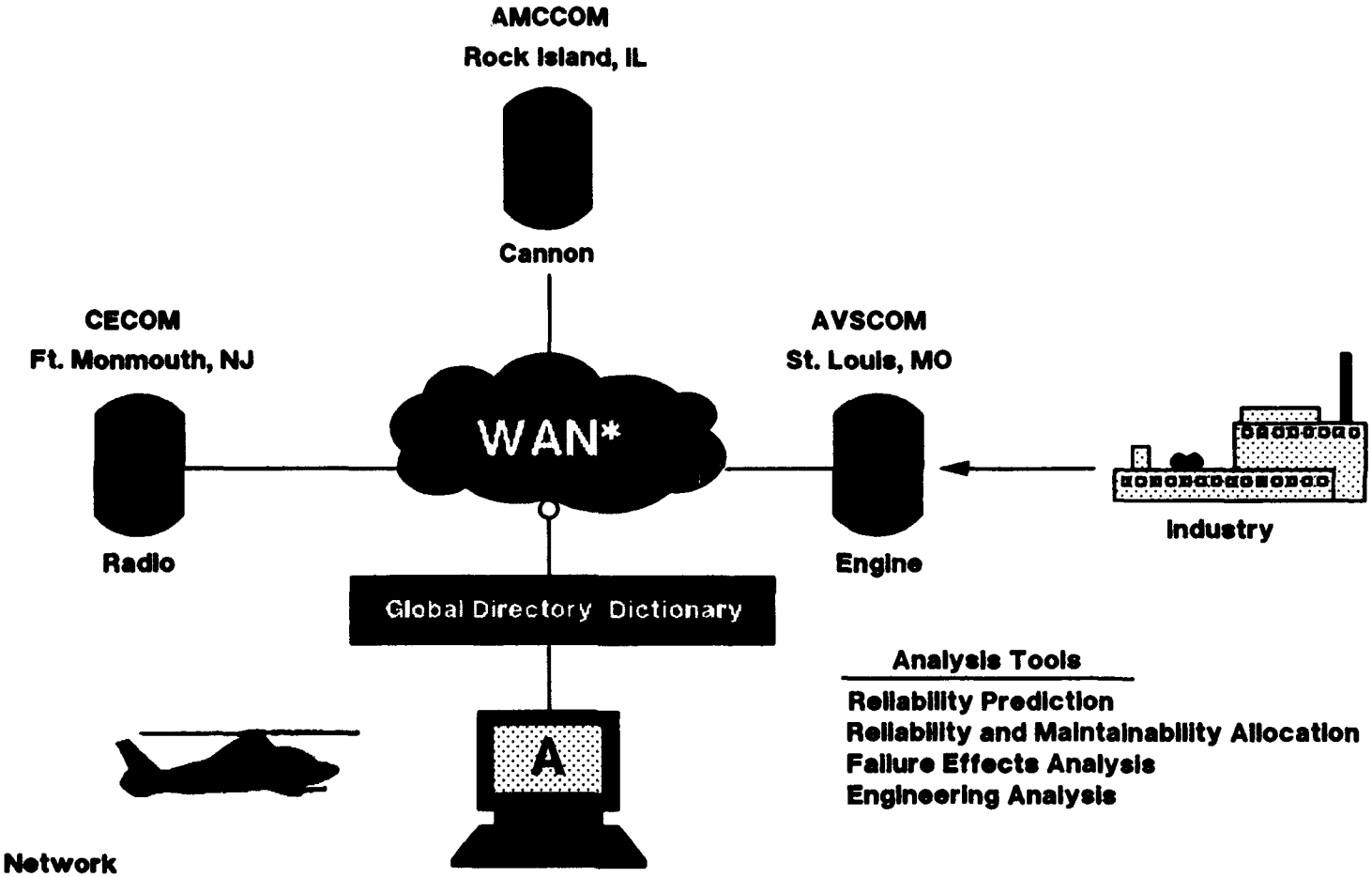
JCALS

IWSDB



IWSDB provides both a weapon-system view and the traditional commodity view, as well as a functional view, of technical information

JCALS
USER CAPABILITY



Analysis Tools

- Reliability Prediction
- Reliability and Maintainability Allocation
- Failure Effects Analysis
- Engineering Analysis

* Wide Area Network

JCALS

EFFECTS ON INDUSTRY

- Proposals
  - Address CALS STDs/SPECs
  - Propose option to deliver CALS-compliant data
- CITIS
  - Interactive System
    - Industry ———— Government
    - Prime ———— Subcontractors
- Weapon system information stored in Integrated Weapon System Data Base
- Increased weapon system simulation and modeling to cut design and development lead times

JCALS

PUTTING CALS REQUIREMENTS IN WEAPON SYSTEM SOLICITATIONS

Publications:

- **MIL-HDBK-59A (CALS Program Implementation Guide)**
- **DoD Acquisition Guide for Implementation of CALS (Draft)**
- **MIL-C-CITIS (Contractor Integrated Technical Information Service) (Draft)**

JCALS

PUTTING CALS REQUIREMENTS IN WEAP . .TEM SOLICITATIONS

(CONTINUED)

Guidance Provided:

- **Provides for transition to digital data delivery and access**
- **Defines criteria for evaluating data options**
- **Contains model contract language**
- **Defines baseline functional requirements for integrated technical information services**

JCALS

PUTTING CALS REQUIREMENTS IN WEAPON SYSTEM SOLICITATIONS
(Continued)

- **Type of program**
  - **NDI**
  - **Product Improvement**
  - **New Start**
- **Acquisition Phase**
  - **RQMT/TECH Base Activities**
  - **Proof of Principle**
  - **Development Prove Out**
  - **Production & Deployment**

JCALS

WHAT YOU CAN DO

- Establish a focal point for CALS in your organization
- Lay the groundwork
  - Educate your workforce
  - Develop support for CALS
  - Establish a CALS environment
- Define your concept of operation
- Manage the introduction of CALS

JCALS

SUMMARY

- ✓ CALS requirements are here to stay
- ✓ They will be used on a increased number of solicitations in the future
- ✓ You can get ready today

NOTES

SESSION II

C3IEW TECH BASE

MODERATOR

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

SESSION II

This session will cover:

Electronics Technology for the Future Army

Night Vision and Electro-Optics Challenges

C3 Systems

Opportunities in EW and RSTA Programs

Lifecyle Software Engineering

Signals Warfare Technology Initiatives

PANELISTS

- Dr. Clarence G. Thornton
  Director, US Army Electronics Technology and Devices Laboratory, LABCOM
- Dr. James A. Ratches
  Associate Director, Night Vision and Electro-Optics Directorate, CECOM
- Mr. Joseph J. Pucilowski, Jr.
  Director, Command, Control and Communications (C3) Systems Directorate, CECOM

PANELISTS

- Mr. Eugene Famolari, Jr.
  Director, Electronic Warfare/Reconnaissance, Surveillance, and Target Acquisition Directorate, CECOM

- Mr. John H. Sintic
  Director, Software Engineering Directorate, CECOM

- Mr. G. William Mitchell, Jr.
  Associate Director for Technology, Signals Warfare Directorate, CECOM

NOTES

ELECTRONICS TECHNOLOGY FOR THE FUTURE ARMY

ADVANCE PLANNING BRIEFING FOR INDUSTRY

DR. C.G. THORNTON
DIRECTOR
ELECTRONICS TECHNOLOGY
AND DEVICES LABORATORY
LABCOM
FORT MONMOUTH, NEW JERSEY

12-13 MAY 1992

ARL
ELECTRONICS AND POWER SOURCES DIRECTORATE
FUTURE DIRECTIONS

FOTES	CORE COMPETENCIES	FUTURE
MICROELECTRONICS →	MICRO/NANO ELECTRONICS →	NANO ELECTRONICS (Quantum Well, Mescoscopic, Cellular 3D Multi-Material)
MICROWAVE/ MILLIMETER-WAVE →	MICROWAVE/MILLIMETER-WAVE DEVICES →	MW/MMW/PHOTONIC (Multimode Focal Plane, Adaptive)
	MIMIC DEVICES	
DISPLAYS →	INFORMATION INTERFACE →	VIRTUAL ENVIRONMENT DEVICES (Micro High Definition, Retinal, Large Screen)
POWER SOURCES PULSE POWER →	POWER SOURCES →	ALTERNATIVE ENERGY SOURCES (Mini Fuel Cells, Micro Generators, SMEPS)
RESEARCH/OPTO ELECTRONICS →	PHOTONICS →	MICRO PHOTONIC DEVICES (Multi Material, 3D, Optical Bench on a Chip, Smart Pixels
	FOCAL PLANE ARRAYS →	
FREQ CONTROL/ACOUS →	ACOUSTOELECTRONICS MAGNETICS FERROELECTRONICS BIO SENSORS SUPERCONDUCTORS →	MICRO SENSOR/ACTUATOR/ CONTROL DEVICES (Microelectro Mechanical, Bioelectronic and Magnetic, Ferroelectronic Superconductivity

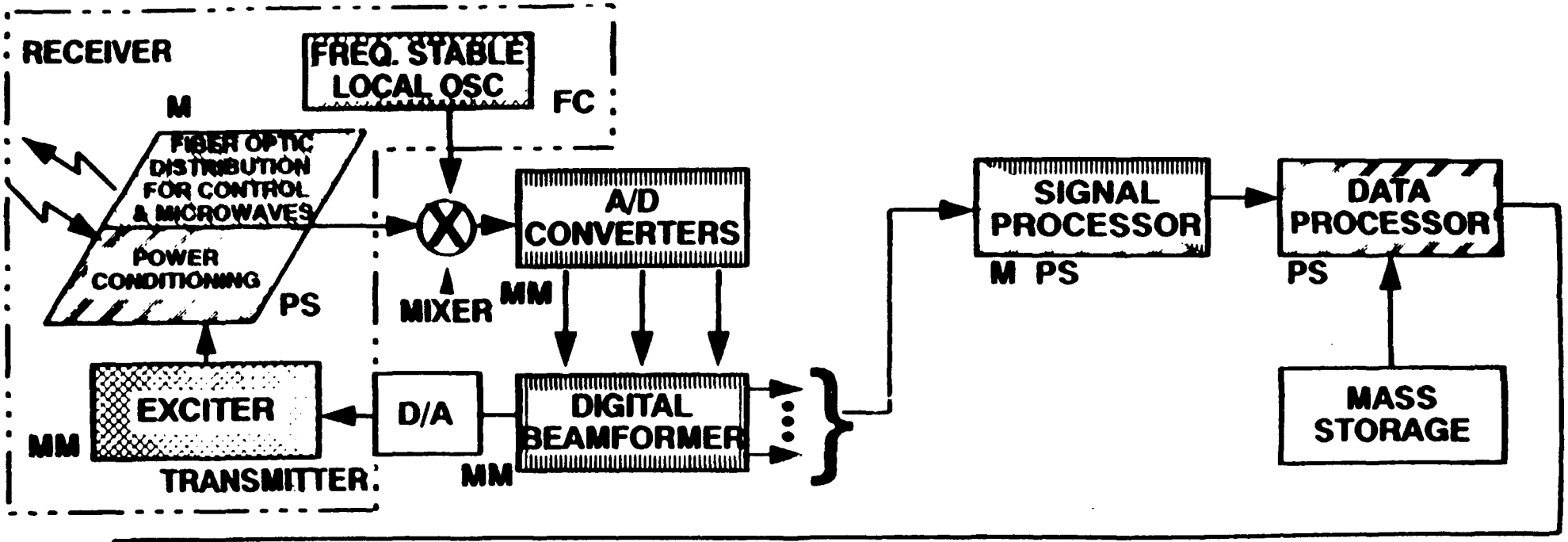
FUTURE TRENDS IN SYSTEM DESIGN

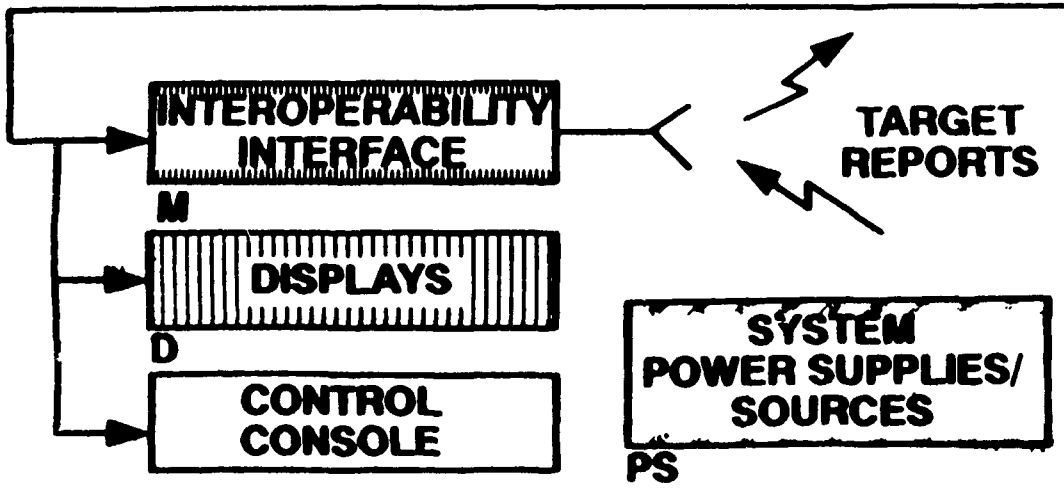
US ARMY
LABORATORY COMMAND

ELECTRONICS TECHNOLOGY and DEVICES LABORATORY

- INTEGRATED SYSTEMS
- SHARED APERTURE ANTENNAS
- MULTIFUNCTION (MULTISENSOR, MULTIMODE)
- ACTIVE APERTURE "CONFORMAL" PHASED ARRAYS
- PROCESSING CLOSE TO ANTENNA
- ADAPTIVE PROCESSING
- SMALL PLATFORMS (ULTRAMINIATURIZATION)
- TRANSPARENT COMPLEXITY
- INTEROPERABILITY GATEWAYS
- SYMBOLIC PROCESSING
- "ON-BOARD" MAINTENANCE
- TOTAL HIERARCHICAL MODELING AND SIMULATION
- FAIL-SAFE RELIABILITY

FUTURE GENERIC RADAR FUNCTION





CURRENT SYSTEMS

1. JOINT SURVEILLANCE AND TARGET ACQUISITION RADAR
2. FIREFINDER
3. PATRIOT

NG/FS SYSTEMS

1. FAADS-MULTI-ROLE SURVIVABLE RADAR
2. LONGBOW
3. LW BFLD. SURVEILLANCE RADAR
4. SYNTHETIC APERTURE RADAR FOR UAV
5. BISTATIC AND MULTISTATIC RADAR

M - MICROELECTRONICS
MM - MICROWAVE/MILLIMETER-WAVES
FC - FREQ. CONTROL
POWER SOURCES
PP - PULSE POWER
D - DISPLAYS

MICROELECTRONICS

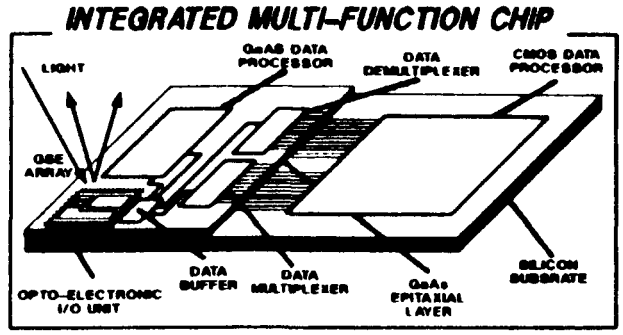
- ELECTRONIC MODULES AND COMPONENTS
- COMPUTER AIDED ELECTRONIC DESIGN
- R&D FOR O&S COST REDUCTION (DIAGNOSTICS, PROGNOSTICS AND TEST)

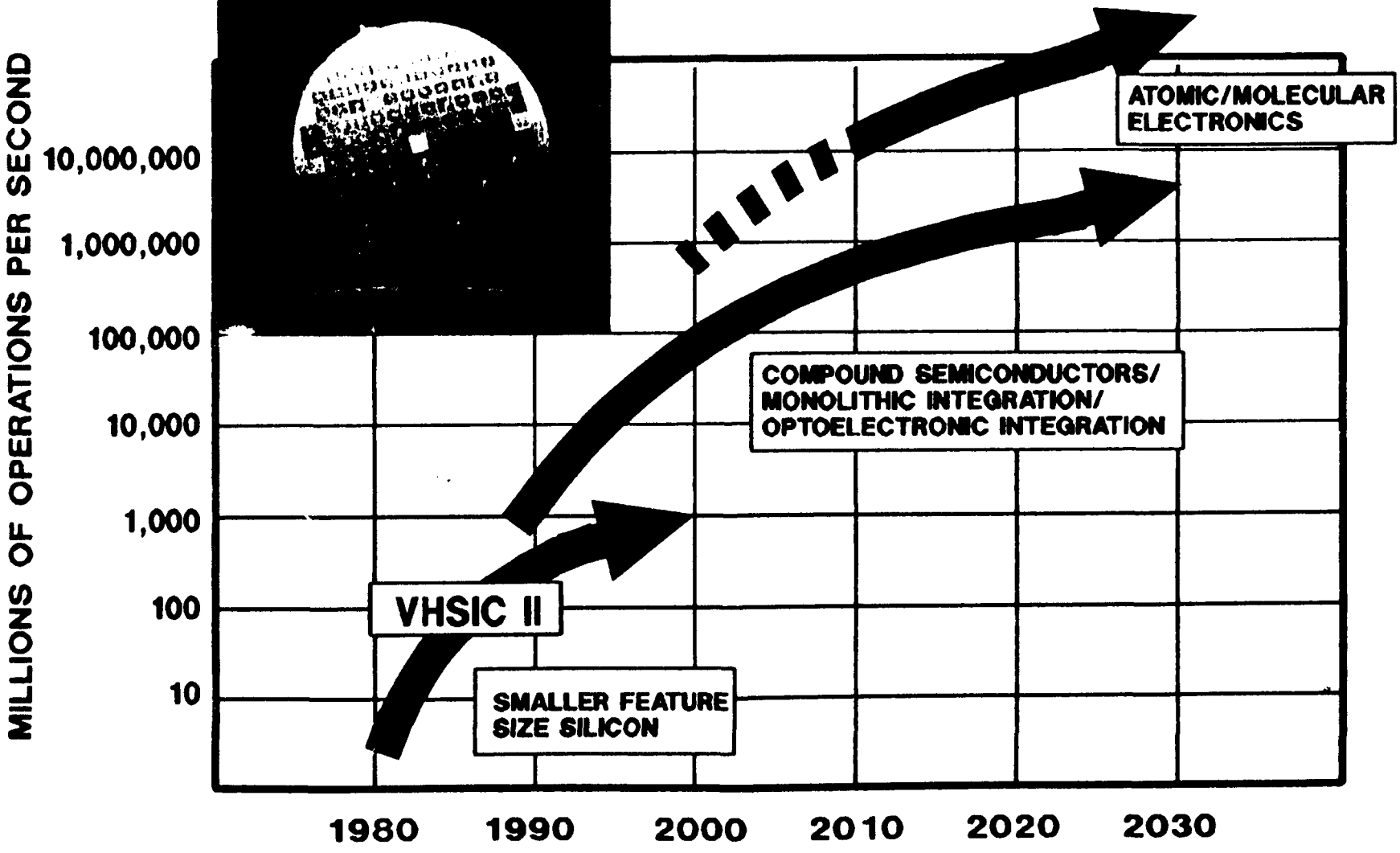
JDL ADVANCED MICROELECTRONICS INITIATIVE

OBJECTIVES

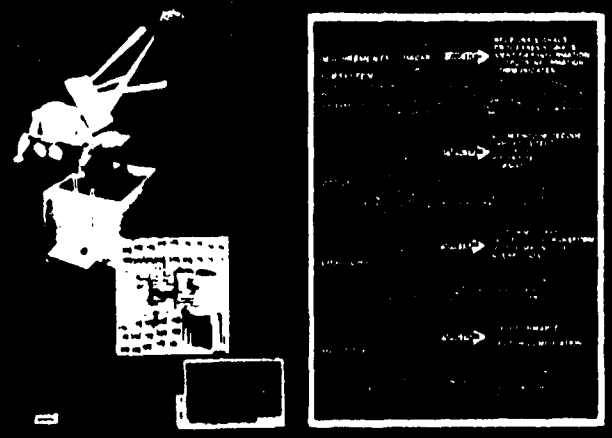
- MAINTAIN CONCURRENCY IN DOD APPLICATION OF STATE-OF-THE-ART MICROELECTRONICS
- ELIMINATE TECHNOLOGY OBSOLESCENCE
- PROVIDE COST EFFECTIVE DESIGN TOOLS & METHODOLOGIES THAT CAN MANAGE ENORMOUS COMPLEXITY OF FUTURE SYSTEMS
- PROVIDE PACKAGING AND INTERCONNECTION TECHNOLOGIES THAT CAN REDUCE SIZE AND WEIGHT OF SIGNAL AND DATA PROCESSORS BY TENFOLD
- AUTOMATE THE PROCESS OF DESIGN, MANUFACTURE AND INSERTION OF NEW ELECTRONIC TECHNOLOGY
- PROVIDE AFFORDABLE, LOW VOLUME THROUGH FLEXIBLE MANUFACTURING
- PERMIT DESIGN AND VALIDATION TO REQUIREMENTS THROUGH SIMULATION
- ESTABLISH FAULT-TOLERANT ELECTRONICS

MICROELECTRONICS RESEARCH

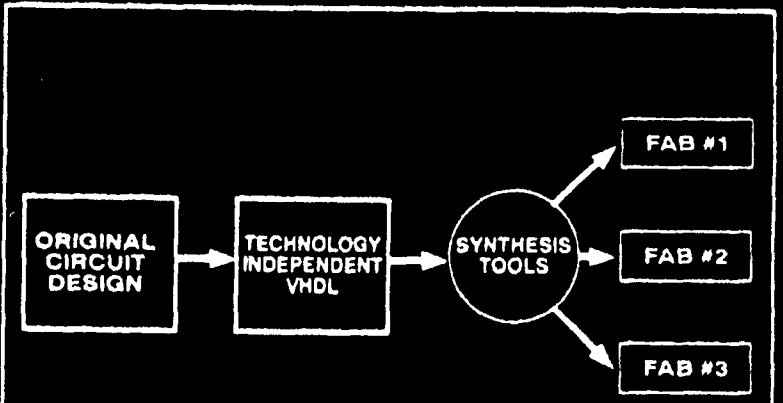




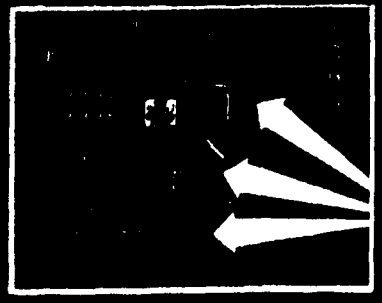
MICROELECTRONICS



COMPUTER AIDED DESIGNS



FLEXIBLE IC MANUFACTURING



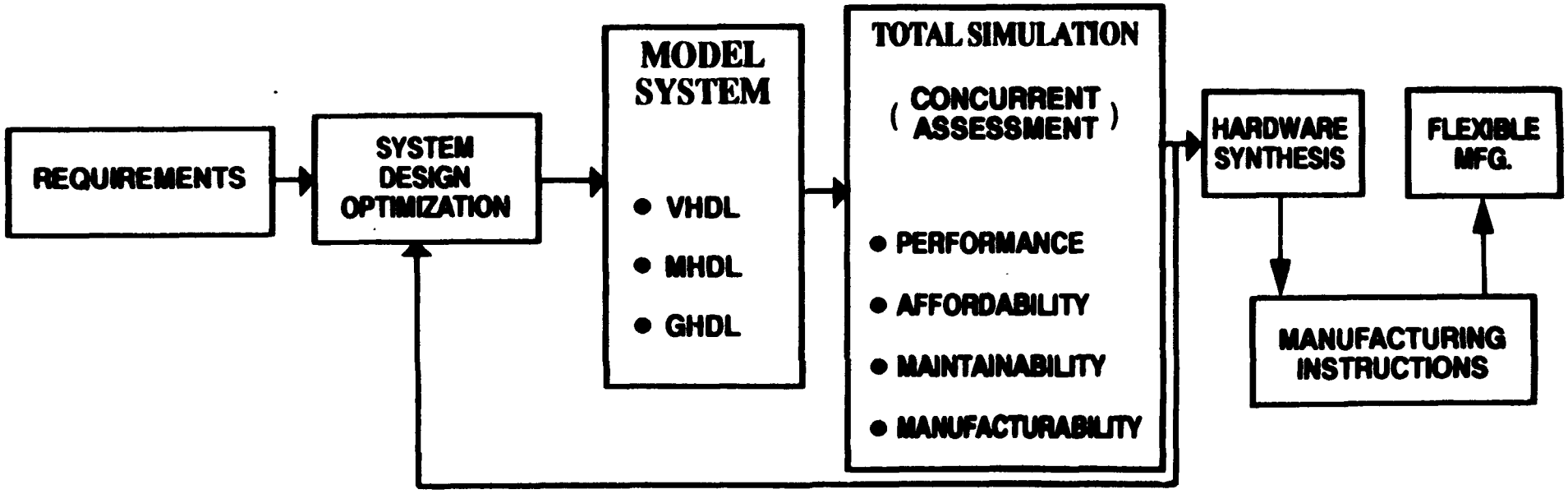
"NON-AVAILABLE"

ANTENNA COUPLER INTEGRATED CIRCUITS

PRC-70 RADIO CHIP EMULATION

ASIC E-BEAM LITHOGRAPHY

COMPUTER AIDED ENGINEERING & MANUFACTURING



NEEDS →	SYSTEM OPTIMIZATION TOOLS	HARDWARE DESCRIPTION LANGUAGE	ADEQUATE MODELS & SIMULATION	SYNTHESIS CAD TOOLS
STATUS →	1st GEN ADAS ◓	VHDL ◐ MHDL ○ GHDL ●	CHIPS ○ SUBSYSTEMS ○ SYSTEMS ●	SIMPLE CHIPS ◓ COMPLEX CHIPS ○ SUBSYSTEMS ◑

INTEGRATION ◑

MICROELECTRONICS

KEY OPERATIONAL CAPABILITIES

- MAINTAIN DOD S&T LEAD IN APPLICATION OF THE NEXT MAJOR ADVANCE IN MICROELECTRONICS, REDUCING SIZE AND WEIGHT BY A FACTOR OF 20 WHILE INCREASING PROCESSING THROUGH-PUT TO MULTI-GIGAFLOP LEVELS.
- PROVIDE CONCURRENT ENGINEERING WITH AUTOMATED ELECTRONIC DESIGN TO PREDICTABLE LEVELS OF COST, PERFORMANCE, MANUFACTURABILITY AND TESTABILITY.
- ACHIEVE FAULT-TOLERANT MICROELECTRONICS AND DRASTICALLY REDUCE O&S COSTS DURING EXPECTED SYSTEMS LIFE.

MICROELECTRONICS

USER REQUIREMENTS/DEFICIENCIES

- CURRENT LEVELS OF COMPONENT/MODULE INTEGRATION ARE INADEQUATE (10-100x)FOR FUTURE MINIATURIZED, MULTI-GIGAFLOP INFORMATION PROCESSORS; ULTRA MINIATURIZATION AND VERY LOW POWER CONSUMPTION FOR PORTABLE APPLICATIONS.

- SYSTEMS ARE BECOMING TOO COMPLEX TO DESIGN WITH CONVENTIONAL TECHNIQUES AND CAD TOOLS; DOCUMENTATION IS INADEQUATE FOR LOW-COST UPGRADING.

- ELECTRONIC SYSTEMS MUST INCORPORATE FAULT-TOLERANT MICROELECTRONICS AND BUILT IN SELF-TEST FOR MOBILE, HIGH-INTENSITY BATTLEFIELD OPERATIONS.

MICROELECTRONICS

NEEDED TECHNOLOGIES

- INTEGRATED MULTI-FUNCTION MICROCIRCUITS AND HIGH-SPEED, ENVIRONMENTALLY PROTECTED MULTICHIP MODULE PACKAGING AND INTERCONNECTION TECHNOLOGY.

- INTEGRATED COMPUTER AIDED DESIGN, MODELING AND SIMULATION SYSTEM WITH INSTRUCTIONS FOR EQUIPMENT TEST AND MANUFACTURING; CONCURRENT ENGINEERING.

- ADVANCED MICROELECTRONICS THAT SURVIVE RUGGED BATTLEFIELD ENVIRONMENTS; HIERARCHICAL, BUILT-IN-TEST THAT INCLUDES ALL ELECTRONIC CIRCUITRY (i.e. Microwave, Analog, Digital, Optical).

MICROELECTRONICS

PROGRAM STATUS

- HPM HARDENED PACKAGING PROTOTYPE DEMONSTRATED USING OPTICAL INTERCONNECTS AND ACOUSTICALLY COUPLED POWER
- INITIAL VHDL-BASED DESIGN, MODELING AND SIMULATION METHODS DEMONSTRATED AND VALIDATED FOR ARMY SYSTEM COMPONENTS AND SUBSYSTEMS.
- TEST AND MAINTENANCE BUS STANDARDS ESTABLISHED THROUGH IEEE AND INCORPORATED IN COMANCHE SPECIFICATIONS, IMPROVED CIRCUIT RELIABILITY MODEL ESTABLISHED; BIST RETROFIT TECHNIQUES USING VHDL INITIATED.

MICROELECTRONICS

SHORT-TERM OBJECTIVES

FY93

- MINIATURIZED PROTOTYPES FOR THE PDR77 AND AN/VDR-2 RADIACS; RAPID PROTOTYPING OF APPLICATION SPECIFIC SIGNAL PROCESSORS (RASSP) JOINT DARPA, TRI-SERVICE INITIATIVE.
- CAD TOOL FOR AUTOMATED CHIP DESIGN SYNTHESIS FROM BEHAVIORAL VHDL MODELS (on going); VHDL BEHAVIORAL SIMULATION ACCELERATOR (joint with AF).
- UPGRADE AND VALIDATE TEST AND MAINTENANCE BUS STANDARDS; VERIFY AND VALIDATE MICROCIRCUIT RELIABILITY MODEL THAT INDICATES THAT RELIABILITY IS NOT STEADY-STATE TEMPERATURE DEPENDENT.

MICROELECTRONICS

LONG-TERM OBJECTIVES

FY94 and BEYOND

- RASSP (on-going)
  OPTICALLY INTERCONNECTED MODULES HARDENED FOR EMI/HPM ENVIRONMENT; 3-D MULTI-CHIP MODULE PACKAGING; LOW POWER SINGLE CHIP, -80db, 1 GHz DIGITAL SYNTHESIZER.
- FULL ELECTRONIC SYSTEM MODELING; INTEGRATED CAD SYSTEM FOR CONCURRENT ENGINEERING; GENERIC HARDWARE DESCRIPTION LANGUAGE.
- RESEARCH AND DETERMINE MATERIAL/DEVICE FAILURE MECHANISMS FOR ADVANCED PACKAGING AND INTERCONNECTS; PROVIDE VERIFIED COATINGS TO REPLACE HERMETIC PACKAGES; EXPAND QML METHODOLOGY TO INCLUDE MIMIC COMPONENT SUPPLIERS;
- DEVELOP AUTOMATED METHODS TO RETROFIT BUILT-IN-SELF-TEST IN EXISTING ARMY EQUIPMENTS.

MICROELECTRONICS

PAYOFFS

- INCREASED PERFORMANCE AND REDUCED VOLUME AND POWER OF ATR PROCESSORS BY 20-30x FOR RPV, MISSILE AND OTHER MOBILE PLATFORMS

- CUT FREQUENCY OF NEW SYSTEM INTRODUCTION IN HALF WHILE MAINTAINING ABILITY TO MEET CHANGING THREAT ENVIRONMENTS; REDUCE ELECTRONIC SYSTEM ACQUISITION COST BY 20%; ELIMINATE PARTS OBSOLESCENCE PROBLEMS

- INCREASED EQUIPMENT MISSION AVAILABILITY; SPARE PARTS FLOAT REDUCED TO 25% OF CURRENT LEVELS AND MAJOR O&S COST SAVINGS (>$1B); SIGNIFICANT DECREASE IN SIZE, WEIGHT AND COST OF COOLING ELECTRONIC MODULES AND SYSTEMS.

VIRTUAL ENVIRONMENT DEVICES
(Display Technology Development)

TECHNOLOGIES TO PROVIDE HIGH DATA-RATE INFORMATION INTERFACES TO TODAY'S AND TOMORROW'S SOLDIERS NEED TO ADDRESS ALL SENSES INCLUDING TOUCH, SOUND, AND THE EXTREMELY WIDE BANDWIDTH OF VISION.

DEVELOP AND INTEGRATE TECHNOLOGIES AND DEVICES FOR DATA FUSION, TRAINING, LOGISTICS, COMMAND AND CONTROL, MAINTENANCE AND ROBOTICS. INCLUDES DEVELOPMENT OF PROCESSES AND MATERIALS TO PRODUCE LOW COST, HIGH PERFORMANCE, HIGH RELIABILITY, HIGH RESOLUTION FULL COLOR FLAT PANELS, PROJECTORS, AND MINIATURE DISPLAY DEVICES.

VIRTUAL ENVIRONMENT DEVICES
(Display Technology Development)

OBJECTIVES

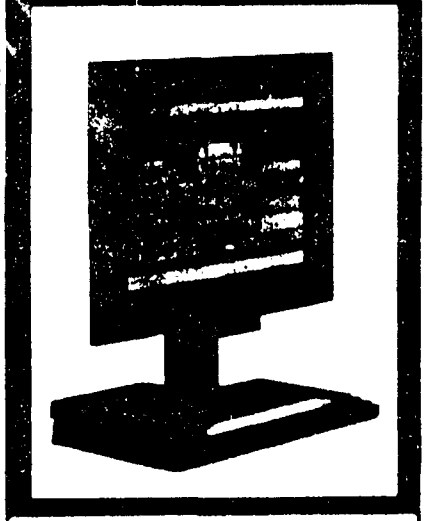
- PROVIDE SOLDIER/DISPLAY INTERACTIVE INTERFACES TO SERVE AS A FORCE MULTIPLIER IN INFORMATION INTENSIVE BATTLEFIELD APPLICATIONS.
- DEVELOP PROTOTYPE, HIGH-RESOLUTION, RUGGED, LOW POWER, DISPLAY PANELS IN SIZES RANGING FROM MINIATURE PERSONAL VIEWERS TO LARGE SCREEN DISPLAYS
- DEVELOP, DEMONSTRATE,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

DISPLAYS

HELMET MOUNTED DISPLAY

LARGE SCREEN DISPLAY

FULL COLOR FLAT PANEL DISPLAY



MULTICOLOR RED/GREEN ELECTROLUMINESCENT FLAT PANEL DISPLAY

VIRTUAL ENVIRONMENT DEVICES
(Display Technology Development)

KEY OPERATIONAL CAPABILITIES

- FULL COLOR FLAT PANEL DISPLAYS
- MINIATURE HEAD MOUNTED DISPLAYS
- LARGE SCREEN DISPLAYS
- STEREOSCOPIC AND 3-D DISPLAYS

VIRTUAL ENVIRONMENT DEVICES
(Display Technology Development)

USER REQUIREMENTS/DEFICIENCIES

- VERY HIGH RESOLUTION MAP DISPLAYS
- COMPRESSED IMAGE DATA FOR TRANSMISSION AND STORAGE
- REAL TIME,HIGH RESOLUTION VIDEO, FLIR, RADAR IMAGERY
- INTEGRATED, MULTISENSORY DATA ENVIRONMEBNT
- SPATIALLY REALISTIC VIRTUAL ENVIRONMENTS

VIRTUAL ENVIRONMENT DEVICES (Display Technology Development)

NEEDED TECHNOLOGIES

- IMPROVED PHOSPHOR MATERIALS AND DEVICE STRUCTURES
- HIGH RATIO IMAGE COMPRESSION
- INTEGRATE DRIVER AND PROCESSOR CHIPS ON DISPLAY DEVICES
- HIGH SPEED DATA HANDLING AND IMAGE PROCESSING SOFTWARE
- HOLOGRAPHIC DISPLAY OPTICS

VIRTUAL ENVIRONMENT DEVICES
(Display Technology Development)

PROGRAM STATUS

- TRI-SERVICE AND NASA PARTICIPATION IN DARPA HIGH DEFINITION SYSTEMS (HDS) PROGRAM PROVIDING MAJOR RESEARCH AND DEVELOPMENT OPPORTUNITIES.
- WELL ESTABLISHED PROCEDURES FOR DISPLAY TECHNOLOGY INSERTION INTO MILITARY SYSTEMS.
- BROAD APPLICATIONS OF NDI AND MILITARIZED FLAT PANELS

VIRTUAL ENVIRONMENT DEVICES
(Display Technology Development)

SHORT-TERM OBJECTIVES

FY93

- **INSERTION OF FULL COLOR FLAT PANEL DISPLAYS IN SYSTEMS.**
- **DEMONSTRATION OF INDIVIDUAL SOLDIER HELMET MOUNTED DISPLAYS**
- **APPLICATION OF NDI LARGE SCREEN PROJECTION SYSTEMS FOR BRIEFING DISPLAYS**
- **DEMONSTRATE STEREOSCOPIC DISPLAYS IN SYSTEM APPLICATIONS**

VIRTUAL ENVIRONMENT DEVICES
(Display Technology Development)

LONG-TERM OBJECTIVES

FY94 - AND BEYOND

- **DEMONSTRATION OF TELEPRESENCE FOR ROBOTICS AND CREW STATIONS**
- **HIGH RESOLUTION WALL SIZE INTERACTIVE ELECTRONIC MAP DISPLAYS**
- **VIRTUAL ENVIRONMENTS FOR SIMULATION AND TRAINING**
- **INTRODUCTION OF NEW TECHNOLOGIES (i.e. HOLOGRAPHIC DISPLAYS, DIRECT RETINAL WRITING)**

VIRTUAL ENVIRONMENT DEVICES (Display Technology Development)

PAYOFFS

- HIGH PERFORMANCE LOW COST SOLDIER INFO INTERFACE
- NEAR REAL TIME BATTLEFIELD INFORMATION SYSTEMS
- INFORMATION ACCESS UNDER ALL TACTICAL ENVIRONMENTS
- ENHANCED SYSTEM AVAILABILITY THROUGH LOWER LIFE CYCLE COST
- FORCE MULTIPLICATION, ENHANCED PERFORMANCE AND REDUCED CREW SIZE

MICROWAVE/MILLIMETER-WAVE DEVICES

TECHNOLOGY AREAS OF INTEREST

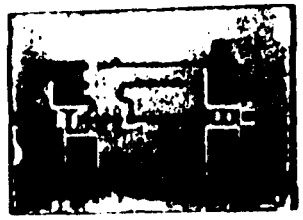
- MILLIMETER-WAVE SENSOR AND GUIDANCE.
- MILLIMETER-WAVE SEEKER COMPONENTS.
- MICROWAVE TECHNOLOGY AND DEVICES.
- HIGH POWER TRANSMITTER MODULES.
- MICROWAVE PHOTONIC COMPONENTS.
- MICROWAVE DESIGN MODELING AND SIMULATION.
- VACUUM ELECTRONIC DEVICES.
- HIGH POWER VACUUM ELECTRONIC RF SOURCES.
- ADVANCED RADAR/JAMMER VACUUM ELECTRONIC POWER MODULES.

OBJECTIVE

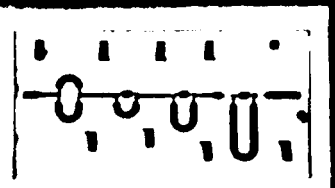
- REDUCE SENSOR SIZE/WEIGHT/COST, HIGH RELIABILITY AND MEET RF PERFORMANCE REQUIREMENTS OF MW/MMW ELECTRONICS FOR MISSILE GUIDANCE/AIRBORNE ELINT RADAR/JAMMERS/SATCOM, IMPROVED TARGET DISCRIMINATION, DUAL MODE (M[illegible]/IR) SENSORS, PASSIVE SENSORS AND IMAGING, ANTENNA REMOTING AND DIGITAL BEAMFORMING.

MICROWAVE/MILLIMETER WAVE

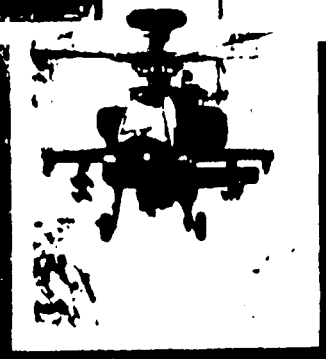
MICROWAVE SOLID STATE JAMMER COMPONENTS



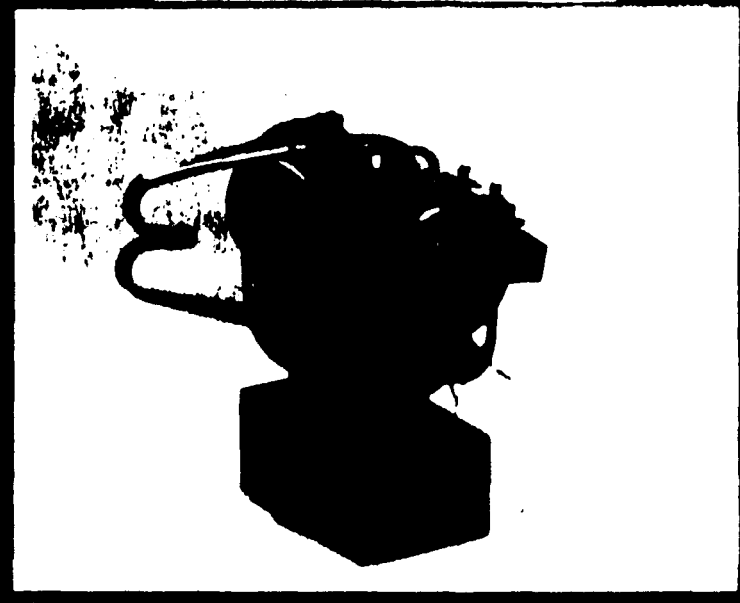
AMPLIFIER

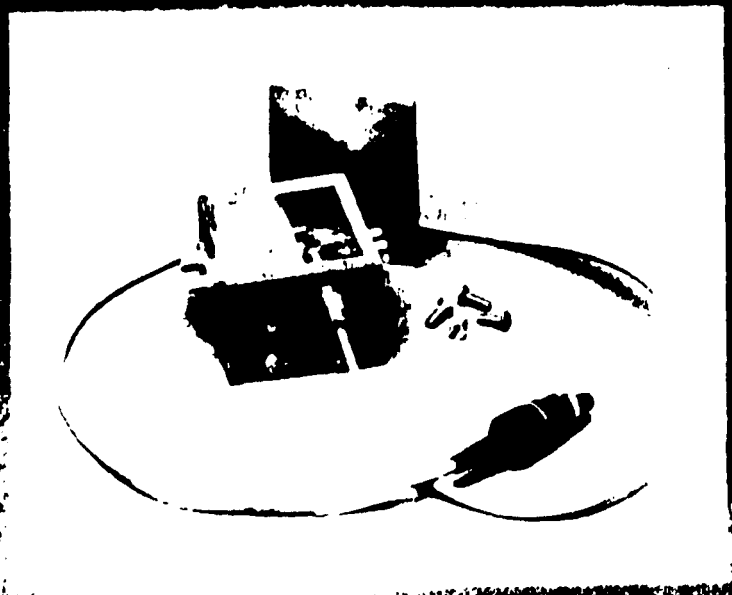


PHASE SHIFTER

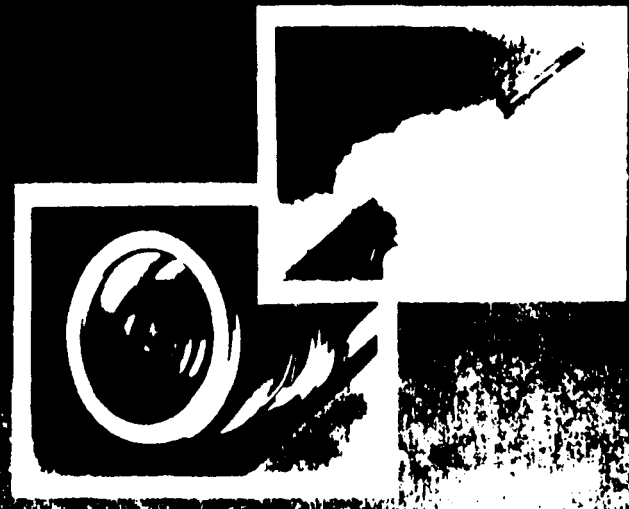


94 GHz FM-CW SENSOR/SEEKER



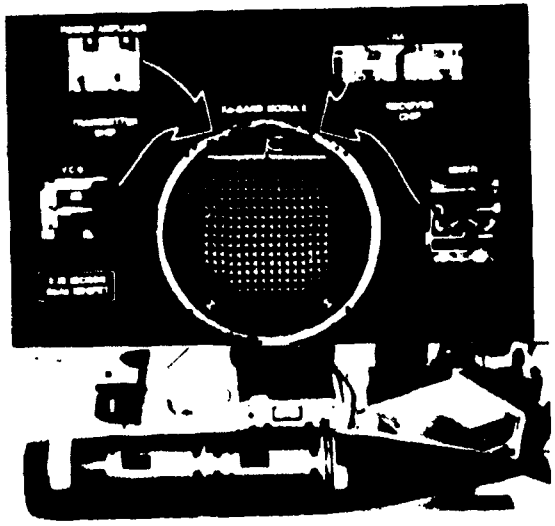


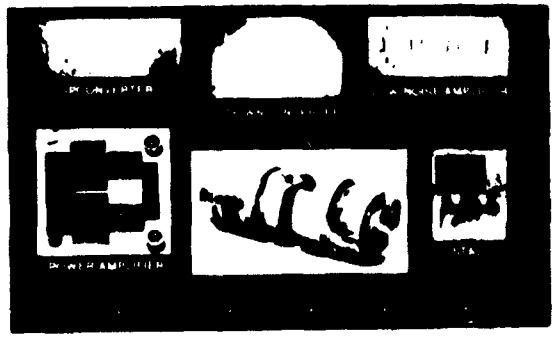
OPTICAL TRANSMITTER FOR MICROWAVES

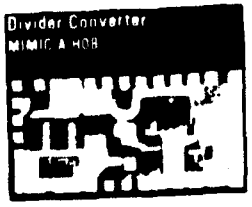


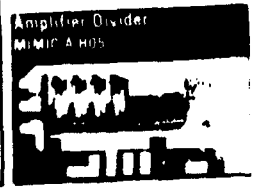
FAST WARM-UP CATHODE TWT FOR PATRIOT

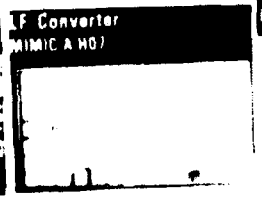
SMART MISSILES











Amplifier/Switch
MIMIC A H09

MICROWAVE/MILLIMETER-WAVE TEST FACILITIES

KEY OPERATIONAL CAPABILITIES

- AUTOMATED NETWORK ANALYSIS AND CHARACTERIZATION OF PHOTONIC/MICROWAVE/MILLIMETER-WAVE DEVICES.
- CRYOGENIC DEVICE TESTING CAPABILITY TO 10°K.
- CUSTOMIZED AUTOMATED ANTENNA TEST FACILITY 20 TO 40 GHz.
- AUTOMATED NOISE FIGURE MEASUREMENT SYSTEM TO 40 GHz.
- AUTOMATED LIFE-TEST FACILITY OPERATIONAL TO 18 GHz.
- AUTOMATED LOAD-PULL MEASUREMENT SYSTEM TO 26 GHz.
- HIGHPOWER RF TEST FACILITIES TO 5 MEGAWATTS (10 MHz TO 140GHz) - UPGRADEABLE TO 30 MW
- ON-SITE CATHODE TEST AND EVALUATION CAPABILITY.
- COMPUTER CONTROL OF HIGH POWER (MULTI-KW) VACUUM ELECTRONICS AUTOMATED TESTING.

