The Future of C4:

One Vision,
One Architecture,
One Voice

PROCEEDINGS





Advanced Planning Briefing to Industry

November 28-29, 1995

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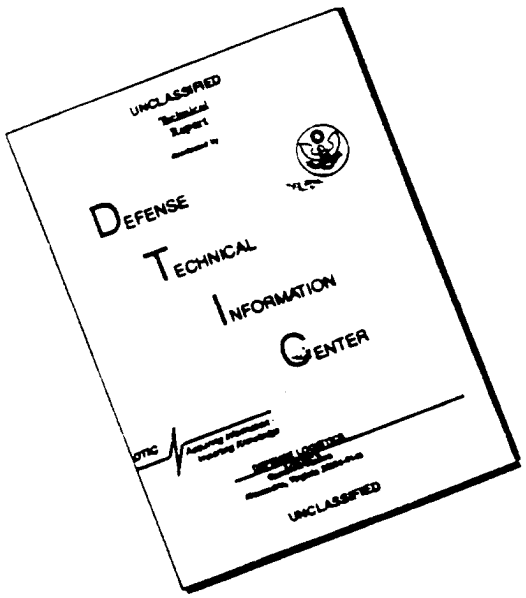
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DO YOU HAVE ANY COMMENTS OR RECOMMENDATIONS FOR NEXT YEAR'S APBI-C4 CONFERENCE?????

SHOULD YOU HAVE ANY COMMENTS FROM THE 1995 APBI, OR RECOMMENDATIONS FOR NEXT YEAR'S CONFERENCE, PLEASE EMAIL YOUR COMMENTS TO EITHER COL WILLIAM F. JAISSLE OR MR. JOHN R. COURTRIGHT AT THE FOLLOWING EMAIL ADDRESS:

WILLIAM.F.JAISSLE@PENTAGON-1DMS2.ARMY.MIL or

JOHN.R.COURTRIGHT@PENTAGON-1DMS2.ARMY.MIL

One Vision, One Architecture, One Voice

LTG Otto J. Guenther

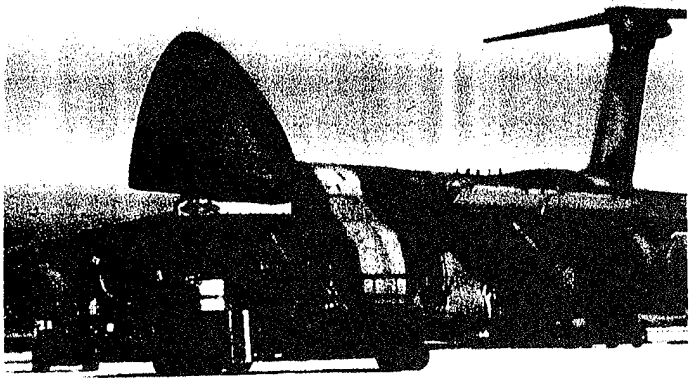
Director of Information Systems for
Command, Control, Communications
and Computers

28 November 1995

Advanced Planning Briefing to Industry
Tyson's Corner, VA

Force XXI to the Installation
Doctrinal Evolution

- Hypothesis: Corps/Div. Rear Boundary is the Sustaining Base
  - Enterprise Implementation Plan
  - TRADOC PAM 525-5
  - Army Battle Command Master Plan
  - DA PAM 100-XX



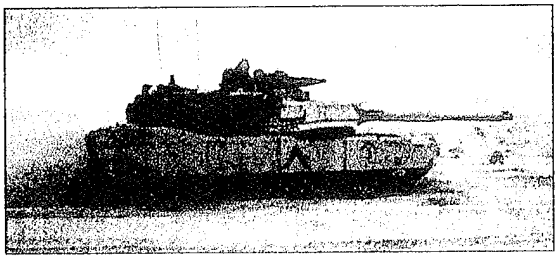
Enterprise Principle:

Power Projection

- Power Projection Doctrine
  - FM 100-5; TRADOC PAM 525-5; *Decisive Victory*
  - power projection C4I & split-base operations
  - C4I information architecture
  - DA PAM 25-1 (to be published)

Operational Evolution

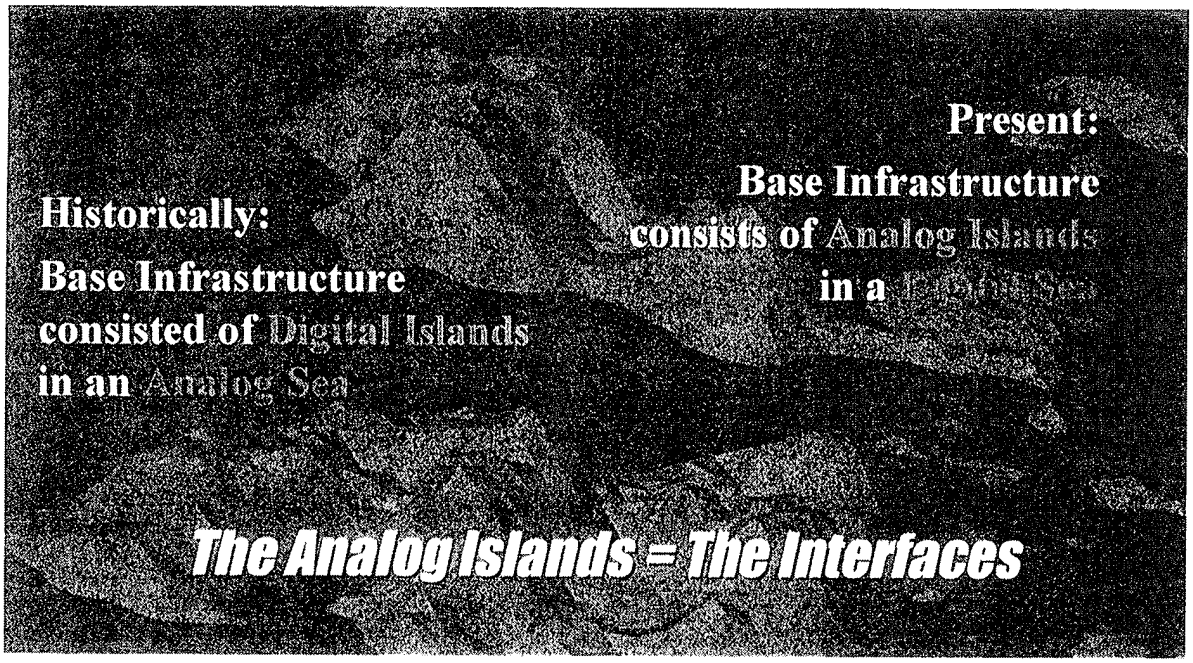
- XVIII ABN Corps in Desert Shield/Desert Storm (Kuwait)
  - tremendous information demand
  - deployed CSS AIS assets
  - heavy "man-in-the-loop" interface



- XVIII ABN Corps, 10th MTN Div., and 25th ID in Operation Uphold Democracy (Haiti)
  - operationally oriented
  - multiple C4 packages
  - true split-based operation
  - but, required continuous engineering of communications systems
  - but, required splitting tactical assets between the sustaining base and the theater of operations
  - but, required kluged DISN interface

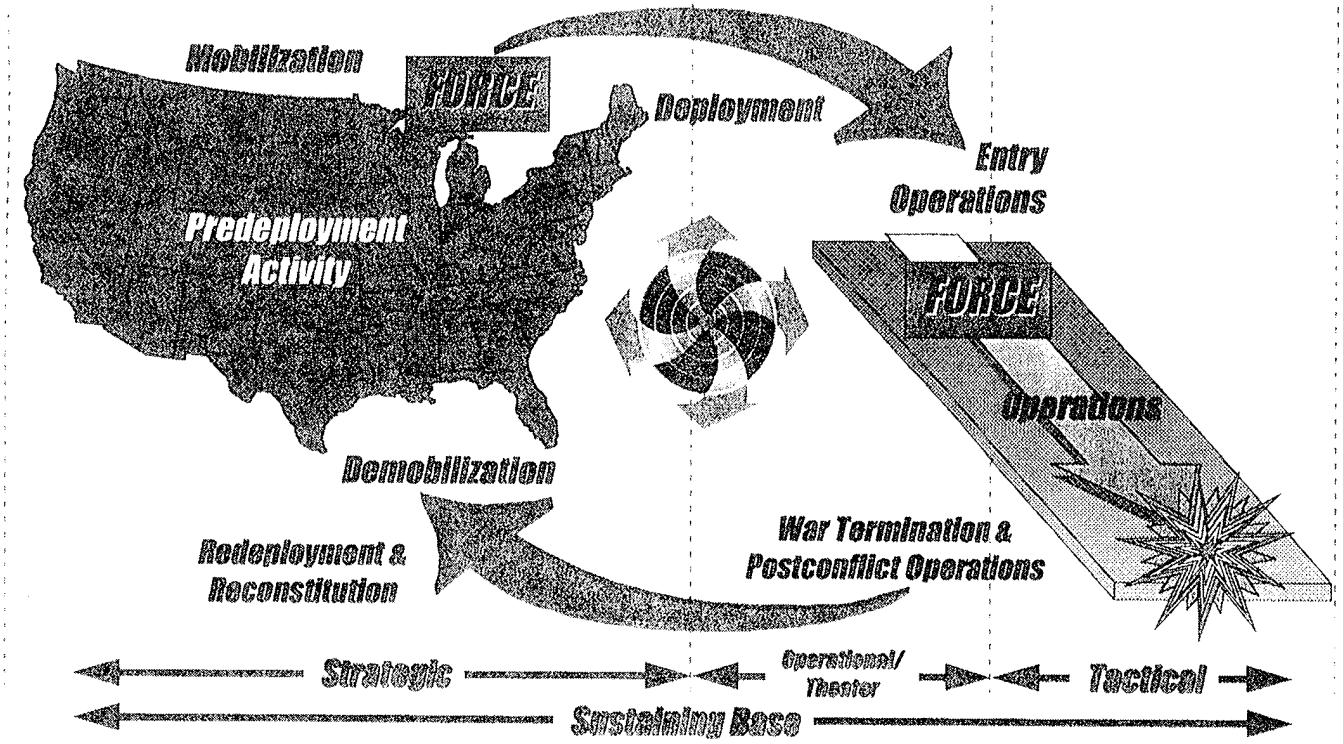
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Technical Evolution of Base Infrastructure

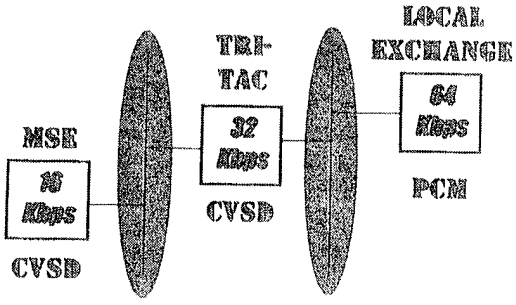


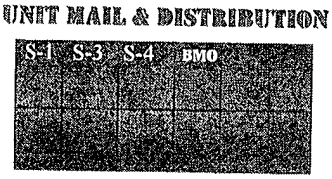
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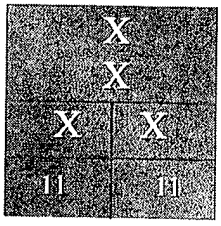
Force Projection Stages and Operating Environments



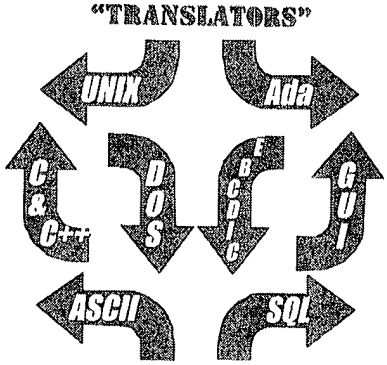
What Are These Analog Islands?





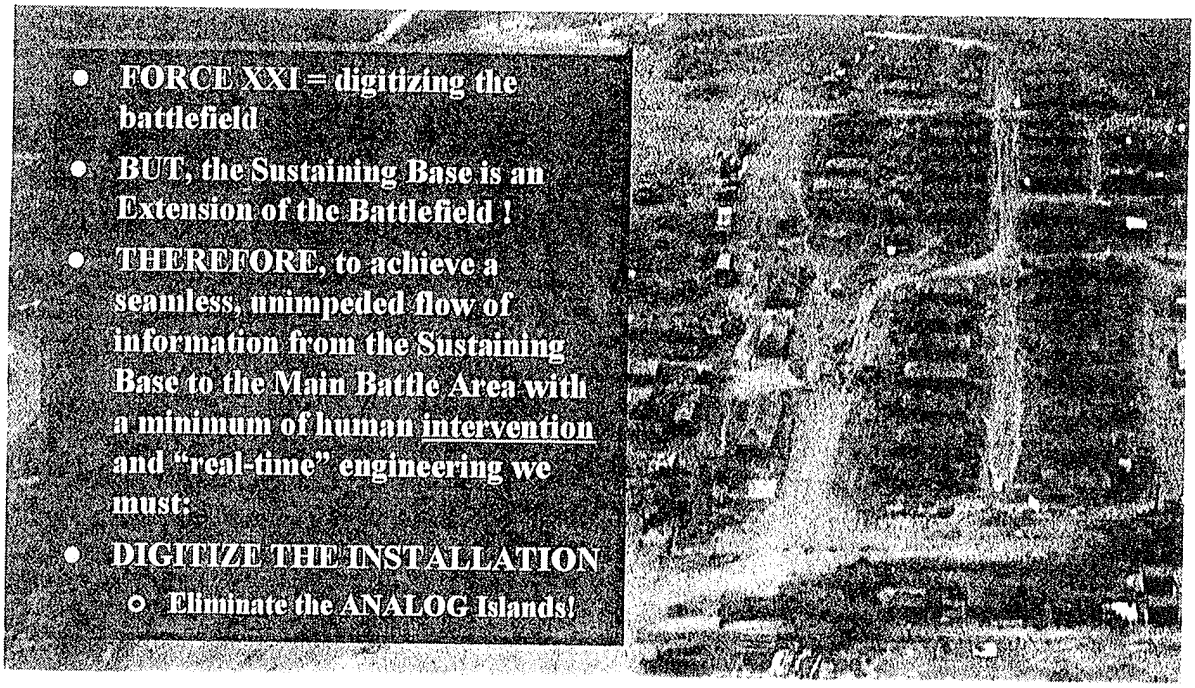






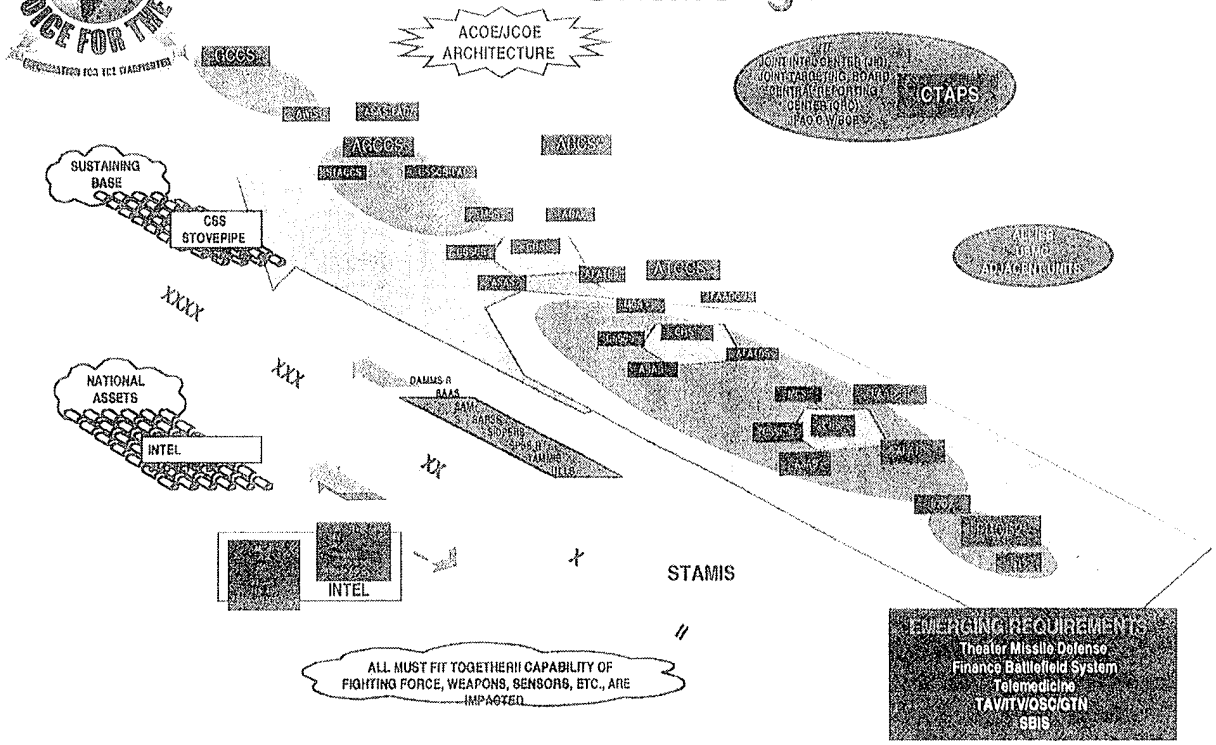
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Why Digitize the Installation?



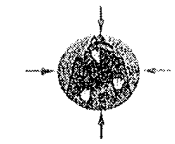
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Program Synchronization Challenge



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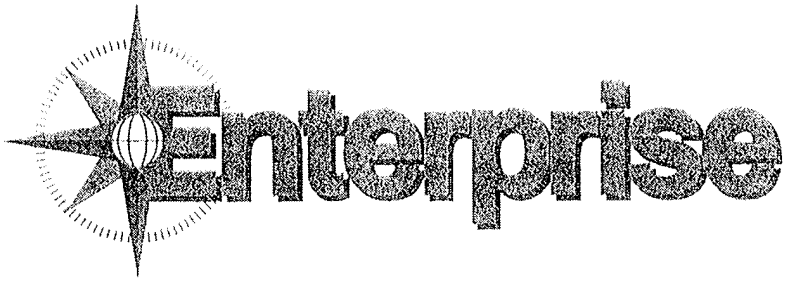
Enterprise Principles



Warfighter Focus

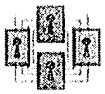


Joint Interoperability





Information Technology



Multi-Level Security



Space-Based Systems



Digitization



Power Projection



Modeling and Simulation



Commercial Technology

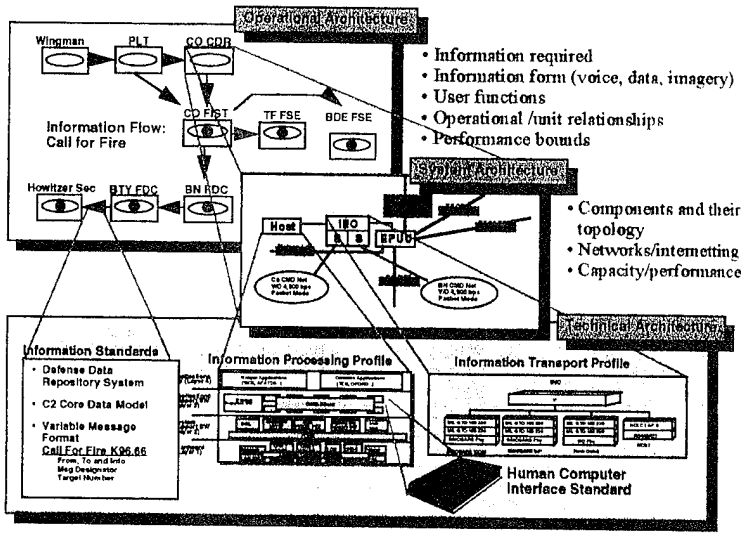


Spectrum Supremacy

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Architecture Must Come First!

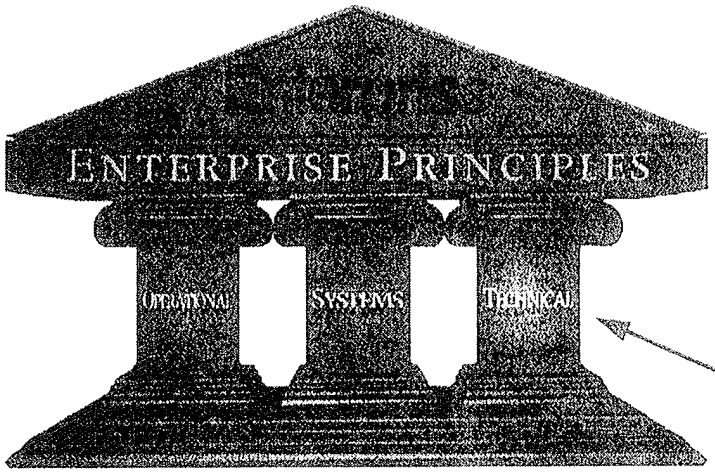
- One Architecture, Three Dimensions
  - Operational dimension
  - Systems dimension
  - Technical dimension
- Moving toward Seamlessness:
  - From the Sustaining Base to the Foxhole
  - New requirement of a Power Projection force



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Army Technical Architecture

- Based on Force XXI, Army Enterprise, and C4I for the Warrior
- Building blocks for hardware, software, and communications

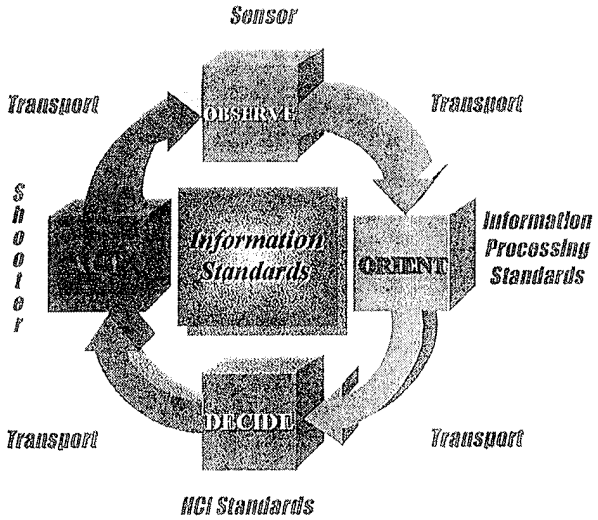


- TA is applicable to all information reliant systems:
  - C4I
  - Weapons
  - Combat Support
  - Combat Service Support
- TA has direct influence on:
  - Task Force XXI
  - DIV XXI
  - CORPS XXI
  - SUSTAINING BASE !

Technical Architecture is a pillar of Enterprise

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Information Technology Tightens the Decision Loop

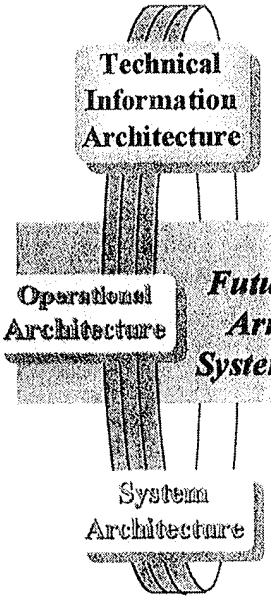


Technical Architecture

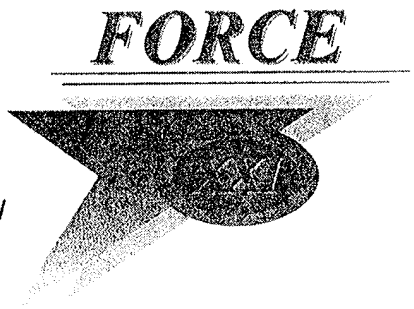
- ***Information Standards***
  The underpinnings of interoperability
  Provides for the common understanding of information
- ***Information Transport Standards***
  Moves the information without roadblocks
- ***Information Processing Standards***
  Ensures the computer knows how to handle the information
- ***Human-Computer Interface Standards***
  A standard way to enhance human understanding

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Technical Information Architecture Status

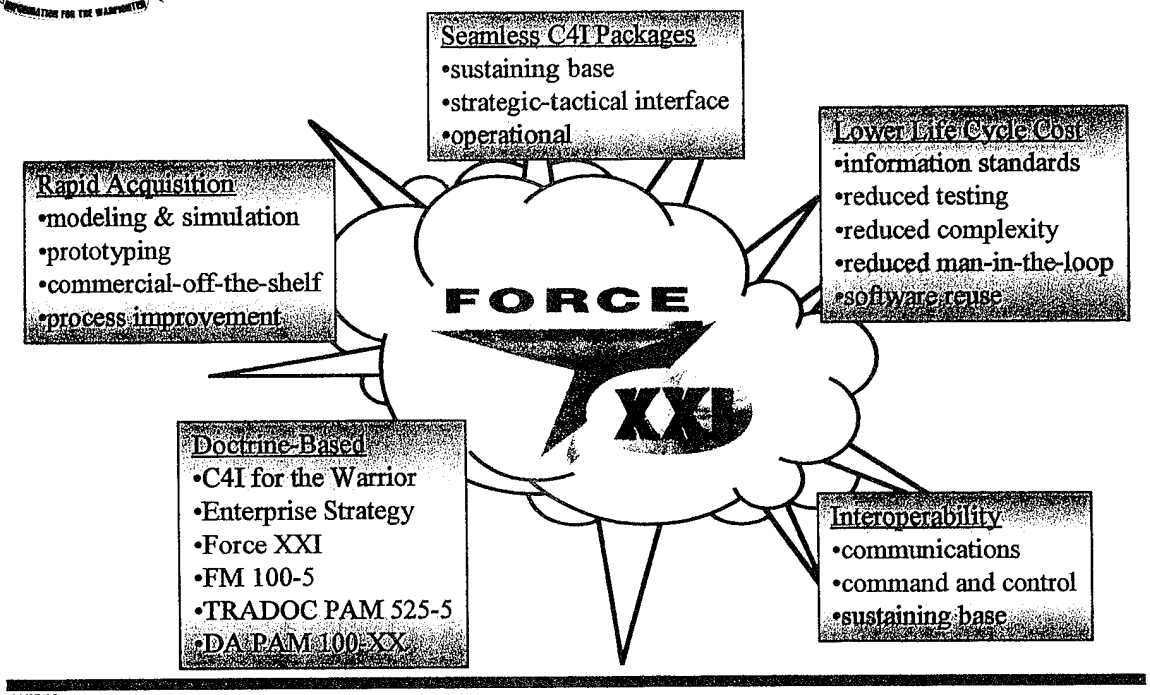


- Version 3.1 was signed and mandated by Mr. Decker (AAE) on 31 Mar 95
- Version 4.x is a Working Draft
- Verison 3.1 is available on the IMA BBS and the DISC4 WWW HomePage
  - download: <http://www.army.mil/disc4-pg/test/arch/projects/ta_dload.htm
  - read online: < http://129.83.53.102/TA31/tech.htm>
- Version 4.x is available:
  - http://129.83.53.102/
  - http://www.hqda.army.mil/webs/techarch/



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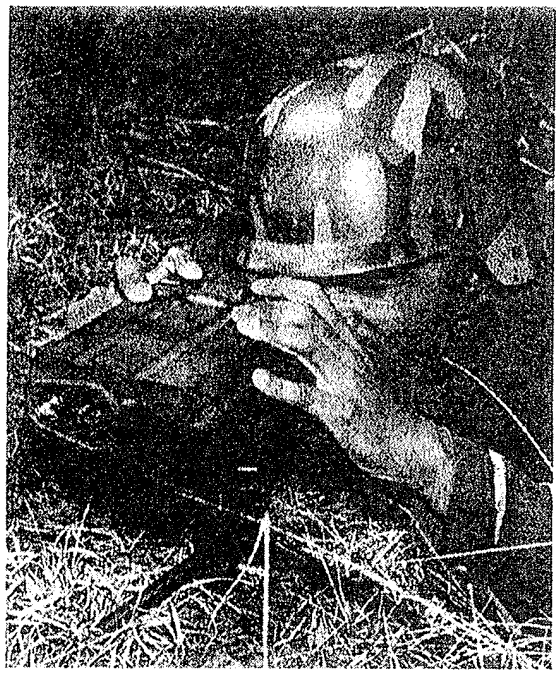
C4 Goals



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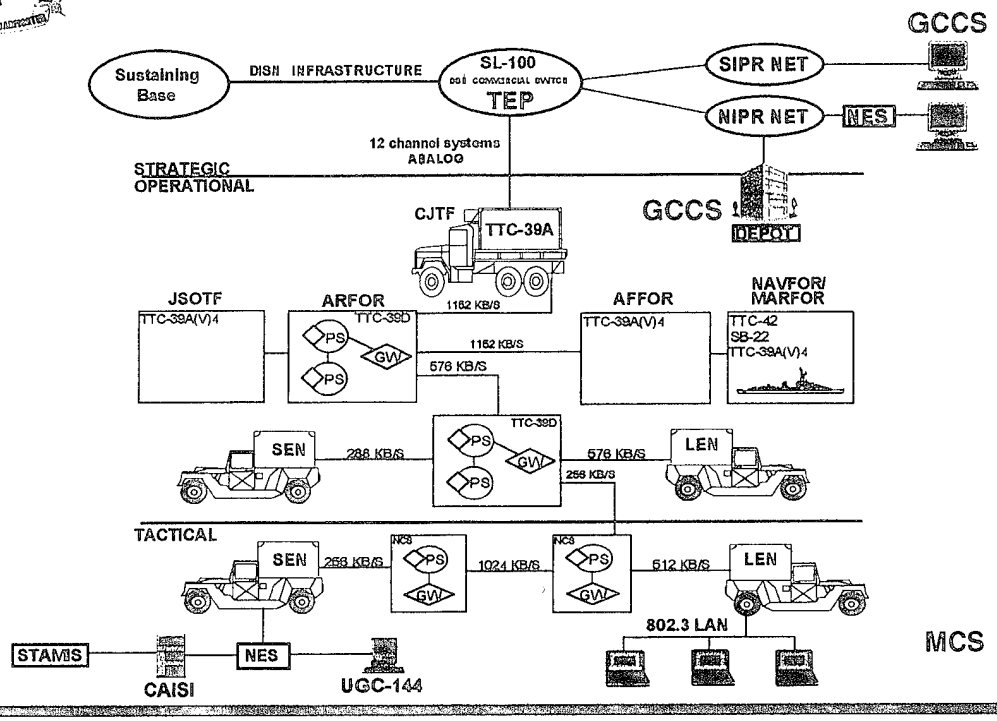
The View Today

- Developing technical, operational, and systems architecture
- Unifying and streamlining the acquisition processes:
  - DoD 5000/8000 series guidance
  - lengthy acquisition cycle (MILSTD, Test-Test-Test)
  - cumbersome, expensive software development
- Patchwork connection of sustaining base, communications, and theater/ tactical C2 and STAMIS systems



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Today's C4I System's Architecture



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Today's C2, Communications and STAMIS Systems

Analog to Digital Conversion

$f_n = \frac{N}{2}$ Hz

STAMIS
- SIDPERS 2.75
- SAMS
- SARSS/SAILS
- DAMMS
- TAMMIS
- STANFINS
- ISMs
- Command Uniques

Communications
- SINCGARS
- MSE
- EPLRS
- TAC-SAT/SATCOM
- MSG Switch (TYC-39)
- CKT Switch (TTC-39)
- DISN/STEP
- 802.3 LAN
- MTMP/CUITIN/OSCAR
- DODIIS/JWICS/TROJAN

INTEL
- InteLink
- TENCAP
- ASAS
- CTT

C2 Systems
- WWMCCS
- MCS (ATCCS)
- AUTODIN
- TACFIRE
- TACCIMS
- EUTACCS

(10101010)

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In Transition

Fusing C2, STAMIS, Intel & Communications = Communication Information System

$f_n = \frac{N}{2}$ Hz (10101010)

CONUS/Installation

STAMIS
- SIDPERS 3.0
- SAMS
- SARSS
- DAMMS-R
- TAMMIS
- STANFINS
- SBIS/RCAS
- InteLink

Communications
- SINCGARS
- MSE
- EPLRS
- TAC-SAT/SATCOM
- STAR-T
- MTMP/CUITIN/OSCAR
- 802.3 LAN/802.11
- DISN/STEP
- JWICS/TROJAN
- JMCIS/GCCS

TACTICAL INTERNET

Theater/Tactical
- GCCS
- MCS (ATCCS)
- FBCB2
- TENCAP
- InteLink

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Objective State

Digital Power Projection

(10101010)

CONUS/Installation ***Theater/Tactical***

C2 Systems
- GCCS
- ABCS
- MCS
- FBCB2

STAMIS
- SIDPERS 3.0
- SAMS/SARSS
- DAMMS-R
- TAMMIS
- STANFINS
- SBIS/RCAS

INTEL
- IntelLink

Communications
- SINCGARS
- MSE
- EPLRS
- TAC-SAT/SATCOM
- STEP
- STAR-T
- MTMP/CUITIN/OSCAR
- 802.3 LAN/802.11
- DII/DISN/DMS
- JMCS/CTT

TACTICAL INTERNET

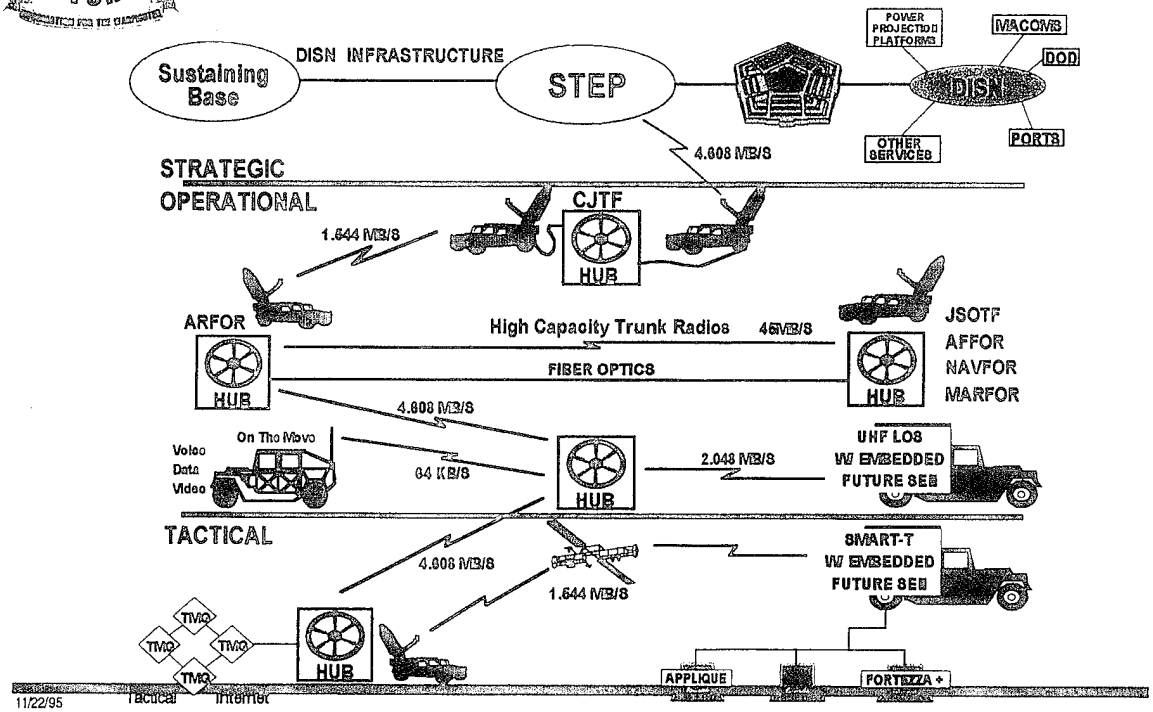
C2 Systems
- GCCS
- ABCS/MCS
- FBCB2

STAMIS
- SIDPERS 3.0
- SAMS/SARSS
- DAMMS-R
- TAMMIS
- STANFINS
- SBIS

INTEL
- ASAS/TENCAP
- IntelLink

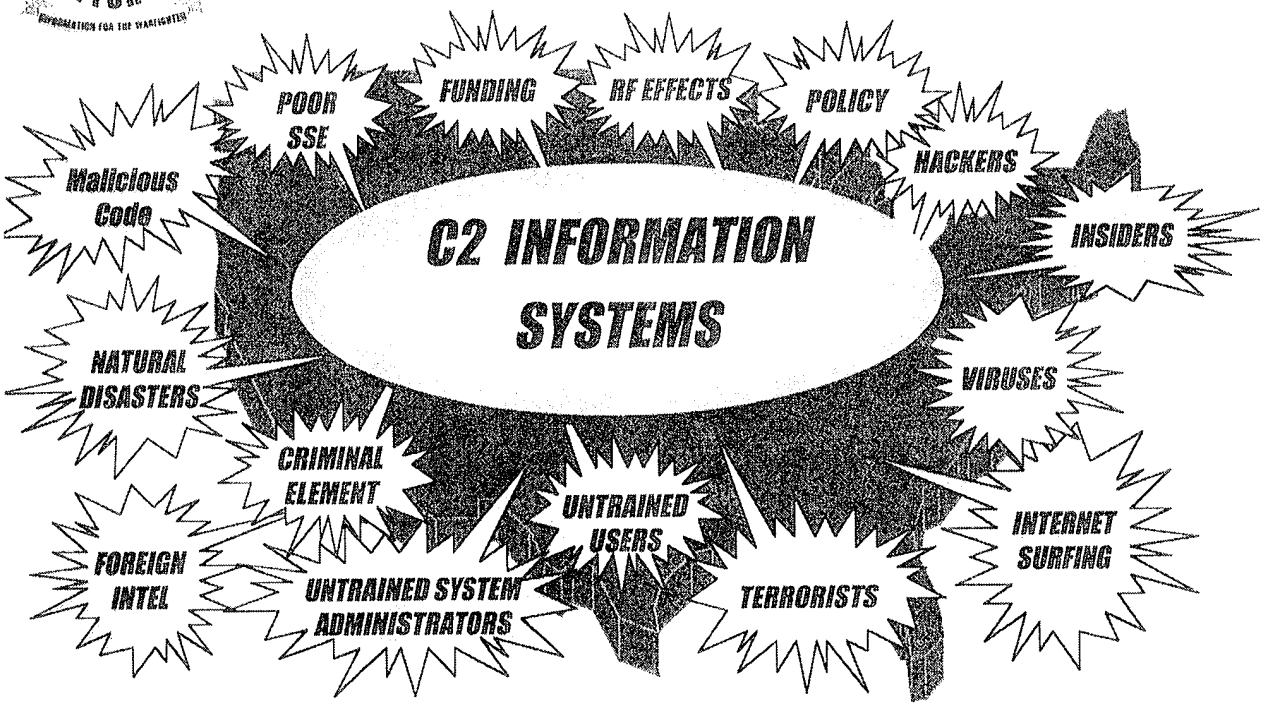
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Objective C4I Systems Architecture



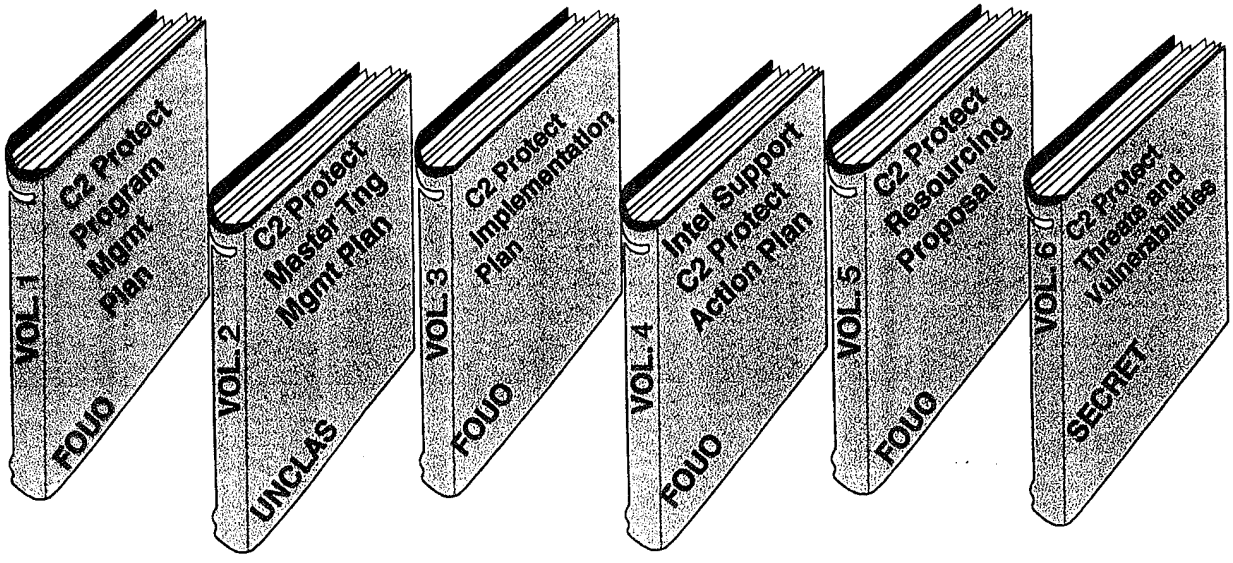
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Threats and Vulnerabilities to C2 Information Systems



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Army C2 Protect Library



C2 Protect Planning Evolves into AR XXX-XX

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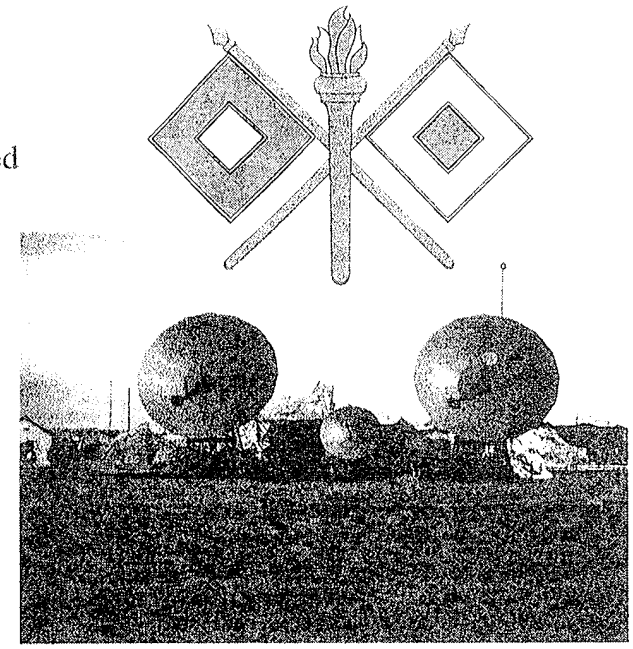
Bringing It All Together

- **Organizationally (One Voice - DISC4)**
  - **The Signal Corps Team (DISC4-SIGCEN-ISC-CECOM)**
- **Conceptually (One Vision - Army Enterprise, JCS C4I for the Warrior)**
- **Technically (One Architecture - Operational, System, Technical)**
- **With the following objectives:**
  - **ensure joint interoperability**
  - **elimination of the analog islands**
  - **elimination of stovepipe systems**
  - **streamlined acquisition**
  - **reduce costs while enhancing capability**

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Signal Organization and Mission Alignment (SOMA)

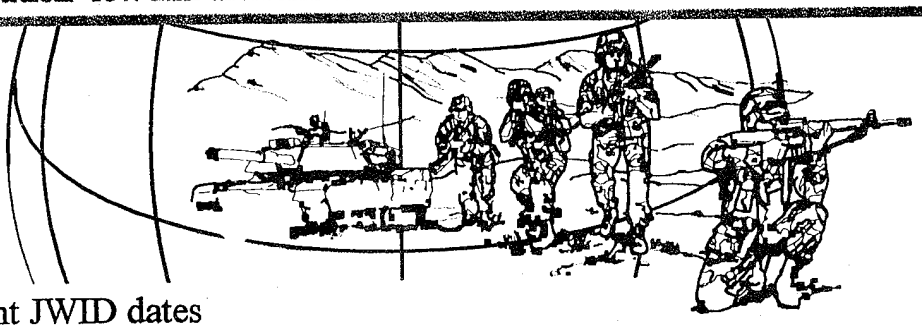
- Totally Examining DISC4 and Community
- Final Decisions to be determined
- Guiding Principles
  - focus on the warfighter
  - structure for Force XXI
  - maintain operational support throughout transition/ reorganization
  - focus on core competencies
  - consolidate functions for seamless support -- sustaining base to foxhole
  - sensitive to people impacts



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JWID '96

- **Joint**- addresses issues across the Services
- **Warrior**- focused on the WARFIGHTER
- **Interoperabilty**- technical solutions to JOINT INTEROPERABILTIY PROBLEMS
- **Demonstration**- low risk environment

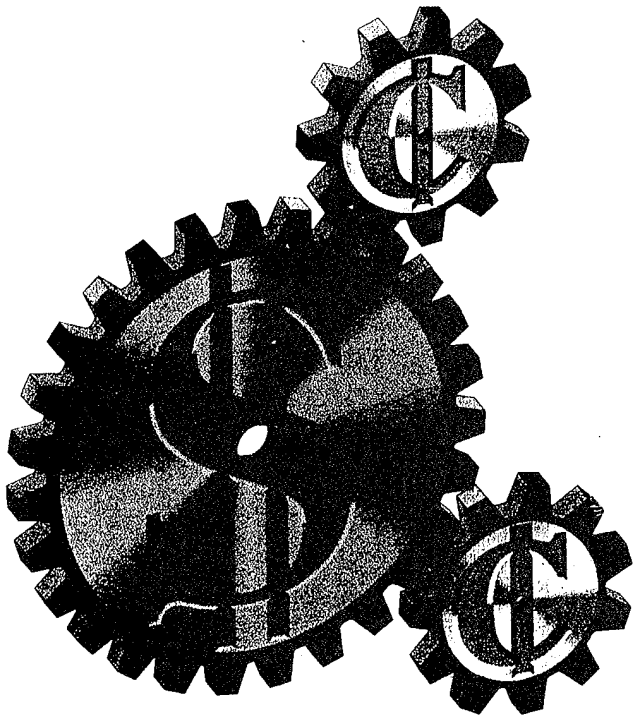


- Important JWID dates
  - *Commerce Business Daily* announcement expected December '95
  - VIP week demonstrations 9-13 September '96
- JWID '96 on the World Wide Web: < http://www.army.mil/jwid96.htm>

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Cost Efficiencies

- Seamless Interoperability without Undue Constraints
  - decentralized execution
    - MACOMs get set resource levels (manpower and funding)
  - centralized monitoring
    - compliance-based oversight by HQDA (architectures and standards)
- FY 97-01
  - reduce automation real expenses by $50m/yr.
  - > $2.5 m = HQDA oversight
  - structural efficiencies for global C4 operations
  - short term investment with long-term cost savings



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Concerns and Issues

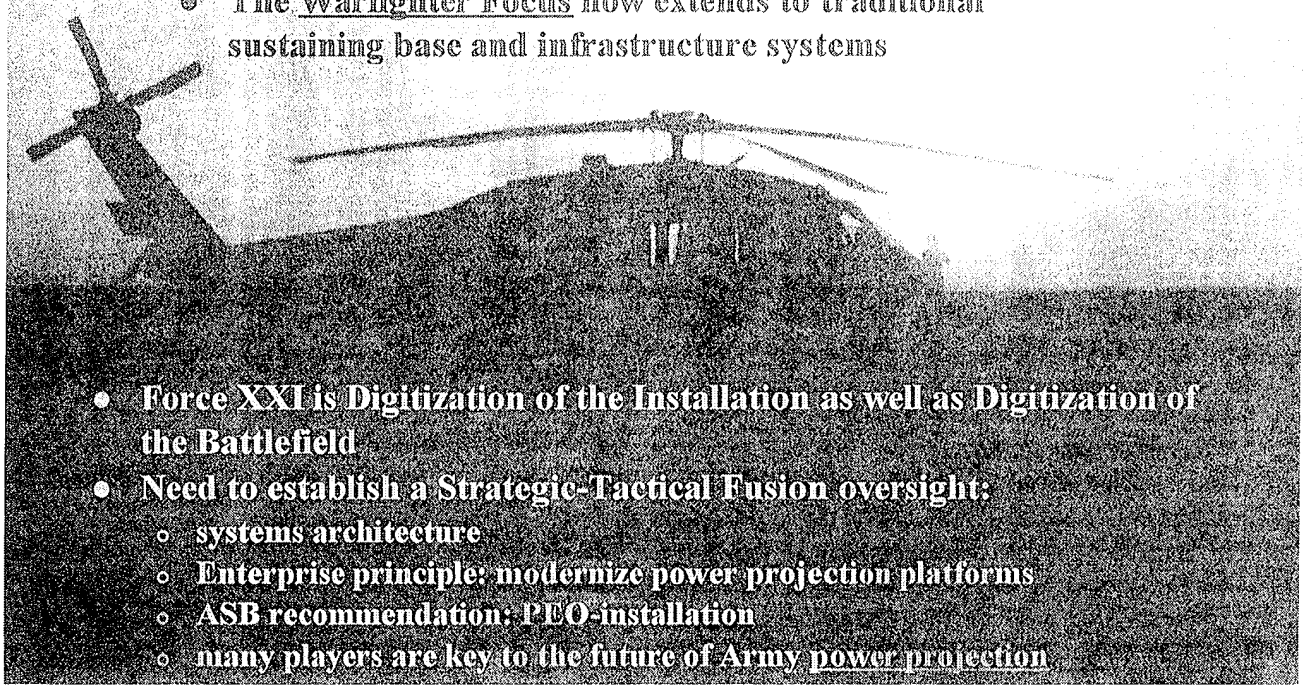
- Effectively digitizing the battlefield requires better synchronization from sustaining base to the foxhole
- Split-Based Operations ARE NOT leveraging the base digital infrastructure
- A resource-constrained environment demands more efficient Information Systems and synergistic Program Management.
- To leverage Army investment, we must move from command-unique systems to standard systems



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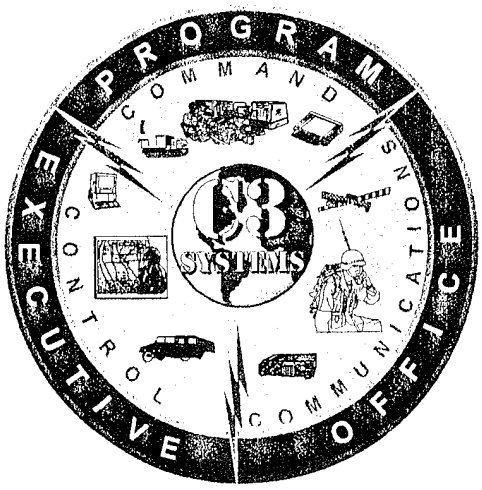
Conclusions

- A Unifying Architecture is Key
- The Warfighter Focus now extends to traditional sustaining base and infrastructure systems



- **Force XXI is Digitization of the Installation as well as Digitization of the Battlefield**
- **Need to establish a Strategic-Tactical Fusion oversight:**
  - **systems architecture**
  - **Enterprise principle: modernize power projection platforms**
  - **ASB recommendation: PEO-installation**
  - **many players are key to the future of Army power projection**

ADVANCED PLANNING BRIEFING TO INDUSTRY



MG William H. Campbell
PEO C3S

PURPOSE

TO PROVIDE INDUSTRY INSIGHT INTO FUTURE OPPORTUNITIES ON C4 WARFIGHTING PROGRAMS

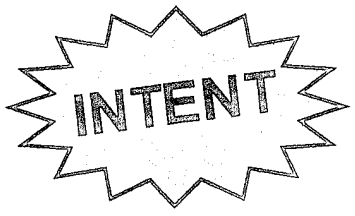
AGENDA

- PEO C3S MERGER, PRODUCT LINES, ORGANIZATION
- OVERARCHING ACQUISITION STRATEGY FOR C4 SYSTEMS
- C4 CONTRACT OPPORTUNITIES

PEO CCS and PEO COMM MERGED INTO PEO C3S



TO FORM A STREAMLINED MANAGEMENT STRUCTURE TO SUPPORT THE DIGITIZED BATTLEFIELD, FORCE XXI AND MODERNIZATION OF ARMY C3 SYSTEMS SUPPORTING THE WARFIGHTER FROM EAC TO THE FOXHOLE.