MICROWAVE/MILLIMETER-WAVE TEST FACILITIES

USER REQUIREMENTS/DEFICIENCIES

- ANTENNA MEASUREMENT REQUIREMENT FOR SMART MUNITIONS TO 110GHz
- NOISE MEASUREMENT REQUIREMENTS FOR TANK DEFENSE, SMART MUNITIONS, EW/RSTA WARNING RECEIVER TO 110GHz
- TRANSMISSION AND NOISE MEASUREMENTS FOR FIBER OPTIC DISTRIBUTION NETWORKS FOR GROUND BASED RADARS
- TRANSMISSION AND NOISE MEASUREMENTS FOR FIBER OPTIC DELAY LINES FOR JAMMERS
- HIGH POWER BROADBAND COMPACT MICROWAVE TUBES ARE REQUIRED FOR FIREFINDER, PATRIOT, MTAS ADKEM SYSTEMS
- FUTURE SYSTEMS REQUIRE HIGH POWER, BROADBAND COHERENT PULSED AND CW TERAHERTZ SOURCES

- HIGH POWER BROADBAND COMPACT MICROWAVE TUBES ARE REQUIRED FOR FIREFINDER, PATRIOT, MTAS, ADKEM SYS.
- FUTURE SYSTEMS REQUIRE HIGH POWER, BROADBAND COHERENT PULSED AND CW TERAHERTZ SOURCES

MICROWAVE/MILLIMETER-WAVE

SHORT-TERM OBJECTIVES

FY93

- DEVELOPMENT OF ACTIVE SUPERCONDUCTING DEVICES (FLUX-FLOW TRANSISTOR)
- DEVELOP LOW COST PLANAR FERROELECTRIC PHASE SHIFTER
- NOISE MEASUREMENT OF MMWAVE HEMT AND HBT DEVICES
- CHARACTERIZE RELIABILITY OF POWER MMIC CIRCUITS
- DEVELOPMENT OF OPTICALLY CONTROLLED GaAs MMIC's
- DEVELOPMENT OF OPTICALLY INJECTION LOCKED OSCILLATORS
- DEVELOP A BROADBAND HIGH POWER COHERENT GYRO-AMPLIFIER
- DEVELOP FAST WARM-UP HIGH DENSITY, LONG LIFE CATHODES
- DEVELOP HIGH POWER COUPLED CAVITY TEST FACILITY FOR FIREFINDER, PATRIOT, MISSLE SEEKER RF SOURCES

MICROWAVE/MILLIMETER-WAVE

LONG-TERM OBJECTIVES

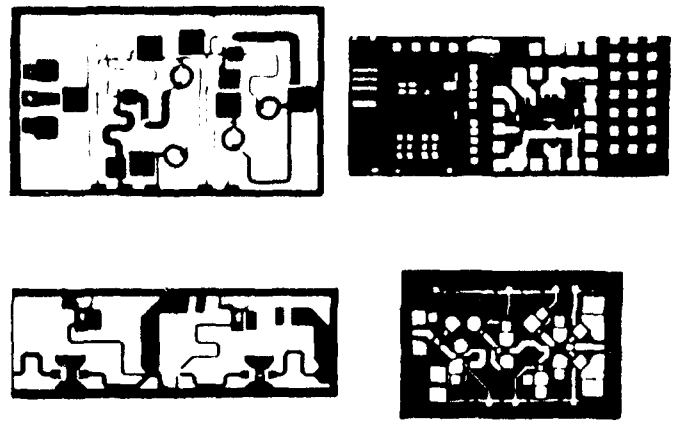
FY94 and BEYOND

- DEVELOPMENT OF SUPERCONDUCTING RECEIVER
- DEMONSTRATE MULTIPLE FERROELECTRIC PHASE SHIFTER FOR ELECTRONIC SCANNING APPLICATIONS
- LIFE-TEST CAPABILITY TO 35 GHz
- DEMONSTRATE OPTICALLY CONTROLLED LARGE ARRAY
- MILLIMETER-WAVE SIGNAL DISTRIBUTION USING HIGH-SPEED DEVICES
- PHOTONIC/MICROWAVE INTEGRATED CIRCUITS (PMMICS)
- DEVELOP AND EVALUATE BROADBAND LONG LIFE AMPLIFIERS FOR TRANSMITTERS FOR ARMY GLOBAL SURVEILLANCE, ARTILLERY, ALL WEATHER DEFENSE AND ACTIVE ARMOR PROTECTION SYSTEM
- DEVELOP AND EVALUATE IR SOURCES FOR EW JAMMERS
- DEVELOP AND EVALUATE TERAHERTZ SOURCES FOR SPACE APPLICATONS FOR SDIO

MIMIC

GOAL:

DEVELOP US CAPABILITY TO PRODUCE AT AN AFFORDABLE PRICE MICROWAVE/MILLIMETER WAVE MONOLITHIC INTEGRATED CIRCUITS (E.G. RADAR ON A SINGLE CHIP) NEEDED FOR SMART MUNITIONS, ELECTRONIC WARFARE, RADAR AND COMMUNICATIONS SYSTEMS



MIMIC CHIPS

CONTRACT TEAMS:

- TRW, HONEYWELL, GD, HITTITE
- ITT/MARTIN MARIETTA ALPHA, HARRIS
- HUGHES\GE AT&T, MACOM
- RAYTHEON/TI AEROJET, MAGNAVOX, NORDEN

SYSTEM'S IMPACT:

- ★ MLRS/TGW
- ★ SADARM
- ★ PATRIOT
- AAAM
- ★ LONGBOW

- ASPJ
- ★ AN/ALQ-136 (V2)
- GENX
- ★ INEWS RECEIVER
- ★ EW ACTIVE ARRAY

- ATF RADAR
- ATSR
- ★ MRSR
- ★ FIREFINDER
- ★ CLASSIFIED

- ★ SHF SATCOM
- ★ GPS
- ★ CLASSIFIED

★ ARMY APPLICATION

MIMIC

PROGRAM STATUS

- 93 UNIQUE CHIPS FOR 20 MILITARY SYSTEMS DESIGNED AND 60% RF FUNCTIONAL ON FIRST ITERATION
- DESIGN TIME REDUCED FROM SEVERAL WEEKS TO 4-6 HOURS BASED ON ADVANCED CAD WORKSTATIONS AND MODELING
- IMPROVED RF YIELD (FROM 10%, TO 50%)
- COST OF QUALIFIED CHIPS COST REDUCED FROM $500 TO $10 PER MM SQUARE
- MAJOR IMPROVEMENT IN ON-WAFER TESTING (FROM 5 hours, TO 6 min)
- SIGNIFICANT PERFORMANCE (50% IMPROVEMENT) IN RADAR & EW MODULE EFFICIENCY
- MIMIC PRODUCTS AGGRESSIVELY MARKETED & DEMONSTRATED TO DOD SYSTEM DEVELOPERS (SADARM, LONGBOW, MOFA, HARM, COBRA, GEN-X)
- THREE MIMIC PHASE 2 CONTRACTS AWARDED TO GUARANTEE MANUFACTURING CAPABILITY OF LOW COST, HIGH PERFORMANCE MIMIC CHIPS FOR PHASED ARRAY RADAR, SMART MUNITION, EW AND COMMUNICATIONS APPLICATIONS

MICROWAVE/MILLIMETER-WAVE DEVICES

PAYOFFS

- IMPROVE ARMY AND RADAR COMMUNICATIONS SYSTEMS RANGE, COHERENCE, AND RELIABILITY WHILE REDUCING SYSTEMS SIZE, WEIGHT, AND COST
- EXPLOIT INHERENT ADVANTAGE OF OPTICAL CONTROL OF MICROWAVE CIRCUITS/ FIBER OPTIC TRANSMISSION LINES FOR NEXT GENERATION ACTIVE PHASED ARRAY RADAR, SIGNAL PROCESSING IN EW JAMMER, ANTENNA REMOTING, TRUE TIME DELAYS, MEMORY LOOPS AND OPTICAL INTERCONNECTS FOR HIGH SPEED COMPUTERS
- IMPROVED PERFORMANCE MICROWAVE/MILLIMETER WAVE DEVICES/COMPONENTS/ SENSORS FOR FUTURE RADAR, SMART MUNITIONS, EW, AND COMMUNICATIONS WITH LOW COST, REDUCED SIZE AND WEIGHT

ACOUSTO/FERROELECTRONICS

TECHNOLOGY AREAS OF INTEREST

- RF FREQUENCY SOURCES/PROCESSING
- FREQUENCY CONTROL & TIMING

OBJECTIVE

- DEVELOP ULTRA-STABLE, LOW-NOISE FREQUENCY SOURCES AND CLOCKS FOR RADAR, COMMUNICATIONS AND IFF. PROVIDE ACOUSTIC-WAVE DEVICES FOR RF PROCESSING TO ACHIEVE REAL-TIME, PASSIVE DETECTION OF COMM/RADAR SIGNALS IN HIGH DENSITY/HIGH CLUTTER SIGNAL ENVIRONMENTS.

ACOUSTO/FERROELECTRONICS

KEY OPERATIONAL CAPABILITIES

- **OSCILLATOR PHASE NOISE MEASUREMENT FACILITY**
  UP TO 30 GHz, -150 dBc/Hz @ 1KHz OFFSET, -180 dBc/Hz @ 1MHz OFFSET

- **AUTOMATIC TEMPERATURE TESTING OF ACOUSTIC DEVICES**
  OVER THE RANGE OF -80°C TO +200°C

- **VIBRATION TESTING OF ELECTRONIC DEVICES**
  DC-6500 Hz VIBRATION FREQUENCY
  UP TO 100G ACCELERATION DEPENDING ON LOAD WEIGHT

ACOUSTO/FERROELECTRONICS

USER REQUIREMENTS/DEFICIENCIES

- TWO ORDERS OF MAGNITUDE IMPROVED VIBRATION RESISTANCE
- HIGHER FREQUENCY STABILITY UHF USING MICROWAVES
- LOWER OSCILLATOR PHASE NOISE CLOSE TO THE CARRIER FREQUENCY
- OSCILLATOR SIZE COMPARABLE/INTEGRATABLE WITH MMIC CHIPS
- LOWER INSERTION LOSS BAND PASS FILTERS
- ORDER OF MAGNITUDE LOWER COST, HIGH PERFORMANCE DISPERSIVE FILTERS
- 10 TO 20 dB GREATER DYNAMIC RANGE SIGINT RECEIVER DEVICES

ACOUSTO/FERROELECTRONICS

PAYOFFS

- HIGHER JAMMING RESISTANCE WITH LONGER RADIO SILENCE INTERVAL.
- CAPABILITY TO DETECT AND CLASSIFY SLOW-MOVING AND STEALTHY TARGETS IN HIGHER CLUTTER OR AT EXTENDED RANGE.
- LONGER BATTERY LIFE AND CALIBRATION INTERVAL FOR REDUCED LOGISTICS COSTS.
- REDUCTION OF SYSTEM SIZE AND WEIGHT WITHOUT COMPROMISING PERFORMANCE.
- ENHANCED ABILITY TO DETECT AND CHARACTERIZE WEAK SIGNALS IN THE PRESENCE OF STRONG SIGNALS.

HIGH POWER PULSER AND POWER ELECTRONICS

TECHNOLOGY AREAS OF INTEREST

- HIGH ENERGY PULSERS

OBJECTIVE

- IMPROVE PULSE POWER CONDITIONING COMPONENTS AND TECHNIQUES TO MEET FUTURE STRATEGIC AND TACTICAL REQUIREMENTS FOR HIGH LETHALITY DIRECTED ENERGY, KINETIC ENERGY WEAPONS.

HIGH POWER PULSER AND POWER ELECTRONICS

KEY OPERATIONAL CAPABILITIES

- THE PULSE POWER CENTER PROVIDES A SHIELDED FACILITY WITH BOTH HIGH POWER (UP TO 15 MW IN EACH BAY) AND HIGH VOLTAGE (UP TO 250KV) TEST CAPABILITIES
- THE PULSE POWER CENTER PROVIDES SEVERAL TESTBED FACILITIES, RECOGNIZED THOUGHOUT THE COUNTRY, FOR VALIDATING HIGH ENERGY PULSER COMPONENTS SUCH AS SWITCHES AND CAPACITORS
- WITH ITS UNIQUE CAPABILITIES THE PULSE POWER CENTER IS ABLE TO SUPPORT DOD, DOE, DNA INDUSTRY AND UNIVERSITY PROGRAMS WITH UNIQUE PULSE POWER REQUIREMENTS
- THE PULSE POWER CENTER HAS EXTENSIVE FACILITIES FOR TESTING HIGH POWER, SUBNANOSECOND, OPTICALLY ACTIVATED SEMICONDUCTOR SWITCHES

USER REQUIREMENTS/DEFICIENCIES

- ADVANCED MODE LOCKED LASERS FOR PHOTOCONDUCTIVE ULTRA-WIDEBAND AND ECM SOURCES

HIGH POWER PULSER AND POWER ELECTRONICS

PAYOFFS

- MONOLITHIC WAFER HIGH POWER MICROWAVE SOURCES FOR APPLICATIONS RANGING FROM PROCESS HEATING TO LOW COST RADAR FOR SMALL AIR AND WATER CRAFT
- ELECTRIC ENERGY STORAGE AND POWER CONDITIONING TO REPLACE LESS CONTROLLABLE AND MORE HAZARDOUS CHEMICAL PROPELLANT AND POWER SOURCES
- COMPACT, LIGHTWEIGHT AND RUGGED POWER SEMICONDUCTOR INVERTER AND DRIVER, CAPABLE OF CONVEYING POWER FROM ANY SOURCE TO EFFICIENT COMPACT HIGH FREQUECY ELECTROMAGNETIC MACHINES AND DEVICES

POWER SOURCES

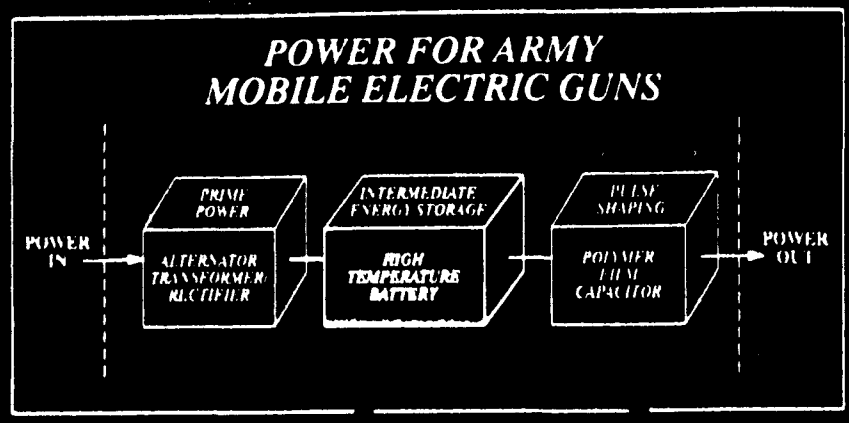
NEEDED TECHNOLOGIES

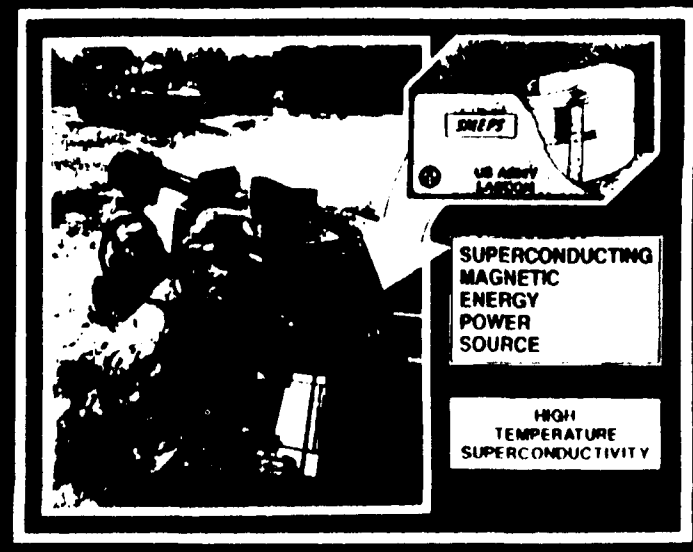
- NOVEL ELECTROCHEMISTRY
- LITHIUM BATTERY R&D
- ELECTRODE AND CELL FABRICATION CAPABILITY
- NEW IDEAS FOR LIGHT-WEIGHT, SILENT POWER GENERATION
- RAPID DISCHARGE PULSED CAPACITORS

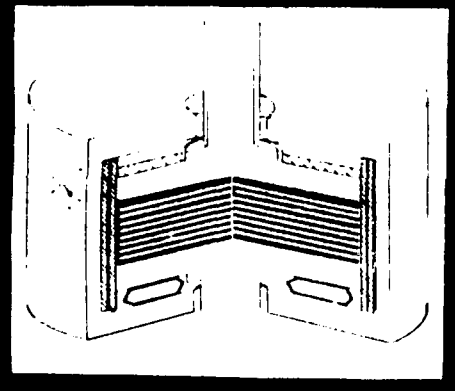
OBJECTIVE

- PROVIDE PORTABLE POWER FOR NEXT GENERATION AND FUTURE SYSTEMS INCLUDING COMMUNICATION EQUIPMENTS, C^2 SYSTEMS, SOLDIER INTEGRATED PROTECTION ENSEMBLE, ELECTRIC GUNS AND DIRECTED ENERGY WEAPONS.

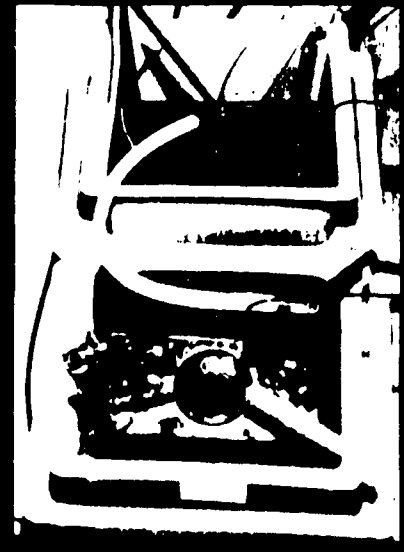
ETDL POWER SOURCES



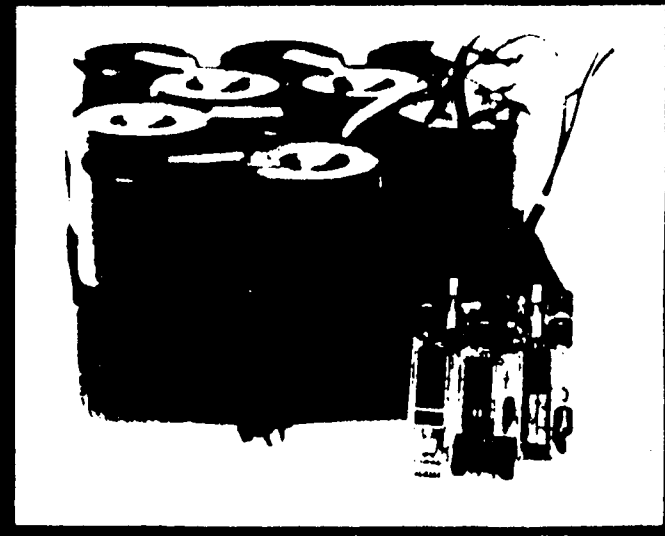




PULSE BATTERIES



HI ENERGY
CAPACITORS



HIGH ENERGY BATTERIES/
INTERNAL CONTROLS FOR C^3I

POWER SOURCES

KEY OPERATIONAL CAPABILITIES

- ADVANCED ELECTROCHEMICAL RESEARCH CENTER WITH PRODUCT EVALUATION LABORATORIES AND EQUIPMENTS.
  - GLOVE-BOXES AND DRY-ROOM
  - MICROPROCESSOR CONTROLLED POTENTIOSTATS
  - INDUCTIVELY COUPLED PLASMA SPECTROMETER
  - THIN FILM FABRICATION AND DIELECTRIC MATERIAL EVALUATION EQUIPMENT
  - SPECIALIZED EQUIPMENT FOR EVALUATION OF FUZE BATTERIES

POWER SOURCES

USER REQUIREMENTS/DEFICIENCIES

- LIGHT WEIGHT POWER SOURCES FOR COMMUNICATIONS EQUIPMENT
- POWER FOR FUTURE SOLDIER SYSTEMS
- RECHARGEABLE BATTERIES TO REDUCE COST DURING TRAINING
- PULSE POWER FOR ELECTRIC GUNS, LASERS, ALL ELECTRIC TANK
- PORTABLE POWER IS A KEY REQUIREMENT/ISSUE ON THE BATTLEFIELD

POWER SOURCES

SHORT-TERM OBJECTIVES

FY93

- IMPROVED PERFORMANCE MAGNESIUM BATTERIES FOR TRAINING
- LOW-COST, HIGH-RATE, LITHIUM-MANGANESE DIOXIDE BATTERIES
- 100 Wh/kg RECHARGEABLE LITHIUM BATTERY FOR TRAINING USE
- LITHIUM-IRON SULFIDE PULSE POWER BATTERY PROTOTYPE
- REPLACEMENT FOR LEAD-BASED FUZE BATTERIES

POWER SOURCES

LONG-TERM OBJECTIVES

FY94 AND BEYOND

- 150-200 Wh/kg RECHARGEABLE LITHIUM BATTERIES
- LOWER-COST BATTERIES WITH PLASTIC/BIPOLAR CONSTRUCTION
- HIGHER ENERGY DENSITY BATTERIES TO POWER SOLDIER SYSTEM
- LITHIUM-IRON SULFIDE OPERATIONAL PULSE POWER BATTERY
- SUPERCONDUCTING MAGNETIC ENERGY STORAGE SYSTEM
- IMPROVED FUZE BATTERIES WITH LONG STORAGE LIVES

POWER SOURCES

PROGRAM STATUS

- AT PRESENT CARRY OUT INDEPENDENT GOVERNMENT TESTING OF ADVANCED PRIMARY BATTERIES FOR CECOM
- ADVISING IN THE INTRODUCTION OF ADVANCED $Li/SOCl_2$ INTO NEW MILITARY EQUIPMENTS
- CONDUCTING R&D ON RECHARGEABLE LITHIUM BATTERIES FOR BOTH PORTABLE AND PULSE POWER APPLICATIONS
- DESIGNING FUZE BATTERIES FOR NEW PROJECTILES AND MISSILES

POWER SOURCES

PAYOFFS

- ENSURE THAT BATTERIES ARE SAFE FOR MILITARY APPLICATIONS.
- DOUBLE ENERGY LITHIUM BATTERIES REDUCE THE LOGISTIC BURDEN OF THE SOLDIER TO CARRY REPLACEMENT BATTERY.
- PROVIDE HIGH ENERGY POWER SOURCES WITHOUT REQUIREMENT OF AC POWER.
- ADVANCED BATTERIES LIGHTENS THE SOLDIER'S LOAD
- RECHARGEABLE BATTERIES REDUCED COST FOR FIELD TRAINING EXERCISES.

DEVICES RESEARCH

NANOELECTRONICS/OPTOELECTRONICS

TECHNOLOGY AREAS OF INTEREST

- HIGH SPEED ELECTRONIC DEVICES
- QUANTUM CONFINED ELECTRONICS
- HIGH FREQUENCY MICROELECTRONICS
- MULTIPLE QUANTUM WELL DEVICES
- INTEGRATED OPTO ELECTRONICS
- OPTICAL CHARACTERIZARTION

OBJECTIVE

- DESIGN/FABRICATE NEW, NANOSCALE ELECTRONIC DEVICES (HEMTs, HBTs) FOR RADAR FRONT-ENDS, HIGH SPEED SIGNAL PROCESSING FOR TARGET RECOGNITION, ELECTRONIC WARFARE. DEVELOP OPTO-ELECTRONIC DEVICES (LASERS, WAVEGUIDES, SWITCHES, MODULATORS) FOR PHASED-ARRAY RDAR, ANTENNA REMOTING INTEGRATED CIRCUITS. PROVED III-V TECHNOLOGY/SINGLE PIXEL SENSORS FOR HIGH D*, LONG WAVELENGTH, MULTI-SPECTRAL, HIGH RESOLUTION STARING IR FOCAL PLANE ARRAYS. EXPLOIT NOVEL OPTICAL CHARACTERIZATION OF ULTRA-FAST, ULTRA-SMALL ELECTRONIC/ OPTO-ELECTRONIC DEVICES.

DEVICES RESEARCH
ELECTRONIC MATERIALS

TECHNOLOGY AREAS OF INTEREST

- DEFECT SCIENCE
- PROCESS SCIENCE
- MAGNETIC CIRCUITS
- HIGH TEMPERATURE SUPERCONDUCTING ELECTRONICS
- MICROANALYSIS
- ELECTRONIC MATERIALS TECHNOLOGY
- THIN FILM FERROELECTRICS

OBJECTIVE

- DEVELOP ENABLING DEVICE FABRICATION/PROCESSING TECHNOLOGIES FOR NEXT GENERATION HIGH FREQUENCY DEVICES. UNDERSTAND ROLE OF DEFECTS FOR IMPROVED DEVICE PERFORMANCE. PROVIDE ULTRA-SENSITIVE, HIGH RESOLUTION ANALYTICAL DIAGNOSTICS FOR IMPROVED PROTOTYPE DEVICE STRUCTURES, HIGH TEMPERATURE SUPERCONDUCTORS, DISPLAYS. DEVELOP INNOVATIVE MAGNETIC CIRCUITS FOR MW/MMW TUBES, HIGH TEMPERATURE SUPERCONDUCTING COMPONENTS FOR ADVANCED RADARS.

DEVICES RESEARCH
INTEGRATED MICROSYSTEMS

TECHNOLOGY AREAS OF INTEREST

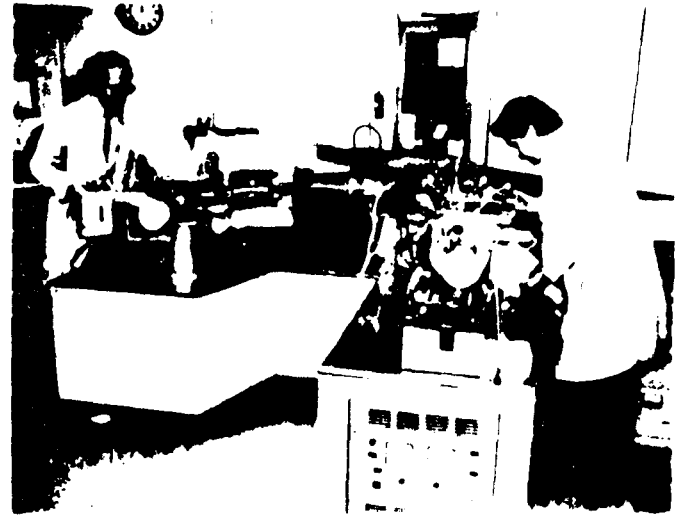
- MICROELECTROMECHANICS
- ADVANCED LITHOGRAPHY TECHNOLOGY
- HIGH POWER OPTICAL SWITCH
- HIGH RESOLUTION DISPLAY TECHNOLOGY
- VACUUM MICROELECTRONICS
- SMART MATERIAL DEVICES
- ASIC-GEM

OBJECTIVE

- DEVELOP PROCESS TECHNOLOGY AND FABRICATE MINIATURE MICROELECTROMECHANICAL SENSORS AND ACTUATORS. LITHOGRAPHICALLY PATTERN ULTRA-HIGH RESOLUTION DEVICE STRUCTURES TO 25nm. ELIMINATE STEP-EDGE BREAKDOWN IN HIGH BRIGHTNESS TFEL USING THICK PLANARIZED ITO. PROVIDE VACUUM MICROELECTRONIC COLD CATHODE EMITTERS FOR FLAT PANEL DISPLAYS. DEVELOP FABRICATION TECHNOLOGY FOR PHOTOCONDUCTIVE FAST RISETIME, NARROW PULSE WIDTH, HIGH PEAK POWER IMPULSE GENERATION.

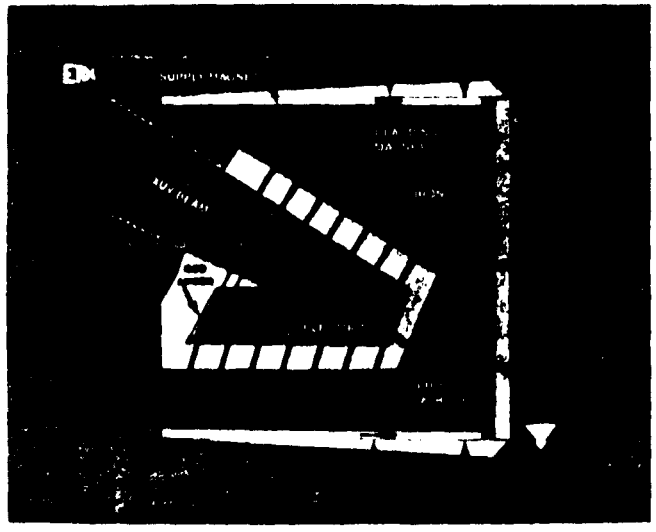
PROCESS SCIENCE

MIE ETCHED GaAs



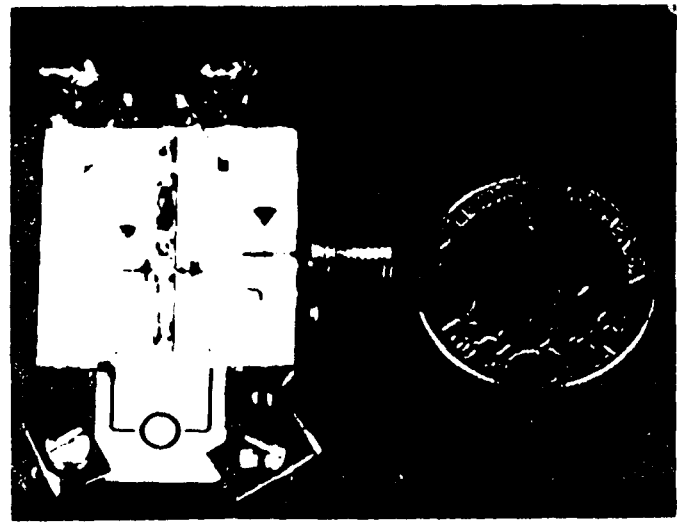
NANOANALYSIS FACILITY

THERMAL DESORPTION MASS SPECTROMETER



MAGNETIC CIRCUITS

UV/X-RAY IMAGER



HTSC ELECTRONICS

HTSC STABILIZED OSCILLATOR

040692

ELECTRONIC DEVICES RESEARCH

IN-HOUSE CAPABILITIES

- ELECTRONIC AND OPTOELECTRONIC DEVICE DESIGN, FABRICATION AND TESTING UTILIZING MOLECULAR BEAM EPITAXIAL GROWTH, ULTRA-HIGH RESOLUTION (<25nm) ELECTRON BEAM LITHOGRAPHY, MAGNETRON REACTIVE ION ETCHING, ELECTRON CYCLOTRON PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION.

- CW AND TIME-RESOLVED OPTICAL CHARACTERIZATION EMPLOYING RAMAN SPECTROSCOPY, PHOTOLUMINESCENCE AND MODULATED PHOTOREFLECTANCE.

- MICROCHEMICAL/MICROSTRUCTURAL CHARACTERIZATION BASED ON AUGER ELECTRON MICROPROBE, SECONDARY ION/GLOW DISCHARGE/LASER-BASED THERMAL DESORPTION MASS SPECTROMETERS, ION ACCELERATOR FOR RUTHERFORD BACKSCATTERING AND CHANNELING, SCANNING ELECTRON AND SCANNING TRANSMISSION ELECTRON MICROSCOPY, TRANSMISSION ELECTRON MICROSCOPY.

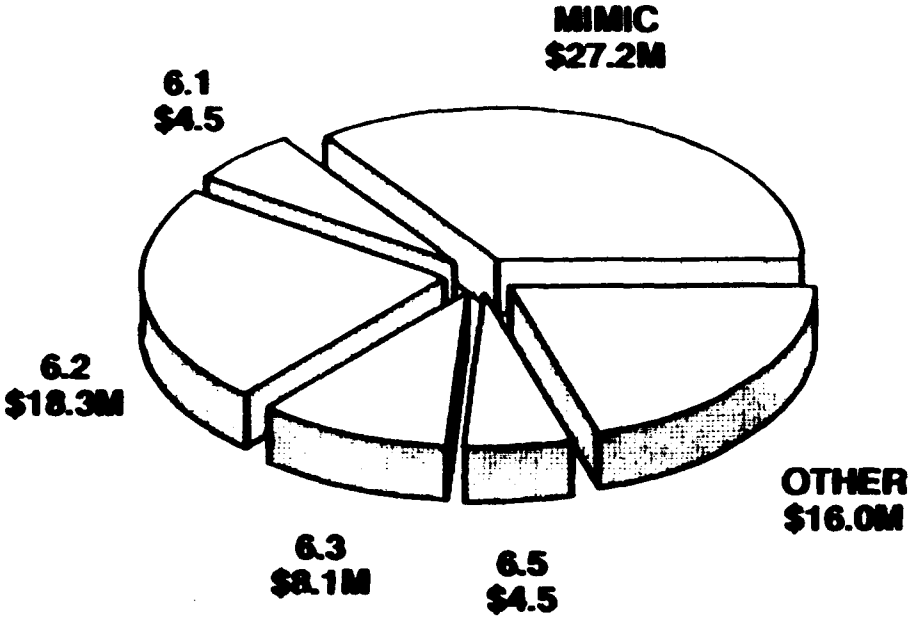
ELECTRONIC DEVICES RESEARCH

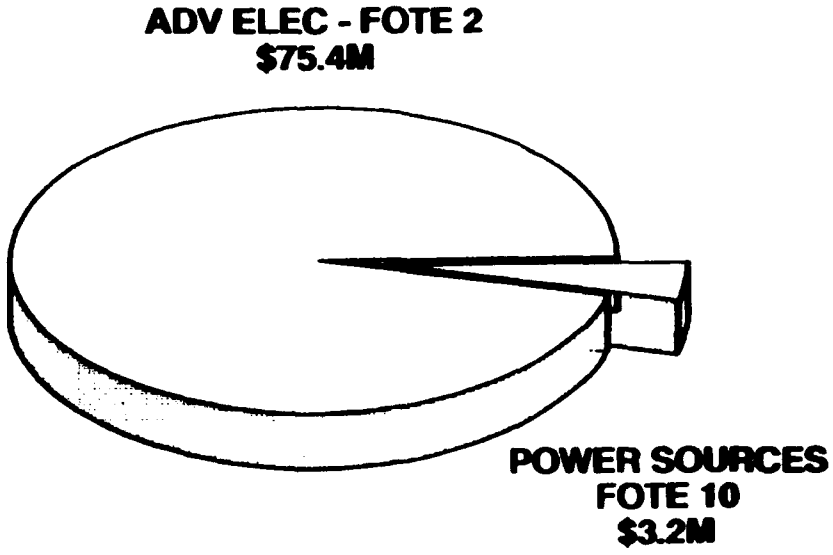
RESEARCH GOALS

- SINGLE PIXEL SENSORS FOR HIGH D*, LONG WAVELENGTH, MULTI-SPECTRAL HIGH RESOLUTION, STARING IR FOCAL PLANE ARRAYS.
- NEW MAGNETIC CIRCUITS FOR LIGHTER WEIGHT, SMALLER VOLUME MW/MMW TUBES, UV/X-RAY IMAGING.
- OPTO-ELECTRONIC DEVICES FOR PHASED ARRAY RADAR, ANTENNA REMOTING
- INNOVATIVE NANOSCALE DEVICES FOR RADAR FRONT ENDS, HIGH SPEED SIGNAL PROCESSING
- FABRICATION TECHNOLOGY FOR PHOTOCONDUCTIVE SWITCHES WITH FAST RISETIME, NARROW PULSE WIDTH, HIGH PEAK POWER PULSES FOR ULTRA-WIDE BANDWIDTH APPLICATIONS.
- ENABLING DEVICE FABRICATION/PROCESSING TECHNOLOGY FOR NEXT GENERATION HIGH FREQUENCY DEVICES.

TOTAL PROJECTED FUNDING
FY93 - FY94

$78.6 M





ETDL
PROJECTED FUNDING BY FOTE *

($ IN MILLIONS)

	FY93	FY94	FY95	FY96
ADVANCED ELECTRONICS	75.4	79.4	83.6	88.0
POWER SOURCES	3.2	3.4	3.6	3.9

** INTERIM FIGURES - SUBJECT TO CHANGE UPON ESTABLISHMENT OF ARL.*

"OPEN LABORATORIES" PROGRAM

- CENTER FOR RESEARCH & DEVELOPMENT COOPERATIONS/COORDINATION
- ON-SITE GOVERNMENT LAB/UNIVERSITY/INDUSTRY TEAMS
- JOINT COOPERATIVE PROGRAMS WITH CONTRACTORS
- IMPORTER OF FOREIGN TECHNOLOGY
  - TECHNOLOGY EXCHANGE
  - ENGINEER/SCIENTIST EXCHANGE
- LABORATORY / INDUSTRY / GOVERNMENT CONSORTIA

SUCCESS IN THESE AREAS REQUIRES STATE-OF-THE-ART CAPABILITIES/FACILITIES

COMMERCIAL APPLICATIONS OF ETDL DEVELOPED TECHNOLOGY

- UV - OZONE CLEANING
- CHEMICAL POLISHING TECHNIQUES FOR QUARTZ CRYSTALS
- METHOD OF BONDING QUARTZ CRYSTALS TO MOUNTING SUPPORTS
- METHOD OF CONTROLLING FREQ vs TEMP. CHARACTERISTICS
- METHOD OF MAKING HIGH SHOCK CRYSTALS
- METHOD OF MAKING HIGH FREQUENCY RESONATORS
- GENERIC CHEMISTRY FOR RECHARGEABLE Li BATTERIES FOR HAND TOOLS, CELLULAR PHONES
- VERSION OF Li MnO2 CELLS FOR THROWAWAY BATTERIES FOR TAPE RECORDERS, CALCULATORS
- THIN FILM ELECTROLUMINESCENT DISPLAYS FOR AIRCRAFT DISPLAYS, COMPUTER DISPLAYS, AIRPORT SCHEDULE DISPLAYS, INDUSTRIAL CONTROL DISPLAYS, MEDICAL DISPLAYS
- MICROWAVE (MAGNETRON) TUBES FOR FAA RADARS, PLEASURE BOAT RADARS, MW OVENS
- FLAT PANEL ELECTROLUMINESCENT DISPLAY FOR DEC WORKSTATIONS

COMMERCIAL APPLICATIONS OF ETDL DEVELOPED TECHNOLOGY

(CONTINUED)

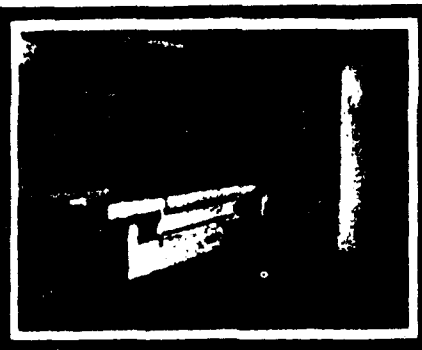
- VHF-UHF PIEZOELECTRIC RESONATORS SUCH AS IN CELLULAR PHONES
- HIGH POWER CONDITIONING, IMPROVEMENTS & QUALITY, FOR THE POWER INDUSTRY
- ARC PLASMA SPRAYING OF ELEC. MATLS. (THICK FILM/BULK APPLIC.) FOR MICROWAVE TUBE APPLICATION.
- HOT PRESS FERRITE MATERIALS & TECHNIQUES FOR RECORDING HEADS
- DUAL TOROID PHASE SHIFTER FOR FAA RADAR APPLIC.
- PDB MIXER DIODES - MARCONI COMMERCIAL PRODUCT LINE
- GRADED - GAP HOT INJECTOR (GUNN DIODES)

POTENTIAL

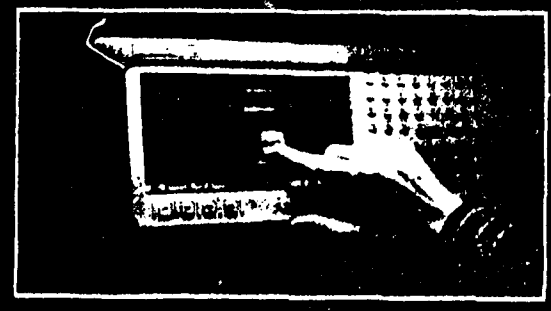
- MICROCOMPUTER COMPENSATED CRYSTAL OSCILLATOR FOR COMM APPLS
- ADVANCED CATHODE MATERIALS (COBALT OXIDE, VANADIUM PENTOXIDE) FOR BUTTON CELLS, CAMERAS, CALCULATORS
- PLANARIZATION OF TFEL DISPLAY ELECTRODE STRUCTURES
- HIGH ENERGY MAGNETIC MATERIALS FOR HOSPITAL COMPUTERIZED TOMOGRAPHY (MRI)

COMMERCIAL APPLICATIONS

MAGNETIC RESONANCE IMAGING



INFORMATION TERMINALS



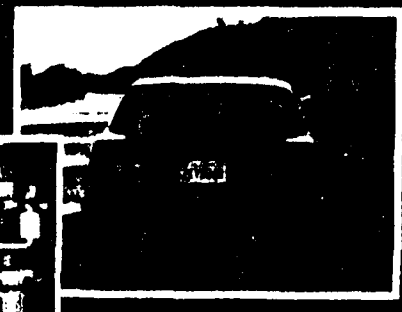
HIGH DEFINITION TELEVISION

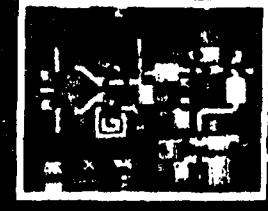
HIGH ENERGY BATTERIES

DIRECT BROADCAST SATELLITE TV

AUTOMOTIVE

COLLISION AVOIDANCE





NAVIGATION

KEY-LESS ENTRY

ETD LABORATORY IMPLEMENTATION OF THE TECHNOLOGY TRANSFER ACT OF 1986

COOPERATIVE R&D AGREEMENTS (CRDAs) IN EFFECT

US ARMY
LABORATORY COMMAND

ELECTRONICS TECHNOLOGY and DEVICES LABORATORY

PARTICIPANTS	AREA OF TECHNOLOGY TRANSFER	FOTE/SUB-FOTE
ETDL - ELECTROMAGNETIC SCIENCES	HIGH POWER MILLIMETER WAVE EVALUATION OF FERRITE DEVICES	ADV. ELECTRONICS/ M/MM WAVES
ETDL - TRONTECH	HIGH FREQUENCY OSCILLATORS AND AMPLIFIERS	ADV. ELECTRONICS/ M/MM WAVES
ETDL - AM. CYANAMID - EMCORE - POLY UNIVERSITY	OMVPE GROWTH TECHNOLOGIES	ADV. ELECTRONICS/ M/MM WAVES
ETDL - MARTIN GOFFMAN ASSOCIATES	MILLIMETER WAVE SUPERCONDUCTOR DETECTORS	ADV. ELECTRONICS/ M/MM WAVES
ETDL - MARTIN MARIETTA CORPORATION	MAGNETIC BIASING SYSTEM FOR MICROWAVE TUBES	ADV. ELECTRONICS/ M/MM WAVES
ETDL - CECOM - BELLCORE	EPITAXIAL LIFT-OFF PROCEDURES FOR FIBER OPTIC APPLICATIONS	ADV. ELECTRONICS/ M/MM WAVES
ETDL - NORDEN	FLAT PANEL DISPLAYS	ADV. ELECTRONICS/ DISPLAYS
ETDL - NEOCERA CORPORATION	SUPERCONDUCTOR TECHNOLOGY	ADV. ELECTRONICS/ M/MM WAVES
ETDL - RTI	E-BEAM CIRCUIT ANALYSIS	ADV. ELECTRONICS/ DISPLAYS
ETDL - EMC TECHNOLOGY	PROGRAMMABLE MICROWAVE ATTENUATORS	ADV. ELECTRONICS/ MICROELECTRONICS

ETD LABORATORY IMPLEMENTATION OF THE TECHNOLOGY TRANSFER ACT OF 1986

COOPERATIVE R&D AGREEMENTS (CRDAs) IN EFFECT (CONTINUATION)

US ARMY LABORATORY COMMAND

ELECTRONICS TECHNOLOGY and DEVICES LABORATORY

PARTICIPANTS	AREA OF TECHNOLOGY TRANSFER	FOTE/SUB-FOTE
ETDL - ALPHA INDUSTRIES	PLANAR DOPED BARRIER DIODE TECHNOLOGY	ADV. ELECTRONICS/ M/MM WAVES
ETDL - ELECTRONICS CONCEPT, INC.	HIGH ENERGY DENSITY CAPACITOR TECHNOLOGY	POWER SOURCES
ETDL - SHIPLEY CORPORATION	DEVELOPMENT OF E-BEAM RESISTS	ADV. ELECTRONICS/ MICROELECTRONICS
ETDL - CECOM- RUTGERS UNIVERSITY	ULTRA-HIGH SPEED AND MM WAVE ELECTRONIC DEVICES	ADV. ELECTRONICS/ M/MM WAVES
ETDL - RUTGERS UNIVERSITY	FERROELECTRICS AND HIGH TEMPERATURE SUPERCONDUCTING THIN FILMS	ADV. ELECTRONICS/ M/MM WAVES
ETDL - RUTGERS UNIVERSITY	HERMETIC COATINGS FOR OPTICAL WAVEGUIDES	ADV. ELECTRONICS/ M/MM WAVES
ETDL - RUTGERS UNIVERSITY	SMART CERAMIC MATERIALS	ADV. ELECTRONICS/ M/MM WAVES
ETDL - CECOM-PRINCETON UNIVERSITY	PHOTONIC DEVICES	ADV. ELECTRONICS/ M/MM WAVES
ETDL - STEVENS INSTITUTE OF TECHNOLOGY	OPTOELECTRONIC DEVICES	ADV. ELECTRONICS/ M/MM WAVES
ETDL - N.J. INSTITUTE OF TECHNOLOGY	ULTRA-HIGH SPEED AND MM WAVE ELECTRONIC DEVICES	ADV. ELECTRONICS/ M/MM WAVES

ETDL
SIGNIFICANT PATENT POSITIONS

- MAGNETICS
- FERRITE DEVICES
- CRYSTAL OSCILLATORS
- OPTICAL SWITCHES
- NANOELECTRONICS
- BATTERIES
- DISPLAYS
- MM WAVE PHOTONICS
- SAW DEVICES
- IR DETECTOR

ETDL GENERATES 35-55 PATENTS EACH YEAR
(55 IN 89 TOTAL DoE 215, ARMY 163, AIR FORCE 137, NAVY 124)

ETDL
PATENT LICENSING INITIATIVES

PATENT	TYPE OF LICENSE	LICENSEE(S)
DUAL MODE QUARTZ RESONATOR	PARTIALLY EXCLUSIVE (SIGNED AND IN EFFECT)	MOTOROLA Q-TECH FREQ. ELECTRONICS BALL EFRATOM VECTRON PIEZO CRYSTAL PEIZO TECHNOLOGY
PLANAR DOPED BARRIER DIODE	PARTIALLY EXCLUSIVE (SIGNED AND IN EFFECT)	ALPHA INDUSTRIES
PLANAR DOPED BARRIER DIODE	PARTIALLY EXCLUSIVE (UNDER NEGOTIATIONS)	_____
HIGH ENERGY DENSITY CAPACITOR TECHNOLOGY	NON-EXCLUSIVE (UNDER NEGOTIATIONS)	_____
MICROWAVE TUBE TECHNOLOGY	NON/PARTIALLY EXCLUSIVE (PLANNED NEGOTIATIONS)	_____
MICROWAVE/MMWAVE DROP-IN FERRITE SWITCH/CIRCULATOR	LICENSING PLANNED UNDER AN SBIR CONTRACT PROGRAM	TO BE DETERMINED
LITHIUM BATTERY TECHNOLOGY	TO BE DETERMINED	INQUIRIES RECEIVED
MAGNETIC TECHNOLOGY FOR MRI	TO BE DETERMINED	INQUIRIES RECEIVED DIALOGUE UNDERWAY

ETDL HAS ALREADY RECEIVED $51K IN PATENT LICENSING FEES

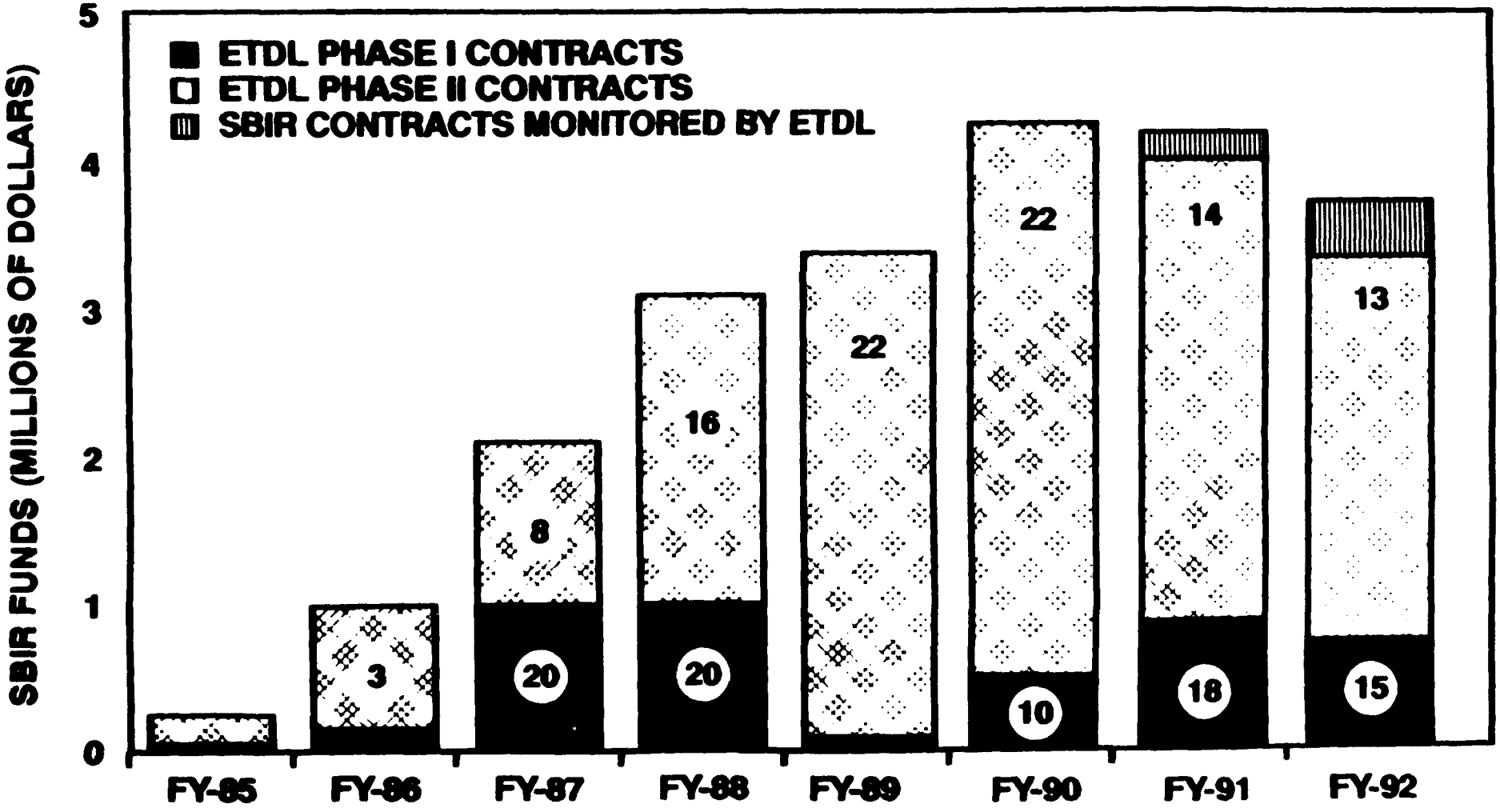
SMALL BUSINESS INITIATIVE

- A PROGRAM TO ESTABLISH NEW OPPORTUNITIES FOR SMALL BUSINESS GROWTH BASED ON ETDL TECHNOLOGY
- OVER AND ABOVE SMALL BUSINESS INNOVATIVE RESEARCH (SBIR) PROGRAM
- REPRESENTED 29.3% OF ETDL MISSION CONTRACT FUNDING IN FY91
- CONTINUAL PARTICIPATION IN NATIONAL SBIR CONFERENCES AND MEETINGS BY PROVIDING BRIEFINGS, WORKSHOP PRESENTATIONS, AND SEMINARS.
- INVITED BY HOUSE COMMITTEE ON SMALL BUSINESS TO PROVIDE COMMENTS AND SUGGESTIONS ON NEW LEGISLATION BEING CONTEMPLATED AS A PART OF THE REAUTHORIZATION OF THE SBIR PROGRAM FOR 1993
- ETDL CITED IN SENATE SUBCOMMITTEE ON INFORMATION AND REGUALTION HEARINGS FOR SUCCESSFUL INITIATIVES LINKING SBIR PROGRAMS WITH TECHNOLOGY TRANSFER EFFORTS

ETDL - SBIR FUNDING

US ARMY
LABORATORY COMMAND

ELECTRONICS TECHNOLOGY and DEVICES LABORATORY



US ARMY
FY92.2 SBIR PROGRAM SOLICITATION FOR ETDL

- 107. MERGED HYDRIDE/OMVPE EPITAXIAL GROWTH SYSTEM
- 108. SUPPRESSION OF VIBRATION-INDUCED SIDEBANDS
- 109. HIGH ENERGY DENSITY POLYMER CAPACITOR
- 110. MICROWAVE/MILLIMETER-WAVE "DROP-IN" CIRCULATORS AND SWITCHES
- 111. MINIATURE DISPLAY DEVICE TECHNOLOGY
- 112. VERY HIGH SPEED INTEGRATED CIRCUITS (VHSIC) HARDWARE DESCRIPTION LANGUAGE (VHDL) PACKAGE LIBRARY/COMMON PACKAGES
- 113. ENHANCED DIRECT DIGITAL SYNTHESIZER (DDS) DESIGNS
- 114. HIGH RATE, ULTRA-SAFE PRIMARY LITHIUM POUCH CELL BATTERY
- 115. RECHARGEABLE LITHIUM BATTERY FOR COMMUNICATION, ROBOTICS AND PULSE POWER
- 116. HIGH POWER, SOLID-STATE Ku-BAND TRANSMITTER
- 117. HIGH TEMPERATURE SUPERCONDUCTING (HTS) MICROWAVE RECEIVER
- 118. SEMICONDUCTOR OPTICAL AMPLIFIERS FOR MICROWAVE APPLICATIONS

BRIEFING SUMMARY

ETDL has:

- EXTENSIVE COUPLING BETWEEN IN-HOUSE EFFORT AND ON-GOING EFFORT IN PRIVATE INDUSTRIES AND UNIVERSITIES
- ACTIVE PROGRAM TO EXPLOIT WORLD TECHNOLOGICAL AND CONTRACTORS CAPABILITY
- MAXIMUM LEVERAGE OF MISSION RESOURCES USING OTHER GOVERNMENT AGENCIES, INDUSTRIES, AND UNIVERSITIES ON-GOING PROGRAMS TO MEET ARMY NEEDS
- AN "OPEN LABORATORY" WITH CONTRIBUTING UNIVERSITY & INDUSTRY PERSONNEL ON-SITE

NOTES

NIGHT VISION & ELECTRO OPTICS CHALLENGES

JAMES A. RATCHES
ASSOCIATE DIRECTOR
NIGHT VISION & ELECTRO-OPTICS
DIRECTORATE

UNCLASSIFIED

AMSEL-RD-NV-RM 03 MAR 92

POINT PAPER

SUBJECT: APBI

OBJECTIVE: Provides industry w/upcoming opportunities with the NVEO technologies for planning purposes.

FACTS:

- o NVEO played a major role in the success of Desert Storm.
- o NVEO technology program is stable for the next 3-5 years and has high level support within DA/DoD.
- o E-O technology proposed as major player in DoD S&T Thrusts areas with significant plus-ups anticipated.
- o Propose to brief program plans to meet challenges facing the Army in NVEO technology.

BRIEFER: Dr. James Ratches
Director, NVEOD
ATTN: AMSEL-RD-NV-D
COMM: (703) 704-1166

ACTION OFFICER
KATHLEEN YAMARIK
Resource Management
COMM: (703) 704-1144

NIGHT VISION & ELECTRO OPTICS CHALLENGES

BRIEFING OUTLINE

- OBJECTIVES
- NV & EO CHALLENGES
  - TECHNOLOGY
  - SYSTEMS
- FUNDING
- REQUIREMENTS & PAYOFFS
- CONTRACT OPPORTUNITIES

NV & E-O CHALLENGES

OBJECTIVES

- DEVELOP TECHNOLOGY & DEVICES TO ENABLE ARMY TO ACQUIRE/ENGAGE ENEMY ANY TIME OF THE DAY/NIGHT UNDER ADVERSE BATTLEFIELD CONDITIONS
  - IR DETECTORS/FPA
  - MODELING & ANALYSIS
  - LASERS
  - PROCESSORS/ATR
  - SENSORS & SENSOR/PROCESSOR SUITES

NV & E-O CHALLENGES
OBJECTIVES (CON'T)

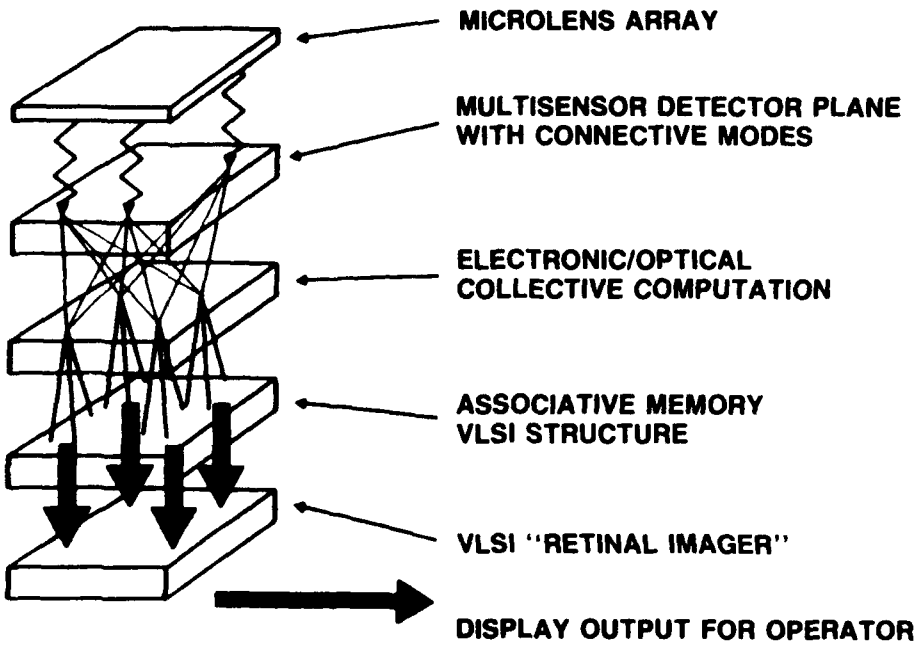
APPROACH

- FOCUS R&D EFFORTS ON HIGH PAYOFF AREAS OF INTEREST
- LEVERAGING OF US/FOREIGN TECHNOLOGY INVESTMENTS
- ESTABLISH PARTNERSHIP WITH INDUSTRY/ ACADEMIA (CONSORTIUMS/JOINT VENTURES)
- PROVIDE SOLDIER WITH BEST TECHNOLOGY AVAILABLE TO MAINTAIN SUPERIOR EDGE

NV & E-O CHALLENGES

IR DETECTORS/FPA

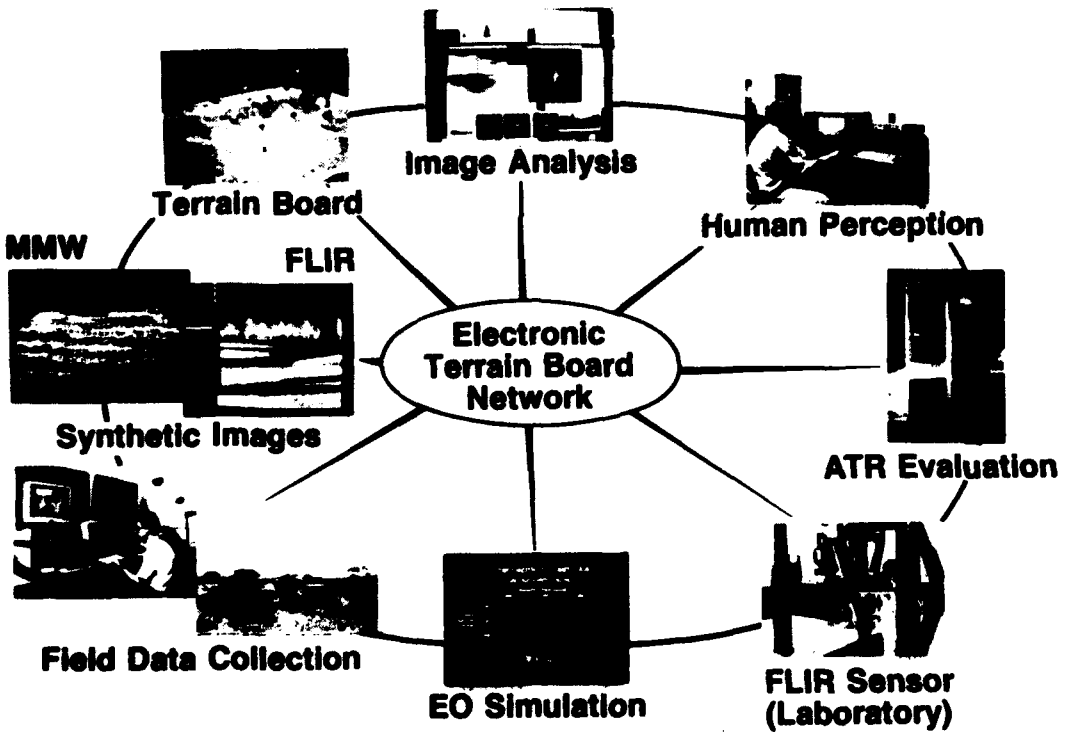
SMART COOLED FPA



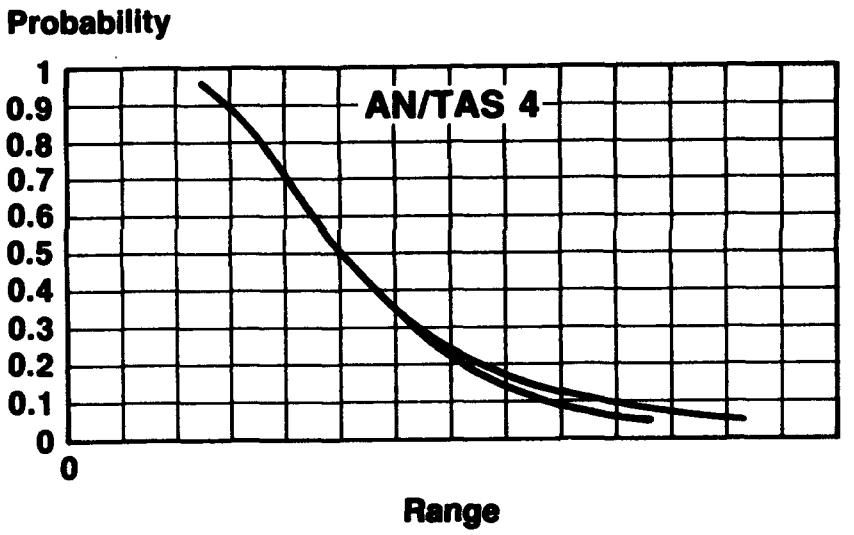
UNCOOLED FPA

NV & E-O CHALLENGES
MODELING & ANALYSIS

ELECTRIC TERRAIN BOARD



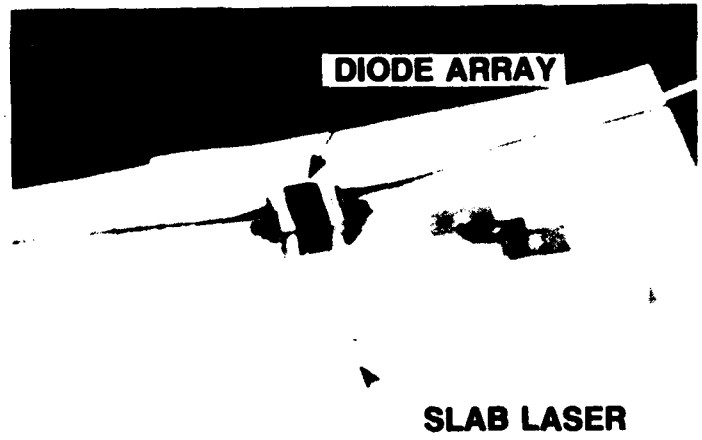
ANALYTIC MODELS



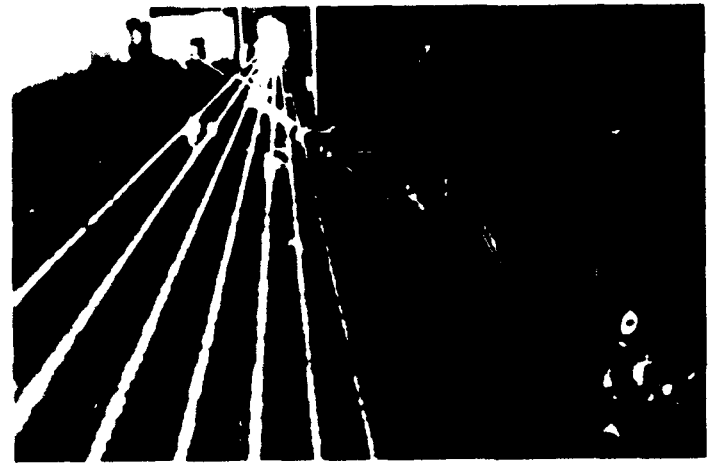
NV & E-O CHALLENGES

LASERS

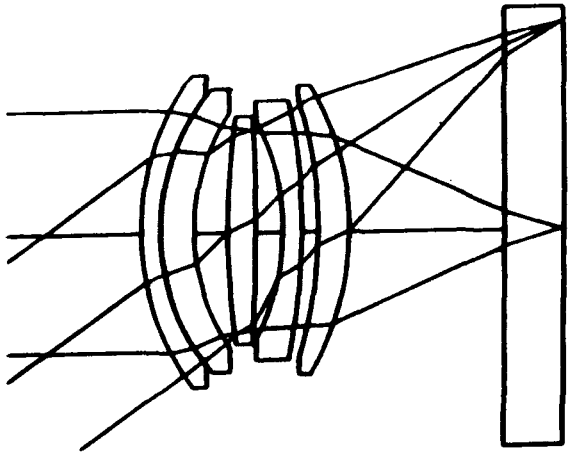
DIODE ARRAYS



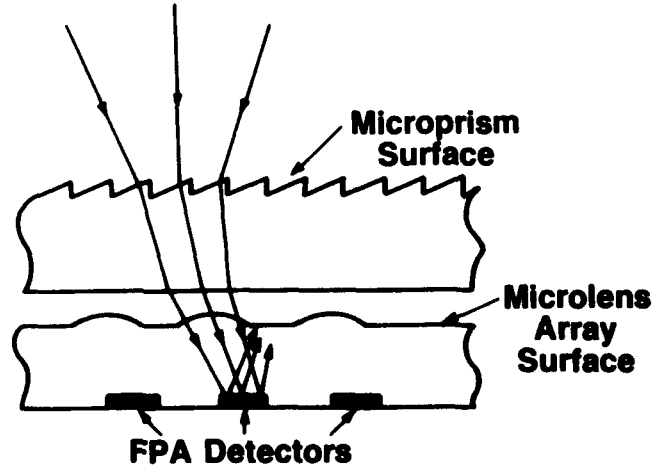
FREQUENCY DIVERSITY



OPTICS



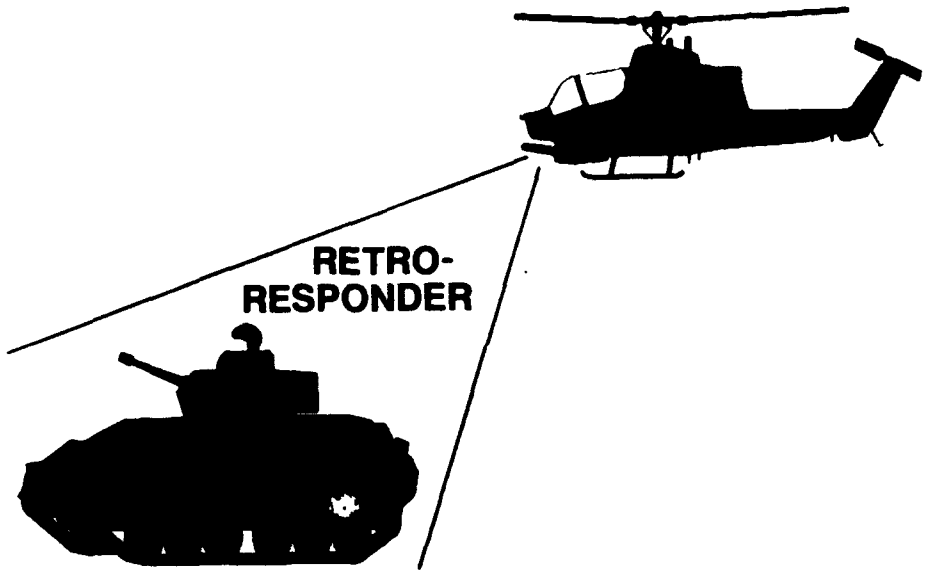
PROTECTION



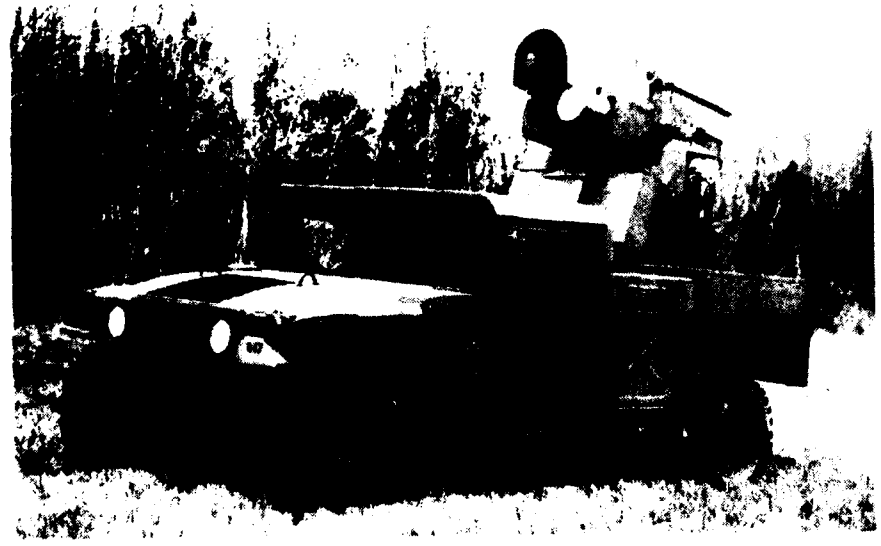
NV & E-O CHALLENGES

LASERS SYSTEMS

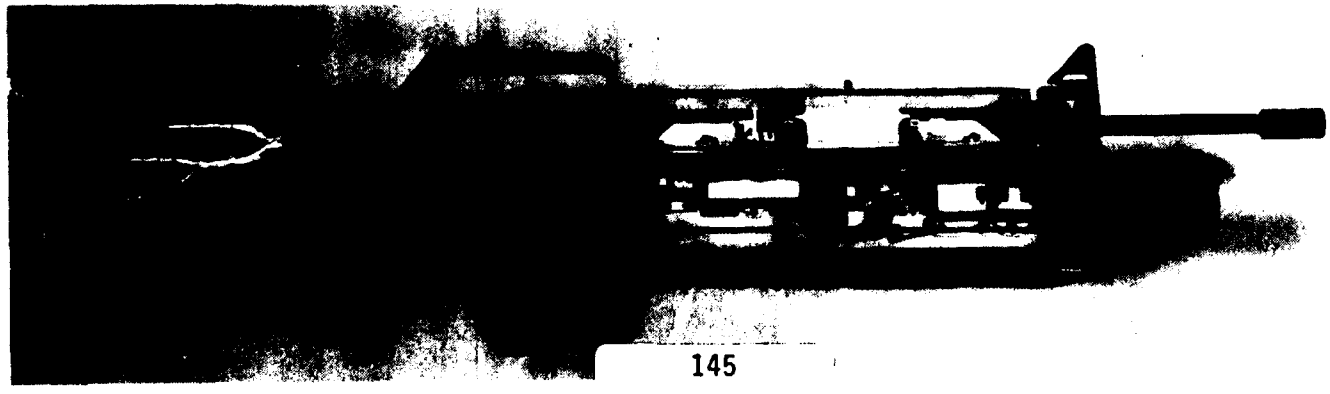
IFF



AIR DEFENSE



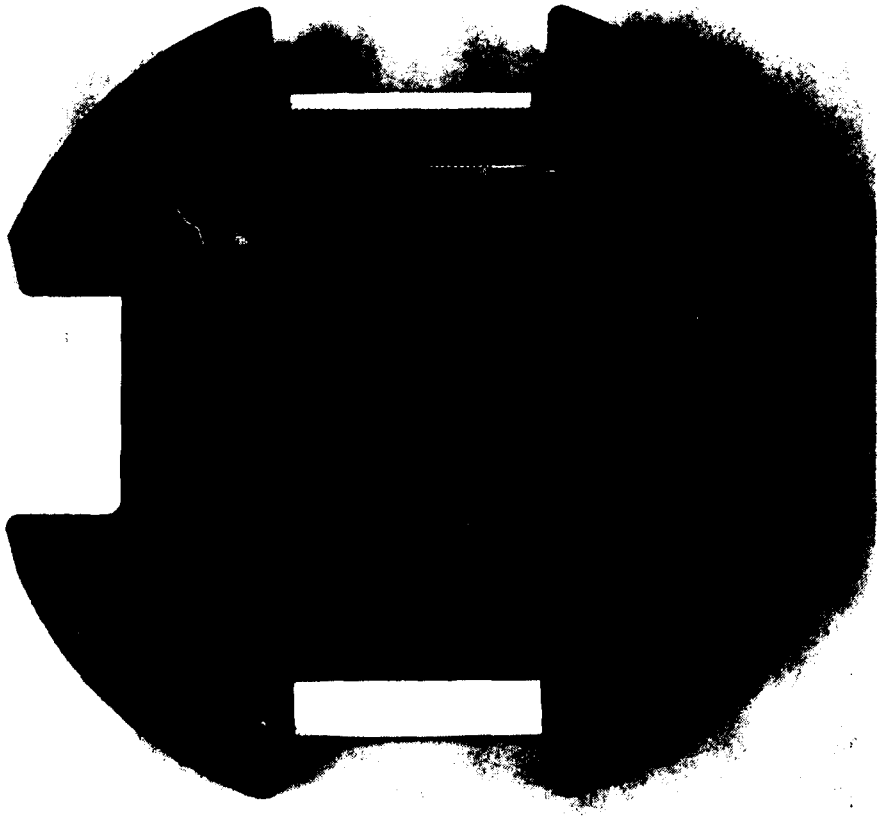
MANPORTABLE DEW



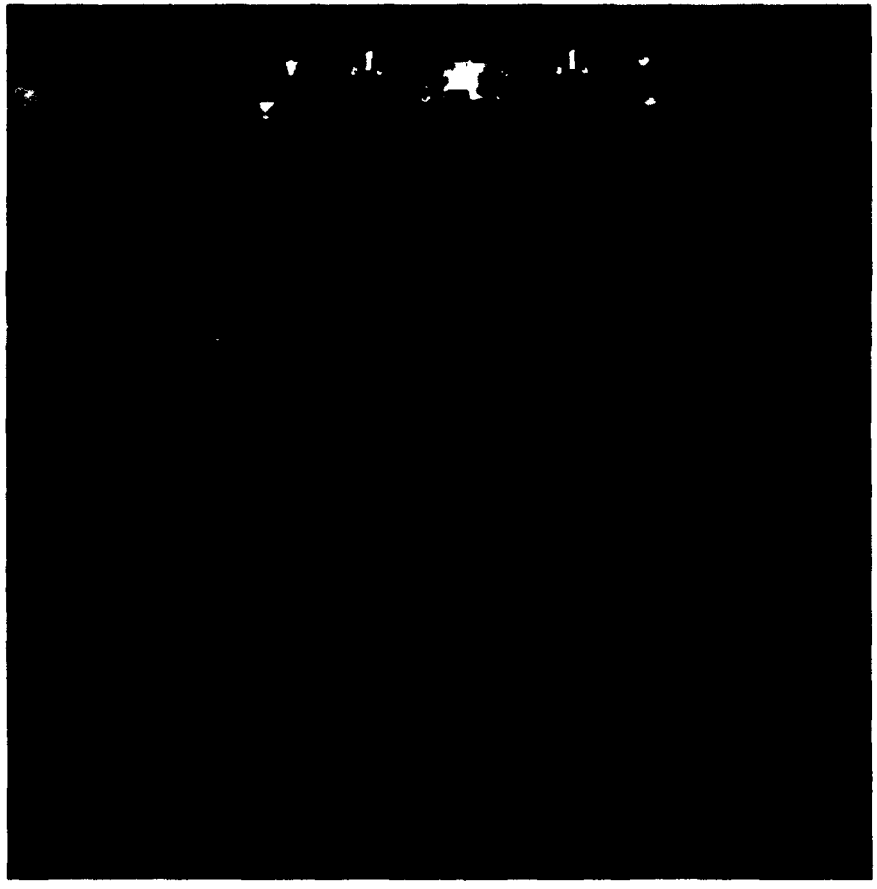
NV & E-O CHALLENGES

PROCESSORS/ATR DEV

ALADDIN



ATCURE

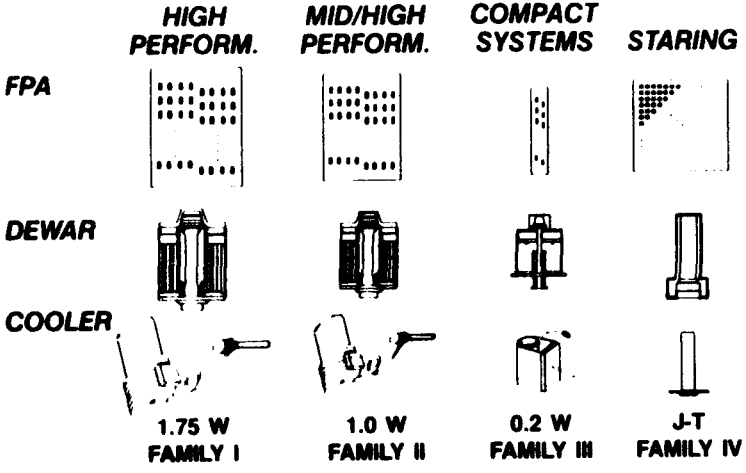


NV & E-O CHALLENGES

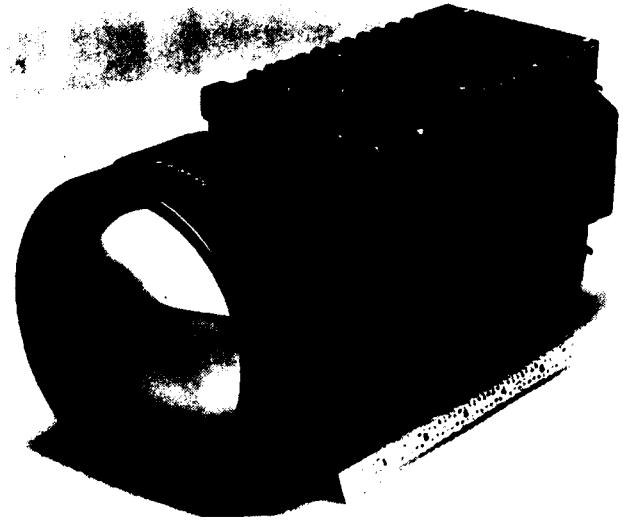
SENSORS

2ND GEN STANDARDIZATION

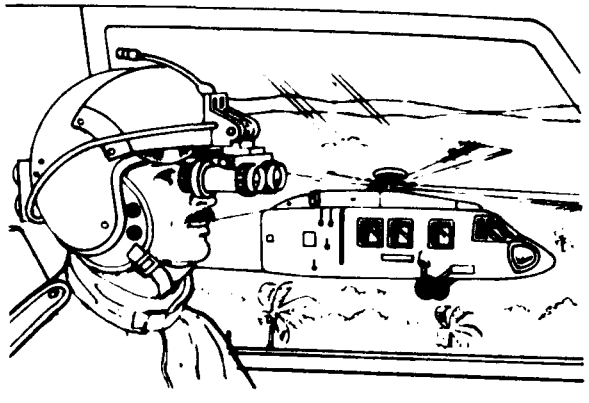
STANDARDIZATION OF FPA/DEWAR/COOLER FAMILIES TO MEET SYSTEM REQUIREMENTS



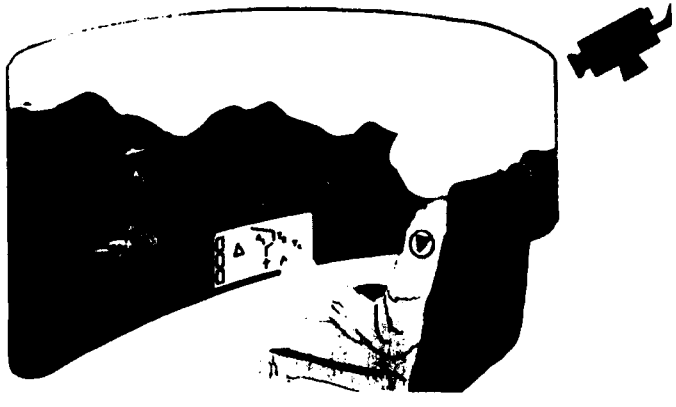
MANPORTABLE SENSORS



PILOTAGE



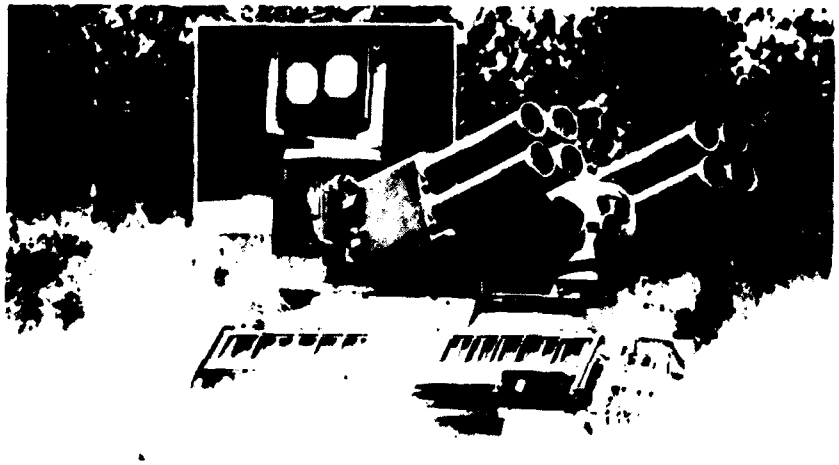
NAVIGATION



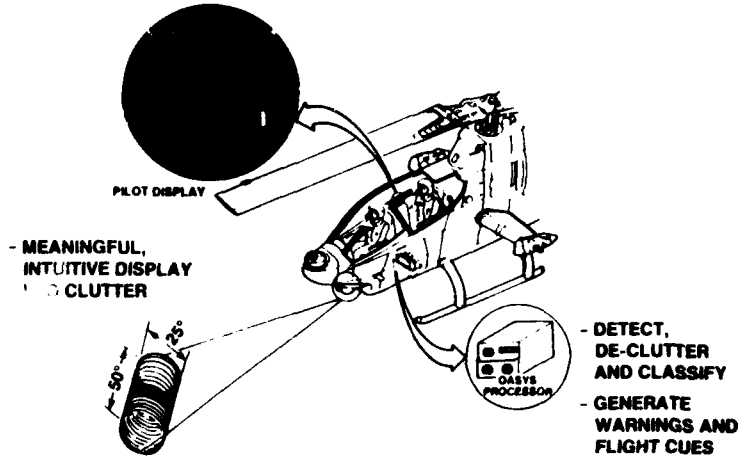
NV & E-O CHALLENGES

SENSORS

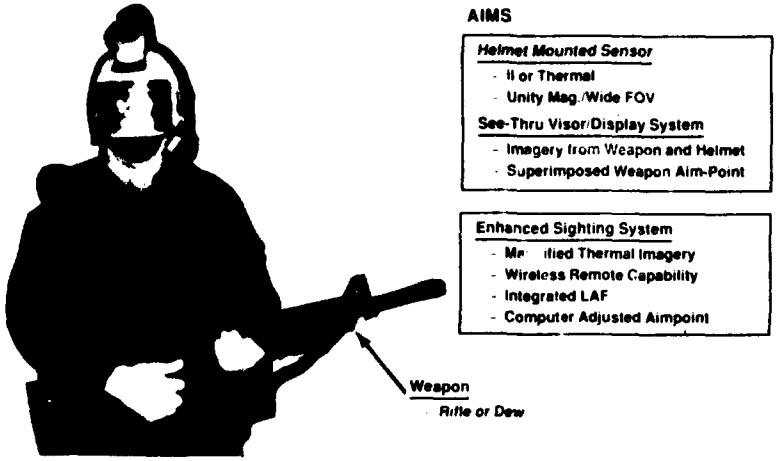
AADEOS



OASYS



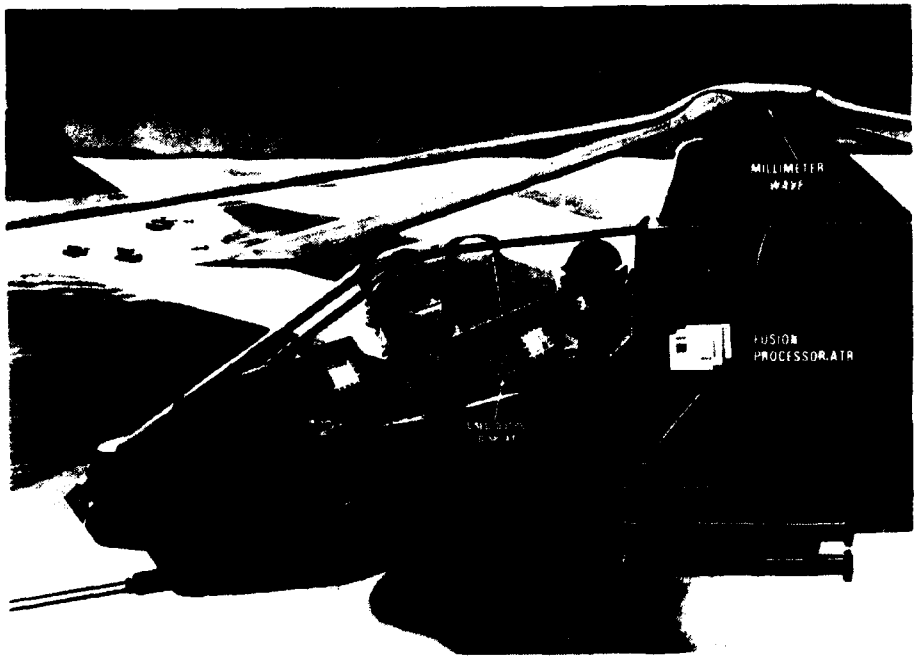
AIMS



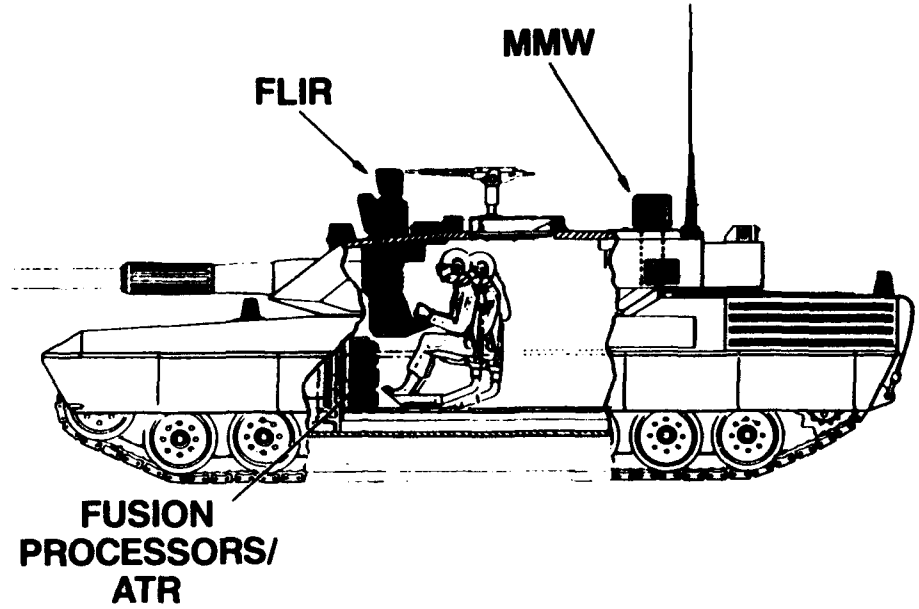
DAY/NIGHT SENTRY

NV & E-O CHALLENGES
SENSOR/SENSOR PROCESSOR SUITES

MSAT-AIR



MSAT-GND



NV & E-O CHALLENGES

USER REQUIREMENTS/DEFICIENCIES

- TARGET ACQUISITION/ENGAGEMENT UNDER ADVERSE CONDITIONS
- INCREASED TARGET SERVICING RATES
- EXTENDED STANDOFF RANGES
- NAP-OF-THE-EARTH PILOTAGE
- PASSIVE SURVEILLANCE
- INTELLIGENCE GATHERING
- IMPROVED MOBILITY AT NIGHT

NV & E-O CHALLENGES
NEEDED TECHNOLOGIES

- IR DETECTORS/FPA
  - SMART FPA'S
  - MICROFACTORIES (LOW COST, HIGH YIELD)
- MODELING & ANALYSIS
  - ELECTRONIC TERRAIN BOARD
  - PERCEPTION UNDERSTANDING
- LASERS
  - IFF (COOPERATIVE/NON-COOPERATIVE)
  - DIODE PUMPING
  - MULTI-WAVELENGTH, FREQUENCY AGILITY

NV & E-O CHALLENGES
NEEDED TECHNOLOGIES

- PROCESSOR/ATR
  - ALGORITHMS & ALGORITHMS OPTIMIZATION
  - ARCHITECTURE OPTIMIZATION
  - MODULAR HARDWARE/SOFTWARE

- SENSORS & SENSOR/PROCESSOR SUITES
  - SENSOR FUSION

NV & EO CHALLENGES PAYOFFS

OWNING THE NIGHT

- LONGER RANGE ACQUISITION THAN POTENTIAL ENEMY
- FULL ACQUISITION RANGE COMPARABLE W/WEAPON SYS
- ALL WEATHER TARGET ACQ
- INCREASED LETHALITY THRU AUTOMATED TARGET ACQUISITION

PASSIVE SURVEILLANCE

- SEE AND NOT BE SEEN

PAYOFFS CONT.

INCREASED MOBILITY/SURVEL.

- AIRCRAFT NAP-OF-THE-EARTH OPERATION
- COMBAT SPT/COMBAT SERVICE SUPPORT MOBILITY
- INCREASED TARGET SERVICING RATES
- IDENTIFICATION FRIEND OR FOE

NV & EO CHALLENGES
OSD SCIENCE & TECHNOLOGY THRUST

MAJOR IMPACT ● HIGHEST IMPACT *	GLOBAL SURV 1	PRECISION STRIKE 2	AIR DEFENSE 3	UNDERSEA SUPER-IORITY 4	ADV LAND COMBAT VEHICLE 5	SIMULATION 6	TECH FOR AFFORD-ABILITY 7	WARRIOR ENHANCE-MENT 8
62709a								
ADVANCED FPA's	*	●	●		●		*	●
ADVANCED ALG. DEV.		*	●		*		●	
PROCESSOR HARDWARE		*			*		*	*
TUNABLE LASER SOURCES			*		●			
ADVANCED OPTICS		●	●		●		●	●
MODELING/SIMULATION		●			●	*		●
63710a								
MSAT-AIR		*			●			
APA/AHP		*						*
OASYS		*						
DAY/NIGHT SENTRY		●			*			●
OCM			*					
2ND GEN TANK SIGHT					*			
AADEOS			*					
2ND GEN STANDARDIZATION		*	●		*		*	●
AIMS								*
SENSOR/PROC FOR AUTOMATION					*			

NV & E-O CHALLENGES
FUNDING PROFILE

	CURRENT RDTE	PROPOSED S&T ENHANCEMENTS
FY93	63.7	33.5
FY94	58.2	50.0
FY95	52.3	65.0
FY96	57.8	55.0
FY97	59.9	25.0
TOTAL	291.90	228.50

NIGHT VISION & ELECTRO OPTICS CHALLENGES
PROPOSED S&T ENHANCEMENTS
E-O TECHNOLOGY
FY93-97

- THRUST 2 (PRECISION STRIKE) $39 MIL
  - ATR

- THRUST 3 (AIR DEFENSE) $35 MIL
  - MODULAR, LIGHTWEIGHT IRST

NIGHT VISION & ELECTRO OPTICS CHALLENGES
PROPOSED S&T ENHANCEMENTS
E-O TECHNOLOGY
FY93-97

- THRUST 5 (ADVANCED LAND COMBAT VEHICLES) $65 MIL
  - ADVANCED SENSOR/PROCESSOR SUITES FOR SCOUT SENTRY'S
  - ADVANCED TARGET ACQUISITION SUITES FOR LIGHT FORCES

- THRUST 7 (TECHNOLOGY FOR AFFORDABILITY) $90 MIL
  - SCALEABLE MANUFACTURING TECH FOR IRFPA'S
  - UNCOOLED FPA'S
  - SIGNAL PROCESSORS

CONTRACT OPPORTUNITY

- TITLE: ADVANCED FOCAL PLANE ARRAYS
- OBJECTIVE: DEVELOP ADVANCED HIGH PERFORMANCE FPA'S (COOLED/UNCOOLED)
  - 1-2 MICRON
  - 3-5 MICRON
  - 8-12 MICRON
- TYPE: COMPETITIVE, CPFF
- STATUS: 6.2 EXPLORATORY DEVELOPMENT
- SCHEDULE: AWARD DATE - 1ST QTR FY93
  CONTRACT LENGTH - 30 MONTHS
- APPROX. VALUE: < 10 MILLION
- POC/PHONE#: DR. H. POLLEHN (703) 704-1648

CONTRACT OPPORTUNITY

- TITLE: ADVANCED OPTICS
- OBJECTIVE: DEVELOP NEW STATE-OF-THE-ART OPTICS (BINARY/MICROBINARY STRUCTURES) FOR APPLICATIONS TO ELECTRO-OPTIC SENSORS
- TYPE: COMPETITIVE, CPFF
- STATUS: 6.2 EXPLORATORY DEVELOPMENT
- SCHEDULE: AWARD DATE - 2ND QTR FY93
  CONTRACT LENGTH - 18-24 MONTHS
- APPROX. VALUE: < 10 MILLION
- POC/PHONE#: W. GRANT (703) 704-1686

CONTRACT OPPORTUNITY

- TITLE: ADVANCED HELICOPTER PILOTAGE
- OBJECTIVE: DEVELOP NEW STATE-OF-THE-ART SENSOR SUITE TO ENHANCE AVIATION NAP-OF-THE-EARTH PILOTAGE
- TYPE: COMPETITIVE, CPFF
- STATUS: 6.3a PROTOTYPE SENSOR DEVELOPMENT
- SCHEDULE: AWARD DATE - 2ND QTR FY93
  CONTRACT LENGTH - 30 MONTHS
- APPROX. VALUE: < 10 MILLION
- POC/PHONE#: M. KELLEY (703) 704-1130

CONTRACT OPPORTUNITY

- TITLE: ADV PILOTS AID (ATTD)
- OBJECTIVE: DEMONSTRATE ADVANCED AVIATOR NIGHT VISION GOGGLES WHICH ENHANCE OPERATIONAL EFFECTIVENESS AND REDUCE PILOT WORKLOAD
- TYPE: COMPETITIVE, CPAF
- STATUS: 6.3a PROTOTYPE SENSOR DEVELOPMENT
- SCHEDULE: AWARD DATE - 3RD QTR FY93
  CONTRACT LENGTH - 30 MONTHS
- APPROX. VALUE: < 10 MILLION
- POC/PHONE#: M. KELLEY (703) 704-1130

CONTRACT OPPORTUNITY

- TITLE: DAY/NIGHT SENTRY
- OBJECTIVE: DEVELOP PROTOTYPE MANPORTABLE ELECTRO-OPTIC SENSOR SUITE THAT CAN BE IMPLANTED BEHIND ENEMY LINES AND REMOTELY ACTIVATED TO PROVIDE DATA TO US FORCES VIA SECURE TRANSMISSION
- TYPE: COMPETITIVE, CPAF
- STATUS: 6.3a PROTOTYPE SENSOR DEVELOPMENT
- SCHEDULE: AWARD DATE - 3RD QTR FY93
  CONTRACT LENGTH - 30 MONTHS
- APPROX. VALUE: > 10 MILLION
- POC/PHONE#: DR. R. ROHDE (703) 704-1304

CONTRACT OPPORTUNITY

- TITLE: ADVANCED INTEGRATED MANPORTABLE SYSTEM
- OBJECTIVE: DEVELOP PROTOTYPE HELMET SENSOR ENSEMBLE UTILIZING MANPORTABLE IR, LASER AND DISPLAY TECHNOLOGY AS PART OF THE ARMY'S TEISS
- TYPE: COMPETITIVE, CPFF
- STATUS: 6.3a PROTOTYPE SENSOR HARDWARE
- SCHEDULE: AWARD DATE - 3RD QTR FY93
  CONTRACT LENGTH - 30 MONTHS
- APPROX. VALUE: < 10 MILLION
- POC/PHONE#: DR. R. ROHDE (703) 704-1304

CONTRACT OPPORTUNITY

- TITLE: SENSOR PROCESSOR AUTOMATION
- OBJECTIVE: DEVELOP A SENSOR/PROCESSOR SUITE FOR UNMANNED GROUND VEHICLE APPLICATION. EMPHASIS PLACED ON IMAGE ENHANCEMENT/ AUTOMATION FOR TARGET ACQUISITION AND MANEUVER PROCESSING
- TYPE: COMPETITIVE, CPAF
- STATUS: 6.3a PROTOTYPE SENSOR DEVELOPMENT
- SCHEDULE: AWARD DATE - 3RD QTR FY94
  CONTRACT LENGTH - 30 MONTHS
- APPROX. VALUE: > 10 MILLION
- POC/PHONE#: DR. R. ROHDE (703) 704-1304

CONTRACT OPPORTUNITY

- TITLE: OPTICAL COUNTERMEASURES ATTD
- OBJECTIVE: DEVELOP, DEMONSTRATE AND TRANSITION A LASER TECHNOLOGY, ANTI-SENSOR, TACTICAL WEAPON EFFECTIVE AGAINST HARDENED THREATS.
- TYPE: COMPETITIVE, CPAF
- STATUS: 6.3a PROTOTYPE SENSOR DEVELOPMENT
- SCHEDULE: AWARD DATE - 3RD QTR FY95
  CONTRACT LENGTH - 30 MONTHS
- APPROX. VALUE: > 10 MILLION
- POC/PHONE#: E. EFKEMAN (703) 704-1147

SUMMARY

- ELECTRO OPTIC TECHNOLOGY MAJOR FORCE MULTIPLIER IN DESERT STORM SUCCESS
- DOD/DA COMMITTED TO "OWN THE NIGHT"
- CURRENT RDTE GUIDANCE AND PROPOSED NEW INITIATIVES REFLECT ARMY'S COMMITMENT TO MEET THE ELECTRO OPTICS CHALLENGES OF THE FUTURE

NOTES

C3 SYSTEMS TECHNOLOGY BASE PROGRAM

MR. JOSEPH J. PUCILOWSKI, Jr.
DIRECTOR
C3 SYSTEMS DIRECTORATE

UNCLASSIFIED

AMSEL-RD-C3-TP-O 09 Mar 92

POINT PAPER

SUBJECT: Broad Agency Announcement (BAA) for CECOM Research, Development and Engineering Center (RDEC)

OBJECTIVE: To encourage submission of R & D proposals by academic institutions, non-profit organizations and private industry for technology base investigations responsive to the CECOM mission.