REENGINEER OURSELVES TO:

- INTEGRATE PROGRAMS HORIZONTALLY AND VERTICALLY
- REDUCE CYCLE TIME IN ACQUISITION AND FIELDING
- SYNCHRONIZE COMPUTER AND COMMUNICATIONS INFRASTRUCTURES AND TECHNOLOGY INSERTION
- LEVERAGE COMMERCIAL TECHNOLOGIES
- ACHIEVE OPERATIONAL ECONOMIES AND REDUCE LIFE CYCLE COSTS



MERGED ORGANIZATIONS ON 1 JUL 95

- PEO STAFFS INTEGRATED
- PM OFFICES TRANSFERRED IN PLACE
- SEVERAL PM OFFICES TO BE MERGED OVER NEXT 2 YEARS

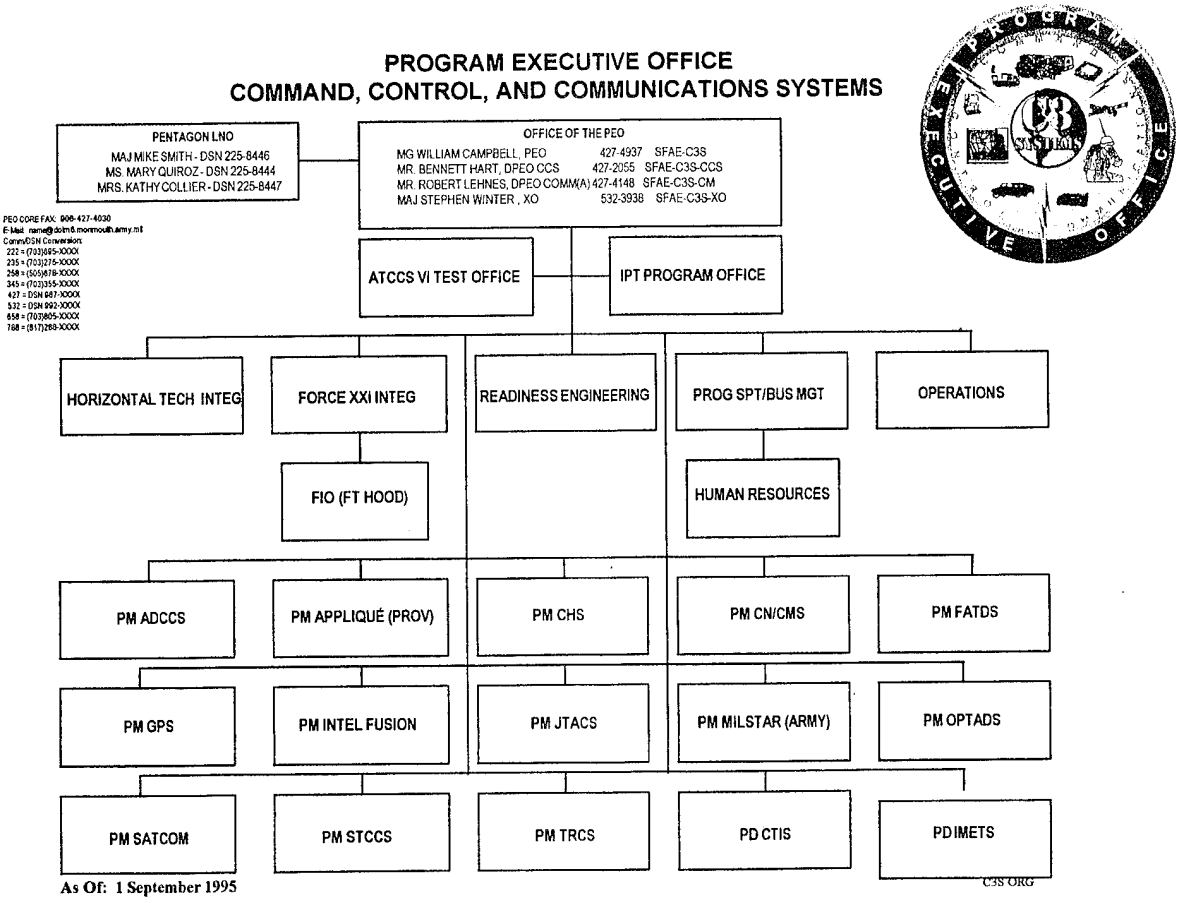
PRODUCT LINES AND PM OFFICES

COMMAND and CONTROL and COMPUTERS

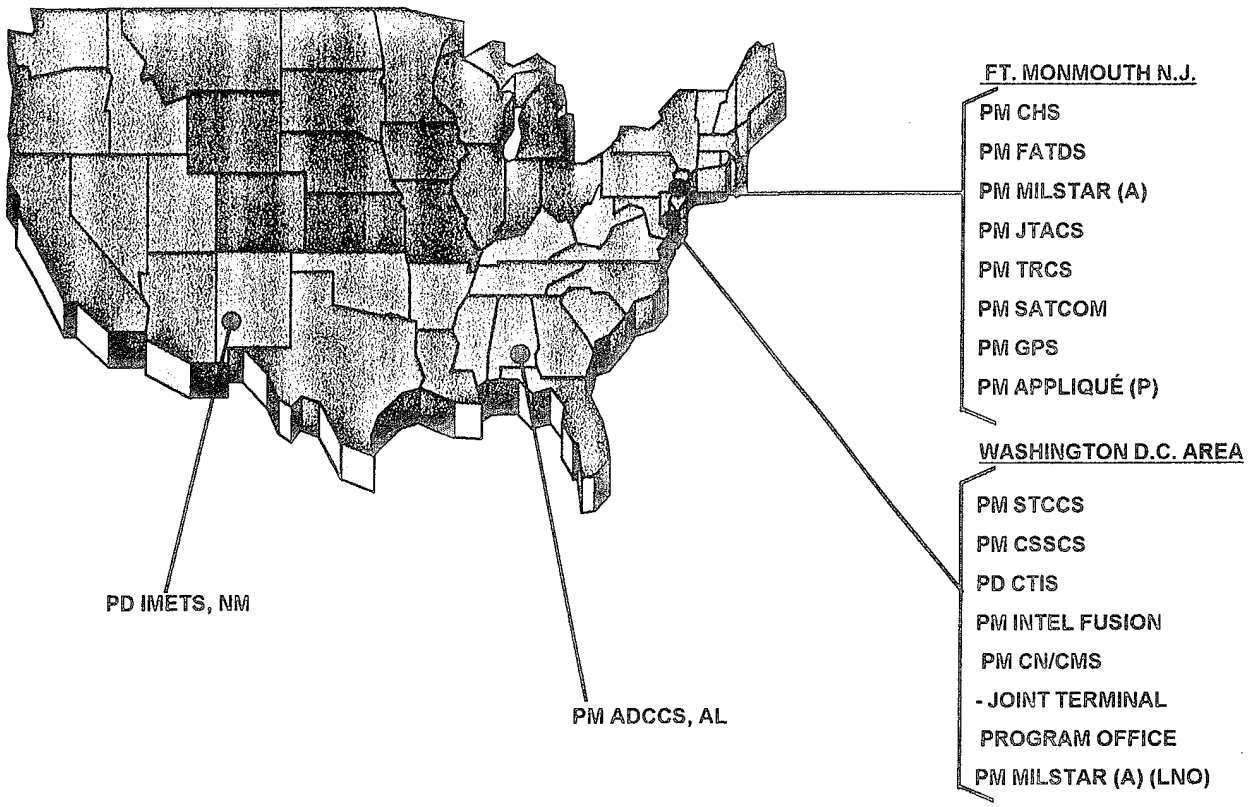
- Air Defense Command and Control Systems (ADCCS) -- Forward Area Air Defense Command and Control (FAADC2)
- Intelligence Fusion -- All Source Analysis System (ASAS)
- Common Hardware and Software (CHS)
- Field Artillery Tactical Data Systems -- Advanced Field Artillery Tactical Data System (AFATDS)
- Operations Tactical Data Systems -- Maneuver Control System (MCS)
- Combat Terrain Information System (CTIS) -- Digital Topographic Support System/Quick Response Multicolor Printer (DTSS/QRMP)
- Integrated Meteorological System (IMETS)
- Strategic and Theater Command and Control Systems (STCCS)
- Appliqué -- TF XXI Weapons Platform Computer
- Counternarcotics Command Management System (CN/CMS)

COMMUNICATIONS

- Satellite Communications (SATCOM)
- Milstar (Army)
- Global Positioning System (GPS)
- Joint Tactical Communication Systems (JTACS)
- Tactical Radio Communication Systems (TRCS)



PEO C3S MANAGEMENT LOCATIONS



OVERARCHING ACQUISITION STRATEGY

- OPEN SYSTEMS *ARCHITECTURE*
- *COMMON* HARDWARE AND SOFTWARE
- MAINSTREAM COMMERCIAL *STANDARDS* -- MILSPEC ONLY WHEN FULLY JUSTIFIED
- *PERFORMANCE* SPECS -- NDI -- REPACKAGED AS REQUIRED
- SYSTEMS DESIGNED FOR *TECHNOLOGY INSERTION*
  - CLOSELY LINKED TO *RDEC* ADVANCED DEVELOPMENT INITIATIVES
  - UPGRADED WITH *COMMERCIAL* PRODUCTS
- *MULTIYEAR* CONTRACTS WITH *P3I* AND PRODUCTION *OPTIONS*
- *ANNUAL* CAPABILITY PACKAGE DELIVERIES ON SOFTWARE CONTRACTS -- FULL FUNCTIONALITY AT COMPLETION
- STREAMLINE ACQUISITION PROCESSES
- CONSTANTLY LOOK FOR NEW OPPORTUNITIES -- MOD TO EXISTING CONTRACTS FAVORED OVER NEW STARTS

C4 CONTRACT OPPORTUNITIES

- ALL PROGRAMS HAVE *ON-GOING* DEVELOPMENT AND/OR PRODUCTION CONTRACTS
- *EXISTING CONTRACTS* PROVIDE MAJOR AVENUE FOR *TECHNOLOGY INSERTION* OR SYSTEM IMPROVEMENTS
- SEVERAL *OPPORTUNITIES* FOR NEW CONTRACTS, PRODUCTION OPTIONS, UPGRADES, AND PROGRAM SUPPORT
- DATA SHEETS WITH *POC* NAME AND PHONE NUMBER PROVIDED

COMMAND and CONTROL SYSTEMS CONTRACT OPPORTUNITIES

- **MANEUVER CONTROL SYSTEM (MCS) DEVELOPMENT**
- **TACTICAL OPERATION CENTER (TOC) INTEGRATION (TIME & MATERIALS)**
- **FORWARD AREA AIR DEFENSE C2 (FAADC2) SYSTEM BLOCK IV DEVELOPMENT**
- **DIGITAL TOPOGRAPHIC SUPPORT SYSTEM/QUICK RESPONSE MULTICOLOR PRINTER (DTSS/QRMP) PRODUCTION**
- **FIELD ARTILLERY TACTICAL DATA SYSTEM PROGRAM MANAGEMENT SUPPORT**

CONTRACT OPPORTUNITY

TITLE:	PM OPTADS - MANEUVER CONTROL SYSTEM BLOCK IV
OBJECTIVE:	SOFTWARE DEVELOPMENT - VERSION 12.1, VERSION 12.2, VERSION 12.3
CONTRACT TYPE:	COMPETITIVE COST PLUS INCENTIVE FEE
KEY MILESTONES:	RFP RELEASE --DEC 95 CONTRACT AWARD -- 4TH QTR FY96
ESTIMATED VALUE:	$60M - $90M
POC NAME/PHONE:	MS GIRGUS / (908) 532-2947

CONTRACT OPPORTUNITY

TITLE:	TACTICAL OPERATIONS CENTER (TOC) INTEGRATION
OBJECTIVE:	PROVIDE TOC AUTOMATION CAPABILITY TO TOTAL ARMY FORCE STRUCTURE
CONTRACT TYPE:	COMPETITIVE COST PLUS INCENTIVE FEE
KEY MILESTONES:	RFP RELEASE -- 1ST QTR FY98 CONTRACT AWARD -- 1ST QTR FY99 INITIAL FIELDING -- 3RD QTR FY99
ESTIMATED VALUE:	TBD (CUSTOMER FUNDED)
POC NAME/PHONE:	LTC J. MORAN / (205) 895-5437

CONTRACT OPPORTUNITY

TITLE: FAAD C2

OBJECTIVE: BLOCK IV DEVELOPMENT (P3I)

CONTRACT TYPE: COMPETITIVE COST PLUS INCENTIVE FEE

KEY MILESTONES:
RFP RELEASE: 2ND QTR FY98
CONTRACT AWARD: 1ST QTR FY99
INITIAL FIELDING: 3RD QTR FY99

ESTIMATED VALUE: APPROX. $45m

POC NAME/PHONE: LTC E. SIOMACCO / (205) 895-5437

CONTRACT OPPORTUNITY

TITLE: PM CTIS - DIGITAL TOPOGRAPHIC SUPPORT SYSTEM/QUICK RESPONSE MULTICOLOR PRINTER (LIGHT) (DTSS/QRMP (LT))

OBJECTIVE: PRODUCTION OF 15 DTSS/QRMP (LT) SYSTEMS

CONTRACT TYPE: COMPETITIVE FIRM FIXED PRICE

KEY MILESTONES:
RFP RELEASE -- MAY 97
CONTRACT AWARD -- NOV 97
FIELDING SCHEDULE NOV 98 THROUGH 2002

ESTIMATED VALUE: $30M

POC NAME/PHONE: MR. THACKER / (703) 355-2876

CONTRACT OPPORTUNITY

TITLE: PM FATDS PROGRAM MANAGEMENT SUPPORT

OBJECTIVE: PROVIDE FIELD ARTILLERY AND FIRE SUPPORT PROGRAM MANAGEMENT SUPPORT FOR PM FIELD ARTILLERY TACTICAL DATA SYSTEMS (PM FATDS) IN THE AREAS OF SYSTEM ENGINEERING, READINESS MANAGEMENT, TEST & EVALUATION, INTEROPERABILITY, PROGRAM MANAGEMENT, AND SOFTWARE ENGINEERING.

CONTRACT TYPE: COMPETITIVE COST PLUS FIXED FEE, LEVEL OF EFFORT OR TIME & MATERIAL

KEY MILESTONES: CONTRACT AWARD DEC 1996

ESTIMATED VALUE: $11M

POC NAME/PHONE: ROBERT VARCA/ (908) 532-3993

COMMUNICATION SYSTEMS CONTRACT OPPORTUNITIES

- MILSTAR -- SMART-T AND SCAMP PRODUCTION, TRAINING, MATERIEL FIELDING
- SATCOM -- STAR-T, UNIVERSAL MODEM, AN/GSC-52 MODERNIZATION, DSCS SPECTRUM MANAGEMENT AND PLANNING, ODOC PLANNING SOFTWARE, DIMS AUGMENTATION, COMSEC REPLACEMENT
- JTACS -- HIGH CAPACITY TRUNK RADIO, FLY AWAY MESSAGE SWITCH, KEY MANAGEMENT SYSTEM SOFTWARE
- GPS -- CARGO UTILITY GPS RECEIVER
- TRCS -- SINCGARS PRODUCTION, NEAR TERM DIGITAL RADIO

CONTRACT OPPORTUNITY

TITLE: PM MILSTAR - SMART-T

OBJECTIVE: MILSTAR HMMWV MOUNTED SATELLITE TERMINAL (LDR/MDR), TO PROVIDE RANGE EXTENSION TO MSE, LPD/LPI, 75-1.544 MBPS, ANTI-JAM

CONTRACT TYPE: LRIP/FSP FFP, DOWN SELECTIONS FROM DUAL DEVELOPMENT CONTRACTORS

KEY MILESTONES: CONTRACT AWARD, 2ND QTR FY96

ESTIMATED VALUE: COMPETITION SENSITIVE

POC NAME/PHONE: COL MICHAEL R. MAZZUCCHI / (908) 532-9767 ext 4001

CONTRACT OPPORTUNITY

TITLE: PM MILSTAR - SMART-T

OBJECTIVE: MATERIAL FIELDING SUPPORT

CONTRACT TYPE: COMPETITIVE TIME AND MATERIALS

KEY MILESTONES: INITIAL FIELDING ACTIVITIES BEGIN, 1ST QTR FY99

ESTIMATED VALUE: TBD

POC NAME/PHONE: COL MICHAEL R. MAZZUCCHI / (908) 532-9767 ext 4001

CONTRACT OPPORTUNITY

TITLE: PM MILSTAR - SMART-T

OBJECTIVE: INTERACTIVE COURSEWARE TO PROVIDE RESIDENT AND SUSTAINMENT TRAINING AT THE US ARMY SIGNAL SCHOOL

CONTRACT TYPE: COMPETITIVE COST PLUS INCENTIVE FEE

KEY MILESTONES: DEVELOPMENT EFFORT BASED ON PERFORMANCE SPECIFICATIONS DEVELOPED BY PRODUCTION CONTRACTOR, 1ST QTR FY97

ESTIMATED VALUE: TBD

POC NAME/PHONE: COL MICHAEL R. MAZZUCCHI / (908) 532-9767 ext 4001

CONTRACT OPPORTUNITY

TITLE: PM MILSTAR, SCAMP, BLOCK I

OBJECTIVE: MILSTAR MANPORTABLE TERMINAL, NTE 37 LBS., LDR, LPD/LPI, ANTI-JAM

CONTRACT TYPE: COMPETITIVE FULL SCALE PRODUCTION FIRM FIXED PRICE

KEY MILESTONES: CONTRACT AWARD: 2ND QTR 96

ESTIMATED VALUE: COMPETITION SENSITIVE

POC NAME/PHONE: COL MICHAEL R. MAZZUCCHI / (908) 532-9767 ext 4001

CONTRACT OPPORTUNITY

TITLE: PM MILSTAR - SCAMP, BLOCK II

OBJECTIVE: MILSTAR MANPACKABLE TERMINAL, 12-15 LBS

CONTRACT TYPE: TBD

KEY MILESTONES: ENGINEERING FEASIBILITY EFFORTS, FY96-99

ESTIMATED VALUE: TBD

POC NAME/PHONE: COL MICHAEL R. MAZZUCCHI / (908) 532-9767 ext 4001

CONTRACT OPPORTUNITY

TITLE: PM SATCOM - SHF TRIBAND ADVANCED RANGE EXTENSION TERMINAL(STAR-T) FOR SOF

OBJECTIVE:
- PROVIDE SHF TRIBAND CAPABILITY
- UTILIZE NDI/COTS/GOTS EQUIPMENT
- REPLACE EXISTING GMF TERMINALS

CONTRACT TYPE: COMPETITIVE FIRM FIXED PRICE FOR HARDWARE WITH OPTIONS FOR 8 YEARS
T&M FOR SERVICES FOR UP TO 10 YEARS

KEY MILESTONES: RFP RELEASE -- 31 JAN 96
CONTRACT AWARD -- 4TH QTR FY96

ESTIMATED VALUE: $280MILLION

POC NAME/PHONE: MR. VELEZ/ (908) 532-9727 ext 6840

CONTRACT OPPORTUNITY

TITLE:	PM SATCOM - UNIVERSAL MODEM SYSTEM
OBJECTIVE:	– ANTI-JAM, ANTI-SCINTILLATION, LPI, LPD – SHF SATELLITE MODEM – REPLACE THE USC-28 AND OM-55 – U.S., UK, AND FRANCE COOPERATIVE DEVELOPMENT PROGRAM
CONTRACT TYPE:	COMPETITIVE PRODUCTION, FIXED PRICE AWARD FEE
KEY MILESTONES:	RFP RELEASE --- APRIL 1996 CONTRACT AWARD --- 2ND QTR FY97
ESTIMATED VALUE:	$200 MILLION
POC NAME/PHONE:	LTC SIDWELL / (908) 532-9727 ext 6828

CONTRACT OPPORTUNITY

TITLE:	PM SATCOM -AN/GSC-52 MODERNIZATION (PRODUCTION) PROGRAM
OBJECTIVE:	– EXTEND LIFE OF TERMINALS – IMPROVE OPERATIONAL OPERABILITY – INCREASE RELIABILITY – REDUCE OPERATING COSTS – PROVIDE COMMONALITY AMONG STRATEGIC TERMINALS
CONTRACT TYPE:	COMPETITIVE FIRM FIXED PRICE FOR HARDWARE, SOFTWARE AND ILS EFFORTS T&M FOR INSTALLATION, CONTRACTOR DEPOT SUPPORT, S/W SUPPORT AND ENGR SUPPORT.
KEY MILESTONES:	RFP RELEASE -- 3RD QTR FY97 CONTRACT AWARD --2ND QTR FY98
ESTIMATED VALUE:	$70M
POC NAME/PHONE:	MR. ANDERSON / (908) 532-0995

CONTRACT OPPORTUNITY

TITLE: PM SATCOM - DSCS SPECTRUM MANAGEMENT SYSTEM

OBJECTIVE:
- REPLACEMENT FOR THE AUTOMATIC SPECTRUM ANALYZER
- MONITOR THE COMMUNICATIONS BANDS
- PERFORM NETWORK CALCULATIONS

CONTRACT TYPE: COMPETITIVE FIRM FIXED PRICE

KEY MILESTONES:
REP RELEASE -- JAN 99
CONTRACT AWARD - - JAN 00

ESTIMATED VALUE: $8M

POC NAME/PHONE: MR. JOHNSON / (908) 532-5293

CONTRACT OPPORTUNITY

TITLE: PM SATCOM - OBJECTIVE DSCS OPERATIONS CENTER (ODOC) PLANNING SOFTWARE

OBJECTIVE: PROCURE NEW SOFTWARE PACKAGE THAT WILL PLAN, MONITOR AND CONTROL THE DSCS & COMM SATELLITE COMMUNICATIONS NETWORKS.

CONTRACT TYPE: COMPETITIVE FIRM FIXED PRICE

KEY MILESTONES:
RFP RELEASE -- JAN 97
CONTRACT AWARD -- JAN 98

ESTIMATED VALUE: $10M

POC NAME/PHONE: MR. D MORRISSEY / (908) 532-9728 ext 5808

CONTRACT OPPORTUNITY

TITLE:	PM SATCOM - DIMS AUGMENTATION
OBJECTIVE:	INCREASE THE CAPABILITY OF THE DOSS/DIMS TO INCLUDE OPERATION OF ALL DSCSOC SUBSYSTEMS FROM A SINGLE WORKSTATION.
CONTRACT TYPE:	COMPETITIVE FIRM FIXED PRICE
KEY MILESTONES:	RFP RELEASE -- JAN 97 CONTRACT AWARD -- JAN 98
ESTIMATED VALUE:	$21M
POC NAME/PHONE:	MR. R. JOHNSON / (908) 532-5293

CONTRACT OPPORTUNITY

TITLE:	PM SATCOM - REPLACEMENT BATSON
OBJECTIVE:	REPLACE THE BATSON COMSEC EQUIPMENT. THE BATSON IS NEARING THE END OF ITS PLANNED LIFE CYCLE.
CONTRACT TYPE:	COMPETITIVE FIRM FIXED PRICE
KEY MILESTONES:	RFP RELEASE -- JAN 97 CONTRACT AWARD -- JAN 98
ESTIMATED VALUE:	$22M
POC NAME/PHONE:	MS L. MURPHY / (908) 532-9728 ext 5822

CONTRACT OPPORTUNITY

TITLE: PM JTACS - HIGH CAPACITY TRUNK RADIO

OBJECTIVE: HIGH CAPACITY RADIO IN SUPPORT OF AREA COMMON USER SYSTEM (ACUS)

CONTRACT TYPE: COMPETITIVE FIRM FIXED PRICE

KEY MILESTONES: CONTRACT AWARD -- 2ND QTR FY00

ESTIMATED VALUE: $100M

POC NAME/PHONE: MR. SCHNABOLK / (908) 532-3525

CONTRACT OPPORTUNITY

TITLE: PM JTACS - FLY-AWAY MESSAGE SWITCH

OBJECTIVE: MESSAGE SWITCH FOR CONTINGENCY OPERATIONS

CONTRACT TYPE: COMPETITIVE FIRM FIXED PRICE

KEY MILESTONES: CONTRACT AWARD -- 2ND QTR FY96

ESTIMATED VALUE: N/A (CURRENTLY IN SOURCE SELECTION)

POC NAME/PHONE: MR. NUGENT / (908) 532-3525

CONTRACT OPPORTUNITY

TITLE:	PM JTACS - KEY MANAGEMENT SYSTEM SOFTWARE SUPPORT II
OBJECTIVE:	SOFTWARE SUPPORT FOR ARMY KEY MANAGEMENT SYSTEM PROGRAM
CONTRACT TYPE:	COMPETITIVE TIME AND MATERIAL
KEY MILESTONES:	CONTRACT AWARD -- 2ND QTR FY96
ESTIMATED VALUE:	N/A (CURRENTLY IN SOURCE SELECTION)
POC NAME/PHONE:	MR. SKRLETTS / (908) 532-3110

CONTRACT OPPORTUNITY

TITLE:	PM GPS - CARGO UTILITY GPS RECEIVER (CUGR)
OBJECTIVE:	LOW COST, NATIONAL AIR SPACE COMPLIANT RECEIVER FOR NON-MODERNIZATION AIRCRAFT
CONTRACT TYPE:	COMPETITIVE FIRM FIXED PRICE WITH 2 OPTIONS
KEY MILESTONES:	RELEASE SOLICITATION -- 2 JAN 96 BID SAMPLE TEST -- 1 APR 96 - MAY 96 CONTRACT AWARD -- 30 JUN 96
ESTIMATED VALUE:	COMPETITIVE SENSITIVE
POC NAME/PHONE:	MAJ GAGER / (908) 532-6304

CONTRACT OPPORTUNITY

TITLE: PM TRCS - SINCGARS PRODUCTION - FY97/97

OBJECTIVE: CONTINUE FULL RATE PRODUCTION OF GROUND RADIOS

CONTRACT TYPE: LIMITED COMPETITION FIRM FIXED PRICE TO ITT/GD

KEY MILESTONES: FIRST DELIVERY, JUNE 97
BEGIN FIELDING, AUG 97

ESTIMATED VALUE: $584M - QTY 66,000

POC NAME/PHONE: MR. J. MYSLINSKI / (908) 427-3008

DIGITAL RADIO LEXICON

- FDR: *FUTURE DIGITAL RADIO* -- ARMY'S OBJECTIVE TACTICAL HIGH CAPACITY DATA HAULER FOR 21st CENTURY -- MENS WRITTEN -- FUTURE SOLICITATION
- NTDR: *NEAR TERM DIGITAL RADIO* -- INTERIM NDI SOLUTION -- IN SOURCE SELECTION NOW -- LIMITED QUANTITIES FOR DIVISION XXI WITH OPTIONS FOR PRODUCTION -- OPEN ARCHITECTURE -- COULD EVOLVE TO MEET FDR REQUIREMENT
- SDR: *SURROGATE DIGITAL RADIO* -- RDEC INITIATIVE FOR TF XXI -- VERY LIMITED QUANTITIES (@ 20 TO 60) -- SOURCE SELECTION WITHIN 6 WEEKS -- WILL DEPLOY TO FT HOOD BY JUN 96 AND EMPLOY IN TF XXI BDE AWE FEB 97

CONTRACT OPPORTUNITY

TITLE:	PM TRCS - NEAR TERM DIGITAL RADIO (NTDR)
OBJECTIVE:	PROCURE AND TEST A LIMITED QUANTITY OF SYSTEMS AS A NEW PLATFORM FOR TACTICAL DATA TRANSMISSION
CONTRACT TYPE:	COMPETITIVE COST PLUS FIXED FEE/TIME AND MATERIALS
KEY MILESTONES:	FIRST DELIVERY, AUG 97 BEGIN TESTING, NOV 97
ESTIMATED VALUE:	COMPETITIVE SENSITIVE
POC NAME/PHONE:	MR. J. MYSLINSKI / (908) 427-3008

WRAP-UP

- MULTIPLE SOURCE SELECTIONS IN PROGRESS
- SEVERAL NEAR AND MID TERM CONTRACTUAL OPPORTUNITIES -- WATCH ELECTRONIC BULLETIN BOARD
- TECHNOLOGY INSERTION ORIENTATION -- KEEP GOOD IDEAS FLOWING -- WE'LL MODIFY ONGOING CONTRACTS
- TF XXI EXPERIENCE WILL DRIVE FUTURE ACQUISITION STRATEGY

DIGITIZATION OVERVIEW BRIEFING

Army Digitization Office



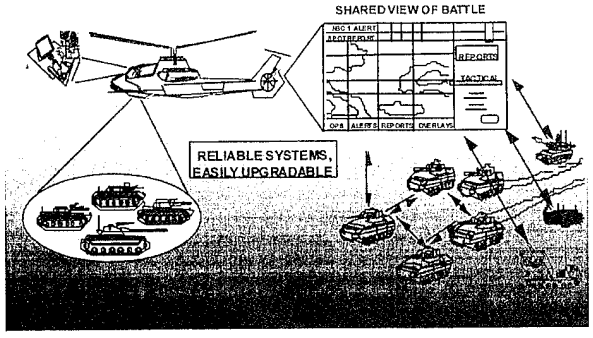
ADPA C^{4}I APBI

28 November 1995

DIGITIZATION

Army Digitization Office

Digitizing the Battlefield is the application of information technologies to acquire, exchange, and employ timely digital information throughout the battlespace, tailored to the needs of each decider (commander), shooter, and supporter...allowing each to maintain a clear and accurate vision of his battlespace necessary to support both planning and execution.



☆*Lethality*

☆*Survivability*

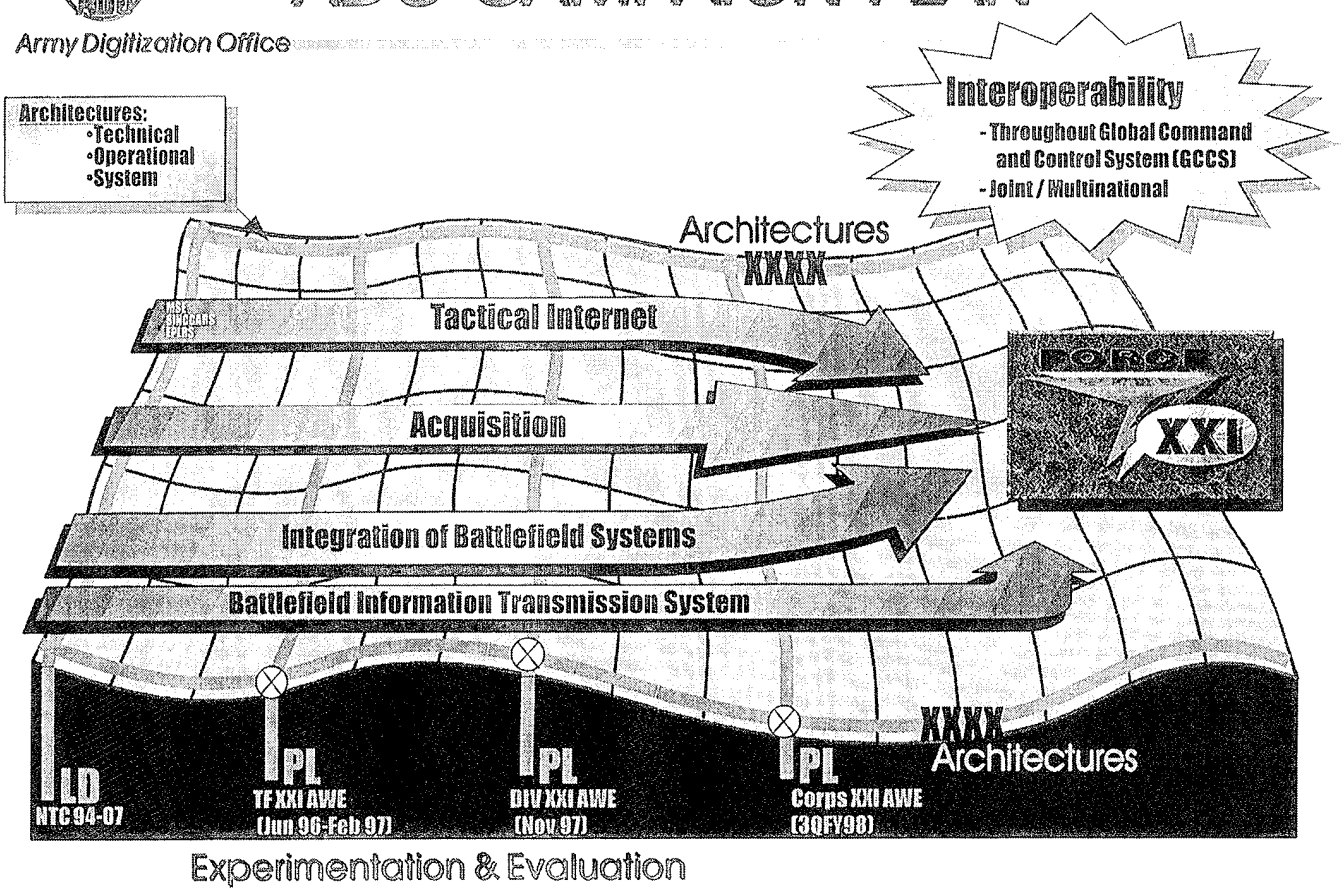
☆*OPTEMPO*

FROM STRATEGIC/SUSTAINING BASE ASSETS TO THE TACTICAL LEVEL

WITHIN THE ARMY AND WITHIN JOINT / COMBINED OPERATIONS

ADO CAMPAIGN PLAN

Army Digitization Office

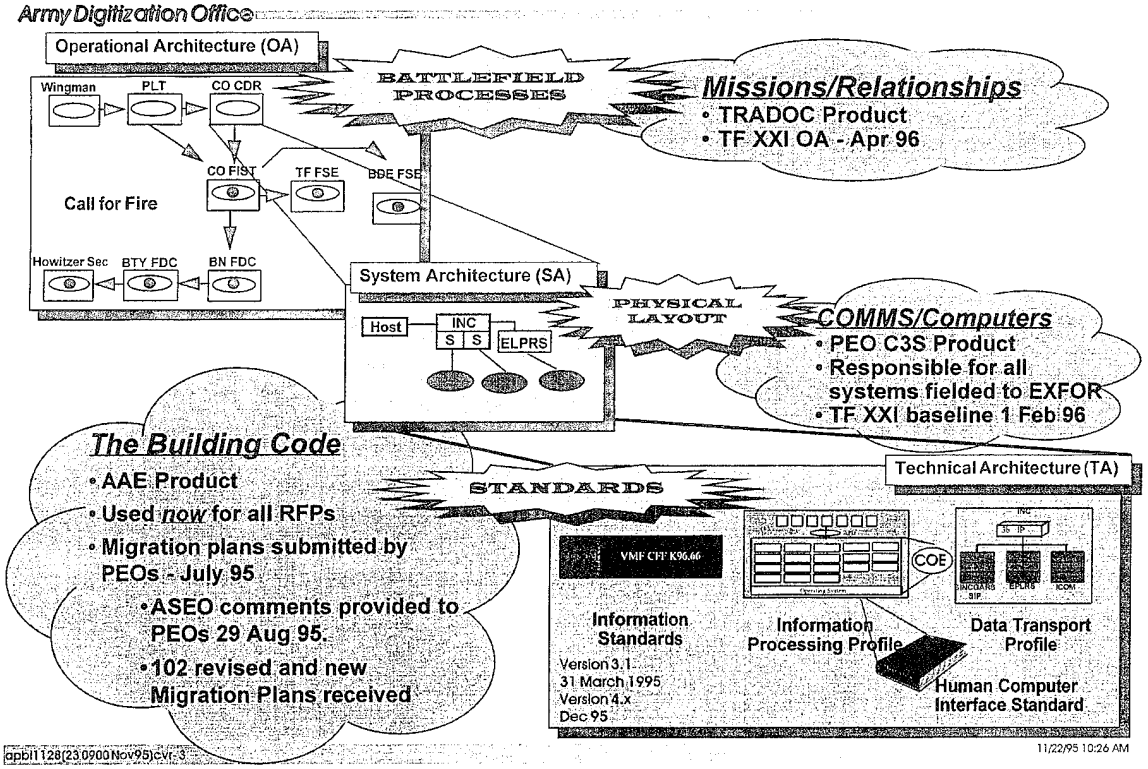


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Architectures for Force XXI

Army Digitization Office



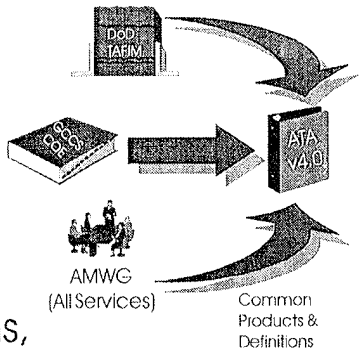
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Army Technical Architecture (ATA)

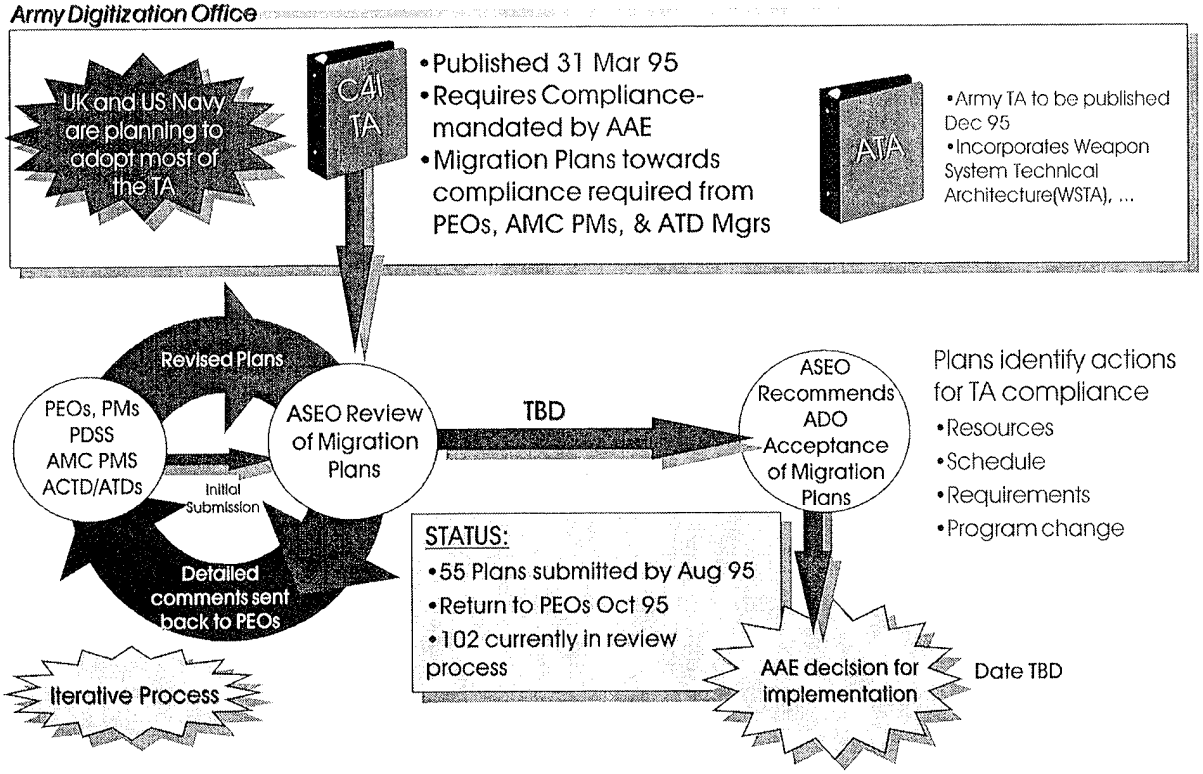
Army Digitization Office

- DISC4 Lead on ATA Development
- Release of Version 4.0 Planned for 31 Dec 95
- Purpose: ATA Maintenance and Expansion
  - Resolve Previous Comments
  - Joint Linkages
    - DoD TAFIM 3.0
    - GCCS COE for C3I
    - Architecture Methodology Working Group (AMWG)
  - Expansion: Embedded/Weapon Systems, Distributed Simulation, Tactical Data Links, Security, Sustaining Base, Office Automation, GPS, Imagery, etc.
- Draft Version Review and Input via the Internet



C4I Technical Architecture Migration Plan Procedure

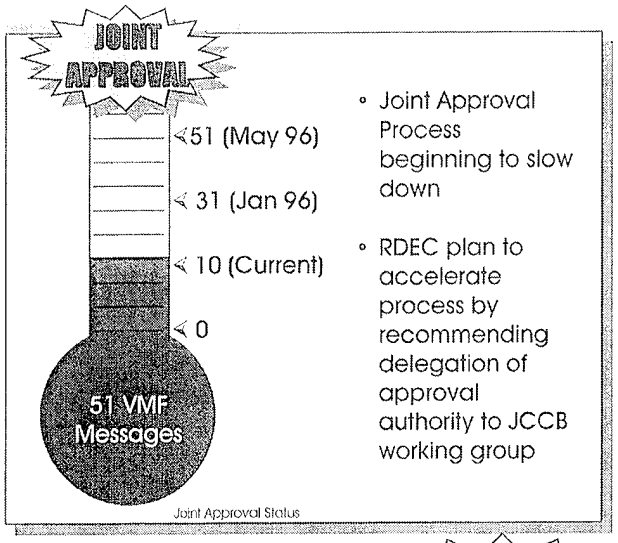
Army Digitization Office



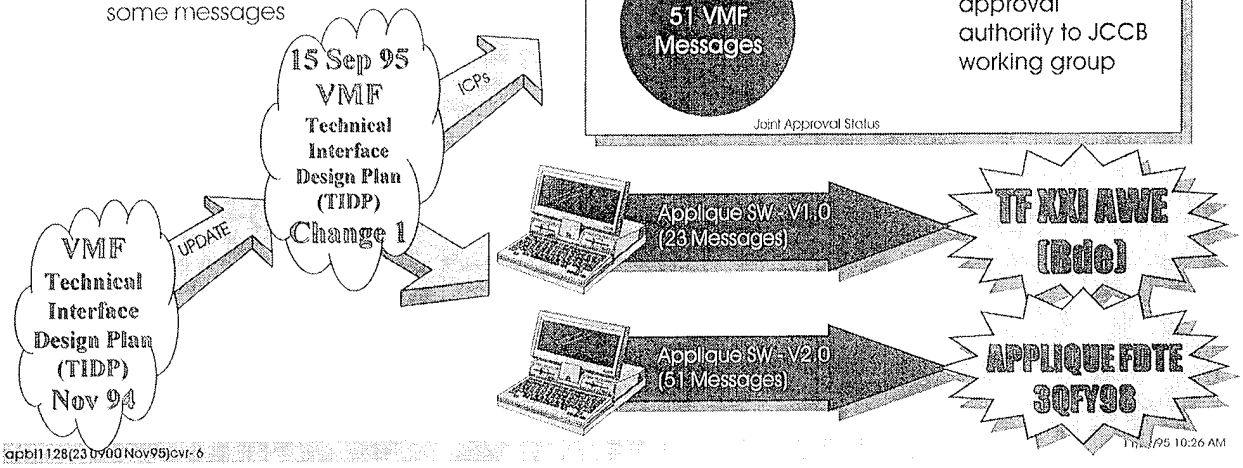
VARIABLE MESSAGE FORMAT (VMF)

Army Digitization Office

- Army proposal consists of 51 bit-oriented VMF messages to support information exchange requirements over CNR
- Working with DISA to expedite Joint Approval timeline
  - Monthly meetings of technical working group intended to reduce overall timeline below the nominal 2 years
  - Approval process experiencing delays for some messages

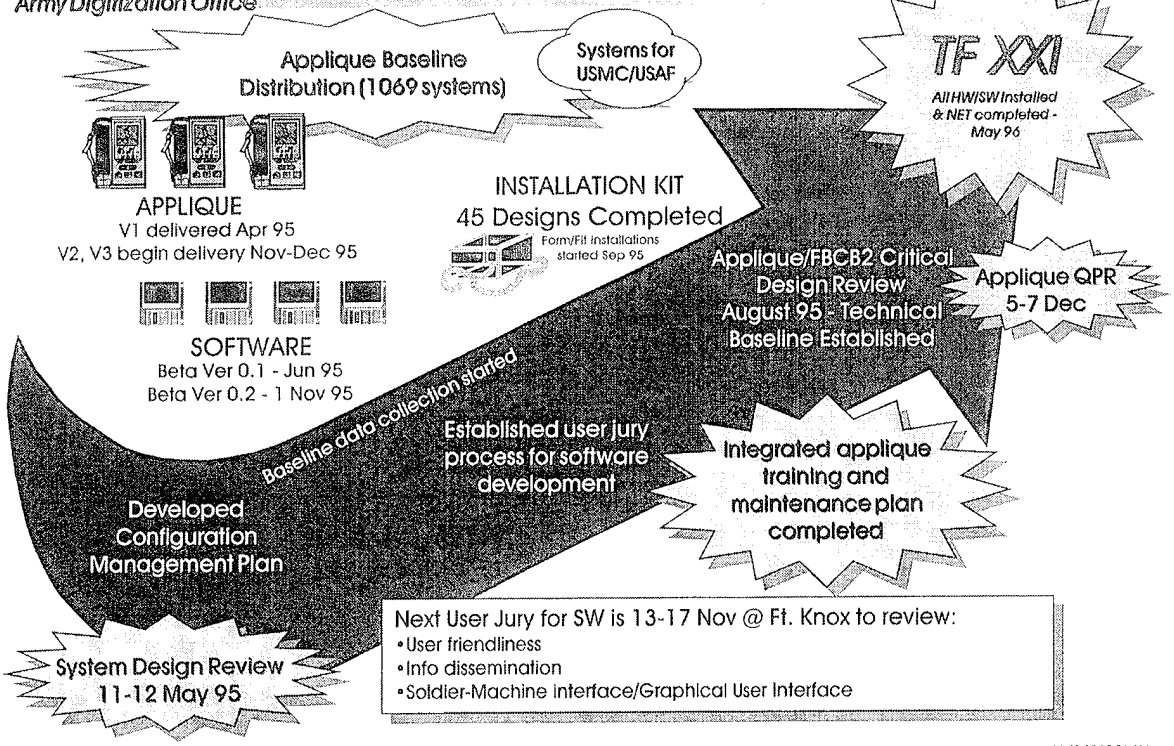


- Joint Approval Process beginning to slow down
- RDEC plan to accelerate process by recommending delegation of approval authority to JCCB working group



TF XXI AWE Update

Army Digitization Office



EXFOR Modernization Update

Army Digitization Office

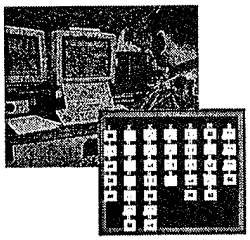
- All major Force Modernization initiatives on schedule
  - –M1A1 Heavy Commons transfer to TF XXI complete
  - –M2A2/M3A2 fielding to TF XXI complete
  - –PLGR fielding to EXFOR complete
  - –Paladin fielding to TF XXI complete
  - –CSSCS - provided to TF XXI
  - –FAADC2 - fielding to TF XXI 4 Mar - 3 May 96
  - –ASAS - fielding to TF XXI 1 Mar 96
  - –MCS/Phoenix - fielding to TF XXI 1 Apr - 30 May 96
  - –AFATDS - fielding to TF XXI 29 Jan - 29 Mar 96
  - –OH-58D - fielding started Oct 95
  - –C2V - fielding to TF XXI 1 May - 1 Jul 96

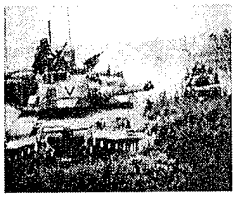
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Focused Dispatch AWE

Army Digitization Office





- Heavy Bn TF (MBBL) AWE: Dec 94 thru field exercise in Aug 95
- Changes in organization as a result of digitization
- Constructive, virtual, and live simulations
- Status: JANUS constructive simulations complete; Live-Virtual now complete; 1100 personnel played from four locations: Knox, Greenville, Bliss, Rucker; providing excellent digitization insights. Collected instrumented and subjective data. Analysis underway.
- Emerging results: Focused Dispatch a success
  - –Dedicated trainup for six months
  - –Architecture stable
  - –Experimental mission, not focused on CTC rotation
  - –Met realistic expectations
  - –TTP will feed TF XXI AWE

FOCUS ON:
- Battle Command
- Fire Support
- Intelligence
- CSS

BOTTOM LINE: Applied lessons learned from NTC 94-07

Focused Dispatch Objectives:

Experiment with changes in Doctrine, TTP, and Structure.	Insights on means to increase lethality, survivability, & tempo of mounted TF	Gain insights into DTLOMS	Refine digital information requirements; maximize connectivity between CBT, CS, & CSS

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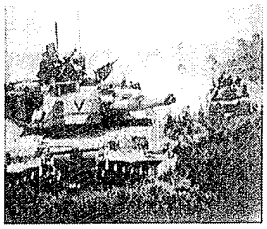
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Army Digitization Office

Warrior Focus AWE



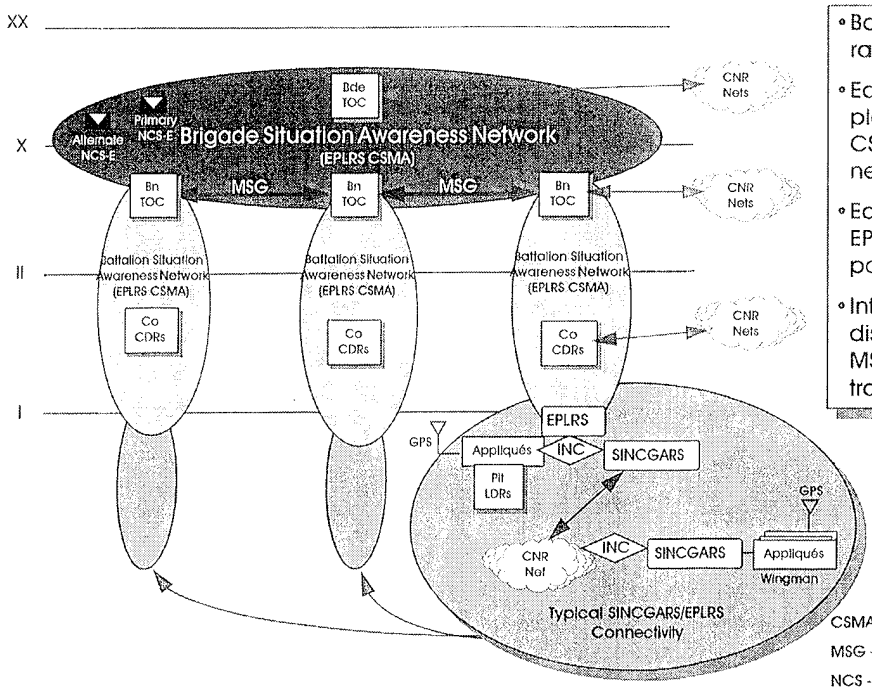
- Lt Inf Bde TF AWE at Ft Drum/JRTC (May 95 thru Nov 95 JRTC event)
- Dismounted soldier baseline established with digitization and Own the Night
- Digital TOC connectivity from Div to Company (No DSSUs); parallel plt experiment to soldier level in CPX Bn.
- Emerging results: Warrior Focus a success for OTN and Digitization
  - Conceptually great potential, but some immature technologies
  - Situation Awareness (two levels down) enhances decision making, tempo, survivability, and battle tracking
  - Split based intel could mean no more IPB templating for S2
  - Must make large screen, high resolution digital map work; can't afford dual system
  - Tremendous potential for CSS - anticipatory logistics provides faster supplies, medical treatment, and personnel replacements
  - Must emphasize dissemination of critical information vice volume; implement message prioritization and acknowledgment



TF included Tank Team, SOF, and Rangers

Army Digitization Office

Simplified Brigade Task Force Tactical Internet

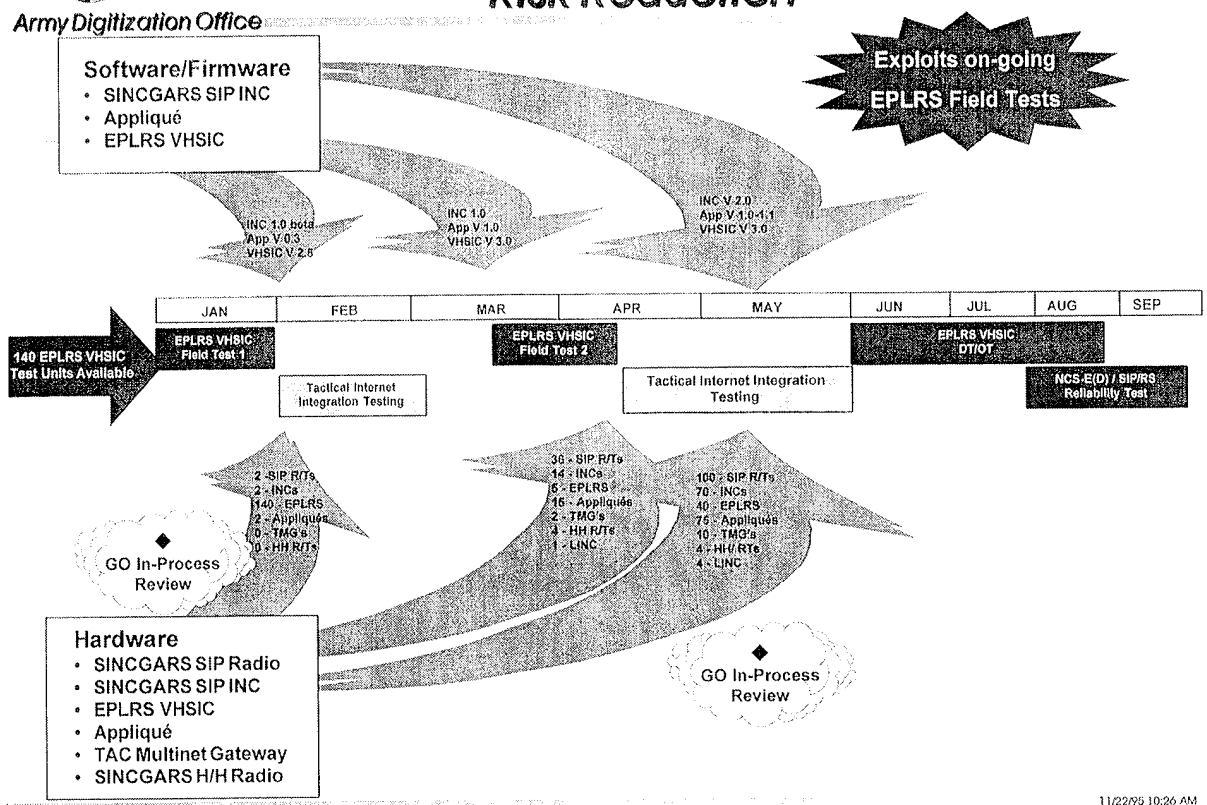


- Based on EPLRS data radio backbone
- Each EPLRS equipped platform participates in CSMA broadcast needline
- Each host connected to EPLRS can serve as SA position server
- Inter-CSMA SA distribution provided by MSG needline (up to 16 transmitters)

CSMA - Carrier Sense Multiple Access
MSG - Multi-Source Group
NCS -- Net Control Station
SA -- Situation Awareness

Tactical Internet Integration Testing and Risk Reduction

Army Digitization Office

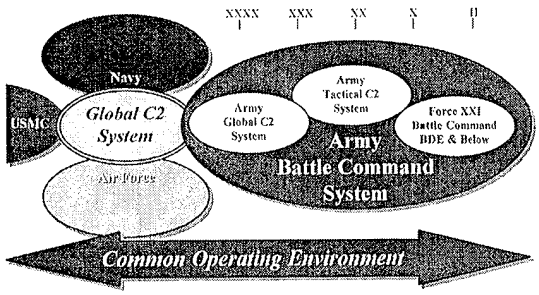


System Integration

Command & Control

Army Digitization Office

- *Army Global Command & Control System (AGCCS)* : 1st Delivery: DEC 95
- *Army Tactical Command & Control System (ATCCS)* : All systems to 2AD by MAY 96
- *Force XXI Battle Command Brigade & Below (FBCB2)* :
  - Version 1.0 Fielding MAR 96



- DoD TECHNICAL ARCHITECTURE
- OPEN SYSTEM ENVIRONMENT
- COMMERCIAL STANDARDS & PROTOCOLS

Army Digitization Office

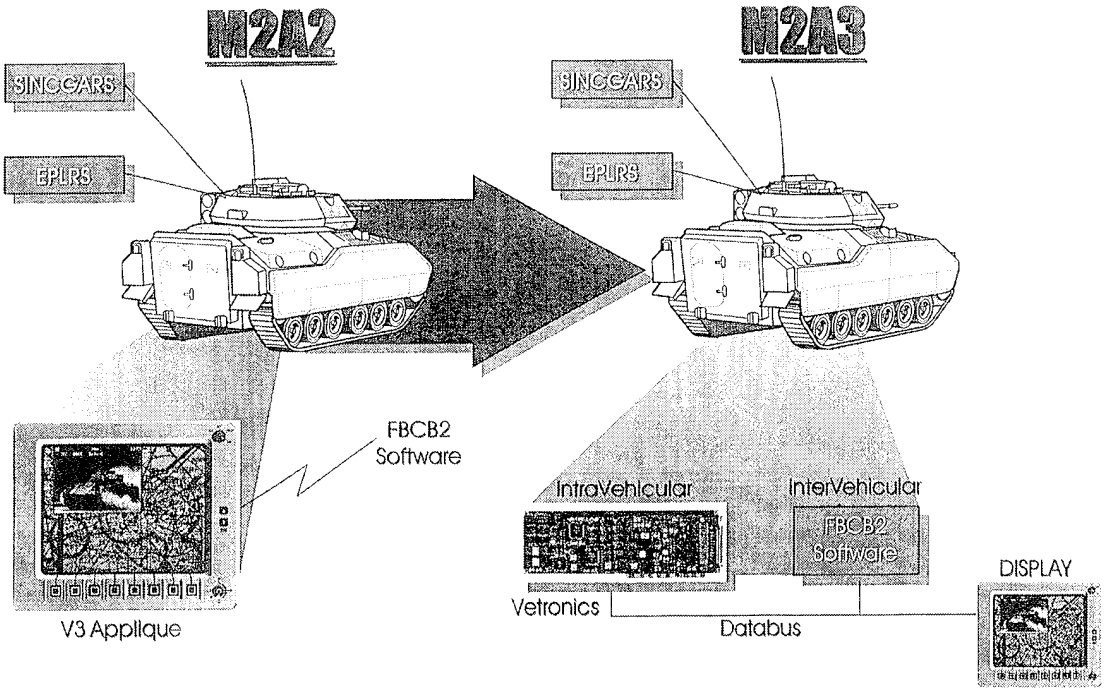
Integration of Applique Software onto Embedded Weapons Systems

- A key digitization goal has been to develop Force Battle Command Brigade and Below (FBCB2) Software for Appliques and embedded systems
- M1A2 SEP is the 1st embedded system to integrate FBCB2 software. M2A3 also plans to reuse FBCB2.
- PEO-C3S and PEO-ASM have agreed to a strategy to reuse FBCB2 in the Abrams and Bradley Programs
  - Top Level C2 functional envelope defined
  - Details will be worked in the next 60 days
  - Platform PMs will be responsible for man-machine interface and C2 module integration
  - PEO-C3S will provide configuration management of the C2 module for all platforms

Army Digitization Office

SW REUSE FOR EMBEDDED SYSTEMS

M2 Bradley example:



Battlefield Information Transmission System (BITS)

Army Digitization Office

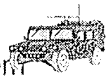
BITS Strategy Approved - May 95

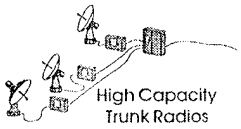
EXPERIMENTS

- *TF XXI*
  - Tactical End to End Encryption
  - Terrestrial Personal Communication System
  - Asynchronous Transfer Mode (ATM) over MSE
  - Direct Broadcast Satellite
- *DIV XXI*
  - Near Term Digital Radio
  - High Capacity Airborne Relay
  - High Capacity Trunk Radio
  - Satellite Personal Communications
- *CORPS XXI*
  - On-the-Move SATCOM Antenna
  - ATM - Combat Net Radio Access Point



Mobile Subscriber Radio-Telephone Terminal





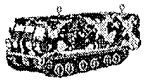
High Capacity Trunk Radios

MORE PIPES FOR CDR's NEEDS

- INCREASED DATA CAPACITY
- SIZE REDUCTION
- MULTI-MODE CAPABILITY
- EXPLORATION OF COMMERCIAL TECHNOLOGY



Commercial Cellular Voice/Data



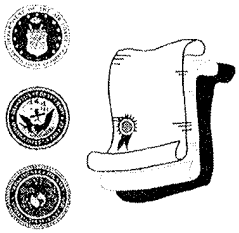
Radio Access Point

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JOINT INTEROPERABILITY

Army Digitization Office



➢MOAs w/ All Services

➢Joint Battlefield Digitization Council of Colonels/Captains

Interoperability/Issues/Concerns - Six Working Groups

Service Participation in TF XXI

ACTD

Training



Evaluation & Assessment

Migration to GCCS COE

Comms/Data links

➢Other Services C4I Plans

USAF Horizon

In Rewrite

USMC

Parallels

Army TA

USN

ADMP

Implements Army TA

➢TF XXI Participation

–USMC - "Sea Dragon" MAGTF (Special)

–Air Force - SADL/Speakeasy

➢ASD(C3I) completed Joint Battlefield Digitization review.

➢Briefed to MCEB - Dec Mtg

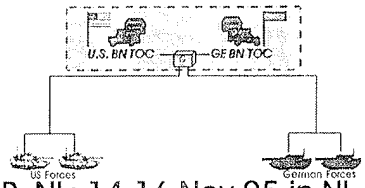
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MULTINATIONAL INTEROPERABILITY

Army Digitization Office

- International C2 Systems Interoperability Program (IC2SIP)
  - Nunn funding issue: IC2SIP #1 on Army funding list
  - Sub-groups working issues (Doctrinal development - Ft. Knox 6-9 Nov 95, message templates - CECOM)
  - Continuing MOU negotiations w/ France
- UK Digitization office established 1 Nov 95
- Army Tactical C2 Information System (ATCCIS)
  - Database-to-Database demo w/ UK, FR, GE, DK, SP, NL: 14-16 Nov 95 in NL
- International Digitization Strategy
  - Revision of 1995 publication, Parallels ADMP
- Development of MOU at Senior National Rep (A)[GE, US, FR, UK]
  - Brings digitization to Quadrilateral Army Communications and Information Systems Interoperability Group (QACISIG)
  - "Digitization" direction to other NATO fora/countries



General Status

Army Digitization Office

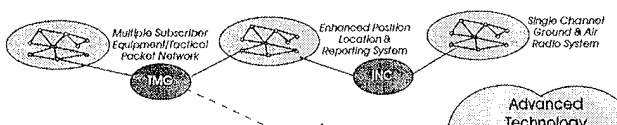
Appliques — 1069 Installed in EXFOR May 96

Installation Kits — Same as Applique

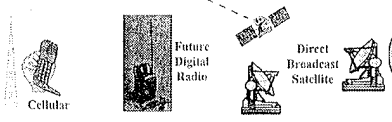
Software — V 1.0 MAR 96

Embedded Systems — M1A2 SEP, FUE - FY99; AH-64D, FUE - FY97; M2A3, FUE - FY00 — Upgrades Ongoing

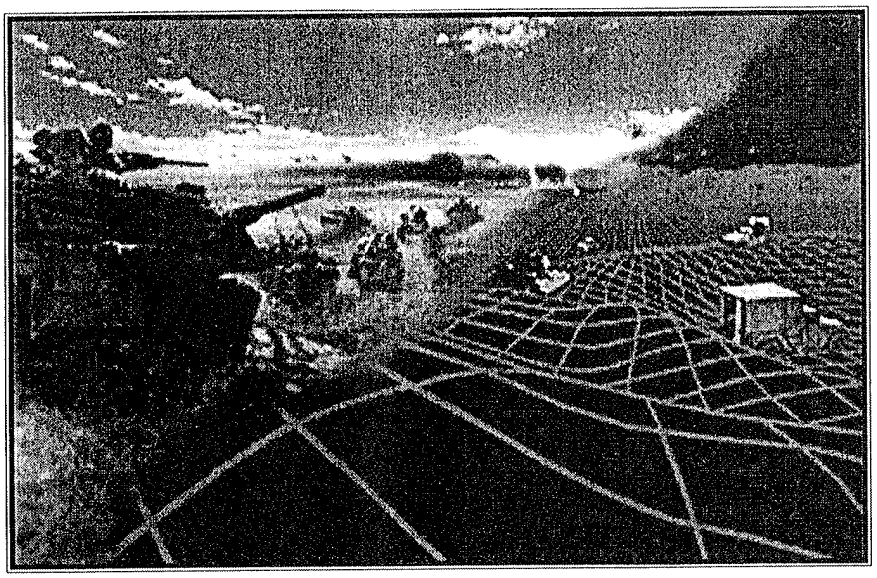
Tactical Internet — In Place MAY 96



Battlefield Information Transmission System(BITS)



Advanced Technology Demonstrations (ATDs), Advanced Concept Technology Demonstrations (ACTDs), AWEs, Lead to Acquisition Strategy by FY99



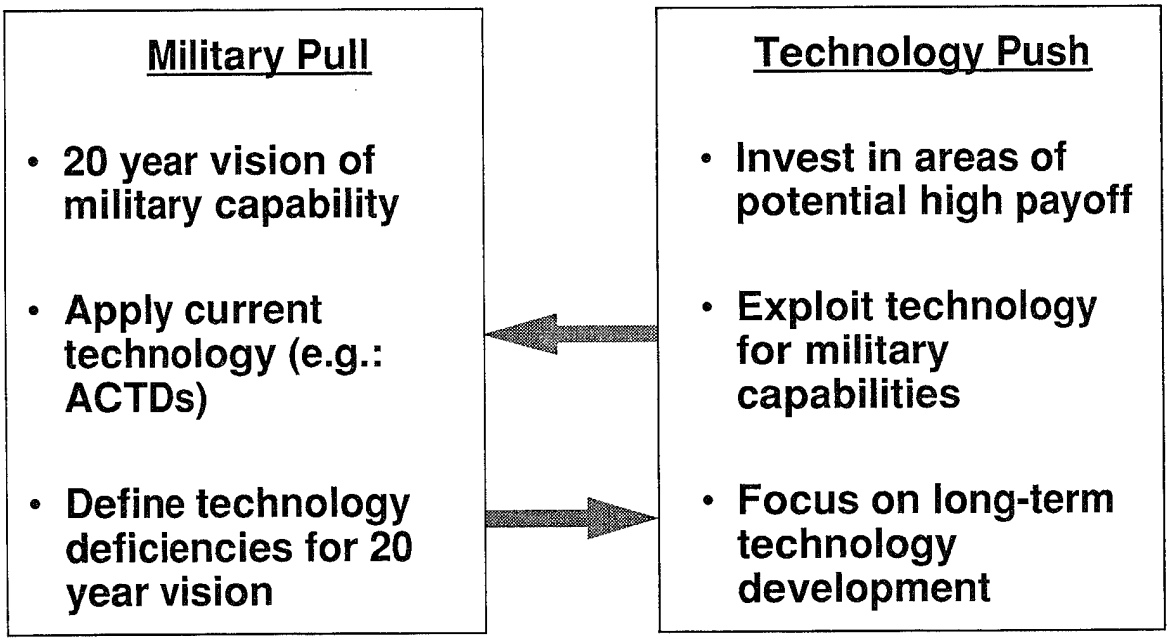
First on the Digital Battlefield

Future Information Technologies for the XXI Century



11/28/95 DISC4

ARPA Approach to Program Selection



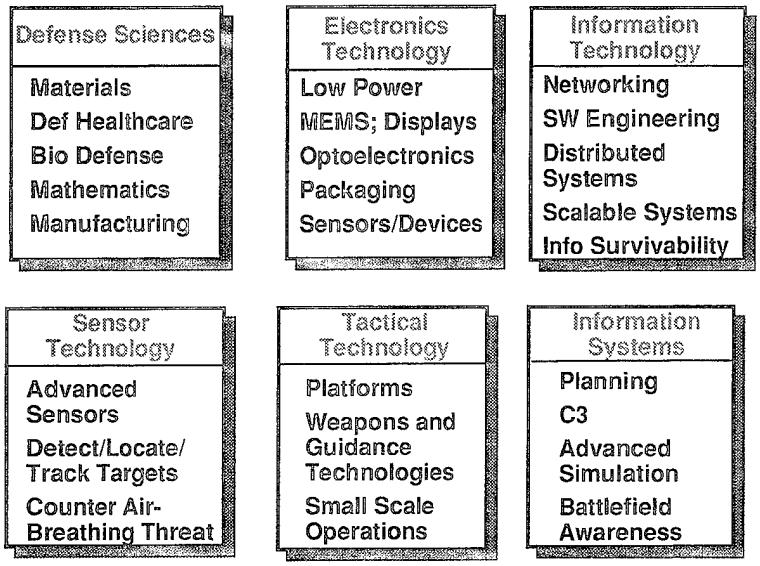
11/28/95 DISC4

Six of ARPAs Top Ten Priorities

- Comprehensive battlefield awareness
- Near-real-time C3, planning and replanning
- Simulation for "continuous war" environment (innovation, interoperability)
- Technology for robust, massive and mobile battlefield networks
- Survivability of our information systems
- Microelectronics for smaller, lighter, more mobile information systems

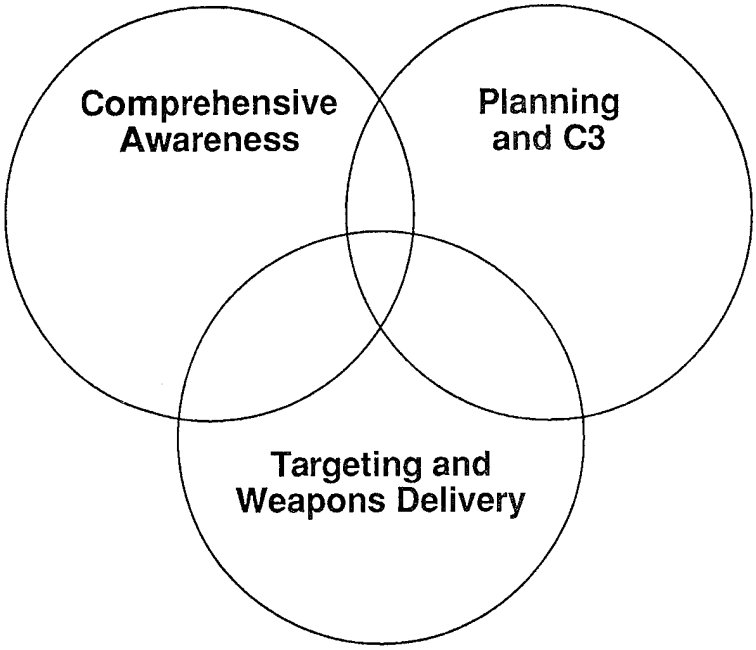
11/28/95 DISC4

ARPA Technical Organization



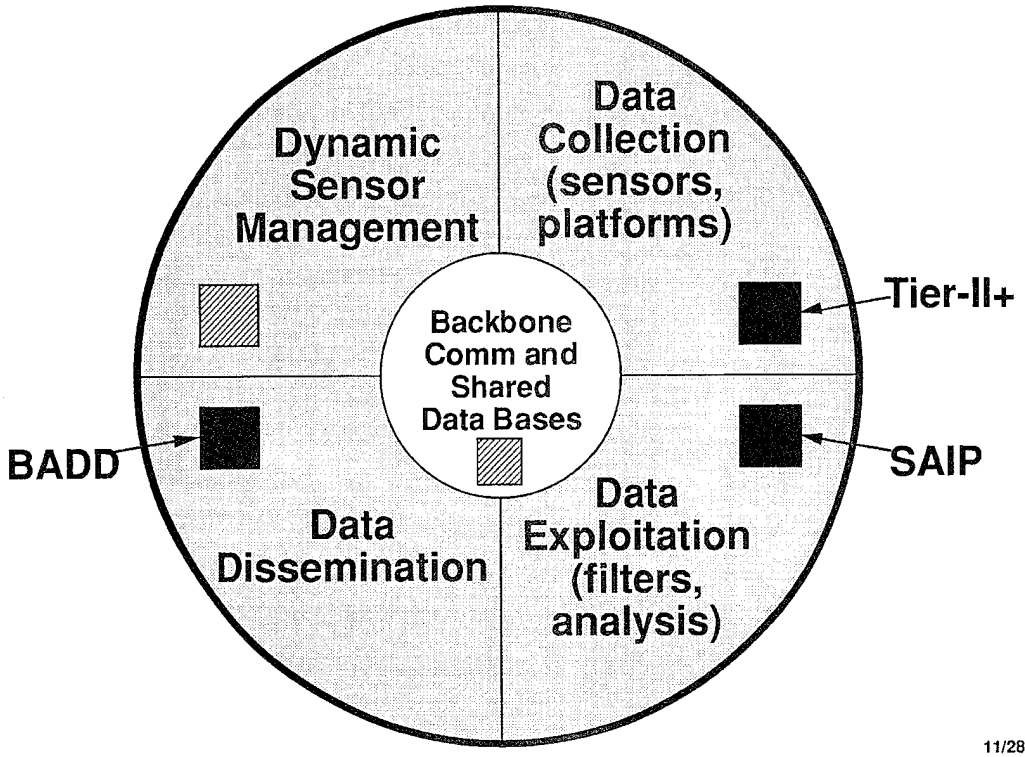
11/28/95 DISC4

Battlefield Dominance



11/28/95 DISC4

Comprehensive Awareness



11/28/95 DISC4

Imagery Data Collection and HAE UAVs

- Warfighter stated requirement for MRC
  - 40,000 sq. n. mi./day at 1' resolution
  - Based on expectation that retasking time is days
- Alternate approaches:
  - Collect at this high rate but process at lower resolution for screening and then at higher when requested
  - Collect at lower resolution but with real time retasking for higher resolution
- The U-2 ASARS and HAE UAVs approximate these rates
- HAE UAVs are instantly retaskable

11/28/95 DISC4

Data Exploitation and SAIP

- 40,000 sq. n. mi./day at 1' resolution ----->
  - Assume IA can deal with million pixel screen in 2 mins
  - Takes 2000 IAs working around the clock
- Probably not the right approach !!
- Can't process completely automatically today, but lots of progress in
  - Automatic Target Recognition (ATR)
  - Image understanding
  - Pattern recognition techniques
- SAIP will apply today's capabilities to increase IA productivity by factor expected to be 100-1000

11/28/95 DISC4

Data Dissemination and BADD

- Given that we can exploit all the data (SAIP), how do we disseminate it
- Commanders know that they want information rather than data and access across the forces
- But there is no adequate definition of who needs what and how
- BADD designed to enable the JTF commander to design the system himself by
  - Field experimentation
  - Tools to provide filters, querries, etc
  - Access to massive, probably distributed, archives
  - Experimental definition of access, form
    - » data, annotated data, extracted information, high level overviews, etc
  - Generally and then dynamically while in use

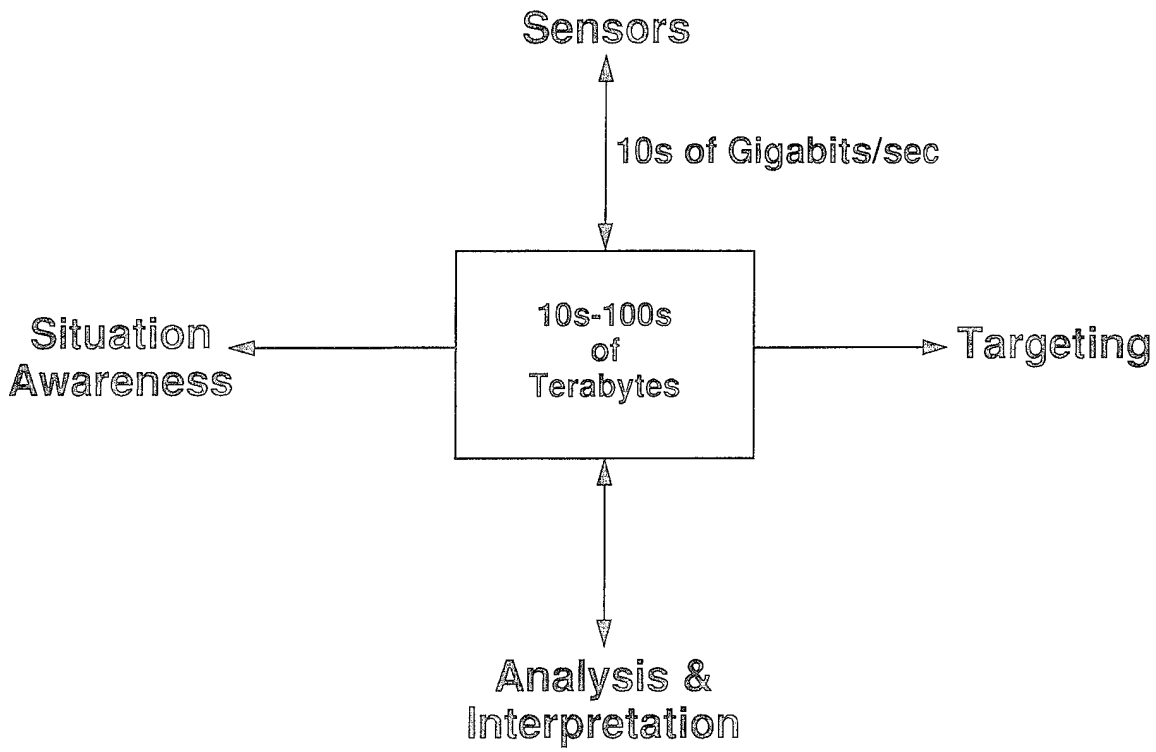
11/28/95 DISC4

Dynamic Sensor Management

- Given adequate first step solutions to Collection, Exploitation and Dissemination in near real time
  - Immediately retask the sensors for a closed loop
- Automated Sensor Management is then next step

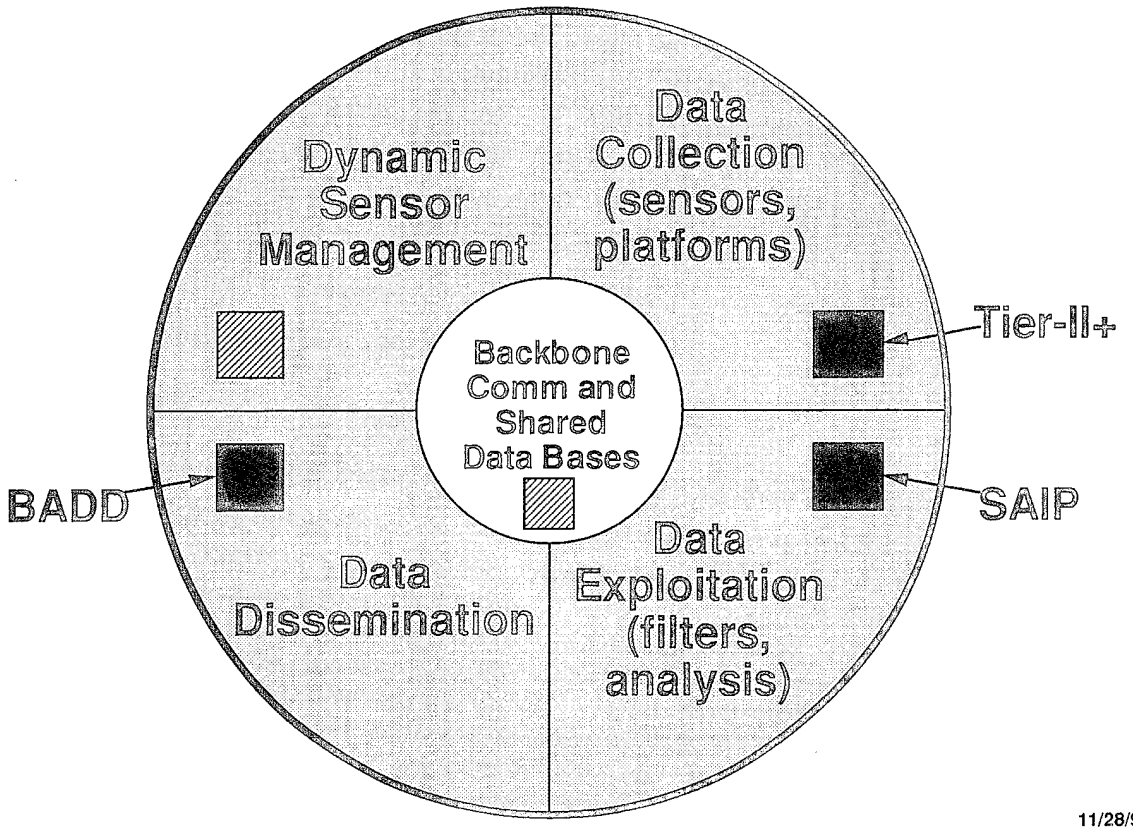
11/28/95 DISC4

Shared Geographic Oriented Data Base



11/28/95 DISC4

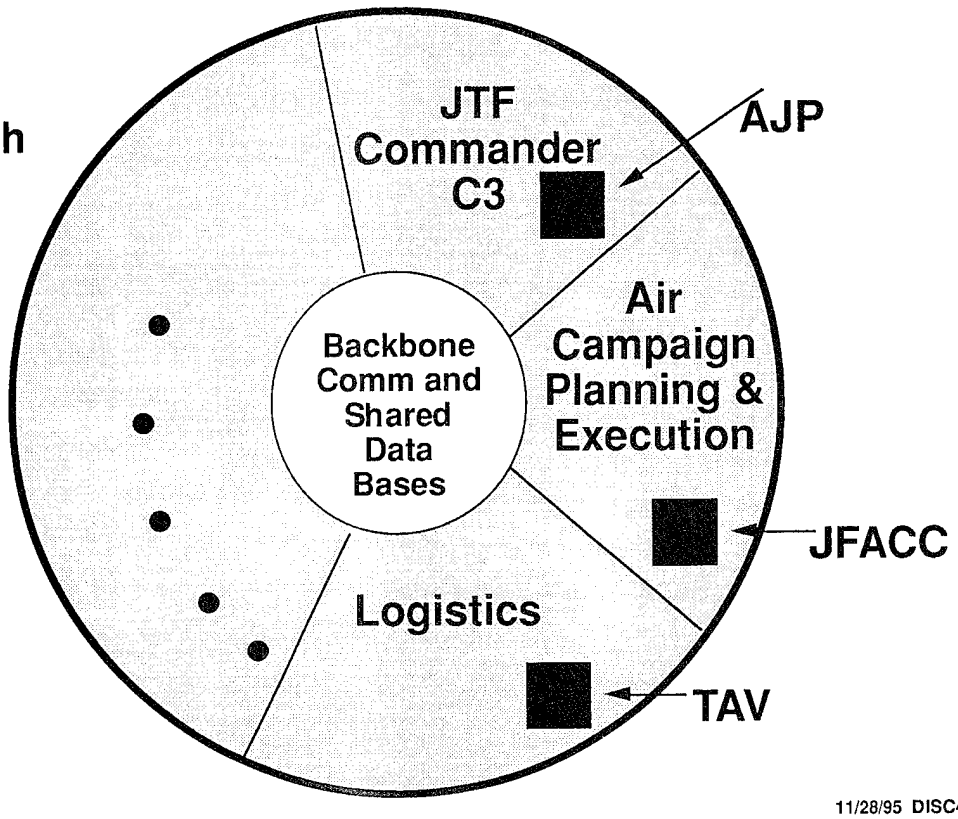
Comprehensive Awareness



11/28/95 DISC4

Planning and C3

- Populate with applications for all needs
- GCCS Leading Edge (CORBA)



11/28/95 DISC4

Conclusion

- Information is where major military advances will occur
- Timelines are critical
  - Others will copy us in approaches and systems
  - We should be able to stay ahead in cycle time for some time to come
- Communications should not limit
- Information handling is where it's at !!!

11/28/95 DISC4

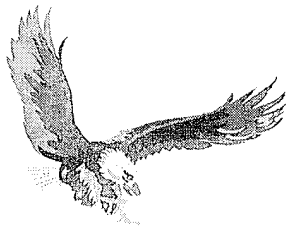
Advance Planning Briefing for Industry

Major General David J. Kelley
Vice Director, DISA
28 Nov 95

Agenda

- The Goal
- DISA's Core Missions
- Electronic Commerce / Electronic Data Interchange (EC/EDI)
- Information Warfare & Security
- DISA Contract Opportunities & Sources
- Summary

Command, Control, Communications & Computers (C4I) For The Warrior



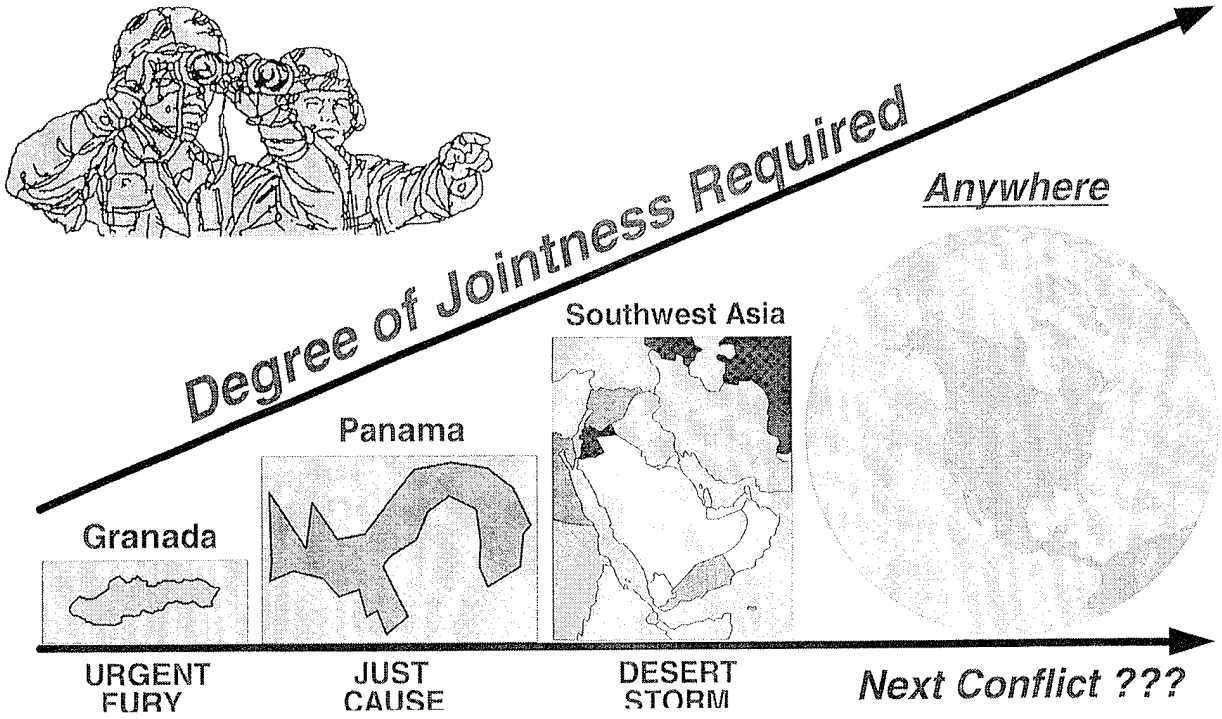
What the Warrior Needs

The Warrior needs a fused, real-time, true picture of the battlespace and the ability to order, respond, and coordinate vertically and horizontally to prosecute the mission in that battlespace.

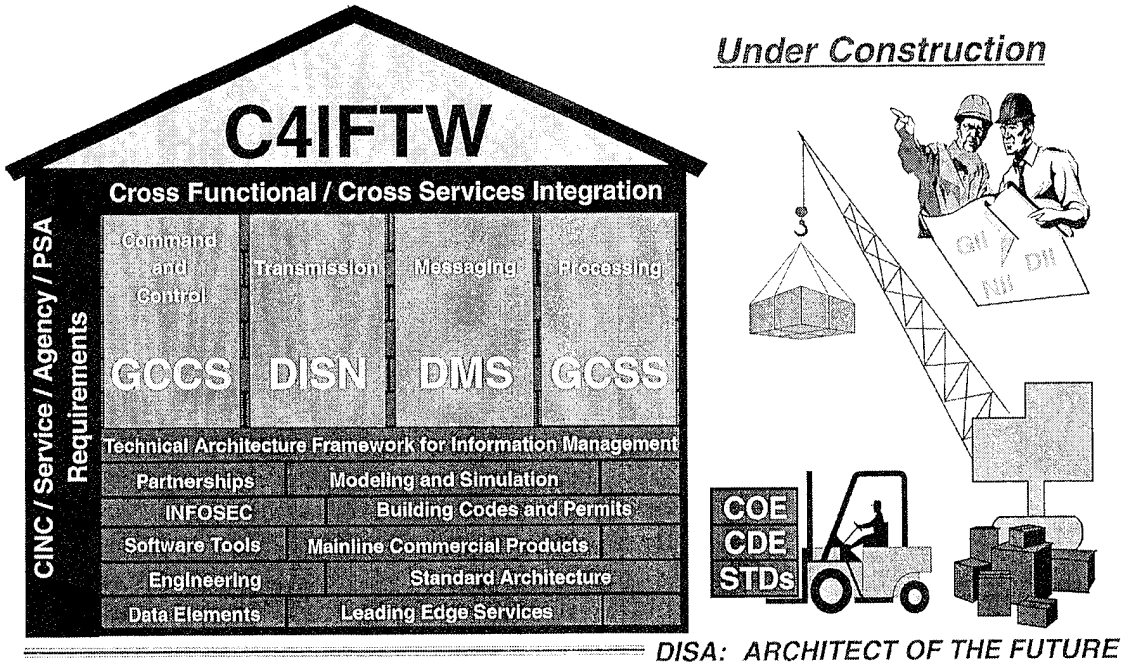


Support to the Warfighter is Job One!

The Goal: *Jointness*



DISA Core Missions



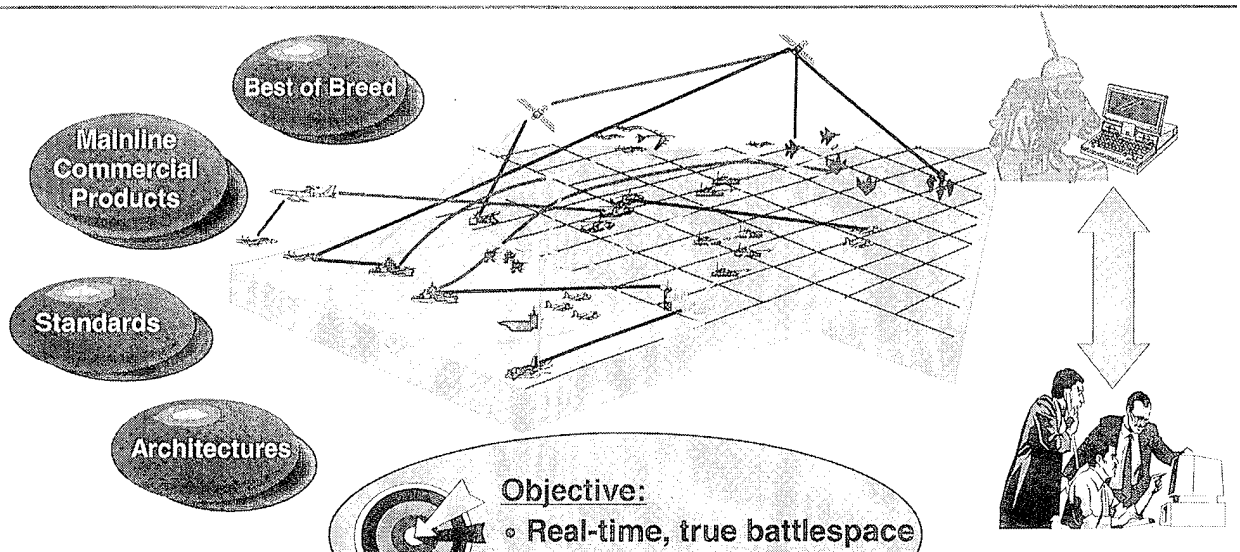
DISA: ARCHITECT OF THE FUTURE

Global Command & Control System (GCCS)

- GCCS will improve the warfighter's ability to manage and execute crisis and contingency operations
  - It provides the seamless, integrated capability to get information to the warfighter when, where, and how it is needed
  - When fully implemented, GCCS will be the realization of the C4I for the Warrior (C4IFTW) concept, providing a fused, real-time, true picture of the battlespace.

DISA is responsible for the GCCS Architecture and Engineering, Integration, Configuration Management and Fielding.

GCCS



Accomplishments:

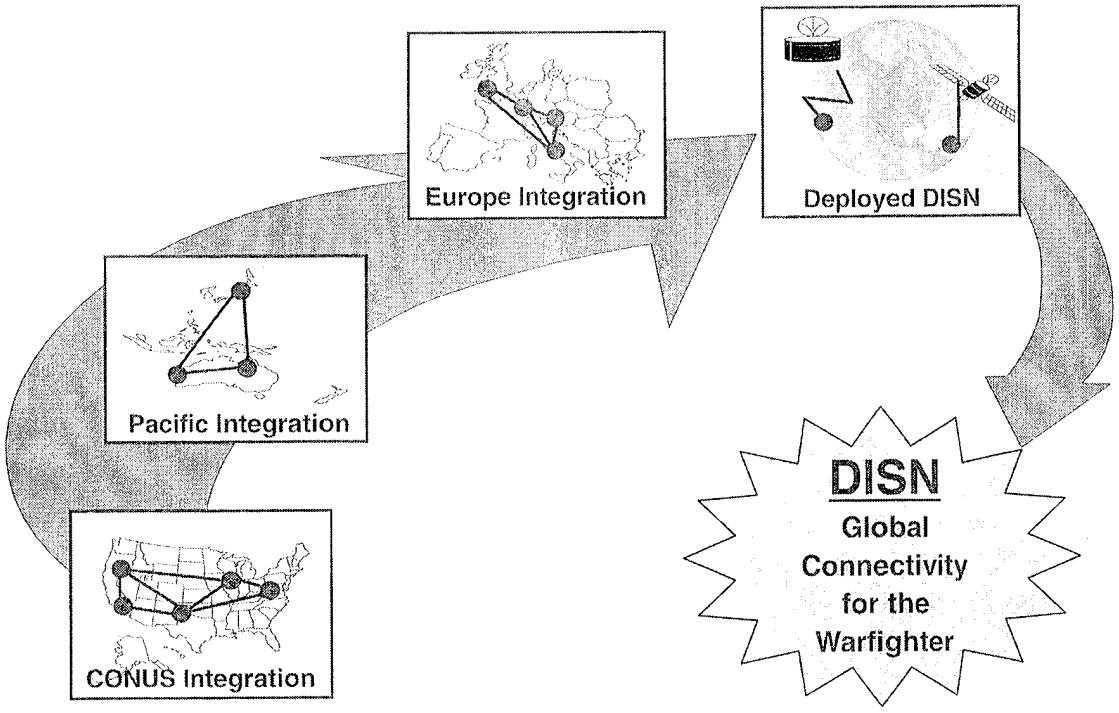
- Proven during:
  - UPHOLD DEMOCRACY
  - VIGILANT WARRIOR

Defense Information System Network (DISN)

- DISN is DOD's consolidated worldwide enterprise-level telecommunications infrastructure
  - It will provide the end-to-end information transfer network for supporting military operations
  - It is the umbrella initiative intended to guide the evolution of DOD's information transfer capabilities for the next 15 to 20 years
  - There are three major building blocks of the DISN:
    - Transport
    - Network management
    - Value added services

DISA is responsible for the overall lifecycle management of DISN.

DISN Evolution



Defense Message System (DMS)

- DMS is DOD's secure, accountable, reliable messaging system based on Joint Staff validated requirements
  - Provides global integrated directory services
  - Consists of mainline commercial products provided by industry leaders
  - Interoperable environment developed on industry standards
  - Complete access to DoD, federal agencies, allies, commercial users, and the public

DISA is responsible for the GCCS Architecture and Engineering, Integration, Configuration Management and Fielding.

DMS Industry Team

GTE Vantage Solutions

BOEING

ANSTEC

ENTERPRISE SOLUTIONS LIMITED

LORAL Federal Systems

DMS

COMMPOWER Communications & Power Engineering, Inc

DA

ANDRULIS RESEARCH CORPORATION

Microsoft

Lotus

TROY

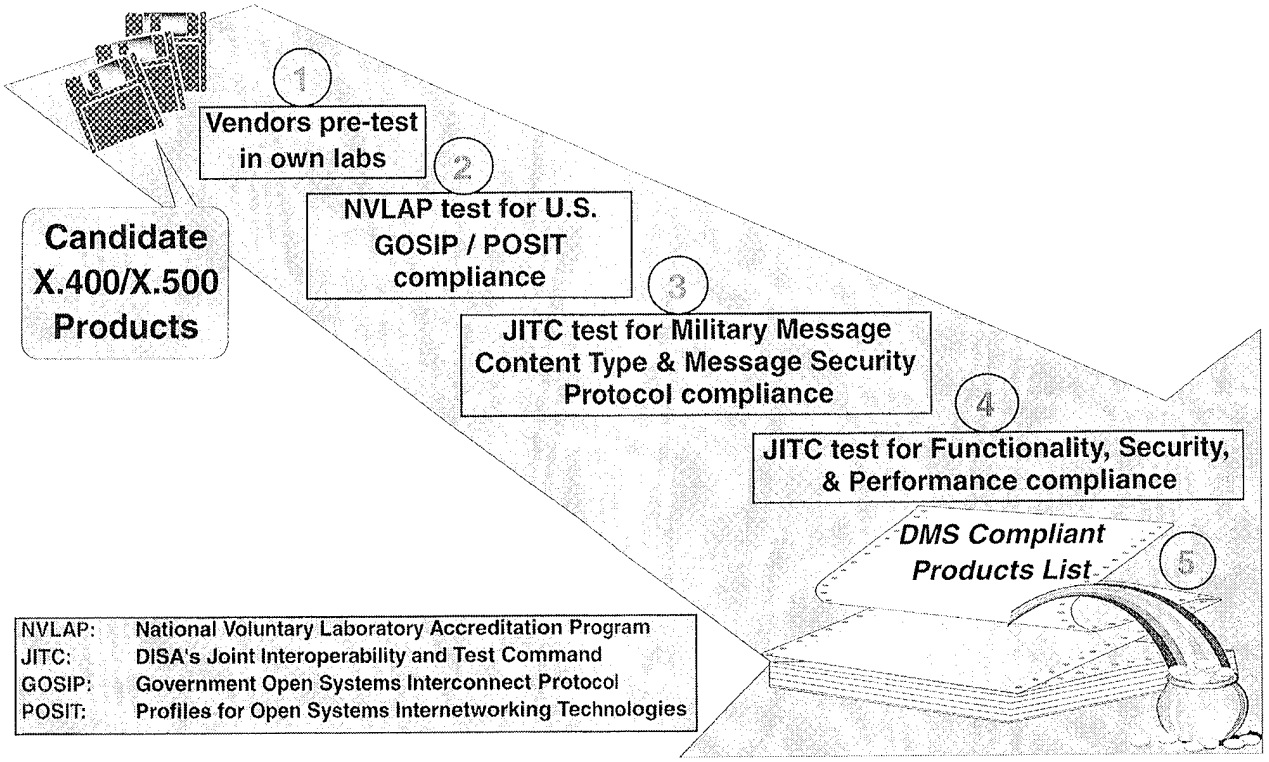
GSI Government Systems, Inc. An Infonet Services Provider

HEWLETT PACKARD

COMPUTER ASSOCIATES

GCH

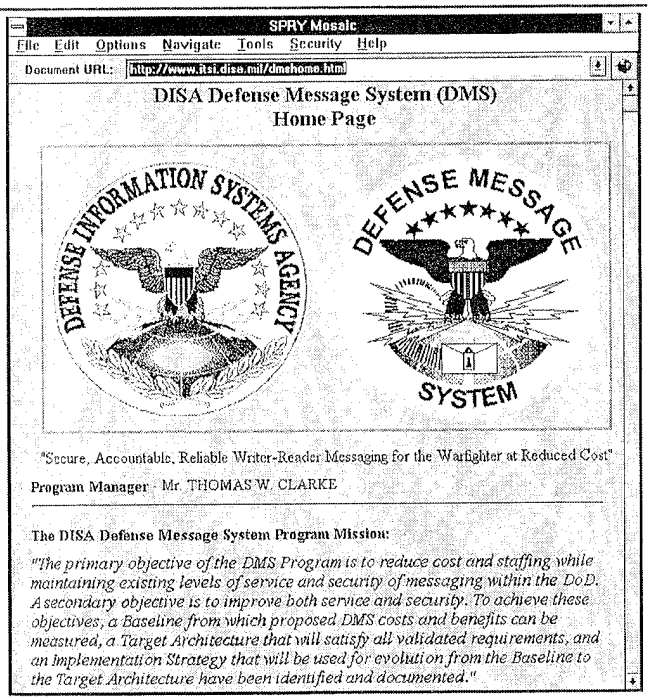
DMS Product Pipeline



NVLAP:	National Voluntary Laboratory Accreditation Program
JITC:	DISA's Joint Interoperability and Test Command
GOSIP:	Government Open Systems Interconnect Protocol
POSIT:	Profiles for Open Systems Internetworking Technologies

DMS Information Sources

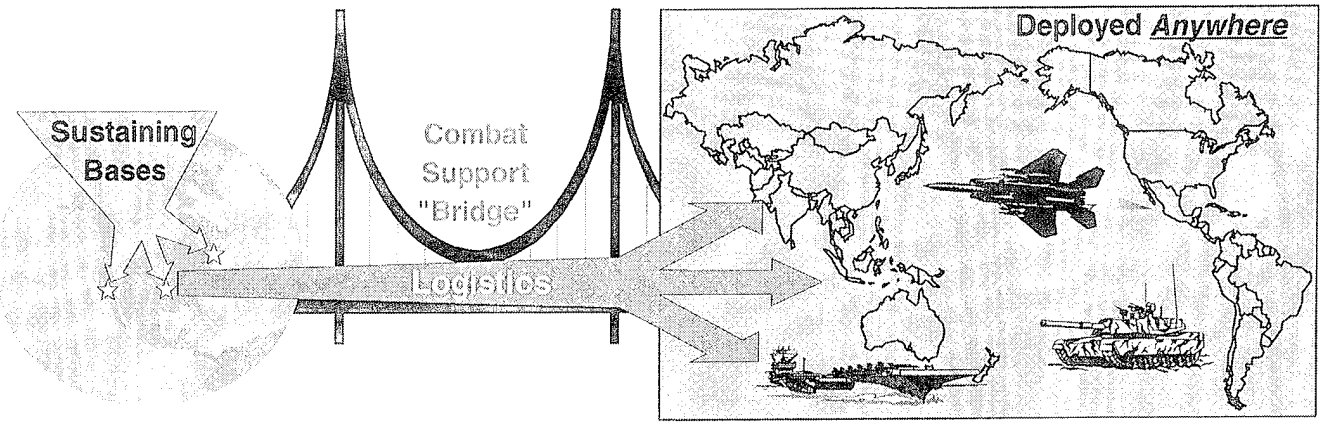
- DMS Home Page on the WWW
- Available 24 Hours
- OSD, Service & Agency POCs
- ROMC & MROC Text
- Programmatics & Schedules
- Management Structure
- Implementation Strategy
- Policies & Directives
- White Papers
- If you don't see what you need here -- *ask for it!*



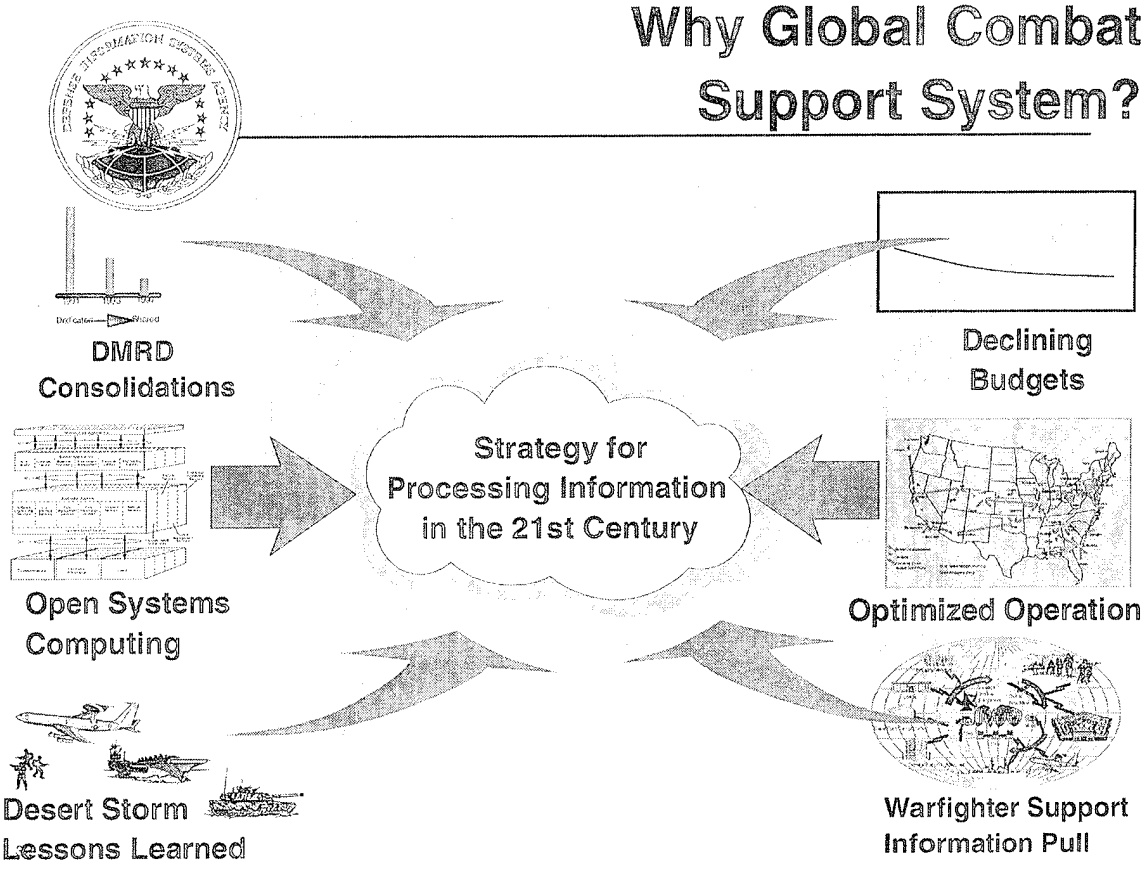
Global Combat Support System (GCSS)

"To meet our Nation's global responsibilities, our ability to move and sustain combat forces virtually anywhere in the world must be maintained." *General Shalikashvili*

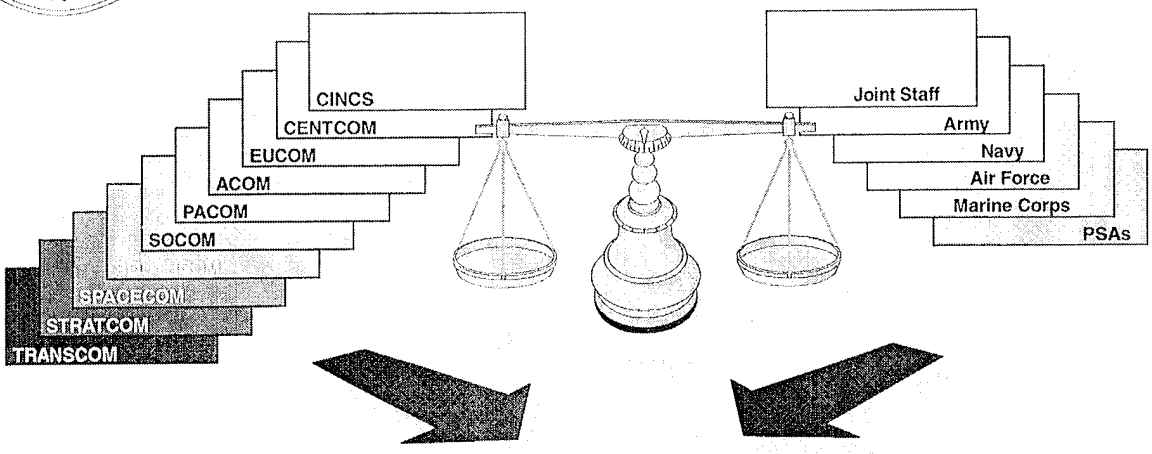
GCSS is the technical implementation



Why Global Combat Support System?



Global Combat Support System Core Requirements



GCSS Core Applications

- Acquisition (EC/EDI)
- Logisitics
  - Maintenance
  - Transportation
  - Total Asset Visibility
  - Supply\Inventory Control
- Engineering
- Personnel
- Finance
- Health Services

33

Status of Core Efforts

GCCS declared single migration system Nov 93
- Installed at 37 sites
- WWMCCS shuts down Dec 95

DISN RFPs released Jul / Sep 95 (all in source selection now)
- DISN Services Support - Global
- DISN Video Services - Global
- DISN Switch / Bandwidth Manager Services
- DISN Transmission Services

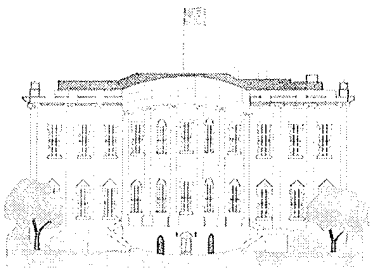
DMS contract awarded to Loral May 95
- Other vendors can inject products into DMS pipeline via Compliance Testing & Evaluation (CT&E) process
- Contact Loral or your customer for details

GCSS is not an acquisition
- Technical implementation of requirements for worldwide processing support for Acquisition, Logistics, Engineering, Personnel, Finance, & Health Services

DISA and Industry

National Security Telecommunications Advisory Committee (NSTAC), CEOs of:

AT&T	Harris
BankAmerica	Motorola
Bellcore	NTI
Boeing	PACTEL
Comsat	Rockwell
TRW	Sprint
Unisys	Hughes
USTA	Interdigital
US West	ITT
Wiltel	Lockheed
CSC	Loral
EDS	MCI
GTE	MFS
	IBM



SECDEF

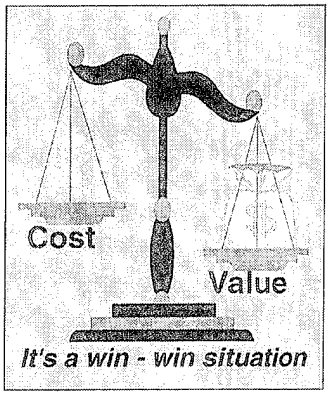
Director DISA, Manager NCS

Committee of Principals:

FEMA	State
NASA	Defense
FCC	Interior
NSA	Commerce
USPS	Trans
FRB	Treasury
NRC	Justice
NTIA	Agriculture
USIA	Energy
	CIA
	GSA
	HHS
	JS
	VA

EC/EDI

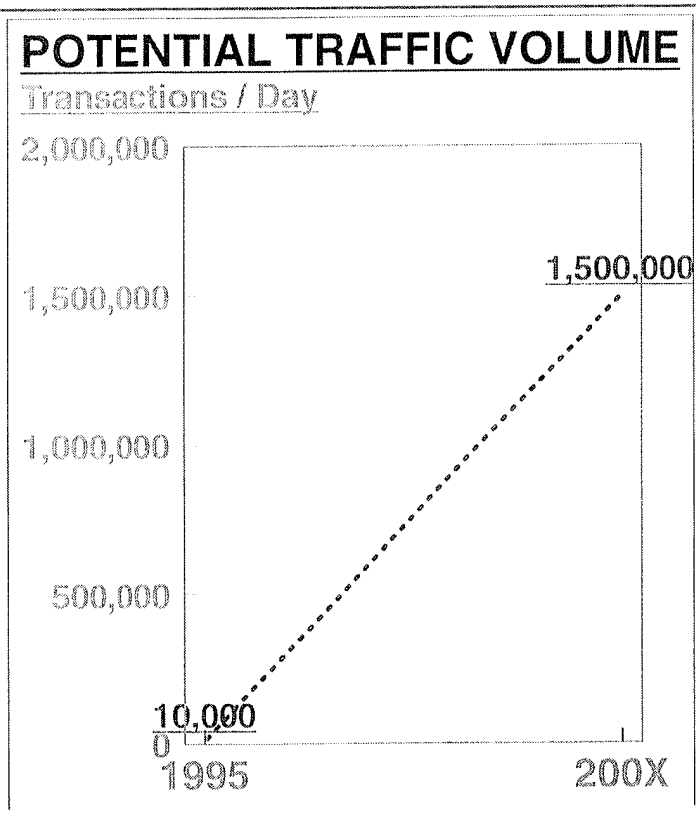
- It's here, now!
- It's how the Gov't will do business
- You need to be part of it
- It fosters competition
- It gives us best value
- It helps achieve interoperability via adherence to standards



- EC/EDI Expo: May 96
  - Audience: DoD, Trading Partners, VANs
  - Format: Industry booths, briefs, demos
  - POC: DISA Public Affairs Office

The Future of EC/EDI

- Emerging Technologies:
  - Electronic catalogs
  - Prime vendors
  - Quick response
  - Virtual shopping
  - Virtual inventory
  - Virtual products
  - Integrated Standard Procurement System role
- Potential Functional Areas:
  - Transportation
  - Medical Supply
  - Health Services
  - Personnel
  - Finance
  - Materiel Supply . . .

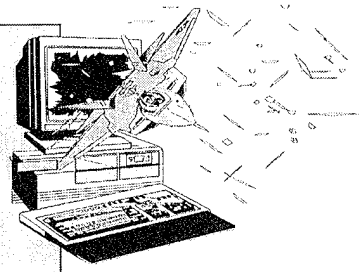


INFOWAR: The New Battleground

Information Warfare is:

- *Low cost* way of waging war
- *Low risk* to attacker; difficult to determine source
- *High payoff* option, compared to cost
- *Without boundaries* in time or geography
- *Available to all* states, organizations, individuals
- *Unsophisticated* technology to employ
- Significant *force multiplier*
- *Serious threat* to everyone

- SOMETHING WE CAN *(MUST)* DEFEND AGAINST!