FACTS:

o BAA's describe C3 requirements in basic research, exploratory development and advanced development.

o BAA's will be advertised in the Commerce Business Daily by 13 March 92. Solicitations will be sent to interested vendors on 1 April 92. Vendors will be given six weeks to respond for FY-92 award.

o All competitive contracts will be awarded within 36 months.

o Value of each contract is normally between $25 K and $500 K.

BRIEFER: Joseph J. Pucilowski, Jr., Director, Command, Control and Communications (C3) Systems Directorate, AMSEL-RD-C3-D, (908) 544-4449.

ACTION OFFICER:
Dr. Felix Schwering
C3 Systems Directorate
908-532-0469

AMSEL-RD-C3-TP-O 09 Mar 92

POINT PAPER

SUBJECT: Small Business Innovations Research (SBIR) Phase I and Phase II

OBJECTIVE: Encourage and stimulate small business to accomplish innovative research projects in the technology areas of interest to C3 Systems.

FACTS:

o Solicitation for SBIR proposal published once a year. FY-92 solicitation to be released 1 May 92. Proposals must be received by 30 June 92.

o Competitive type contract, 6 months, Phase I.

o Approximately 50% of Phase I contracts lead to Phase II (at < 500 K).

o Generally, 3 to 5 Phase I contracts per year.

BRIEFER: Joseph J. Pucilowski, Jr., Director, Command, Control and Communications (C3) Systems Directorate, AMSEL-RD-C3-D, (908) 544-4449.

ACTION OFFICER
Roy S. Zelenka
C3 Systems Directorate
908-544-3702.

POINT PAPER

SUBJECT: R & D Engineering Support Services for Command, Control and Communications (C3) Systems Directorate

OBJECTIVE: To provide integration and systems engineering services to the C3 Systems Directorate to facilitate Program Managers (PMs) and Program Executive Officers (PEOs), laboratories, centers, directorates and Department of Defense Agencies in the development, production and fielding of C3 Systems.

FACTS:

- o Type of Contract: Competitive
  Indefinite Quantity with Delivery Orders issued as required.

- o Schedule: 1st Quarter, FY-93
  Period of Performance - 48 months.

- o Efforts will involve tasks related to:
  - oo Systems Engineering and Analysis;
  - oo Modeling and Simulation;
  - oo Systems Interface and Integration;
  - oo Systems Security Accreditation and Certification;
  - oo Government and Contractor Testing;
  - oo Technical and Design Reviews;
  - oo Electromagnetic Interference (EMI);
  - oo Technical Demonstrations, Briefings and Graphics;
  - oo Computer-Based C3 Equipment Architecture

BRIEFER: Joseph J. Pucilowski, Jr., Director, Command, Control and Communications (C3) Systems Directorate, AMSEL-RD-C3-D, (908) 544-4449.

ACTION OFFICER:
Thomas J. Sheehan
C3 Systems Directorate
(908) 544-3267

POINT PAPER

SUBJECT: Multiband/Multimode Radio

OBJECTIVE: Multi-phased effort at developing a software reprogrammable radio system. The Speakeasy program is Phase I of this multi-phased effort.

FACTS:

o The Multiband/Multimode Radio is a program intended to develop a new radio architecture. The new radio will consist of modules which may be combined onto a common bus in order to share information and processing capability. The design will be such that additional processing power will be possible through the addition of additional modules or by replacing existing modules with newer more powerful ones. This design is the basic concept of the open architecture which the program hopes to take advantage of and develop.

o The open architecture, combined with software reprogrammability and control will result in a radio system which can be altered by simply modifying software while maintaining the existing hardware.

o When completed, it is envisioned that the Multiband/Multimode Radio will consist of a common bus which acts as an information and control path to a number of modules. These modules will be of the same design and act as "processing engines". If additional processing power is needed, additional (common) modules will be added to the existing bus. All platforms will share the common modules and software controlling those modules. Logistic costs will be reduced because of the limited type of modules needed and technology can concentrate on these modules to make them more reliable and better performers.

o As the program progresses and we actually develop hardware, we may learn that it is not an optimal size/cost/processing solution for all the modules to be exactly the same or to have one common bus. However, the basic intent of the program will remain to develop a radio which can be easily modified by changing its software and whose processing power can be enhanced by the addition of processing modules.

BRIEFER: Joseph J. Pucilowski, Jr., Director, Command, Control and Communications (C3) Systems Directorate, AMSEL-RD-C3-D, (908) 544-4449.

ACTION OFFICER:
John J. Jeski
C3 Systems Directorate
(908) 532-0444.

POINT PAPER

SUBJECT: Vehicular Conformal Antennas

OBJECTIVE: 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. 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, candidate vehicles (i.e. HMMWV - high mobility multi-purpose wheeled vehicles, M1, M2), and candidate radio systems followed by a feasibility demonstration phase and evaluation of models on respective tactical vehicles.

FACTS:

o 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.

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

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

MILESTONES:

FY-93	Begin technical assessment.
FY-94	Complete technical assessment and initiate feasibility contract.
FY-95	Complete feasibility models and conduct evaluation tests on candidate vehicles.

BRIEFER: Joseph J. Pucilowski, Jr., Director, Command, Control and Communications (C3) Systems Directorate, AMSEL-RD-C3-D, (908) 544-4449.

ACTION OFFICER:
Robert T. Hoverter
C3 Systems Directorate
(908) 532-0455

AMSEL-RD-C3-LA-L 09 Mar 92

POINT PAPER

SUBJECT: Survivable Adaptable System Technology - Advanced Technology Transfer Demonstration (SAST-ATTD)

OBJECTIVE:

o An Adaptive Network for Multimedia Communications supporting Common Hardware Software (CHS) equipment.

o Integrated Systems Development in four technology thrusts:

  oo Fiber Distributed Data Interface (FDDI)
  oo Wireless LANs (EHF, Omni-Directional, and Long Hall)
  oo Tactical Network Management (includes System Software and Gateway Technology)
  oo Network Security

o High technology contracts shifting to CPFF in FY93 - FY95.

FACTS:

o We are developing a system to give the Tactical Computer User:

  oo High capacity (100 Mbps +)
  oo Multimedia (Data, Packet Voice and Video)
  oo Survivability (Wireless LANs, dual ring fiber, Command and Control on the move)

OPPORTUNITY FOR CONTRACTORS:

o System Integration.

BRIEFER: Joseph J. Pucilowski, Jr., Director, Command, Control and Communications (C3) Systems Directorate, AMSEL-RD-C3-D, (908) 544-4449.

ACTION OFFICER:
CPT James D. Bass
C3 Systems Directorate
(908) 544-3697

POINT PAPER

SUBJECT: Wireless Local Area Network (LAN) Antenna Techniques

OBJECTIVE: The goals of the Wireless LAN Antenna Techniques program are to investigate all of the suitable technical approaches for developing a scanning omni-directional antenna operating in the 54-58 GHz Extremely High Frequency (EHF) band for use with the EHF Wireless LAN, to select the most promising approach, and to design and fabricate prototypes for demonstration with EHF Wireless LAN as part of the Survivable Adaptable System Technology - Advanced Technology Transition Demonstration (SAST-ATTD).

FACTS:

o A baseline EHF Wireless LAN Ethernet Internetworking system currently under development operates in the 36 and 54 GHz frequency bands and utilizes directional antennas. The intent of this development effort is to demonstrate the suitability of using the EHF band to provide high bandwidth tactical wireless internetworking for dispersing Army Tactical Command and Control System (ATCCS) command post LANs in a static environment as part of the SAST-ATTD.

o In September 1991, LTG Thomas imposed a new requirement that the Wireless LAN being developed under the SAST-ATTD be capable of operating on-the-move. In order to meet this requirement, future Wireless LAN systems will require omni-directional antennas. Since omni-directionally radiating antennas are not suitable for use with wide bandwidth radios operating at 54-56 GHz (a frequency band selected for its unique LPI/LPD characteristics) due to gain margin limitations, development of an antenna system capable of dynamically scanning a directional beam around 360 degrees of azimuth is required.

o A number of technical approaches for an antenna with the desired characteristics exist. These include mechanically scanned directional antennas, mechanically scanned splashplate antennas, omni-directional phased arrays, phased conjugate arrays, and sectored omni-directional antennas. This program will allow these various approaches to be fully investigated and an optimum approach selected based on technical, operational, cost and reliability considerations. Prototype antennas will be developed for demonstration in the SAST-ATTD.

BRIEFER: Joseph J. Pucilowski, Jr., Director, Command, Control and Communications (C3) Systems Directorate, AMSEL-RD-C3-D, (908) 544-4449.

ACTION OFFICER:
Frank Loso
C3 Systems Directorate
(908) 544-4025

POINT PAPER

SUBJECT: Adaptive Network Management and Planning

OBJECTIVE: The goal of the Adaptive Net Planner and Management program is to develop the protocols and algorithms to provide a near real time planner for localized network voice, data, and video subscribers. Also to develop the protocols and algorithms to provide Open System Interconnection (OSI) based network management for localized networks. The near term focus for this development is the Survivable Adaptable System Technology Demonstration (SASTD) (95 DEMO) and the far term focus is the Battlefield Information System (BIS) 2015 architecture.

FACTS:

o The ANPM protocols and algorithms would provide an automated planner capability for the localized network subscribers. The automated planner must operate in near real time to support frequent user requirement changes as a result of battlefield dynamics and/or mission changes.

o The ANPM design for the localized network will be based on the current DOD protocols and algorithms. They will be enhanced to perform in the tactical environment and support evolution to OSI compatibility.

o The near term planner will focus on the data subscribers in the localized network environment consisting of FOTLAN, Wireless LAN, and Ethernets. The results of the near term effort will be demonstrated in laboratory demonstrations with transitions to the SASTD DEMO.

o The far term effort will focus on voice/data/video subscribers in localized network and OSI based network management for broadband Integrated Services Digital Network (ISDN) and metropolitan area networks.

BRIEFER: Joseph J. Pucilowski, Jr., Director, Command, Control and Communications (C3) Systems Directorate, AMSEL-RD-C3-D, (908) 544-4449.

ACTION OFFICER:
Charles J. Graff
C3 Systems Directorate
(908) 544-3264

POINT PAPER

SUBJECT: Development of Automated Command and Control Battlefield Operations Systems Concept for Battalion & Below Use.

OBJECTIVE: Using low cost, rapid prototyping capabilities, develop, evaluate and refine automation applications. These applications will be appropriate and applicable to the execution of command and control (C2) processes for US Army units of brigade and below sizes regardless of mission dependence. Extend, integrate and enhance the Army Tactical Command and Control System (ATCCS) concepts, such that life cycle costs are equal to or less than current costs.

FACTS:

o Present command and control for all units is not automated.

o Present practices, procedures and processes are not standardized relative to automation.

o Both automation and its application to C2, and the practices, procedures, processes and doctrine are evolving.

o An interactive "developer" - "user" process based on rapid prototyping concepts can accelerate and enhance fielding of automation aids for C2.

o ACCS/ATCCS common hardware/software extensions can minimize and/or reduce associated life cycle and development costs.

OPPORTUNITIES FOR CONTRACTORS:

o Low cost, graphical interface capable, government owned-supported Rapid Prototyping software selection maximizes multiple contractor participation in modular applications development.

o Integrated, seamless, command and control battlefield operating system development is targeted. Subsystem development, existing software insertion, and prototyping of specialized (unique) C2 needs suggest that a requirement for system software integration will exist.

o Rapid Prototyping demonstration, evaluation and refinement require establishment of maintenance and support for B2C2 Functionality Test Bed capability, possibly in several locations. Test support and test documentation is involved.

o Transitional documentation preparation and software configuration management support will be required.

BRIEFER: Joseph J. Pucilowski, Jr., Director, Command, Control and Communications (C3) Systems Directorate, AMSEL-RD-C3-D, (908) 544-4449.

ACTION OFFICER:
John W. Strozyk
C3 Systems Directorate
(908) 544-3244/4929

AMSEL-RD-C3-LA-F 09 Mar 92

POINT PAPER

SUBJECT: Fiber Optic Wideband RF Links

OBJECTIVE: Apply recent developments in Photonics technology toward a wideband (>25 GHz) point to point fiber optic link for demonstration in Broadband Networking or remoting of radio/radar.

FACTS:

o Photonic Devices are being manufactured in limited quantities which are capable of modulating laser diodes at rates exceeding 25 GHz. In 1992 such optical modulators are reported to have achieved gains of 6 dB.

o PIN Diode receivers are available which have bandwidths up to 100 GHz.

o This program will utilize this new technology towards achieving Analog and Digital transmission of a bandwidth two orders of magnitude greater than the current standard.

o This program builds on CECOM C3 Systems' earlier photonics programs on Quantum Well Modulators and D-Shaped optical Fiber Transceivers.

o This program is one of our joint development efforts with the Air Force's Rome Laboratory. The primary objective is to allow both services to maximize commonality potential within constrained resources. CECOM will be the lead organization on this program and contract.

o The program will start with an exploratory development effort solicitation in 2Q93, anticipated award 1Q94.

BRIEFER: Joseph J. Pucilowski, Jr., Director, Command, Control and Communications (C3) Systems Directorate, AMSEL-RD-C3-D, (908) 544-4449.

ACTION OFFICER:
Robert Shields
C3 Systems Directorate
(908) 532-3620.

AMSEL-RD-C3-IS-C 09 Mar 92

POINT PAPER

SUBJECT: Army Secure Tactical Initiative

OBJECTIVE: To secure tactical Local Area Nets (LANs) and Wide Area Nets (WANs) exchanging computer data.

FACTS:

o The objective is to build a network security device that will secure end users on the MSE Tactical Packet Network (TPN). This device will allow unclassified, TS, TS/SCI and secret users to share the network.

o The TEED will allow connectivity between the MSE TPN and the Defense Data Network (DDN).

o The TEED will address the tactical and MSE specific security issues not currently satisfied in network security devices available today.

o The Trusted Network Base (TNB) will address the vulnerabilities imposed on a network that uses untrusted gateways/routers/switches. The subversion of these network devices can lead to exposure of classified information and denial of network services. The 6.4 effort will develop trusted network components.

o The Secure Authentication (SAUTH) program will investigate suitable techniques used for authentication. The program will investigate user authentication methods (finger prints, voice analysis, retina patterns etc.) which use user specific characteristics and message authentication methods (ignition keys, smart cards, digital signatures). The 6.4 effort will transfer the knowledge from the 6.2 effort in Army Communication testbeds.

o The system integration effort will address how to merge computer security, communications security, authentication, trusted gateways/routers/switches into a secure systems solution. The 6.4 effort will actually install these secure components on Army communications systems and assess and analyze the security risks.

BRIEFER: Joseph J. Pucilowski, Jr., Director, Command, Control and Communications (C3) Systems Directorate, AMSEL-RD-C3-D, (908) 544-4449.

ACTION OFFICER:
Robert Cicero
C3 Systems Directorate
(908) 544-2684.

BRIEFING OUTLINE

- TECHNOLOGY BASE PROGRAM DESCRIPTION
- FUNDING PROFILE
- CONTRACT OPPORTUNITIES

TECHNOLOGY BASE PROGRAM COMMUNICATIONS RESEARCH (6.1)

- ANTENNAS: HF, VHF, UHF, MICROWAVE, MILLIMETER WAVE NEAR FIELD ANTENNA MEASUREMENTS.
- NETWORK MANAGEMENT AND CONTROL: NETWORK PLANNING AND PROTOCOLS.
- PROPAGATION: HF STUDIES, MILLIMETER WAVE PROPAGATION.
- ECCM: TACTICAL LAN ECCM APPLICATIONS.

TECHNOLOGY BASE PROGRAM COMMUNICATIONS RESEARCH (6.1)

(CONTINUED)

- ARTIFICIAL INTELLIGENCE (AI): EXPERT SYSTEMS AND DECISION AIDS.
- C2 SYSTEMS MODELING:
- FIBER OPTICS: OPTICAL SIGNAL PROCESSORS, OPTO-ELECTRONIC INTEGRATED CIRCUITS, OPTICAL FIBER WAVEGUIDE.

TECHNOLOGY BASE PROGRAM COMMUNICATIONS TECHNOLOGY (6.2)

- COMBAT NET RADIO: MULTIMODE MULTIBAND DIGITAL RADIO AND CONFORMAL ANTENNAS.
- TACTICAL FIBER OPTICS: TACTICAL SECURE FO AND RAPID DEPLOYABLE FO CABLE.
- DISTRIBUTED COMMUNICATIONS: LAN SUPPORT, MULTINET GATEWAYS, AND NETWORK PLANNING AND MANAGEMENT.
- SPECTRUM MANAGEMENT: INCREASED SPECTRUM EFFICIENCY.
- MODELING AND SIMULATION·

TECHNOLOGY BASE PROGRAM C3 ADVANCED TECHNOLOGY (6.3a)

- ARTIFICIAL INTELLIGENCE EXPERT SYSTEMS AND DECISION AIDS: AIR LAND BATTLE MANAGEMENT (ALBM) ATTD AND INTELLIGENT BATTLE MANAGER ASSISTANT (IBMA).
- SOLDIER MACHINE INTERFACE: SOLDIER COMPUTER.
- BATTALION AND BELOW COMMAND AND CONTROL:
- SURVIVABLE ADAPTIVE SYSTEMS: SAST ATTD AND ADVANCED TACTICAL LANS.

TECHNOLOGY BASE PROGRAM
C3 ADVANCED TECHNOLOGY (6.3a)

(CONTINUED)

- MULTIMODE MULTIBAND DIGITAL RADIO:
- CONFORMAL ANTENNAS:
- INTELLIGENT USER INTERFACE: C2 ON THE MOVE AND VOICE INPUT/OUTPUT.

TECHNOLOGY BASE PROGRAM FUNDING PROFILE

YEAR	RDTE $M
FY 93	20-25
FY 94	25-30
FY 95	25-30
FY 96	25-30
FY 97	30-35
FY 98	30-35

CONTRACT OPPORTUNITY BAA AND SBIR

- TITLE: BROAD AGENCY ANNOUNCEMENT (BAA) FOR CECOM RDEC AND SMALL BUSINESS INNOVATIVE RESEARCH (SBIR) PROGRAM.

- SCOPE: THESE PROGRAMS WILL ENTERTAIN SUBMISSION OF PROPOSALS IN THE FOLLOWING TECHNICAL DISCIPLINES:

  - NETWORK MANAGEMENT AND CONTROL; NETWORK PLANNING

  - ADVANCED SWITCHING TECHNOLOGY

CONTRACT OPPORTUNITY BAA AND SBIR

- SCOPE (CONTINUED):

  - WIRELESS LAN'S/FIBER OPTIC LAN'S
  - VOICE, VIDEO AND DATA INTEGRATION
  - NETWORK ECCM; INFORMATION SURVIVABILITY IN MILITARY ENVIRONMENT
  - ARTIFICIAL INTELLIGENCE FOR COMMAND AND CONTROL
  - MODELING AND SIMULATION OF C3 SYSTEMS

CONTRACT OPPORTUNITY BAA AND SBIR

- SCOPE (CONTINUED):
  - ANTENNA TECHNOLOGY
  - PROPAGATION RESEARCH AND MEDIA MODELING
  - INTERFERENCE AND COUPLING
  - FIBER OPTICS AND PHOTONICS

CONTRACT OPPORTUNITY

TITLE: BROAD AGENCY ANNOUNCEMENT (BAA) FOR CECOM RESEARCH, DEVELOPMENT AND ENGINEERING CENTER (RDEC).

OBJECTIVE: ENCOURAGE SUBMISSION OF R&D PROPOSALS BY ACADEMIC INSTITUTIONS, NONPROFIT ORGANIZATIONS, AND PRIVATE INDUSTRY FOR TECHNOLOGY BASE INVESTIGATIONS RESPONSIVE TO THE CECOM MISSION.

TYPE: COMPETITIVE

STATUS: 6.1, 6.2, AND 6.3A.

SCHEDULE: ISSUE DATE: 3QTR FY 92
TIME PERIOD: 36 MONTHS

APPROXIMATE VALUE: $5M TOTAL FOR 3 YEARS

POC/PHONE: DR. FELIX SCHWERING/(908)532-0469 (TECHNICAL)
MR. ROY ZELENKA/(908)544-3702 (GENERAL)

CONTRACT OPPORTUNITY

TITLE: SMALL BUSINESS INNOVATIVE RESEARCH (SBIR) PHASE I AND PHASE II.

OBJECTIVE: ENCOURAGE AND STIMULATE SMALL BUSINESS TO ACCOMPLISH INNOVATIVE RESEARCH PROJECTS IN THE TECHNOLOGY AREAS OF INTEREST TO C3 SYSTEMS.

TYPE: COMPETITIVE PHASE I

STATUS: 6.2 EXPLORATORY DEVELOPMENT

SCHEDULE: AS REQUESTED EACH YEAR

APPROXIMATE VALUE: 3 TO 5 PHASE I PER YEAR <50K
APPROXIMATELY 50% OF PHASE I LEAD TO PHASE II AT <500K

POC/PHONE: ROY ZELENKA/(908)544-3702

CONTRACT OPPORTUNITY

TITLE: R & D ENGINEERING SUPPORT

OBJECTIVE: OBTAIN R & D ENGINEERING SUPPORT TO AUGMENT IN HOUSE WORK FORCE IN PROVIDING SUPPORT TO PEOS AND PMS AND ACCOMPLISHMENT OF TECHNOLOGY BASE MISSION.

TYPE: COMPETITIVE, INDEFINITE QUANTITY, TASKING TYPE

STATUS: RDTE AND PRODUCTION

SCHEDULE: AWARD DATE 1QTR FY 93
TIME PERIOD: 48 MONTHS

APPROXIMATE VALUE: $10M TO $15M TOTAL FOR 4 YEARS

POC/PHONE: THOMAS SHEEHAN/(908)544-3267

CONTRACT OPPORTUNITY

TITLE: MULTIBAND-MULTIMODE RADIO

OBJECTIVE: DEVELOP RF SECTION OF RADIO SYSTEM, (AF LEAD) COMPLETE ARCHITECTURE DESIGN

STATUS: 6.3A ADVANCED DEVELOPMENT

TYPE: COMPETITIVE, CPFF

SCHEDULE: 2 YEAR CONTRACT TO BE AWARDED IN OCTOBER 1994

APPROXIMATE VALUE: $7M

POC/PHONE: JOHN JESKI/(908)532-0444

CONTRACT OPPORTUNITY

TITLE: VEHICULAR CONFORMAL ANTENNAS

OBJECTIVE: ASSESS, DEVELOP AND DEMONSTRATE CONFORMAL ANTENNA TECHNOLOGY FOR TACTICAL VEHICULAR USE

TYPE: COMPETITIVE, CPFF

STATUS: 6.2 DEVELOPMENT

SCHEDULE: AWARD DATE – 2QFY93
CONTRACT LENGTH – 24 MONTHS

APPROXIMATE VALUE: < $600K

POC/PHONE: R. HOVERTER/(908) 532–0455

CONTRACT OPPORTUNITY

TITLE: SAST ATTD SYSTEMS ENGINEERING & TEST SUPPORT

OBJECTIVE: TO PROVIDE SUPPORT FOR THE SYSTEM ENGINEERING, INTEGRATION, AND DEMONSTRATION OF THE SURVIVABLE ADAPTIVE SYSTEM TECHNOLOGIES WITH THE ARMY TACTICAL COMMAND AND CONTROL SYSTEM

TYPE: CPFF

STATUS: 6.3A ADVANCED DEVELOPMENT

SCHEDULE: AWARD: 1Q FY94
CONTRACT LENGTH – 36 MONTHS

APPROXIMATE VALUE: $1M

POC/PHONE: CPT JAMES D. BASS/(908) 544–3697
LARRY LEVINE/(908)544–3697

CONTRACT OPPORTUNITY

TITLE: WIRELESS LOCAL AREA NETWORK (LAN)

OBJECTIVE: WIRELESS LAN ANTENNA TECHNIQUES

TYPE: CPFF

STATUS: 6.3A ADVANCED DEVELOPMENT

SCHEDULE: AWARD: 4Q FY93
CONTRACT LENGTH – 18 MONTHS

APPROXIMATE VALUE: $1M

POC/PHONE: FRANK LOSO/(908) 544–4025
JAY STABA/(908)544–3988

CONTRACT OPPORTUNITY

TITLE: ADAPTIVE NETWORK MANAGEMENT & PLANNING

OBJECTIVE: - DESIGN, DEVELOP PROTOTYPE PLANNER FOR LOCALIZED NETWORK ACCESS SUBSCRIBERS (PACKET DATA ONLY)

- DEMO PROTOTYPE IN LAB ENVIRONMENT

TYPE: COMPETITIVE, CPFF

STATUS: 6.2 EXPLORATORY DEVELOPMENT

SCHEDULE: AWARD DATE – 2QFY93
CONTRACT LENGTH – 24 Months

APPROX. VALUE: < $600K

POC/PHONE: CHARLES J. GRAFF/(908)544-3264

CONTRACT OPPORTUNITY

TITLE: AUTOMATED BATTALION AND BELOW COMMAND AND CONTROL (B2C2) BATTLEFIELD OPERATING SYSTEM (BOS)

OBJECTIVE: DEMONSTRATION OF SYSTEM FEASIBILITY (ADVANCED TECHNOLOGY TRANSITION DEMONSTRATION (ATTD)
FY95–96: B2C2 BOS ATTD AND INTEGRATION WITH ATCCS

TYPE: COMPETITIVE, CPFF

STATUS: 6.3A DEVELOPMENT

SCHEDULE: AWARD DATE – 1Q FY 95
CONTRACT LENGTH – 36 MONTHS

APPROXIMATE VALUE: <$6M ATTD

POC/PHONE: JOHN STROZYK/(908)544–3244

CONTRACT OPPORTUNITY

TITLE: FIBER OPTIC WIDEBAND RF LINKS

OBJECTIVE: DEVELOP WIDE BANDWIDTH ANALOG AND DIGITAL FIBER OPTIC LINKS FOR USE IN POINT-TO-POINT, LOCAL AREA NETWORK AND SIGNAL PROCESSING APPLICATIONS

TYPE: COST PLUS FIXED FEE

STATUS: 6.2 DEVELOPMENT

SCHEDULE: AWARD DATE – 2Q FY94
CONTRACT LENGTH – 30 MONTHS

APPROX. VALUE: $1.5M

POC/PHONE: ROBERT SHIELDS/(908) 544–3620

CONTRACT OPPORTUNITY

TITLE: ARMY SECURE TACTICAL INITIATIVE (ASTI)

OBJECTIVE: TO SECURE TACTICAL LOCAL AREA NETS (LANs) AND WIDE AREA NETS (WANs) EXCHANGING COMPUTER DATA

TYPE: LIMITED COMPETITION (BIDDING LIST FORMULATED IN CONSULTATION WITH NATIONAL SECURITY AGENCY), CPFF

STATUS: 6.7 DEVELOPMENT

SCHEDULE: AWARD DATE: 2QFY94
LENGTH: 30 MONTHS

APPROXIMATE VALUE: $25M (FOUR CONTRACTS)

POC/PHONE: BARRY SALIS/908-544-3597

NOTES

OPPORTUNITIES IN EW AND RSTA PROGRAMS

MR. EUGENE FAMOLARI, JR.
DIRECTOR
EW/RSTA DIRECTORATE

UNCLASSIFIED

AMSEL-RD-EW-C 6 Apr 92

POINT PAPER

SUBJECT: Small Business Innovations Research (SBIR) Phase I and Phase II

OBJECTIVE: Encourage and stimulate small business to accomplish innovative research projects in the technology areas of interest to EW/RSTA Directorate.

FACTS:

o Solicitation for SBIR proposal published once a year. FY-92 solicitation to be released 1 May 92. Proposals must be received by 30 Jun 92.

o Competitive type contract, 6 months, Phase I.

o Approximately 50% of Phase I contracts lead to Phase II (at < 500 K).

o Generally, 3 to 5 Phase I contracts per year.

BRIEFER: Eugene Famolari, Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Dennis Sanders
EW/RSTA Directorate
(908) 544-3203

AMSEL-RD-EW-C 6 Apr 92

POINT PAPER

SUBJECT: Broad Agency Announcement for EW/RSTA Directorate

OBJECTIVE: To encourage submission of R&D Proposals by Academic Institutions, non-profit organizations and private industry for technology base investigations responsive to the EW/RSTA Directorate mission.

FACTS:

o The BAA describes EW/RSTA requirements in exploratory development and advanced development.

o FY93 will be the last year of a three year BAA for EW/RSTA. The cutoff for submission of proposals is 30 Sep 92.

o The value of each contract is between $25K and $500K.

BRIEFER: Eugene Famolari, Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Dennis Sanders
EW/RSTA Directorate
(908) 544-3203

AMSEL-RD-EW-CE

April 7, 1992

POINT PAPER

SUBJECT: High Technology R & D Engineering Support Services

OBJECTIVE: To provide high technology engineering support to the EW/RSTA Directorate to facilitate Program Managers (PMs) and Program Executive Officers (PEOs), laboratories, centers, directorates and Department of Defense Agencies in the rapid prototyping and development of Intelligence and Electronic Warfare (IEW) systems.

FACTS:

o Type of Solicitatition: Competitive with possibility for multiple awards

o Type of Contract: Indefinite Quanity with provisions for Time & Materials type delivery orders

o Efforts will include but not be limited to the following type tasks:

- oo Establish and Support a High Technology Test-Bed Facility
- oo Systems Engineering and Analysis
- oo Simulation and Modeling
- oo Rapid Protyping and Technology Insertion
- oo Systems Interface and Integration
- oo Develop, Evaluate and Integrate emerging state-of-the-art technologies
- oo Government and Contractor Testing
- oo Hardware and Software development
- oo Exploratory Development, Proof of Principle and Proof of Concept

BRIEFER: Eugene Famolari, Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Albert Talerico
(908) 544-5543

AMSEL-RD-EW-S 7 Apr 92

POINT PAPER

SUBJECT: Advanced Threat Radar Jammer (ATRJ)

OBJECTIVE: The ATRJ System will provide the Army Aviation fleet with an advanced system for detecting and countering RF threats.

FACTS:

o ATRJ is a modular RF Jammer that combines pulse, pulse doppler and CW capabilities in one system.

o The system will have increased pulse density capability and utilize advanced ECM techniques.

BRIEFER: Eugene Famolari, Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Robert Zanzalari
EW/RSTA Directorate
(909) 544-4676

AMSEL-RD-EW-S 6 Apr 92

POINT PAPER

SUBJECT: Advanced Threat Infrared Countermeasure (ATIRCM) System

OBJECTIVE: The ATIRCM System will provide the Army Aviation Fleet an advanced system that will detect both infrared and rf missiles and protect any aircraft against infrared missiles/

FACTS:

o The ATIRCM system is composed of an advanced missile detector. and advanced infrared jammer and an advanced expendable dispenser.

o The missile detector will use the latest technologies and algorithms to detect and declare missile threats directed at the aircraft.

o The jammer will utilize directable infrared sources to defeat infrared missiles.

o The expendable dispenser will be capable of handling multiple munitions in various configurations to meet aircraft mission requirements.

o The ATIRCM system will be integrated with other on-board aircraft survivability equipment and aircraft data via a data bus to optimize system and aircraft mission performance.

o The program is presently in the advanced development phase through to the end of 4QFY94. Engineering Development is anticipated to begin 2QFY95.

BRIEFER: Eugene Famolari, Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Adam Bogner
EW/RSTA Directorate
(908) 544-2143

AMSEL-RD-EW-S Apr 7, 92

POINT PAPER

SUBJECT: Airborne Optical Countermeasures (AOCM)

OBJECTIVE: To provide aircraft self-protection countermeasures against hostile close engagement ground and air tactical target acquisition systems.

FACTS:

o AOCM will combine the best of the available technologies which will provide a high degree of protection fro Army aircraft in the mid to high intensity threat environment.

o The development of AOCM will address state-of-the-art technologies in lasers, detectors and precision pointing and tracking systems.

o The most important consideration in trade-offs between approaches is the probability of detection and suppression.

o Other considerations in tradeoffs will be life cycle cccc, false alarm rate, reliability, weight size and ease of maintenance.

BRIEFER: Eugene Famolari, Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Richard Brady
EW/RSTA Directorate
(909) 544-3793

AMSEL-RD-EW-C 7 Apr 92

POINT PAPER

SUBJECT: Enhanced Survivability for Ground Vehicles (ESGV)

OBJECTIVE: This is an effort to develop an integrated technology demonstration to increase ground vehicle survivability on a modern battlefield through self-protection and situational awareness.

FACTS:

o Current threats include anti-tank guided missiles (ATGM), smart munitions, guided bombs, mines and weapon support systems that identify, acquire and track.

o Each of these threats has a different level of susceptibility to EW effects.

o This demonstration will integrate the capability to detect threat weapons support systems and provide situation awareness with countermeasures techniques for vehicle protection.

BRIEFER: Eugene Famolari, Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Louis Kosa
EW/RSTA Directorate
(908) 544-3219

AMSEL-RD-EW-C 07 Apr 92

POINT PAPER

SUBJECT: Top Attack CM

OBJECTIVE: Initiate concept development for a CM system for ground vehicle protection against threat weapons including IR Imaging and Multi-Spectral Munitions.

FACTS:

o This 6.2 Development effort to be awarded competitively, CPFF will investigate concepts to protect ground vehicles against advanced IR guided ATGM's.

o This contract, scheduled for an FY93 award, valued at $2M will run for 60 months with prototype hardware development. This device will be designed to protect ground vehicles from next generation IR imaging and multi-spectral type weapons.

BRIEFER: Eugene Famolari, Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Joseph O'Connel
EW/RSTA Directorate
(908) 544-4870

AMSEL-RD-EW-C 6 Mar 92

POINT PAPER

SUBJECT: Laser Locator

OBJECTIVE: An exploratory effort to design, fabricate, demonstrate and deliver a "brassboard" type of a hardware system that will detect and accurately locate common military lasers from a far off-axis position of 8km.

FACTS:

o Most lasers that are used on the battlefield are operated from, or associated with, weapons platforms such as armored ground vehicles and attack helicopters. These lasers are used to accurately guide the munition to the target. If these lasers could be detected and located accurately from off-axis, that is without also being the target, then the laser weapon platform can be targeted and destroyed.

o The majority of laser detectors and laser locators that have been developed for potential use on the battlefield can perform their tasks only when the laser beam strikes the laser detector or passes within a few meters of it. This proximity to the laser beam means that in order to detect the laser you must also be the target of the laser directed weapons.

MILESTONES:	System Design Plan	120 DAC
	System Demonstration Plan	240 DAC
	System Operation Instruction Manual	360 DAC
	FOALLS Prototype	360 DAC
	Field Demo	360-450 DAC

BRIEFER: Eugene Famolari Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Alan Chan
EW/RSTA Directorate
(908) 544-4019

AMSEL-RD-EW-C 7 Apr 92

POINT PAPER

SUBJECT: CO2 Beam Rider Warning Receiver

OBJECTIVE: Develop detection capability laser beamrider radiation for warning air and ground crews.

FACTS:

o This 6.2 Development Contract to be awarded competitively, CPFF, will evaluate concepts on how to detect CO2 Beam Rider munitions.

o This is a 36 month effort, scheduled for FY93 at an approximate value of $1M, will provide a plan on how to give warning to air and ground crews when they are being attacked by munitions using CO2 Beam Rider technology.

BRIEFER: Eugene Famolari, Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Joseph O'Connell
EW/RSTA Directorate
(908) 544-4870

AMSEL-RD-EW-C 7 Apr 92

POINT PAPER

SUBJECT: EO Jammer vs. Laser Designated Missile

OBJECTIVE: Develop a compact jammer module to defeat advanced laser guided munitions.

FACTS:

o This 6.2 development effort to be awarded competitively, CPFF, will investigate concepts on how to jam and defeat advanced laser guided munitions.

o This is a FY93 award valued at $2M that will run approximately 60 months. After a conceptual design effort, prototype hardware will be built and tested for use on both air and ground platforms.

BRIEFER: Eugene Famolari, Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Joseph O'Connell
EW/RSTA Directorate
(908) 544-4870

AMSEL-RD-EW-C 7 Apr 92

POINT PAPER

SUBJECT: Multi-Spectral Missile (MSM) Warning

OBJECTIVE: Improve the ability to detect and track Threat Missiles through the use of Multiple Spectral Bands and High Speed Signal Processing.

FACTS:

o This 6.2 Development Contract, to be awarded competitively, CPFF, will evaluate the feasibility of multi-spectral missile warning.

o This study, FY93 award for 36 months at approximately 600K will investigate the use of sensor fusion to more accurately determine missile launches with less false alarms, and higher pointing accuracy.

BRIEFER: Eugene Famolari, Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Joseph O'Connell
EW/RSTA Directorate
(908) 544-4870

AMSEL-RD-EW-C 07 Apr 92

POINT PAPER

SUBJECT: Next Generation ESM Processor

OBJECTIVE: To develop a Next Generation Digital ESM Processor that can utilize the intrapulse modulations measured by state-of-the-art ESM Receivers.

FACTS:

o The Next Generation System will require a new arch that will allow processing speed of up to 2 million pulses per second.

o The system will be able to handle the characteristics of modern modulations.

o The processor will incorporate advanced algorithms.

BRIEFER: Eugene Famolari, Jr., Director, Electronic Warfare/ Reconnaissance Surveillance and Target Acquisition Directorate, AMSEL-RD-EW-D, (908) 544-3212.

ACTION OFFICER
Dr. Frank Elmer
EW/RSTA Directorate
(908) 544-3224

BRIEFING OUTLINE

- BUSINESS AREAS
- INITIATIVES
- FUNDING BY BUSINESS AREA
- OPPORTUNITIES BY BUSINESS AREA
- TECHNOLOGY BASE PROGRAM
- CONTRACT OPPORTUNITIES
- SUMMARY

BUSINESS AREAS

- BATTLEFIELD INFORMATION COLLECTORS
  - SIGINT/ESM
  - RADAR/COMBAT ID
  - COMMON GROUND STATION
- ENVIRONMENTAL COLLECTORS
  - WEATHER
  - RADIATION MONITORING
- ELECTRONIC SELF PROTECTORS
  - AIRCRAFT
  - GROUND VEHICLES

INITIATIVES

- CONTINUE TO IMPROVE AIRCRAFT ELECTRONIC SELF PROTECTION AND EXPLOIT THE TECHNOLOGY FOR APPLICATION TO GROUND VEHICLES
- COMBINE BATTLEFIELD IFF WITH EW
- COMMON GROUND STATION
- RADAR SURVEILLANCE AND TARGET ACQUISITION INCLUDING FUSION OF MULTIPLE SENSORS ON A UAV FOR BATTLEFIELD SURVEILLANCE
- EXTENSIVE SUPPORT TO PMs IN OUR TECHNOLOGY AREAS

FUNDING 93 - 97

BUSINESS AREA	TECH BASE	SPECIFIC CUSTOMER
BATTLE INFORMATION COLLECTORS	$18-25M	TBD
ENVIRONMENTAL COLLECTORS		
ELECTRONIC SELF PROTECTION	$25-35M	$95-105M

OPPORTUNITIES 93 - 97

BUSINESS AREA	SBIR/ BAA	HI-TECH R&D SUPPORT	SPECIFIC CONTRACT
BATTLE INFORMATION COLLECTORS	$5-10M	$13-15M	TBD
ENVIRONMENTAL COLLECTORS			
ELECTRONIC SELF PROTECTION	$12-20M	$3-6M	$105-114

TECHNOLOGY BASE PROGRAM

BATTLEFIELD INFORMATION COLLECTION

- ELECTRONIC SUPPORT MEASURES (ESM)
- MULTI-SPECTRAL COMBAT IDENTIFICATION (ID)
- RADAR
- COMMON GROUND STATION/INTEL DISSEMINATION

ELECTRONIC SELF PROTECTION

- INFRARED WARNING AND COUNTERMEASURES (IRCM)
- RADAR WARNING AND COUNTERMEASURES
- LASER WARNING AND COUNTERMEASURES

CONTRACT OPPORTUNITY

TITLE:	Small Business Innovative Research (SBIR)
OBJECTIVE:	Stimulate Small Business to accomplish innovative research projects
TYPE:	Competitive (Phase 1)
STATUS:	6.2 exploratory development
SCHEDULE:	Annually by 30 Sep
APPROX VALUE:	4 to 6 Phase 1 per year < 50K
POC:	Dennis Sanders (908) 544-3205

CONTRACT OPPORTUNITY

TITLE:	Broad Agency Announcement (BAA)
OBJECTIVE:	Encourage submission of R&D proposals for technology base investigations
TYPE:	Competitive (DAAB07-90-R-BAA1)
STATUS:	6.2 and 6.3A
SCHEDULE:	Annual cut-off date: 30 Sep Period of Performance: < 24 months
APPROX VALUE:	$4000K/yr (proposals < $500K)
POC:	Dennis Sanders (908) 544-3205

CONTRACT OPPORTUNITY

TITLE:	R&D Engineering Support
OBJECTIVE:	Provide high technology engineering support to augment in house work force
TYPE:	Competitive, Indefinite Quantity, Tasking Type Possible 3 Separate Awards
STATUS:	RDTE and Production
SCHEDULE:	FY 93 Award, 4 yrs
APPROX VALUE:	$100M over 4 yrs
POC:	Albert Talerico, (908) 544-5543

SPECIFIC CONTRACT OPPORTUNITIES

THREE ADV DEV/ENG MFG DEV

- ADVANCED THREAT RADAR JAMMER
- ADVANCED THREAT IR COUNTERMEASURES
- AIRBORNE OPTICAL COUNTERMEASURES

ONE TECHNOLOGY DEMO

- ENHANCED SURVIVABILITY FOR GROUND VEHICLES

SIX 6.2/6.3 FEEDER EFFORTS

- FIVE EO/IR PROJECTS
- NEXT GENERATION ESM PROCESSOR

CONTRACT OPPORTUNITY

TITLE:	Advanced Threat Radar Jammer
OBJECTIVE:	Proceed with the development of a light weight, modular RF Jammer for Aircraft Self-Protection
TYPE:	CPFF, CPIF
STATUS:	6.4 Engineering Development
SCHEDULE:	4Q FY 94/1Q FY 95
APPROX VALUE:	$45.0M
POC:	Robert M. Zanzalari (908) 544-4676

CONTRACT OPPORTUNITY

TITLE:	Advanced Threat IR Countermeasures
OBJECTIVE:	Provide army aircraft an advanced system that detects IR and RF missiles and provides protection from IR missile threats
TYPE:	CPFF, CPIF
STATUS:	6.4 Engineering Development
SCHEDULE:	FY 95 Award, 36 months
APPROX VALUE:	$40.0M
POC:	Adam Bogner (908) 544-2143

CONTRACT OPPORTUNITY

TITLE:	Airborne Optical Countermeasures
OBJECTIVE:	Development of a modular, Lightweight Electro-Optic Countermeasures System for Aircraft Self Protection
TYPE:	CPFF, CPIF
STATUS:	6.3B Advanced Development
SCHEDULE:	FY 95 Award, 36 months
APPROX VALUE:	$20.0M
POC:	Rich Brady (908) 544-3793

CONTRACT OPPORTUNITY

TITLE:	Enhanced Survivability for Ground Vehicle
OBJECTIVE:	Develop an integrated technology demonstrator for Ground Vehicle self protection with situational awareness
TYPE:	Competitive, CPFF
STATUS:	6.3A Development
SCHEDULE:	FY 94 Award, 36 months
APPROX VALUE:	< $4000K
POC:	D. Sanders (908) 544-3205

CONTRACT OPPORTUNITY

TITLE:	Top Attack CM
OBJECTIVE:	Initiate concept developement for a CM system for Ground Vehicle protection against threat weapons including IR Imaging and Multi-Spectral Munitions
TYPE:	Competitive, CPFF
STATUS:	6.2 Development
SCHEDULE:	FY 93 Award, 24 months
APPROX VALUE:	< $600K
POC:	J. O'Connell (908) 544-4870

CONTRACT OPPORTUNITY

TITLE:	Laser Locator
OBJECTIVE:	Demonstrate Technical Capability to detect and locate pulsed lasers at 8KM, off-axis
TYPE:	Competitive, CPFF
STATUS:	6.2 Development
SCHEDULE:	FY 92 Award, 48 months
APPROX VALUE:	< $750K
POC:	J. O'Connell (908) 544-4870

CONTRACT OPPORTUNITY

TITLE:	CO2 Beamrider Warning Receiver
OBJECTIVE:	Develop detection capability Laser Beamrider Radiation for warning air and ground crews
TYPE:	Competitive, CPFF
STATUS:	6.2 Development
SCHEDULE:	FY 93 Award, 36 months
APPROX VALUE:	< $1000K
POC:	J. O'Connell (908) 544-4870

CONTRACT OPPORTUNITY

TITLE:	EO Jammer vs Laser Designated Missile
OBJECTIVE:	Develop a Compact Jammer Module to defeat Advanced Laser Guided Munitions
TYPE:	Competitive, CPFF
STATUS:	6.2 Development
SCHEDULE:	FY 93 Award, 60 months
APPROX VALUE:	< $2000K
POC:	J. O'Connell (908) 544-4870

CONTRACT OPPORTUNITY

TITLE:	Multi-Spectral Missile (MSL) Warning
OBJECTIVE:	Improve the ability to detect and track Threat Missiles through the use of Multiple Spectral Bands and High Speed Signal Processing
TYPE:	Competitive, CPFF
STATUS:	6.2 Development
SCHEDULE:	FY 93 Award, 36 months
APPROX VALUE:	< $600K
POC:	J. O'Connell (908) 544-4870

CONTRACT OPPORTUNITY

TITLE:	Next Generation ESM Processor
OBJECTIVE:	Develop a digital processor to utilize the intrapulse modulations measured by state-of-the-art ESM receivers
TYPE:	Competitive, CPFF
STATUS:	6.2 Development
SCHEDULE:	FY 94 Award, 36 months
APPROX VALUE:	< 1000K
POC:	F. Elmer (908) 544-3224

SUMMARY
TECHNOLOGY BASE FUNDING

YEAR	RDTE ($ M)
FY93	9-12
FY94	9-12
FY95	9-12
FY96	7-12
FY97	9-12

NOTES

LIFE CYCLE SOFTWARE ENGINEERING FOR MISSION CRITICAL DEFENSE SYSTEMS

JOHN H. SINTIC
DIRECTOR
CECOM SOFTWARE ENGINEERING DIRECTORATE (SED)

UNCLASSIFIED

AMSEL-RD-SE-D

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:

0 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.