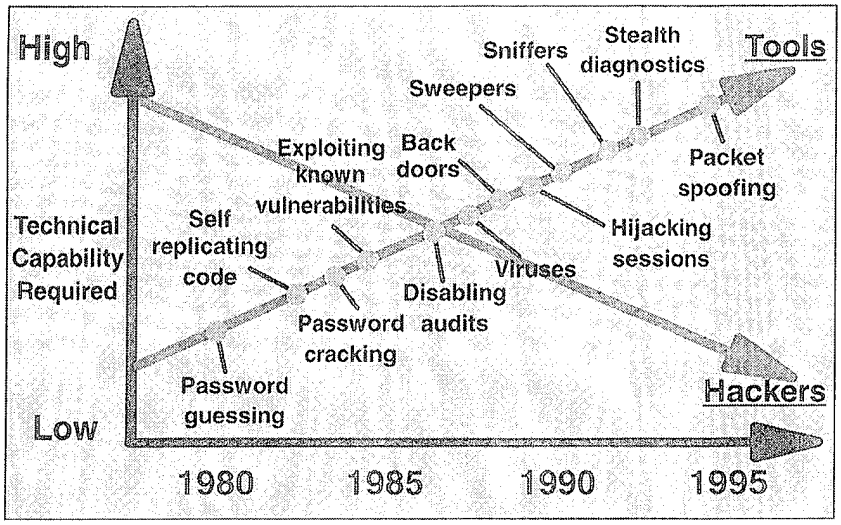


DISA's ROLE:
- Defend the DII
- Assure systems availability

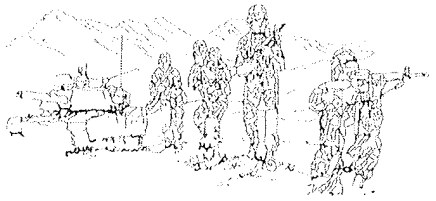
INFOSEC Threats

Threats increasing in sophistication & frequency:

- Of 150 companies surveyed, 98.6% experienced some computer crime *(Business Week, Jun 95)*
- 17% of North American companies on Internet suffered losses last year *(Montreal Gazette, Apr 95)*



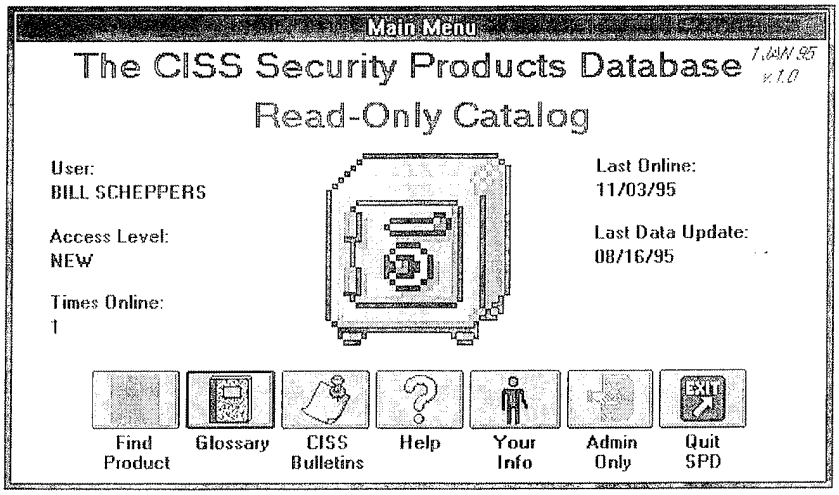
- Hackers attacked AOL, fouled up new billing program, created mail "bombs" and stole access to AOL user accounts -- including AOL's president *(Computer World, Aug 95)*



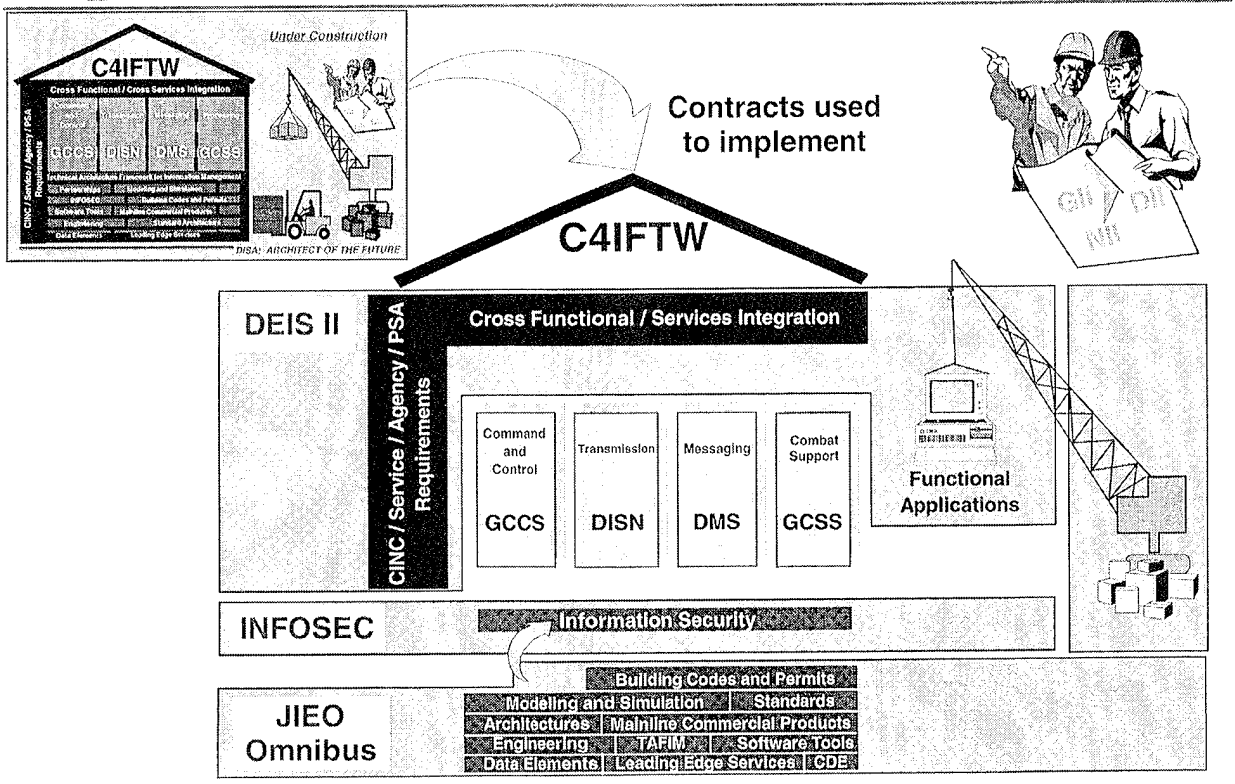
INFOSEC Opportunities

DISA's Center for Information Systems Security (CISS) produces the Security Products Database catalog to advertise YOUR security products *(free!)*

- YOU maintain the catalog (update as often as you wish)
- Customer base is entire DoD community (systems integrators, engineers, program managers, etc.)
- Point your Web browser to www.disa.mil/ciss/spd.html for the details



JIEO Omnibus / INFOSEC / DEIS II

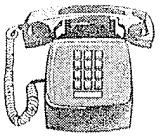


Contract Comparisons

	INFOSEC	DIES II	JIEO Omnibus
Scope	Engineering Services and Technical Support to produce unified, fully integrated systems security solutions for the DoD.	Functional Integration Services to move mission applications into the DII shared environment. Includes application development, deployment, & maintenance. Uses & applies core building blocks delivered through the Infosec, JIEO Omnibus and other DoD programs.	Systems Engineering Services for core building blocks to implement the DII. Used to develop the COE, CDE, Technical Architecture, Standards, Technical Integration & engineering services for DISA core programs (e.g., DMS, nuclear C2, etc.).
Awards	CSC SAIC Merdan Group, Inc.	Multiple awards anticipated.	Multiple awards anticipated
Date	12 Jul 95	Est: Jul 96	Est: Dec 96
Lifecycle	Base year + 4 option years	Base year + 4 option years	Base year + 4 option years
Ceiling	$1.095B	TBD	TBD
Type	IDIQ with task orders	IDIQ with task orders	IDIQ with task orders
Customers	All DoD components and Agencies and non-DoD Federal Agencies	All DoD components and Agencies and non-DoD Federal Agencies	DISA

National Capital Region Contracting Office -- NCRCO

- New organization, created Sep 95



POC: Lt Col Carmichael, (703) 607-6901

- Responsibilities:
  - CONUS focus
  - HQ DISA customers
  - "Black World" customers
  - IT supplies & services

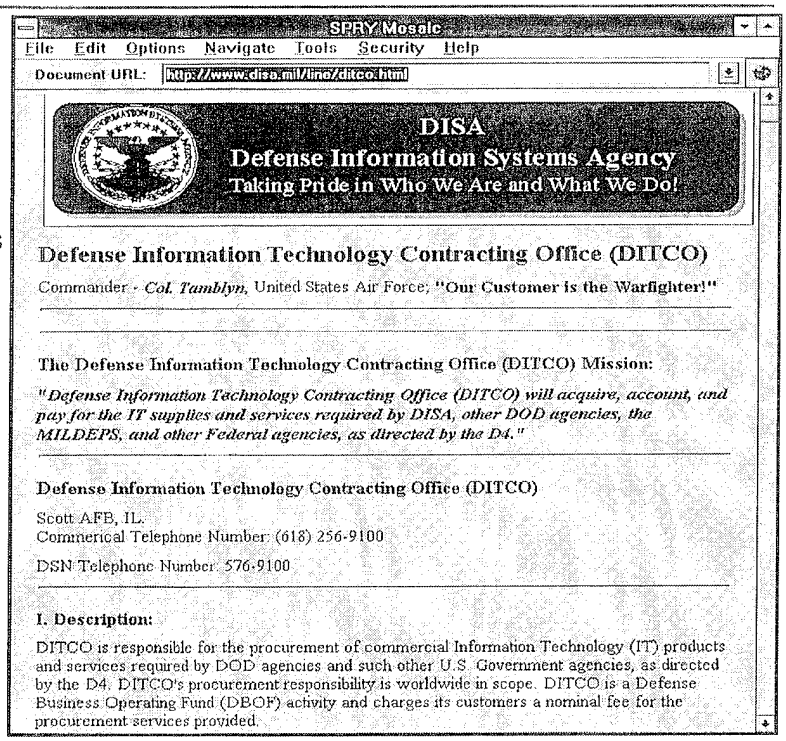
- $578M in contracts in '95
  - New contracts
  - Contract mods



Defense Information Technology Contracting Office -- DITCO

- Responsibilities:
  - World wide focus
  - Long haul comm
  - Megacenters
  - IT equipment / services

- $847M in contracts in '95
  - New contracts
  - Contract mods
  - Credit card purchases

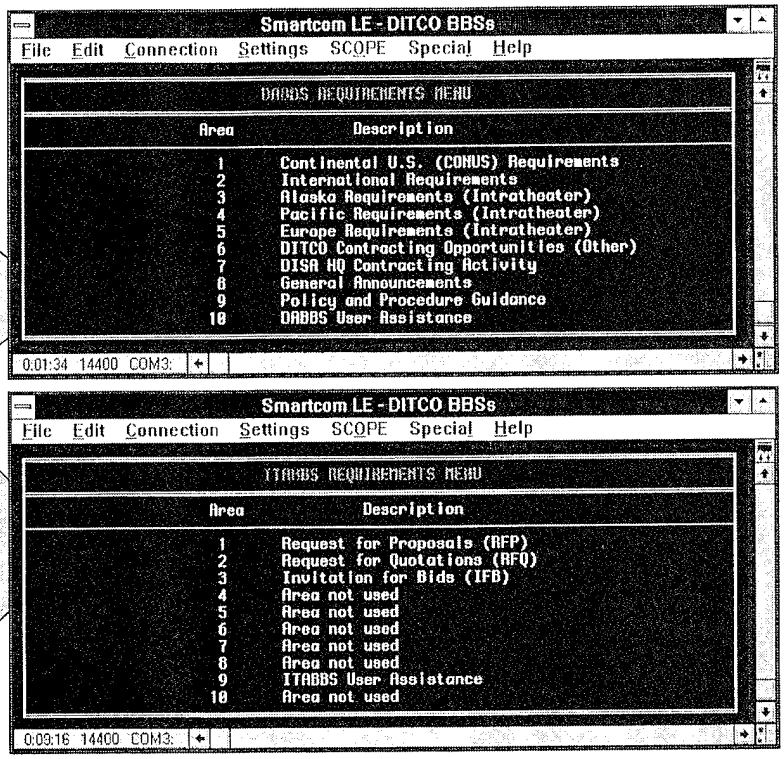


DITCO's Acquisition Bulletin Board Systems

- 2 BBSs available, both accessed by 1 number:
  - (618) 256-9200
  - 24 access lines

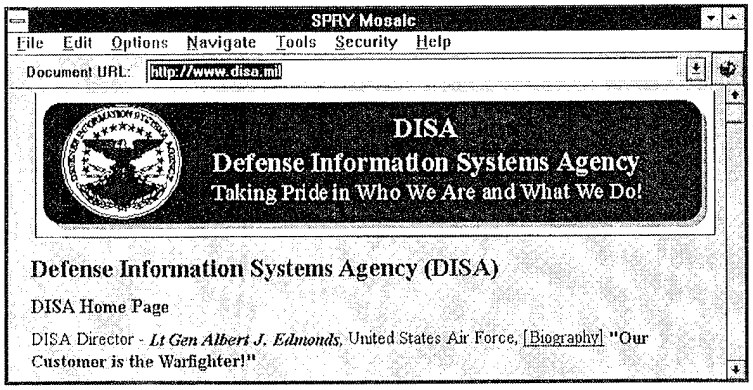
- DISA Acquisition BBS (DABBS)
  - Telecommunication leases / purchases

- IT Acquisition BBS (ITABBS)
  - IT services and commodities (PCs, peripherals, software, etc.)



How to Contact DISA

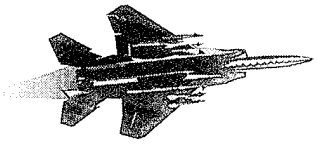
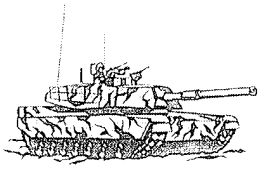
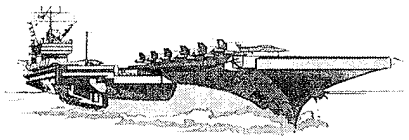
- World Wide Web Home Page
  - *www.disa.mil*



- E-Mail
  - *(name)@ncr.disa.mil*
- BBS
  - *(618) 256-9200, DITCO Electronic Bulletin Board System*
- Phone
  - *(703) 607-6900, DISA Public Affairs Office*

Summary

- Warfighter requirements are key!
- Best value depends on healthy competition
- Interoperability vital for defense info systems
- Success in 21st century requires cooperative effort


FT. LEAVENWORTH
FT. GORDON
FT. HUACHUCA
BATTLE
COMMAND
BATTLE LAB


FT. LEAVENWORTH
FT. GORDON
FT. HUACHUCA
BATTLE
COMMAND
BATTLE LAB

WHY BATTLE LABS ?

ARMY MODERNIZATION
- Importance of technology
- Need to modernize with fewer new starts
- Reduce resources
  - Dollars
  - Manpower

NATIONAL M ILITARY STRATEGY
- Force Projection
  - Regional Conflicts
  - Crisis Response
- Decisive Force
  - Win Quickly
  - Minimum Casualties

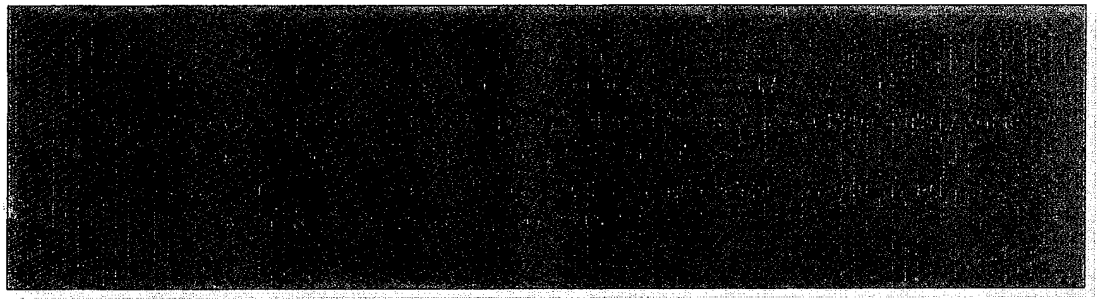
NEW STRATEGIC ENVIRONMENT
- Volatile
- Unpredictable
- Proliferation of High Technology

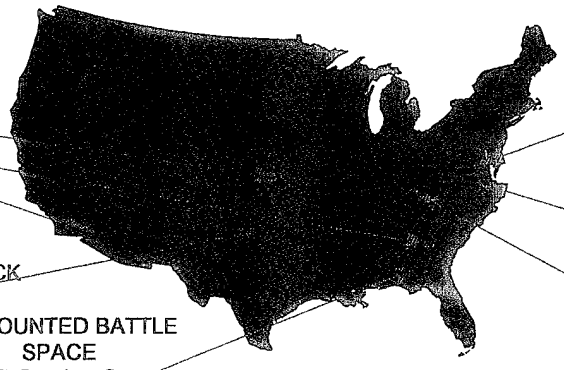


- DOMINANCE OF LAND COMBAT
- MAINTAIN THE TECHNOLOGY EDGE

Driving Forces Behind the Development of Batt
- The New World Order
- Rapid Technology Changes
- The Coming Of The Information Age

THE ARMY'S RESPONSE
-- AN APPROACH THAT FITS OUR ARMY --





BATTLE COMMAND
Ft. Leavenworth, Ks
Ft. Gordon, Ga
Ft. Huachuca, Az

DEPTH & SIMULTANEOUS ATTACK
Ft. Sill, Ok

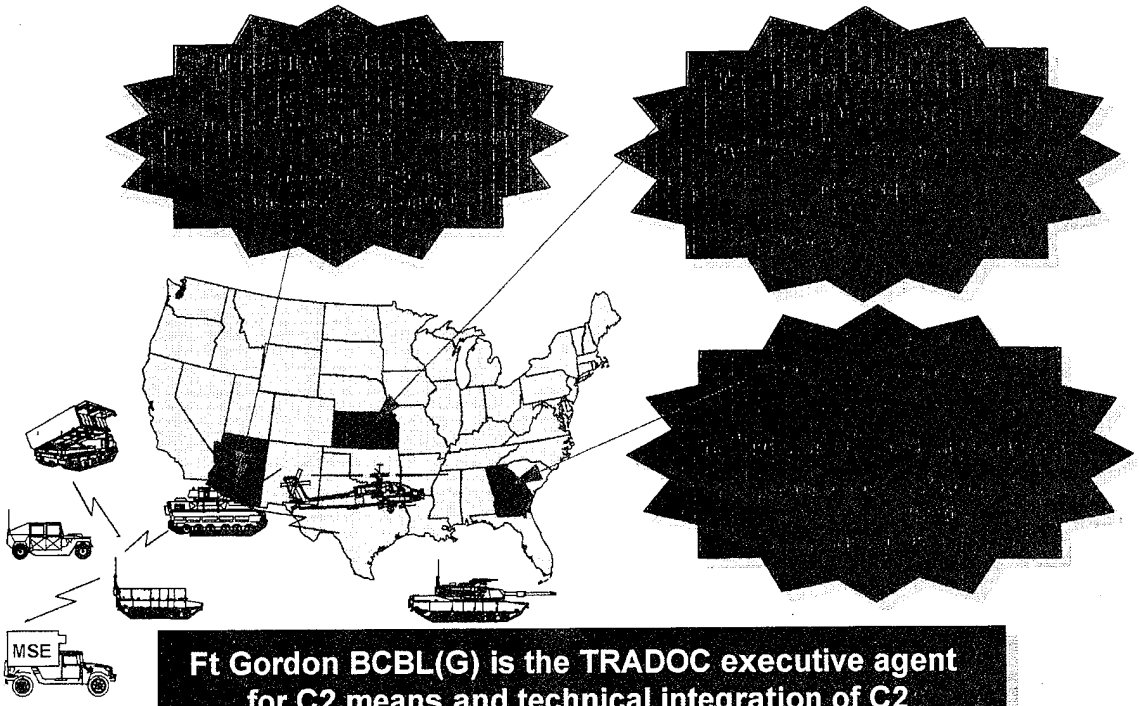
DISMOUNTED BATTLE SPACE
Ft. Benning, Ga

COMBAT SERVICE SUPPORT
Ft. Lee, Va

EARLY ENTRY LETHALITY & SURVIVABILITY
Ft. Monroe, Va

MOUNTED BATTLE SPACE
Ft. Knox, Ky

BATTLE COMMAND BATTLE LAB (BCBL) TRIAD



Ft Gordon BCBL(G) is the TRADOC executive agent for C2 means and technical integration of C2 automation and communications.

BATTLE LAB S - AN ARMY EXAMPLE OF THE "RE-INVENTING GOVERNMENT" CONCEPT

✓ **Define new ways of doing business:**

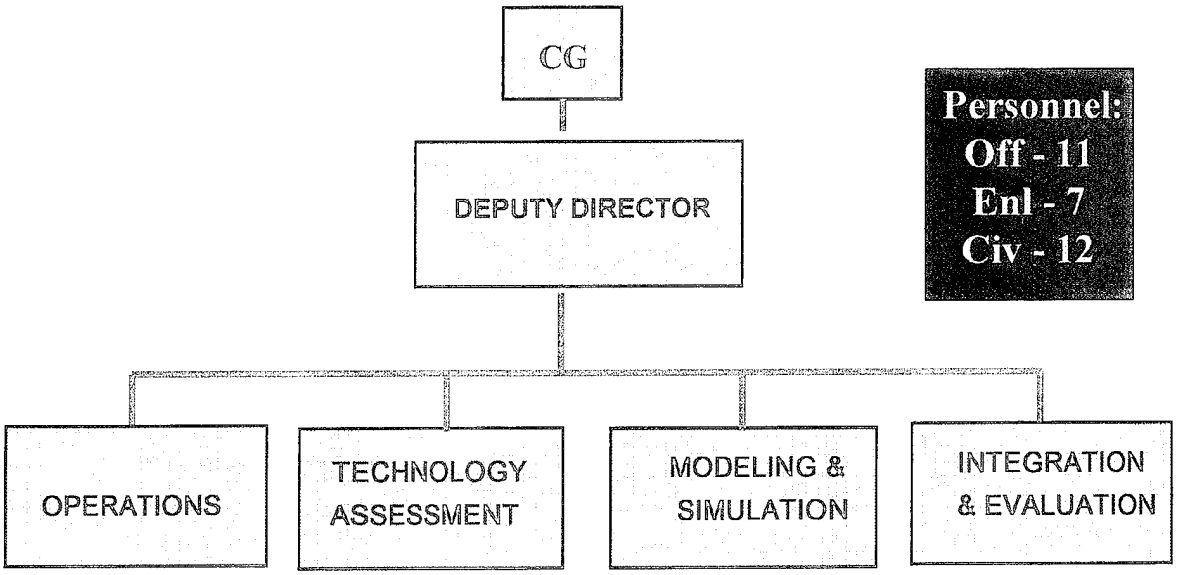
- **Identify capabilities, requirements, & priorities**
- **Create integrated environment**
- **Maintain technical currency at affordable cost.**

✓ **Attack traditional 7-15 year Materiel Acquisition Process:**

- **Develop "Informed Requirements"**
- **Reduce Materiel Acquisition / Dev process**
- **"Golden Nuggets".**

BATTLE COMMAND BATTLE LAB

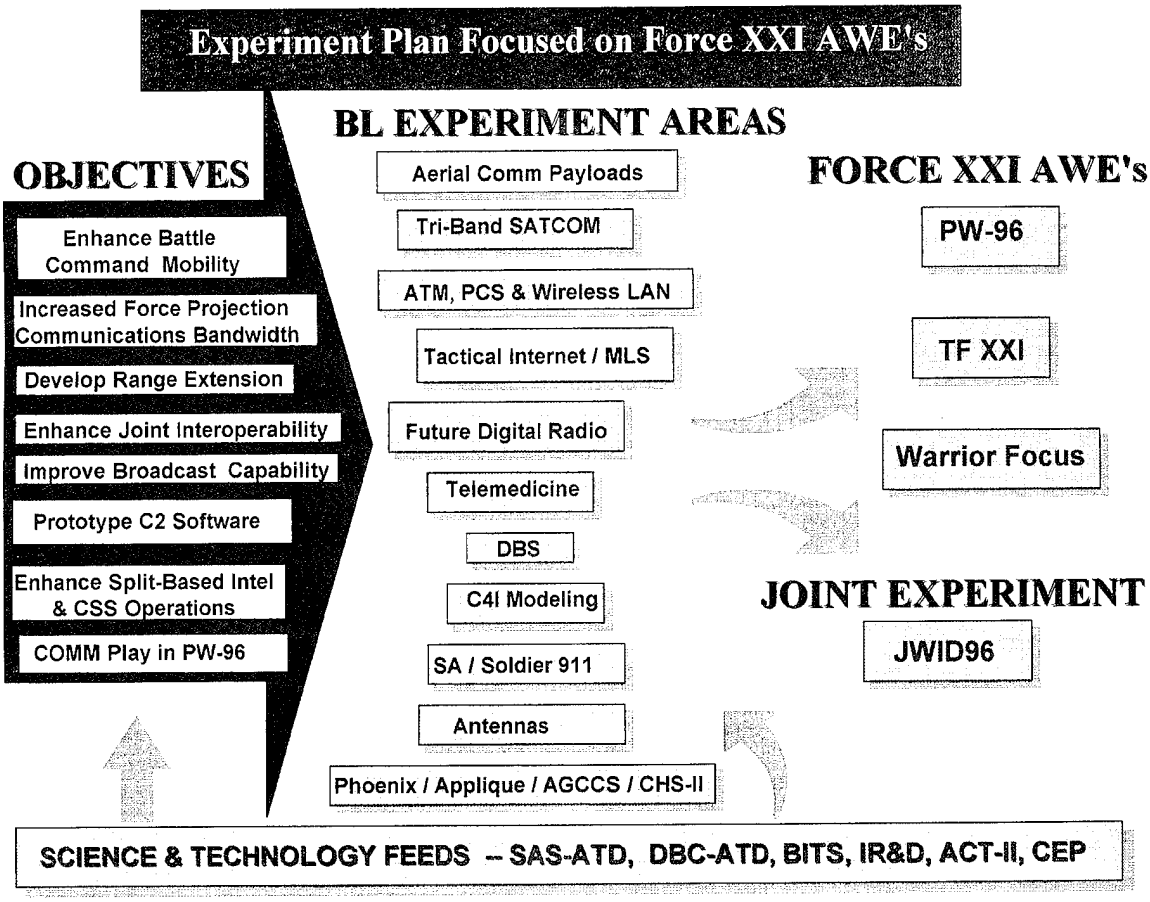
(FT GORDON)



BCBL(G) MISSION

The Ft. Gordon element of the Battle Command Battle Lab is responsible for the means of battle command and friendly elements of information operations:

- Technology solutions for C4I .
- Develop on-the-move battle command capabilities.
- Improve C4I interoperability with joint and coalition forces.
- Enhance space-based systems for battle command.
- Enhance broadcast technology for battle command.
- Enhance CSS battlefield automation and communications support.
- Influence DOD tech base.
- Influence industry IR&D.



BATTLE COMMAND BATTLE LAB
SCIENCE & TECHNOLOGY METHODOLOGY

✓ **Influence DOD & Industry:**

- **Battle Labs :**
  - **Develop OCR's.**
  - **Conduct S&T Reviews.**

- **BCBL(G) Proactive Methodology**
  - **Created 3 Man S&T Cell**

BATTLE COMMAND BATTLE LAB
SCIENCE & TECHNOLOGY METHODOLOGY

✓ Influence Industry IR&D:
- Open Environment
- Leverage commercial technology
- Participate in IR&D reviews.
- ACT - II Program

Industry IR&D Activity

✓ Conduct annual or semi-annual IR&D Reviews:
- With numerous companies
- Brief BCBL(G) experiment plan.
- Industry has modified and aborted projects.

✓ ACT-II Projects:
- 7 projects in FY-94 ($4.5m).
- 5 projects in FY-95 ($4.2m).
- 1 project in FY-96 ($735k).

Payoff from working closely with industry is high !!!

Science & Technology Feeds (ACT-II Programs)

FY 95

PROJECT #	TITLE
1. BCBL-112	Wideband Data Networking Phase II
2. CSS-034	Digital Video For MSE
3. BCBL-XX	64kbs Data Comm over 25khz VHF/UHF
4. BCBL-142	Multimedia ATM Services on the Battlefield
5. CSS-101	Tactical End-To-End Encryption Device (TEED)

FY 96

PROJECT #	TITLE
1. BCBL-37	PC Direct

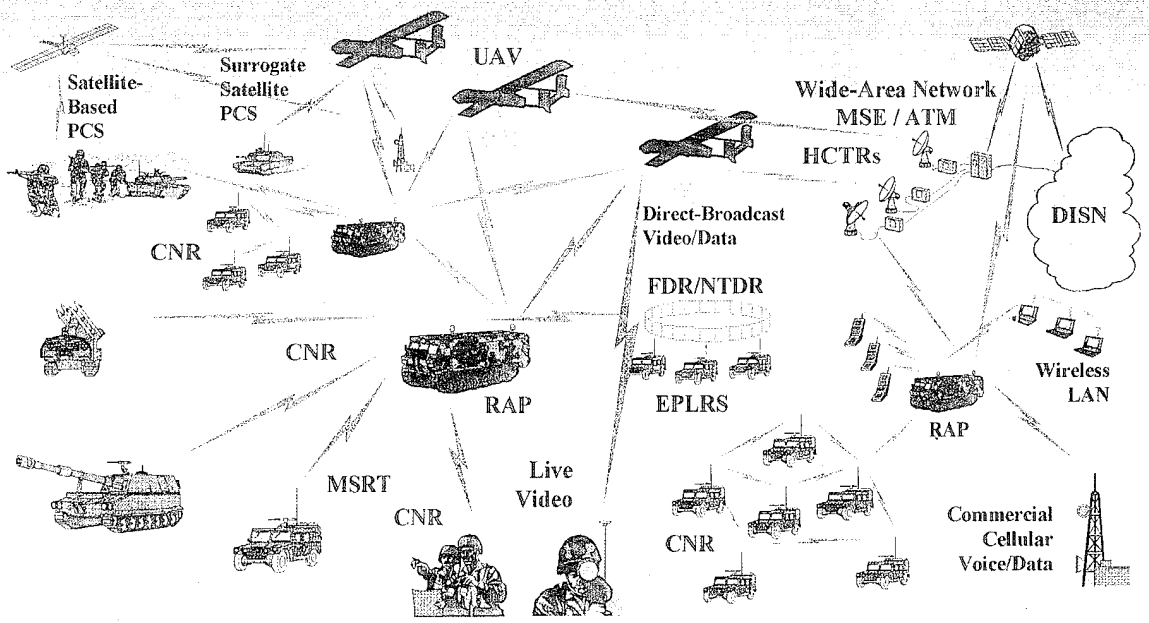
SUMMARY

✓ BCBL(G)'s S&T methodology is effective !

- **Leveraged $85.9m of Army tech base dollars.**
- **Priority is leave-behind capability.**
- **Focused IR&D leaders in information technology.**

Influencing the DOD Technology Base and Industry IR&D is essential to achieving Force XXI Battle Command Objectives !!!

Digital Battlefield Communications (DBC-ATD)
Architectural Elements



Battle Command Battle Lab - Gordon
Points of Contact

Deputy Director, Battle Command Battle Lab
COL Patrick Lusk
Commercial Phone - (706) 791-2057
FAX: (706) 791-8346
DSN (780-xxxx)
e-mail: luskp@bcblg.gordon.army.mil

Chief Technology Assessment Division
Mr Tom Mims
Phone: Same as Above
e-mail: mimst@bcblg.gordon.army.mil

Operations Officer
MAJ Steve Mecham
Commercial Phone: (706) 791-75
e-amil: mechams@bcbl.gordon.army.mil

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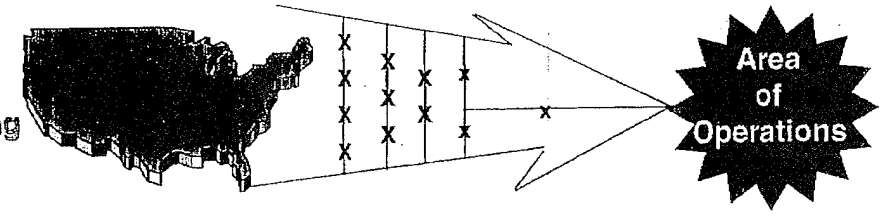
PEO STAMIS

Advanced Planning Briefing to Industry
Power Projection Programs
28-29 November 1995

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PEO STAMIS

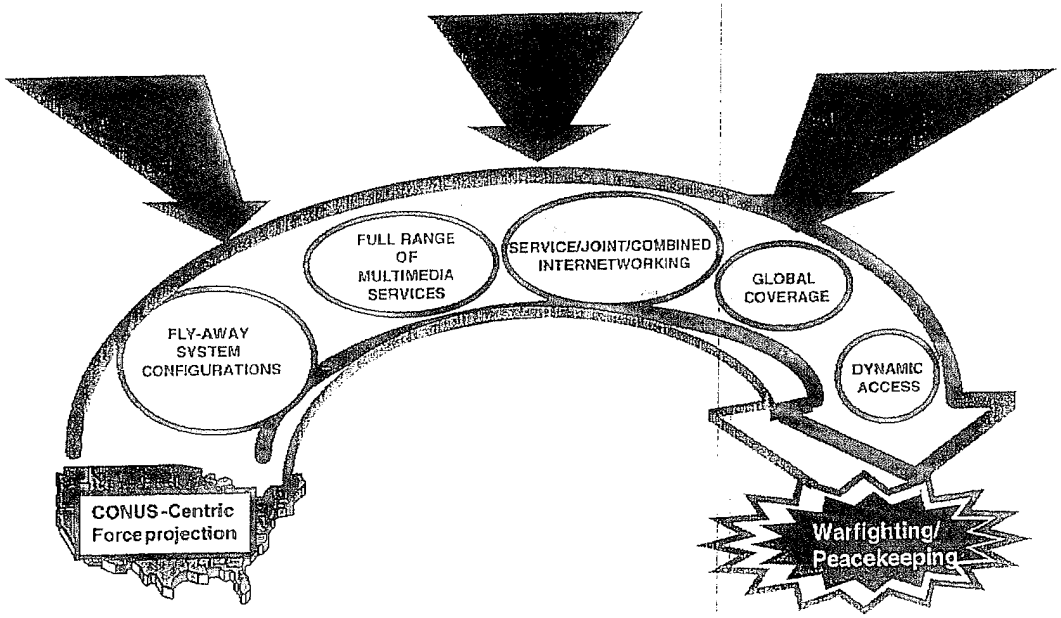
Army Power Projection Doctrine



- ☆ FM 100-5, Operations, defines the Army Power Projection doctrine
  - ➨ "...ability to rapidly alert, mobilize, deploy, and conduct operations anywhere in the world."
- ☆ And the need for communications
  - ➨ "A split-based logistics concept relies on communications systems that allow much of the logistics base to remain in CONUS, receive and act on information, and send necessary supplies forward."

PEO STAMIS

Power Projection Information Systems Requirements

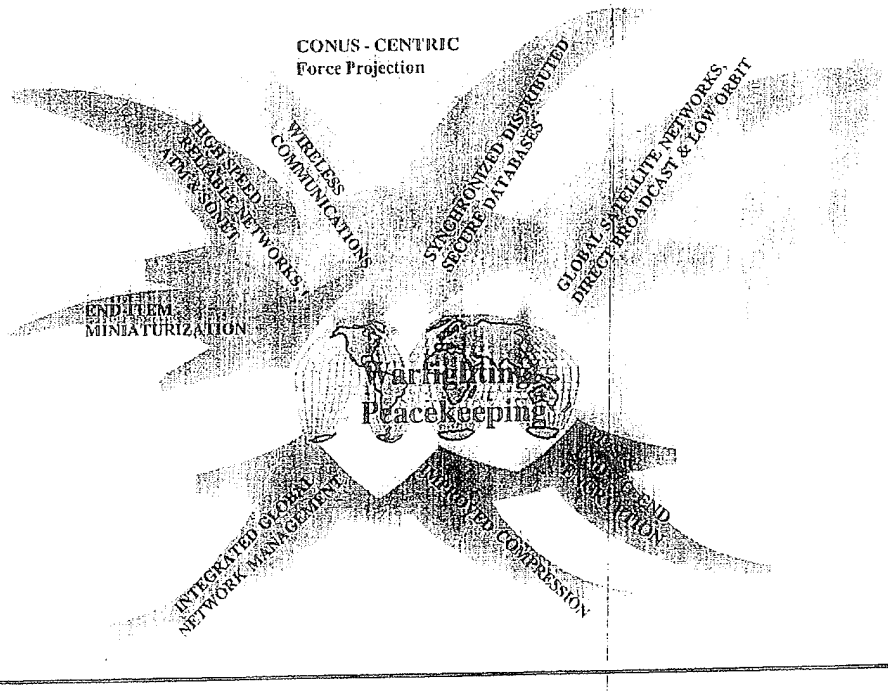


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PEO STAMIS

Enabling Technologies



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PEO STAMIS

Power Projection Resultant Change

- ☆ Must guarantee interoperability of legacy & new systems
- ☆ Must provide world wide information system
  - ☞ True distributed information systems
  - ☞ Very large logical data base
- ☆ Must guarantee robust communications system
- ☆ Distinguishment between strategic, tactical & sustaining base must be eliminated - seamless
- ☆ Must focus on integrating all systems to support the processes associated with readiness, mobilization & war fighting
- ☆ Must get the most for every dollar

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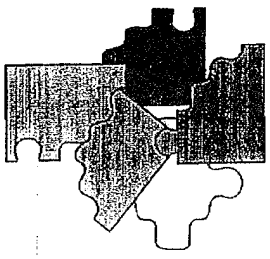
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PEO STAMIS

Establishing a Coherent Path Actions Underway

- ☆ Establish a Common Army Architecture
- ☆ Re-engineer the way we do business
- ☆ Installation upgrades to support Force Projection

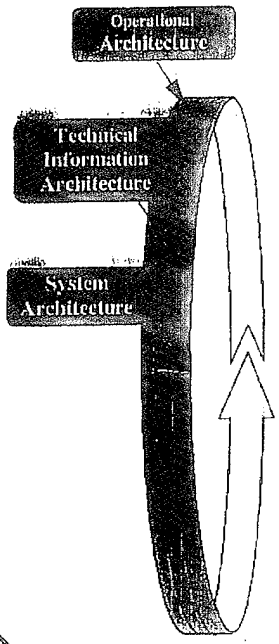


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PEO STAMIS

"The Products"



- THE TECHNICAL ARCHITECTURE IS THE "BUILDING CODE" UPON WHICH C4I SUPPORT IS BASED.
- THE OPERATIONAL ARCHITECTURE. THE DEFINITION OF MISSIONS, FUNCTIONS, AND TASKS, THE INFORMATION NEEDED FOR THEM, AND THE PRIORITY AND PERISHABILITY OF THIS INFORMATION. , THE MILITARY UNITS AND ELEMENTS AND THEIR FUNCTIONAL RELATIONSHIPS.
- THE SYSTEM ARCHITECTURE IS THE PHYSICAL LAYOUT AND RELATIONSHIP OF THE COMPUTER AND COMMUNICATIONS EQUIPMENT

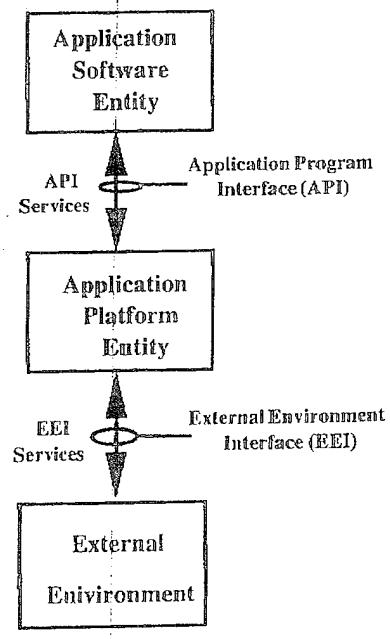
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PEO STAMIS

Army Technical Architecture

Underlying premise of TRM: Implementation of open systems environment allowing information systems to be developed, operated, and maintained independent of applications or proprietary vendor products



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PEO STAMIS

Army Technical Architecture

- ☆ Provides foundation for seamless flow of information among all systems that produce use or exchange data electronically
- ☆ Provides guidelines and standards for system development and acquisition that will dramatically reduce cost, development and fielding time
- ☆ Mandates the minimum set of standards for integration and interoperability

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PEO STAMIS

Re-engineering the Way We Do Business



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Changes

- Reorientation from functional organizations to process managers
  - More efficient
  - Allows optimization in product development
  - End to end control & accountability of the process
  - Horizontal integration is emphasized
- A major cultural change
  - We can do more with less
    - Enterprise solutions
    - Standard processes and ways of doing business
    - Continuous technology refreshment
    - Open Systems Architectures - commodity environment
  - Only if people/organizations will accept

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Actions Underway

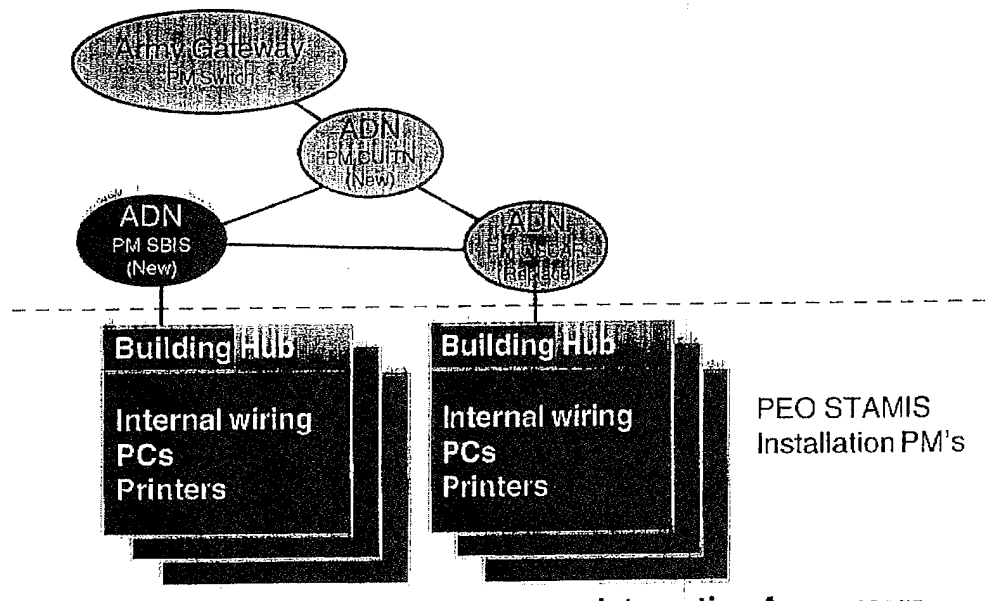
- Reviewing installation support process:
  - Organizational changes may be necessary
    - All PMs doing installation work under single PEO
  - Develop standard installation architecture & design
    - Individual PMs won't do their own solution
    - Establish configuration management
  - Single organization for DOIMS to call
    - Single schedule
    - Coordinated installation work
  - Allows for Army enterprise solutions - open systems
    - Reduced design, development & maintenance costs
    - Reduced manpower/training costs
  - Improved support to installations

Synchronization

- Develop Installation Infrastructure Template
  - Integrate Heterogeneous Systems - Legacy
  - Establish installation architecture
    - Adaptable
    - Expandable
    - Postured for the future
  - Integrated plan encompassing
    - Voice
    - Data
    - Video
    - Support DoD systems
      - Data Security
  - Enterprise solutions for network and system management
    - Supports DOIMs
    - Reduced cost
    - Configurable
    - Identify Army-wide problems
    - Integrated COTS solution
    - Bring expertise to bear

13

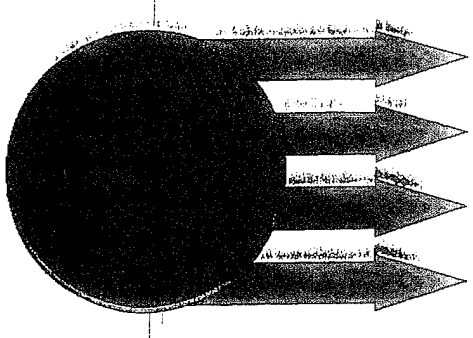
Fielding Installation Infrastructure Integrating the Way We Do Business



14

PEO STAMIS

Installations as Force Projection Platform

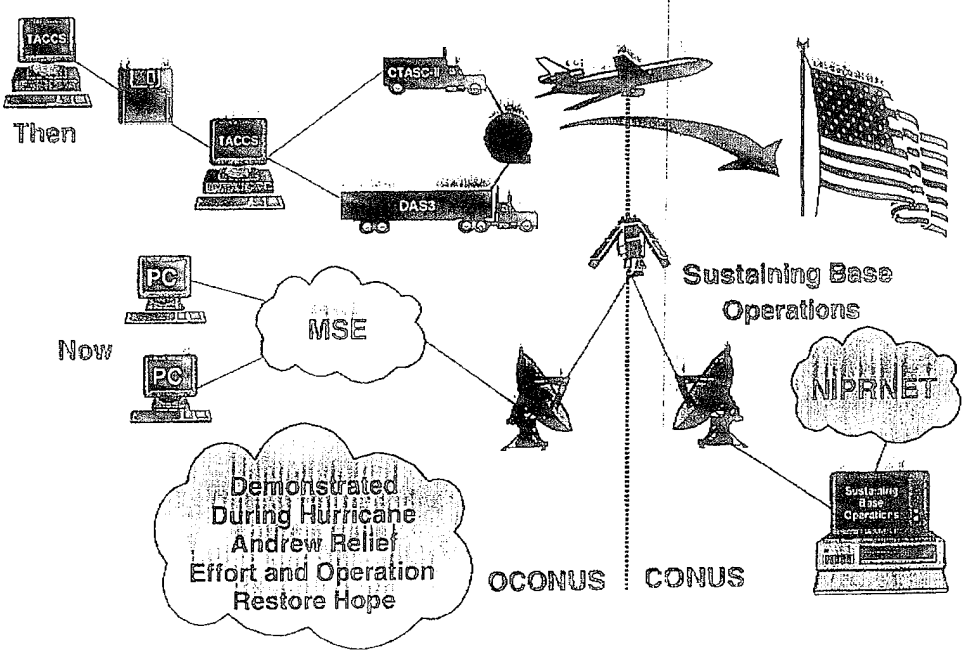


15

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PEO STAMIS

Flexibility

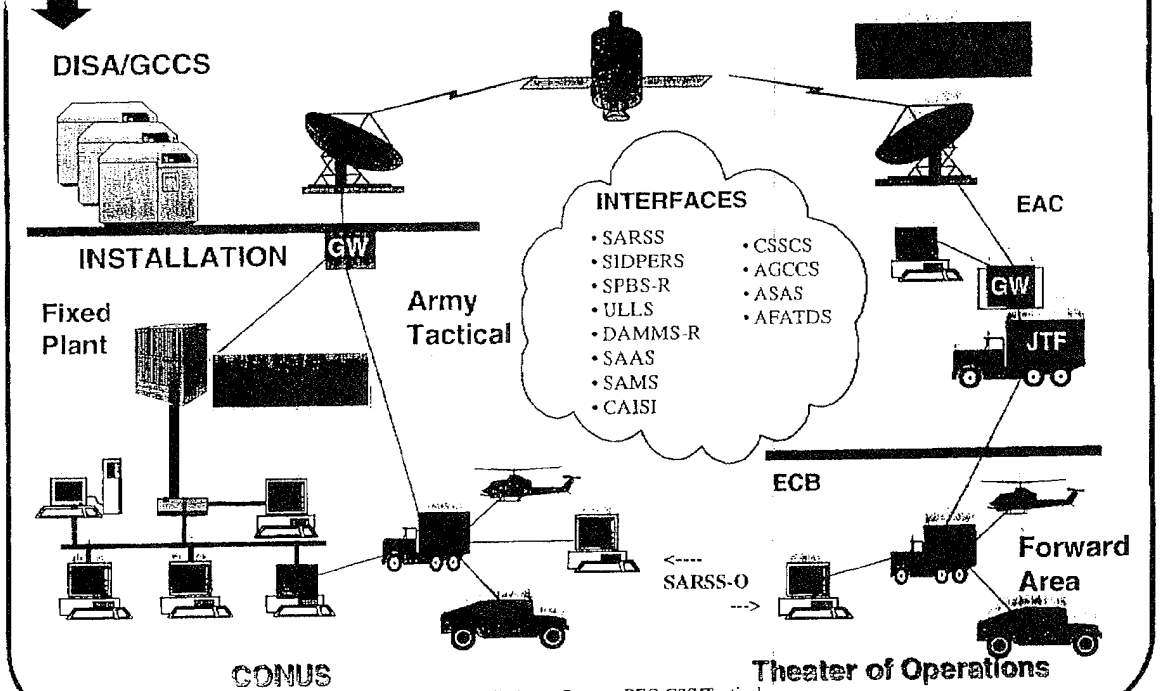


16

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PEO STAMIS

Sustainment and Force Support



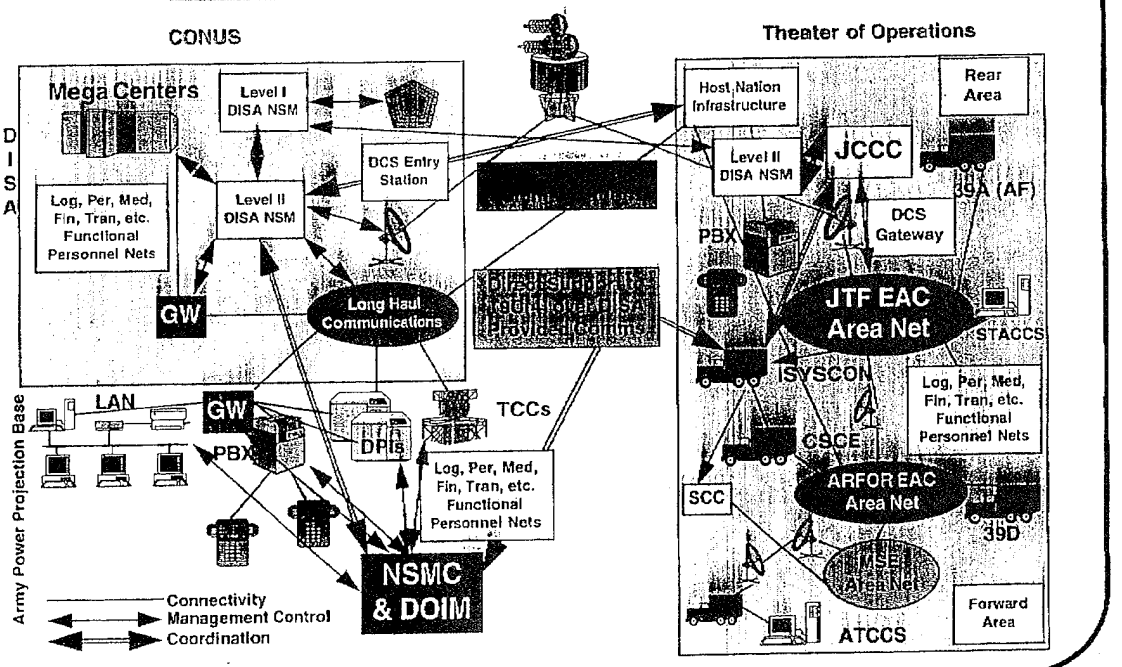
Blue = PEO Stamis/Installation Green = PEO C3S/Tactical

17

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PEO STAMIS

Vision of the Army WIN-T Environment - Year 2000



18

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Where the Army is Headed

Software Applications

- ☆ DoD standard applications
  - ⇨ CIM
  - ⇨ Defense Message System
- ☆ DA standard applications
  - ⇨ Need your help on those
  - ⇨ Non-developmental & contractor off the shelf
  - ⇨ Open system standards based systems
  - ⇨ ADA is the language of choice
  - ⇨ Standard data elements
  - ⇨ Horizontal integration of systems
  - ⇨ Re-engineered systems via software change package
  - ⇨ Centralized software distributors
  - ⇨ Embedded training
  - ⇨ Scaleable, interoperable, portable systems

19

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Where the Army is Headed

Technology

- ☆ Client server architecture
- ☆ True distributed information systems
- ☆ Open systems via standards
- ☆ High speed installation networks - B-ISDN
  - ⇨ Asynchronous transistor mode - 644mbps
  - ⇨ Fiber based
  - ⇨ Integrate voice data video
- ☆ Enterprise network & system management
- ☆ Extremely powerful desktop personal computers
  - ⇨ Industry off the shelf solutions
- ☆ Multi media at the desktop
- ☆ Increased system security
  - ⇨ MISSI technology
  - ⇨ PCs compatible with DoD initiatives

20

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What This Means to Industry

- ☆ Major emphasis on upgrading the installation infrastructure
  - ➠ Hubs, routers, switches, LANs, WANs, fiber etc.
- ☆ More emphasis on COTs and less on applications development
  - ➠ Companies with higher maturity levels will win the business
- ☆ Movement of more work from government people to industry - privatization
- ☆ Hardware will be treated as a commodity
  - ➠ Service and value added will determine who gets the business
    - ➢ Supportability will be a bigger factor
- ☆ Network services will be a bigger factor in the future
- ☆ Systems security will continue to be ***very*** important
- ☆ The only constant will be ***change***

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What This Means to Industry

(Continued)

- ☆ Proprietary solutions will not be used
- ☆ Future developments will be in the common operating environment
- ☆ Future software work will mostly be integration

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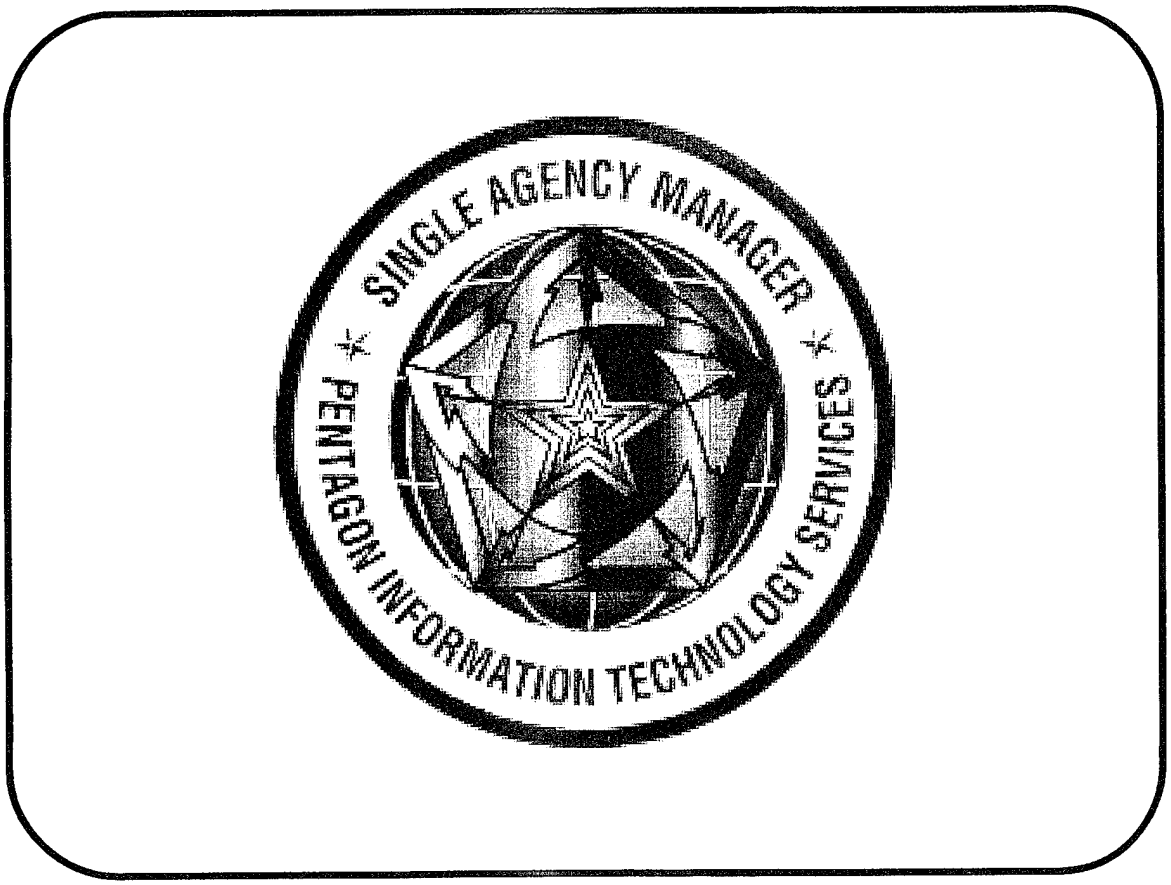
PEO STAMIS

[redacted]

- ☆ A technical architecture exists based on open system standards
  - ➪ We must ensure we comply - interoperability
  - ➪ We can't afford to develop unique or proprietary systems
- ☆ Installations are force projection platforms
  - ➪ We must upgrade them
  - ➪ Must work closer together - "dig one hole"
- ☆ We are making significant changes in our business practices
  - ➪ Our support to installations must improve
  - ➪ Need your cooperation to make it a reality
- ☆ Leverage commercial technology



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Overview

- Background/Mission
- Organization/Relationships
- Demographics
- Unique Missions
- Products/Services
- Initiatives
- The Future

BACKGROUND

- 28 Mar 94 - DepSecDef Memo
- 1 Apr 94 - SAM Officially established under ISC
- 18 Oct 94 - Concept Plan approved (12 Jul 94)
- 16 Nov 94 - ISC-P and AVIC join SAM
- 12 Dec 94 - Implementation Plan approved (28 Nov 94)
- 1 Mar 95 - DoD Directive 8220.1 published
- 7 Apr 95 - AFPCA OPCONs to SAM

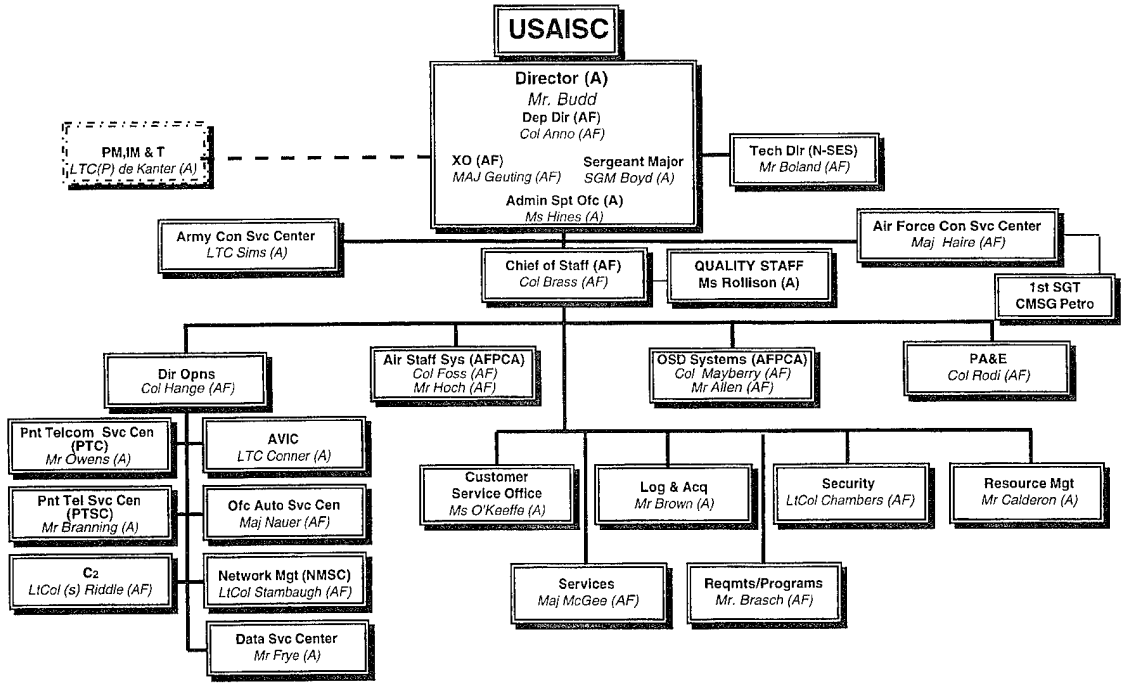
The Secretary of the Army is hereby designated as the Single Agency Manager (SAM) for the Information Technology Services (ITS) on the Pentagon Reservation.

JOHN DEUTCH
28 MAR 94

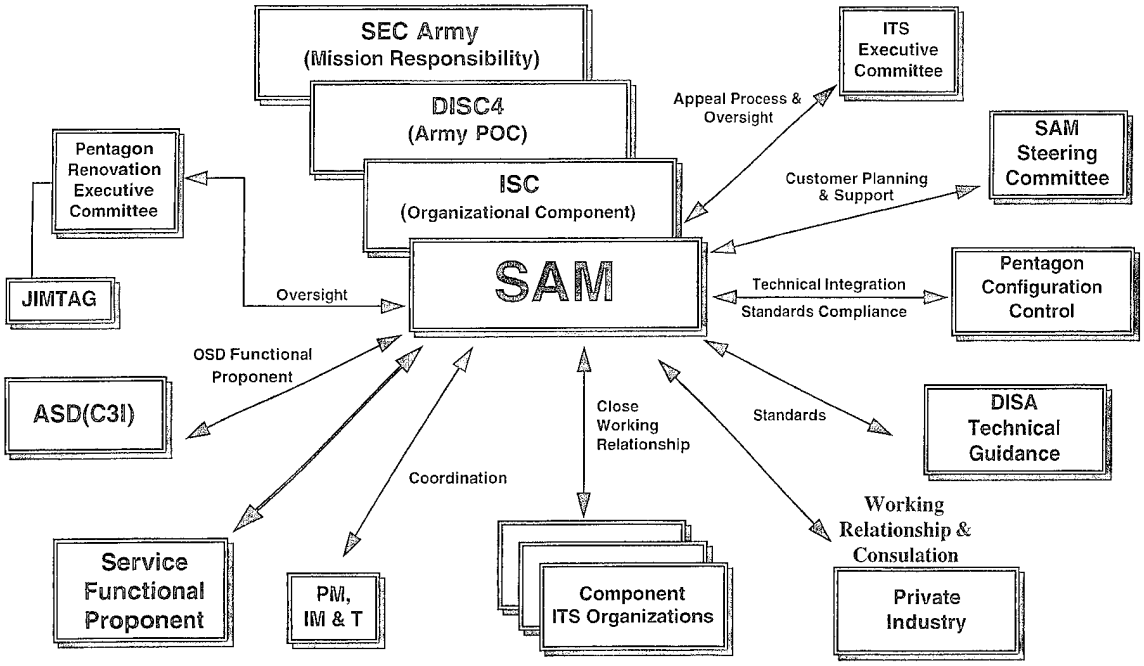
MISSION

The Single Agency Manager is a professional customer-focused team dedicated to provide and sustain standardized, integrated, and innovative information technology products and services to the Pentagon community.