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

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

0 The SED contractual program represents approximately 1200 man-years of support disbursed throughout the various CONUS locations maintained by SED, and over 221 MCDSs in various stages of development/deployment. The value of the program exceeds $100 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, CECOM SED, AMSEL-RD-SE-D, AV 992-8208

ACTION OFFICER:
Eugene J. Boyle
Chief
SED Contract Branch
AV 992-8220

BRIEFING OUTLINE

- LIFECYCLE SOFTWARE ENGINEERING
- SOFTWARE TECHNOLOGY
- ARMY INTEROPERABILITY NETWORK
- FUNDING
- CONTRACTOR OPPORTUNITIES

LIFE CYCLE SOFTWARE ENGINEERING

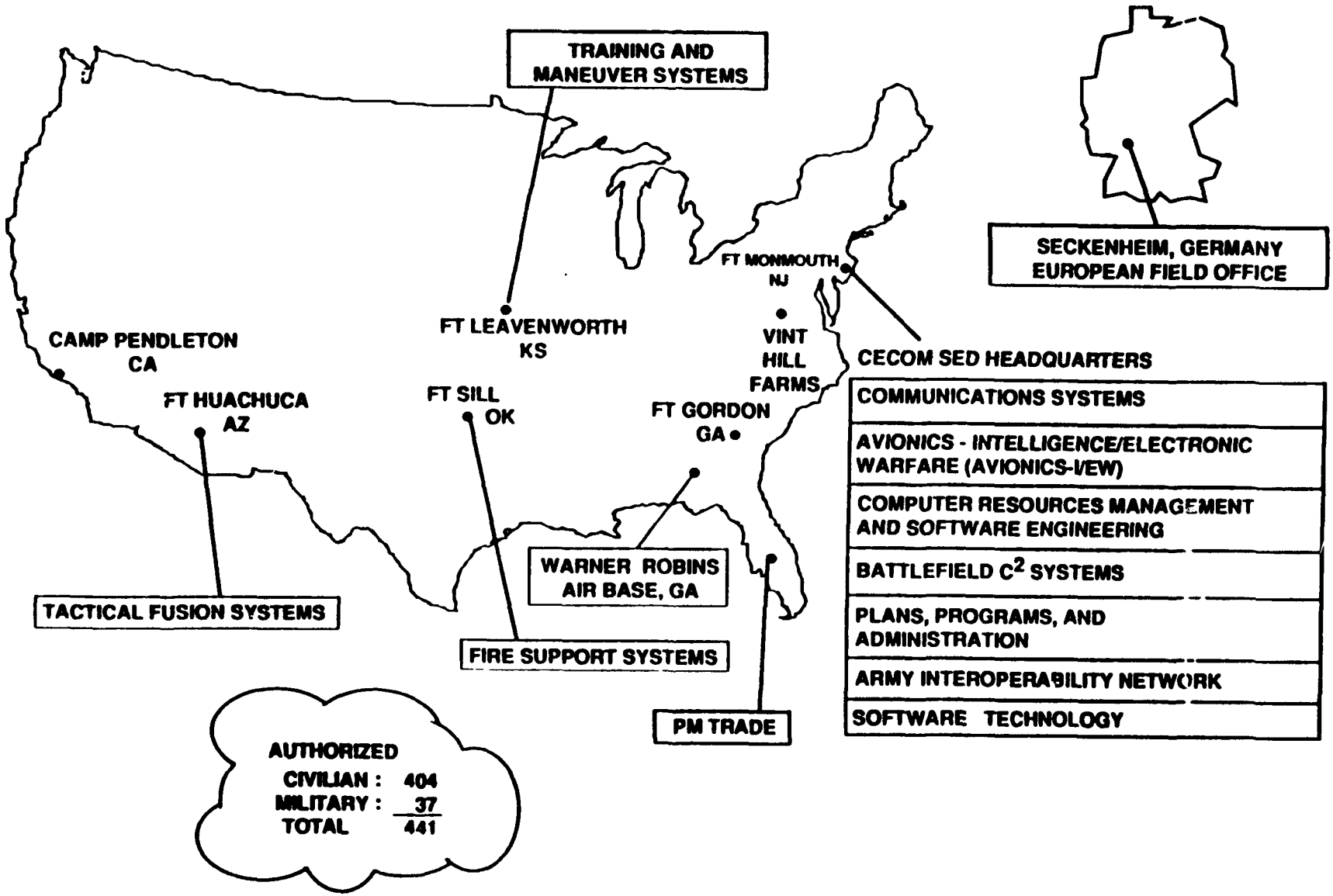
- SINGLE FOCAL POINT FOR DEVELOPMENT, PRODUCTION, AND MAINTENANCE OF SOFTWARE FOR MISSION CRITICAL DEFENSE SYSTEMS (MCDSs)
  - COMMUNICATIONS (ALL TACTICAL AND STRATEGIC SATELLITE)
  - FIRE SUPPORT
  - AVIONICS-INTELLIGENCE/ ELECTRONIC WARFARE (I/EW)
  - TACTICAL FUSION
  - COMMAND AND CONTROL
  - TRAINING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

LIFE CYCLE SOFTWARE ENGINEERING

OBJECTIVES

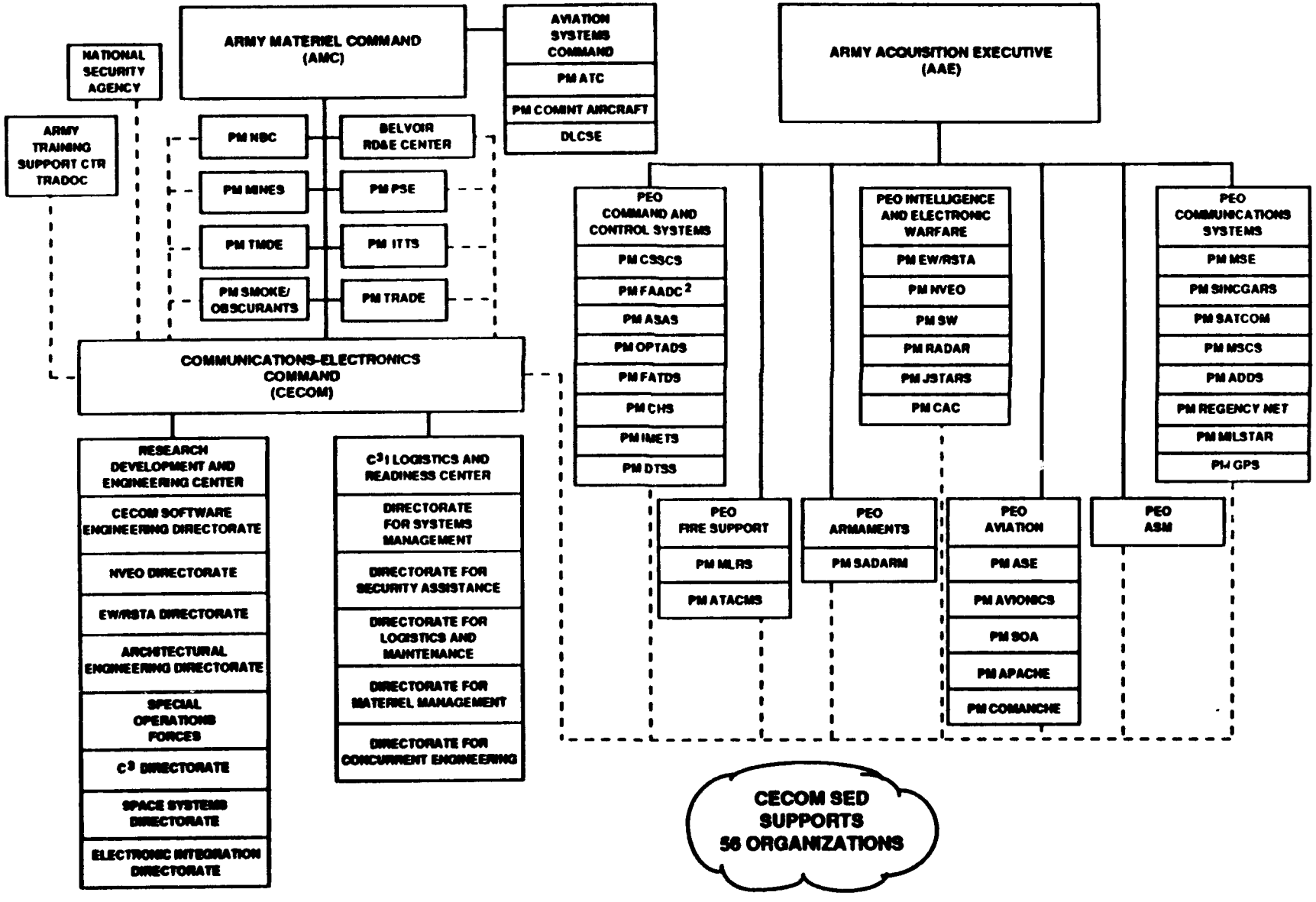
- o DURING ACQUISITION PHASE (DEVELOPMENT AND PRODUCTION), ENSURE THAT MCDS SOFTWARE IS:
  - SUITABLE FOR MISSION REQUIREMENTS
  - SUPPORTABLE AFTER FIELDING
- o DURING OPERATIONS AND SUPPORT PHASE (AFTER FIELDING), MODIFY MCDS SOFTWARE TO:
  - CORRECT LATENT DEFECTS
  - IMPLEMENT REFINEMENTS/ENHANCEMENTS TO SATISFY EVOLVING DOCTRINE, MISSION CHANGES, THREAT CHANGES, AND NEW INTEROPERABILITY REQUIREMENTS

CECOM SOFTWARE ENGINEERING DIRECTORATE

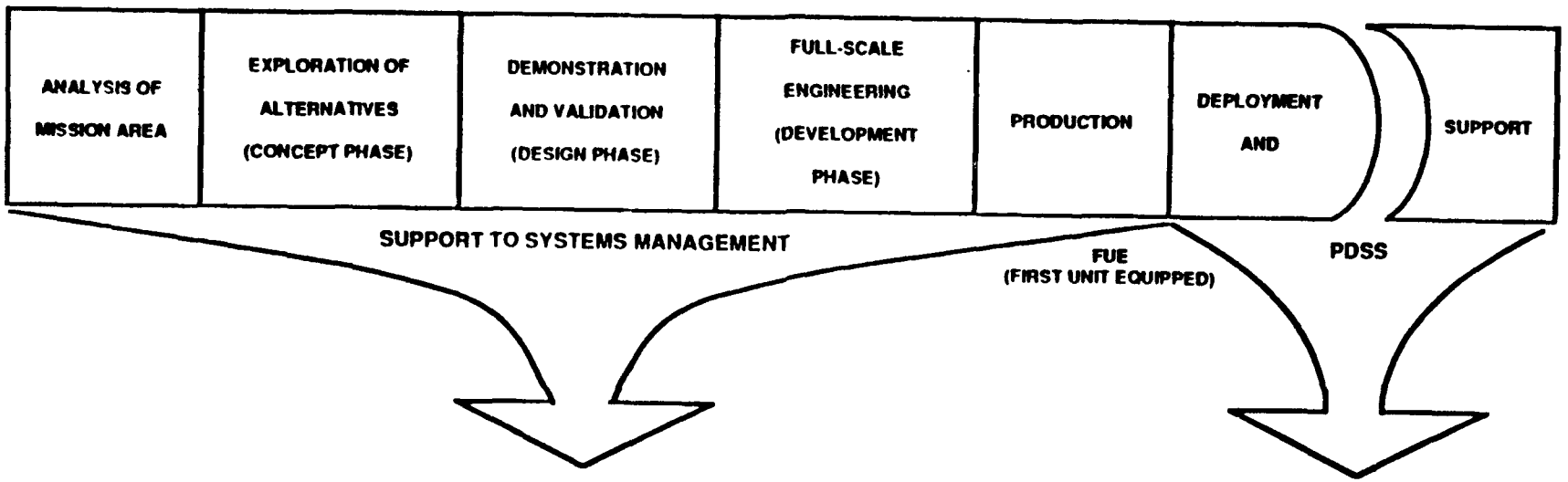


COMMUNICATIONS SYSTEMS
AVIONICS - INTELLIGENCE/ELECTRONIC WARFARE (AVIONICS-I/EW)
COMPUTER RESOURCES MANAGEMENT AND SOFTWARE ENGINEERING
BATTLEFIELD C^2 SYSTEMS
PLANS, PROGRAMS, AND ADMINISTRATION
ARMY INTEROPERABILITY NETWORK
SOFTWARE TECHNOLOGY

SOURCES OF CECOM SED MCDS WORKLOAD



LIFE CYCLE SOFTWARE ENGINEERING ROLES IN LIFE CYCLE



- ROLES:
  - PROVIDE TECHNICAL SUPPORT TO PEOs/PMs
  - ENSURE THAT MANAGEMENT AND TECHNICAL DECISIONS ARE COMPATIBLE WITH SUPPORT NEEDS
  - ACQUIRE DESIGN KNOWLEDGE

- ROLES:
  - MODIFY, REFINE, AND CONTROL SYSTEM SOFTWARE

CONTRACTOR SUPPORTED LCSE TASKS

CONCEPT EXPLORATION & DEFINITION

- IDENTIFY MSCR RISKS
- MSCR ACQUISITION & SUPPORT STRATEGY
- EVALUATE MSCR CONCEPTS
- SPECIAL STUDIES & SUPPORT

DEMONSTRATION & VALIDATION (DEMVAL)

- ACQUISITION SUPPORT
- SOFTWARE EVALUATION & MSCR ANALYSIS
- EMD PLANNING
- SUPPORT TECHNICAL REVIEWS

CONTRACTOR SUPPORTED LCSE TASKS (CONTINUED)

ENGINEERING & MANUFACTURING DEVELOPMENT

- ACQUISITION SUPPORT
- SOFTWARE V&V
- SOFTWARE INDEPENDENT TEST
- SYSTEM INTEGRATION & FIELD TESTS
- SUPPORT ACTIVITIES

CONTRACTOR SUPPORTED LCSE TASKS (CONTINUED)

PRODUCTION & DEPLOYMENT

- PRODUCTION READINESS ANALYSIS
- SOFTWARE SUPPORTABILITY ANALYSIS
- SOFTWARE TRANSITION
- SUPPORTABILITY DEMONSTRATION
- FINALIZE SOFTWARE ILS PLANNING

OPERATION & SUPPORT

- CHANGE ANALYSIS
- SYSTEM INTEGRATION & TESTING (I&T)
- SOFTWARE DEVELOPMENT
- PRODUCT LOGISTICS
- FIELD SUPPORT

LIFE CYCLE SOFTWARE ENGINEERING

NEEDED TECHNOLOGIES

- Ada TOOLS
- CASE TOOLS
- SOFTWARE COST ESTIMATING MODELS
- SOFTWARE REUSE AND LIBRARIES
- AUTOMATED REQUIREMENTS GENERATION TOOLS
- INNOVATIVE ACQUISITION MODELS
- SOFTWARE ENGINEERING PROCESS IMPROVEMENTS

LIFE CYCLE SOFTWARE ENGINEERING

NEEDED EXPERTISE

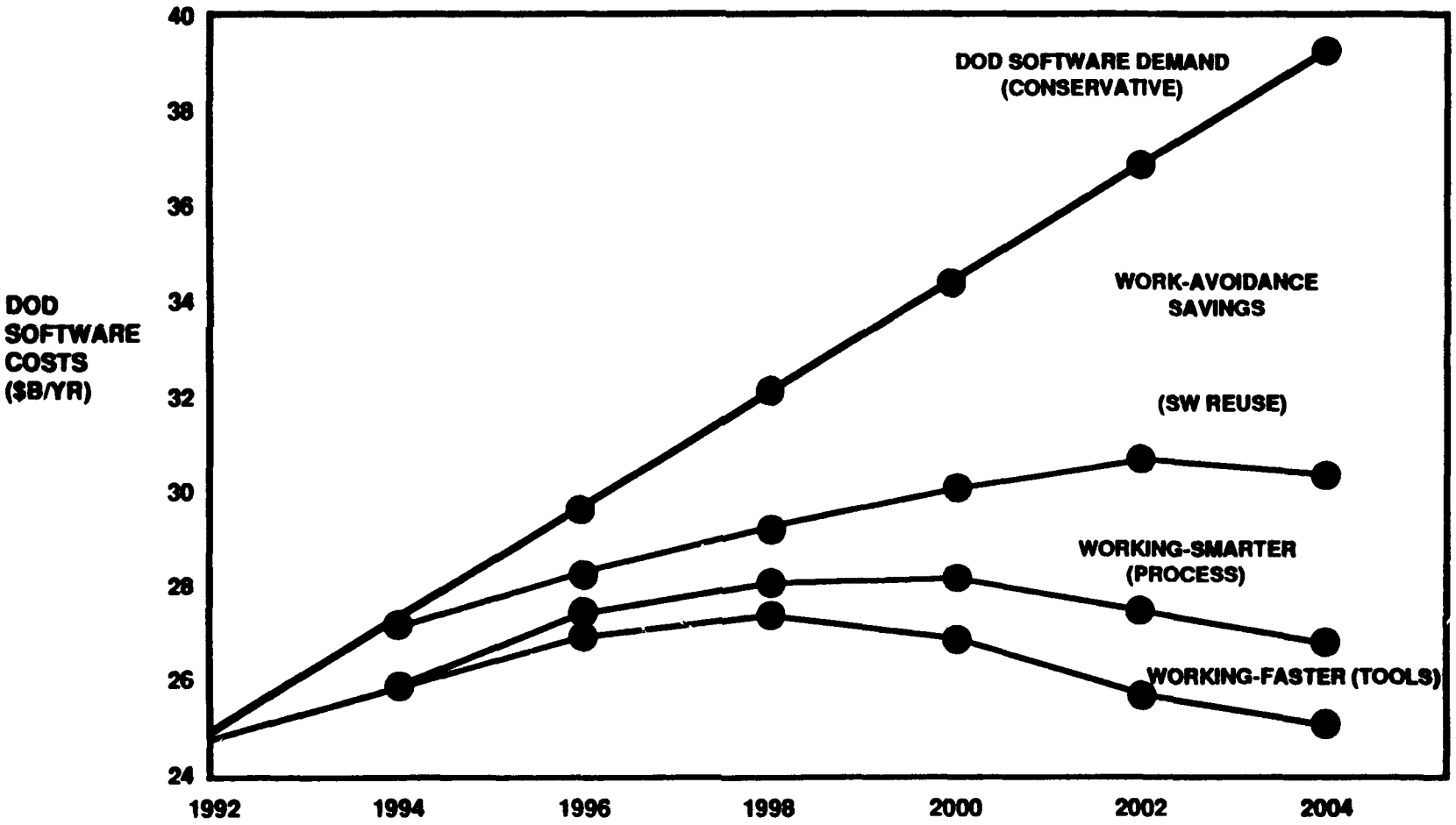
- SYSTEM AND SOFTWARE ENGINEERING IN TACTICAL COMMUNICATIONS, SATELLITE COMMUNICATIONS, FIRE SUPPORT, AVIONICS-I/EW, TACTICAL FUSION, COMMAND AND CONTROL; AND TRAINING, SIMULATION, AND INSTRUCTION
- APPLICATION OF Ada LANGUAGE
- 105 LANGUAGES AND 144 TARGET COMPUTERS USED IN CECOM SED-SUPPORTED SYSTEMS
- MANAGEMENT OF TECHNOLOGICAL CHANGE/PROCESS 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

DOD SOFTWARE TECHNOLOGY USAGE/ SAVINGS MODEL



SOFTWARE PROCESS TECHNOLOGY

TECHNOLOGY UTILIZED DURING DEVELOPMENT AND MAINTENANCE BY SOFTWARE DEVELOPERS AND MAINTAINERS TO IMPROVE THEIR PRODUCTIVITY AND TO PROVIDE AFFORDABLE, HIGH-QUALITY SOFTWARE ON TIME

SOFTWARE PROCESS TECHNOLOGY

- PROVIDE TECHNOLOGY TRANSFER
- CAPITALIZE ON EMERGING AND MATURE TECHNOLOGIES AND EXPEDITE THEIR ASSIMILATION
- TAILOR TECHNOLOGY TO ARMY NEEDS
- INFLUENCE TECHNOLOGY DIRECTION
- PROMOTE SOFTWARE PROCESS TECHNOLOGY UNDERSTANDING

SOFTWARE PROCESS TECHNOLOGY

NEEDED TECHNOLOGIES

- Ada TECHNOLOGY
- SOFTWARE REUSE
- SOFTWARE PROCESS METRICS
- SOFTWARE ACQUISITION PROCESS
- SOFTWARE DOCUMENTATION AND REVIEW PRACTICES
- SOFTWARE PROCESS METHODS AND TOOLS
- REQUIREMENTS ENGINEERING
- SOFTWARE RE-ENGINEERING

SOFTWARE PROCESS TECHNOLOGY

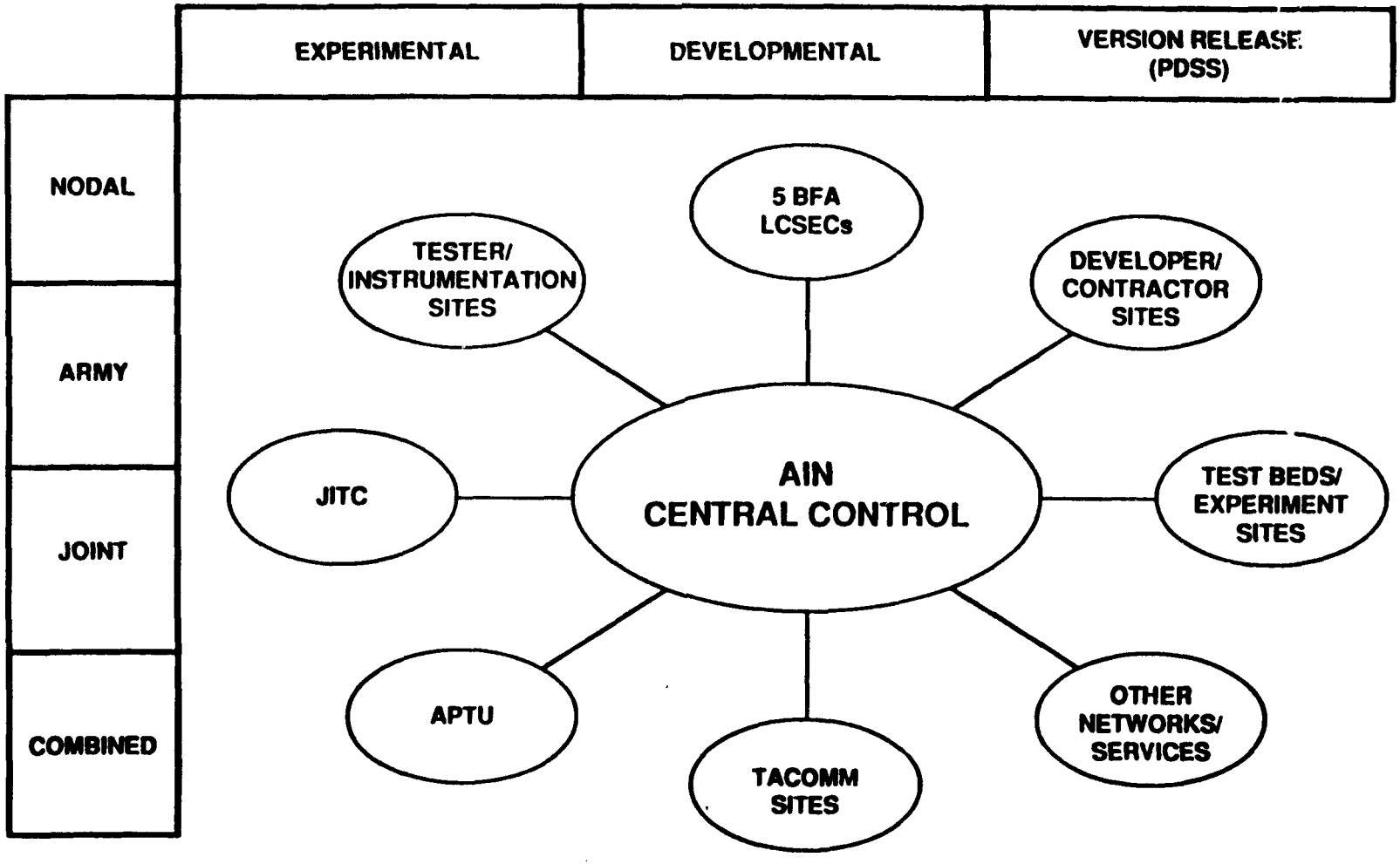
PAYOFFS

- PROVIDE SIGNIFICANT SAVINGS TO SYSTEM DEVELOPERS AND MAINTAINERS BY ALLOWING ONE TO WORK SMARTER, WORK FASTER, AND TO AVOID WORK
- PRODUCE HIGHER QUALITY, MORE EFFECTIVE SOFTWARE
- REDUCE DEVELOPMENT/MAINTENANCE SCHEDULE

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

ARMY INTEROPERABILITY NETWORK (NOTIONAL)



ARMY INTEROPERABILITY NETWORK (AIN)

OBJECTIVES

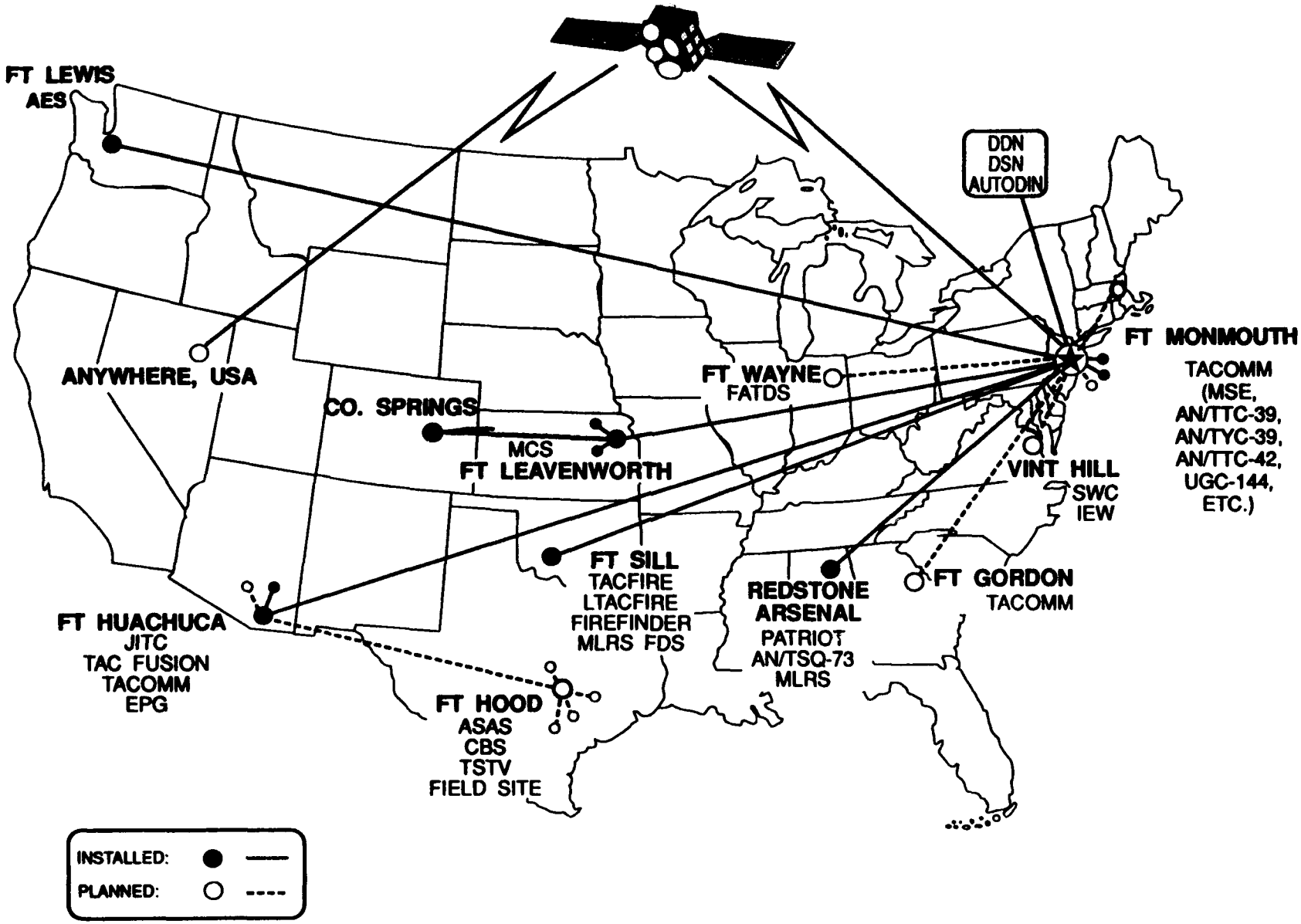
- SIGNIFICANTLY REDUCES RISK, COST, AND SCHEDULE IN INTEGRATION, INTEROPERABILITY, AND LIFE CYCLE SOFTWARE SUPPORT WHILE IMPROVING SOFTWARE AND INTEROPERABILITY QUALITY, CONFIDENCE, AND ASSURANCE
- ENSURES THAT C3I SYSTEMS WORK BEFORE AND AFTER FIELDING THROUGH PROPER SOFTWARE, INTEGRATION, AND INTEROPERABILITY TESTING
- ASSISTS INVESTIGATION OF INTEROPERABILITY PROBLEMS ARISING FROM TACTICAL OPERATIONS. AIN'S ABILITY TO RAPIDLY ACCESS, INTERCONNECT, AND NETWORK ACTUAL FIELDED SYSTEMS WAS INSTRUMENTAL IN RE-CREATING AND FIXING SOFTWARE PROBLEMS THAT WOULD OTHERWISE BE DIFFICULT OR IMPOSSIBLE TO SOLVE

ARMY INTEROPERABILITY NETWORK (AIN)

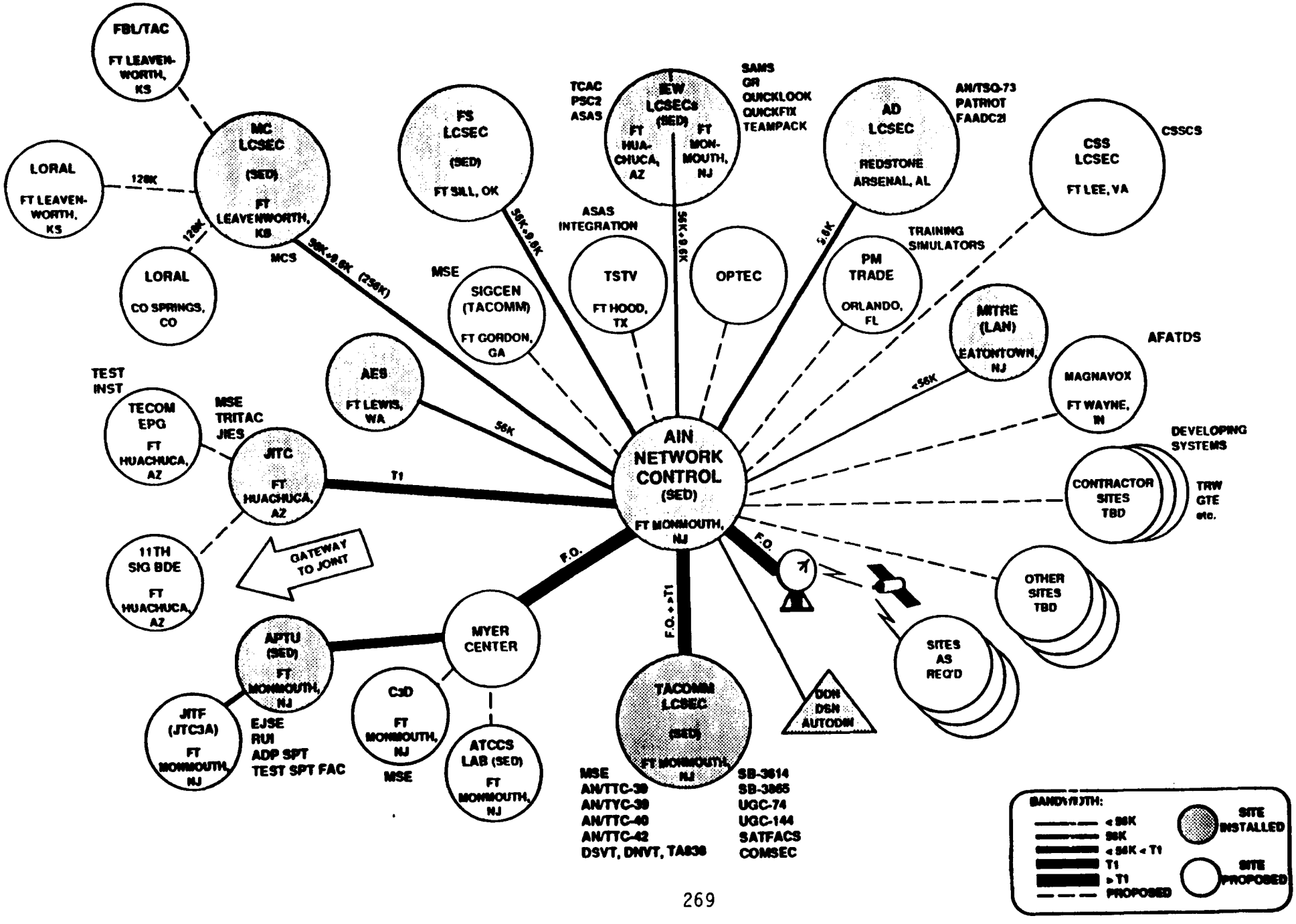
OBJECTIVES (Continued)

- LEVERAGES THE INVESTMENTS ALREADY MADE BY THE ARMY IN TEST BEDS, LABS, AND FIELD TEST SITES BY LINKING THESE FACILITIES TOGETHER, THEREBY AVOIDING THEIR DUPLICATION AND RELOCATION
- CURBS THE RAPIDLY ESCALATING SOFTWARE COSTS THROUGH EARLIER SOFTWARE INTEGRATION, MORE COMPLETE TESTING CAPABILITIES, AND IMPROVED LIFE CYCLE SOFTWARE SUPPORT

AIN TODAY (DEC 91)



ARMY INTEROPERABILITY NETWORK



ARMY INTEROPERABILITY NETWORK (AIN)

PAYOFFS

- REDUCES RISK, COST, AND TIME IN INTEGRATION, INTEROPERABILITY, AND LIFE CYCLE SOFTWARE SUPPORT WHILE IMPROVING QUALITY, CONFIDENCE, AND ASSURANCE THROUGH EARLY AND INCREMENTAL INTEGRATION AND TEST
- PROVIDES EASY ECONOMICAL ACCESS TO SCARCE, EXPENSIVE, OR NOT LOCALLY AVAILABLE RESOURCES; AND IMPROVES THE AVAILABILITY OF KEY SYSTEMS FOR INTEROPERABILITY TESTING
- PROVIDES REMOTE GFE WHERE IT IS ALREADY OPERATED, MAINTAINED, AND SUPPORTED BY ACCESS THROUGH THE AIN

ARMY INTEROPERABILITY NETWORK (AIN)

PAYOFFS (Continued)

- REDUCES INITIAL SYSTEM COSTS THROUGH MORE EFFICIENT DEVELOPMENT TESTING AND REDUCED TOTAL LIFE CYCLE COSTS BY PRECLUDING LATENT HARDWARE AND SOFTWARE INTEROPERABILITY PROBLEMS REACHING THE FIELD
- PROVIDES THE CAPABILITY TO DEVELOP, TEST, AND MAINTAIN THE SOFTWARE AND INTEROPERABILITY OF C3I SYSTEMS THROUGH A GEOGRAPHICALLY DISTRIBUTED APPROACH AND REMOTE ACCESS. THIS CAPABILITY RESULTS IN INCREASED RATIO OF PRODUCTIVE TEST TIME, INCREASED PRODUCTIVITY OF TECHNICAL PERSONNEL, DECREASED TRAVEL REQUIREMENTS, AND DECREASED NEED TO TRANSPORT C3I SYSTEMS AND TEST EQUIPMENT

FUNDING

- o OMA SUPPORT FOR FIELDED SYSTEMS, i.e., ITEMS OUT OF PRODUCTION AND SUPPORT FOR CENTER OPERATIONS SUCH AS LABOR, TRAVEL, PURCHASES, HARDWARE, AND MAINTENANCE SUPPORT CONTRACTS

- o OPA TARGET, HOST, TEST, OTHER SUPPORT EQUIPMENT ACQUISITION: EQUIPMENT-IN-PLACE AND SUPPORT FOR SYSTEMS IN PRODUCTION ON REIMBURSEMENT BASIS FROM END-ITEM MANAGER

- o R&D SUPPORT FOR SYSTEMS IN DEVELOPMENT ON REIMBURSEMENT BASIS FROM END-ITEM MANAGER; SUPPORT FOR ARMY INTEROPERABILITY NETWORK; AND SUPPORT FOR ADVANCED SOFTWARE TECHNOLOGY

SED CONTRACTUAL PROGRAM
FUNDING PROFILE
($ IN MILLIONS)

	RDTE $M	PROC $M	OMA $M
FY 93	15-20	30-35	95-100
FY 94	18-23	32-37	107-112
FY 95	19-24	31-36	107-112
FY 96	17-22	30-35	114-119
TOTAL:	69-89	123-143	423-443

CECOM SOFTWARE ENGINEERING DIRECTORATE
CONTRACT OPPORTUNITY

TITLE:	AN/TTC-39 CIRCUIT SWITCH, AN/TTC-39A NODAL CONTROL CIRCUIT SWITCH AND AN/TYC-39 MESSAGE SWITCH POST DEPLOYMENT SOFTWARE SUPPORT (PDSS), FORT MONMOUTH, NEW JERSEY
OBJECTIVE:	SYSTEMS SOFTWARE ENGINEERING SERVICES TO SUPPORT CORRECTION OF SOFTWARE/FIRMWARE DEFECTS/DEFICIENCIES/ERRORS AND IMPLEMENTATION OF SOFTWARE/FIRMWARE REFINEMENTS AND ENHANCEMENT TO THE TARGET SYSTEM'S OPERATIONAL AND SUPPORT SOFTWARE
TYPE:	COMPETITIVE (UNRESTRICTED) TIME AND MATERIALS
SCHEDULE:	AWARD DATE - 2ND QUARTER FY 93
APPROXIMATE VALUE:	$34M (5 YEARS)
POC/TELEPHONE:	EUGENE J. BOYLE, 532-8220

CECOM SOFTWARE ENGINEERING DIRECTORATE
CONTRACT OPPORTUNITY

TITLE:	ARMY INTEROPERABILITY NETWORK (AIN) DEVELOPMENT, INTEGRATION AND TECHNICAL SUPPORT, FORT MONMOUTH, NEW JERSEY
OBJECTIVE:	THE CONTRACT WILL ASSIST THE ARMY TO DEVELOP THE AIN TO PROVIDE A CONFORMANCE AND INTEROPERABILITY TEST CAPABILITY FOR MISSION CRITICAL DEFENSE SYSTEMS (MCDSs)
TYPE:	COMPETITIVE (UNRESTRICTED) TIME AND MATERIALS
SCHEDULE:	AWARD DATE - 2ND QUARTER FY 93
APPROXIMATE VALUE:	$30M (5 YEARS)
POC/TELEPHONE:	EUGENE J. BOYLE, 532-8220

CECOM SOFTWARE ENGINEERING DIRECTORATE
CONTRACT OPPORTUNITY

TITLE:	LIFE CYCLE SYSTEMS AND SOFTWARE ENGINEERING SUPPORT FOR FIRE SUPPORT COMMAND, CONTROL, FIRE DIRECTION AND OTHER SYSTEMS, FORT SILL, OKLAHOMA
OBJECTIVE:	PROVIDE SYSTEMS AND SOFTWARE ENGINEERING SERVICES IN SUPPORT OF THE DEVELOPMENT, PRODUCTION AND DEPLOYMENT OF THE FIRE SUPPORT COMMUNITY OF SYSTEMS INCLUDING SYSTEMS SUCH AS TACFIRE, BATTERY COMPUTER SYSTEM (BCS), MULTIPLE LAUNCH ROCKET SYSTEM (MLRS), ADVANCED FIELD ARTILLERY TACTICAL DATA SYSTEM (AFATDS).
TYPE:	COMPETITIVE (UNRESTRICTED) CPAF
SCHEDULE:	AWARD DATE - 4TH QUARTER FY 93
APPROXIMATE VALUE:	$134M (5 YEARS)
POC/TELEPHONE:	EUGENE J. BOYLE, 532-8220

CECOM SOFTWARE ENGINEERING DIRECTORATE
CONTRACT OPPORTUNITY

TITLE:	MCDS HARDWARE MAINTENANCE AND TECHNICAL SUPPORT, FORT MONMOUTH, NEW JERSEY
OBJECTIVE:	PROVIDE TECHNICAL SERVICES FOR HARDWARE MAINTENANCE AND SUPPORT ON ASSIGNED MCDSs AND ASSOCIATED EQUIPMENT AT BUILDING 1210, FORT MONMOUTH, NEW JERSEY
TYPE:	COMPETITIVE (UNRESTRICTED) CPAF
SCHEDULE:	AWARD DATE - 4TH QUARTER FY 93
APPROXIMATE VALUE:	$13.5M (5 YEARS)
POC/TELEPHONE:	EUGENE J. BOYLE, 532-8220

CECOM SOFTWARE ENGINEERING DIRECTORATE
CONTRACT OPPORTUNITY

TITLE:	SECURITY SUPPORT AND SECURITY ENGINEERING SERVICES, FORT MONMOUTH, NEW JERSEY
OBJECTIVE:	THE SERVICES WILL ENCOMPASS THE PROTECTION OF CLASSIFIED INFORMATION/MATERIAL WITHIN SED, TO INCLUDE COMMUNICATIONS SECURITY (COMSEC), AUTOMATIC DATA PROCESSING (ADP) AND SENSITIVE COMPARTMENTED INFORMATION (SCI). ALSO REQUIRES TECHNICAL AND ENGINEERING SUPPORT FOR THE SENSITIVE COMPARTMENTED INFORMATION FACILITY (SCIF) AND DATA PROCESSING ACTIVITIES INCLUDING EQUIPMENT INSTALLATION AND SITE PLANNING
TYPE:	COMPETITIVE (UNRESTRICTED)
SCHEDULE:	AWARD DATE - 3RD QUARTER FY 93
APPROXIMATE VALUE:	$10M (5 YEARS)
POC/TELEPHONE:	EUGENE J. BOYLE, 532-8220

CECOM SOFTWARE ENGINEERING DIRECTORATE
CONTRACT OPPORTUNITY

TITLE:	LIFE CYCLE SOFTWARE ENGINEERING SUPPORT SERVICES FOR SELECTED JOINT TACTICAL FUSION BATTLEFIELD AUTOMATED SYSTEMS (BASs), FORT HUACHUCA, ARIZONA
OBJECTIVE:	ENGINEERING SUPPORT SERVICES FOR SELECTED JOINT FUSION BAS, INCLUDING PDSS AND SOFTWARE DEVELOPMENT FOR SUCH TACTICAL FUSION SYSTEMS AS DIGITAL TOPOGRAPHIC SUPPORT SYSTEM (DTSS), ALL SERVICE ANALYSIS SYSTEM/ENEMY SITUATION CORRELATION ELEMENT (ASAS ENSCE), TACTICAL CONTROL AND ANALYSIS CENTER (TCAC).
TYPE:	COMPETITIVE (SMALL BUSINESS SET-ASIDE) TIME AND MATERIALS
SCHEDULE:	AWARD DATE - 3RD QUARTER FY 93
APPROXIMATE VALUE:	$81M (5 YEARS)
POC/TELEPHONE:	EUGENE J. BOYLE, 532-8220

CECOM SOFTWARE ENGINEERING DIRECTORATE
CONTRACT OPPORTUNITY

TITLE:	LIFE CYCLE SYSTEMS AND SOFTWARE ENGINEERING SUPPORT FOR FIRE SUPPORT COMMAND, CONTROL, FIRE DIRECTION AND OTHER SYSTEMS, FORT SILL, OKLAHOMA
OBJECTIVE:	PROVIDE SYSTEMS AND SOFTWARE ENGINEERING SERVICES IN SUPPORT OF THE DEVELOPMENT, PRODUCTION AND DEPLOYMENT OF THE FIRE SUPPORT COMMUNITY OF SYSTEMS INCLUDING SUCH SYSTEMS AS FIREFINDER AND METEOROLOGICAL DATA SYSTEM (MDS)
TYPE:	COMPETITIVE (SMALL BUSINESS SET-ASIDE) TIME AND MATERIALS
SCHEDULE:	AWARD DATE - 4TH QUARTER FY 93
APPROXIMATE VALUE:	$20M (5 YEARS)
POC/TELEPHONE:	EUGENE J. BOYLE, 532-8220

CECOM SOFTWARE ENGINEERING DIRECTORATE
CONTRACT OPPORTUNITY

TITLE:	PDSS FOR THE GSC-40 SYSTEM
OBJECTIVE:	PROVIDE ENGINEERING AND TECHNICAL SERVICES TO SUPPORT THE PDSS FOR THE AN/GSC-40 SERIES SATELLITE COMMUNICATIONS TERMINAL (SCT) (AN/GSC-40)
TYPE:	COMPETITIVE (UNRESTRICTED) TIME AND MATERIALS
SCHEDULE:	AWARD DATE - 1ST QUARTER FY 95
APPROXIMATE VALUE:	$12M
POC/TELEPHONE:	EUGENE J. BOYLE, 532-8220

CECOM SOFTWARE ENGINEERING DIRECTORATE
CONTRACT OPPORTUNITY

TITLE:	SYSTEMS AND SOFTWARE ENGINEERING FOR C^3 SYSTEMS, FORT MONMOUTH, NEW JERSEY
OBJECTIVE:	PROVIDE SYSTEMS AND SOFTWARE ENGINEERING SERVICES IN SUPPORT OF THE DEVELOPMENT, PRODUCTION, AND DEPLOYMENT OF THE C^3 COMMUNITY OF SYSTEMS INCLUDING VARIOUS SATELLITE, TACTICAL, AND COMMAND AND CONTROL SYSTEMS
TYPE:	COMPETITIVE (UNRESTRICTED) TIME AND MATERIALS
SCHEDULE:	AWARD DATE - 1ST QUARTER FY 96
APPROXIMATE VALUE:	$120M
POC/TELEPHONE:	EUGENE J. BOYLE, 532-8220

CECOM SOFTWARE ENGINEERING DIRECTORATE
CONTRACT OPPORTUNITY

TITLE:	SYSTEM AND SOFTWARE ENGINEERING FOR IEW SYSTEMS, FORT MONMOUTH, NEW JERSEY
OBJECTIVE:	PROVIDE SYSTEMS AND SOFTWARE ENGINEERING SERVICES IN SUPPORT OF THE DEVELOPMENT PRODUCTION AND DEPLOYMENT OF THE IEW COMMUNITY OF SYSTEMS INCLUDING VARIOUS SIGNAL INTELLIGENCE, ELECTRONIC WARFARE, AIRCRAFT SURVIVABILITY EQUIPMENT AND SENSOR SYSTEMS
TYPE:	COMPETITIVE (SMALL BUSINESS) TIME AND MATERIALS
SCHEDULE:	AWARD DATE - 1ST QUARTER FY 96
APPROXIMATE VALUE:	$57M
POC/TELEPHONE:	EUGENE J. BOYLE, 532-8220

NOTES

SIGNALS WARFARE TECHNOLOGY INITIATIVES

Mr. G. William Mitchell, Jr.
Associate Director for Technology
CECOM Signals Warfare Directorate

UNCLASSIFIED

AMSEL-RD-SW-DT 27 March 1992

POINT PAPER

SUBJECT: Signals Warfare Technology Initiatives

OBJECTIVE: To provide information on the CECOM Signals Warfare Directorate's interest in the areas of Intercept Technology, Electronic Warfare Technology and Tactical Data Fusion Technology

FACTS: These three areas will provide technology to U.S. Army systems to locate and exploit hostile command, control and communications (C^3) systems; deny hostile units use of their C^3; and, process, analyze and report battlefield intelligence.