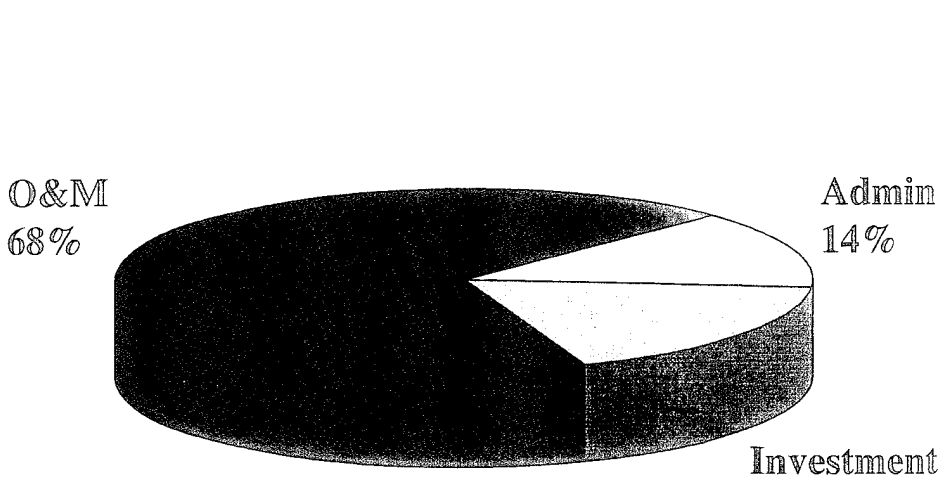
SAM ORGANIZATION CHART



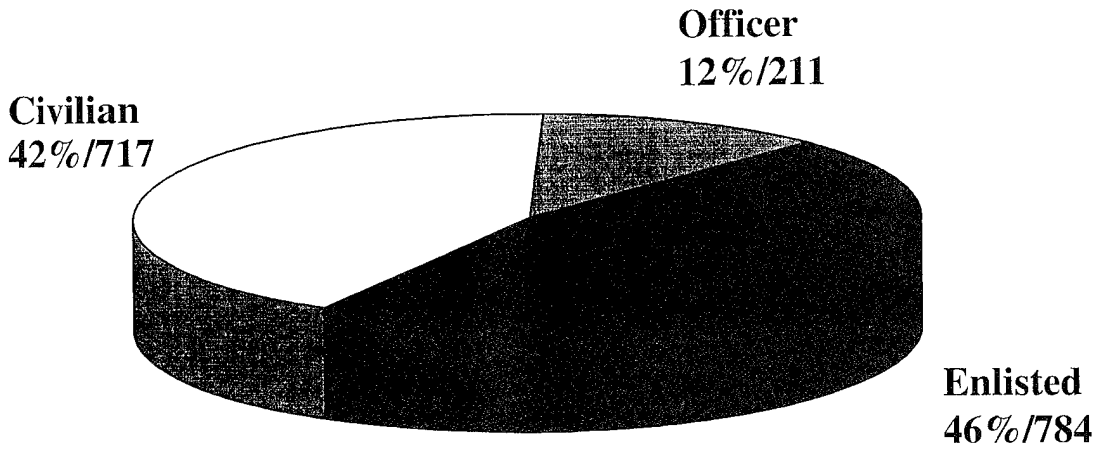
SAM RELATIONSHIPS



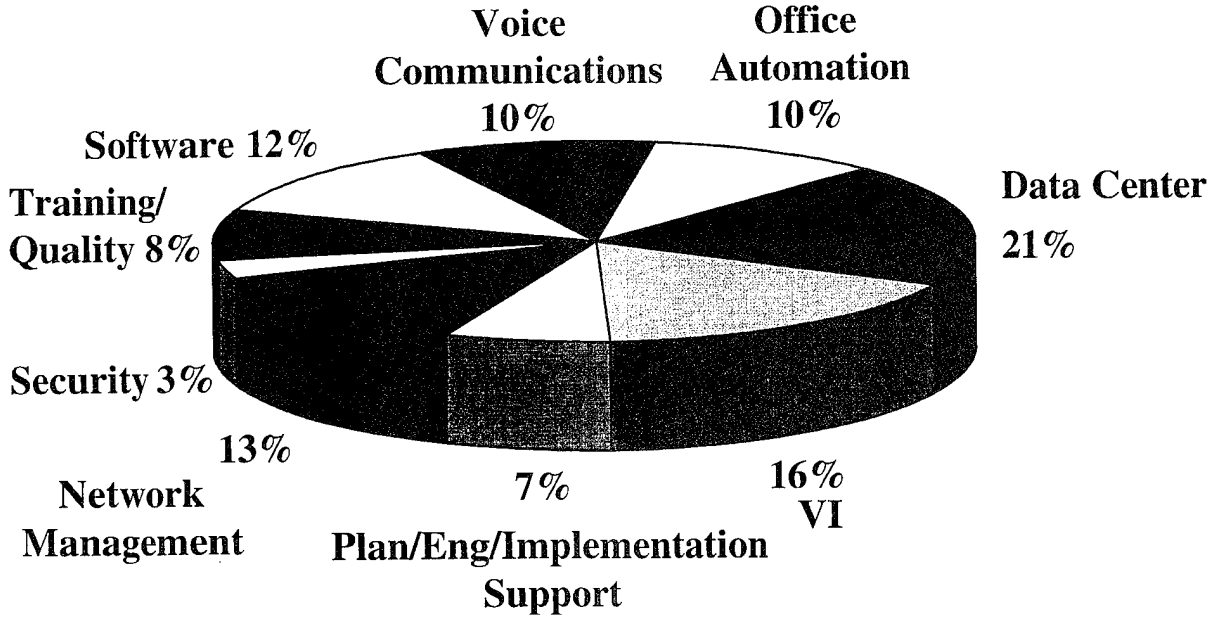
SAM Manpower Profile



Personnel Demographics



Functional Demographics



Uniqueness

- NMCC Executive Agent
- Mobile Communications
- OSD Mission
- 55th Combat Camera
- Army Visual Information Center
- Pentagon Telecommunications Center Executive Agent

Environment

Application Software

Voice Communications

Office Automation

Data Centers

Visual Information

Plan/Eng/Implementation

Network Management

Security

Training/Quality

- **PPBS Moderization**
- **WWMCCS/GCCS**
- **Software Migration**
- **Product Evaluation**
- **System Design & Engineering**
- **System Maintenance**

Environment

Voice Communications

Office Automation

Data Centers

Visual Information

Plan/Eng/Implementation

Network Management

Security

Training/Quality

Application Software

- **Secure C2**
  - **5 Red Switches, 2500 Leased Circuits**
- **NMCC & AFOC Networks**
- **SECDEF, CJCS, Sec Army, CSA Executive Travel**
- **WASH TAC Switch**
  - **AF Four Star Conference**
- **Administrative Telephones**
  - **3 Switches, 8000 Phones, 3000 STU III**
- **Cellular and Pager Systems**

Environment

Office Automation

Data Centers

Visual Information

Plan/Eng/Implementation

Network Management

Security

Training/Quality

Application Software

Voice Communications

- **Over 11,000 OSD, Army, and USAF customers**
- **OSD LAN Backbone**
- **HQ AF LANs and Backbone**
- **C3I LAN**
- **Small Computer Technical Center**
- **Installation, Inventory & Reuse**
- **Warehouse**

Environment

Data Centers

Visual Information

Plan/Eng/Implementation

Network Management

Security

Training/Quality

Application Software

Voice Communications

Office Automation

- **Joint Comm Center (Army/Navy/Air Force)**
- **Joint Data Center (Army/Air Force)**

Environment

Visual Information

Plan/Eng/Implementation

Network Management

Security

Training/Quality

Application Software

Voice Communications

Office Automation

Data Centers

- **Worldwide JCS Contingency/Exercise Spt COMCAM**
- **DOD VI Distribution**
- **DOD/Army Photo/TV/Graphics**

Environment



Planning/Eng/Implementation

Network Management

Security

Training/Quality

Application Software

Voice Communications

Office Automation

Data Centers

Visual Information

- **Pentagon-wide Impact**
  - **Pentagon Standards Based Architecture**
  - **SAM Standards Profile**
- **SAM-Supported Systems**
  - **Enterprise I.T. Design**
  - **Technical Solutions**
  - **Project Management**
  - **Integration/Installation**
  - **Configuration Management**

Environment



Network Management

Security

Training/Quality

Application Software

Voice Communications

Office Automation

Data Centers

Visual Information

Plan/Eng/Implementation

- **Network Control (Voice/Data/Video)**
- **Readiness Center**
- **Tech Control Facilities**
- **Cable TV**

Environment

Security

Training/Quality

Application Software

Voice Communications

Office Automation

Data Centers

Visual Information

Plan/Eng/Implementation

Network Management

- **TEMPEST**
  - **340+ Customers**
- **COMSEC**
  - **Key Manager for 300+ Accounts**
- **COMPUSEC**
- **Network Security Management**
- **DAA**
- **CSSO Training**

Environment

Training/Quality

Application Software

Voice Communications

Office Automation

Data Centers

Visual Information

Plan/Eng/Implementation

Network Management

Security

- **IT Training**
- **Quality Staff**

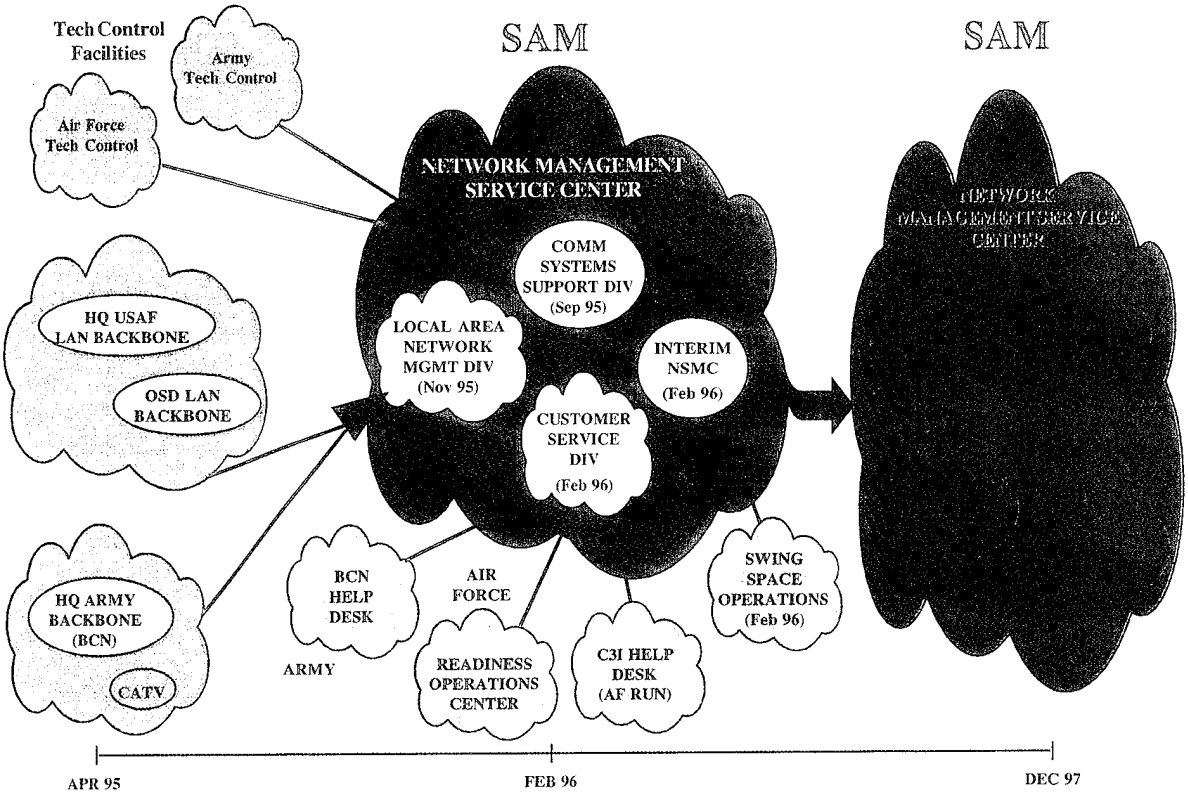
Training/Quality

- Quality Approach
- Mission/Vision/Goals
- Strategic Plan
- Institutionalized Training
  - Orientation Course (1 day)
  - Customer Service Course (2 days)
  - Leaders Course (4 days)

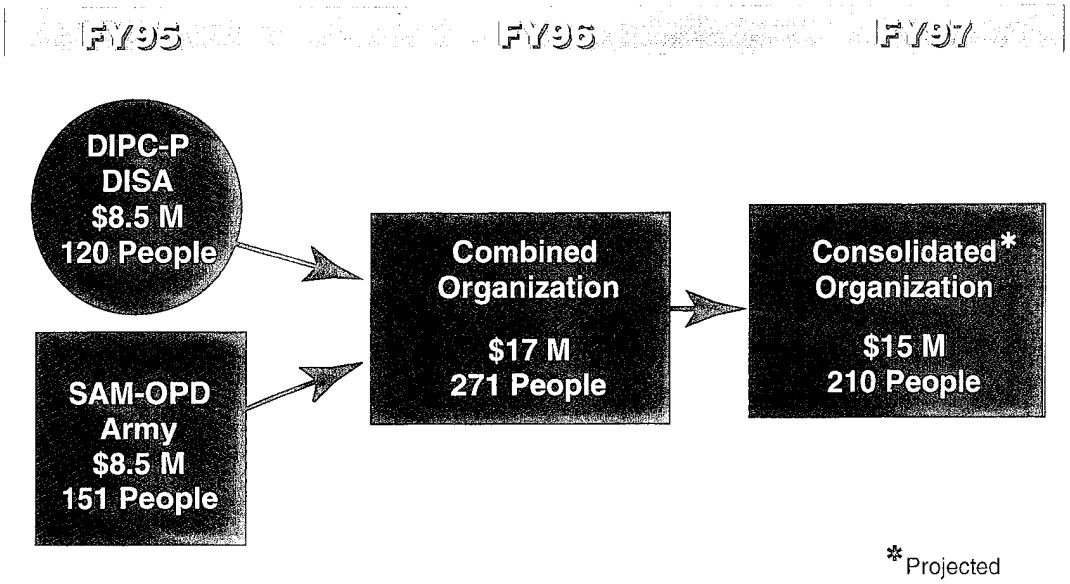
Other Initiatives

- Pentagon Renovation Planning & Execution
- Pentagon Enterprise E-Mail Interoperability
- Swing Space O&M
- Organizational Integration

NETWORK MANAGEMENT & CUSTOMER SUPPORT OPERATIONS MIGRATION

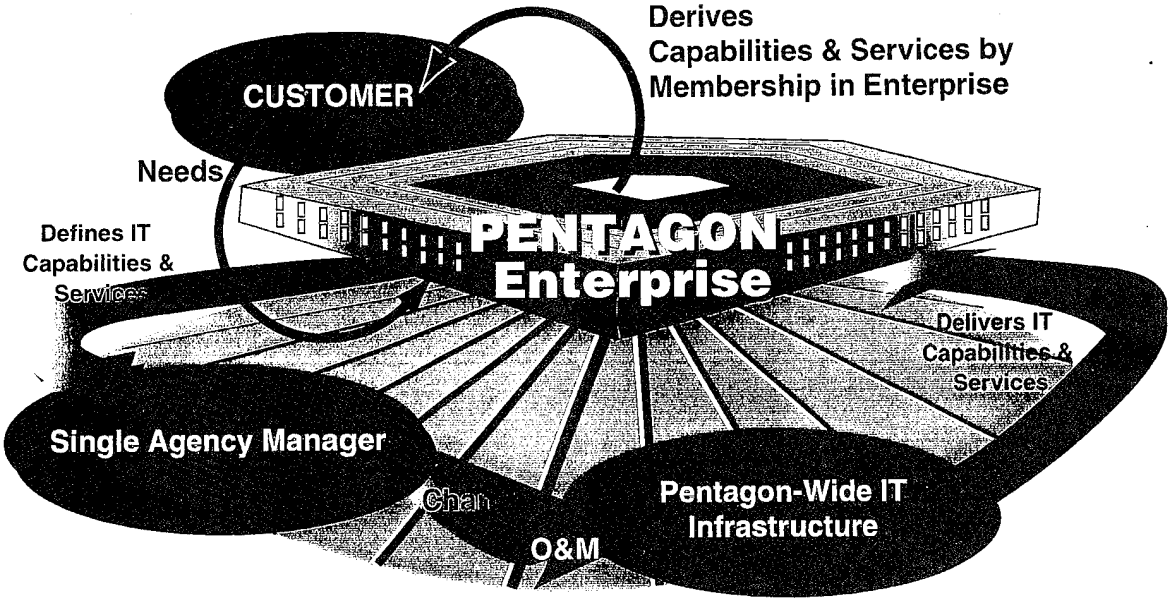


Evolution of The Pentagon Data Processing Service Center



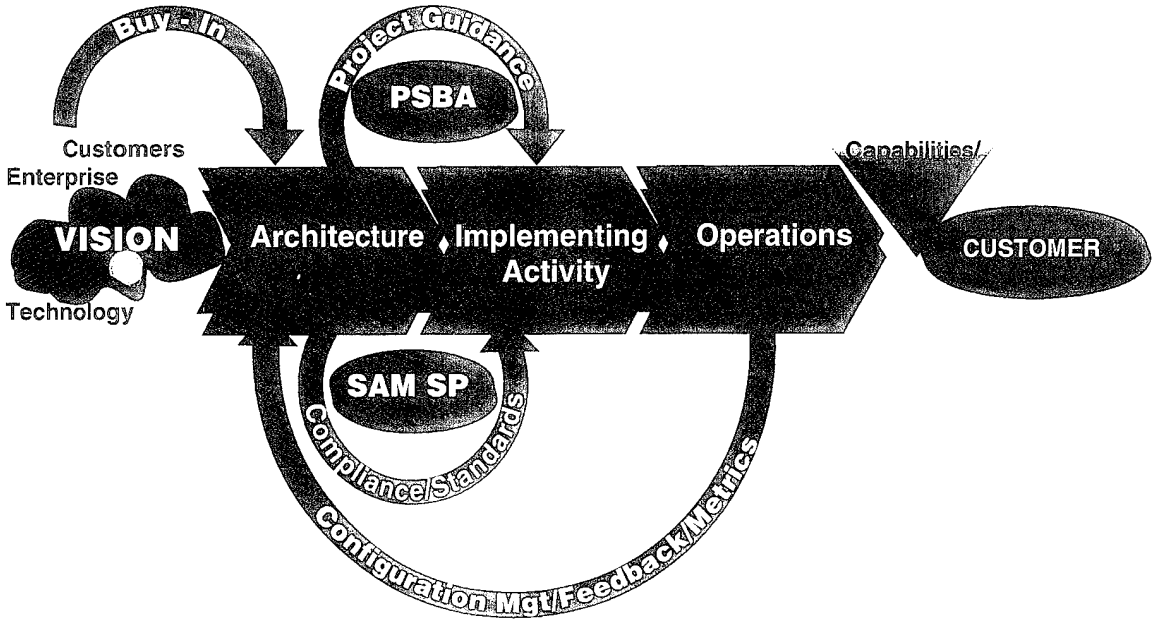
Vision: Pentagon as an Enterprise

Supported by SAM's IT Infrastructure



Vision: Pentagon as an Enterprise Supported by SAM's IT Infrastructure

- Corporate (Pentagon Enterprise) IT Agenda
  - Set by Pentagon ITS Executive Committee (DODD 8220.1)
  - Defined in terms of capabilities
- SAM's Pentagon-wide IT Infrastructure
  - Consists of all physical, electronic, personnel, and fiscal resources
  - Changed, operated, maintained to provide capabilities and services to enterprise as set by corporate agenda
- Customers Derive Capabilities and Services Based on Being a Member of the Enterprise
  - IT as a *utility* vice a specially requested service
  - Only unique services need specific requests



KEYS TO ARCHITECTURE CONTROL

- GENERATE BUY-IN
  - During architecture development
  - Common vision results in common direction
- PROJECT/PROGRAM GUIDANCE
  - PSBA drives implementation activity
  - Compatible programs result in compatible systems
- COMPLIANCE
  - SAM-SP prescribes implementation standards
  - Standardize systems result in effective, interoperable IT services
- CONFIGURATION MANAGEMENT
  - Configuration control of fielded systems
  - O & M results feedback to improve architectural targets



Customer-Focused World Class

Team

Infrastructure

Performance

.....Gateway to 21st Century IT.

Pentagon Renovation Information Management and Telecommunications Project

COL Scipio de Kanter
Project Manager

LTC Gerald R. Miller
Deputy Project Manager

Mission

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

Current Pentagon IM&T



2 CATV
Broadcast Systems



6 Command/Operation Centers



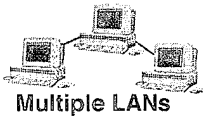
11 ADP Ctrs
3 WWMCCS
Ctrs



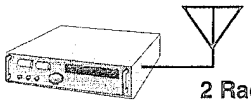
Multiple Network
Management Centers



7 Tech Control
Facilities



Multiple LANs
-Classified
-Unclassified



2 Radio Rooms



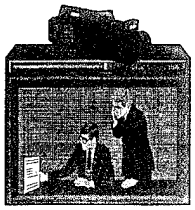
25,000 +/- Tenants



Black Red
15 Telephone Switches



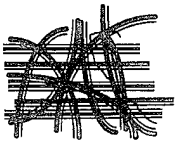
AVIC's



VTCs

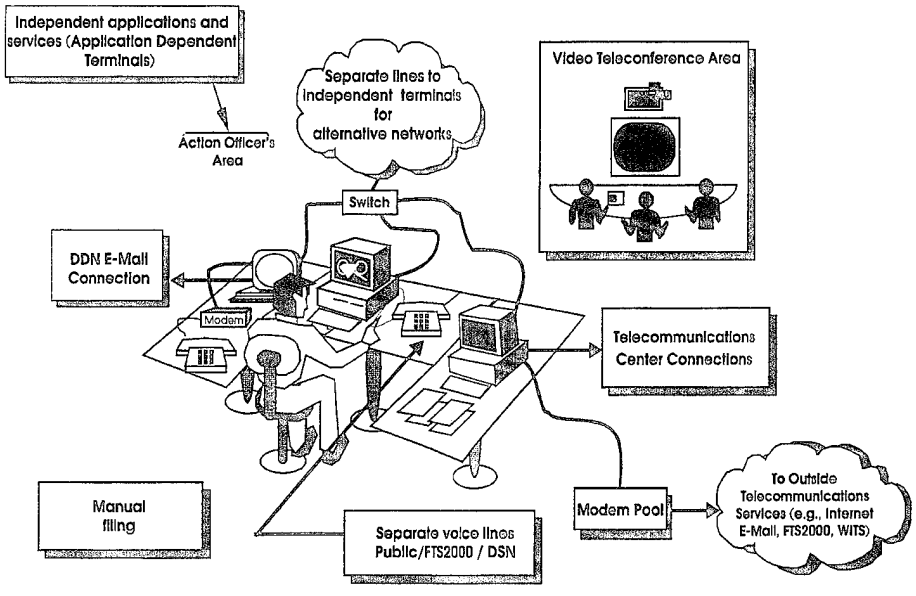


Message Ctrs



Unstructured, Undocumented
Distribution Systems
(Fiber, Copper, Coax)

Current Pentagon IM&T (Cont'd)



- Independently procured and non-interoperable systems and services
- Different interfaces to access information data bases (both electronic and manual)
- Telecommunications access arrangements vary by organization
- Most record communications provided by over the counter (OTC) or pneumatic tubes
- Video teleconference arrangements arranged independently and may not interoperate (e.g. , Rembrandt vs PictureTel CODECs)
- Cabling infrastructure inadequate, static and not centrally managed

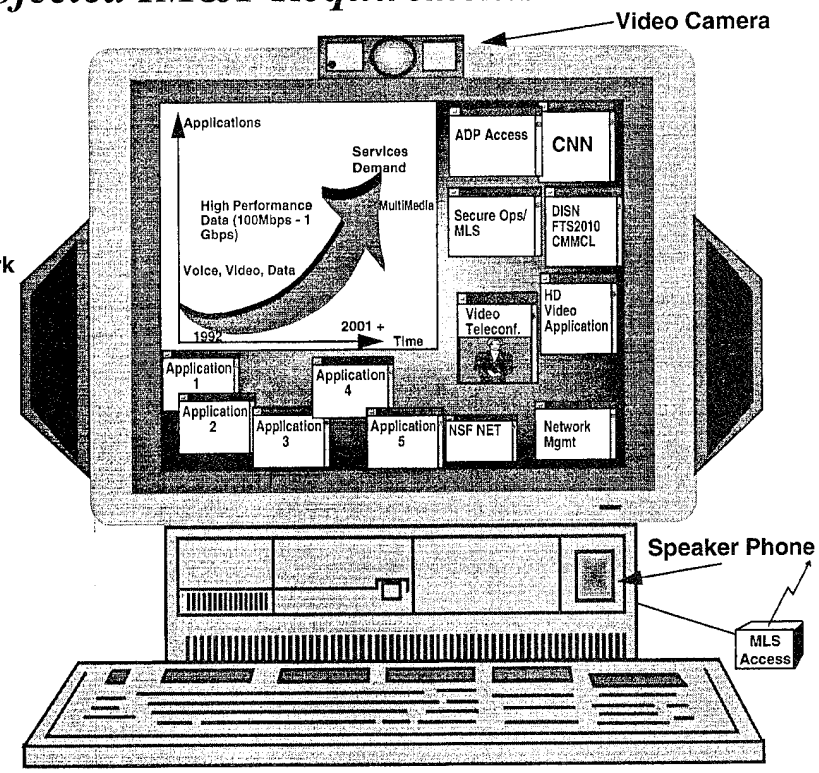
It works, but it's costly, inefficient, and inflexible.

Legend:

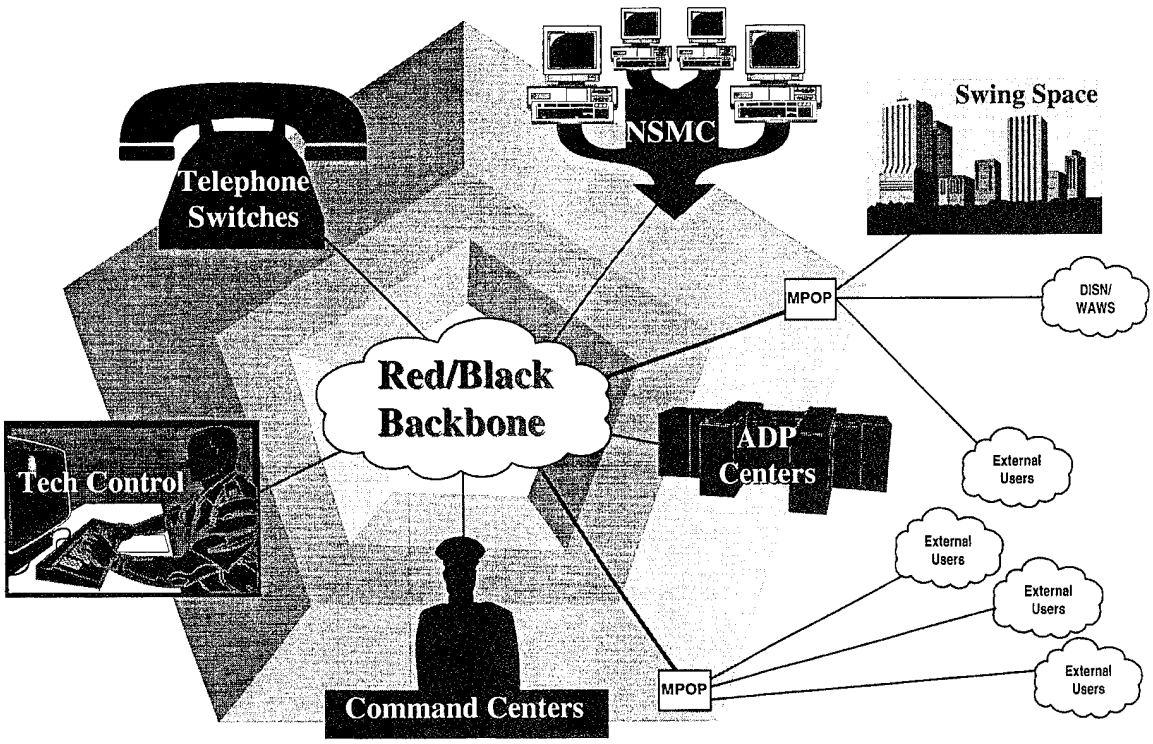
WITS - Washington Interagency Telecommunications System
DSN - Defense Switched Network
DDN - Defense Data Network
FTS2000 - Federal Telecommunications System 2000
ISDN - Integrated Services Digital Network

Projected IM&T Requirements

- **Management's Perspective**
  - Single Agency Network Management Control
  - Reconfigurable
  - Scaleable
  - Fault Tolerant
  - Cost Effective
  - Standard Compliant
- **User's Perspective**
  - Easy to Use
  - Single Integrated Service Workstations
  - Multimedia Access



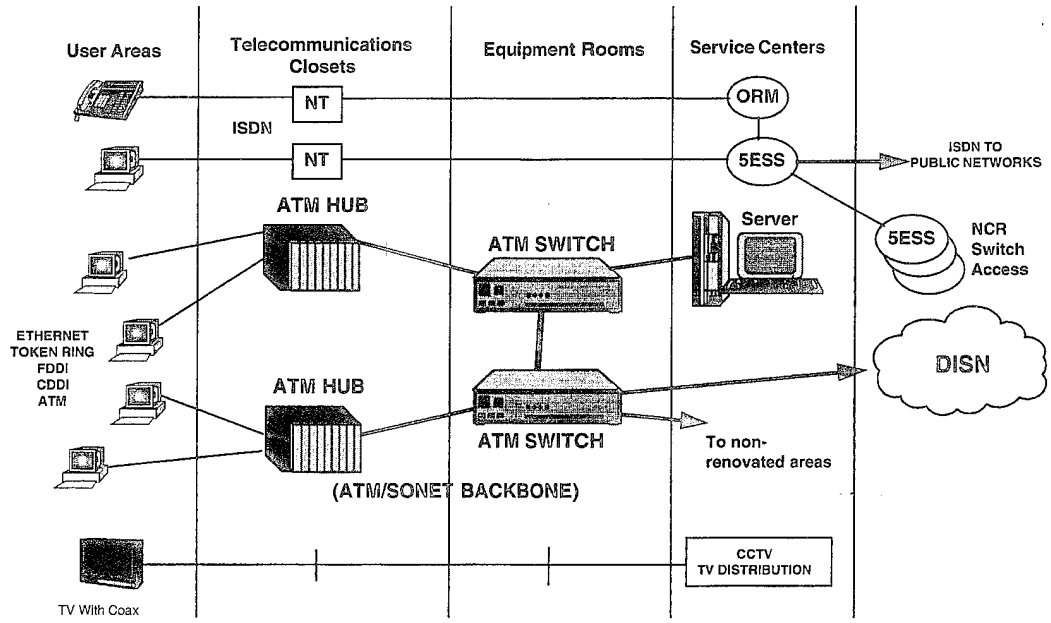
IM&T Functional Products



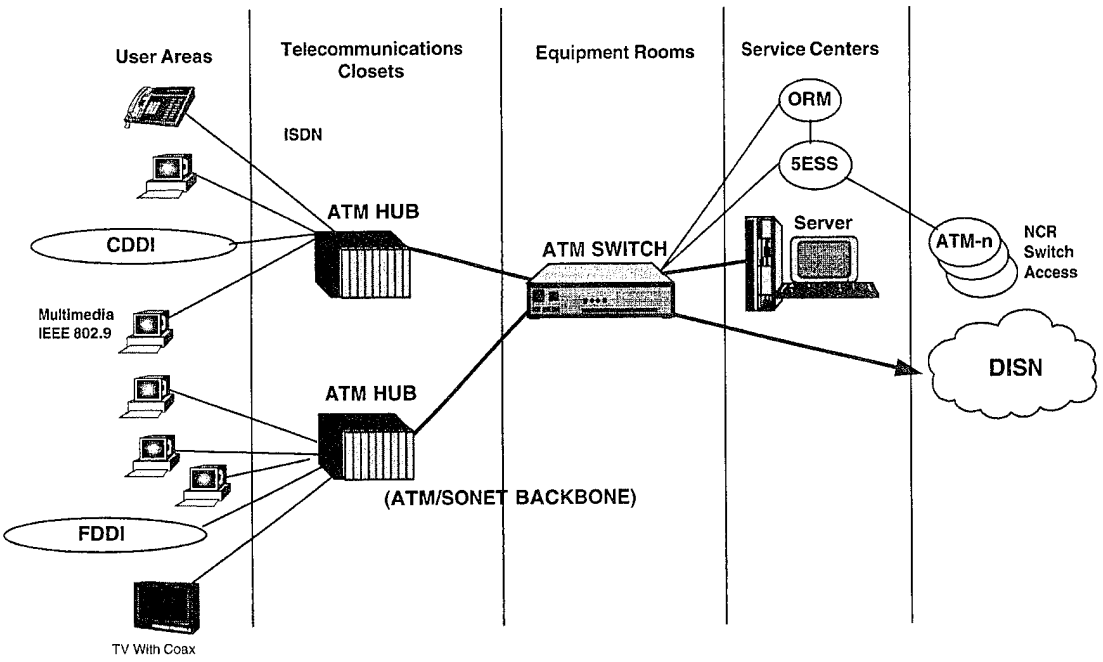
Communications Backbones

- Unclassified/Classified Backbone Design
  - Structured Wiring/Physical Infrastructure
    - Meets Federal and Commercial Standards
    - Accommodates Growth
    - Technology Independent
  - Supports Legacy Systems
  - Supports Current and Future Technology
    - Integrated Voice, Data, Video
    - Multimedia
    - Prepares for Multi-Level Security/Defense Message System

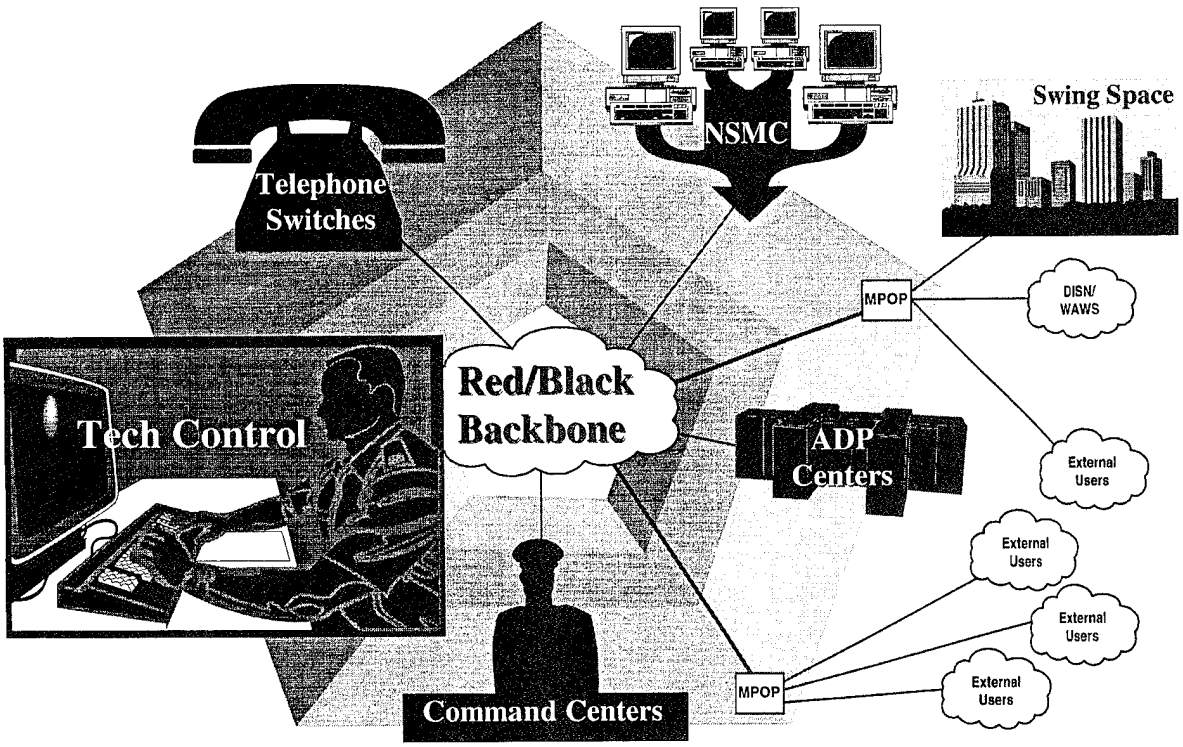
Logical Ph I Backbone Architecture



Logical Final Backbone Architecture

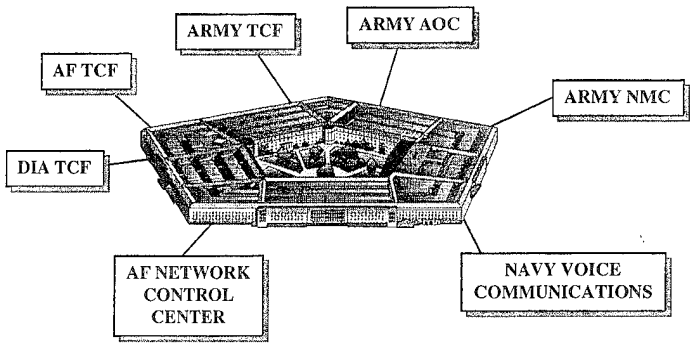


IM&T Functional Products

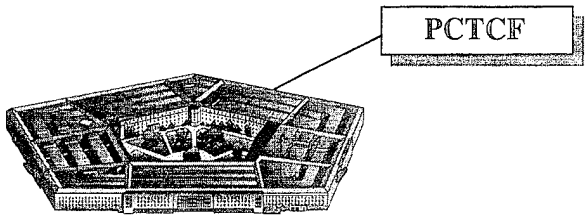


Pentagon Technical Control Facility Consolidation

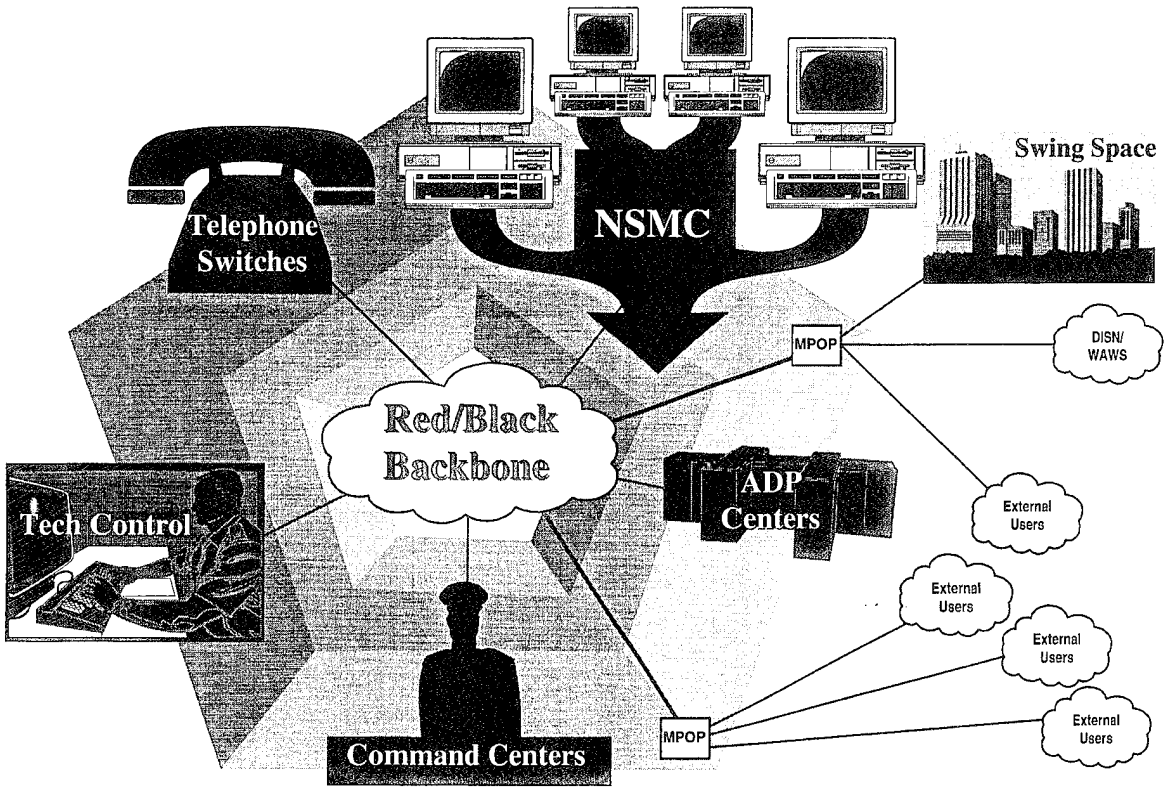
Present



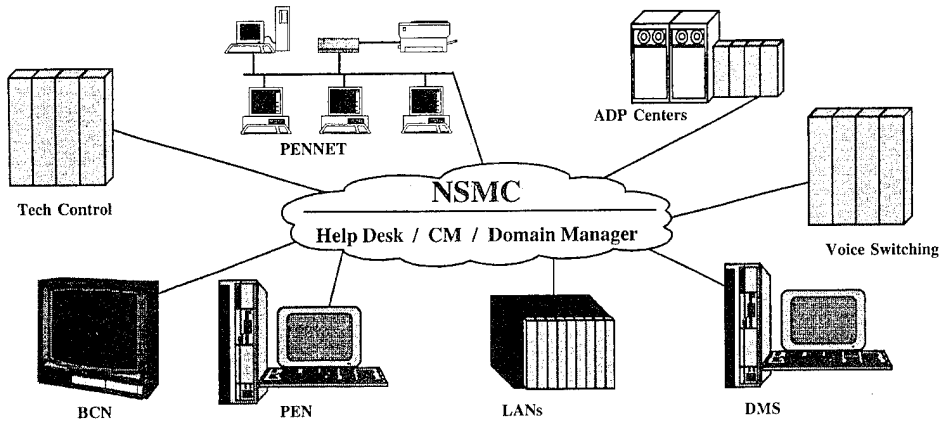
Future



IM&T Functional Products

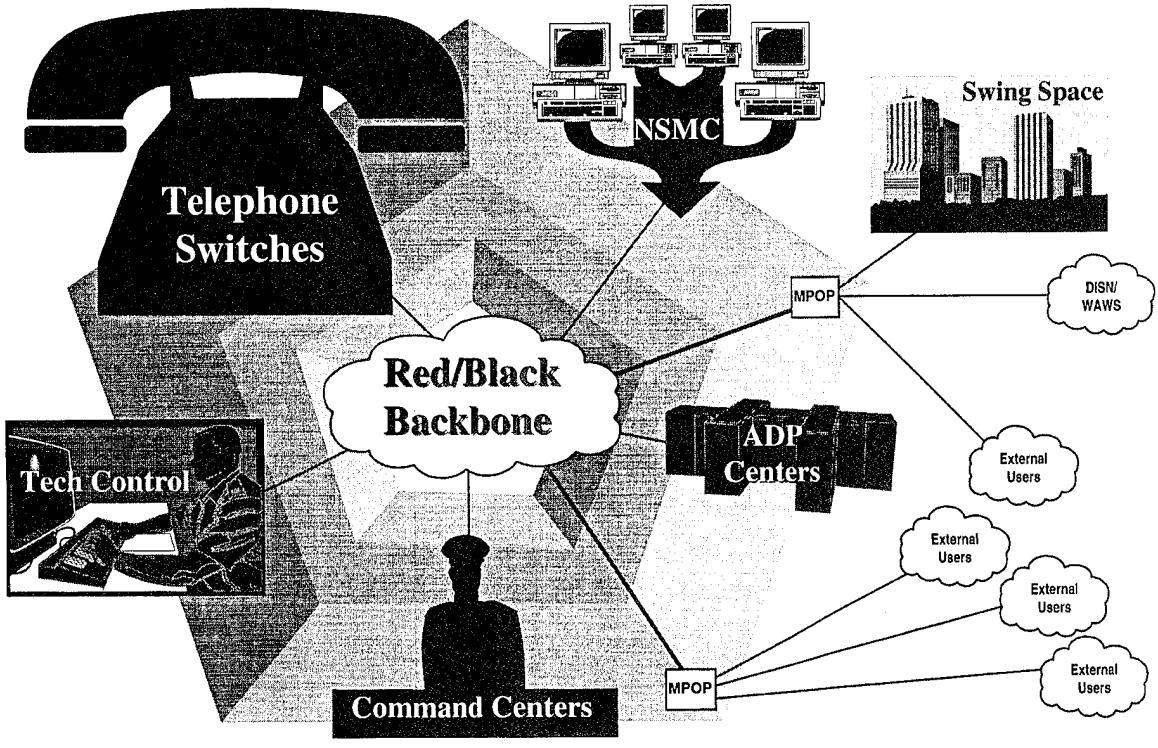


Network & Systems Management Center

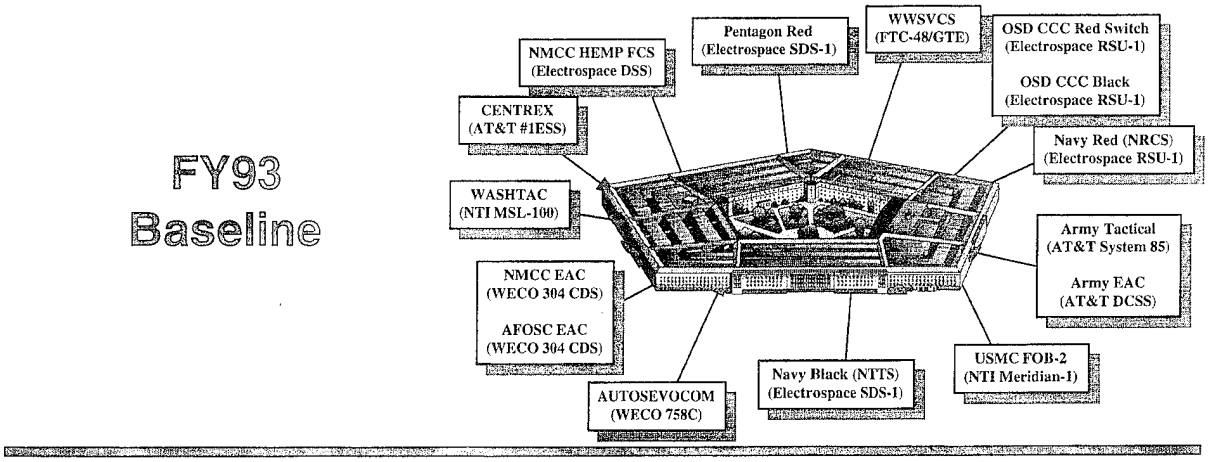


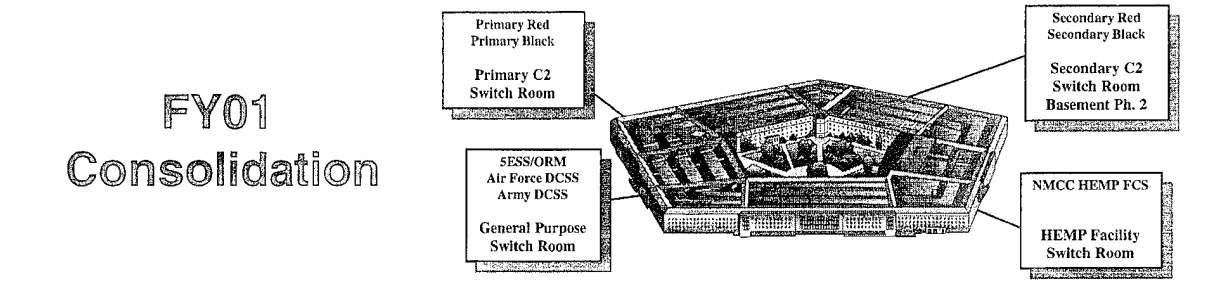
- **Proactive Management of the Network Through:**
  - **Fault Detection and Isolation**
  - **Configuration Management**
  - **Accounting/Billing**
  - **Performance**
  - **Security**

IM&T Functional Products

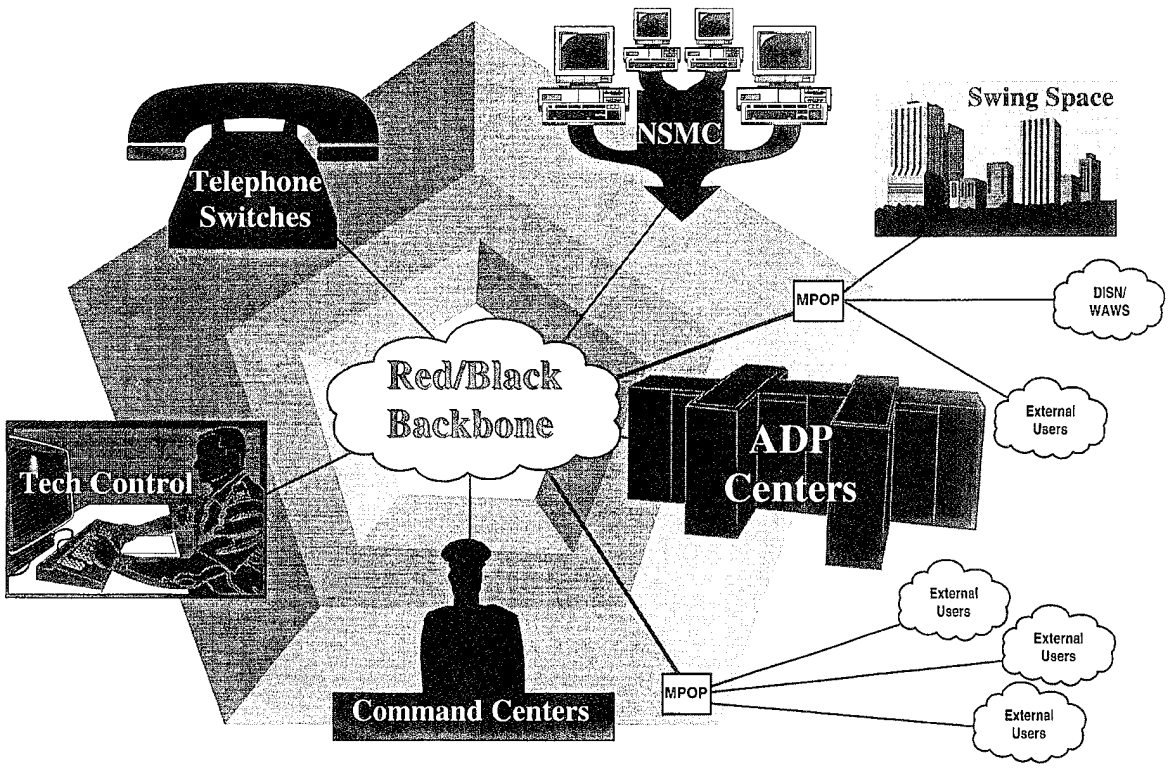


Switch Facility Locations

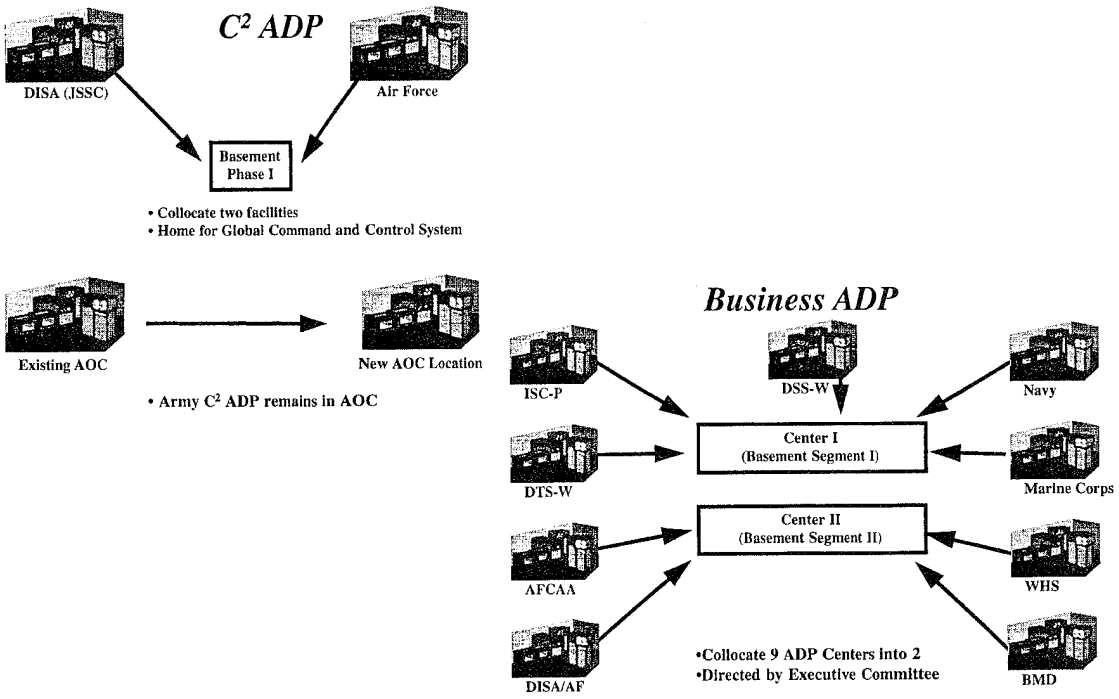




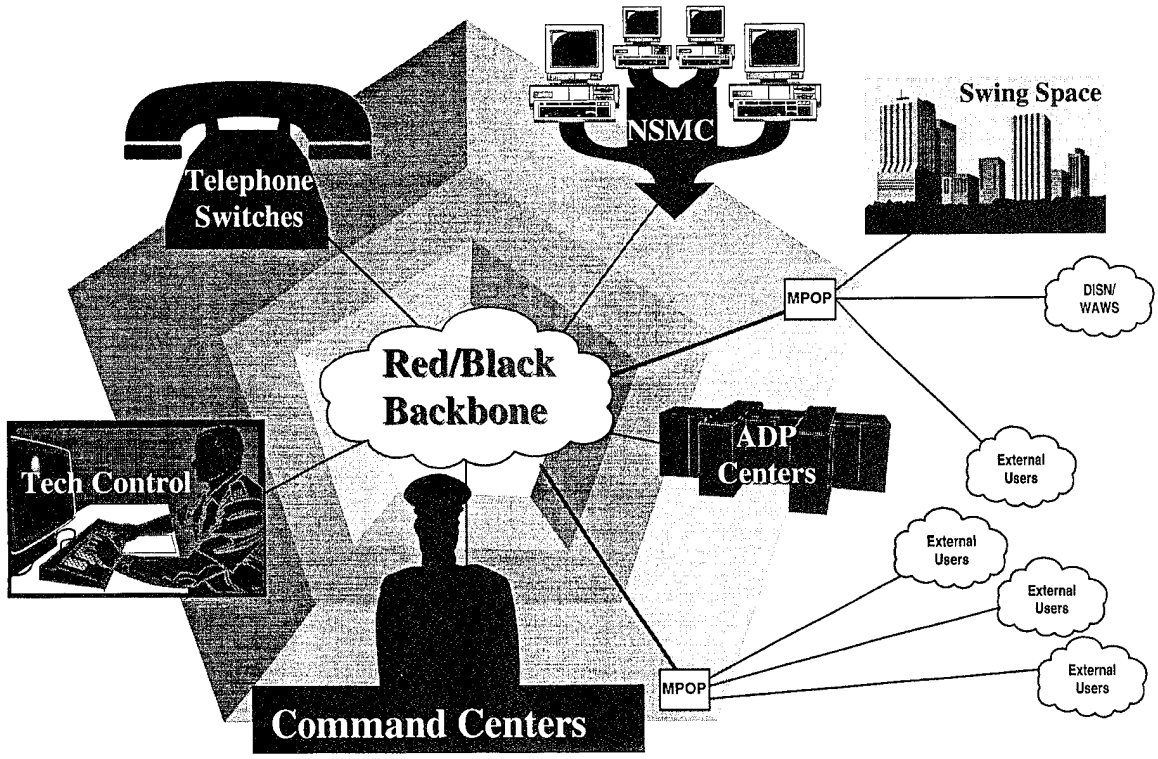
IM&T Functional Products



ADP Centers



IM&T Functional Products

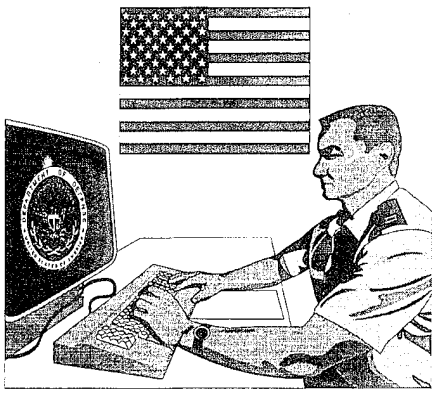


Command Center Relocation Requirements

- Pentagon Renovation Cannot Impair Command/Operational Center Mission Requirements
  - Parallel Operations Requirement
  - Pneumatic Tube System Requirement
- Command/Operations Centers Cannot Move to Swing Space
- Stringent Security Requirements
- Integrate With Ongoing JS and Service Programs Like GCCS, DMS Etc.
- HEMP Protection Requirement

Summary

- IM&T Renovation will:
  - Support a Modern Office Environment
  - Provide Enabling Architecture to Maximize Benefits of Future Technologies
  - Maximize Consolidation of Services and Other Economic Efficiencies



Telecommunications Architecture

⇨ Requirement

- **Description: The PM IM&T anticipates the need to develop a contract to provide integration and implementation services that include the engineering, furnishment, installation, and testing (EFI&T) of the IM&T telecommunications architecture in the renovated Pentagon. The vendor will be required to provide a proposal that will describe how they will EFI&T both active and passive telecommunications components. Provide qualified personnel to perform tasks in both classified and unclassified environments. The PM intends to offer a base contract that will implement Wedge 1 with a government option on the following four wedges.**
  Detailed description will be provided in the Statement of Work.
- **Time Frame: 2QFY97**
- **Point of Contact: Ms. Weida Borkowski, (703) 607-9016**

Video 1

⇨ Requirement

- **Description: The PM IM&T anticipates the need to develop a contract to provide integration and implementation services that include the engineering, furnishment, installation, and testing (EFI&T) of the relocation of the video teleconferencing centers from the unrenovated to the renovated Pentagon. The vendor will be required to perform site surveys of in place and new VTC sites, develop designs and procure the equipment and software to relocate VTCs and assist in any integration with the IM&T telecommunications infrastructure. Detailed description will be provided in the Statement of Work.**
- **Time Frame: 1QFY97**
- **Point of Contact: Ms. Weida Borkowski, (703) 607-9016**

Business ADP #2

⇨ Requirement

- ◇ Description: The PM IM&T anticipates the need to develop a contract to provide integration and implementation services that include the engineering, furnishment, installation, and testing (EFI&T) of the relocation of various existing business ADP centers to a consolidated ADP center in the basement of the Pentagon. The vendor will be required to perform site surveys, develop designs and procure equipment required to relocate these in place system. The vendor will also be required to assist in the integration of the relocated systems with the IM&T telecommunications infrastructure.
  Detailed description will be provided in the Statement of Work.
- ◇ Time Frame: 4QFY97
- ◇ Point of Contact: Ms. Weida Borkowski, (703) 607-9016

White House Communications Agency

Our Future Vision

An elite team in relentless pursuit of providing premier worldwide telecommunications for the Presidency

Our Mission

Install, operate, & maintain worldwide voice, data, & audio-visual systems

for the

President

Vice President

White House Staff

U.S. Secret Service

National Security Council

Future Vision

- Based on Architecture plan
  - Baseline
  - Technology Assessment
  - Transition Plan
- Summarized in 5 long-term themes

Integrate voice, data, video, & image services on the desktop

- Securely assessable
- Wireline & wireless connectivity
- Fixed, travel, & residential locations
- Growth of video conferencing

Integrate cellular, radio, & paging services in a single mobile device

- Hand held
- Configurable for:
  - CONUS
  - Worldwide
- Potential E-mail platform

Unified Backbone Network

- Bandwidth -on-demand
- Pipeline for all telecommunications services
- Multi-level secure
- Redundant paths

Integrated Network Management System

- Manage all network assets & end devices
- Network Management Roles:
  - Fault Mgmt
  - Configuration Mgmt
  - Security Mgmt
  - Performance Mgmt
  - Accounting Mgmt
- Highly reliable
- Outages transparent to the customer

Flexible Application Environment

- Rapid development
- Prototypes
- COTS & GOTS products
- Corporate database environment

The WHCA Future Vision

- Integrated services to the desktop
- Integrated services 'on-the-belt'
- Unified backbone network
- Integrated network management system
- Flexible application environment

?

Questions

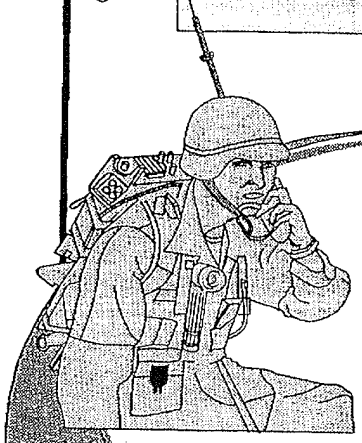
?

USAISC Mission

- Provide information systems and network management to the Army.
- Maintain Army's portion of the Defense Communications System (DCS) and Army warfighter support.
- Assess and develop requirements for sustaining base information systems; provide technical support to PEO.
- Materiel developer for information systems. Plan, engineer, acquire, install, test, operate and maintain Army systems.
- Exercise training and readiness oversight and wartime technical C2 of National Guard and US Army Reserve EAC Signal units.

Information Systems Command

Army Signal Command Mission

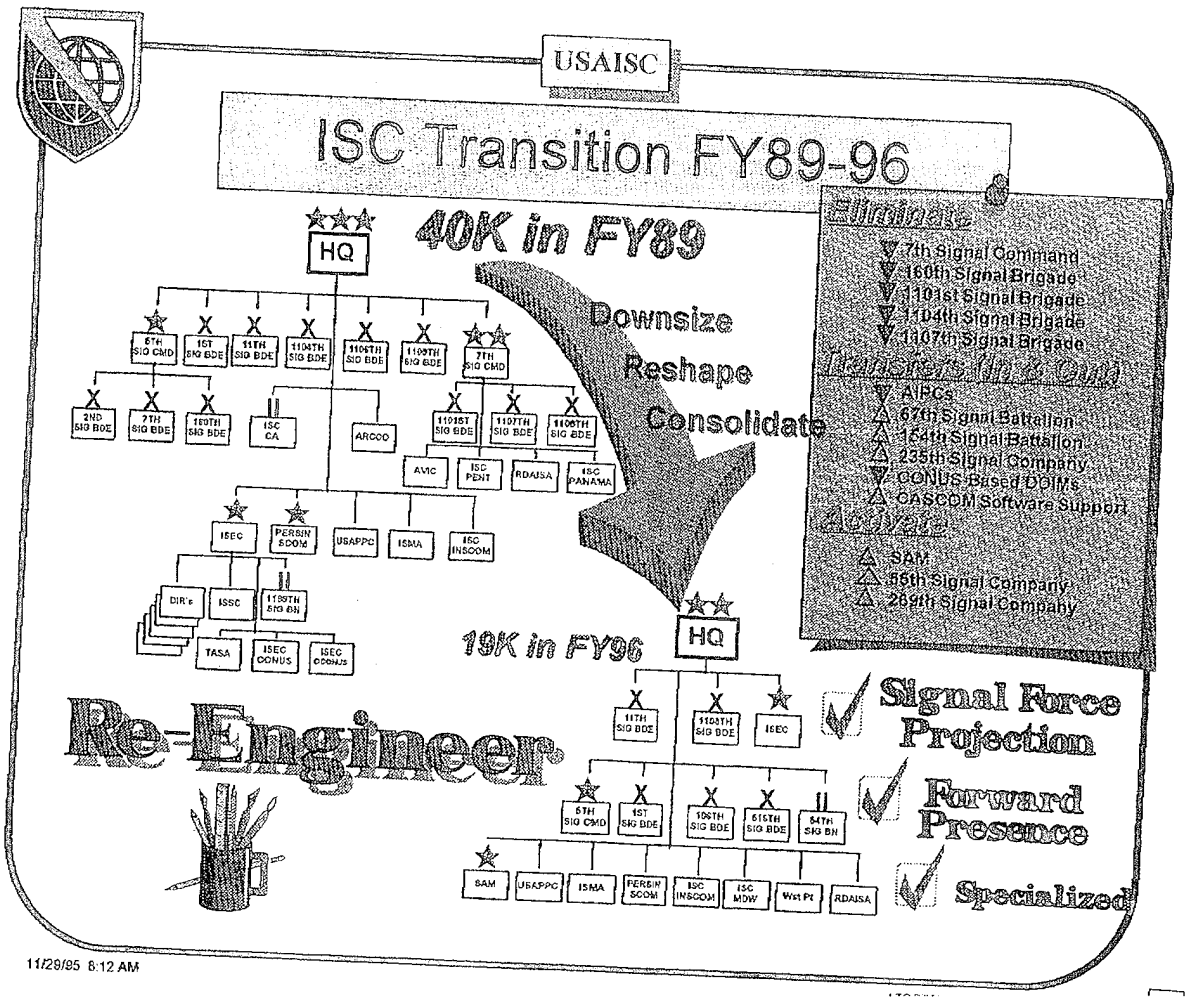


Train and maintain a combat-ready, worldwide deployable Signal force to support warfighting CINCs in the execution of joint and combined operations across the spectrum of conflict. Sustain and protect C4 systems and personnel. Assist in the reception, staging, onward movement and integration of reinforcing Signal forces for the warfighting CINCs. Execute sustaining base, strategic and theater tactical C4 systems integration with all components, defense agencies and NGOs.

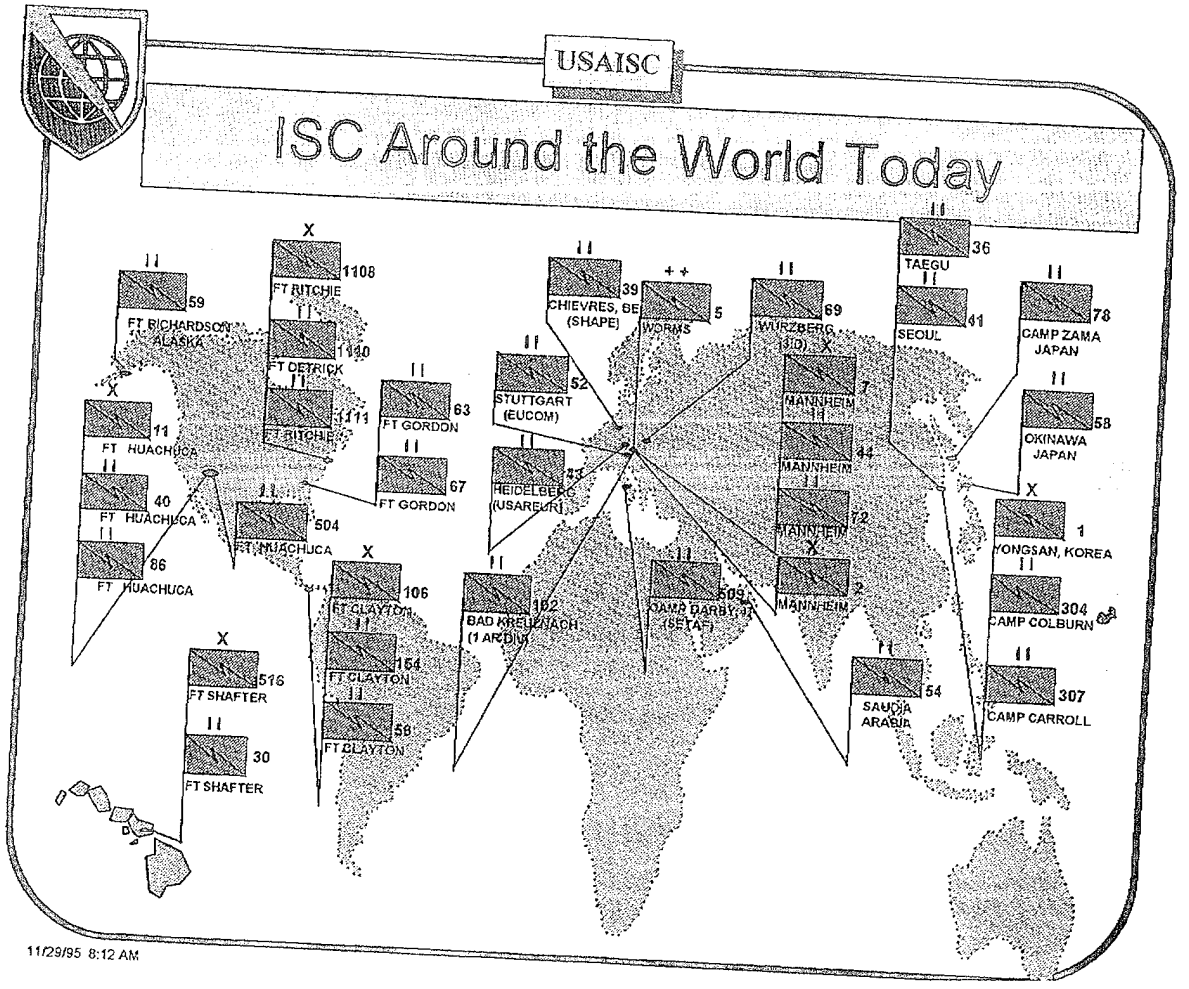
FORCE XXI

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NOV-30-1995 10:47 FROM DISC4 ANAFAX UF-270M **** TO 99170352218B5 P.04

NOV-30-1995 10:48 FROM DISC4 ANAFAX UF-270M **** TO 99170352218B5 P.05



NOV-30-1995 10:50 FROM DISC4 ANAFAX UF-270M **** TO 99170352218B5 P.06



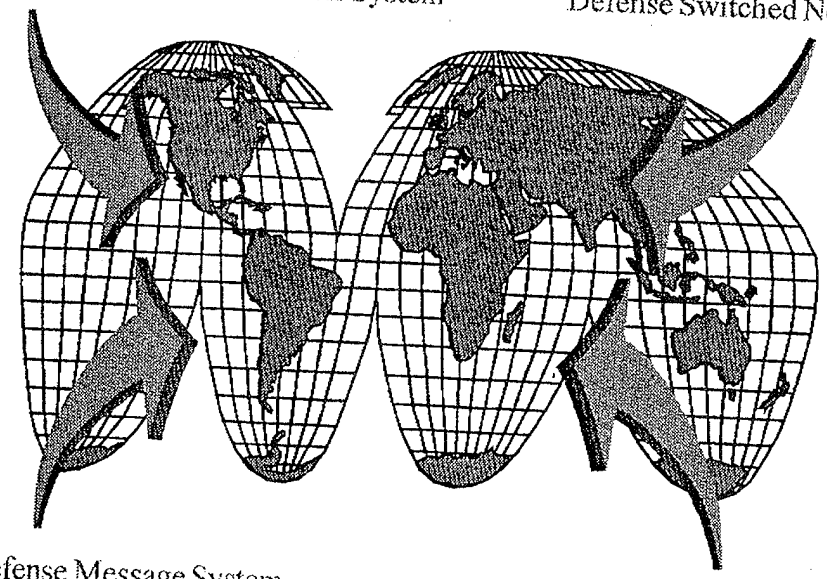
NOV-30-1995 10:51 FROM DISC4 ANAFAX UF-270M **** TO 9917035221885 P.07

USAISC

Army's Executive Agent for the Defense Communications System

Defense Satellite Communications System

Defense Switched Network



Defense Message System

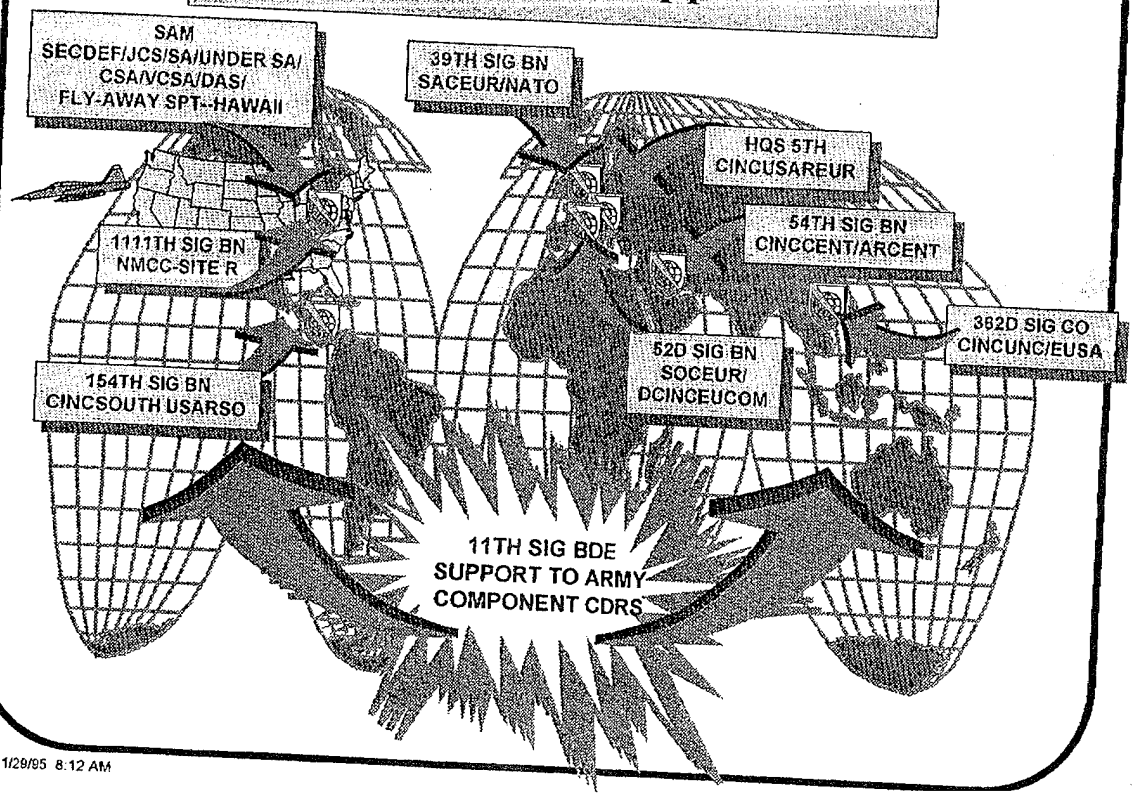
Defense Red Switch Network

11/29/95 8:12 AM

NOV-30-1995 10:53 FROM DISC4 ANAFAX UF-270M **** TO 9917035221885 P.08

USAISC

NCA/CINC Support

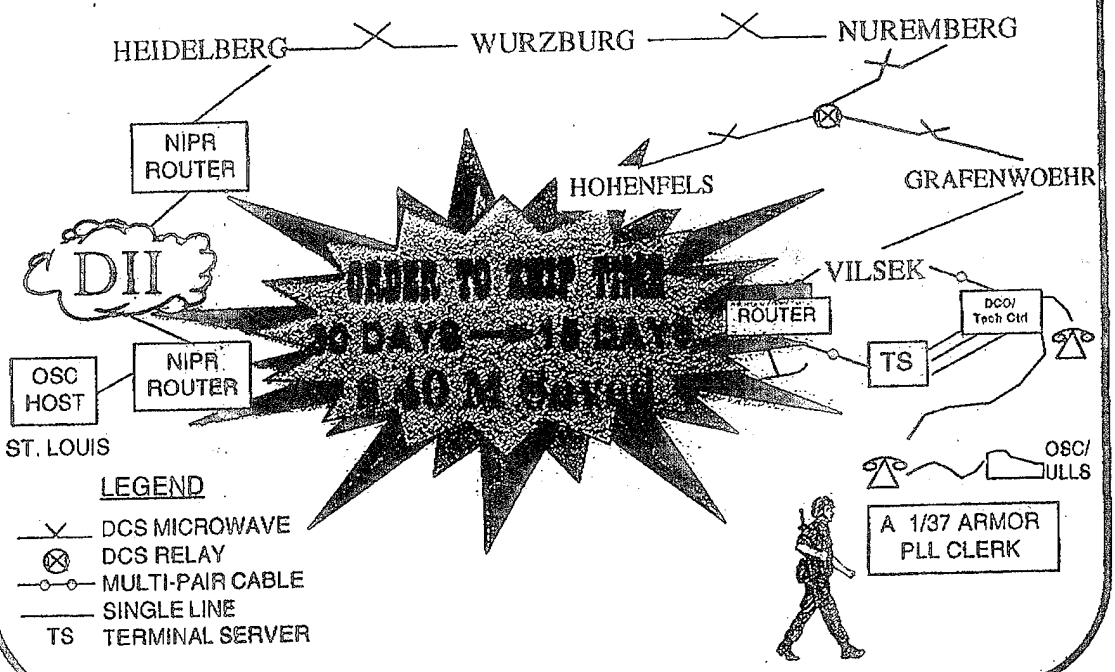


11/29/95 8:12 AM

NOV-30-1995 10:55 FROM DISC4 ANAFAX UF-270M **** TO 99170335221885 P.09

USAISC

Operational Requirements
A Real World OOTW Example



10/3/95 1:59 PM

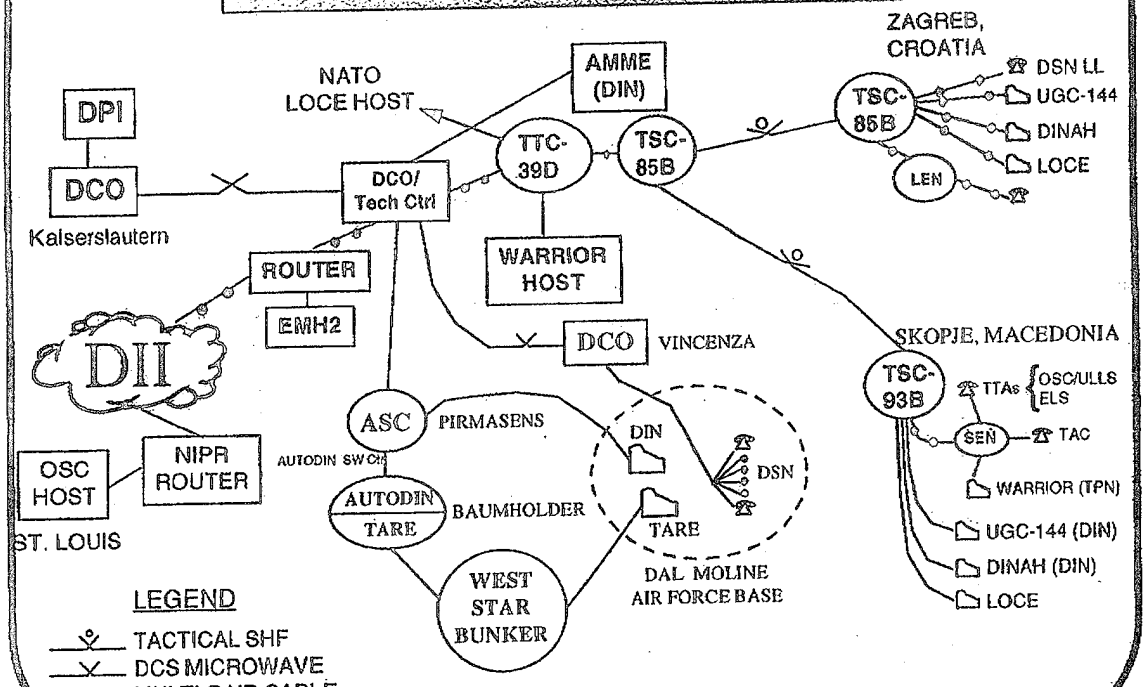
LTC Bill Holmes/DSN 879-0719
115cpBoD.ppt

31

NOV-30-1995 10:55 FROM DISC4 ANAFAX UF-270M **** TO 99170335221885 P.10

USAISC

Operational Requirements
A European Example



10/3/95 1:59 PM

LTC Bill Holmes/DSN 879-0719
115cpBoD.ppt

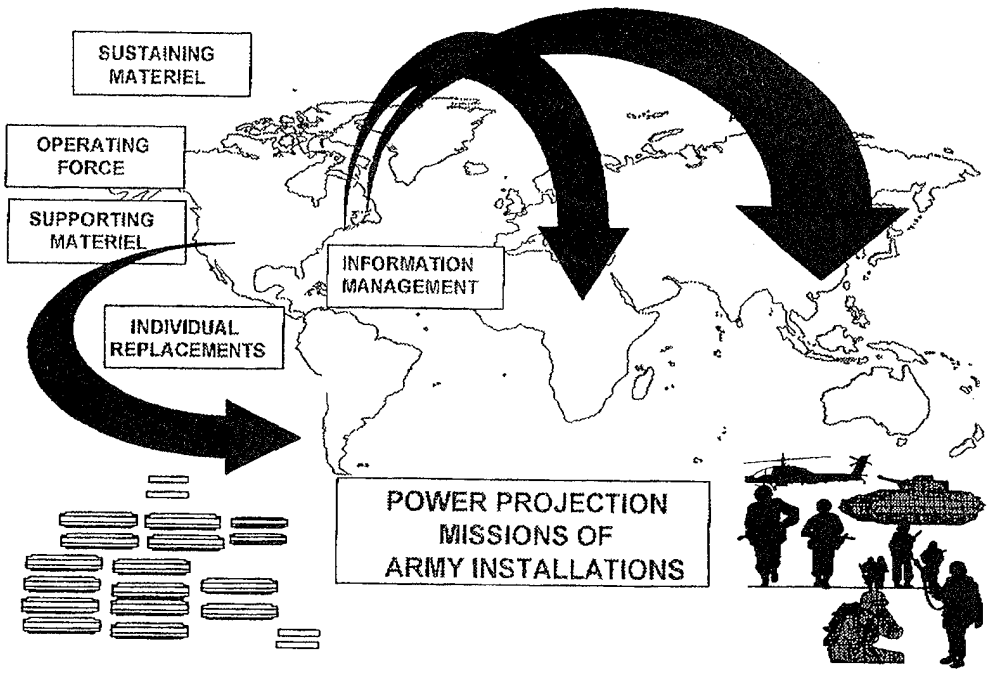
32

NOV-30-1995 10:56 FROM DISC4 ANAFAX UF-270M **** TO 9917035221885 P.11

USAISC

Power Projection C4 Infrastructure Program

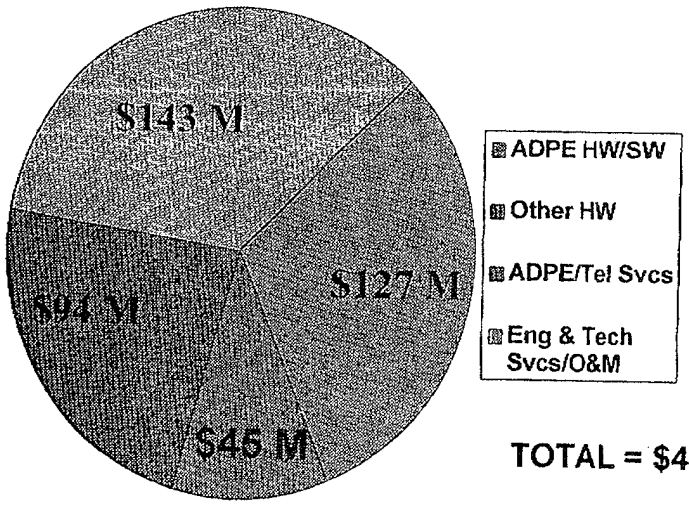
ARMY INSTALLATIONS ARE POWER PROJECTION PLATFORMS



NOV-30-1995 10:56 FROM DISC4 ANAFAX UF-270M **** TO 9917035221885 P.12

USAISC

Support from Industry FY 94

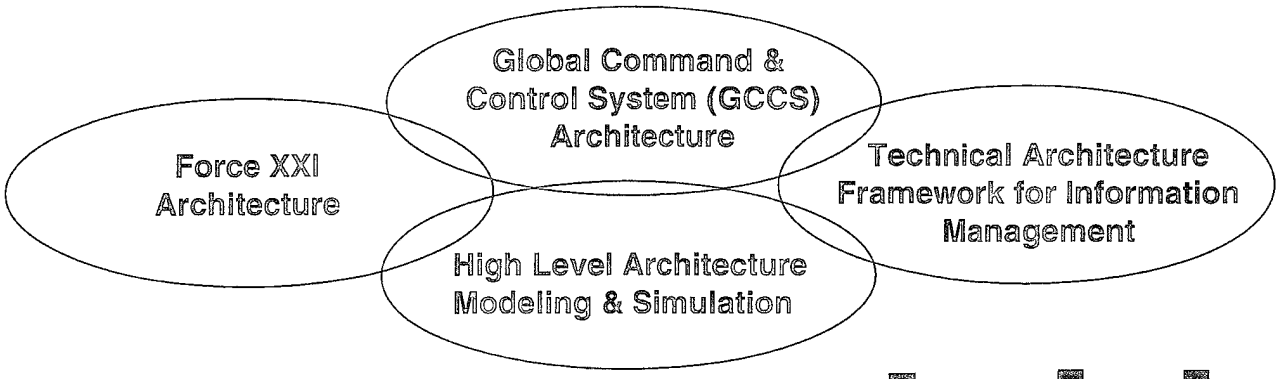


TOTAL = $409M

The Information Future in DoD

Dr. Anita K. Jones
Director, Defense Research & Engineering

1990's - The Decade of Information System Architecture





Vice: Stove Pipes of the 80's

Chart 2

Information Technology

is moving so fast that DoD can ONLY KEEP CURRENT
by tracking/using commercial productization

Chart 3

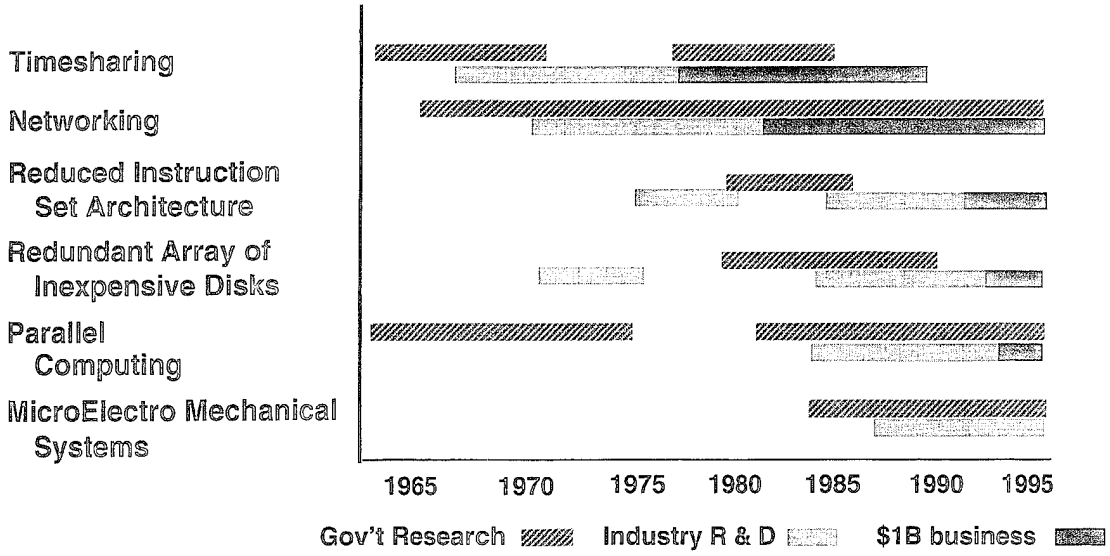
Synergy of Commercial/Military Information Technology Development

- Industry invests 4% of its R&D in long term research* ~$800M
- DoD/Government are the major source of science and technology funds ~$2.4B
- Commercial industry short term R&D (96%) dwarfs that of the government investment ~$19.2B

* 6.1 + 6.2 equivalent

Chart 4

Long Term Investments Have Payoff



Note: Most examples taken from NRC Study, Evolving the HPCC Initiative t Support the Nation's Information Infrastructure

Chart 5

DoD Is The Dominant Investor in Critical Fields in the Technology Base (6.1 & 6.2)

	DoD Percentage of Federal Technology Base
Electrical Engineering	75%
Metallurgy & Materials	62%
Mechanical Engineering	59%
Computer Science	56%
Civil Engineering	45%
All Engineering	37%
Mathematics	28%
All Funding	16%

Source: NSF Federal Funds Report 94-328

Note - 6.1 & 6.2 Funding Only

Chart 6

Leveraging Commercial Technology

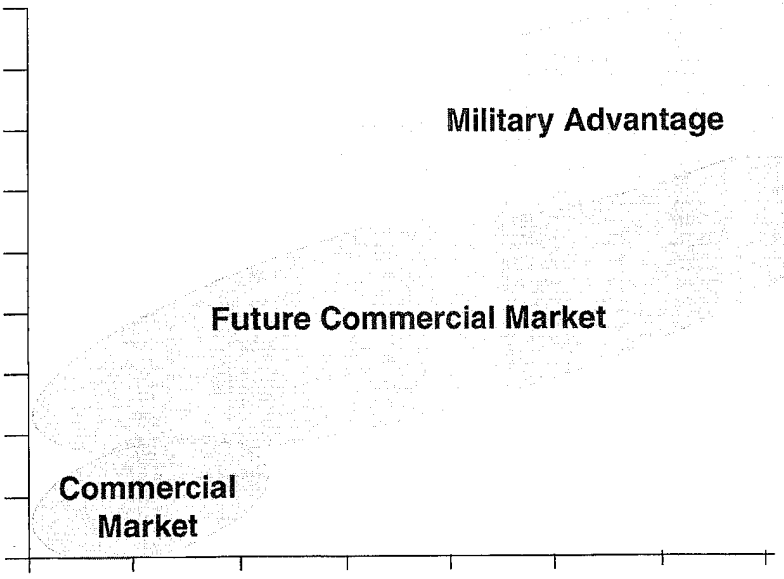


Chart 7

Technological Superiority Requires Being Years Ahead of Commercial State-of-the-Art

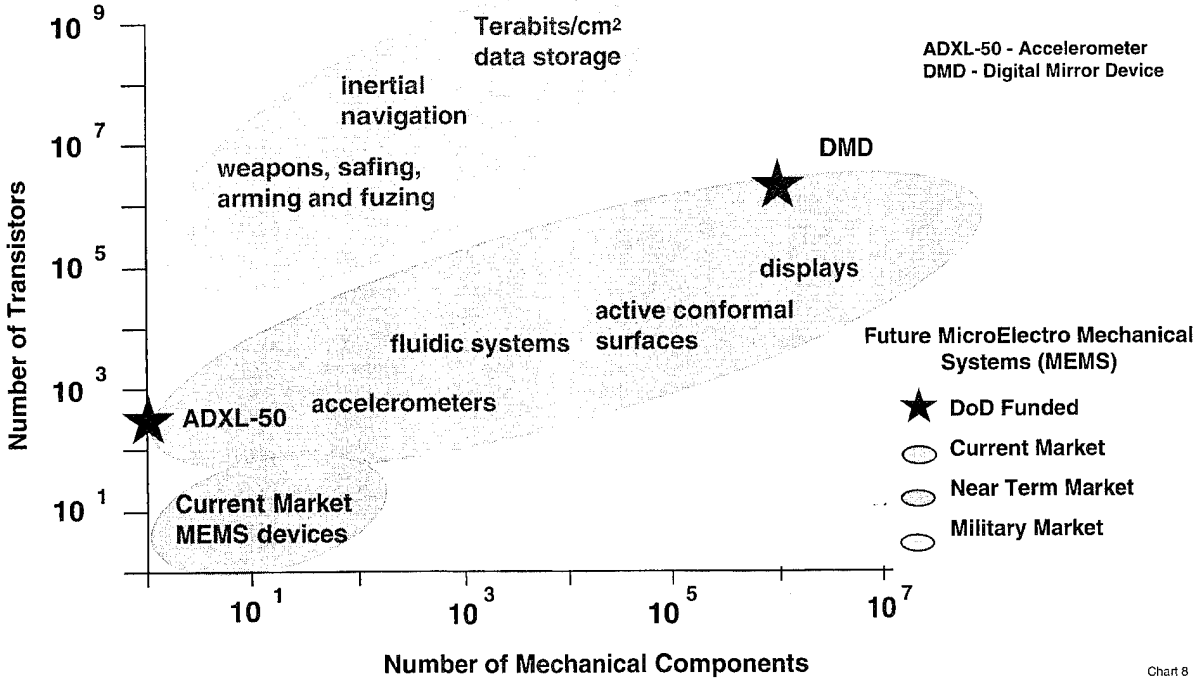


Chart 8

Daddy Fought in the War

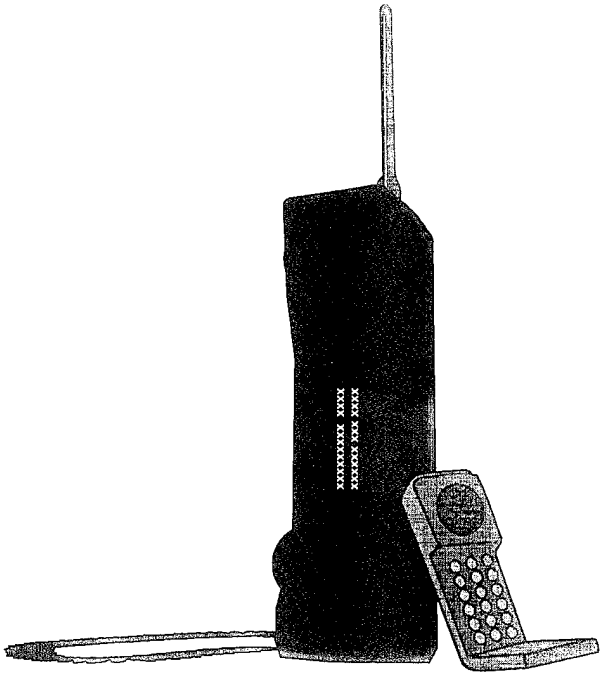


Chart 9

Post Year 2000: Dueling Radios

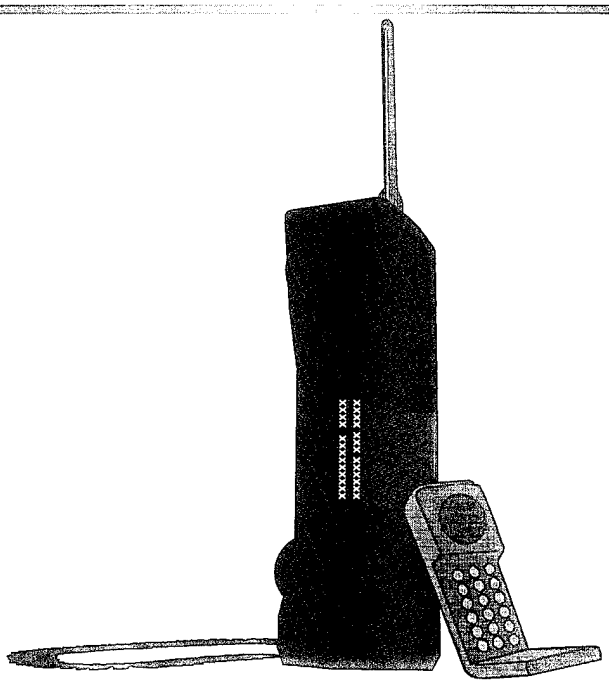


Chart 10

Technology Available Tomorrow

- Fiber (OC48) when you want/string it
- Wide-area, hundred channel broadcast
- Computing cheaply embedded in any object
- Wide, robust, secure message communications
- Multimedia near any user
- Commercial-Off-The-Shelf software applications of military interest

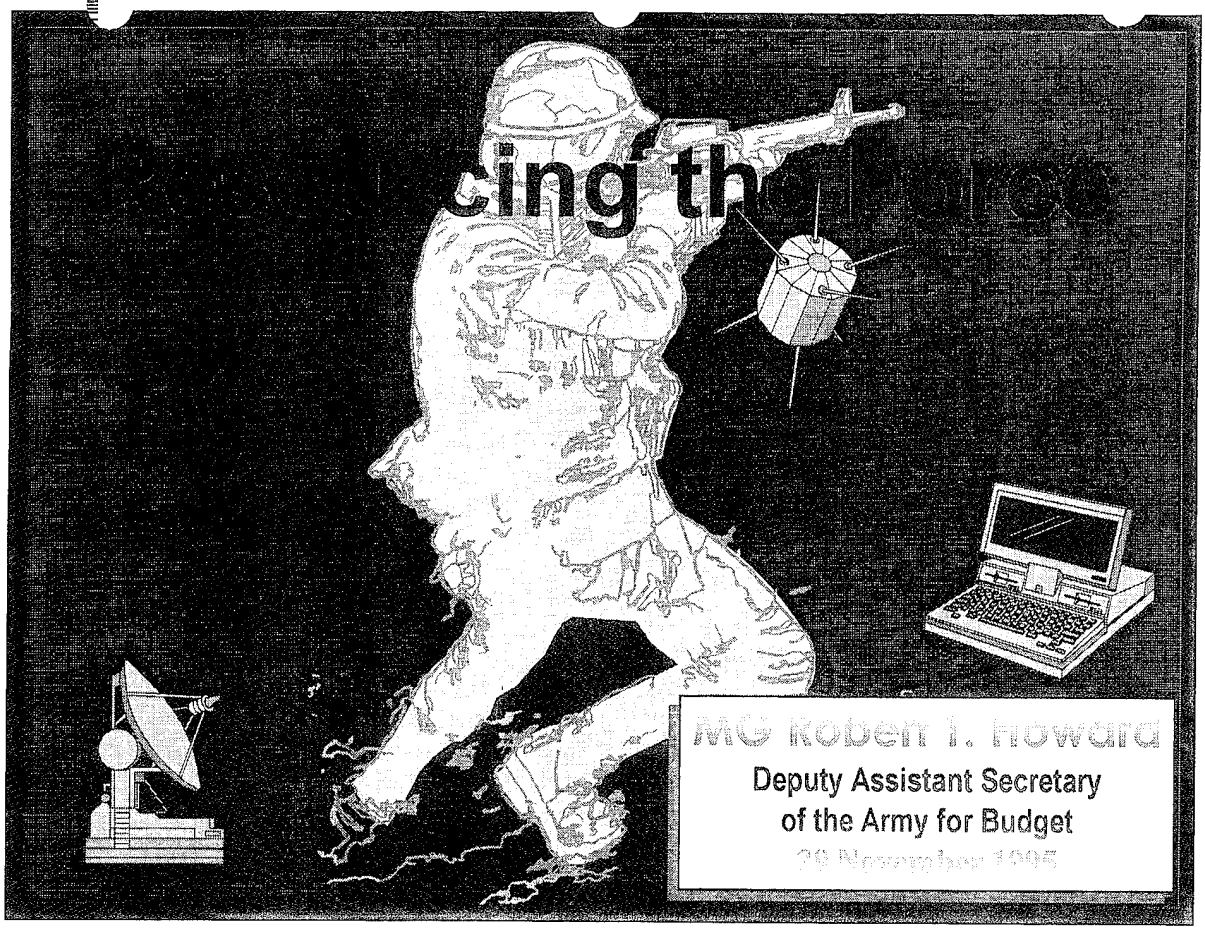
Low Risk
Affordable

Chart 11

Technology is Not the Challenge

The hard part is effective harnessing of information technology into military systems that matter - and that evolve competitively

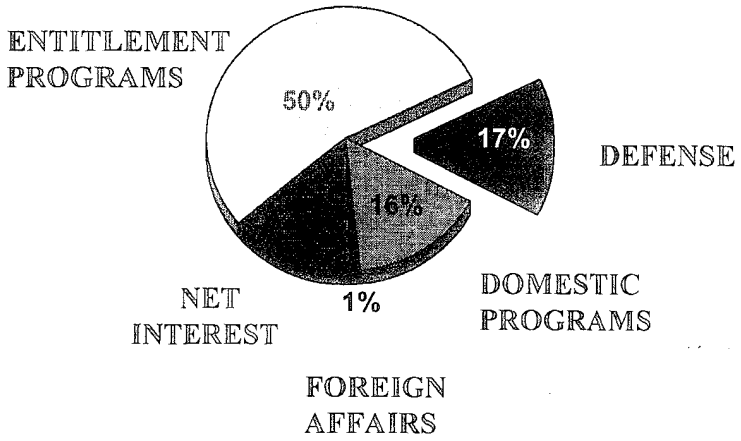
Chart 12



ASA (FM&C)

DEFENSE AS % OF FEDERAL BUDGET

FY96 - $1.6 TRILLION

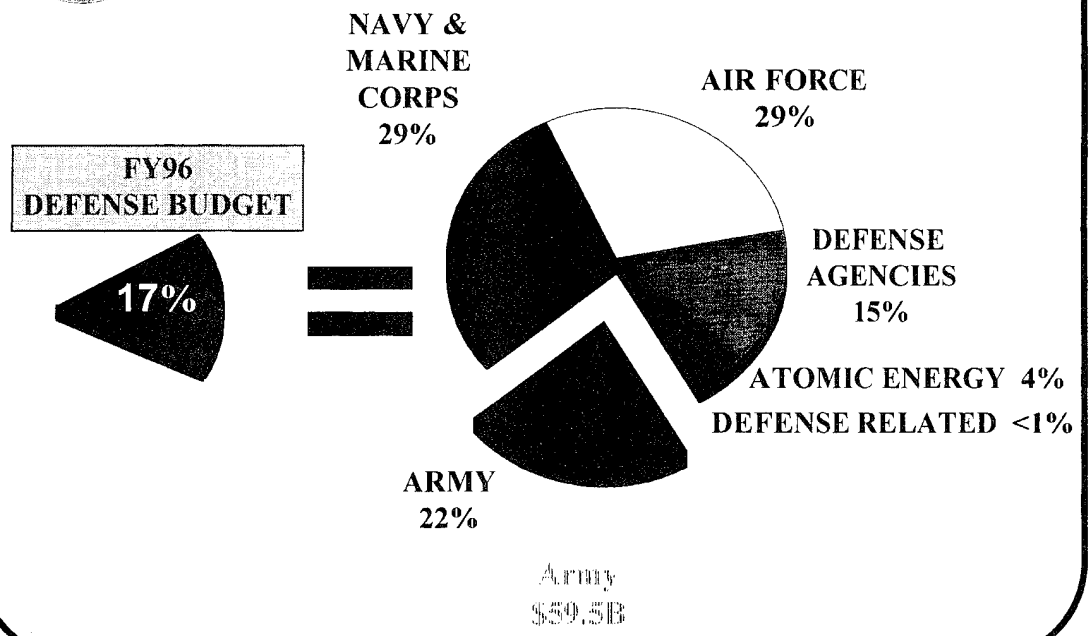


Source: Fiscal Year 1996 Budget of the United States

11/27/95 2:53 PM

ASA (FM&C)

ARMY AS % OF THE DEFENSE BUDGET



11/27/95 2:53 PM

ASA (FM&C)

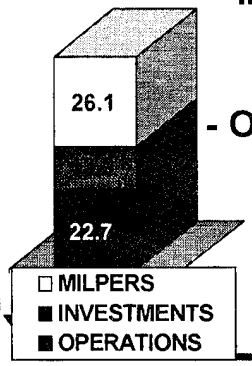
FY95 HAD ITS CHALLENGES

- **Contingency Operations:**
  - Supplemental Paid $805M
  - Costs Still Exceeded Emergency Supplemental

and RDA remains severely underfunded

- **Military Pay Shortfall**

$61.8B



  - Military Personnel Actions Taken:
    - Accelerated ETSs
    - Reduced Accessions, etc
  - OMNIBUS Reprogramming
    - Congress continued trend of NOT accepting RDA billpayers
    - OMA Depot Maint of $112M used to help solve MPA shortfall

11/27/95 2:53 PM

ASA (FM&C)

FY96 FUNDING
"Finally...Help From Congress!"

CURRENT $B

APPROPRIATION	FY94	FY95	Pres Bud FY96	Congress Approp Marks
MILPERS	26.8	26.1	25.0	+ .1
O&M	19.1	21.2	21.6	+ .4
PROC	6.9	6.9	6.3	+1.7
RDTE	5.4	5.5	4.4	+ .4
MILCON	1.3	.8	.5	+ .3
AFH	1.3	1.2	1.4	+ .1
BRAC*	<.1	.1	.3	
TOTAL	60.9	61.8	59.5	+3.0
TRANSFERS & SUPPLEMENTALS	2.5	2.3		

* BRAC is a DOD Appropriation and not a portion of Army Appropriations during and after year of execution
(Numbers may not add due to rounding)

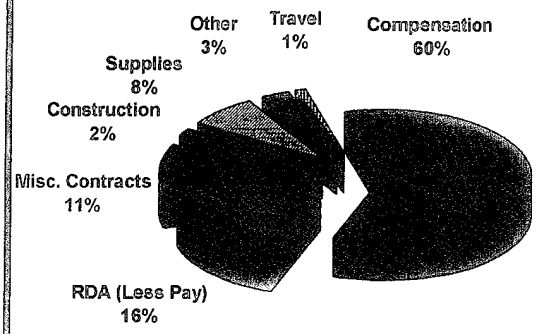
We are surviving from "year to year" fixing the "must fund" problems!!

11/27/95 2:53 PM

ASA (FM&C)

WHERE THE DOLLARS GO !!!

FY95



TOTAL: $64 B

Other includes Army Family Housing (Opns) and Transportation

Major Items

Compensation
- Civilian Pay 271 K
- Military Pay (Active) 510 K
- Military Pay (Reserve) 629 K

RDA (Less Pay)
- Abrams Tank Upgrade
- Bradley Fighting Vehicle Upgrade
- Apache Upgrade
- Kiowa Upgrade

Construction

Army Family Housing:
- New Construction - - $114.3 M / 1,187 units
- Improvements - - - - -$ 44.8 M / 657 units

Military Construction:
- Barracks - - - - $246 M / 12 projects
- Strategic Mobility - - $65 M / 6 projects

11/29/95 7:15 AM

ASA (FM&C)

INFORMATION TECHNOLOGY SYSTEMS BUDGET (ITSB)

ITSB INCLUDES:

- **ALL AUTOMATION (EXCEPT EXEMPTIONS LISTED BELOW)**
- **CIVILIAN AND MILITARY PAYROLL COSTS (PRINCIPAL DUTY IS AUTOMATION RELATED)**

ITSB DOES NOT INCLUDE:

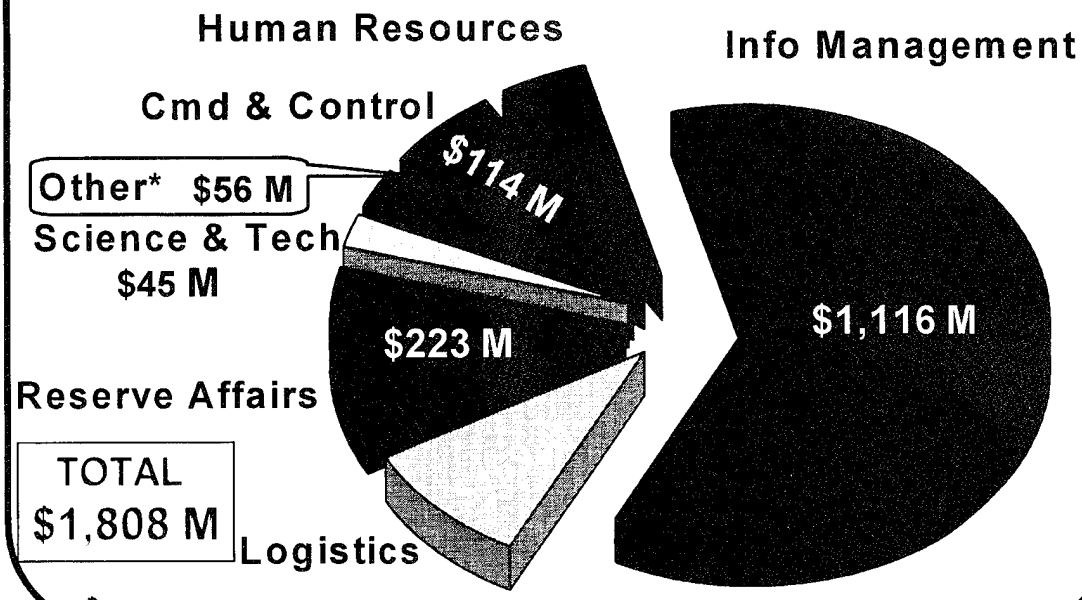
- **CERTAIN COMMAND AND CONTROL SYSTEMS (AGCCS)***
- **TACTICAL SYSTEMS (MCS)****
- **EMBEDDED AUTOMATION IN WEAPONS SYSTEMS**
- **RADAR, TELEVISION, RADIO**

* AGCCS - ARMY GLOBAL COMMAND & CONTROL SYSTEM
** MCS - MANEUVER CONTROL SYSTEM

11/29/95 7:16 AM

ASA (FM&C)

Information Technology Systems Budget FY 95 (Functional Area)

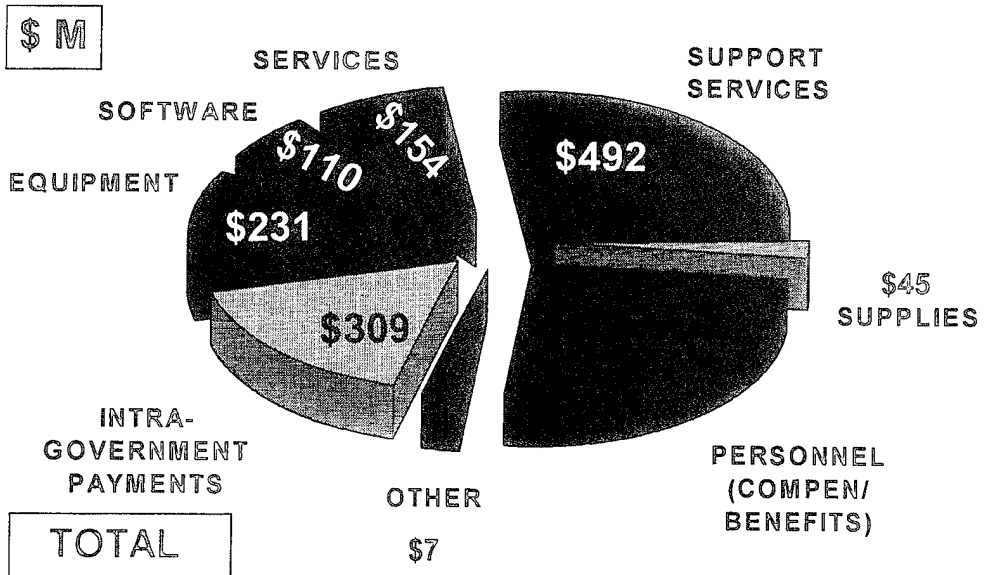


* Other includes Finance, Health, Intelligence, Policy, Procurement, System Acquisition Mgnt and Other Special Staff.