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

BRIEFER: Mr. G. William Mitchell, Jr., Associate Director for Technology, AMSEL-RD-SW-DT, (703) 349-7205; DSN: 229-7205

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

BRIEFING OUTLINE

- Technology Goals
- Technology Drivers
- Intercept Technology
- Electronic Warfare Technology
- Tactical Intelligence Data Fusion Technology

TECHNOLOGY GOALS

Provide technology to U.S. Army systems to:

- Locate and exploit hostile command, control and communications (C3) systems
- Deny hostile units use of their C3
- Process, analyze & report battlefield intelligence

TECHNOLOGY GOALS (Continued)

- Therefore:
  We provide technology to access at will the hostile communications spectrum and allow its use only at our option

TECHNOLOGY DRIVERS

- Army Technology Base Master Plan
- Intelligence Electronic Warfare Modernization Plan
- DoD Science and Technology Thrusts

INTERCEPT TECHNOLOGY

- Locate and exploit hostile command, control and communications (C3) systems

INTERCEPT TECHNOLOGY
OBJECTIVES

- Improved accuracy in geolocating transmitters in the presence of interference
- HF signal exploitation
- Exploitation of modern signals

INTERCEPT TECHNOLOGY
KEY OPERATIONAL CAPABILITIES

- Utilization of narrow bandwidth communication links
- Exploitation of modern modulations
- Combine COMINT, ELINT and other sensors on same platform

INTERCEPT TECHNOLOGY
USER REQUIREMENTS/DEFICIENCIES

- 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

INTERCEPT TECHNOLOGY
USER REQUIREMENTS (Continued)

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

INTERCEPT TECHNOLOGY
PROGRAM STRATEGY

- Conduct research and exploratory development
- Demonstrate promising technologies
- Maximum use/testbeds and prototypes
- Transition to gaining intercept systems, such as family of IEW Common Sensors

INTERCEPT TECHNOLOGY
FY93-95 OBJECTIVES

- Develop interference rejection and suppression techniques
- Develop small, efficient and broadband receiving antennas
- Improve super-resolution direction finding algorithms
- Improve HF direction finding accuracies

INTERCEPT TECHNOLOGY
FY93-95 OBJECTIVES (Continued)

- Develop exploitation techniques against modern signals
- Increase on-board sensor processing
- Explore other innovative intercept techniques

INTERCEPT TECHNOLOGY
CONTRACT OPPORTUNITIES

- 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

INTERCEPT TECHNOLOGY
CONTRACT OPPORTUNITY (Continued)

- Status: Technology Base
- Schedule: Award dates - FY93-95
  - Contract length -
    - 2-3 yrs (BAA)
    - 1 yr Phase I & 2 yrs Phase II (SBIR)
- Approx Value: $1M total for FY93-95
- POC/Phone No.: Jim Mulligan (703) 349-5275

ELECTRONIC WARFARE (EW) TECHNOLOGY

- Deny hostile units use of their command, control and communications (C3)

EW TECHNOLOGY
OBJECTIVES

- Jam modern signals
- Avoid fratricide
- Automate the communications jamming process
- Develop more efficient, smaller jamming components

EW TECHNOLOGY
KEY OPERATIONAL CAPABILITIES

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

EW TECHNOLOGY
USER REQUIREMENTS/DEFICIENCIES

- Small tactical HF antenna systems for jamming applications
- Fratricide avoidance
- Ability to surgically jam
- Ability to jam from remote platforms

EW TECHNOLOGY
PROGRAM STRATEGY

- Conduct research and exploratory development in new signals electronic warfare and critical components
- Develop demonstration programs for new stand-in and stand-off communications jamming concepts

EW TECHNOLOGY
PROGRAM STRATEGY (Continued)

- Transition to gaining tactical electronic warfare systems, such as, Ground Based Common Sensor - Heavy (GBCS-H) and Advanced QUICKFIX

ELECTRONIC WARFARE
FY93-95 OBJECTIVES

- Initiate additional antenna technology efforts for efficient tactical HF and multiband antennas
- Develop high power broadband power amplifier
- Initiate Electronic Countermeasures (ECM) against modern mobile communications

EW TECHNOLOGY

FY93-95 OBJECTIVES (Continued)

- Continue stand-in jammer demonstration
- Explore additional expert controller technologies for jammers
- Explore other innovative electronic warfare technologies

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

EW TECHNOLOGY
CONTRACT OPPORTUNITY (Continued)

- Type: Multiple Competitive CPFF contracts from BAA and SBIR solicitations
- Status: Technology Base
- Schedule:
  - Award dates - FY93-95
  - Contract length -
    - 1-2 yrs (BAA)
    - 1 yr Phase I & 2 yrs Phase II (SBIR)

EW TECHNOLOGY
CONTRACT OPPORTUNITY (Continued)

- Approx Value: $5M total for FY93-95
- POC/Phone
  No.: Jim Yolda (703) 349-6911

TACTICAL INTELLIGENCE DATA FUSION TECHNOLOGY

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

TACTICAL INTEL DATA FUSION
OBJECTIVES

- Develop the theoretical basis to automate the Data Fusion process
- Transition Data Fusion research products into testbed efforts
- Provide maturing products to technology demonstrations

TACTICAL INTEL DATA FUSION
KEY OPERATIONAL CAPABILITIES

- Automate the intelligence generation process
- Situation and threat assessment
- Efficient intelligence data base management systems
- Knowledge based spectral search and adaptive sensor tasking

TACTICAL INTEL DATA FUSION
USER REQUIREMENTS/DEFICIENCIES

- 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
PROGRAM STRATEGY

- Conduct research and exploratory development
- Demonstrate promising technologies
- Maximum use of testbeds and prototypes
- Transition to gaining tactical intelligence data fusion systems

TACTICAL INTEL DATA FUSION
FY93-95 OBJECTIVES

- Sensor allocation/Sensor management
- Multiple hypothesis management
- Computational geometry
- Hybrid data base management techniques

TACTICAL INTEL DATA FUSION

FY93-95 OBJECTIVES (Continued)

- Plan generation and recognition/ threat assessment
- Explore other innovative intelligence data fusion technologies

TACTICAL INTEL DATA FUSION
CONTRACT OPPORTUNITIES

- Title: Tactical Intelligence Data Fusion Techniques

- Objectives:
  - Automate the intelligence generation process
  - Situation and threat assessment
  - Efficient intelligence database management techniques

TACTICAL INTEL DATA FUSION
CONTRACT OPPORTUNITY (Continued)

- Type: Multiple Competitive CPFF contracts from BAA and SBIR solicitations
- Status: Technology Base
- Schedule:
  - Award dates - FY93-95
  - Contract length -
    - 2-3 yrs (BAA)
    - 1 yr Phase I & 2 yrs Phase II (SBIR)

TACTICAL INTEL DATA FUSION
CONTRACT OPPORTUNITY (Continued)

- Approx Value: $2M total for FY93-95
- POC/Phone
  No.: Dave Grubb (703) 349-7566

SUMMARY OF CONTRACT OPPORTUNITIES

YEAR	TITLE	AMOUNT ($ IN MILLIONS)
FY93-95	INTERCEPT TECHNOLOGY	1
FY93-95	EW TECHNOLOGY	5
FY93-95	TACTICAL INTEL DATA FUSION	2
	TOTAL	8

PROGRAM SUMMARY

Technology program must provide:

- Expanded IEW capability
- Smart intelligence systems
- Deny enemy use of command and control

PROGRAM SUMMARY
(Continued)

Thorough emphasis on:

- Exploiting modern signals
- Smaller, lightweight, modular components with reduced power requirements
- Platform independent common modules
- Near real-time intelligence processing and reporting

NOTES

SESSION III

C3IEW

MODERATOR

MR. NEAL W. ATKINSON
DEPUTY PROGRAM EXECUTIVE OFFICER
PEO COMMUNICATIONS SYSTEMS

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM (STACCS)

COL CARL L. LAMBETH
PM OPTADS

UNCLASSIFIED

SFAE-CC-MVR-S March 27, 1992

POINT PAPER

SUBJECT: To provide a synopsis of the subject of the briefing.

FACTS:

1. The STACCS is a United States Army theater Program supporting the Commander in Chief, US Army Europe, ARCENT Command and Control Information System, 3rd US Army, US Army South/Southern Command, 8th US Army/Pacific Command, Forces Command, and their Major Subordinate Commands (MSC) with an automated, secret level, Command and Control (C2) capability for peacetime, exercises, transition to war and wartime situations.

2. The STACCS is presently fielded to two (2) theater armies; USAREUR and 3rd US Army/ARCENT. It is intended to baseline STACCS through an on-site user validation late this summer.

3. The contracting opportunities introduced in the briefing are for the total system contract to provide follow-on system development to the present effort. It is intended that the contract will be a cost plus fixed fee type "tasking" contract, which will be awarded late FY 93.

4. Funding figures included in the briefing are based on estimates to provide required capability and may differ from actual programed dollars in FY94 and latter years.

BRIEFER: CARL L. LAMBETH, COL, SC, PM OPTADS, SFAE-CC-MVR, TELEPHONE NUMBER (908) 532-4912

ACTION OFFICER: DPM, STACCS
FRANK NISSEN
PM OPTADS/PM STACCS

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

BRIEFING OUTLINE

- DEFINITION
- NOTIONAL SYSTEMS ARCHITECTURE
- OBJECTIVES
- KEY OPERATIONAL CAPABILITIES
- USER REQUIREMENTS
- NEEDED TECHNOLOGIES
- PAYOFFS
- PROGRAM STATUS
- SHORT TERM OBJECTIVES
- LONG-TERM OBJECTIVES
- FUNDING PROFILE
- CONTRACT OPPORTUNITY
- SUMMARY

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

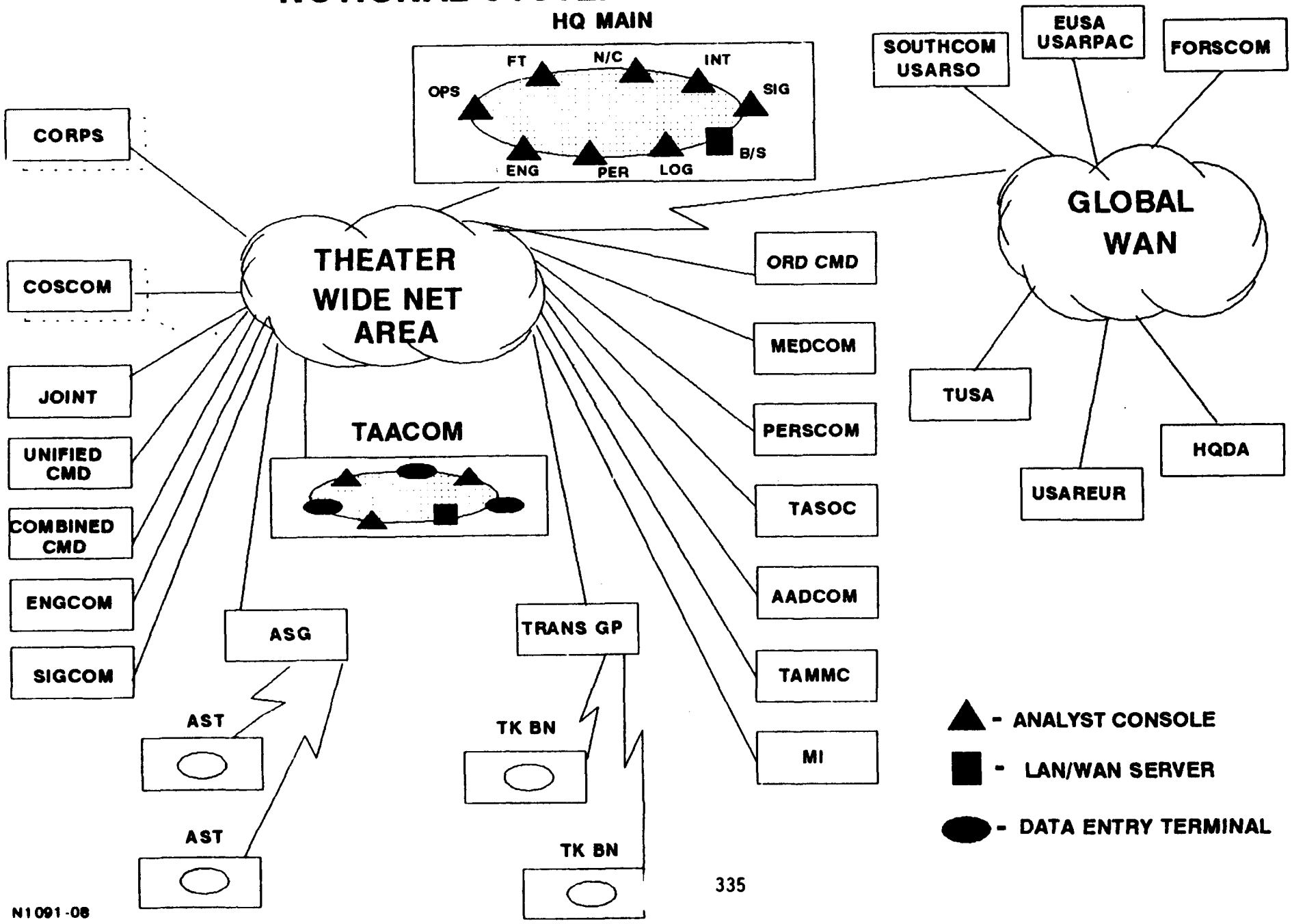
DEFINITION

A THEATER LEVEL,SECRET HIGH, ARMY COMMAND AND CONTROL (C2) SYSTEM PROVIDING THE THEATER COMMANDER, HIS MAJOR SUBORDINATE COMMANDS (MSC) AND OTHER ECHELON ABOVE CORPS (EAC) ELEMENTS WITH AN AUTOMATED C2 CAPABILITY.

STACCS PROVIDES SITUATION MONITORING AND DECISION SUPPORT DURING PEACETIME, TRANSITION TO WAR AND WAR TIME IN THE AREAS OF FORCES PLANNING, MOVEMENT, SUSTAINMENT, CRISES MANAGEMENT, NATION ASSISTANCE, AND OPERATIONAL C2.

COMMON DATABASES ARE SHARED AND DATA EXCHANGED AND UPDATED AUTOMATICALLY BY ALL STACCS INTERCONNECTED ORGANIZATIONS.

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM NOTIONAL SYSTEMS ARCHITECTURE



N1091-08

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

OBJECTIVES

- PROVIDE STANDARDIZED PEACETIME AND WARTIME C2 FUNCTIONS, SITUATION MONITORING, AND DECISION SUPPORT FOR THEATER ARMIES AND COMMANDERS WORLDWIDE
- DESIGN FOR USE IN GARRISON BY MILITARY PERSONNEL USING THE SAME EQUIPMENT AND SOFTWARE DURING EXERCISES OR WARTIME SITUATIONS
- ELECTRONICALLY LINK UNITS AT ECHELONS ABOVE CORPS WITH A COMMON, ARMY STANDARD HARDWARE AND SOFTWARE INTO A COMMON NETWORK, SHARING COMMON DATA

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

OBJECTIVES (CONT.)

- INTERFACE WITH STRATEGIC SYSTEMS ABOVE AND ATCCS ECB SYSTEMS BELOW TO FORM A SEAMLESS ACCS ARCHITECTURE/ SYSTEM
- CONVERGE WITH PEO CCS COMMON SOFTWARE AND ARCHITECTURE/ EFFORTS
- UTILIZE EVOLUTIONARY DEVELOPMENT PROCESS "FIELD A LITTLE, TEST A LITTLE"

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

KEY OPERATIONAL CAPABILITIES

- ELECTRONIC MAIL
- AUTOMATED MESSAGE HANDLING
- DATA COMMUNICATIONS WITHIN AND BETWEEN CENTERS
- LOCAL AND SHARED DATA BASE MANAGEMENT
- DATABASE APPLICATIONS

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

KEY OPERATIONAL CAPABILITIES (CONT.)

- NETWORK AND DATA MANAGEMENT
- VIDEO MAP GRAPHICS, BRIEFING-DECISION SUPPORT SYSTEM
- WORD PROCESSING
- REPORT GENERATION
- EMBEDDED TRAINING AND MAINTENANCE DIAGNOSTICS

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

USER REQUIREMENTS

- CHS WORKSTATIONS
- COTS FOR FIBER OPTIC LAN, GATEWAYS AND PACKET SWITCH
- KG-84 - TRUNK ENCRYPTION, STU III - TERMINAL INTERCONNECT TO SYSTEM
- OPEN ARCHITECTURE
- SYSTEM INTERFACES

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

USER REQUIREMENTS (CONT.)

- DATA BASES REPLICATED AND DISTRIBUTED
- DATA DISTRIBUTION BASED ON TRANSACTION PROCESSING
- NO SINGLE POINT OF FAILURE, MTTR,PCB .5HRS
- SIMPLE QUERY RESPONSE TIME - 6 SEC LOCAL, 2 MINS REMOTE
- COMPLEX QUERY RESPONSE TIME - 2 MINS LOCAL, 4 MINS REMOTE
- MULTI-LOGICAL NETWORKS

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

NEEDED TECHNOLOGIES

- FULL EXPLOITATION OF DEFENSE MAP AGENCY'S CD-ROM
- MIGRATION FROM CURRENT HARDWARE TO RISK TECHNOLOGY
- IMPLEMENTATION OF AN AUTOMATED MESSAGE HANDLING SYSTEM
- IMPLEMENTATION OF MLS TECHNOLOGY

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

PAYOFFS

- COMMONALITY OF HARDWARE, SOFTWARE, TRAINING AND MAINTENANCE AT ARMY LEVEL HQs
- ALL THEATERS BENEFIT FROM BASIC COMMON SYSTEMS IMPROVEMENT PRODUCTS
- SYSTEM IS ADAPTABLE TO UNIQUE THEATER MISSIONS, GEOPOLITICAL ENVIRONMENTS AND COALITION FORCES
- SINGLE SET OF INTERFACES TO JOINT AND UNIFIED COMMANDS

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

PROGRAM STATUS

- CURRENT SE&I CONTRACT IS BEING EXTENDED TO ACCOMMODATE COMPLETION OF STACCS BASELINE REQUIREMENTS

- CURRENT MAINTENANCE SUPPORT/TECHNICAL SERVICES CONTRACT HAS BEEN EXTENDED

- COMPETITIVE SOLICITATION CURRENTLY UNDER DEVELOPMENT

STANDARD ARMY THEATER COMMAND AND CONTROL SYSTEM

SHORT TERM OBJECTIVES

- COMPLETE REFORGER 92, IMPLEMENT CORRECTIONS AND BASELINE SYSTEM AS STACCS
- RELEASE DRAFT RFP 4TH QTR 92 AND AWARD CONTRACT 3RD QTR 93
- COMPLETE PRELIMINARY FIELDINGS TO 8TH US ARMY AND US ARMY SOUTH
- INITIATE MAINTENANCE AND SUPPORT FOR FIELDED SYSTEMS

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

LONG-TERM OBJECTIVES

- PROVIDE STACCS IN REQUIRED CONFIGURATION TO 8TH US ARMY AND US ARMY SOUTH
- MAKE TRANSITION TO NEW SUITE OF HARDWARE AS AVAILABLE FROM PM CHS
- FULLY IMPLEMENT DECISION TOOLS AND USER FUNCTIONAL APPLICATIONS AND INTERFACES
- IMPLEMENTATION OF MLS INTERFACES TO ARMY WWMCCS SYSTEMS/STRATEGIC & DODIS SYSTEMS

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

REQUIRED FUNDING PROFILE

	RDT&E $M	PROC $M	OMA $M
FY 93	1-2	8-15	5-10
FY 94	8-17	7-17	2-3
FY 95	8-18	6-7	2-3
FY 96	8-17	6-15	2-3
FY 97	7-13	5-7	2-3
TOTAL	32-67	32-61	13-22

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

CONTRACT OPPORTUNITY

TITLE: STANDARD THEATER ARMY COMMAND AND CONTROLSYSTEM (STACCS)

OBJECTIVE: ENGINEER, FURNISH, INSTALL, TEST AND MAINTAIN STACCS FOR THE THEATER ARMIES

TYPE: COMPETITIVE, CPFF, "BEST VALUE"

STATUS: DRAFT RFP 4TH QTR FY 92

SCHEDULE: INCREMENTAL UPGRADES/FIELDINGS EACH CONTRACT YEAR

ESTIMATED VALUE:	1ST YEAR	14-27M
	2ND YEAR	17-37M
	3RD YEAR	16-28M
	OPTION YEAR 1	16-35M
	OPTION YEAR 2	14-23M

POC TELEPHONE: MR JOSEPH A VIZ/908-532-6462

STANDARD THEATER ARMY COMMAND AND CONTROL SYSTEM

SUMMARY

- TWO ARMY THEATERS EQUIPPED WITH INITIAL CAPABILITY
- FUTURE SYSTEMS NEEDS TO BE BACKWARD COMPATIBLE AND ALSO ALLOW FOR TECHNOLOGY INSERTION
- SUCCESSFUL OFFEROR WILL NEED TO RESPOND TO THE LEVEL OF EFFORT FUNDING

NOTES

THE AWIS PROGRAM

MR. MICHAEL R. VERVILLE
CHIEF, ACQUISITION BRANCH
PMO AWIS

UNCLASSIFIED

SFAE-CC-AWM 13 March 1992

POINT PAPER

SUBJECT: The AWIS Program

OBJECTIVE: Modernize Army C2 Systems through Ada Software Applications

FACTS:

This contract will call for the development of the new AWIS software product lines and the maintenance of the fielded product lines.

- Full-scale development of 18 product lines.
- Software designed for Ada reuse.
- Streamlined development through extensive use of COTS/NDI.
- Open architecture based on industry standards.

Five product lines currently are fielded.

Recompete will be a cost plus award fee contract.

- Base plus 5 option years.
- Acquisition plan under development.
- Expected award in FY94.
- RDT&E/OPA/OMA appropriations.
- Approximate value between $55M and $75M.

BRIEFER: Mr. Michael R. Verville, Chief, Acquisition Branch, PMO AWIS, ATTN: SFAE-CC-AWM, (703) 806-6245

BRIEFING OUTLINE

- DEFINITION
- OBJECTIVES
- KEY OPERATIONAL CAPABILITIES
- USER REQUIREMENTS
- NEEDED TECHNOLOGIES
- PAYOFFS
- PROGRAM STATUS
- SHORT-TERM OBJECTIVES
- LONG-TERM OBJECTIVES
- FUNDING PROFILE
- CONTRACT OPPORTUNITY
- SUMMARY

THE AWIS PROGRAM
WHAT IS AWIS?

ARMY WORLD WIDE MILITARY COMMAND AND CONTROL SYSTEM (WWMCCS) INFORMATION SYSTEM

- ARMY'S PORTION OF THE DOD WWMCCS IN COORDINATION WITH THE WWMCCS ADP MODERNIZATION PROGRAM

THE AWIS PROGRAM (CONT'D)

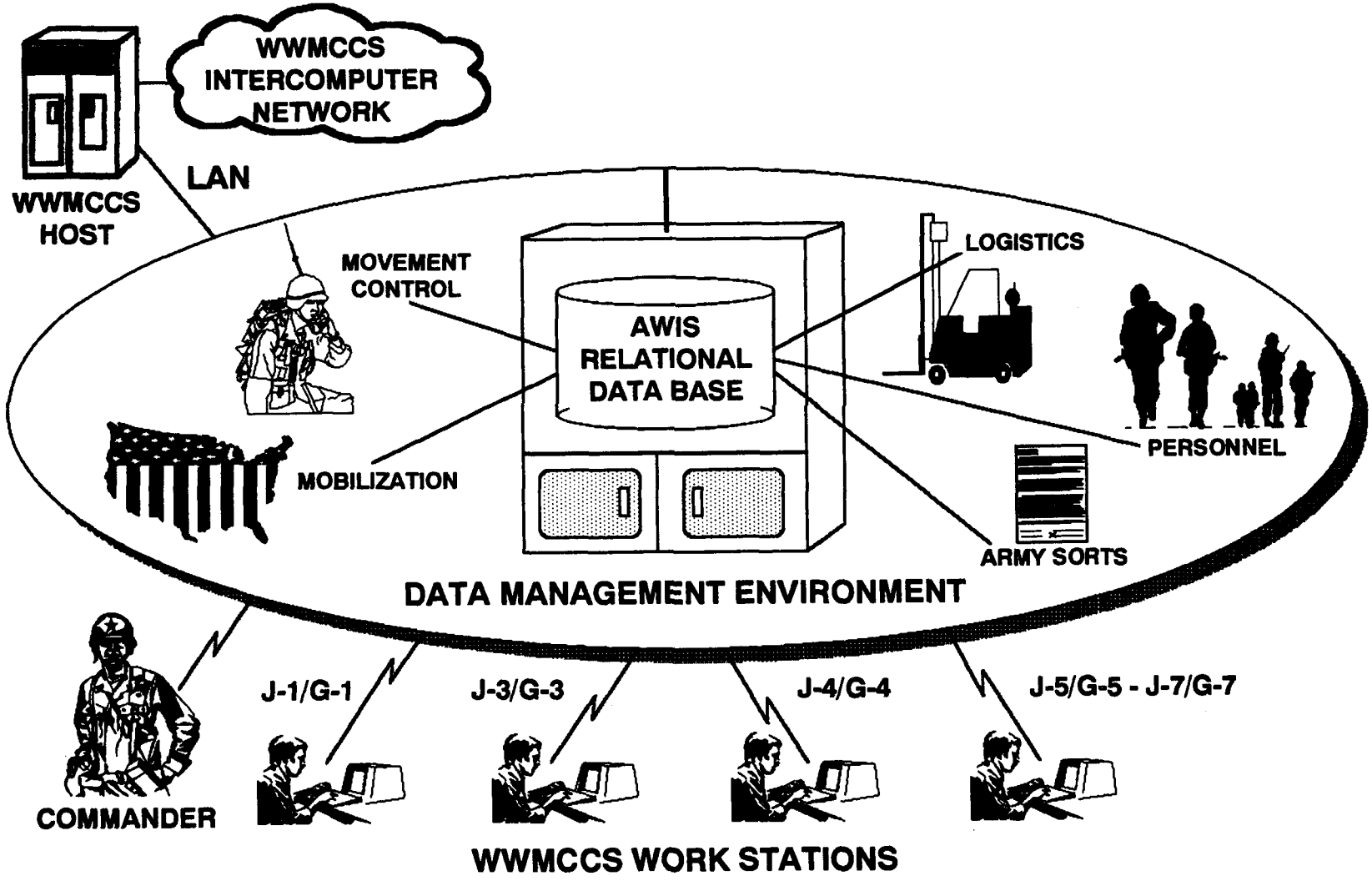
WHAT IS AWIS?

ARMY WWMCCS INFORMATION SYSTEM

- PROVIDES MAJOR IMPROVEMENTS IN INFORMATION SUPPORT TO JOINT OPERATIONS IN THE AREAS OF MOBILIZATION, DEPLOYMENT, EMPLOYMENT, AND SUSTAINMENT

THE AWIS PROGRAM

SYSTEM DESCRIPTION HARDWARE



APB0392

THE AWIS PROGRAM

HARDWARE PLATFORM USED

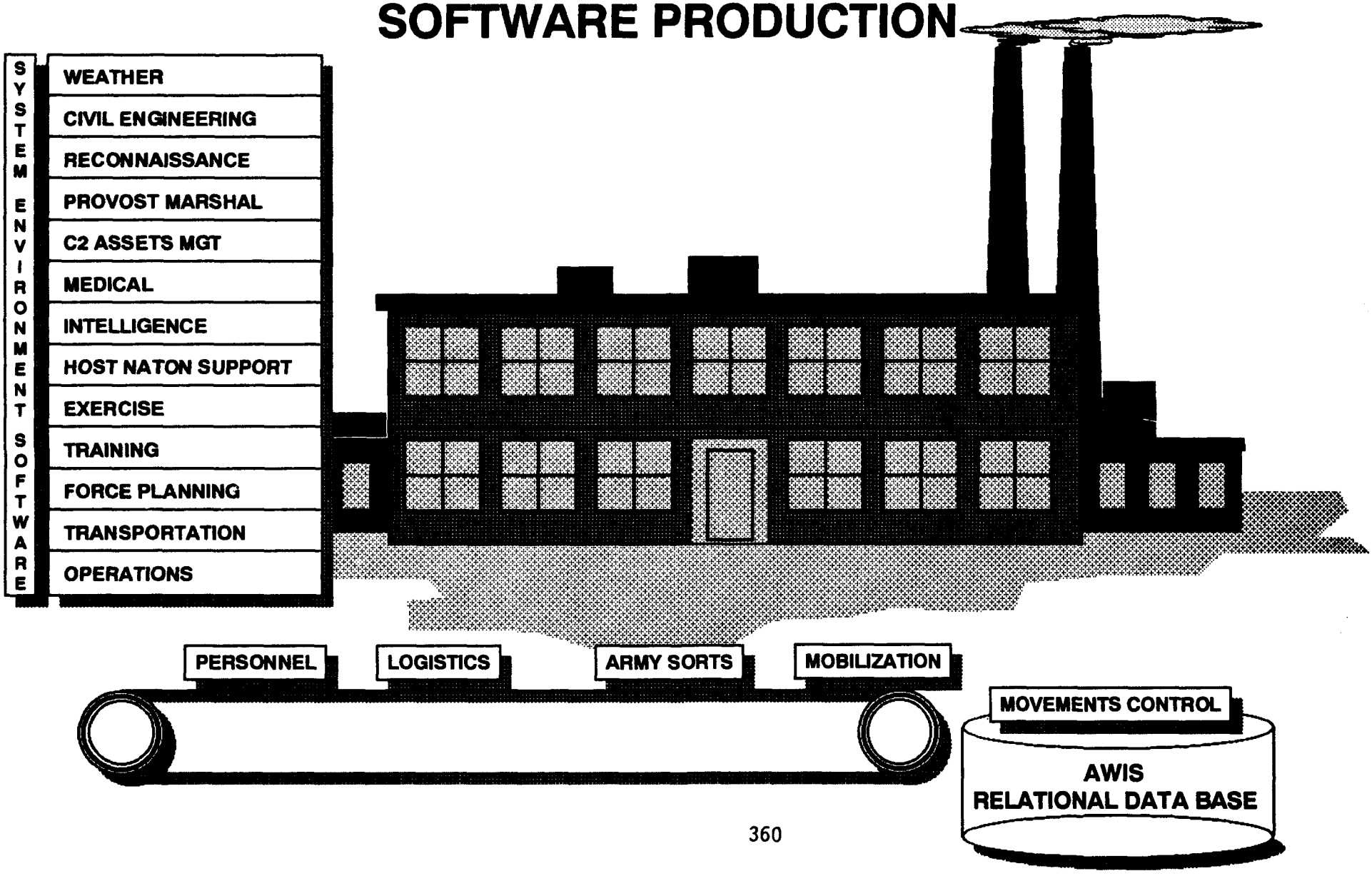
WS WORKSTATION
(HFSI/MACIIfx CPU)

DME DATA MANAGEMENT ENVIRONMENT
(DEC 6000 ARCHITECTURE)

LAN LOCAL AREA NETWORK
(ULANA CONTRACT IEEE802.3)

THE AWIS PROGRAM

SOFTWARE PRODUCTION



APB0392

THE AWIS PROGRAM
OBJECTIVES

- SUPPORT THE C2 STRATEGIC NEEDS FOR CONVENTIONAL MILITARY PLANNING AND EXECUTION
- SUPPORT MULTIPLE ARMY SITES
- PRODUCT IS ADA SOFTWARE
  - 18 PRODUCT LINES DEFINED
  - 3.5 M LINES OF ADA EXPECTED

THE AWIS PROGRAM
KEY OPERATIONAL CAPABILITIES

- PROVIDES ACCURATE, TIMELY, SYNTHESIZED INFORMATION FOR DECISION MAKING
- INCREASES PLANNING FLEXIBILITY
- IMPROVES VISIBILITY AND TRACKING FOR CRISIS MANAGEMEANT
- LINKS FORCES AND RESOURCES FOR EFFECTIVE SUSTAINMENT
- IMPROVES INTERFACE WITH JOINT SYSTEMS

AWIS SOFTWARE DEVELOPMENT
USER REQUIREMENTS

- FULL SCALE DEVELOPMENT FOR AWIS SITES TO INCLUDE:
  - DESIGNING, DEVELOPING, DOCUMENTING, AND FIELDING A CORE ARCHITECTURE
  - INTEGRATING SYSTEM SOFTWARE
  - PROVIDING OPERATOR TRAINING AND SOFTWARE MAINTENANCE FOR FIELDED SITES
- IMPLEMENTATION OF MOST NEEDED FUNCTIONAL CAPABILITIES AS PRIORITIZED BY DA DCSOPS

THE AWIS PROGRAM
NEEDED TECHNOLOGIES

- ADA SOFTWARE DEVELOPMENT
- ADA CODE REUSE
- FULL OPEN ARCHITECTURE
- SOFTWARE QUALITY METRICS
- DATABASE ACCESS CONTROL
- MULTI-LEVEL SECURITY

THE AWIS PROGRAM
PAYOFFS

- PORTABILITY ACROSS MULTIPLE PLATFORMS
- COMMONALITY ACROSS RELATED PROJECTS
- STANDARDIZED DATA SOURCES AT SITES
- SEAMLESS INTERFACE OF INFORMATION
- LOW-COST LIFE CYCLE MAINTENANCE THROUGH USE OF COTS/NDI

THE AWIS PROGRAM

PROGRAM STATUS

→ END DEVELOPMENT

MCRR (→91)
MOB/ODEE (→94)
LOGISTICS (→97)
UNIT STATUS (→95)
PERSONNEL (→96)
SYSTEM ENVIRONMENT SW
AWIS GLOBAL DATA BASE

FY91

OPERATIONS (→97)

C2 ASSETS MGT (→97)

SYSTEM ENVIRONMENT SOFTWARE

AWIS GLOBAL DATABASE

FY92

APB0382

THE AWIS PROGRAM

SHORT TERM OBJECTIVES

→ END DEVELOPMENT

- MEDICAL (→97)
- FORCE PLANNING (→98)
- RECON (→96)
- TRANSPORTATION (→97)
- CIVIL ENGINEERING (→98)
- WEATHER (→97)
- SYSTEM ENVIRONMENT SOFTWARE
- AWIS GLOBAL DATABASE

FY93

THE AWIS PROGRAM

LONG TERM OBJECTIVES

→ END DEVELOPMENT

- MTMC (→96)
- TRAINING (→98)
- INTELLIGENCE (→98)
- PROVOST MARSHAL (→98)
- HOST NATION SUPPORT (→98)
- EXERCISE (→98)
- SYSTEM ENVIRONMENT SOFTWARE
- AWIS GLOBAL DATABASE

FY94-98

APB0392

AWIS PROGRAM
FUNDING PROFILE

	RDTE $M	OPA $M	OMA $M
FY 93	9-11	1-2	4-7
FY 94	8-10	1-2	4-7
FY 95	9-12	1-2	6-8
FY 96	9-12	1-2	6-8
TOTAL	35-45	4-8	20-30

CONTRACT OPPORTUNITY

TITLE: SOFTWARE DEVELOPMENT CONTRACT

OBJECTIVE: ADA SOFTWARE

TYPE: CPAF BASE + 5 YEARS

STATUS: ACQUISITION PLAN UNDER DEVELOPMENT

SCHEDULE: EXPECTED AWARD - FY94

APPROX. VALUE: $55-75M

POC TELEPHONE: MR. MICHAEL VERVILLE, CHIEF, ACQUISITON BRANCH, PMO AWIS, (703) 806-6245

SUMMARY

- COST PLUS AWARD FEE CONTRACT
- APPROX VALUE BETWEEN $55 & $75M
- EXPECTED AWARD IN FY 94
- FULL-SCALE DEVELOPMENT OF AWIS PRODUCT LINES
- FIELDING TO AWIS SITES IAW DCSOPS PRIORITIES
- ADA CODE REUSE

NOTES

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

HAROLD G. BRITTON, Jr.

PROJECT MANAGER

COMBAT TERRAIN INFORMATION SYSTEMS

US ARMY CORPS of ENGINEERS

TOPOGRAPHIC ENGINEERING CENTER

UNCLASSIFIED

POINT PAPER

SUBJECT: Digital Topographic Support System (DTSS)

OBJECTIVE: Automate terrain analysis functions to meet AirLand Battle rapid response requirements.

FACTS: EMD contract for the development of three DTSS units was awarded to Loral Defense Systems, Akron, OH in July 1987. The units were delivered and government technical testing began in Jan 91. Approval to award an LRIP Option (7 units) in the EMD contract was granted by Special Program Review in Jan 92. Operational testing (IOTE) is scheduled to be completed in Jul 92 and MS III is anticipated to occur in Dec 92. Pending MS III approval, a full-rate of production contract will be competitively awarded for fifteen systems. Three blocks of PrePlanned Production Improvements (P3I) are approved to enhance the baseline DTSS. The first P3I block RFP will be available in 2QFY93. The emphasis of the first block will be development of a downsized version for the light Division. Future P3I's will add digital image manipulation, increase throughput responsiveness, add digital communications and pursue enhancements that help DTSS reach more customers of terrain intelligence.

BRIEFER: Harold G. Britton, Jr.
PM CTIS
SFAE-CC-TER
DSN: 345-2854, commercial (703)355-2854

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

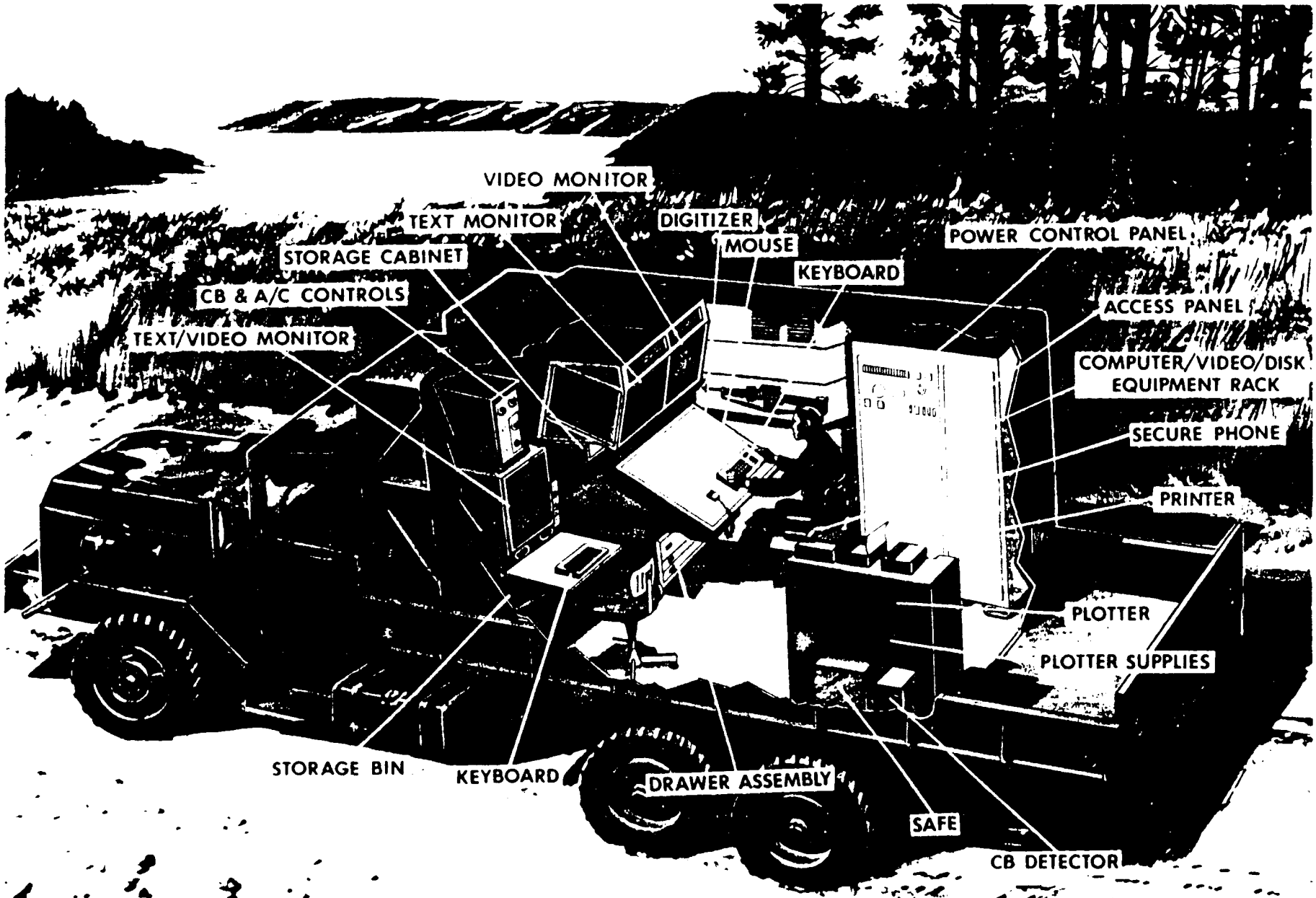
BRIEFING OUTLINE

- DEFINITION
- PICTURE
- OBJECTIVES
- KEY OPERATIONAL CAPABILITIES
- USER REQUIREMENT/DEFICIENCIES
- NEEDED TECHNOLOGIES
- PAYOFFS
- PROGRAM STATUS
- SHORT-TERM OBJECTIVES
- LONG-TERM OBJECTIVES
- FUNDING
- CONTRACT OPPORTUNITY
- SUMMARY

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

DEFINITION

A TACTICAL TERRAIN ANALYSIS SYSTEM FOR THE ENGINEER TERRAIN TEAM AT DIV, CORPS AND EAC. DTSS CAN STORE, RETRIEVE, UPDÀTE, (RE)FORMAT, AND MANIPULATE DIGITAL TOPOGRAHPIC DATA. THE DATA FEEDS SOFTWARE MODELS THAT MAKE INTERVISIBILITY, MOBILITY AND ENVIRONMENTAL TERRAIN ANALYSIS PRODUCTS. THE DATA AND PRODUCTS CONTRIBUTE TERRAIN INTELLIGENCE TO THE INTELLIGENCE PREPARATION OF THE BATTLEFIELD PROCESS.



DIGITAL TOPOGRAPHIC SUPPORT SYSTEM (DTSS)

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

OBJECTIVES

BASELINE SYSTEM:

- MEET AIRLAND BATTLE RESPONSE TIMES
- AUTOMATE TERRAIN ANALYSIS FUNCTIONS
- SUPPORT ASAS WITH TERRAIN INTELLIGENCE

PREPLANNED PRODUCT IMPROVEMENTS (P3I):

- DOWNSIZE FOR LIGHT DIVISION
- MANIPULATE MULTI SPECTRAL IMAGERY
- DIGITAL COMMUNICATION OF PRODUCTS
- IMPROVE SYSTEM THROUGHPUT TIMEs

BFA - BATTLEFIELD FUNCTIONAL AREA

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

KEY OPERATIONAL CAPABILITIES

- USE DMA STANDARD DIGITAL DATA BASES
- TERRAIN ANALYSIS MODELS
  INTERVISIBILITY, MOBILITY, ENVIRONMENTAL & SPECIAL PURPOSE (USER DEFINED)
- DIGITIZE - CREATE DATA FROM HARDCOPY
- PLOT - MAP SIZE, MYLAR & PAPER
- PRINT - TEXT REPORTS
- COMMUNICATIONS - VOICE (BASELINE)
  DIGITAL (P3I)

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

USER REQUIREMENTS/DEFICIENCIES

- THE ENGINEER & MINE WARFARE MISSION AREA ANALYSIS IDENTIFIES A NEED FOR AN AUTOMATED TACTICAL SYSTEM CAPABLE OF MANIPULATING DTD AND PRODUCING TOPOGRAPHIC PRODUCTS FROM DTD.

- MANUAL PREPARATION OF TOPOGRAPHIC SUPPORT PRODUCTS CANNOT SUSTAIN THE PACE OF AIRLAND BATTLE REQUIREMENTS (OPERATIONAL DEFICIENCY).

DTD - DIGITAL TOPOGRAPHIC DATA

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

NEEDED TECHNOLOGIES

BASELINE COMPLETED

PREPLANNED PRODUCT IMPROVEMENTs (P3I)

- EXPLOITATION OF MULTI SPECTRAL IMAGERY
- INTELLIGENT WORKSTATIONS
  EXTRACTION/CREATION OF DTD
- HIGH DENSITY/SPEED STORAGE MEDIA
- HIGH SPEED THROUGHPUT
  HARDWARE AND/OR SOFTWARE

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

PAYOFFS

- PROVIDE TIMELY DTD & PRODUCTS
- REPLACE SOME SUBSYSTEMS OF TSS
- IMPROVED TRANSPORTABILITY & MOBILITY
- REDUCED MANPOWER & MAINTENANCE COSTS

TSS - TOPOGRAPHIC SUPPORT SYSTEM

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

PROGRAM STATUS

- EMD CONTRACT AWARDED JUL 87 (LORAL)
- LRIP AWARDED MAR 92 (EMD OPTION)
- TECHNICAL TESTING COMPLETED APR 92
- IOTE SCHEDULE APR-JUL 92

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

SHORT-TERM OBJECTIVES

FY 93

- MILESTONE III DEC 92
- P3I BLOCK I RFP JAN 93
- BASELINE PRODUCTION RFP JUL 93
- FUE (LRIP UNITS) SEP 93

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

LONG-TERM OBJECTIVES

FY 94 AND BEYOND

- AWARD PRODUCTION CONTRACT 1Q FY94
- COMPLETE LRIP FIELDINGS 2Q FY94
- P3I BLOCK II RFP 2Q FY95
- FIELD P3I BLOCK I (DOWNSIZED) FY96

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

FUNDING PROFILE

	RDTE $M	PROC $M	OMA $M
FY 93	5-6	10-12	-
FY 94			
FY 95	(BEGIN P3I BLOCK II)		
FY 96	(FIELD P3I BLOCK I)		
FY 97	(FINAL BASELINE PRODUCTION DELIVERIES)		

CLASSIFIED

APBI-13F 18Mar92

CONTRACT OPPORTUNITY

TITLE: DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

OBJECTIVE: PRODUCTION OF 15 SYSTEMS

TYPE: FFP, MULTI-YEAR (3)

STATUS: RFP AVAILABLE IN 4QFY93

SCHEDULE: DELIVER 5 SYSTEMS PER YEAR IN FY95-97

APPROX. VALUE: $20M - $23M

POC TELEPHONE: MARK HAINSEY, (703) 355-2734

CONTRACT OPPORTUNITY

TITLE: DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

OBJECTIVE: P3I BLOCK I

TYPE: CPFF

STATUS: RFP AVAILABLE IN 2QFY93

SCHEDULE: TWO YEAR EFFORT, 4QFY93 THRU 4QFY95

APPROX. VALUE: $15M - $18M

POC TELEPHONE: MARK HAINSEY, (703) 355-2734

APBI-159 18Mar92

DIGITAL TOPOGRAPHIC SUPPORT SYSTEM

SUMMARY

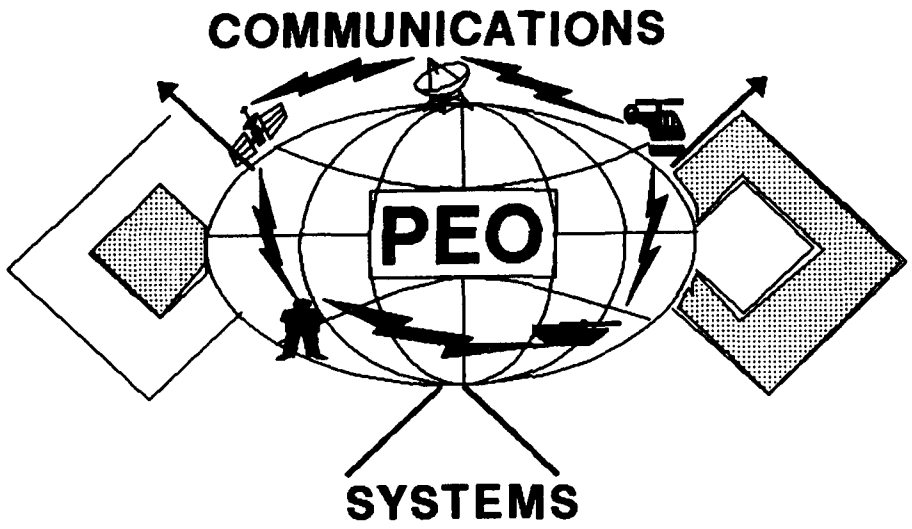
- THE BASELINE PROGRAM IS NEARLY COMPLETED.
- LRIP OPTION FOR 7 SYSTEMS HAS BEEN AWARDED.
- ADDITIONAL SYSTEMS (15) WILL BE COMPETED.
- THREE BLOCKS OF P3I WILL BE COMPETED.

NOTES

PEO COMMUNICATIONS SYSTEMS

ADVANCE PLANNING BRIEFING FOR INDUSTRY

(APBI)



JOHN BENNER

CHIEF, SYSTEMS ENGINEERING OFFICE

PEO COMMUNICATIONS SYSTEMS

632502N

POINT PAPER

SUBJECT: Frequency Hopping Multiplexer (FH MUX)

OBJECTIVE: Provide information to industry on contract opportunities for FH MUX

FACTS: FH MUX is currently in engineering development. The program will proceed through a LRIP phase with the developer. Plans are currently for a competitive contract award for Full Scale Production.

The FH MUX is a critical piece of equipment for the Army that will provide coupling for the SINCGARS Frequency Hopping Radio, where two or more radios are co-located. The FH MUX provides the capability to deal with frequency collisions by assigning priorities to each of the four channels of the FH MUX.

The FH MUX will also reduce the command post antenna signature since the output of the device feeds only one antenna rather than the possibility of up to the four antennas associated with each radio.

BRIEFER: Mr. John T. Benner, Chief Systems Engineering Office
PEO COMM SYS, SFAE-CM-SE, (908) 532-0180

Action Officer
Richard M. Colangelo
PEO COMM SYS OPNS OFC
SFAE-CM-OP
(908) 544-3176

SFAE-CM-SE 30 MAR 92

POINT PAPER

SUBJECT: Quick Erect Antenna Mast (QEAM)

OBJECTIVE: Provide information to industry on contract opportunities for (QEAM)

FACTS: The version of the (QEAM) being offered to industry is the 10 Meter Mast. This is a member of a family of Quick Erect Antenna Masts. The family (once completed) will provide standardization throughout the Army for Antenna Mast for multiple application.

This mast will be utilized for many applications including the Standard Integrated Command Post Shelter (SICPS) being utilized for the Army Tactical Command and Control System (ATCCS).

The requirements for this mast lend themselves for an NDI type procurement.