11/29/95 7:16 AM

ASA (FM&C)

Information Technology Systems Budget FY 95 (Type)



11/28/95 3:15 PM

ASA (FM&C)

INFORMATION SERVICES BUDGET COMPARISON* (As a Percentage of Revenue)

Financial Services	5.3 %
Aerospace	3.5 %
Transportation	3.1 %
Manufacturing	1.5 %
Retailing and Wholesaling	0.8 %

ITSB As A Percentage of Total Obligation Authority**

Army	3.0 %
Navy	2.8 %
Air Force	2.3 %

*Source: ComputerWorld, September 13, 1993 ** Compared to FY 94 TOA

11/29/95 7:24 AM

Defense Finance and Accounting Service

Defense Finance and Accounting Service

- Background
- Consolidation and Standardization
  - Operations
  - Finance Systems
  - Accounting Systems
- Business Process Reengineering
- Contract Support Required
- Summary

2

Background

- DFAS Established - January 1991
- Charter
  - Standardize/Consolidate
    - Policy/Procedures
    - Systems
    - Operations
  - Improve Service to Customers
  - Reduce Costs

3

Magnitude of Operations - Monthly

- Disbursements - $25 Billion
- 2,000,000 Invoices
- 9,800,000 Payroll Payments
- 550,000 Savings Bonds
- 730,000 Travel Vouchers
- 340,000 Transportation Bills
- 8,500 Garnishments Processed
- 2,500 Military Retiree Death Cases Processed

4

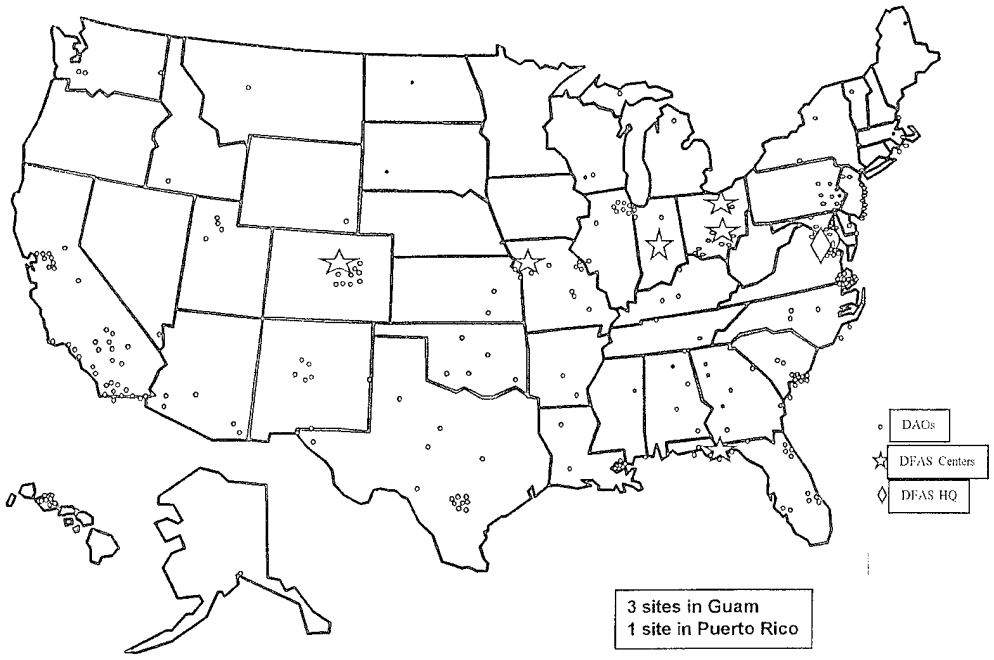
Defense Finance and Accounting Service

- Background
- Consolidation and Standardization
  - Operations
  - Finance Systems
  - Accounting Systems
- Business Process Reengineering
- Contract Support Required
- Summary

5

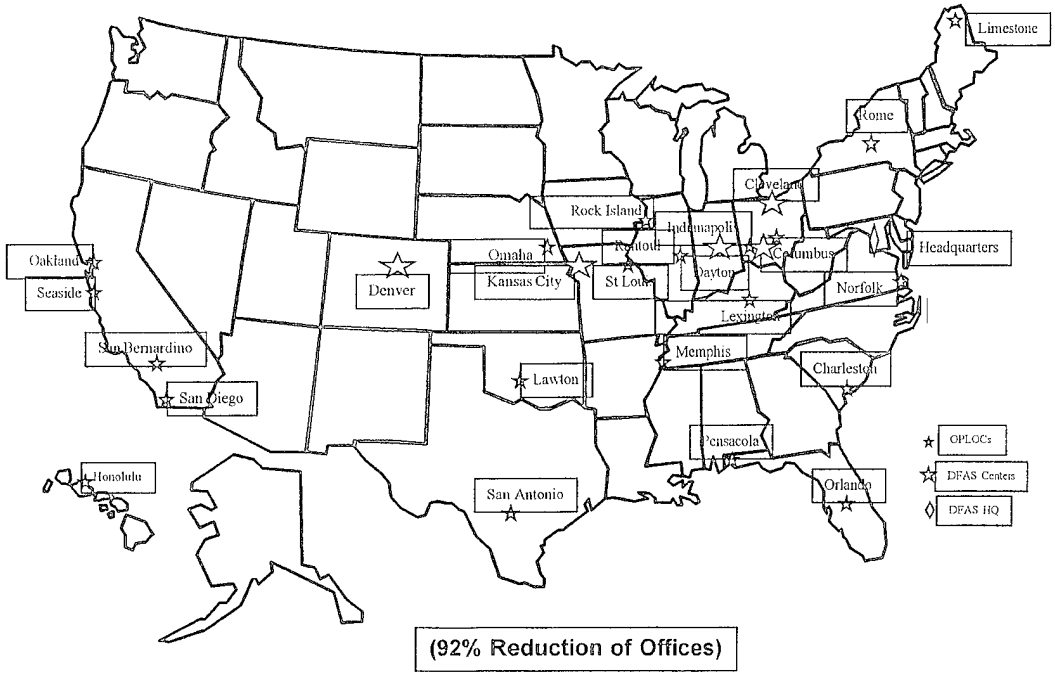
DFAS Inherited
6 Centers
329 Activities
30,500 Employees

Original DFAS Locations



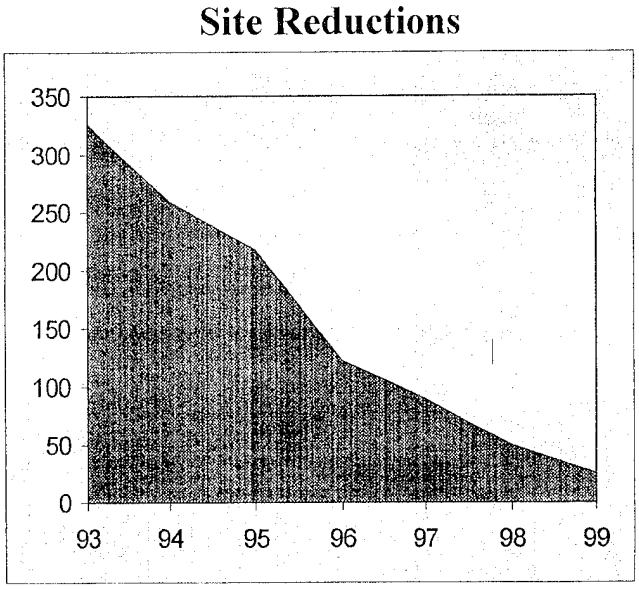
DFAS will have
5 Centers
21 Operating Locations
22,000 Employees

Future DFAS Locations



Consolidate Operations

- Fiscal 1995
  - 15 Operating Locations (OpLocs) Activated
  - 42 Defense Accounting Offices (DAOs) Closed
- Fiscal 1996
  - 90 DAOs Close
- Complete Realignment - Fiscal 1999
- Savings: $120 Million Annually



8

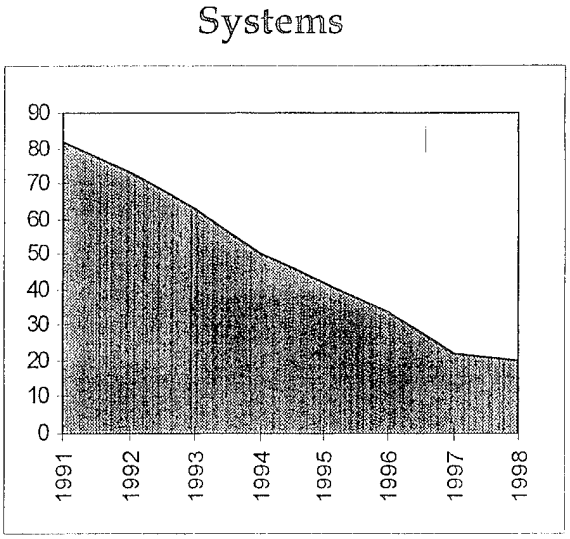
Defense Finance and Accounting Service

- *Consolidation and Standardization*
  - *Operations*
  - ***Finance Systems***
  - *Accounting Systems*
- *Background*
- *Business Process Reengineering*
- *Contract Support Required*
- *Summary*

9

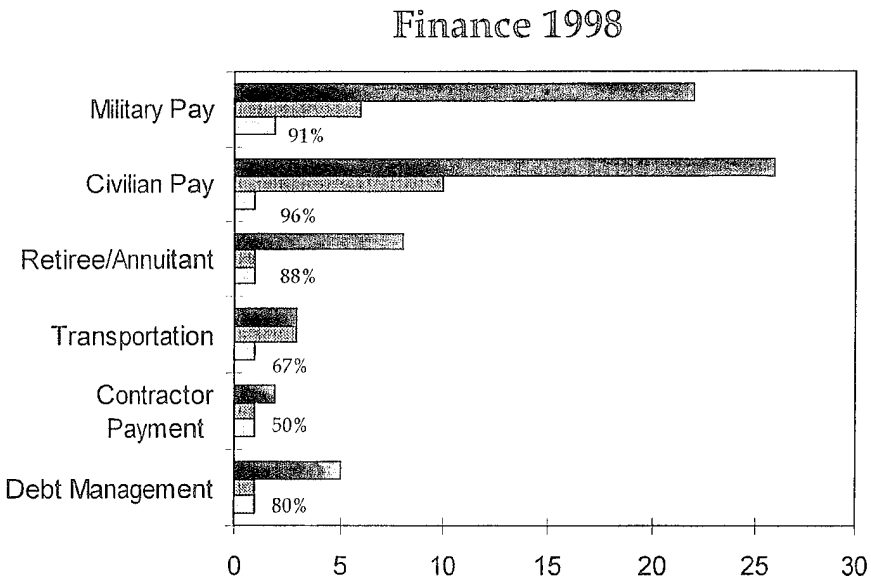
Finance Systems Strategy

- Standardize by Function
  - 82 Systems - 1991
  - 20 Systems - 1998
- Consolidate Operations
  - Contractor Payments
  - Civilian Pay
  - Military Pay
  - Retiree/Annuitant Pay
  - Transportation Payments
  - Debt Management



10

System Consolidation Well Under Way



11

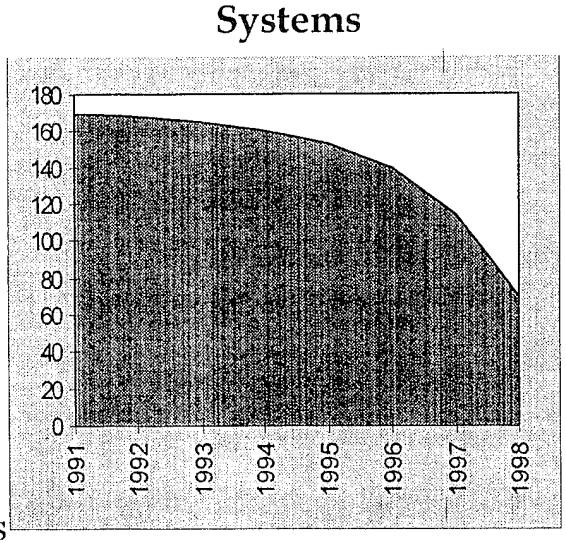
Defense Finance and Accounting Service

- *Background*
- *Consolidation and Standardization*
  - *Operations*
  - *Finance Systems*
  - ***Accounting Systems***
- *Business Process Reengineering*
- *Contract Support Required*
- *Summary*

12

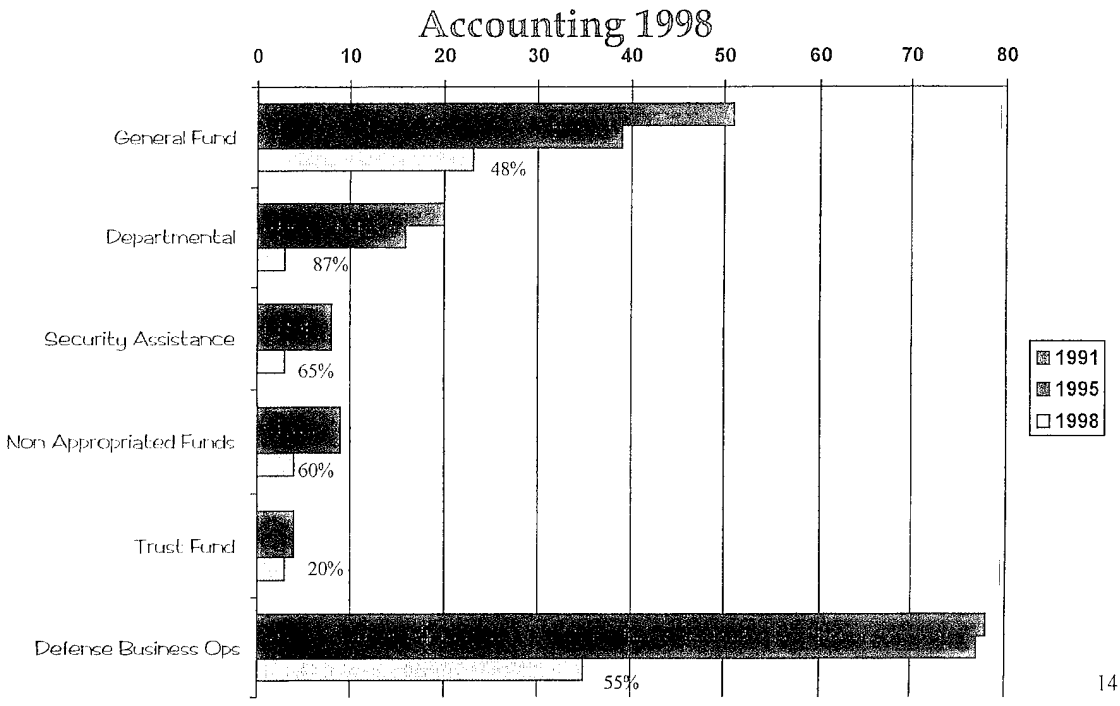
Accounting Systems Strategy

- Standardize by Function
  - 170 Systems - 1991
  - 71 Systems - 1998
- Consolidate Operations
  - General Funds
  - Defense Busines Operations Fund
  - Departmental/Reporting
  - Non Appropriated Funds
  - Trust Fund Accounting



13

System Consolidation Well Under Way



14

Defense Finance and Accounting Service

- *Background*
- *Consolidation and Standardization*
  - *Operations*
  - *Finance Systems*
  - *Accounting Systems*
- ***Business Process Reengineering***
- *Contract Support Required*
- *Summary*

15

EC/EDI/EFT

* EFT - Payments to Individuals

Civilian Employees	800,000	88%
Military:		
Active Duty	1,600,000	95%
Reserve/Guard	1,200,000	94%
Retiree/Annuitants	2,000,000	83%

Dollar Value = $96 Billion

16

EC/EDI/EFT (Continued)

EFT - Payments to Major Contractors

	Payments		Dollars	
	Number	Percent	Value	Percent
Per Year	426,000	30%	$53.2B	60

EFT - Payments to Government Agencies

	Payments		
	Number	Percent	Value
Per Year	7,800	65%	$21.8B

17

EC/EDI/EFT (Continued)

* EDI - Invoices Received

	Number	Percent
Per Year	24M	9%

* Future
  - Increase Use of EFT for Contractor Payments
  - Increase Use of EDI Invoicing
  - Receive Contract Data by EDI
  - Use EDI to Prevalidate Payments

18

Other Streamlining Initiatives

* Imaging

* On-Line Reporting

* Travel Simplification

* Garnishment

19

Defense Finance and Accounting Service

- *Background*
- *Consolidation and Standardization*
  - *Operations*
  - *Finance Systems*
  - *Accounting Systems*
- *Business Process Reengineering*
- ***Contract Support Required***
- *Summary*

20

Where Do We Get Our Support

- Philosophy
  - Use Existing Contract Vehicles Where Practical
  - Put in Place, Under DFAS Management, Key Support Contracts

21

Where Do We Get Our Support Cont.

- Systems Consolidation, Development & Maintenance
  - Over 600 Contractor Personnel Per Year
  - Use More than 10 Different Contract Vehicles
- Operation Consolidation
  - Over 100 Contractor Personnel Per Year
  - Purchased Goods & Services From More Than 12 Different Contracts
- Business Process Reengineering
  - Over 50 Contractor Personnel Per Year
  - Several Different Contracts Used

22

Major Contract Actions

- Imaging Contract Awarded --August 1994
- Federal Information Processing Infrastructure Contract Awarded --September 1995
- Support Services Contract Scheduled Award -- Summer 1996

23

Defense Finance and Accounting Service

- *Background*
- *Consolidation and Standardization*
  - *Operations*
  - *Finance Systems*
  - *Accounting Systems*
- *Business Process Reengineering*
- *Contract Support Required*
- ***Summary***

24

Summary

- Significant Progress Has Been Made To
  - Consolidate Operations
  - Eliminate Redundant Systems
  - Reduce Operating Cost
- A Very Significant Workload Remains to Be Done
- We Need Our
  - Customers &
  - Suppliers
    - Help to Succeed

25

C3I Business Opportunities

Current on Friday, October 13, 1995

World Wide Web Address:

http://www.dtic.dla.mil:80/c3i/c3ia.html

Army Business Opportunities

Maneuver Control System Recompete for Block IV

* Description: C2 System, Echelons Corps and below
* Status: Draft RFP: Available; RFP: December 1995; Award: July 1996
* POC: PM: Barbara Girgus, 908-532-2947;
  KO: Steve Lacellis, CECOM, 908-532-4433

Information Mission Area Support Services for MICOM

* Description: Huge, omnibus contract to provide a full range of support services to MICOM locations in CONUS and overseas. Small business setaside. Systems components also required. Must be able to support a wide variety of systems platforms and environments. RFP DAAH01-95R-0251
* Status: RFP: Dec 95; Award: Jan 97
* POC: Contracting Officer: Barbara Jones 205-876-2250;
  Program Office: Richard Manley; 205-876-2235

Interim Radio Frequency Indentification Device (RFID)

*Description: Radio Frequency Device or Bar Code Reader with memory capabilities that facilities communications to a host computer
*Status: Draft RFP to be released 2QFY96; Final RFP, 3QFY96; Contract Award, 3QFY97
*POC: PM, AIT, Susian Vickers, 703-806-4110

Functional Support Services-Lee (FSS-L)

* Description: Provides a wide range of Functional Support Services for Army Software Dev Ctr - Ft. Lefe
* Status: RFP: FY96; Award: FY96
* POC: KO: Vera Davis, 703-325-6068

Tri-Band Terminal (STAR-T and SOFTACS)

* Description: Tri-band on a simple HMMWV
* Status: RFP: 1Q96; Award: 3Q96
* POC: Ed Velez; PM SATCOM, 908 532-9728 X5860

Army Combat Camera

Electronic still photography & video system incl.satellite stations

* Status: Varies by Command
* POC: SGM Griffin, HQDA, 703-614-2528

Tele-medicine

* Description: Various medical C4 projects
* Status: Ongoing throughout the year
* POC: PMO: MAJ Downs, 301-619-2751

Universal Modem System

* Description: Strategic/Tactical Anti-Jam Modem
* Status: RFP: 3Q FY96; Award: 2Q FY97
* POC: PM Universal Modem: Al Miller, 908-532-9727/6828

Personal Computer – 2

* Description: Desktop personal computers, peripherals, and office automation software for sustaining base and theater/tactical users
* Status: RFP: May 96; Award: Jan 97
* POC: PM Small Computer Program: LTC Fuller, 908-532-7917

Personal Computer – 3

* Description: Desktop personal computers, peripherals, and office automation software for sustaining base and theater/tactical users
* Status: RFP: May 98; Award: Jan 99
* POC: PM Small Computer Program: LTC Fuller, 908-532-7917

Standard Systems Technology Support – 1 (SSTS–1)

* Description: PC/Portable/Server peripherals, Upgrades, Software for fielded standard base
* Status: RFP: June 96; Award: FY Jan 97
* POC: PM Small Computer Program: LTC Fuller, 908-532-7917

AIT – IRFI

* Description: Interim Radio Frequency Identification Equipment
* Status: RFP: FY96; Award FY96
* POC: PM Susan Vickers, 703-806-4110

Military Individual Communicator (MIC)

* Description: Provides a paging capability via satellite
* Status: RFP: FY99; Award FY00
* POC: Scott Sharp, PM Milstar, 908 532-9767

Air Force Business Opportunities

Management Information Systems Technical Support

* Description: Services Contract
* Status: RFP: Nov 95; Award: May 96
* POC: Diane Gringas, Hanscom AFB, MA 617-377-6466

BLSM

* Description: Base Level Systems Modernization
* Status RFP: Oct 95; Award: 2Q FY96
* POC: Lt Col Smith, Gunter AFB, Al, (334)-416-4110

Desktop VI

* Description: IDIQ Desktop personal computers, portables (laptops, notebooks, PDAs), PC peripherals, PC software.
* Status: RFP: 3Q FY96; Award: 3Q FY97
* POC: Maj Tasseff, Gunter AFB, AL, 334-416-1270

TSS

* Description: Technical Support Services Sensor Spacecraft
* Status: RFP: 1Q FY96; Award: 2Q FY97
* POC: Ms. Brenda Lewis, Peterson AFB, CO, (719)-461-7530

Global Theater Weather Analysis & Prediction System

* Description: Software development effort
* Status: RFP: 3Q FY96; Award: 2Q FY97 (Possible 8(a))
* POC: CPT Pino, AWS, (618) 256-5731 Ext 436

Hyperchannel

* Description: Replace Global Weather Central Interface
* Status: RFP: 3Q FY96; Award: 1Q FY97
* POC: Mr. Marler, AWS, (618) 256-4741 X398

MISTS

* Description: Management Information Systems Technical Support
* Status: RFP: 1Q FY96; Award: 1Q FY97
* POC: Ms. Diane Gringas, Hanscom AFB, MA, (617)-377-7530

Unified Local Area Network Architecture (ULANA) III

* Description: Next generation LAN hardware and software
* Status: RFP: 3Q FY98; Award: 3Q FY99
* POC: Ray Olivas, 38 EIW, Tinker AFB, (405) 734-9928

CMC

Description: Cheyenne Mountain Complex Software Support
Status: RFP: Jan 96 Award 1Q FY 97
POC: Mr. Chuck Parker, Peterson AFB, CO, (719)-556-4080

Navy Business Opportunities

NISMC Forecast BBS

* Description: Solicitations and Forecasts
* Phone Number: 202-433-3405
* Administrator: Jack Rymer 202-433-4535

Navy Acquisition BBS

* Description: Marketing BBS; Long Range Acquisition Estimates
* Phone Number: 317-353-3413
* Gen'l Q&A: Ms Tronic; 703-602-2849
* SW Help: Ms Johnson; 317-353-4300

SPAWAR Acquisition BBS

* Description: Solicitation Information; Long Range Acquisition Plans
* Phone Number: 703-602-9494
* Administrator: Bernie Ford; 703-602-6073

TAC-X

* Description: Family of open contracts addressing a multiple of product lines (domains)
* Planning Info: Internet web page; 204.254.216.31
* Additional Info: Ms Valerie Wallick; (703) 602-6278

Navy Desktop (NAVDESK)

* Description: IDIQ to acquire larger scale desktop systems suitable to applications development. Maximum two year ordering period
* RFP: 3Q FY96
* Mr. Ron Lash, NCTC; (202) 764-0825

Naval Telecommunications Infrastructure Project (NAVTIP)

* Description: IDIQ to acquire telecommunications switching equipment and services with state-of-the-art commercial-off-the-shelf switching equipment, private branch exchanges and CPE
* RFP: 1Q FY96
* Mr. Chuck Trigger, SPAWAR; (703) 602-4045

Survivability Analysis and Support (SAS)

* Description: IDIQ for support services for the Survivability Division at the Naval Air Warfare Center, Weapons Division, China Lake
* RFP: 1Q FY96
* Mr. David Hall, NAWCWD; (619) 927-1297

DoD Business Opportunities

Defense Finance and Accounting Service Financial Integrated Support Services

* Description: Wide range of support services for DFAS systems
* Status: RFP: FY96 Award: FY96
* POC: Audrey Davis, Acq Mgr: (317) 549-5987

Defense Nuclear Agency Technical Support Services

* Description: ADP technical support services; LAN support, help desk, application development, test data preservation, training, IV&V support. Small business setaside
* Status: Draft RFP: May 96; Award: 3Q FY97
* POC: IRM Office: Robert Thomas 703-325-0725

Defense Mapping Agency Digital Production System (DPS) Migration

* Description: Very large, Tri-phase program to migrate the current DPS to open systems architecture, COTS HW and SW
* Status: Acquisition. Strategy under development
* POC: PM: Col Henry Obering III, 301-227-2093

OSD Systems Engineering and Technical Support Services

* Description: Multiple award, IDIQ contracts to support OSD automation initiatives. No equipment or commercial software licenses
* Status: RFP: Dec 95; Award: Oct 96
* POC: Tim Sullivan, 703-604-1507

OSD Health Affairs Support Hardware and Automation Related Products (SHARP)

* Description: Acquisition of Commercial off-the-shelf (COTS) computer equipment, software, training and maintenance.
* Status: Draft RFP released April 30, 1995; RFP: undetermined (FY96)
* POC: Contract Specialist - Mrs. Geraldine Marshall,703-681-0155
  Contracting Officer: Mrs. Joyce Ellis, 703-681-0340

OSD Health Affairs OCHAMPUS ADP Hardware/Software Support Services

* Description: Performance in FY 97 – 2002
* Status: Acquisition Planning Stage.
* POC: Gene Mays, 303-361-1185
  E-Mail: maysg@ochampus.mil

Defense Logistics Agency – Standard Procurement System

* Description: Automated Procurement System to be used DoD – Wide; Major Opportunity
* Status: RFP: Oct 30, 1995; Award: 4Q FY96 (OSD est.)
* POC: PM: CAPT Case, 703-767-6363; KO: David Hecht, 703-274-1305

Defense Logistics Agency – Automated Manifest System

* Description: Automated system utilizing. laser card technology to enhance tracking, accountability & improve visibility of materials in the distribution system.
* Status: RFP : Delayed for further requirements definition; Award: TBD
* POC: Lucy Capaldi, MMATT, 703-767-3627

OSD High Performance Computing Mod Program: DREN

* Description: Second acquisition to provide high speed network for Major Shared Research Center access: support DoD Sci&Tech, T&Eval
* Status: RFP: 1Q FY96; Award: 4Q FY96 (OASD(C3IA) est)
* POC: PM: Tony Pressley, 703-812-8205; KO: Pam Locke, 703-812-8205

DISA Comm for TROJAN/Intelligence Electronic Warfare (TROJAN/IEW)

* Description: Dedicated, point-to-point digital comm system. 100 worldwide locations homed to a central complex at Ft. Belvoir, VA. Also provides connectivity to remotely deployed transportable satellite terminals. Contractor will engineer, furnish, install the system
* Status: RFP: FY96; Award: FY96
* POC: Ms. Jo Ann Smith; 618-256-9455

DISA Hawaii Information Transfer System (HITS)

* Description: HITS provides full range of telecommunications services and CPE to support the Defense components and commanders in Hawaii
* Status: RFP: 31 Oct 95 Est; Award: 4Q FY96
* POC: PM: LTC Barry Bryan, 703-681-0321

DISA Joint Interoperability Test Command (JITC) Omnibus Contract

* Description: 5-year, CPFF contract provides engineering and scientific support the JITC test mission. This includes planning, evaluating and reporting results of test and evaluation for DoD C4I information systems
* Status: RFP: 1Q FY96; Award: 4Q FY96.
* POC: Contracting Officer: N. Tinnell, 520-533-1213
  PM/tech official: Wesley Holmes, 520-538-5254

DISA Integrator Services for Air Force Phase IV Modernization

* Description: Integration services; maintenance of Unisys and third-party equipment; some new hardware and software; relates to the migration of Air Force worklead in MegaCenters to modern platforms (platforms will be bought separately)
* Status: RFP: 2Q FY96; Award: 4Q FY96
* POC: Mike Black, DISA Denver; 303-676-1793

DISA Megacenter HW, DASD

* Description: Acquisition of DASD upgrades
* Status: RFP: 1Q FY97; Award: 1Q FY98
* POC: : KO: Coni Jackson, 618-256-9696, PM: Cal Ader, 303-676-1796

Megacenter HW, Mainframe Upgrades

* Description: Acquisition of Megacenter CPU upgrades
* Status: RFP: 3Q FY96; Award: 3Q FY97
* POC: : KO: Coni Jackson, 618-256-9696, PM: Cal Ader, 303-676-1796

Megacenter HW, Front End Processors

* Description: Acquisition of Megacenter 370/390-compatible equipment & upgrades - 3 yr. ordering - IDIQ
* Status: RFP: 2Q FY97; Award: 2Q FY978
* POC: : KO: Coni Jackson, 618-256-9696, PM: Cal Ader, 303-676-1796

Megacenter HW, Robotic Tape Libraries (RTL)

* Description: Acquisition of Megacenter RTL to support operational and archival requirements
* Status: RFP: 1Q FY97; Award: 1Q FY98
* POC: : KO: Coni Jackson, 618-256-9696, PM: Cal Ader, 303-676-1796

Megacenter HW, Remote Job Entry (RJE) Equipment

* Description: Acquisition of RJE Equipment
* Status: RFP: 1Q FY97; Award: 1Q FY98
* POC: KO: Coni Jackson, 618-256-9696, PM: Cal Ader, 303-676-1796

Army Intelligence

Information Requirements

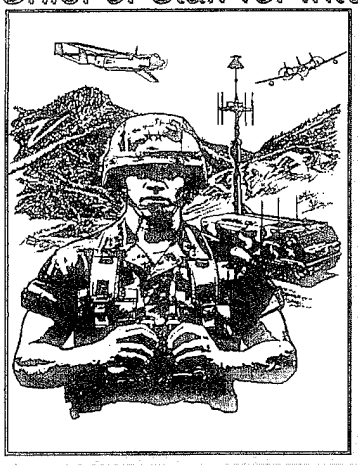
briefing to the

American Defense Preparedness Association

Advanced Planning Briefing for Industry

LTG Paul E. Menoher, JR .

Deputy Chief of Staff for Intelligence



...The Commander Drives Intelligence

Bottom Line - Up Front

Multiple Intel Assessments

- AIMP
- MI Relook
- FDU
- FAA
- I3
- MI RC FDU

New Family of Systems

New MI Concept and Doctrine

CSA Approved Force Design

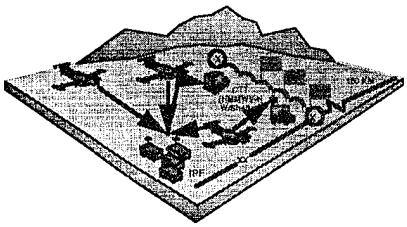
INSCOM Reengineered:
- 37% Reduction
- New Organizations

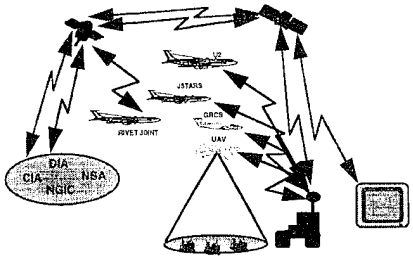
Critical Capabilities for a Force Projection Army today... evolving to an Information Age Intel Force XXI tomorrow

New Family of Systems

Fielding

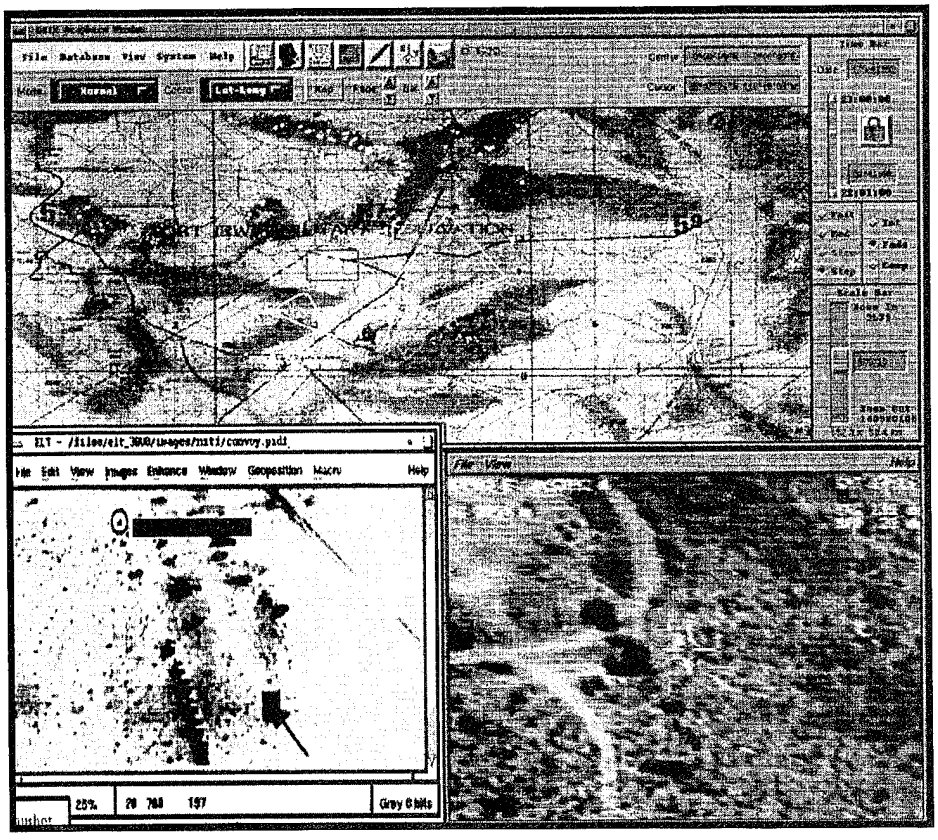
All Source Analysis System
Guardrail Common Sensor
JSTARS Ground Station Module
Modernized Imagery Exploitation System
Tactical Radar Correlator
Mobile Integrated Tactical Terminal
Forward Area Support Terminal (FAST)
Airborne Reconnaissance Low (ARL)
Trackwolf
TROJAN SPIRIT
UAV - Short Range
Enhanced Tactical Radar Correlator





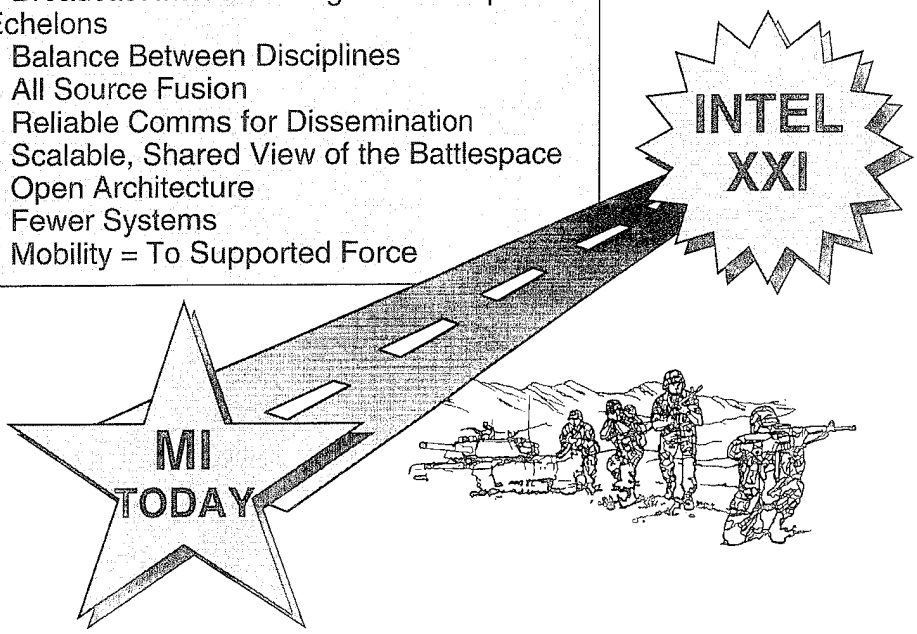
To Be Fielded:

Next 2 Years:
Ground-Based Common Sensor
Advanced Quickfix
UAV - Maneuver
Enhanced Trackwolf



Critical Capabilities

- Targeting Accuracy- Multiple Systems
- Broadcast Intel and Targets to Multiple Echelons
- Balance Between Disciplines
- All Source Fusion
- Reliable Comms for Dissemination
- Scalable, Shared View of the Battlespace
- Open Architecture
- Fewer Systems
- Mobility = To Supported Force

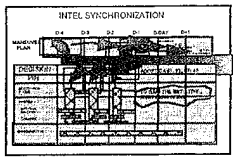


MI Concept for Force Projection

- FIVE MI DOCTRINAL TENETS -

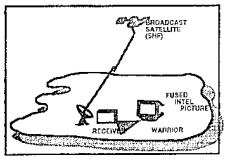
THE COMMANDER DRIVES INTELLIGENCE

INTEL SYNCHRONIZATION



MELD W/OPERATIONS & FORCE PROTECTION

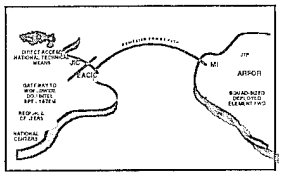
BROADCAST



DIAL-UP..."PULL" INTEL

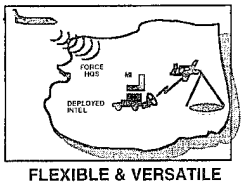
MI

SPLIT-BASED



FOCUS DOWN

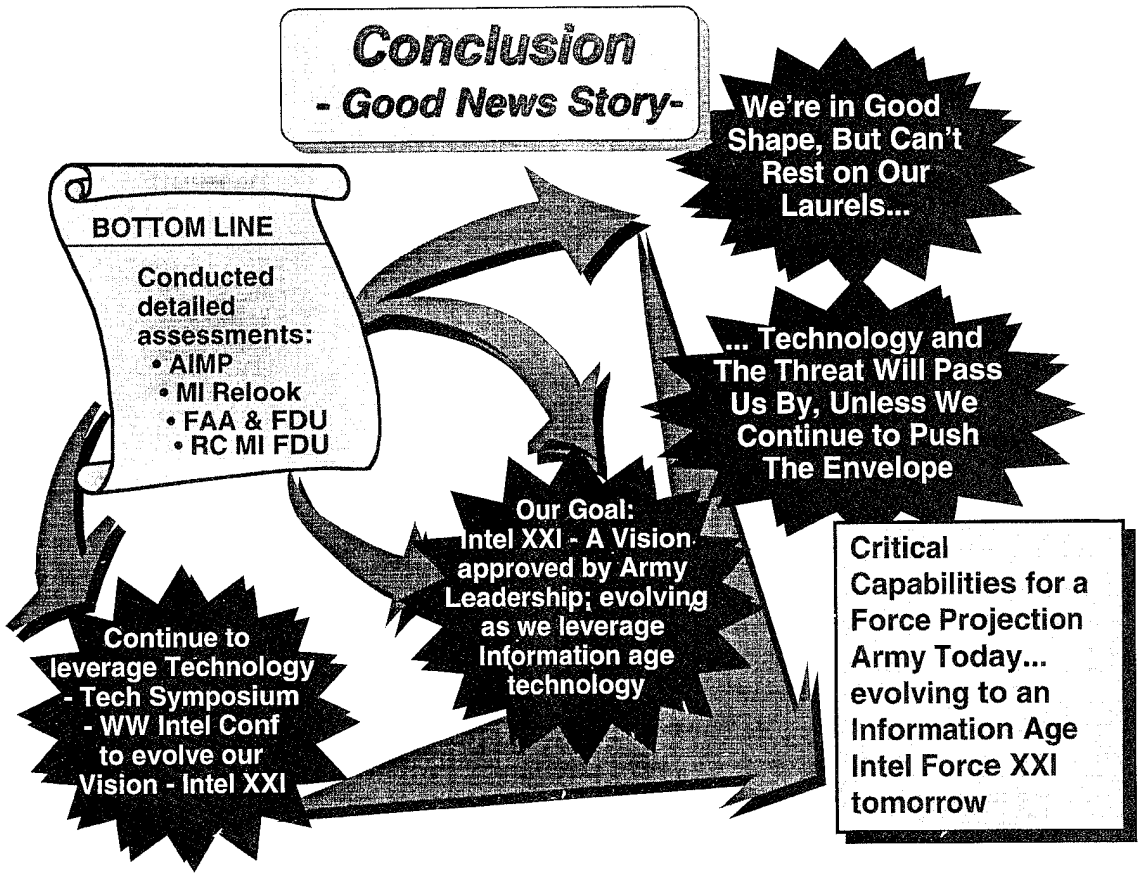
TACTICAL TAILORING

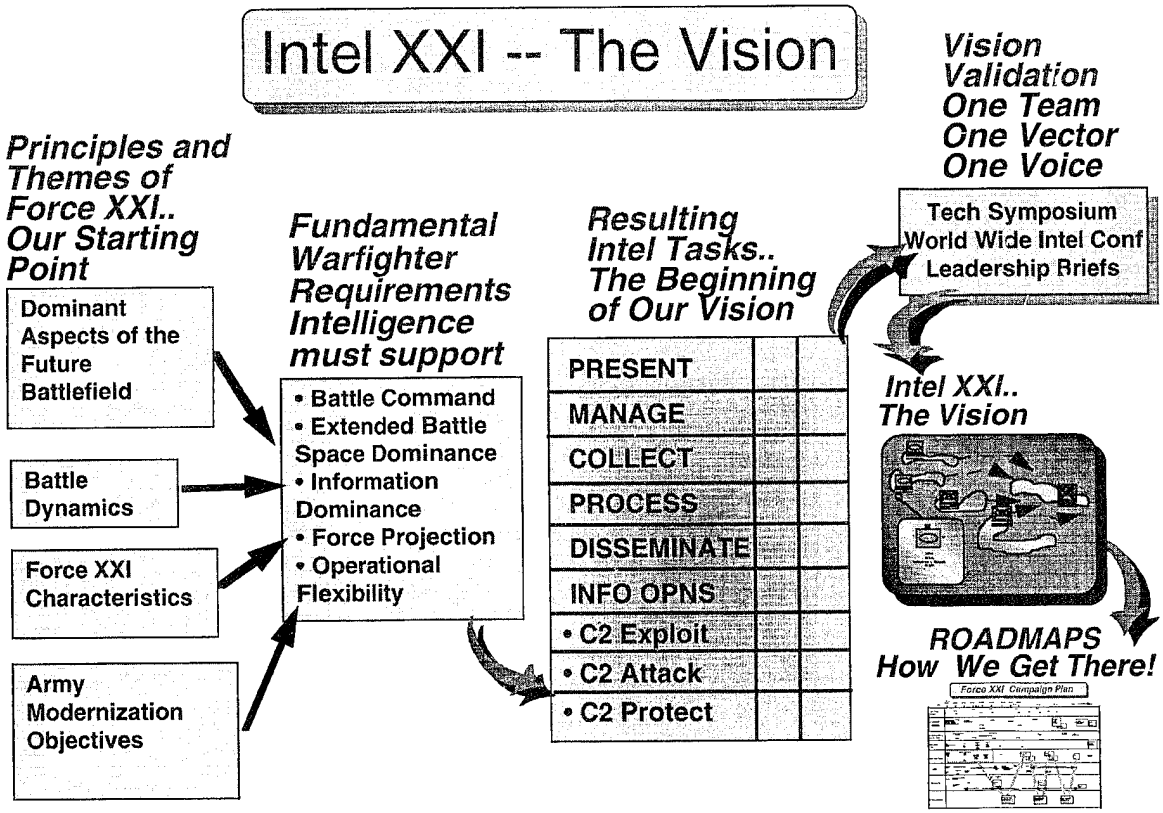


FLEXIBLE & VERSATILE

INFORMATION WARFARE

Interagency *Joint* *Combined*





Tied to Force XXI Key Events

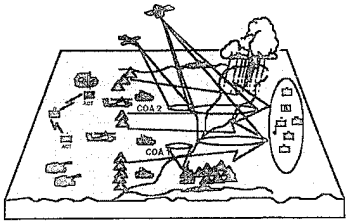
Battle Command

Warfighter Requirements
- Visualize
  - Forces
  - Environment
- Assimilate Information
- Anticipate
- Develop Estimates/COAs

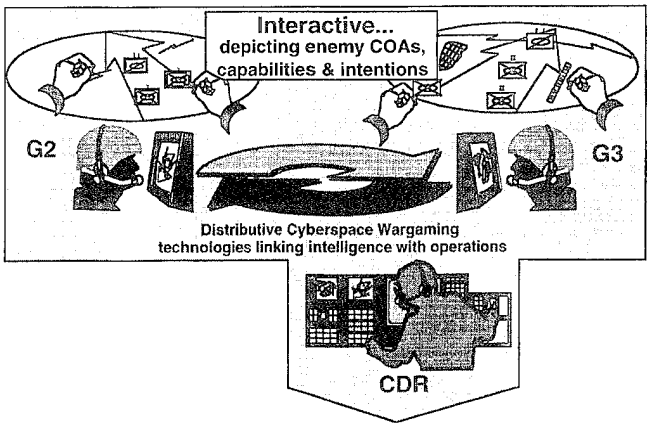
Key Intel Attributes
- Real-time/Dynamic
- Predictive
- Common Understanding
- Shared Situational Awareness

"The art of battle decision making, leading and motivating soldiers and their organizations into actions to accomplish missions." FM 100-5

Intel Prep of the Battlefield
- AI supported IPB tool
- Correlation
- C2W/IO IPB
- Knowledge Based Tools
- Integrates Weather and Terrain



Wargaming...Mission Planning...Mission Rehearsal Tool



Extended Battlespace Dominance

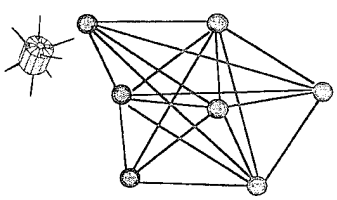
Warfighter Requirements
- Depth
  - Improve RISTA
  - ID, disrupt and destroy at greater ranges
  - Increase force protection
- Simultaneity
  - Orchestrate force effects in time and space
  - Joint/Multinational/Interagency
  - Synchronization

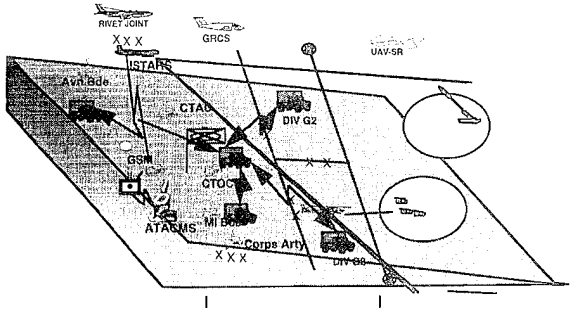
Support to:
- Command & Control
- Targeting/BDA
- Maneuver
- Info Operations

"Future intelligence, reconnaissance, active and passive target acquisition, and surveillance systems will provide commanders with continuous wide area battlefield observation at greater ranges, prevent fratricide and provide joint BDA." TRADOC Pam 525-5

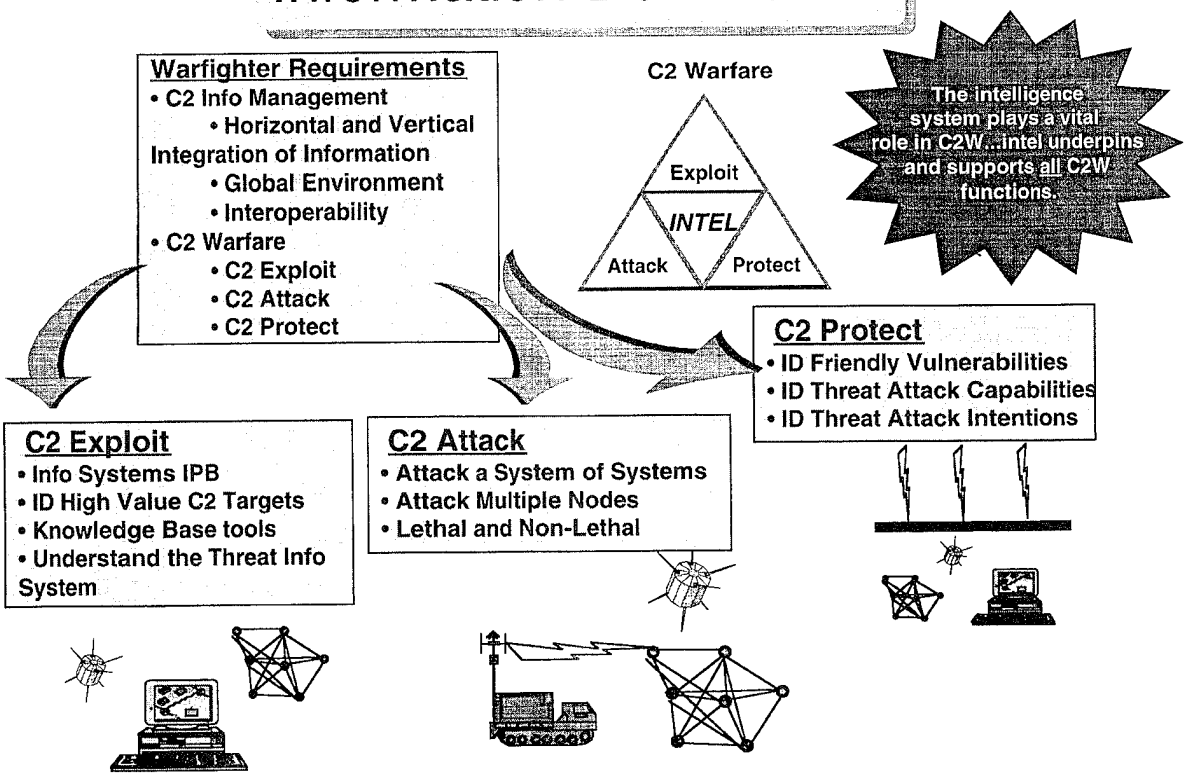
Sense the Battlefield Environment
- AI Collection Management
- Integrate all sensors
- Netted Suite of sensors
- Full spectrum collection

Convey Information
- Bandwidth on Demand
- Broadcast/tether/link to tactical forces
- Wireless LAN

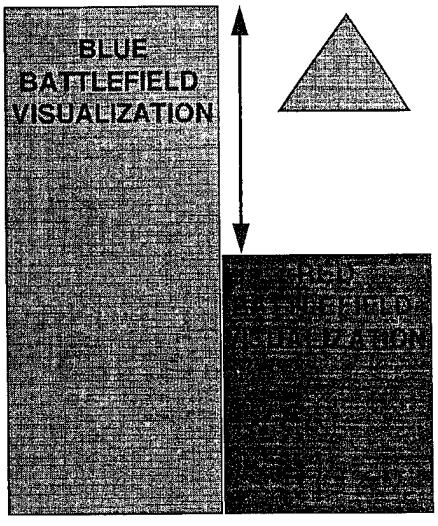




Information Dominance



Information Dominance



= *Information Dominance*

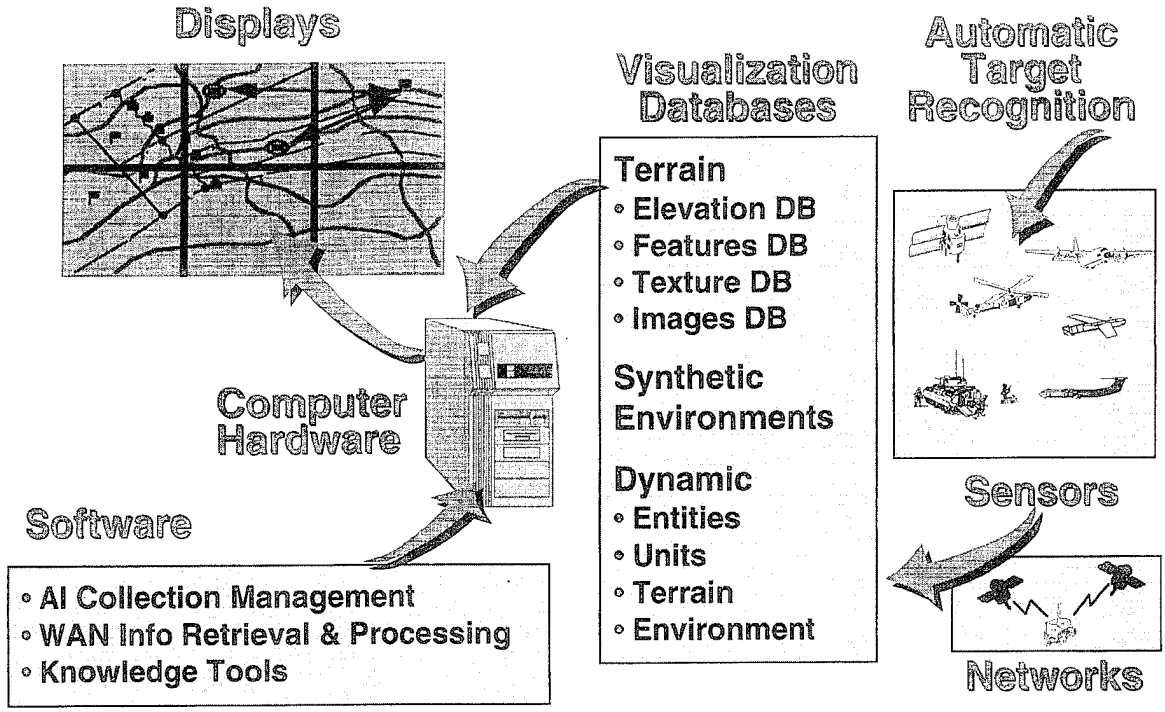
- The aggregate of Information Operations activities that create an **advantage**
- Not just in the ***amount*** of information but in the relative capacity for **Battlefield Visualization**

The Commander's **understanding** of his **current state** in relation to the **enemy** and the **environment**...