BRIEFER: Mr. John T. Benner, Chief Systems Engineering Office
PEO COMM SYS, SFAE-CM-SE, (908) 532-0180

Action Officer
Richard M. Colangelo
PEO COMM SYS OPNS OFC
SFAE-CM-OP
(908) 544-3176

COMMUNICATIONS PEO SYSTEMS

BRIEFING OUTLINE

- FREQUENCY HOPPING MULTIPLEXER (FH MUX)
- QUICK ERECT ANTENNA MAST (QEAM)

COMMUNICATIONS

PEO

SYSTEMS

FH MUX

- DEFINITION
  - EQUIPMENT IS DESIGNED TO ACCEPT UP TO FOUR (4) SINCGARS OR VRC-12 SERIES RADIOS AND MULTIPLEX THEIR SIGNAL OUTPUT OVER ONE ANTENNA
- OBJECTIVES
  - TO REDUCE CO-SITE/MUTUAL INTERFERENCE IN COMMAND POSTS
  - TO REDUCE ANTENNA SIGNATURE IN COMMAND POSTS

COMMUNICATIONS PEO SYSTEMS

FH MUX

- KEY OPERATIONAL CAPABILITIES/PAY OFFS
  - PROVIDES MULTIPLEXING CAPABILITY TO FREQ HOPPING OR SINGLE CHANNEL VHF-FM RADIOS
  - COUPLES FOUR (4) RADIOS TO A SINGLE ANTENNA
  - REDUCES ANTENNA VISUAL SIGNATURE
  - CONTROLS COSITE INTERFERENCE

COMMUNICATIONS PEO SYSTEMS

FH MUX

- PROGRAM STATUS
  - CURRENTLY IN ENGINEERING DEVELOPMENT
- SHORT TERM OBJECTIVES
  - FY93 - CONTINUE DEVELOPMENT
  - FY94 - COMPLETE DEVELOPMENT
- LONG TERM OBJECTIVES
  - FY95 - AND BEYOND
    - AWARD PRODUCTION CONTRACT
      - LRIP - SOLE SOURCE
      - FSP - COMPETITIVE

COMMUNICATIONS

PEO

SYSTEMS

FH MUX FUNDING

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
R&D	3.2	2.1	1.9	3.9	—	—	—
OPA			*	*	*	*	*

* FUNDING FOR PRODUCTION NOT CURRENTLY FUNDED IN PRESIDENT'S BUDGET (FY92-97). FUNDING BEING PLACED IN FH MUX LINE DURING POM (94-99) AT HQDA. POM FUNDING NOT RELEASABLE AT THIS TIME.

032903J

COMMUNICATIONS PEO SYSTEMS

CONTRACT OPPORTUNITY

TITLE:	FH MUX
OBJECTIVE:	FULL SCALE PRODUCTION
TYPE:	• COMPETITIVE • BUILD TO PRINT
STATUS/SCHEDULE:	AWARD DATE TO BE DETERMINED BASED UPON OUTCOME OF POM (94-99)
APPROX VALUE:	DEPENDENT UPON POM FUNDING
POC TELEPHONE:	MR. JOHN T. BENNER, (908) 532-0180

COMMUNICATIONS PEO SYSTEMS

QEAM

- DEFINITION
  - TEN (10) METER MAST CAPABLE OF BEING ERECTED QUICKLY. TO BE USED FOR COMMAND POSTS AND STANDARD INTEGRATED COMMAND POST SHELTER (SICPS). PART OF A FAMILY OF QUICK ERECT MASTS

- OBJECTIVES
  - REPLACE AGING MASTS
  - SATISFY NEW REQUIREMENTS FOR ADDITIONAL MASTS
  - STANDARDIZE MASTS WITHIN THE ARMY

COMMUNICATIONS

PEO

SYSTEMS

QEAM

- KEY OPERATIONAL CAPABILITIES/PAY OFFS
  - PROVIDES RAPID DEPLOYMENT OF TACTICAL COMM
  - ENHANCES ORGANIZATION SURVIVABILITY
  - MAST HEIGHT - 10 METERS
  - INTENDED TO BE STANDARD FOR ARMY TACTICAL COMM
  - ERECTION TIME
    - 7½ MIN FOR 2 PEOPLE
    - 15 MIN FOR 1 PERSON
  - WEIGHT
    - MAST ONLY - 42 lbs
    - TOTAL (BAG, GUYS, ETC) - 100 lbs

032M02F

COMMUNICATIONS PEO SYSTEMS

QEAM

- PROGRAM STATUS
  - SOLICITATION (PRODUCTION) SCHEDULED APR/MAY 92
- SHORT TERM OBJECTIVES
  - FY92/93 - BASIC CONTRACT AWARD
    FIRST ARTICLE TESTS
    FOT&E
  - FY94 - FIRST OPTION AWARD
- LONG TERM OBJECTIVES
  - FY95 AND BEYOND - CONTINUE OPTION AWARDS

032502M

COMMUNICATIONS PEO SYSTEMS

QEAM FUNDING

FY92	FY93	FY 94	-	FY99
2.3	-	*		*

* PRODUCTION FUNDING BEING PLACED IN THE QEAM LINE DURING POM 94-99 ACTIVITY AT HQDA. ACTUAL FUNDING NOT RELEASABLE AT THIS TIME.

COMMUNICATIONS

PEO

SYSTEMS

CONTRACT OPPORTUNITY

TITLE:	QEAM
OBJECTIVE:	FULL SCALE PRODUCTION
TYPE:	• COMPETITIVE NDI AWARD • BASE YEAR WITH PRICED OPTIONS • BASE YEAR QUANTITY - 50 MASTS
STATUS:	RFP RELEASE APR/MAY 92
SCHEDULE:	CONTRACT AWARD FY 92/93
APPROX VALUE:	BASED UPON POM FUNDING
POC TELEPHONE:	MR. OMAR SICKLES, (908) 532-3525

NOTES

PRECISION LIGHTWEIGHT GPS RECEIVER (PLGR)

COL BRUCE D. SWEENY

PROJECT MANAGER

GLOBAL POSITIONING SYSTEM

UNCLASSIFIED

SFAE-CM-GPS 31 March 92

POINT PAPER

SUBJECT: Advance Planning Briefing for Industry (APBI)

PURPOSE: Global Positioning System (GPS) Acquisition

FACTS:

- o Project Manager Global Positioning System (PM GPS) Organization.
  - o Reports to Program Executive Office - Communications Systems.
  - o PM GPS is Army participant to GPS Joint Program Office (JPO) located at Space Systems Division, Los Angeles Air Force Base.
  - o GPS procurements are thru GPS JPO in LA.
- o Current GPS procurement orientation.
  - o Non Development Item (NDI).
  - o Take advantage of commercial market place.
- o Precision Lightweight GPS Receiver (PLGR).
  - o Hand held.
  - o Precise position, velocity, and time.
  - o Light weight.
  - o Unclassified when keyed.
  - o Night Vision Goggle compatible.
  - o FY 92 Solicitation.
  - o FY 93 contract award.

BRIEFER: BRUCE D. SWEENY, COL. SC, SFAE-CM-GPS, X26301.

RELEASED BY:
BRUCE D. SWEENY
COL. SC
Project Manager, GPS
X26091

ACTION OFFICER:
RONALD A. FIALA
GM 15
Deputy PM, GPS
X26061

PLGR

BRIEFING OUTLINE

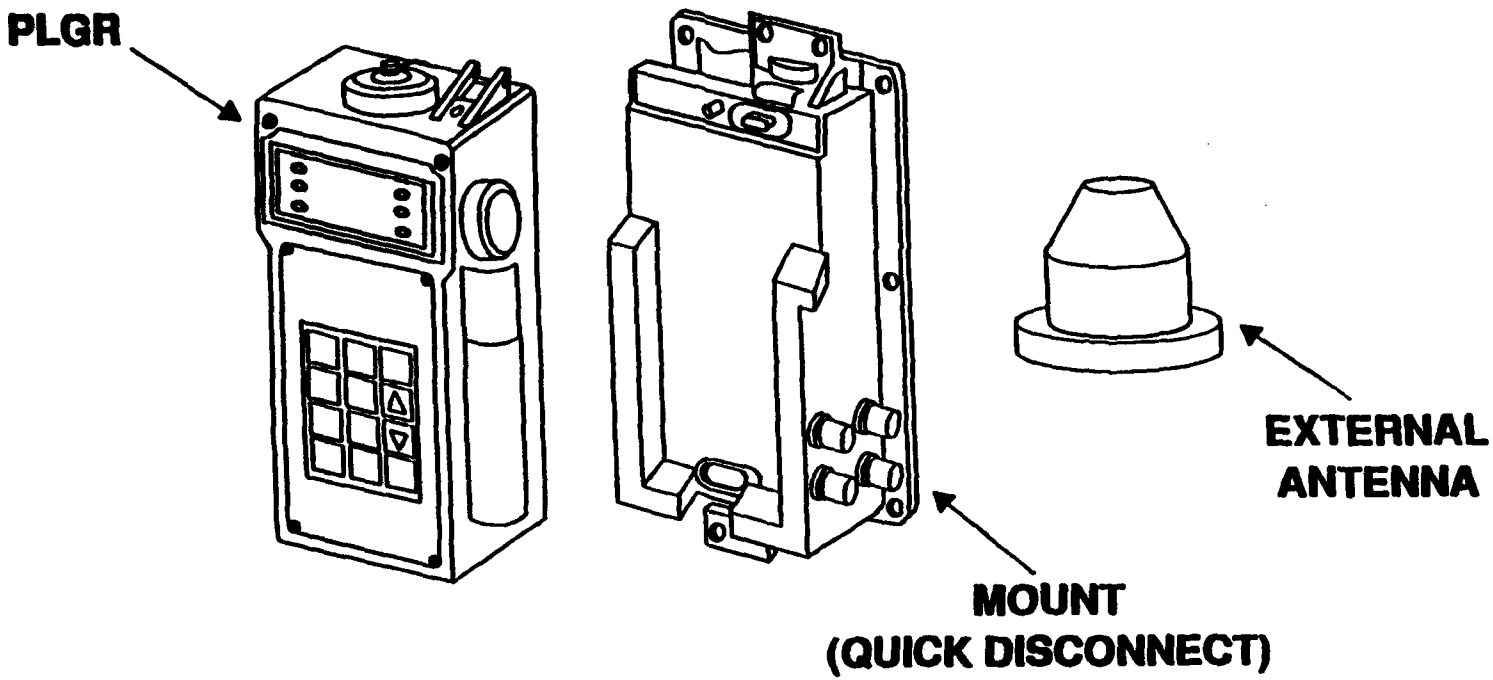
- DESCRIPTION
- OBJECTIVES
- KEY OPERATIONAL CAPABILITIES
- USER REQUIREMENTS/DEFICIENCIES
- NEEDED TECHNOLOGIES
- PAYOFFS
- PROGRAM STATUS

PLGR

BRIEFING OUTLINE (CONT'D)

- SHORT/LONG TERM OBJECTIVES
- FUNDING PROFILE
- CONTRACT OPPORTUNITY
- SUMMARY

PLGR
DESCRIPTION



ARTISTS CONCEPT (SPECIFIC FORM WILL BE VENDOR UNIQUE)

NOT SHOWN: VEHICLE POWER CABLE

PLGR

OBJECTIVES

- PROVIDE THE FIELD SOLDIER WITH
  - PRECISE POS/NAV CAPABILITY
  - WORLDWIDE COMMON GRID
  - ADVERSE WEATHER
  - DAY & NIGHT
  - EW ENVIRONMENT

PLGR

OBJECTIVES CONT'D

- BASIS OF ISSUE:

  1 PER COMBAT VEHICLE
  1 PER 2 TACTICAL VEHICLES
  1 PER FIRING PLATFORM
  1 PER IEW PLATFORM
  1 PER SQUAD & PLATOON LEADER

PLGR

KEY OPERATIONAL CAPABILITIES

- PERFORMANCE SPECIFICATION - SS-M/V-500 REVISION B, 28 JAN 92
- HAND HELD, SELF CONTAINED OPERATION
- POSITION ACCURACY: 16 m 3-D SEP
- VELOCITY ACCURACY: +/- 0.2 m/s
- TIME TRANSFER ACCURACY: 100 ns

PLGR

KEY OPERATIONAL CAPABILITIES (CONT'D)

- PRECISE POSITIONING SERVICE (PPS):
  - SELECTIVE AVAILABILITY (SA)
  - ANTI-SPOOF (A-S)
- UNCLASSIFIED WHEN KEYED
- SIZE:
  - 4 LBS WITH BATTERIES
  - 120 CU IN; STAND ALONE, HAND-HELD CONFIGURATION
- DISPLAY-NIGHT VISION GOGGLES (NVG) COMPATIBLE

PLGR

USER REQUIREMENTS/DEFICIENCIES

"MAP, COMPASS & SURVEY EQUIPMENT IN USE WILL NOT PROVIDE THE LOCATION AND NAVIGATION INFORMATION TO THE DEGREE OF ACCURACY AND RESPONSIVENESS REQUIRED TO SUPPORT THE COMBAT USER OF FIELDED OR EMERGING TACTICAL SYSTEMS."

PLGR
NEEDED TECHNOLOGIES

- ALL TECHNOLOGIES EXIST:
  - COMMERCIAL, HAND HELD, COARSE ACQUISITION (CA) - CODE
  - MILITARY ACCURACY, P/Y-CODE SET
  - PPS SECURITY MODULES (PPS/SM)
  - AUXILLIARY OUTPUT CHIPS (AOC)
- ENG, PACKAGING, QUAL/TEST NEEDED

PLGR
PAYOFFS

- SOLDIER, VEHICLE NAVIGATION ACCURACY & EFFICIENCY
- FEWER ROUNDS, MISSILES TO ACHIEVE KILL
- FUEL, AMMUNITION & TIME SAVED TO ACCOMPLISH MISSION
- SAVE OVER $20K PER RECEIVER GOING TO COMMERCIAL VS MILSPEC DESIGN

PLGR

PROGRAM STATUS

- ACQUISITION STRATEGY APPROVED
  - 2 STEP INVITATION FOR BID (IFB) WITH BID SAMPLES
- GLOBAL POSITIONING SYSTEM JOINT PROGRAM OFFICE (GPS JPO) SOLICITATION FOR TECHNICAL PROPOSALS AND BID SAMPLES

PLGR

PROGRAM STATUS (CONTINUED)

- FOLLOW ON NONDEVELOPMENTAL ITEM REPROCUREMENT OF AN/PSN-8 FUNC REQUIREMENT
- TYPE CLASSIFICATION GENERIC APPROVED DEC '91
- FUNDED THROUGH POM YEARS

PLGR

SHORT TERM OBJECTIVES (FY93)

- NOV 92 COMPLETE BID SAMPLE TEST & TECH EVALUATION
- DEC 92 STEP 2 SOLICITATION AND BID OPENING
- JAN 93 PRODUCTION CONTRACT AWARD
- MAR-SEP 93 FIRST ARTICLE TESTING
- JUL 93 INITIAL DELIVERY
- JUL 93 START CHARACTERIZATION TESTING
- AUG 93 START INITIAL OPERATIONAL TEST AND EVALUATION (IOT&E)

PLGR

LONG-TERM OBJECTIVES

- NOV 93 COMPLETE CHARACTERIZATION AND QOTE (IOT&E)
- JAN 94 MS III; AWARD 1ST PRODUCTION OPTION; TC STANDARD
- JUN 94 COMPLETE DELIVERY OF INITIAL CONTRACT QUANTITY
- JAN 95-97 AWARD 2D-4TH OPTIONS

PLGR
FUNDING PROFILE

	RDTE $M	PROC* $M (TOTAL/ARMY)	ESTIMATED QTY* (X1000) (TOTAL/ARMY)
FY 93	NONE	36/18	5.1/2.4
FY 94	NONE	45/14	4.9/1.4
FY 95	NONE	35/15	3.9/1.6
FY 96	NONE	25/12	2.8/1.3
FY 97	NONE	14/13	1.6/1.4
TOTAL:	NONE	155/72	18.2/8.1

*ORDER OF MAGNITUDE BASED ON CURRENT PRESIDENTS BUDGET (ARMY PORTION IS PLANNED TO INCREASE WITH NEW POM)

PLGR
CONTRACT OPPORTUNITY

TITLE: PRECISION LIGHTWEIGHT GPS RECEIVER

OBJECTIVE: PRODUCTION AND CONTRACTOR LOGISTICS SUPPORT

TYPE: NDI; FIRM, FIXED PRICE (FFP); INDEFINITE QUANTITY; BASE YEAR 4 OPTION YEARS

STATUS: IN SOURCE SELECTION (2 STEP IFB WITH BID SAMPLES)

PLGR

CONTRACT OPPORTUNITY (CONT'D)

SCHEDULE: SEP 92 STEP 1 BIDS CLOSE;
DEC 92 STEP 2 BIDS CLOSE;
JAN 93 INITIAL AWARD; JAN 94-97
OPTION AWARDS

APPROX. VALUE: $155M

POC TELEPHONE: CAPT MUN KWON (USAF)
(310) 363-6509
MS JOY McGRATH
(310) 363-0800

PLGR
SUMMARY

- NDI PRODUCTION OF UP TO 60,000 HANDHELD GPS RECEIVERS
- FULL MILITARY ACCURACY; COMMERCIAL DESIGN & SUPPORT
- PRIMARY APPLICATION-FOOT SOLDIER, COMBAT VEHICLES
- INTEGRATE AND PACKAGE COMMERCIALLY AVAILABLE COMPONENTS

PLGR

SUMMARY CONT'D

- FUNDED FY 93-97 FOR 17,000 - PLUS SETS
- JAN 93 AWARD; JUL 93 INITIAL DELIVERIES
- SOLICIATION FOR BID SAMPLES CLOSES SEP 92
- JOINT PROGRAM MANAGED AT GPS JPO, LA AFB

NOTES

EMUT PROGRAMS

COLONEL THOMAS J. STAUFFACHER
PROJECT MANAGER
SATELLITE COMMUNICATIONS

UNCLASSIFIED

SFAE-CM-SC-TT

17 MAR 1992

MEMORANDUM FOR AMSEL-PE-OD (M. Aufseeser)

SUBJECT: Advanced Planning Brief for Industry

1. The subject briefing charts are herewith provided for your review.

2. PM TACSAT POC is Mr. Robert Kirzow, X20994.

MICHAEL R. MAZZUCCHI
LTC, SC
PM, TACSAT

SFAE-CM-SC 20 Mar 92

POINT PAPER

SUBJECT: PM SATCOM's Enhanced Manpack UHF Terminal (EMUT) Programs

PURPOSE: To provide DOD and other Government users UHF satellite terminals which contain new COMSEC and channel utilization features.

FACTS:

* The EMUT programs are driven by two Joint Staff mandates to provide military satellite users with 5KHZ bandwidth (narrowband) COMSEC and Demand Assignment Multiple Access (DAMA) channel utilization protocol.

* DAMA interoperability documents for UHF systems have existed as Technical Interface Specifications since before 1987.

* The Army EMUT programs are complemented by programs in the Air Force and Navy around the DAMA waveforms. Developing Army systems are intended to be interoperable with other service programs.

* The Army program is being executed around two major phases, phase one is the enhancement or replacement of commercial/NDI UHF terminals. Phase two is the enhancement of the militarized terminal the AN/PSC-3, AN/VSC-7. There is a third EMUT phase, but it is conceptual and deals with future requirements at this time.

* This briefing describes both major EMUT programs, which have been announced in the Commerce Business Daily for industry. It provides the descriptions and programmatic thrusts of both of these phases. The briefing also provides general timelines of industry involvement and current funding ranges.

BRIEFER: COL Thomas J. Stauffacher, Project Manager Satellite Communications. (908) 532-5305

RELEASED BY:
Robert Kirzow
GM-14/DPM
Tactical Satellite Terminals
X20994/6

ACTION OFFICER:
Robert Wilson
GS-13/PL
Tactical Satellite Terminals
X23011

EMUT PROGRAM
BRIEFING OUTLINE

- DEFINITION
- OBJECTIVES
- KEY OPERATIONAL CAPABILITIES
- USER REQUIREMENTS/DEFICIENCIES
- NEEDED TECHNOLOGIES
- PAYOFFS

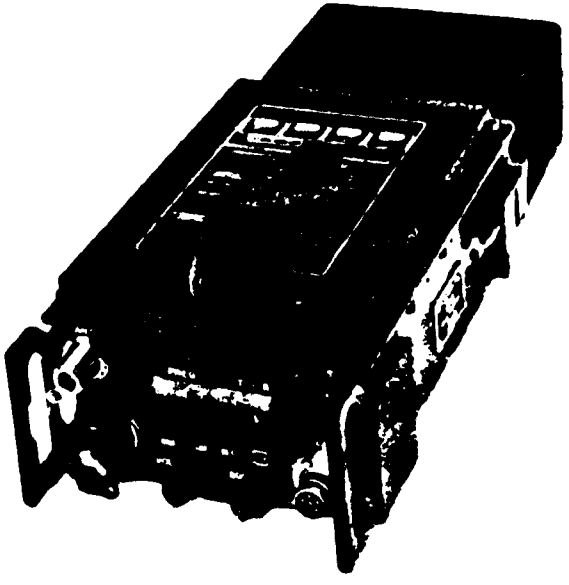
EMUT PROGRAM
BRIEFING OUTLINE (CONT)

- PROGRAM STATUS
- SHORT TERM OBJECTIVES
- LONG TERM OBJECTIVES
- FUNDING PROFILE
- CONTRACT OPPORTUNITIES
- SUMMARY

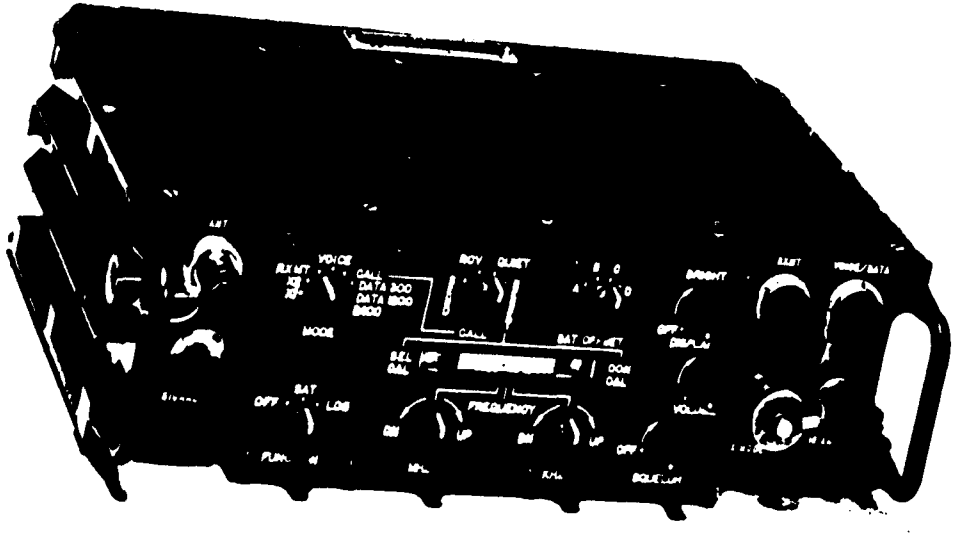
EMUT PROGRAMS

MULTIPLE PROGRAMS TO INCORPORATE NARROWBAND COMSEC AND DEMAND ASSIGNMENT MULTIPLE ACCESS (DAMA) FEATURES, IN UHF SATCOM MANPACK RADIOS

EMUT MANPACK PROGRAM



LST-5C Radio Set



AN/PSC-3

EMUT MANPACK PROGRAM
OBJECTIVES BY PHASE

- PHASE I, PROCURE AND FIELD THE AN/PSC-5 THROUGH LST-5 UPGRADE OR PURCHASE OF NEW NDI TERMINAL
- PHASE II, UPGRADE EXISTING AN/PSC-3 RADIOS TO INCLUDE COMSEC AND DAMA FEATURES
- PHASE III, PROCURE NEXT GENERATION SYSTEM, REQUIREMENTS TBD

EMUT PROGRAMS
KEY OPERATIONAL CAPABILITIES

- 5 & 25 KHZ BANDWIDTH DAMA TO MILITARY INTEROPERABILITY STDS (MIL-STD-188/181,82,83)
- 5 & 25 KHZ BANDWIDTH EMBEDDED COMSEC; VINSON, ANDVT (KYV-5), AND KG-84A COMPATIBILITY
- TREMENDOUS INCREASE IN SATELLITE CHANNEL UTILIZATION AND USER ACCESS

EMUT PROGRAMS
USER REQUIREMENTS/DEFICIENCIES

- INCREASE IN UHF SATELLITE ACCESS
- REDUCTION OF ANCILLARY COMSEC BOXES
- RUGGEDIZED AND FULL MILITARIZED USES
- REPLACE EARLY GENERATION HARDWARE AND PROVIDE MORE FOR NEW USERS

EMUT PROGRAMS
NEEDED TECHNOLOGIES

- INTEGRATION OF NSA APPROVED COMSEC DEVICES FOR NARROW AND WIDEBAND OPERATIONS

- INCORPORATION OF 5 & 25 KHZ DAMA WAVEFORMS

EMUT PROGRAMS
PAYOFFS

- CHANNEL ACCESS INCREASE IN ORDERS OF MAGNITUDE
- REDUCTION OF EXTERNAL CRYPTO BOXES
- JOINT SERVICE INTEROPERABILITY THROUGH NEW MIL-STD WAVEFORMS

EMUT PROGRAMS
PROGRAM STATUS BY PHASE

PHASE I: NDI CBD ANNOUNCEMENT, 7 OCT 91
RFP TO INDUSTRY, 4QFY92
PRODUCTION AWARD, 1QFY94

PHASE II: R&D CBD ANNOUNCEMENT, 15 JAN 92
RFP TO INDUSTRY, AUG 92
R&D AWARD, FOLLOWED BY
FULL COMPETITION PRODUCTION CONTRACT

PHASE III: CONCEPTUAL AT THIS TIME
USERS DEVELOPING REQUIREMENTS

EMUT PROGRAMS
SHORT TERM OBJECTIVES (FY93)

PHASE I: BID SAMPLE TESTING OF CONTRACTOR NDI CANDIDATE SYSTEMS, FOLLOWED BY FORMAL SOURCE SELECTION

PHASE II: R&D AWARD TO UPDATE GOVERNMENT OWNED DRAWINGS AND DEVELOP PROTOTYPES

PHASE III: NONE, NO USER REQUIREMENTS DEVELOPED

EMUT PROGRAMS
LONG-TERM OBJECTIVES

- PHASE I, PRODUCTION AWARD 1QFY94
- PHASE II, COMPLETE R&D TESTING, INITIATE PRODUCTION RFP FIELDING SYSTEMS
- PHASE III, DEFINITION OF REQUIREMENTS

EMUT PROGRAMS
FUNDING PROFILE

	RDTE $M	PROC $M	OMA $M
FY93	5-10		
FY94	1-5	20-55	1-2
FY 95		20-55	1-2
FY 96		20-55	1-2
FY97+		15-40	1-2
TOTAL:	6-15	75-205	4-8

CONTRACT OPPORTUNITY

TITLE: EMUT PHASE I (AN/PSC-5)

OBJECTIVE: EMBED COMSEC AND DAMA IN COMMERCIAL UHF SATCOM TERMINAL

TYPE: NDI PRODUCTION AWARD

STATUS: SPECIFICATION COMPLETED, RFP IN DEVELOPMENT

SCHEDULE: RFP JUL/AUG 92, BID SAMPLES JAN 93

APPROX. VALUE: $20M ARMY TO $100M + JOINT USERS

POC TELEPHONE: JULIANNE MAGEE, (908) 532-2924

CONTRACT OPPORTUNITY

TITLE: EMUT PHASE II (AN/PSC-3 & VSC-7)

OBJECTIVE: EMBED COMSEC AND DAMA IN MILITARIZED UHF SATCOM TERMINAL

TYPE: COST PLUS AWARD FEE

STATUS: SPECIFICATION COMPLETE, RFP IN DEVELOPMENT

SCHEDULE: RFP AUG 92, AWARD 2QFY93

APPROX. VALUE: $10M - $15M

POC TELEPHONE: JULIANNE MAGEE, (908) 532-2924

SUMMARY
EMUT PROGRAMS

- THE EMUT PROGRAMS ARE INTENDED TO PROVIDE THE SERVICES WITH RADIOS CONTAINING DAMA AND COMSEC FEATURES.
- THE EMUT PROGRAMS DESCRIBED HERE ARE INTENDED TO SATISFY GROWING SERVICE NEEDS

NOTES

PEO IEW
ACQUISITION OPPORTUNITIES
(93-97)

EDWARD T. BAIR

CHIEF, BUSINESS MANAGEMENT DIVISION

PEO IEW

UNCLASSIFIED

BRIEFING OUTLINE

- THERMAL IDENTIFICATION DEVICE (TID)
- LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER (LLD/R)
- DRIVERS VISION ENHANCER (DVE)
- IEW FAMILY OF COMMON SENSOR SYSTEMS
  - GROUND BASE COMMON SENSOR - LIGHT (GBCS-L)
  - ADVANCED QUICKFIX (AQF)
  - GROUND BASE COMMON SENSOR - HEAVY (GBCS-H)

THERMAL IDENTIFICATION DEVICE

- PROVIDE GUNNER BLACK & WHITE BLINKING EFFECT IN THERMAL VIEWERS TO AID IN THE IDENTIFICATION OF FRIENDLY VEHICLES.

- SYSTEM PROVIDES A TEMPERATURE DELTA SUFFICIENT TO SHOW A BLACK & WHITE IMAGE REGARDLESS OF HOW THE TARGETING SYSTEM SENSITIVITY IS SET.

THERMAL IDENTIFICATION DEVICE

- HOT/COLD PANELS
- SHAFT
- LASER SENSOR
- MANUAL ON/OFF SWITCH

THERMAL IDENTIFICATION DEVICE

OBJECTIVES

- QUICK INTERIM 80% SOLUTION TO FRATRICIDE
- FIELD TO PROVIDE SOME CAPABILITY WHILE DEVELOPING TECHNIQUES & PROCEDURES
- ENABLES GUNNERS TO IDENTIFY FRIENDLY VEHICLES THROUGH THERMAL SIGHT OUT PAST MAX ENGAGEMENT RANGES
- DO NOT DEGRADE OR EXPOSE USING FORCE TO UNACCEPTABLE DANGER
- RUGGEDIZE FOR FIELDING

THERMAL IDENTIFICATION DEVICE

KEY OPERATIONAL CAPABILITIES

- PROVIDE THE GUNNER A BLACK & WHITE BLINKING EFFECT IN THERMAL VIEWER
- MANUAL OR LASER ACTIVATED
- FUTURE GROWTH:
  - EMIT AUDIO WARNING INTERNALLY
  - AUDIO RESPONSE TO TARGETING VEHICLE
- IDENTIFIED BY A THERMAL SIGHT OUT PAST MAX ENGAGEMENT RANGES
- ABLE TO TRAVERSE WOODED TERRAIN

THERMAL IDENTIFICATION DEVICE

USER REQUIREMENTS/DEFICIENCIES

- IMMEDIATE PARTIAL SOLUTION TO FRIENDLY IDENTIFICATION PROBLEM

THERMAL IDENTIFICATION DEVICE

NEEDED TECHNOLOGIES

- COMPATIBLE WITH OR INCLUDE LASER-RECEIVER

THERMAL IDENTIFICATION DEVICE

PAYOFFS

- LOW COST, READILY AVAILABLE 80% SOLUTION TO COMBAT IDENTIFICATION DEFICIENCIES
- ASSIST AIR & GROUND GUNNERS IN FRIENDLY VEHICLE IDENTIFICATION

THERMAL IDENTIFICATION DEVICE

PROGRAM STATUS

- 40 PROTOTYPES EMPLOYED WITH 24TH INFANTRY DIVISION AT NTC (DEC '91 & FEB 92)
- GENERAL OFFICER STEERING COMMITTEE (GOSC) APPROVAL FOR 300 FIELDABLE PROTOTYPES
- 5 TO BE INCLUDED IN FT. BLISS APR-MAY 92 COMBAT IDENTIFICATION TRIALS

THERMAL IDENTIFICATION DEVICE

PROGRAM STATUS (cont'd)

- GOSC DECISION TO PROCEED POST - FT. BLISS TRIALS
- OPERATIONAL REQUIREMENTS DOCUMENT (ORD) STAFFING & MILESTONE III DECISION PROJECTED 1Q FY93
- PRODUCTION AWARD 2Q FY93 TARGET

THERMAL IDENTIFICATION DEVICE

SHORT-TERM OBJECTIVES

- GOSC DECISION TO PROCEED - 3Q FY92
- RELEASE COMPETITIVE RFP - 4Q FY92
- MILESTONE III IPR - 1Q FY93
- EVALUATE PROPOSALS - 1Q FY93
- AWARD PRODUCTION CONTRACT - 2Q FY93
  - ESTIMATE 6000 UNITS TOTAL

THERMAL IDENTIFICATION DEVICE

FUNDING PROFILE

	RDTE $M	PROC $M
FY93	1-2	3-18

CONTRACT OPPORTUNITY

TITLE:	THERMAL IDENTIFICATION DEVICE
OBJECTIVE:	NDI PRODUCTION OF 1200-6000 DEVICES
TYPE:	COMPETITIVE, FFP
STATUS:	RFP RELEASE 4Q FY92
SCHEDULE:	1 YEAR PRODUCTION CONTRACT
APPROX. VALUE:	$3-18M, MINIMUM QUANTITY OF 1200 & WITH/WITHOUT GROWTH CAPABILITIES
POC TELEPHONE:	MAJ. R. BURDETTE PM NVEO, (703) 806-4275

LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER

- TARGET MARKER FOR GUIDED MUNITIONS OUT TO 5 KM WITH RANGE INDICATOR, DAY SIGHT, COMPASS/VERTICAL ANGLE MEASUREMENT & INTEGRATED THERMAL IMAGING SIGHT. INTERFACES WITH GLOBAL POSITIONING & DIGITAL MESSAGE DEVICE.

LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER

- LIGHTWEIGHT LASER TARGET DESIGNATOR
- 2ND GENERATION THERMAL SIGHT
- DIGITAL COMPASS
- GLOBAL POSITIONING SYSTEM (GPS) PORT
- DIGITAL MESSAGE DEVICE PORT
- EYESAFE LASER RANGEFINDER

LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER

OBJECTIVES

- TECHNOLOGY INTEGRATION
- RANGE TO TARGETS
- AZIMUTH & VERTICAL ANGLE TO TARGETS
- MARK TARGETS TO 5 KM
- 10X DAY SIGHT
- NIGHT SIGHT RECOGNITION TO 2 KM

LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER

KEY OPERATIONAL CAPABILITIES

- PROVIDE LIGHT FORCE FORWARD OBSERVERS' CAPABILITY TO DIRECT/MARK TARGET FOR GUIDED MUNITIONS
- MANPORTABLE TARGET MARKER
  - MARK TARGETS TO 5 KM
  - 10X DAY SIGHT
  - NIGHT SIGHT RECOGNITION TO 2 KM
- LINKS GLOBAL POSITIONING, FAR TARGET LOCATION & AUTOMATED CALL FOR FIRE

LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER

USER REQUIREMENTS/DEFICIENCIES

- A TARGET ACQUISITION/MARKING CAPABILITY FOR
  - LIGHT FORCE FIELD ARTILLERY
  - SCOUTS

LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER

NEEDED TECHNOLOGIES

- SYSTEM INTEGRATION OF:
  - GPS
  - DIGITAL MESSAGE DEVICE (DMD)
  - LASER DESIGNATOR
  - THERMAL SIGHT
  - LASER RANGEFINDER
  - COMPASS/VERTICAL ANGLE MEASUREMENT (VAM)

LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER

PAYOFFS

- GPS LIKE POS/NAV INTEGRATED WITH HAND-HELD LASER RANGEFINDER
- AUTOMATED LOCATION REPORTING TO NEXT HIGHER HQ
- CONTRIBUTE TO MAINTAINING U.S. ARMY FORCES "OWN THE NIGHT" CAPABILITY

LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER

PROGRAM STATUS

- PART OF TRADOC "OWN THE NIGHT" ASSESSMENT
- ARTILLERY SCHOOL WORKING ORD
  - 2Q FY93 APPROVAL
- MILESTONE II FIELDABLE PROTOTYPE INITIATION 2Q FY93
  - 3 YEAR PROGRAM
- MILESTONE III PRODUCTION ESTIMATED FY97

LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER

SHORT-TERM OBJECTIVES

- RELEASE COMPETITIVE RFP - 4Q FY92
- ARTILLERY SCHOOL ORD - 1Q FY93
- MILESTONE II DECISION - 1Q FY93
- COMPETITIVE NDI PROCUREMENT - 2Q FY93

LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER

LONG-TERM OBJECTIVES

- FIELD TEST PROTOTYPES (FY95-96)
- LIMITED TESTS (FY95)
- ILS/PRODUCTION PLANNING (FY96-97)
- MILESTONE III APPROVAL (FY96)
- PRODUCTION AWARD (FY97)

LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER

FUNDING PROFILE

	RDTE $M	PROC $M
FY93	5-6	-
FY94	4-5	-
FY95	1-3	-
FY96	1-2	-
FY97	-	15-30
	---	---
TOTAL	11-16	15-30

CONTRACT OPPORTUNITY

TITLE:	LIGHTWEIGHT LASER DESIGNATOR/RANGEFINDER
OBJECTIVE:	NDI INTEGRATION OF UP TO 36 DEVICES AS FIELDABLE PROTOTYPES
TYPE:	COMPETITIVE, CPAF
STATUS:	RFP RELEASE 4Q FY92
SCHEDULE:	3 YEAR PROTOTYPE DEVELOPMENT PROGRAM
APPROX. VALUE:	$11-16M RDTE MINIMUM QUANTITY OF 36
POC TELEPHONE:	JIM SUTTON PM NVEO, (703) 806-4275

DRIVERS VISION ENHANCER

- AN INFRARED VIEWING DEVICE WHICH WILL ALLOW DRIVERS OF TACTICAL WHEELED VEHICLES TO CONTINUE TRANSPORT OPERATIONS AT SPEEDS GREATER THAN POSSIBLE WITH NIGHT VISION GOGGLES DURING CONDITIONS OF DEGRADED VISIBILITY.

DRIVERS VISION ENHANCER

- SENSOR HEAD MOUNTS ON VEHICLE EXTERIOR
- CONTROL UNIT INSIDE DRIVER'S CAB

DRIVERS VISION ENHANCER

OBJECTIVES

- ALLOW FOR SAFE DRIVING WHEN GOGGLES ARE INSUFFICIENT
- PROVIDE COMPATABILITY WITH PRESENT & FUTURE TACTICAL VEHICLES (E.G., FAMILY OF MEDIUM TACTICAL VEHICLES, HEAVY EXPANDED MOBILITY TACTICAL TRUCK, PALLETIZED LOAD SYSTEM)
- VEHICLE POWERED
- UNITY MAGNIFICATION
- EXPLOIT BALANCED TECHNOLOGY INITIATIVE (BTI) & COMMERCIAL TECHNOLOGY
- REMOVABLE, PORTABLE & REPLACEABLE BY ONE SOLDIER

DRIVERS VISION ENHANCER

KEY OPERATIONAL CAPABILITIES

- THERMAL VISION ASSISTANCE FOR COMBAT SERVICE SUPPORT
- PROVIDE VISION DURING PERIODS OF DEGRADED VISIBILITY
  - SMOKE
  - FOG
  - DUST

DRIVERS VISION ENHANCER

USER REQUIREMENTS/DEFICIENCIES

- ALLOW FOR SAFE DRIVING WHEN NIGHT VISION GOGGLES DEFICIENT
- REMOVABLE, PORTABLE & REPLACEABLE BY ONE SOLDIER
- USABLE ON ALL TERRAIN WITH HOST VEHICLE'S CAPABILITY
- COMPATIBLE WITH PRESENT & FUTURE TACTICAL VEHICLES
- DESIGN FOR LOCAL HAUL, UNIT RESUPPLY & UNIT MOBILITY MISSIONS

DRIVERS VISION ENHANCER

NEEDED TECHNOLOGIES

- LOW COST THERMAL IMAGING

DRIVERS VISION ENHANCER

PAYOFFS

- PROVIDE 24 HOUR COMBAT SERVICE SUPPORT MOBILITY IN DEGRADED CONDITIONS
- SUPPLY & TRANSPORT VEHICLES REQUIRE DRIVER AIDS
- MAJOR FOCUS TO MAINTAINING U.S. ARMY "OWN THE NIGHT" CAPABILITY

DRIVERS VISION ENHANCER

PROGRAM STATUS

- PART OF TRADOC "OWN THE NIGHT" ASSESSMENT
- TRANSPORTATION SCHOOL WORKING ORD
  - 1Q FY93 APPROVAL
- MILESTONE II FIELDABLE PROTOTYPE 2Q FY93
  - 2 YEAR PROGRAM
- MILESTONE III PRODUCTION ESTIMATED FY97

DRIVERS VISION ENHANCER

SHORT-TERM OBJECTIVES

- COMPETITIVE RFP RELEASE - 4Q FY92
- TRANSPORTATION SCHOOL ORD - 2Q FY93
- MILESTONE II DECISION - 2Q FY93
- COMPETITIVE NDI PROCUREMENT (2 AWARDS) - 2Q FY93

DRIVERS VISION ENHANCER

LONG-TERM OBJECTIVES

- FIELD TEST PROTOTYPES (FY95)
- DOWN SELECT TO 1 VENDOR (FY96)
- ILS/PRODUCTION PLANNING (FY96-97)
- MILESTONE III APPROVAL (FY97)
- PRODUCTION AWARD (FY98)

DRIVERS VISION ENHANCER

FUNDING PROFILE

	RDTE $M	PROC $M
FY93	5-7	-
FY94	6-8	-
FY95	5-7	-
FY96	2-3	-
FY97	1-3	-
BEYOND	-	175-225
	---	---
TOTAL	19-28	175-225

CONTRACT OPPORTUNITY

TITLE:	DRIVERS VISION ENHANCER
OBJECTIVE:	FIELDABLE PROTOTYPE APPROACH WITH TWO AWARDS FOR UP TO 30 QUANTITY
TYPE:	COMPETITIVE, CPAF
STATUS:	RFP RELEASE 4Q FY92
SCHEDULE:	2 YEAR FIELDABLE PROTOTYPE DEVELOPMENT PROGRAM
APPROX. VALUE:	$19-28M RDTE SPREAD AMONG 2 VENDORS
POC TELEPHONE:	JIM SUTTON PM NVEO, (703) 806-4275

IEW COMMON SENSOR (GBCS-L, AQF, GBCS-H)

- A FAMILY OF TACTICAL MULTI-SENSOR PLATFORMS, UTILIZING COMMON SUBSYSTEMS IN STANDARD ARMY PLATFORMS

FLAGSHIP		PLATFORMS		COMMON SUBSYSTEMS
GBCS-L	=	HMWWV		MODULAR ESM/COMINT
AQF	=	BLACKHAWK VARIENT	+	MODULAR ECM
GBCS-H	=	BRADLEY VARIENT		TDOA/DD TARGETING
				COMMON MODULAR ELINT

IEW COMMON SENSOR (GBCS-L, AQF, GBCS-H)

- STANDARD ARMY PLATFORMS (i.e., HMWWV, BLACKHAWK & EFVS)
- TACJAM-A COMINT SUBSYSTEM
- CHALS-X GEOLOCATION SUBSYSTEM
- COMMON ELINT SUBSYSTEM
- GPS
- COMMON WORKSTATION
- SINCGARS COMBAT NET RADIO
- SELF-ERECTING ANTENNA MAST
- MISSION EQUIPMENT DATA LINK

IEW COMMON SENSOR (GBCS-L, AQF, GBCS-H)

OBJECTIVES

- FIELD A FAMILY OF TACTICAL SENSORS THAT USE COMMON SUBSYSTEMS
- PACE THREAT
- MODULAR SUBSYSTEMS
- OPEN SYSTEMS ARCHITECTURE
- "DOCTRINALLY FLEXIBLE"
- OPERATIONALLY TAILORABLE
- FULLY INTEROPERABLE
- REDUCE FORCE STRUCTURE

IEW COMMON SENSOR (GBCS-L, AQF, GBCS-H)

KEY OPERATIONAL CAPABILITIES

- UTILIZE COMMON MODULAR SENSOR SUBSYSTEMS
  - TACJAM-A
  - CHALS-X
  - HOST INTERFACE UNIT (HIU)
  - COMMON MODULAR ELINT SYSTEM
- STANDARD ARMY PLATFORMS
  - GBCS-L - HMWWV WITH UNDER THE HOOD POWER
  - AQF - BLACKHAWK VARIENT
  - GBCS-H - BRADLEY VARIENT/STANDARD WITH COMMAND & CONTROL VEHICLE (C2V)

IEW COMMON SENSOR (GBCS-L, AQF, GBCS-H)

KEY OPERATIONAL CAPABILITIES (cont'd)

- COMINT & COMM JAMMING OF CONVENTIONAL & FREQUENCY HOPPING SIGNALS
- ELINT OF MODERN MODULATIONS

IEW COMMON SENSOR (GBCS-L, AQF, GBCS-H)

PAYOFFS

- FAMILY OF TACTICAL SENSORS THAT USE COMMON SUBSYSTEMS
- PROVIDE QUALITY TARGETING DATA
- REDUCES FORCE STRUCTURE DEMANDS

IEW COMMON SENSOR (GBCS-L, AQF, GBCS-H)

PROGRAM STATUS

- E&MD INTEGRATION CONTRACT COMPETITIVELY AWARDED
  - 9 SYSTEMS/3 OF EACH
- TESTING 4Q FY93 - 2Q FY94
- MILESTONE III 1Q FY95
- PRODUCTION RFP RELEASE 1Q FY94
  - AWARD 1Q FY95
  - 105 SYSTEMS TOTAL

IEW COMMON SENSOR (GBCS-L, AQF, GBCS-H)

SHORT-TERM OBJECTIVES

- DELIVER PLATFORMS TO E&MD INTEGRATOR
- DELIVER TACJAM-A & CHALS-X E&MD SUBSYSTEMS TO INTEGRATOR
- COMPLETE BUILD OF ELINT SUBSYSTEM
- INSTALL UPGRADED ENGINE (T701C) IN AQF PLATFORM
- COMPLETE INITIAL SYSTEMS INTEGRATION BUILDS

IEW COMMON SENSOR (GBCS-L, AQF, GBCS-H)

LONG-TERM OBJECTIVES

- CONTINUE SYSTEMS INTEGRATION BUILD/DELIVERIES
- CONDUCT USER TEST (FY94)
- SPECIAL IPR FOR URGENT FIELDING TO SUPPORT 82ND AIRBORNE (FY94)
  - COMINT ONLY
- PRODUCTION RFP (FY94)
- PRODUCTION AWARD (FY95)
- IOC FY97
  - GBCS-L FY98

IEW COMMON SENSOR (GBCS-L, AQF, GBCS-H)

FUNDING PROFILE

	RDTE $M	PROC $M
FY93	60-80	1
FY94	80-100	60-70
FY95	60-80	110-125
FY96	50-70	100-120
FY97	35-50	160-180
BEYOND	90-120	390-425
	---	---
TOTAL	375-500	820-920

INCLUDES TOTAL SYSTEMS FUNDING. NOT JUST INTEGRATION

CONTRACT OPPORTUNITY

TITLE:	IEW COMMON SENSOR INTEGRATION (GBCS-L/AQF/GBCS-H)
OBJECTIVE:	INTEGRATE A FAMILY OF TACTICAL SENSORS USING COMMON SUBSYSTEMS
TYPE:	COMPETITIVE, FP
STATUS:	RFP RELEASE 1Q FY94
SCHEDULE:	BASIC PLUS 4 OPTION YEARS (ESTIMATE)
APPROX. VALUE:	$65-90M PRODUCTION
POC TELEPHONE:	TOMMY HURT PM SW, (703) 349-5212

NOTES

SESSION IV

STRATEGIC & SUSTAINING BASE ACQUISITION OPPORTUNITIES

MODERATOR

BG JOHN M. WATKINS
PROGRAM MANAGER
ARMY INFORMATION SYSTEMS AND
COMMANDING GENERAL
US ARMY INFORMATION SYSTEMS
ACTIVITY

LIFE CYCLE SUPPORT FOR AT&T/GTE ELECTRONIC DIGITAL SWITCHED SYSTEMS

MR. THOMAS J. MICHELLI
DEPUTY PM AIS,
DEPUTY ISMA

UNCLASSIFIED

POINT PAPER

Life Cycle Support Contract for
AT&T/GTE Electronic Digital Switched Systems

Summary: This is a requirement to provide comprehensive logistics support for AT&T and GTE Electronic Digital Switched Systems worldwide.

Facts: This contract will be subject to limited competition due to some specific make and model requirements. Issuance of Draft Request for Proposal is projected for May 92.

Briefer: Mr. Thomas J. Michelli, Deputy PM AIS/Deputy USAISMA, ASQM-D, 908-532-7960

POC: Mr. Eric Swenson
Chief, Systems Management Division
Logistics Directorate
ASQM-LGS
PM AIS/ISMA
Fort Monmouth, NJ 07703-5606
908-532-7976

BRIEFING OUTLINE

- PROJECT DEFINITION
- USER REQUIREMENTS
- ACQUISITION STRATEGY
- FUNDING PROFILE
- CONTRACT OPPORTUNITY

LIFE CYCLE SUPPORT FOR AT&T/GTE ELECTRONIC DIGITAL SWITCHED SYSTEMS

PROJECT DEFINITION:

PROVIDE MAINTENANCE FOR APPROXIMATELY 75 AT&T/GTE SWITCHES LOCATED THROUGHOUT THE WORLD.

LIFE CYCLE SUPPORT FOR AT&T/GTE ELECTRONIC DIGITAL SWITCHED SYSTEMS

USER REQUIREMENTS:

- REPAIR AND RETURN
- TRAINING
- REMOTE DIAGNOSTIC/EMERGENCY TECHNICAL ASSISTANCE
- FIELD SERVICE SUPPORT

LIFE CYCLE SUPPORT FOR AT&T/GTE ELECTRONIC DIGITAL SWITCHED SYSTEMS

USER REQUIREMENTS (CONTINUED):

- SOFTWARE/HARDWARE/TECHNICAL DOCUMENTATION UPGRADES
- SPARE PARTS REPLENISHMENT

LIFE CYCLE SUPPORT FOR AT&T/GTE ELECTRONIC DIGITAL SWITCHED SYSTEMS

ACQUISITION STRATEGY:

- LIMITED COMPETITION
  - SPECIFIC MAKE/MODEL SPECIFICATIONS
- MULTIPLE YEARS
- CONTRACT STRUCTURED TO PROVIDE HIGH DEGREE OF FLEXIBILITY IN SUPPORT REQUIREMENT OPTION
- O&M COMMANDS' ABILITY TO SELECT ONLY THOSE SERVICES REQUIRED TO SATISFY THE SUPPORT REQUIREMENTS FOR EACH SITE

LIFE CYCLE SUPPORT FOR AT&T/GTE ELECTRONIC DIGITAL SWITCHED SYSTEMS

ACQUISITION STRATEGY (CONTINUED):

- O&M COMMANDS WILL CENTRALLY MANAGE THE CONTRACT

LIFE CYCLE SUPPORT FOR AT&T/GTE
ELECTRONIC DIGITAL SWITCHED SYSTEMS

FUNDING PROFILE

OMA $M

FY 93	
FY 94	O&M COMMANDS WILL
FY 95	ESTABLISH COMMAND
FY 96	BUDGET & FUNDING REQUIREMENTS
ETC.	

CONTRACT OPPORTUNITY

TITLE: LIFE CYCLE SUPPORT FOR AT&T/GTE ELECTRONIC DIGITIAL SWITCHED SYSTEMS

OBJECTIVE: PROVIDE MAINTENANCE FOR APPROX. 75 SWITCHES AT WORLDWIDE LOCATIONS

TYPE: IDIQ CONTRACT - FFP/T&M

STATUS: DFRP RELEASE: APPROX MAY 92
ONE YEAR W/FOUR ONE YEAR OPTIONS

SCHEDULE: ANTICIPATED AWARD - 2ND QTR FY93

APPROX. VALUE: $15-30 MILLION

POC TELEPHONE:MR. ERIC SWENSON, 908-532-7976

NOTES

PENTAGON RENOVATION PROGRAM

MR. THOMAS J. MICHELLI
DEPUTY PM AIS,
DEPUTY ISMA

UNCLASSIFIED

POINT PAPER

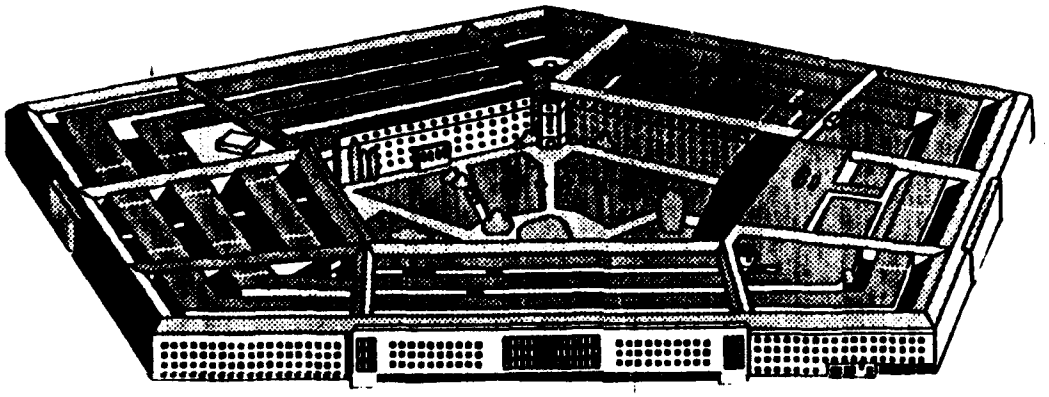
Pentagon Renovation Program

Summary: Program objectives are to replace/upgrade all information and telecommunications systems, while assuring continuity of operation for critical command and control facilities; maintaining a high caliber of services; and preventing info systems costs from escalating.

Facts: This will be a 10-year effort, managed by OSD, with U.S. Army Information Systems Command as the lead MILDEP of information systems.

Briefer: Mr. Thomas J. Michelli, Deputy PM AIS/Deputy USAISMA, ASQM-D, 908-532-7960

POC: Mr. Fred Budd
Chief, Pentagon Information
Management & Telecommunications
Renovation Office
ASQM-PR-Pentagon
Washington, DC
703-697-4909



PENTAGON RENOVATION PROGRAM

PENTAGON RENOVATION PROGRAM
BRIEFING OUTLINE

- DEFINITION
- OBJECTIVES
- KEY OPERATIONAL CAPABILITIES
- USER REQUIREMENTS/DEFICIENCIES
- NEEDED TECHNOLOGIES
- PAYOFFS

PENTAGON RENOVATION PROGRAM
BRIEFING OUTLINE

- PROGRAM STATUS
- SHORT TERM OBJECTIVES
- LONG TERM OBJECTIVES
- FUNDING PROFILE
- CONTRACT OPPORTUNITIES
- SUMMARY

PENTAGON RENOVATION PROGRAM
DEFINITION

- TOTAL RENOVATION OF THE PENTAGON RESERVATION BUILDINGS (GUTTED AND INTERIOR REBUILT)
- INFORMATION SYSTEM INFRASTRUCTURE REBUILT FROM SCRATCH
- 1991 - 2001

PENTAGON RENOVATION PROGRAM
OBJECTIVES

- MODERNIZATION/ENHANCEMENT OF IMA SYSTEMS
- NEW DIGITAL BACKBONE SYSTEM (FIBER/COPPER)
- OPEN SYSTEMS ENVIRONMENT
- SHARED NETWORK WITH STANDARD INTERFACE FOR TENANT ACCESS

PENTAGON RENOVATION PROGRAM
KEY OPERATIONAL CAPABILITIES

- OPERATIONAL CONTINUITY BEFORE, DURING AND AFTER RENOVATION
- COLLOCATION/CONSOLIDATION OF LIKE IMA DISCIPLINES
- INTEGRATE PLANNED USER UPGRADES INTO THE RENOVATION SCHEDULE

PENTAGON RENOVATION PROGRAM
USER REQUIREMENTS/DEFICIENCIES

- STATE OF THE ART INFORMATION SYSTEMS
- DATA AND VOICE TOTALLY INTEGRATED INTER/INTRA NETWORKS
- VIDEO TELECONFERENCING CENTERS
- AUDIO/ VISUAL CAPABILITY
- INTEGRATED MESSAGING (SINGLE SYSTEM FOR VOICE/VIDEO MAIL & FAX)

PENTAGON RENOVATION PROGRAM
USER REQUIREMENTS/DEFICIENCIES

- DESKTOP PRINTING
- ELECTRONIC LIBRARIES
- RECORDS STORAGE
- "SMART BUILDING"
- PAPERLESS DOCUMENTATION
- SECURITY

PENTAGON RENOVATION PROGRAM
NEEDED TECHNOLOGIES

- ISDN SWITCHING
- HIGH SPEED/BANDWIDTH TRANSMISSION
- MULTI-MEDIA

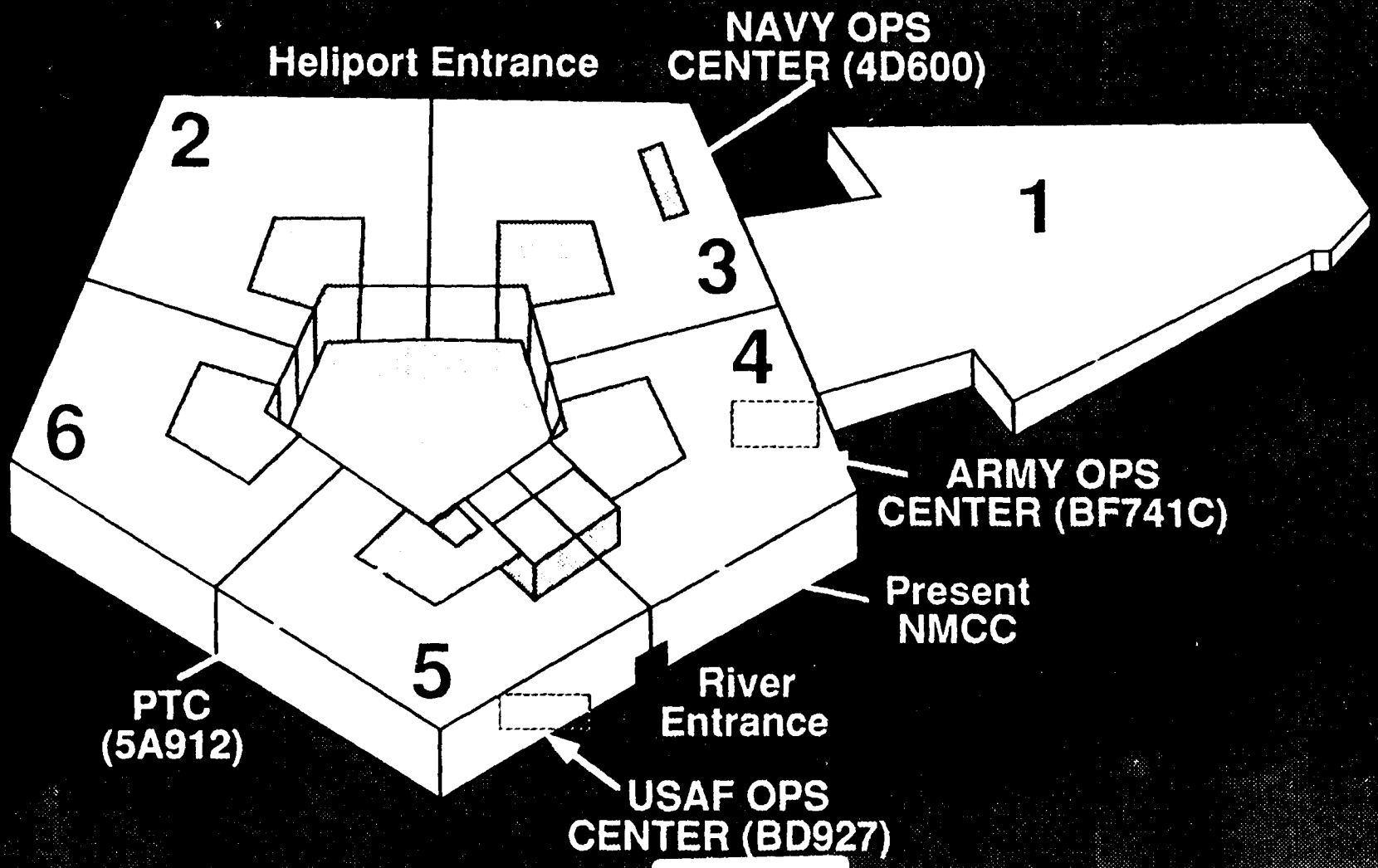
PROGRAM RENOVATION PROGRAM
PAYOFFS

- OPERATIONAL EFFICIENCY
- EXPANDED AND ENHANCED CAPABILITY

PENTAGON RENOVATION PROGRAM
PROGRAM STATUS

- INITIAL PLANNING UNDERWAY
- REQUIREMENTS BEING DEFINED
- PROJECT MANAGER OFFICE ESTABLISHED

PENTAGON RENOVATION PROJECT CONCEPT PLAN



PENTAGON RENOVATION PROGRAM
SHORT-TERM OBJECTIVES

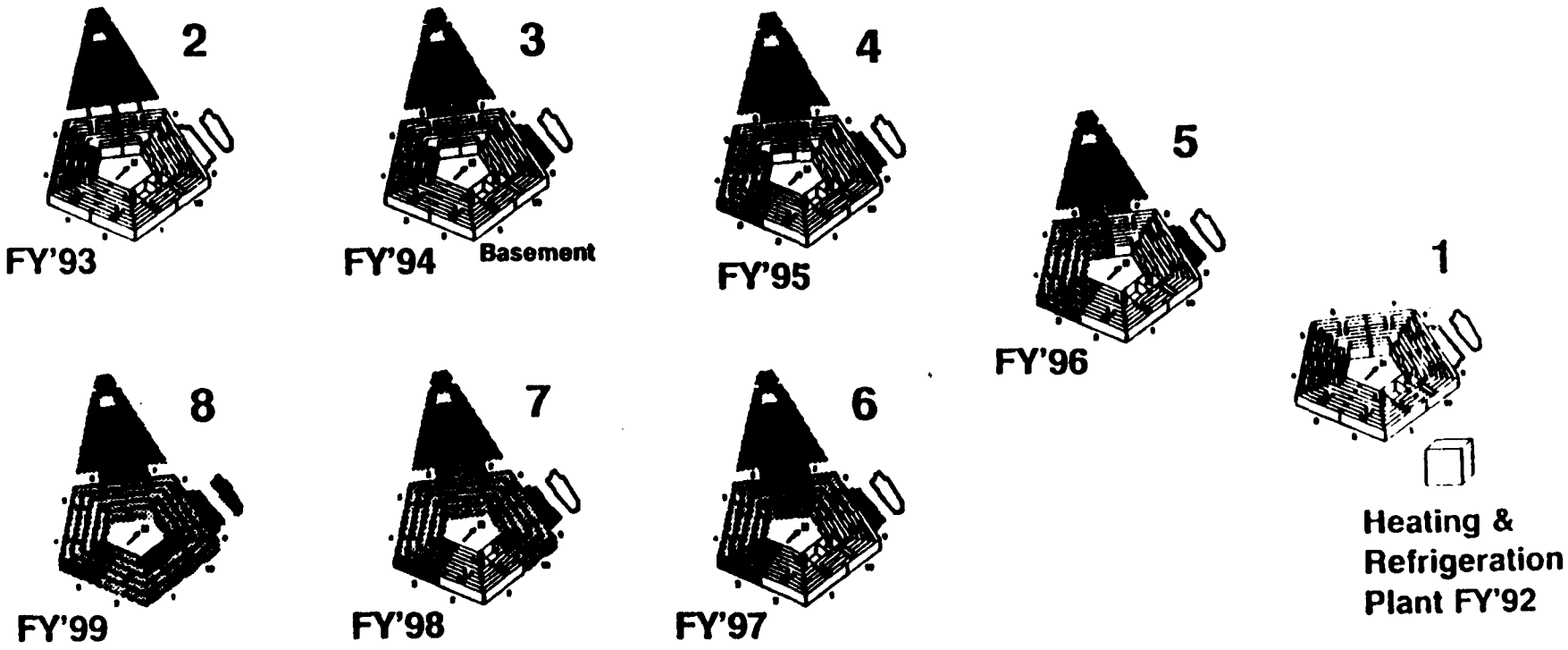
- VALIDATE REQUIREMENTS
- DEVELOP SPECIAL OPERATIONS CONCEPTS

PENTAGON RENOVATION PROGRAM
LONG-TERM OBJECTIVES

- IMPLEMENT SPECIAL OPERATIONS
- ENGINEER, FURNISH, INSTALL & TEST FACILITIES
- "SWING" SPACE AVAILABILITY

PENTAGON RENOVATION PROGRAM

Program Concept - Construction Sequencing



PENTAGON RENOVATION PROGRAM
FUNDING PROFILE

- COST ESTIMATES:
- TOTAL CONSTRUCTION EST $1.2B
- IMA ESTIMATE $750M - $1.2B
- FUNDED BY COMBINATION OF:
- INDUSTRIAL REVOLVING FUND
- TENANT ACCOUNTS

PENTAGON RENOVATION PROGRAM
CONTRACT OPPORTUNITY

- MULTIPLE CONTRACTS
- STUDIES, EQUIPMENT, TURN-KEY
- SEVERAL CONTRACTING ACTIVITIES
- POC: PM-PENTAGON RENOVATION INFORMATION MANAGEMENT & TELECOMMUNICATIONS

PENTAGON RENOVATION PROGRAM
SUMMARY

- BIGGEST ISC PROGRAM
- 10 YEAR PLUS
- MULTI-SERVICE IMA
- REPLACEMENT SYSTEMS

PENTAGON RENOVATION PROGRAM
SUMMARY

- TRANSITION SPACE SYSTEMS
- COMPLEX INTERFACES
- MUST MAINTAIN OPERATIONAL CAPABILITY

NOTES

WHITE SANDS MISSILE RANGE-TEST SUPPORT NETWORK

(WSMR-TSN)

COL DONALD E. BROWN

PROJECT MANAGER
DEFENSE COMMUNICATIONS
AND
ARMY TRANSMISSIONS SYSTEMS
(PM, DCATS)

UNCLASSIFIED

AMCPM-AIS-TSD 23 Mar 92

POINT PAPER

SUBJECT: White Sands Missle Range - Test Support Network (WSMR-TSN)

OBJECTIVE: Provide an Advance Planning Briefing to Industry (APBI) on the WSMR-TSN PROJECT.

FACTS:

a. WSMR is the largest overland research, development, test, and evaluation (RDT&E) test range in the free world. WSMR's three million acre range area tests and evaluates state-of-the-art weapon systems, conducting more than 4,000 test missions yearly, each using test instruments at one or more locations selected from the 3,000 surveyed points.

b. The present information systems backbone network has evolved over several decades. The resulting mixture of old and new technologies has created interface incompatibilities, operational and capacity problems which have significantly degraded the range performance from technical, cost and security perspectives.

c. The proposed system satisfying WSMR's requirements will be a secure, reconfigurable, range-wide backbone information systems transport network comprised of commercial off-the-shelf and/or non-developmental items (COTS/NDI) equipment which will support the RDT&E of weapons and space systems, subsystems and their associated components, including missiles, rockets, munitions, high energy lasers, etc. This information system network will transport data, voice, telemetry and video/imagery signals.

d. The Project Manager, Defense Communications and Army Transmission Systems (PM DCATS), the executing agent for the Project Manager, Instrumentation, Targets and Threat Simulators (PM ITTS) for this network, will manage the competitive acquisition and implementation of a COTS/NDI system which will satisfy WSMR's requirements.

BRIEFER: COL Donald E. Brown, Project Manager, Defense Communications and Army Transmission Systems, AMCPM-AIS-TS, (908) 532-7920.

LTC de Kanter
PM, WHTS/PMO DCATS
Tel CML: (201) 532-7924
DSN: 992-7924

WHITE SANDS MISSILE RANGE - TSN
BRIEFING OUTLINE

- PROGRAM DEFINITION
- KEY OPERATIONAL CAPABILITIES
- USER REQUIREMENTS
- PROGRAM OBJECTIVES
- NEEDED TECHNOLOGIES
- PAYOFFS
- PROGRAM STATUS
- ACQUISITION APPROACH
- CONTRACT STRUCTURE
- CONTRACT OPPORTUNITY
- SUMMARY

WSMR-TSN
PROGRAM DEFINITION

- IMPLEMENT A SECURE, RECONFIGURABLE RANGE-WIDE INFORMATION TRANSPORT SYSTEM WHICH SUPPORTS THE WSMR TEST AND EVALUATION MISSION
  - SUPPORT 4000 + TEST MISSIONS
  - RDT&E OF WEAPONS & SPACE SYSTEMS, SUBSYSTEMS, AND ASSOCIATED COMPONENTS
  - TRANSPORT VOICE, DATA, VIDEO & TELEMETRY SIGNALS

WSMR-TSN

PROGRAM DEFINITION (CONT.)

- MODERNIZE AND UPGRADE THE INFORMATION TRANSPORT NETWORK ALLOWING FOR VOICE, DATA, TELEMETRY, VIDEO, HRTV AND HDTV SIGNALS

WSMR-TSN
KEY OPERATIONAL CAPABILITIES

- PROVIDE STATE-OF-THE-ART DIGITAL INFORMATION SYSTEMS TRANSPORT NETWORK
- AUTOMATE & CENTRALIZE NETWORK CONTROL
- PROVIDE EXPERT SYSTEM CAPABILITY TO NETWORK CONTROL
- FULLY AUTOMATE SWITCHING NODES
- DIGITIZE INFORMATION "NEAR" THE USER

WSMR-TSN
USER REQUIREMENTS

- PROVIDE DUAL DIVERSITY FOR CONNECTED CIRCUITS
- PROVIDE EXPANDED SERVICE
- PROVIDE NETWORK SYNCHRONIZATION
- PROVIDE PROTECTION/SECURITY
- MINIMIZE RF TRANSMISSION
- PROVIDE NON-BLOCKING NETWORK
- INCREASE COMMERCIAL / EXTERNAL INTERFACES
- PROVIDE DISTRIBUTION OF RANGE TIMING

WSMR-TSN
PROGRAM OBJECTIVES

- EXPAND AND RENDER SECURABLE, HIGH CAPACITY NETWORKS TO MISSION ESSENTIAL AREAS OF WSMR
- MAKE COMMUNICATIONS OPERATIONS CONTROL FUNCTIONS RESPONSIVE TO RANGE RECONFIGURATION AND TURN AROUND TIMING CONSTRAINTS
- DEVELOP AN INTEGRATED RANGE INTERCOME SERVICE COMPLETE WITH END USER SERVICES
- IMPLEMENT AN AUTOMATED AND INTEGRATED NETWORK MANAGEMENT HAVING A REMOTE CONTROL CAPABILITY

WSMR-TSN
NEEDED TECHNOLOGIES

- REPLACE EXISTING BACKBONE COMMUNICATIONS AND DATA TRANSPORT SYSTEM WITH STATE-OF-THE-ART TECHNOLOGY
- REPLACE EXISTING PATCH AND TEST FACILITIES WITH A DIGITAL SYSTEM WITH REMOTELY AUTOMATED CAPABILITIES
- REPLACE 2800 + INTERCOM DEVICES

WSMR-TSN
NEEDED TECHNOLOGIES (CONT.)

- CREATE AN INTEGRATED NETWORK CONTROL CENTER
  - CENTRALIZE RANGE COMMUNICATIONS
  - PROVIDE AN AUTOMATED REMOTE MONITORING AND CONTROL ALARM, FAULT ISOLATION AND SWITCHING

WSMR-TSN
PAYOFFS

- IMPROVE OPERATIONAL CAPABILTIY
  - IMPROVE RELIABILITY
  - INCREASE INFORMATON THROUGHPUT
  - EXPAND RANGE COVERAGE
- LOWER DOIM OPERATIONAL COSTS
  - LOWER SYSTEM CONFIGURATON TIME
  - DEVELOP INTEGRATED LOGISTICS SUPPORT
  - REDUCE MANPOWER REQUIREMENTS
- IMPROVE INFORMATION SECURITY

WSMR-TSN
PROGRAM STATUS

ACTIVITY	START	COMPL
REQMTS DEF	JAN 91	FEB 92
DEVELOP RFP	DEC 91	2ND QTR FY 93
DRAFT	DEC 91	4TH QTR FY 92/ 1ST QTR FY 93
FINAL	1ST QTR FY 93	2ND QTR FY 93
ISSUE FINAL RFP	2ND QTR FY 93	3RD QTR FY 93
PROPOSAL EVALUATION	3RD QTR FY 93	4TH QTR FY 93
CONTRACT AWARD	1ST QTR FY 94	1ST QTR FY 94
IMPLEMENTATION	2ND QTR FY 94	

WSMR-TSN
ACQUISITION APPROACH

- A "TOTAL SYSTEM" APPROACH
- ACQUISITION BASED ON DODD 5000.1 AND DODI 5000.2
  - GOVERNMENT PROVIDES MINIMUM SET OF REQUIREMENTS ALLOWING OFFERORS TO PRESENT INNOVATIVE SOLUTIONS

WSMR-TSN
ACQUISITION APPROACH (CONT.)

- GOVERNMENT NEEDS AND PROGRAM OBJECTIVES WILL BE STATED IN MISSION TERMS ALLOWING INDUSTRY MAXIMUM FLEXIBILITY IN DEVELOPING PROPOSED SYSTEM

- EXISITING RANGE EQUIPMENT WILL BE OFFERED TO THE CONTRACTORS AS GFE TO INCLUDE IN THEIR PROPOSED SYSTEM DESIGN WHERE COST EFFECTIVE AND TECHNICALLY ADVANTAGEOUS

WSMR-TSN

CONTRACT STRUCTURE

- A MULTIPLE CONTRACT WITH A BASIC INITIAL SEGMENT AND OPTIONS BY PROGRAM YEAR
  - BASIC SEGMENT-A TURNKEY USEABLE SEGMENT OF THE OVERALL SYSTEM
  - OPTIONS-ADDITIONAL USEABLE SEGMENT OF THE OVERALL SYSTEM (IDEALLY NO MORE THAN TWO OPTION YEARS)
  - OPTIONS-YEARLY SUSTAINMENT/MAINTENANCE OPTIONS FOR AN EXTENDED PERIOD
- GFE - THE GOVERNMENT WILL OFFER HARDWARE/SOFTWARE OBTAINED FROM EXISTING CONTRACTS AND/OR EXISTING WSMR PLANT

WSMR-TSN
CONTRACT OPPORTUNITY

- OBJECTIVE: UPGRADE INFORMATION TRANSPORT NETWORK

- TYPE:- NEGOTIATED FIRM FIXED PRICE CONTRACT USING FULL & OPEN COMPETITION FOR BASIC SEGMENT; W/TWO OPTIONAL SEGMENTS AND OPTIONS FOR SUSTAINMENT

  - AWARD ON THE BASIS OF "BEST VALUE" TO THE GOVERNMENT-COST AND OTHER FACTORS OF THE SYSTEM OVER ITS ANTICIPATED LIFE CYCLE

WSMR-TSN
CONTRACT OPPORTUNITY (CONT.)

- STATUS: DEVELOPING TECHNICAL REQUIREMENTS PACKAGE
- SCHEDULE: DRAFT SOLICITATION 4TH QTR FY-92/ 1ST QTR FY-93
- APPROX. VALUE: $25-75 MILLION
- POC: MS. ROBIN A. BALDWIN,
  CML TELE: 908-532-4348

WSMR-TSN
SUMMARY

- SECURE, RECONFIGURABLE, RANGEWIDE, BACKBONE, INFORMATION TRANSPORT SYSTEM
  - STATE-OF-THE-ART SYSTEM TRANSFORMING VOICE, DATA TELEMETRY & VIDEO SIGNALS
  - AUTOMATED AND CENTRALIZED NETWORK CONTROL
  - DIGITIZE INFORMATION "NEAR" THE USER
- CONTRACTOR PROPOSAL MUST BE A SYSTEM WHICH PROVIDES "BEST VALUE" TO THE GOVERNMENT
- $25-75M PROJECT TO BF AWARDED 1ST QTR FY-94

NOTES

COMMON USER INSTALLATION TRANSPORT NETWORK

COL JOHN D. HARTMAN
PROJECT MANAGER
SWITCHED SYSTEMS

UNCLASSIFIED

POINT PAPER

SUBJECT: COMMON USER INSTALLATION TRANSPORT NETWORK (CUITN)

OBJECTIVE: Provide the Ability to Facilitate On-base Communications Networks for Army Bases through Integration Contract(s).

FACTS:

- This program has a primary objective of providing installation transport networks for army bases world-wide.
- A key part of the program are indefinite delivery, indefinite quantity contract(s) at a fixed price.
- These networks will require standard, GOSIP compliant, open systems which are scalable and upgradable.
- Contract elements include:

  Components such as distribution devices, hubs, software, network management, media attachments and other related items.

  Engineering, furnish and install services including training, and maintenance.
- These systems will require the use of fiber optic cables, FDDI and network management technologies as well as modern technology related to communications networks.
- This program was initiated in January 1992 and a contract award is anticipated in 1Q FY 94.
- In the FY 93 time frame, program planning, release of the solicitation and continuation of site implementation with existing contracts will constitute the program.
- In FY 94 and beyond, the availability of standard, comprehensive contract(s) will provide the on-going capability to provide the required army CUITN facilities.
- Funding for this program will permit installation of a selected list of sites.

BRIEFER: COL JOHN D. HARTMAN, Project Manager, PM Switched Systems, DCASS, ASQM-SW, 908-532-7910

PRODUCT LEADER
RONALD WALTER
PM, SWITCHED SYSTEMS
908-532-7912

BRIEFING OUTLINE

- PROGRAM DEFINITION
- KEY OPERATIONAL CAPABILITIES
- REQUIREMENTS
- NEEDED TECHNOLOGIES
- PROGRAM STATUS
- SHORT-TERM OBJECTIVES
- LONG-TERM OBJECTIVES
- FUNDING PROFILE
- CONTRACT OPPORTUNITY

COMMON USER INSTALLATION TRANSPORT NETWORK

PROGRAM DEFINITION

TO PROVIDE THE CAPABILITY TO FACILITATE ON-BASE COMMUNICATIONS NETWORKS BY ENGINEERING, FURNISHING,INSTALLING AND MAINTAINING INSTALLATION TRANSPORT NETWORKS FOR ARMY BASES THROUGHOUT THE WORLD.

COMMON USER INSTALLATION TRANSPORT NETWORK

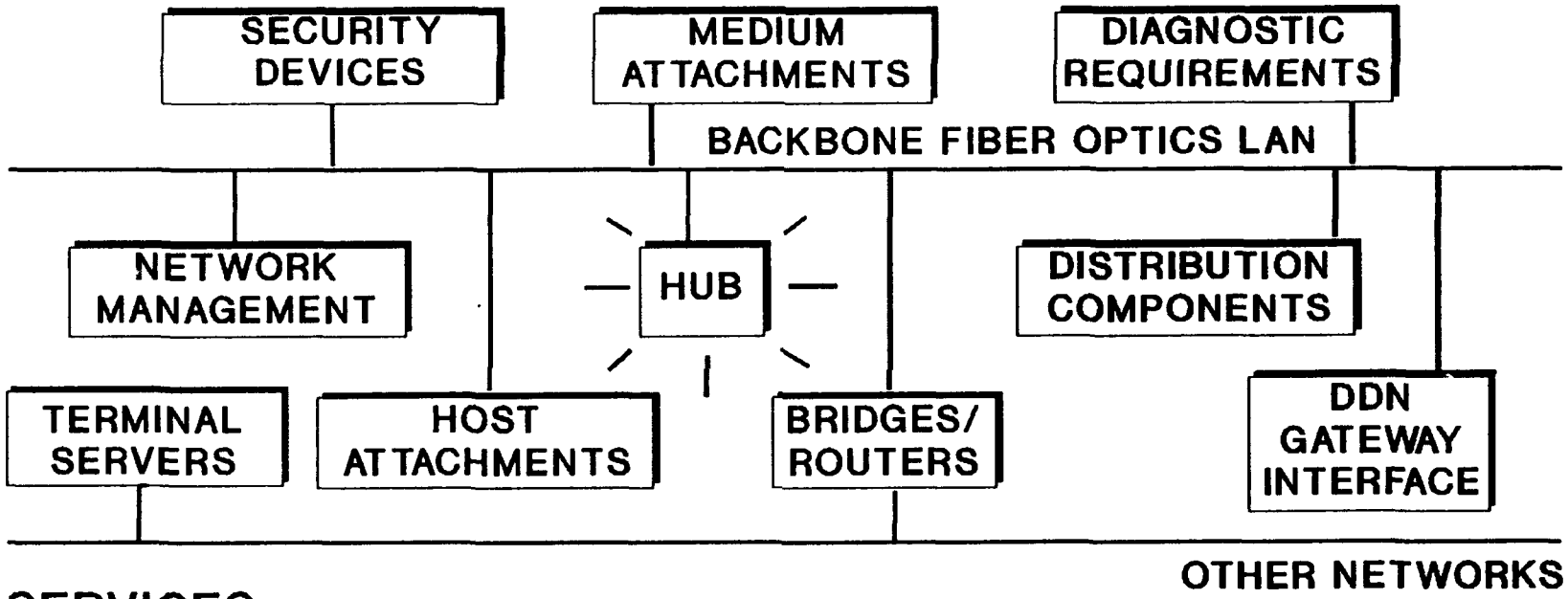
KEY OPERATIONAL CAPABILITIES

- GOSIP COMPLIANT
- SUPPORTS AN OPEN SYSTEMS ENVIRONMENT
- SCALABLE
- UPGRADABLE

COMMON USER INSTALLATION TRANSPORT NETWORK

REQUIREMENTS

COMPONENTS



SERVICES:

DESIGN

SITE SURVEY

SITE PREPARATION

ENGINEERING

FURNISHING

OPERATION

TRAINING

INSTALLATION

MAINTENANCE

NETWORK MGMT

COMMON USER INSTALLATION TRANSPORT NETWORK

NEEDED TECHNOLOGIES

- FIBER OPTIC CABLE
- FIBER DISTRIBUTED DATA INTERFACE
- INTEGRATED NETWORK MANAGEMENT

COMMON USER INSTALLATION TRANSPORT NETWORK

PROGRAM STATUS

- PROGRAM INITIATED JAN 92 - ISMO
- CONTRACT AWARD 1Q FY 94

COMMON USER INSTALLATION TRANSPORT NETWORK
SHORT-TERM OBJECTIVES

FY 93

- PROGRAM PLANNING
- RELEASE SOLICITATION
- IMPLEMENTATION WITH EXISTING CONTRACTS

COMMON USER INSTALLATION TRANSPORT NETWORK
LONG-TERM OBJECTIVES

FY 94 AND BEYOND

- PROVIDE TURN KEY IMPLEMENTATION

COMMON USER INSTALLATION TRANSPORT NETWORK

FUNDING PROFILE

	RDTE $M	PROC $M	OMA $M
FY 93	0	0	0
FY 94		25M - 30M	5M - 10M
FY 95		25M - 30M	5M - 10M
FY 96		25M - 30M	5M - 10M
FY 97		25M - 30M	5M - 10M
TOTAL:	$0	$100M - 120M	$20M - 40M

CONTRACT OPPORTUNITY

TITLE:	COMMON USER INSTALLATION TRANSPORT NETWORK
OBJECTIVE:	PROVIDE INTEGRATED, TURN KEY, GOSIP COMPLIANT COMMUNICATIONS NETWORKS ON POSTS, CAMPS AND STATIONS THROUGHOUT THE ARMY
TYPE:	IDIQ, FP
STATUS:	PLANNING PHASE
SCHEDULE:	AWARD 1Q FY 94
APPROX. VALUE:	$120M - $160M (FY 94-97)

NOTES

SESSION V

FOREIGN MILITARY SALES (FMS) OPPORTUNITIES

MODERATOR

MR. JAMES M. SKURKA
DIRECTOR
C3I LOGISTICS AND
READINESS CENTER
CECOM

— PENDING —
FOREIGN MILITARY SALES

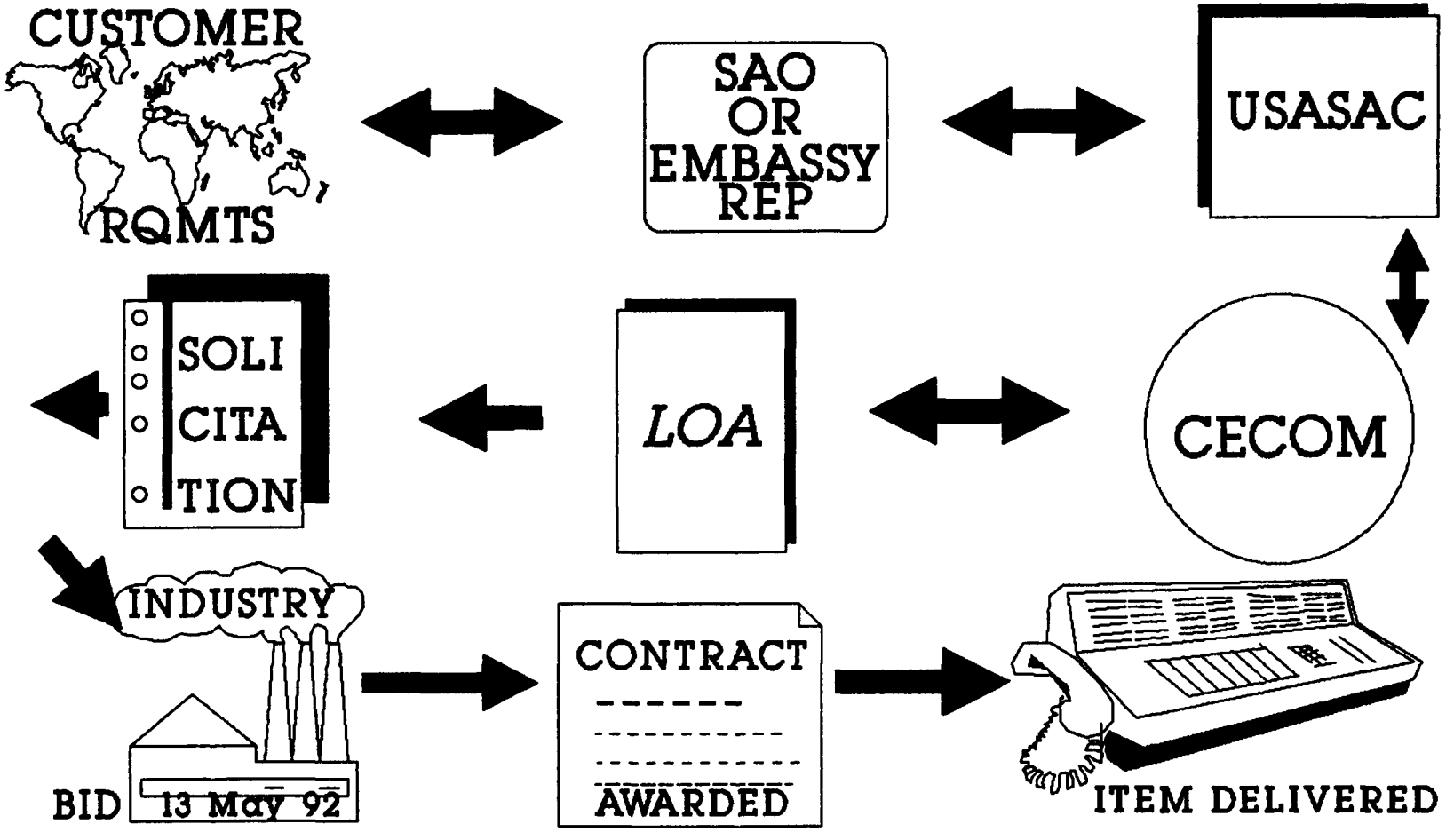
EUGENE P. BENNETT
DIRECTOR
SECURITY ASSISTANCE MANAGEMENT

UNCLASSIFIED

— OUTLINE —

- FOREIGN MILITARY SALES PROCESS
- AVIONICS SUPPORT PROGRAM
- ELECTRONICS EQUIPMENT
- COMMUNICATIONS EQUIPMENT
- NIGHT VISION EQUIPMENT
- PATRIOT SUPPORT PROGRAM
- PAYOFFS

FMS PROCESS


CUSTOMER
RQMTS
SAO
OR
EMBASSY
REP
USASAC
SOLI
CITA
TION
LOA
CECOM
INDUSTRY
BID
13 May 92
CONTRACT
AWARDED
ITEM DELIVERED

-AVIONICS SUPPORT PROGRAM-

AIRCRAFT	QTY AIRCRAFT	$VAL AVIONICS
UH-1H	50	4.3M
AH-64	8*	1.3M
OH-58D	14	7.2M

*SPECIAL DEFENSE ACQUISITION FUND

— ELECTRONICS EQUIPMENT —

NOMENCLATURE	EQUIPMENT/QTY		$VAL
TELEPHONE SET	TA-312	8249	4.1M
BATTERY TEST SHOP	AN/TSM-133	5	150K
AUTOMATIC TEST EQUIPMENT	AN/USM-410	3	3.0M

– ELECTRONICS EQUIPMENT –

NOMENCLATURE	EQUIPMENT/QTY		$VAL
RADIAC SET	AN/PDR-75	53	374K
RADIAC SET	AN/VDR-2	749	1.3M
RADIAC SET	IM-93A/UD	1518	500K

— ELECTRONICS EQUIPMENT —

NOMENCLATURE	EQUIPMENT/QTY		$VAL
ELEC SHOP SHELTER	AN/ASM-146	4	346K
ELEC SHOP SHELTER	AN/ASM-147	12	1.0M
IREMBASS		116	14.1M
GPS		402	3.3M

— ELECTRONICS EQUIPMENT —

NOMENCLATURE	EQUIPMENT/QTY		$VAL
BATTERY CHARGER	PP-7286	29	141K
METEOR. DATA SYSTEM	TMQ-31	1	2.5M
PROGRAMMER INTERROGATOR	AN/GSX-1A	170	1.7M

— ELECTRONICS EQUIPMENT —

NOMENCLATURE	EQUIPMENT/QTY		$VAL
OSCILLOSCOPE	AN/USM-488	62	117K
BATTERY	BA-5567	400K	2.7M
INTENSIFIER TUBE	MX-9916	499	673K

-COMMUNICATIONS EQUIPMENT-

NOMENCLATURE	EQUIPMENT/QTY		$ VAL
RADIO SET	AN/PRC-126	396	861K
RADIO SET	AN/VRC-12	70	1.0M
RADIO SET	AN/VRC-43	14	49K

-COMMUNICATIONS EQUIPMENT-

NOMENCLATURE	EQUIPMENT/QTY		$ VAL
RADIO SET	AN/VRC-46	7	61K
SECURE TELEPHONE SET	TA-1035	505	1.3M
FREQUENCY HOPPING VHF RADIOS	SINCGARS	4500	77M

—NIGHT VISION EQUIPMENT—

NOMENCLATURE	EQUIPMENT/QTY		$VAL
GOGGLES	AN/PVS-5B	1853	9.9M
GOGGLES	AN/PVS-5C	213	1.1M
LASER RANGE FINDER	AN/PVS-6	41	354K
GOGGLES	AN/PVS-7B	672	3.0M

— NIGHT VISION EQUIPMENT —

NOMENCLATURE	EQUIPMENT/QTY		$VAL
NIGHT VISION SIGHT	AN/TVS-5	600	3.0M
AVIATOR NV IMAGING SYSTEM	AN/AVS-6(V)1	99	842K

—NIGHT VISION EQUIPMENT—

NOMENCLATURE	EQUIPMENT/QTY		$VAL
WEAPONS SIGHT	AN/PVS-4	648	1.3M
META SCOPE	AN/PAS-7A	57	907K

-PATRIOT SUPPORT PROGRAM-

NOMENCLATURE	EQUIPMENT	QTY
RADIO, VHF	UNDEFINED	109
RADIO, UHF	AN/GRC-103(V)4	81
IDENTIFICATION FRIEND OR FOE	AN/TPX-46(V)7	30
ANTENNA MAST GROUP	OA-9054(V)4/G	30

PROGRAM VALUE $15.8M

— FOREIGN MILITARY SALES —
PAYOFFS

- DRAMATIC SALES INCREASE IN RECENT YEARS
- EXPECT UPWARD TREND IN SALES
- ENABLES US TO GAIN ACCESS & INFLUENCE ABROAD
- SUSTAIN THE U.S. DEFENSE INDUSTRIAL BASE

NOTES

EXECUTIVE PANEL

MG ALFRED J. MALLETTE
CG, CECOM

MG WILLIAM E. HARMON
PEO, CCS

BG JOHN M. WATKINS
PM, AIS / CG, ISMA

MR. NEAL W. ATKINSON
DEP PEO, COMM

MR. ANDREW R. D'ANGELO
DEP PEO, IEW

MR. EDWARD G. ELGART
DIR, C3I ACQ CTR, CECOM

NOTES

NOTES

NOTES

NOTES

SYMPOSIUM PARTICIPANTS

MG ALFRED J. MALLETTE
HQ, US Army Communications-Electronics Command
AMSEL-CG
Fort Monmouth, New Jersey 07703
(908) 532-1515

MG WILLIAM E. HARMON
PEO, Command and Control Systems
SFAE-CC
Fort Monmouth, New Jersey 07703
(908) 544-4937

BG JOHN M. WATKINS
PM, Army Information Systems and
Commanding General, US Army Information
Systems Management Activity
ASQB-CG
Fort Huachuca, AZ 85613-5300
(602) 538-6626

MR. ANTHONY V. CAMPI
HQ, US Army Communications-Electronics Command
Research, Development and Engineering Center
AMSEL-RD
Fort Monmouth, New Jersey 07703-5201
(908) 544-2686

MR. NEAL W. ATKINSON
PEO, Communications Systems
SFAE-CM-EX
Fort Monmouth, New Jersey 07703
(908) 544-4148

DR. CLARENCE G. THORNTON
HQ, US Army Laboratory Command
Electronics Technology and Devices Laboratory
SLCET-D
Fort Monmouth, New Jersey 07703
(908) 544-2541

MR. JAMES M. SKURKA
HQ, US Army Communications-Electronics Command
C3I Logistics and Readiness Center
AMSEL-LC
Fort Monmouth, New Jersey 07703
(908) 532-5757

MR. EDWARD G. ELGART
HQ, US Army Communications-Electronics Command
C3I Acquisition Center
AMSEL-AC
Fort Monmouth, New Jersey 07703
(908) 532-5601

MR. JOSEPH J. PUCILOWSKI, JR.
HQ, US Army Communications-Electronics Command
Command, Contol and Communications Systems Directorate
AMSEL-RD-C3-D
(908) 544-4449

MR. EUGENE FAMOLARI, JR.
HQ, US Army Communications-Electronics Command
Electronic Warfare Reconnaissance,
Surveillance, and Target Acquisition Directorate
AMSEL-RD-EW-D
(908) 544-3212

MR. ANDREW R. D'ANGELO
PEO, Intelligence and Electronic Warfare
SFAE-IEW-D
Fort Monmouth, New Jersey 07703
(908) 532-0179

COL DONALD E. BROWN
PM, Defense Communications and Army Transmission Systems
ASQM-TS
Fort Monmouth, New Jersey 07703
(908) 532-7920

COL JOHN D. HARTMAN
PM, Defense Communications and Army Switched Systems
ASQM-SW
Fort Monmouth, New Jersey 07703
(908) 532-7910

COL CARL L. LAMBETH
PM, Operations Tactical Data Systems
SFAE-CC-MVR-PM
Fort Monmouth, New Jersey 07703
(908) 532-4041

COL BRUCE D. SWEENY
PM, Global Positioning Systems
SFAE-CM-GPS
Fort Monmouth, New Jersey 07703
(908) 532-6301

COL THOMAS J. STAUFFACHER
PM, Satellite Communications
SFAE-CM-SC
Fort Monmouth, New Jersey 07703
(908) 532-5305

MR. EUGENE P. BENNETT
HQ, US Army Communications-Electronics Command
Security Assistance Management Directorate
AMSEL-LC-SA
Fort Monmouth, New Jersey 07703
(908) 532-2155

MR. G. WILLIAM MITCHELL, JR.
HQ, US Army Communications-Electronics Command
Signals Warfare Directorate
AMSEL-RD-SW-DT
Vint Hills Farm Station
Warrenton, Virginia 22186-5100
(703) 349-7205

DR. JAMES A. RATCHES
HQ, US Army Communications-Electronics Command
Night Vision and Electro-Optics Directorate
AMSEL-RD-NV-D
Fort Belvoir, Virginia 22060-5677
(703) 704-1166

MR. JOHN H. SINTIC
HQ, US Army Communications-Electronics Command
Software Engineering Directorate
AMSEL-RD-SE-D
(908) 532-8208

MR. EDWARD T. BAIR
PEO, Intelligence and Electronic Warfare
SFAE-IEW-BM
Fort Monmouth, New Jersey 07703
(908) 532-0181

MR. JOHN T. BENNER
PEO, Communications Systems
SFAE-CM-SE
Fort Monmouth, New Jersey 07703
(908) 532-0180

MR. HAROLD G. BRITTON, JR.
PM, Combat Terrain Information Systems
CETEC-TL-G
Fort Belvoir, Virginia 22060-5546
(703) 355-2854

MR. THOMAS J. MICHELLI
PM, Army Information Systems and
US Army Information Systems Management Activity
ASQM-D
Fort Monmouth, New Jersey 07703
(908) 532-7961

DR. JAMES E. TOMLINSON
PM, Joint Computer-Aided Acquisition
and Logistic Support
SFAE-PS-CAL
Fort Monmouth, New Jersey 07703
(908) 532-0412

MR. MICHAEL R. VERVILLE
PM, Army World Wide Military
Command and Control System and Information System
SFAE-CC-AW-M
Fort Belvoir, Virginia 22060-5456
(703) 806-5245

LTC I. P. BARLOW
HQ, US Army Army Materiel Command
Deputy Chief of Staff for Research,
Development and Engineering
AMCRD-AR
Alexandria, Virginia 22333-0001
(703) 274-3094

★U.S. GOVERNMENT PRINTING OFFICE: 1992-613-034/40051