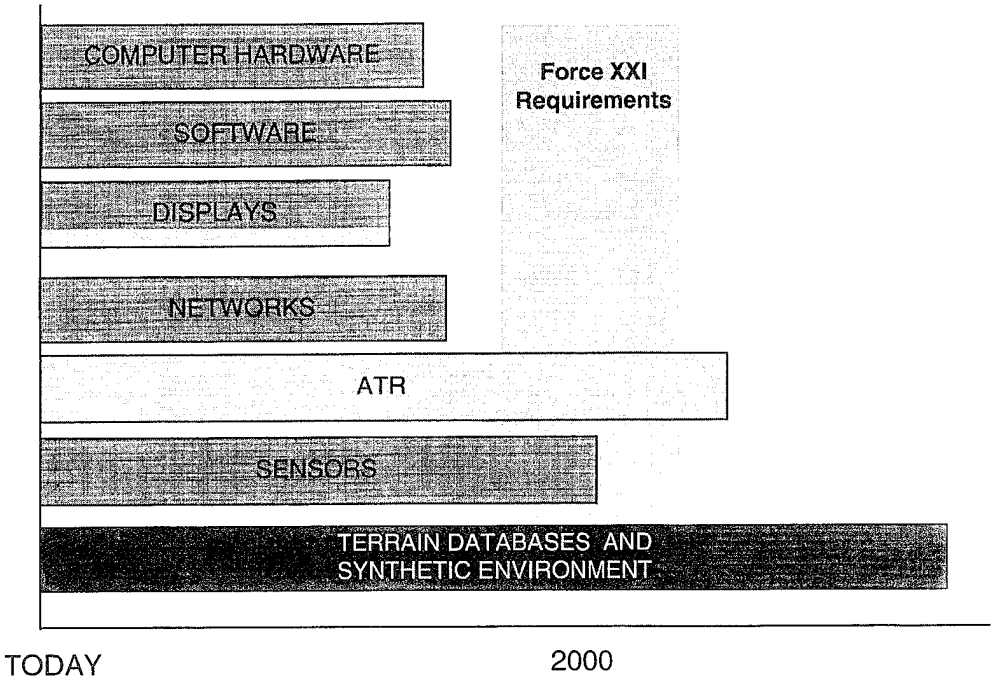
and...his ability to see these in the context of a **desired end state**...

and...his ability to visualize the **sequence of activity** that will move his force from its current state to its desired end state

Battlefield Visualization
Enabling Technologies

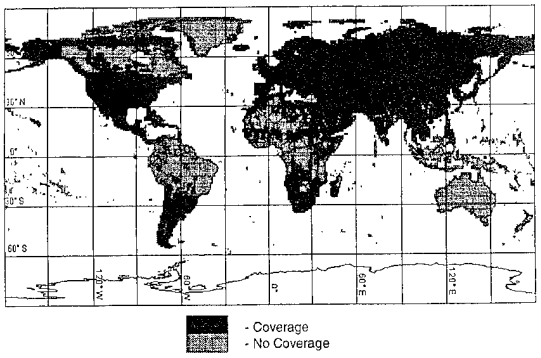


Technology Maturation
Support to Battlefield Visualization

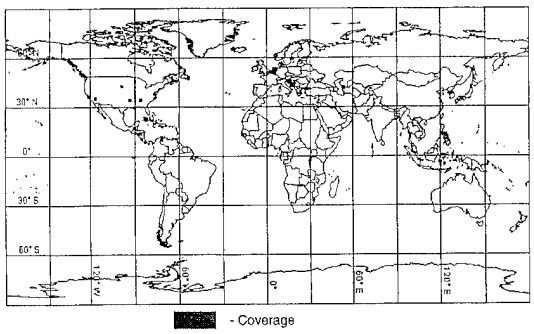


Digital Terrain
The Coverage Problem

DTED - Level 1 (100 meter)



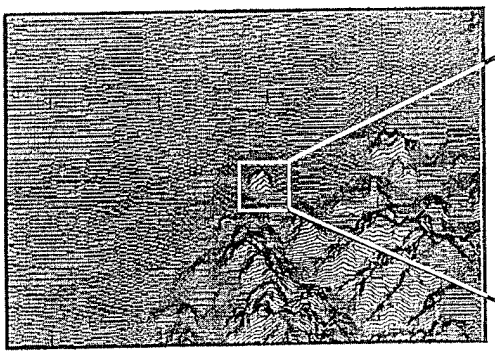
DTED - Level 2 (30 meter)



DTED Level 3, 4, 5 coverage is virtually non-existent

Digital Terrain Data
The Resolution Problem

DTED Level 1 (100 meter)



DTED Level 4 (3 meter)



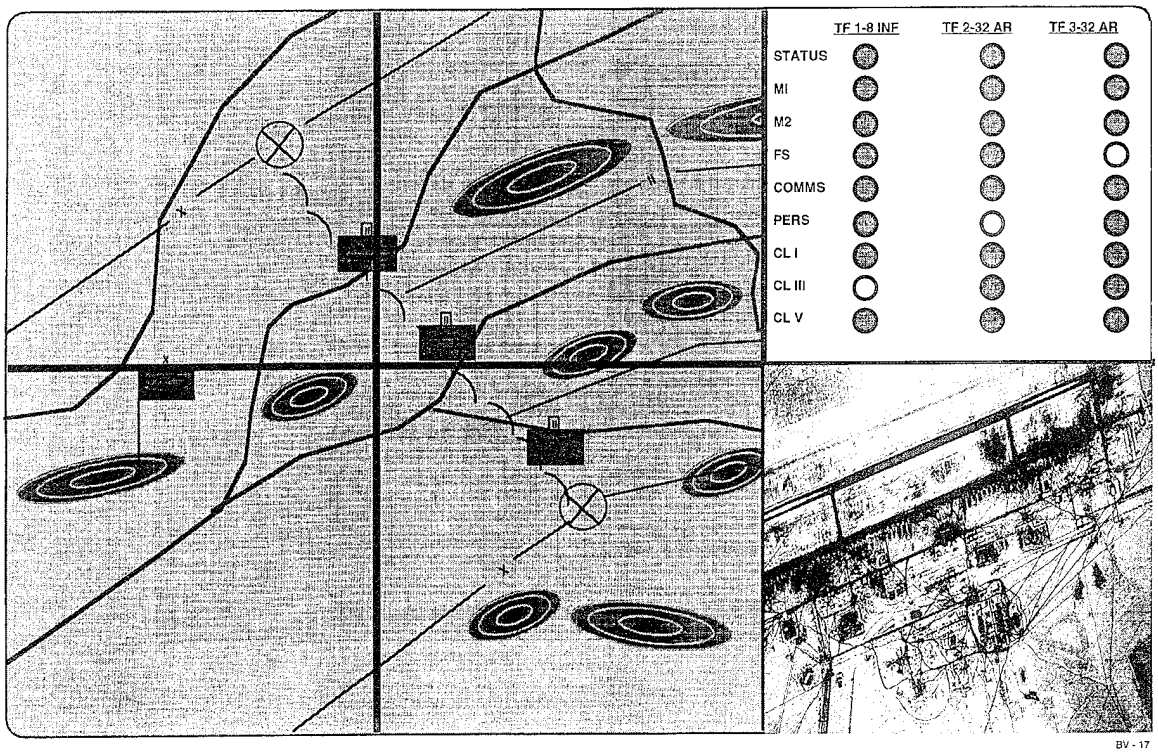
- **Planning-level data**
  - Levels 1 (100m) and 2 (30m)

- **Operation-specific areas require higher resolution data**
  - Levels 3 (10m), 4 (3m), and 5 (1m)

- **High resolution data requires near-real time capability (e.g., source acquisition,elevation generation, and dissemination to operational users)**

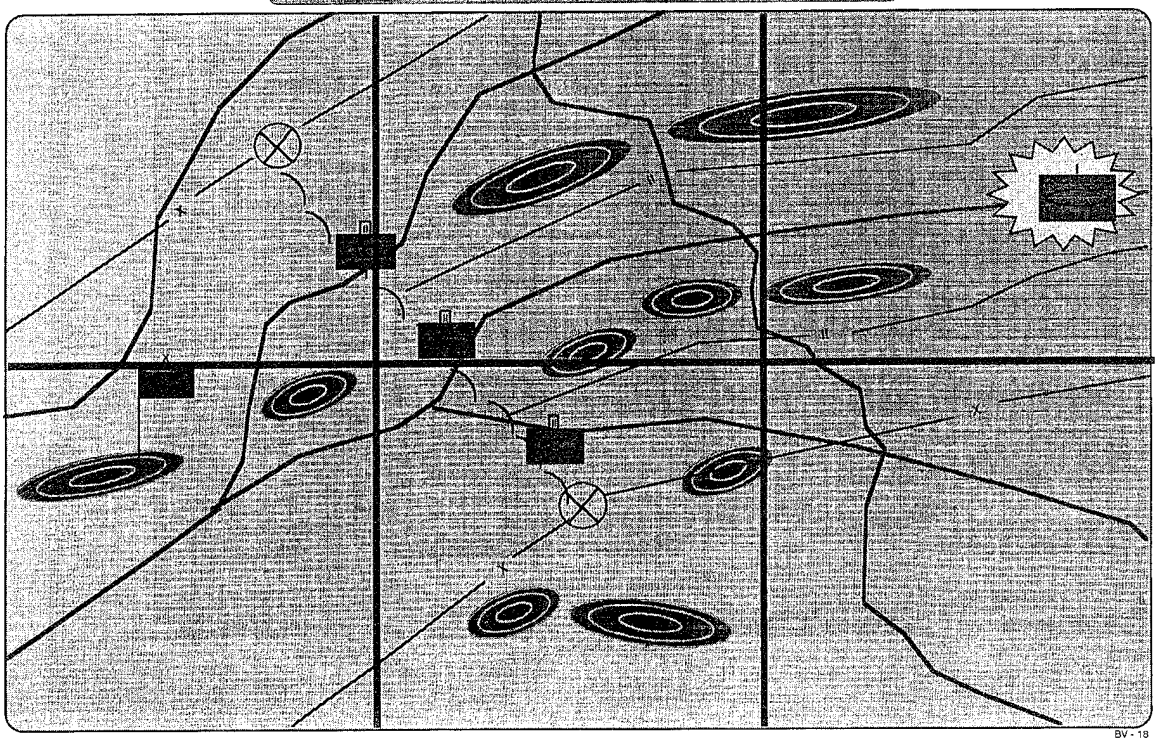
Commander Monitors the Battle

Movement to Contact "On Track"



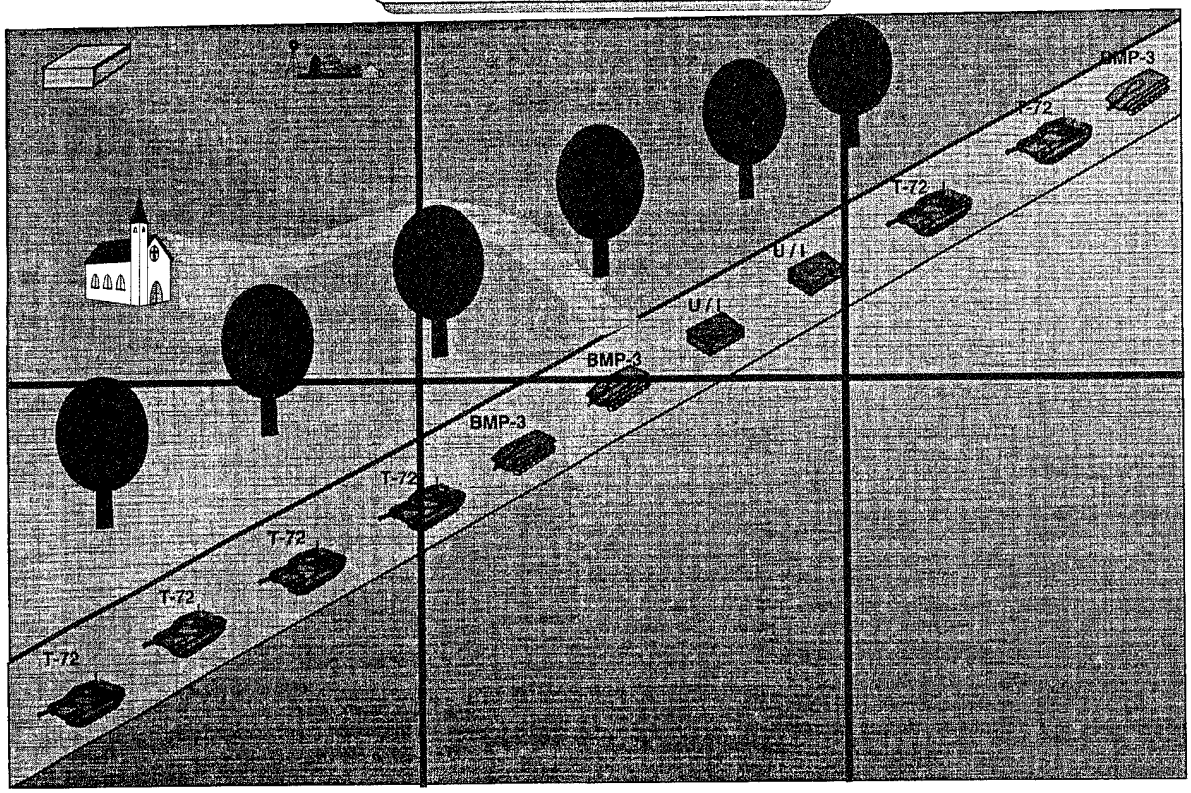
BV - 17

Enemy Unit Detected

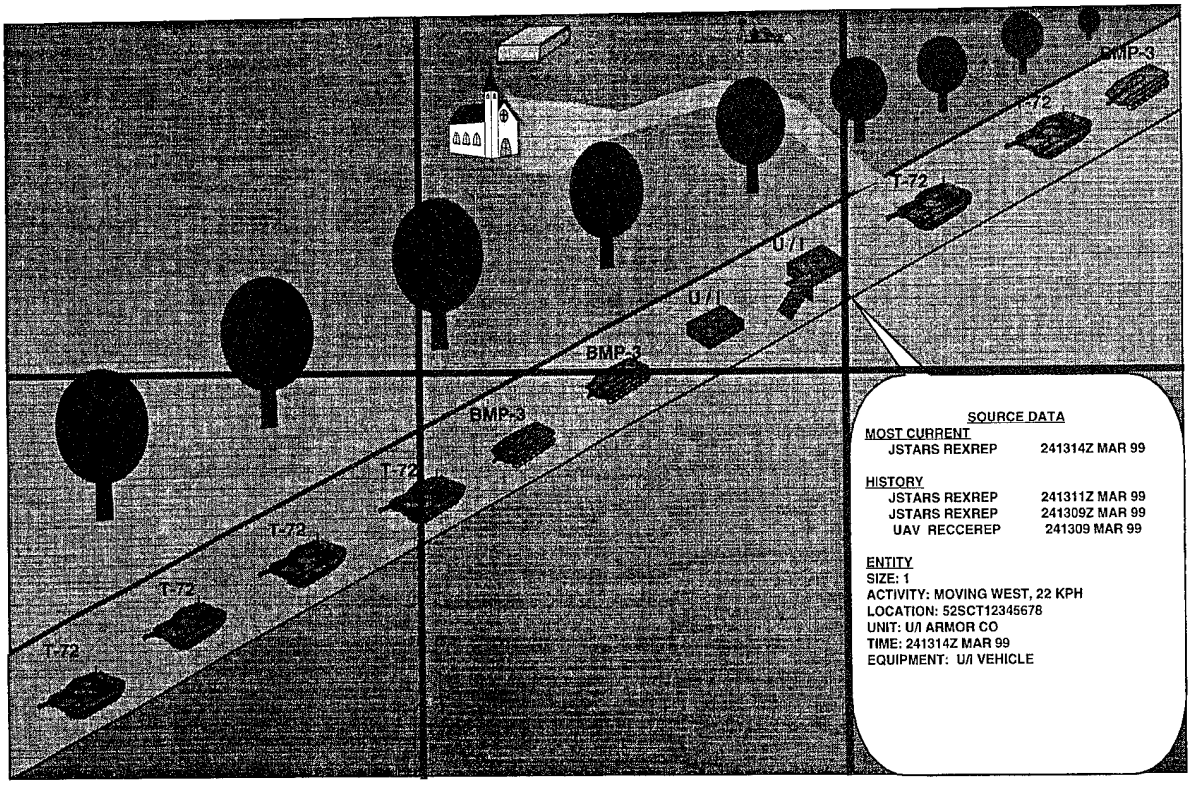


BV - 18

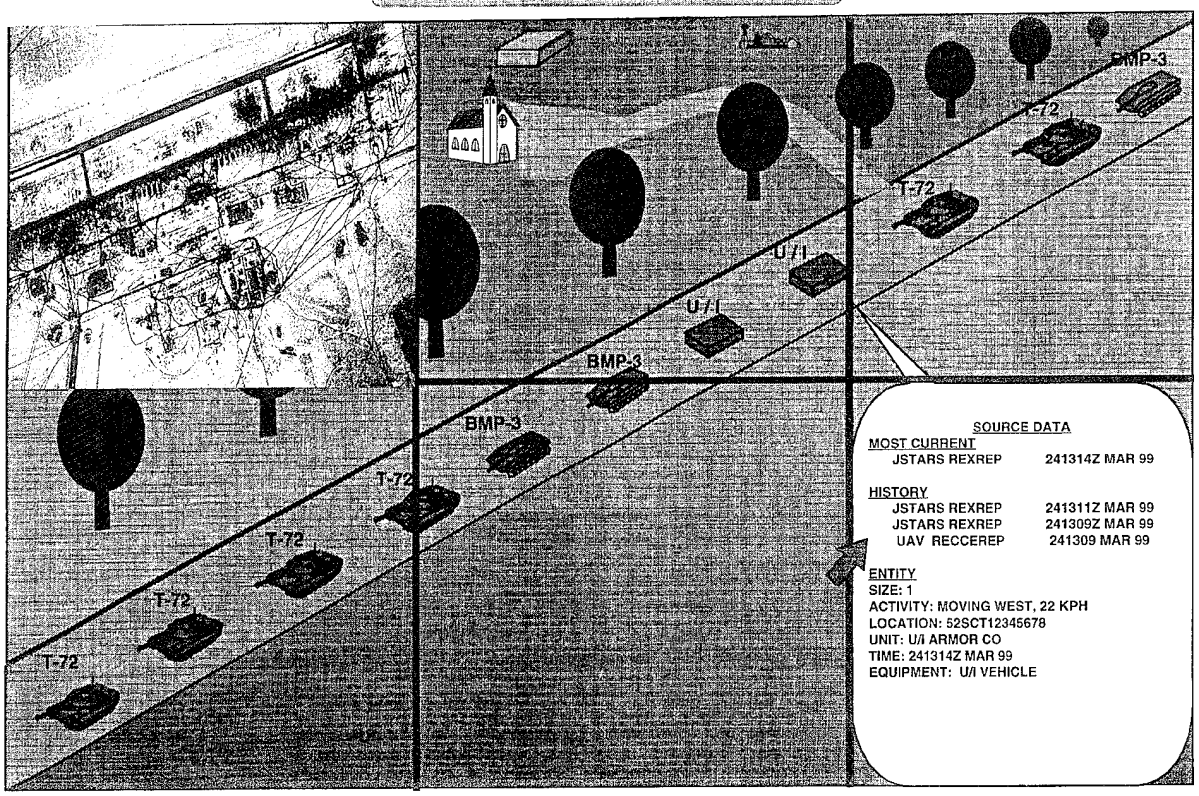
S2 Zooms to 3D View
Notes U/I Movers



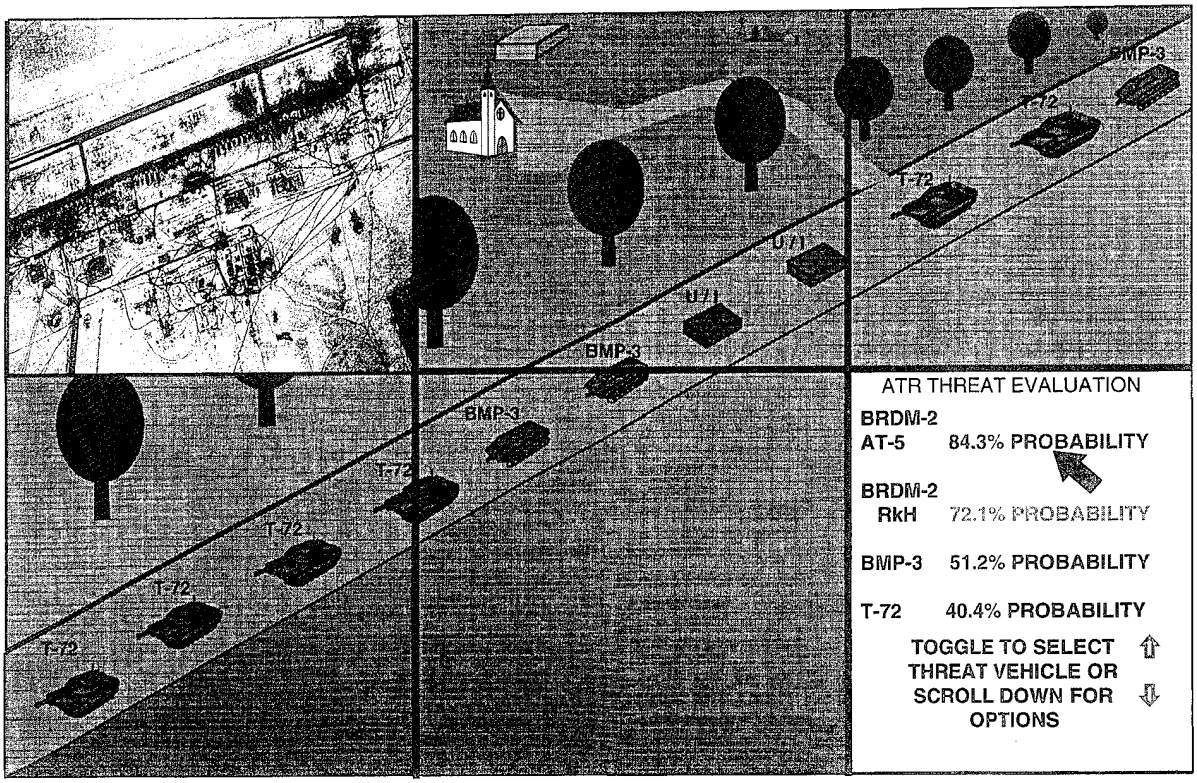
S2 Toggles to Data on U/I Mover



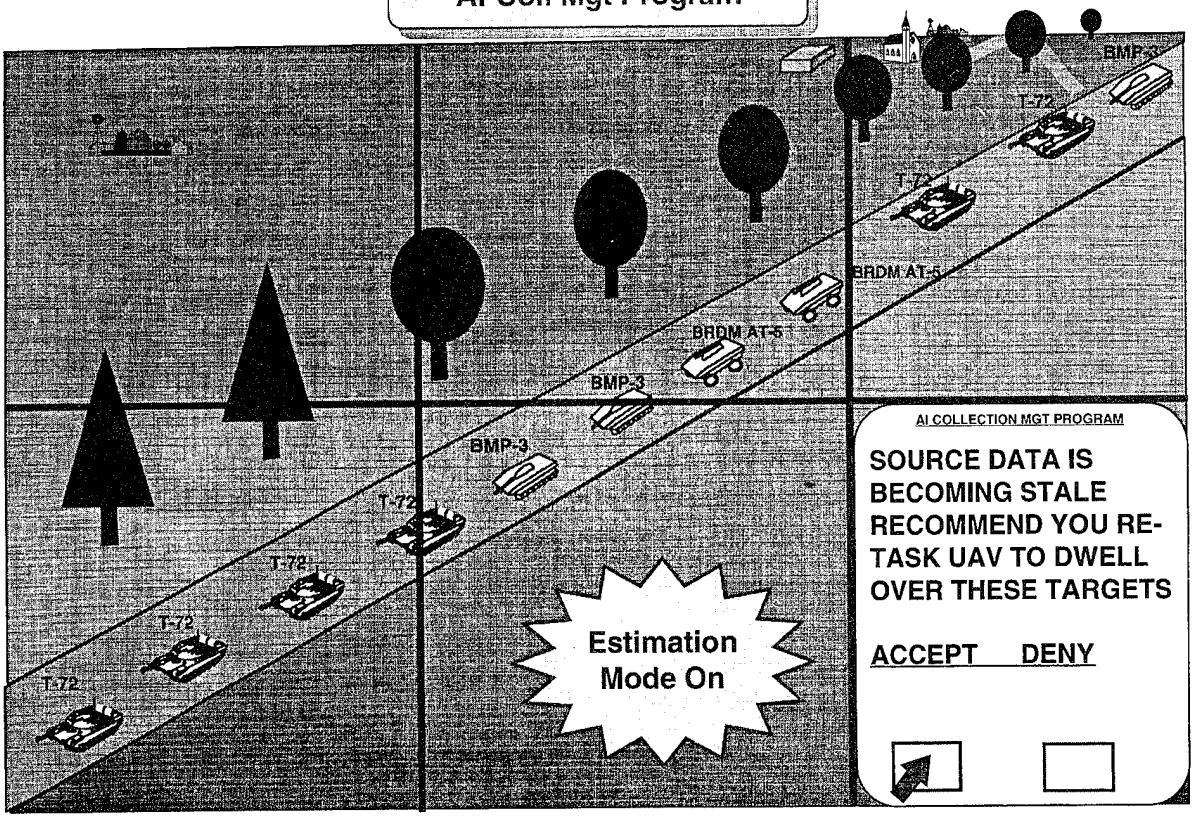
S2 Plays UAV Video
Notes ATR Filter Deficiency



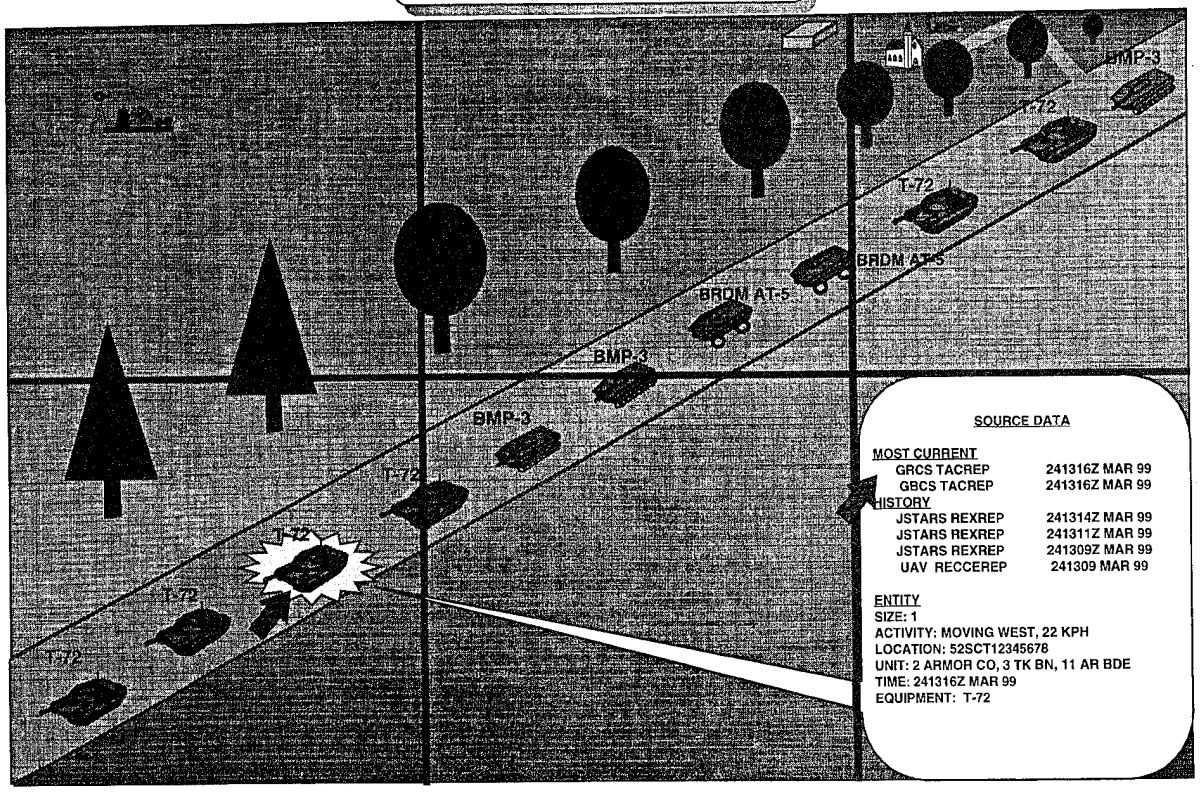
ATR Assisted Vehicle I.D.



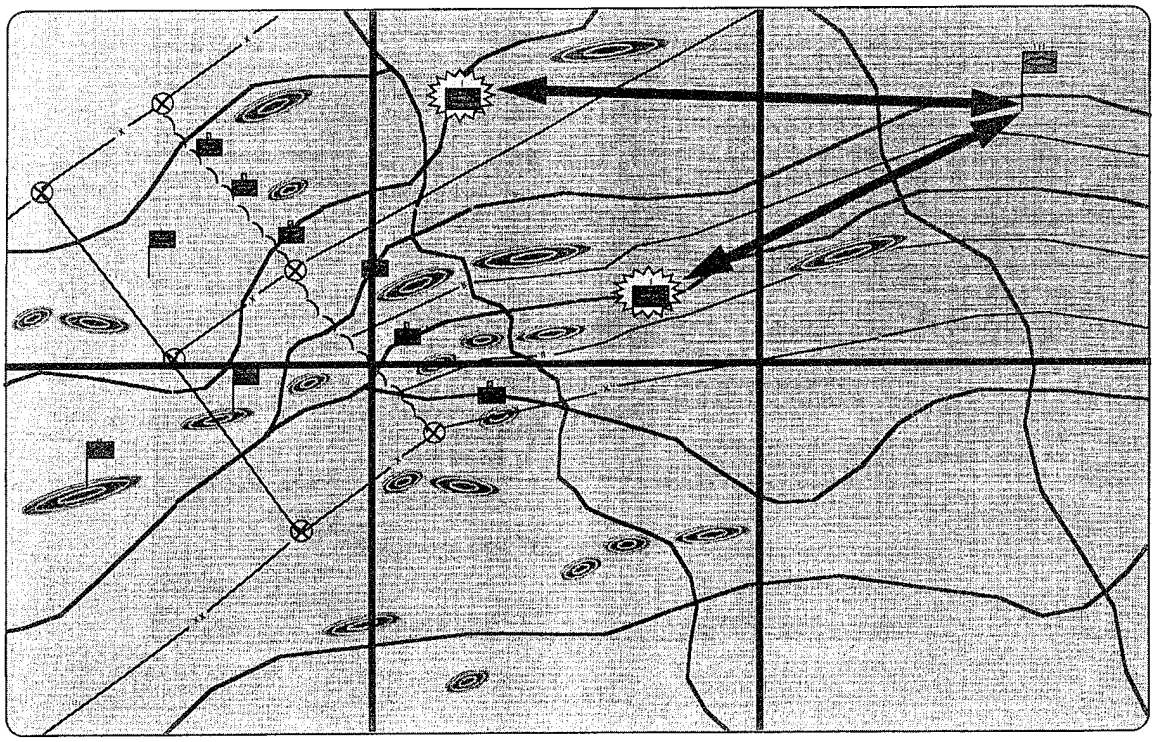
Location Data Stale
AI Coll Mgt Program



T-72 Flashes
S2 Toggles to SIGINT Data



S2 Toggles to SIGINT View
Notes Comms to Regimental HQ

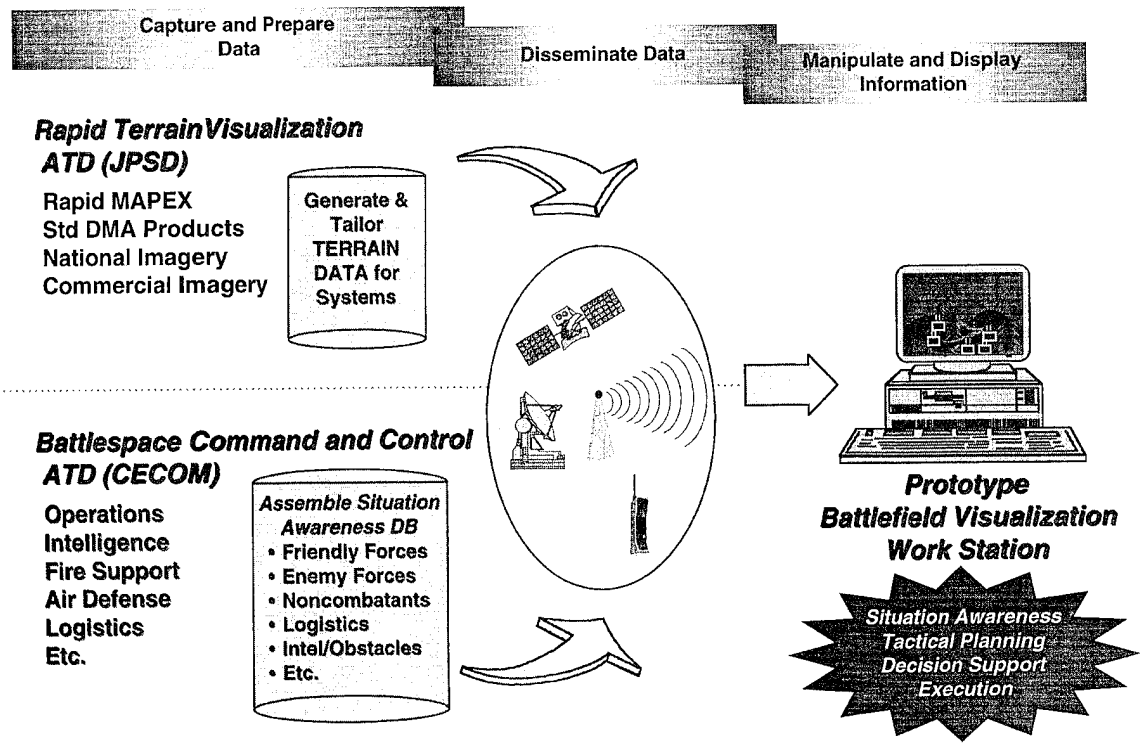


What We're Doing

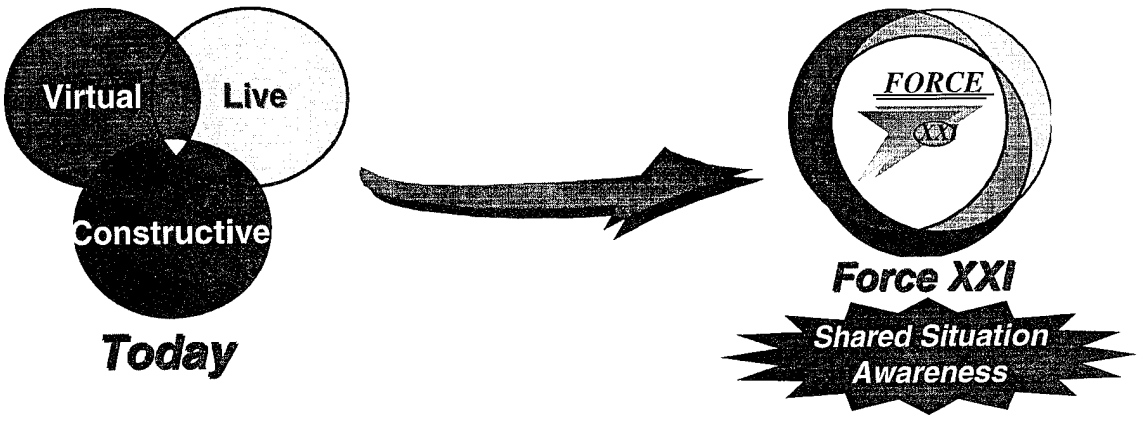
- Army Internal Management Plan Development
  - ODCSOPS developing the plan
  - Technical working groups meeting
  - TRADOC working a holistic master plan
- Crisis Response (Hasty Mapping) Exercise
  - DMA and TEC effort on JRTC
  - Quarterly exercises upcoming
- JROC Elevation Working Group (DMA lead)
  - Defining user requirements
  - Assessing technologies
  - Developing options for recommendation to JROC
- Battlefield Visualization ACTD
  - Developing ACTD Concept
  - Two building block ATD's briefed to ASTWG
    - Rapid Terrain Visualization
    - Battlespace Command and Control



ATDs Supporting Battlefield Visualization
Concept



Battlefield Visualization
Our Objective



Drive Live, Virtual and Constructive environments into one coherent architecture for America's Army, using the Army Technical Architecture as our guide.

One system to train for, plan, wargame, rehearse, and execute operations

Reserve Component Automation System

Briefing for

Advanced Planning Briefing to Industry
29 November 1995

The RCAS Vision

Reserve Component Automation System

RCAS is the Information System of Choice for the Army Reserve Component

Mission Statement

Reserve Component Automation System

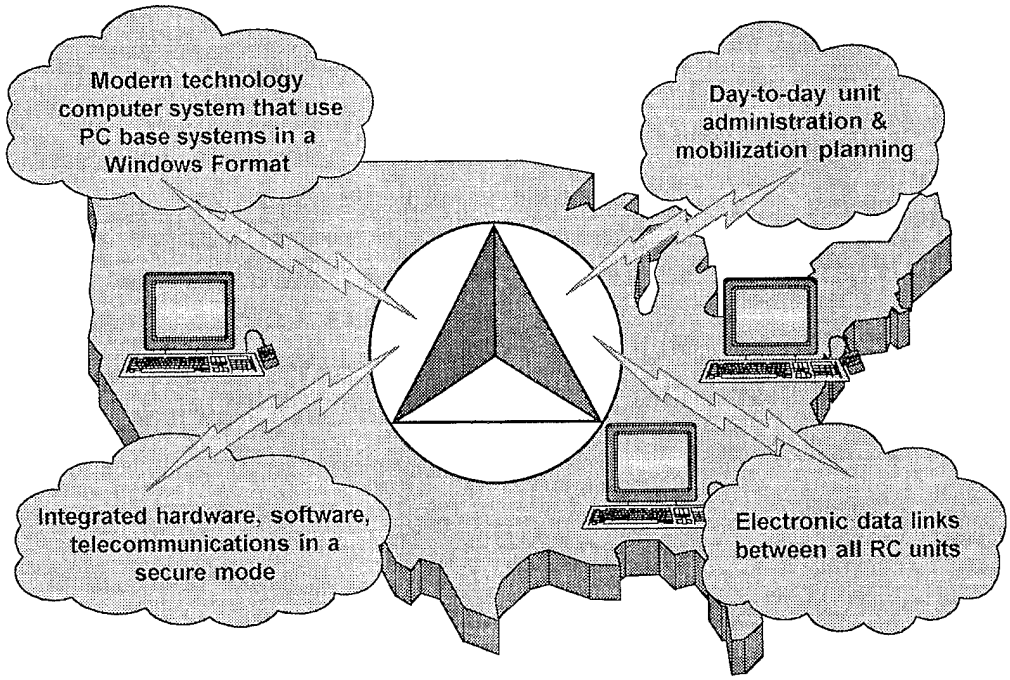
Provide the Army Reserve Component with an Integrated Delivery and Applications System that is cost effective and supports the day-to-day administrative, operational, and moblization needs.

"HAS NOT CHANGED"

3

What is RCAS?

Reserve Component Automation System



3

RCAS Assessment ("Red") Team Review
13-28 February 1995

Reserve Component Automation System

Assembled by LTG Baca to:

- identify problem areas
- develop corrective actions

Membership

- PEO STAMIS (Mr. Austin, Team Lead)
- Active Army
- ARNG
- USAR
- Contractors

Recommendations

- ✓ Establish an ARNG/USAR Customer Focus Team
- ✓ Consolidate data servers at STARC/MUSARC level
- ✓ Utilize PCs as user terminals
- ✓ Connect all RCAS sites
- ✓ Remove the Multilevel Security requirement
- ✓ Replace selected applications with commercial off-the-shelf software (COTS) and DOD software reuse (GOTS)

4

Validation Assessment Team (VAT)
1 April - 19 July 1995

Reserve Component Automation System

Assembled by LTG Baca to:

- Validated "Red" Team's recommendations
- Develop program wide plan for implementation
- Determine cost implications
- Determine final architecture and plans for implementation
- Get user Input
- Restructure the RCAS contract to accommodate the revised solution

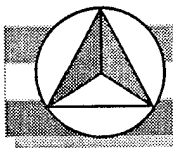
Membership

Active Army	PMO
ARNG	Boeing Information Systems
USAR	Support contractors

Recommendations

- ✓ PC based Applications executed locally at workstations
- ✓ Centralized Master Data Base of Record at STARC/MUSARC level
- ✓ DB Query servers at med/large sites
- ✓ C2 security on All platforms
- ✓ Red/Black secure processing at Battalion and above
- ✓ Increased user involvement in deployment/software development/testing/sustainment

5



Technical Recommendations

Reserve Component Automation System

Architecture:

- PC Based (46,194 Program provided and 10k provided by users & upgraded by program)
- Centralized Master Database of Record (DBOR) at STARC/MUSARC
- DB query servers at large/medium sites
- Applications executed locally at workstations
- C2 security on all platforms
- RED/BLACK Secure Processing at Battalions and above

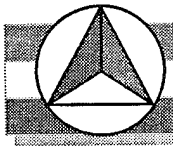
Software:

- RCAS integrated database (relies heavily on use of GOTS and COTS)
  - Reverse engineer database from Legacy Systems and RCAS Block 1/2 data products
  - External Interface Broker running at the DBOR
  - Major reduction in enterprise modeling and functional area planning costs
- Mission support software for all RCAS functionality through hosted GOTS and COTS-based development
- Joint rapid application development with end-users

Testing:

- Integrated with the software development processes
- Heavy user involvement
- Uses Operational Test and Evaluation Sites

6

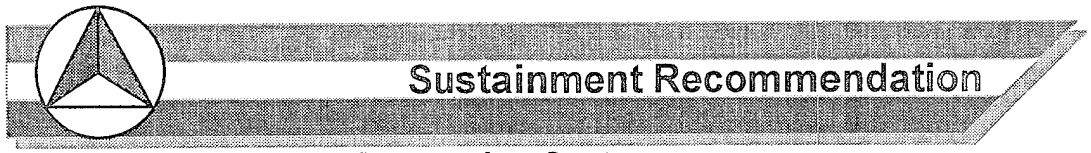


Deployment Responsibilities

Reserve Component Automation System

PROCESS	Small Sites 16 or less workstations	Large Sites 17 or more workstations	STARC/MUSARC
Site Survey	**Command**	Boeing	Boeing
Server/Telecom Design	Boeing	Boeing	Boeing
Site Prep Electrical	**Command**	**Command**	**Command**
Site Prep Telecom Hub	**Command**	**Command**	Boeing
Site Prep LAN Wiring	**Command**	Boeing	Boeing
Outside Plant	N/A	Boeing	Boeing
Circuit Ordering	**Command**	**Command**	**Command**
Workstation Installation	**Command**	**Command**	**Command**
Server Installation	N/A	Boeing	Boeing

7



Reserve Component Automation System

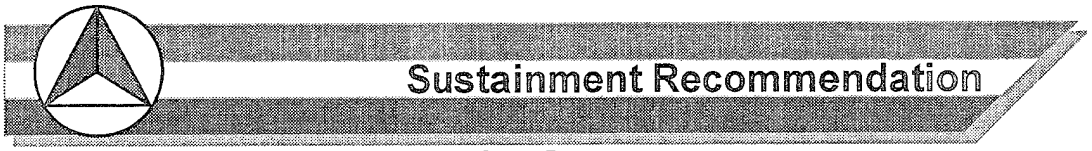
Characteristics Provided By The Program

- Maintenance - contractor provided on all critical (telecom, servers, database) RCAS equipment for 7 years
- Service Support Center - Combined NCC and Help Desk provide 12 hour, 7 day/week network monitoring and support for command-level System Administrators (SA). SA support users in their command.
- SA Training
  - RCAS specific training provided by Boeing
  - Funds are provided for commercial training
- User Training
  - CD ROM or Video for OA Software

Characteristics Provided By The User

- Electricity Costs
- Consumables
- Maintenance on PCs and printers after 3 years when extended warranty expires
- Manage telecom lines (PMO MIPR funds)

8



Reserve Component Automation System

Characteristics Provided By The Program

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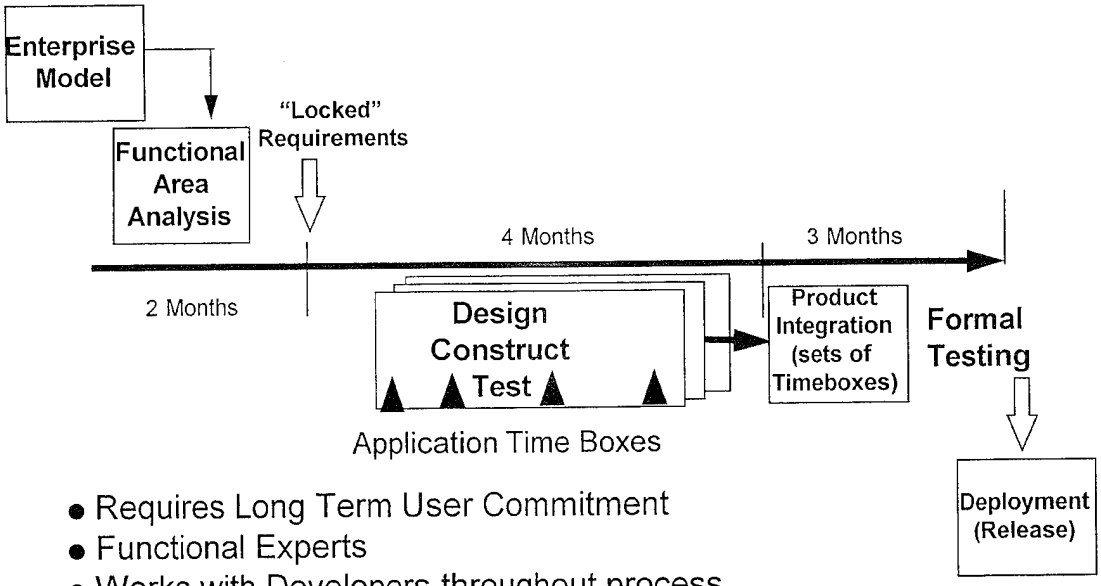
Characteristics Provided By The User

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- Consumables
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8

Software Development Strategy

Reserve Component Automation System



- Requires Long Term User Commitment
- Functional Experts
- Works with Developers throughout process
- AGR and ADSW

9

Points of Contact for Contracting

Reserve Component Automation System

Information System Selection & Acquisition Agency
Mr. Lee H. Harvey
Attn ISSAA-ABE
2461 Eisenhower Av.
Alexandria, VA 22331-0700

(703) 821-6590
or
(703) 339-9350

Boeing Information Services Inc.
Mr Mark D. Connel
Manager, Contracting and Acquisition
7990 Boeing Court
Vienna, Va 22182-3999

(703) 821-6541

10

Tri-Service Command, Control, and Communications Programs Summary

Robert F. Giordano

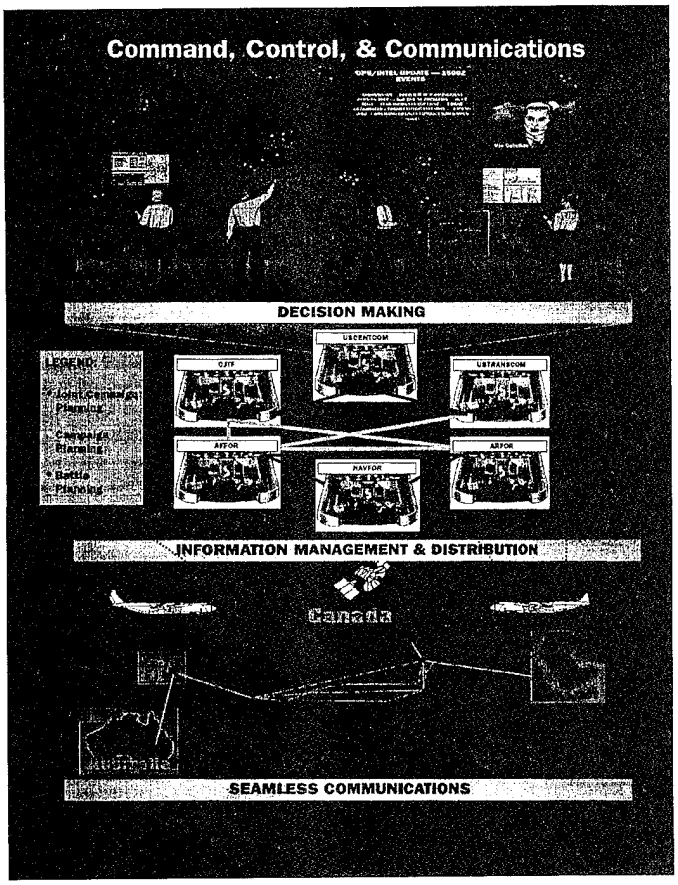
U.S. Army Communications-Electronics Command
Research, Development and Engineering Center
Fort Monmouth, New Jersey

29 November 1995

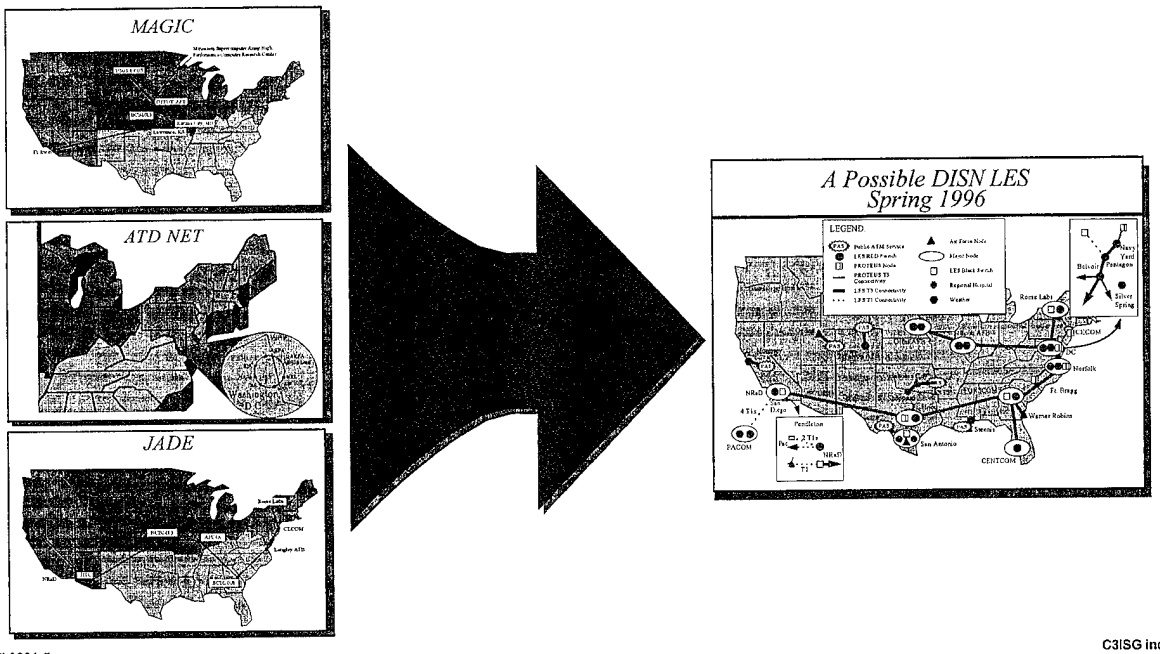
C3 Vision

- Transparent Communication Between and Across Command Levels/Echelons—"Seamless" Communication
- Common Architecture as a Framework to Achieve Transparent Distribution of Information
- Commonality Where Common Elements are Appropriate (e.g., Decision-Making Toolkit)

(Right Information, Right Place, Right Time)



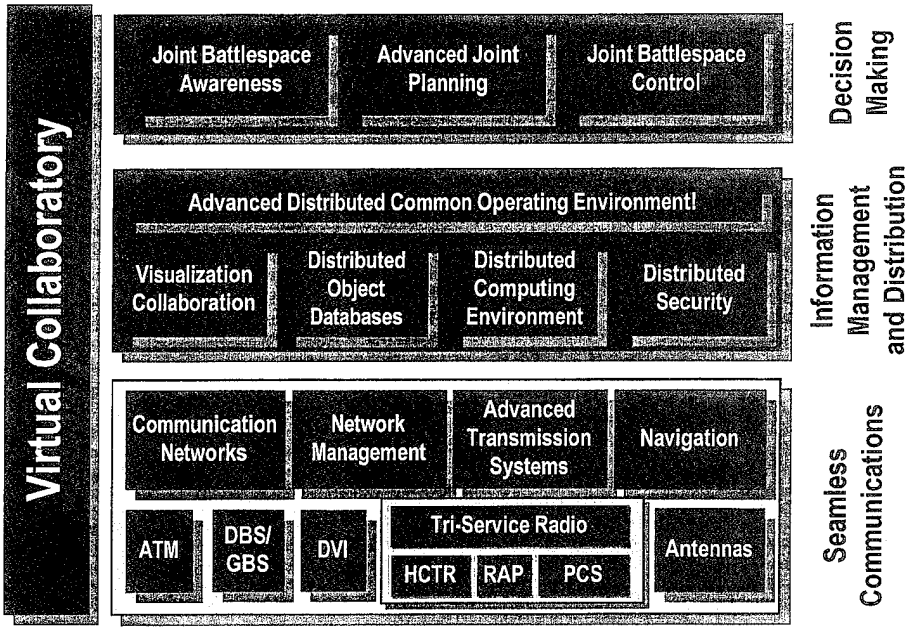
Interconnected Laboratories:
A Tool to Improve Interaction



Tri-Service Technology Focus

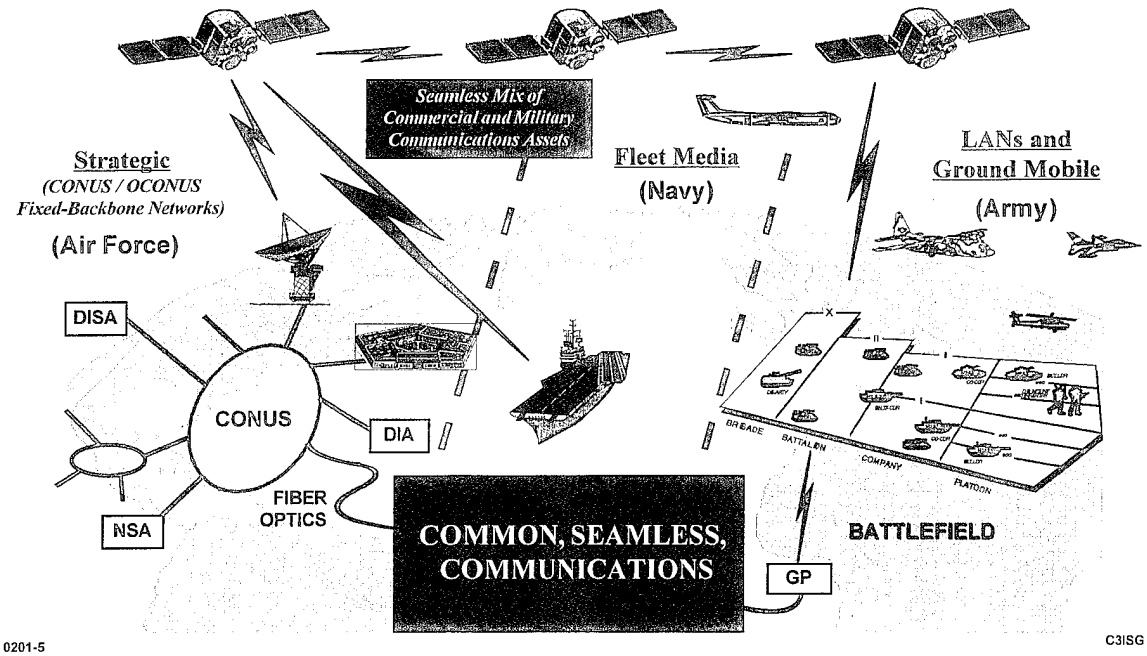
C4I for the Warrior Architecture

- Distributed
- Secure
- Survivable
- Adaptive
- Consistent in Perception for Decision Making



C3ISG inc

Seamless Global Communications

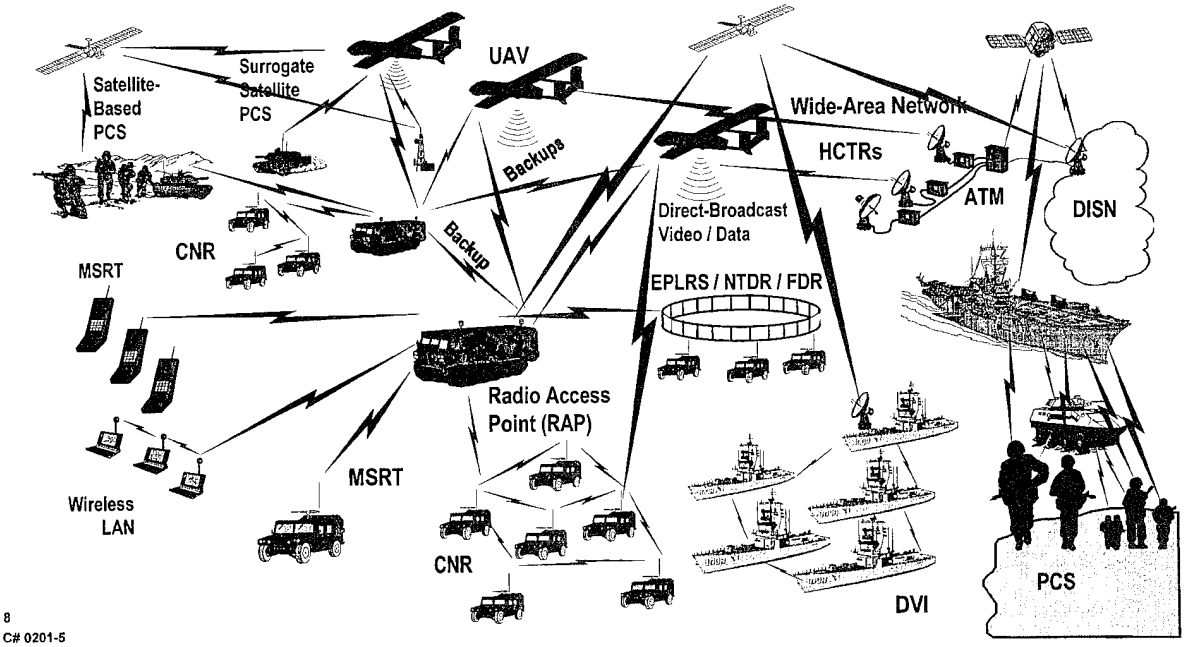


C3ISG inc

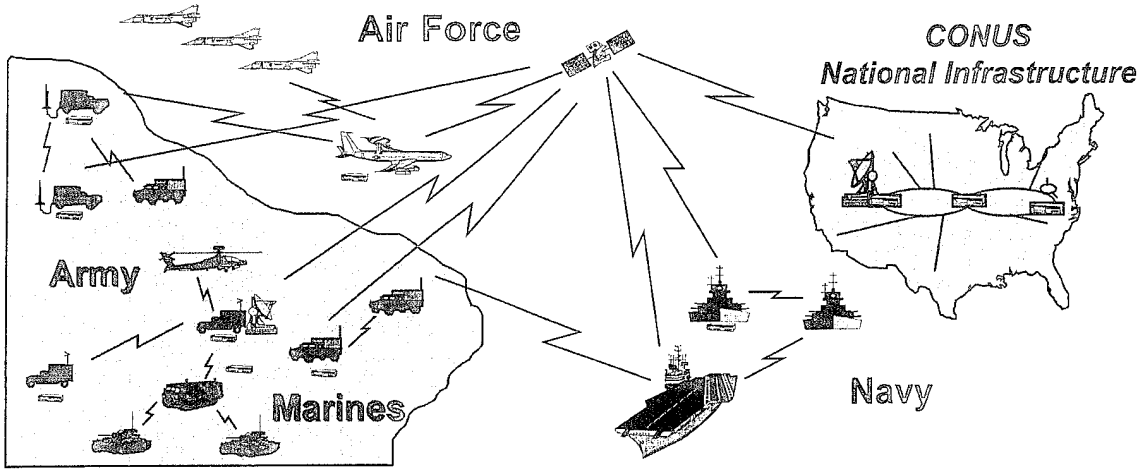
Seamless Communications
Goals

- Transparent Access to and Use of Commercial Services
- Secure Connectivity Between Theater and Sanctuary
- Utilize Military and Commercial Infrastructures
- Automatically Accommodate a Range of Transmission Media, Bandwidths, Standards, and Protocols
- Provide Uniform Information Infrastructure to Handle Voice, Data, Graphics, Imagery, and Video
- Increased Capacity to the Warfighter

Tri-Service Seamless Communications Architectural Elements



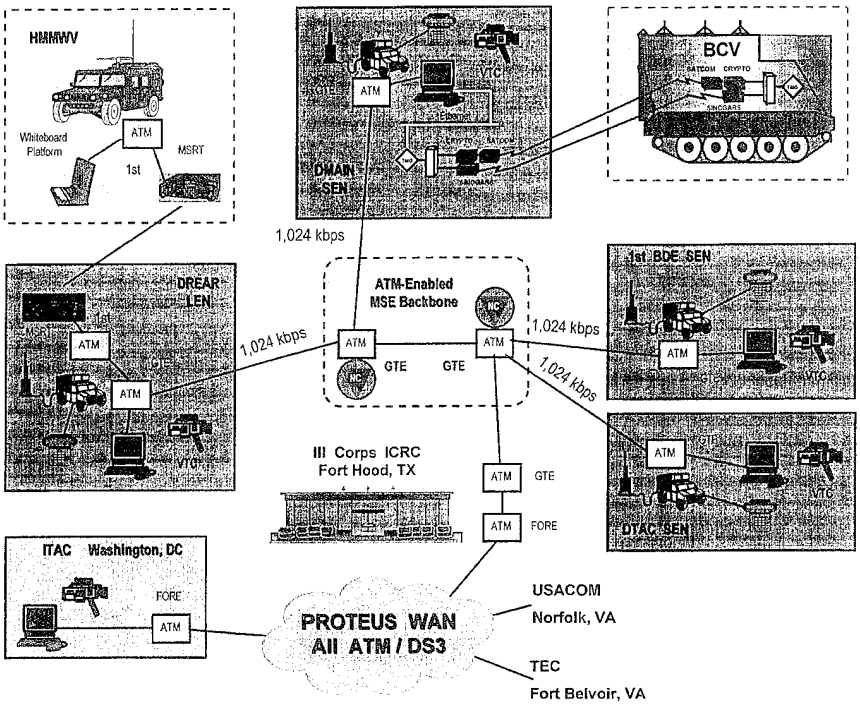
Joint ATM Architecture



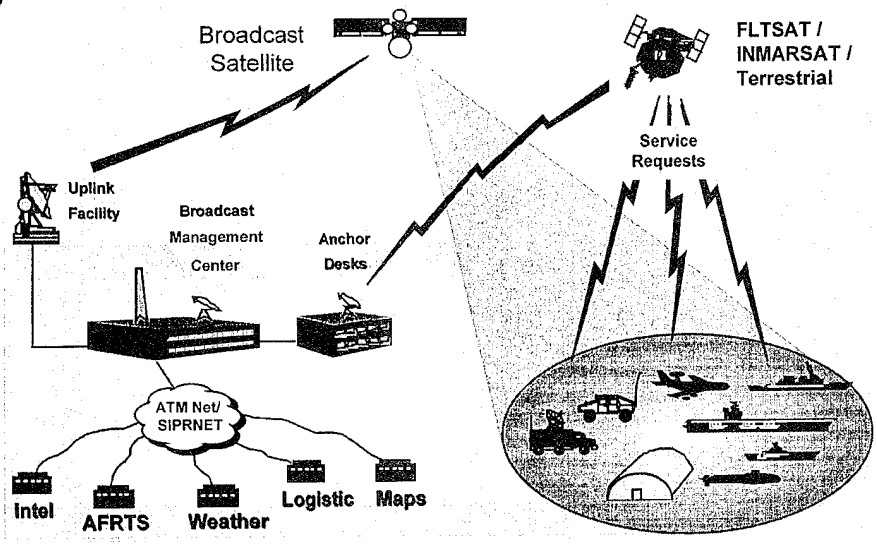
- Leverage Commercial Technologies
- Develop Enhancements to Commercial Products
- Perform Joint Testing
- Address Unique Communications Needs
  - Forward Error Correction
  - Network Management
  - Survivable Protocols

ATM-Enabled MSE Network

Unified Endeavor



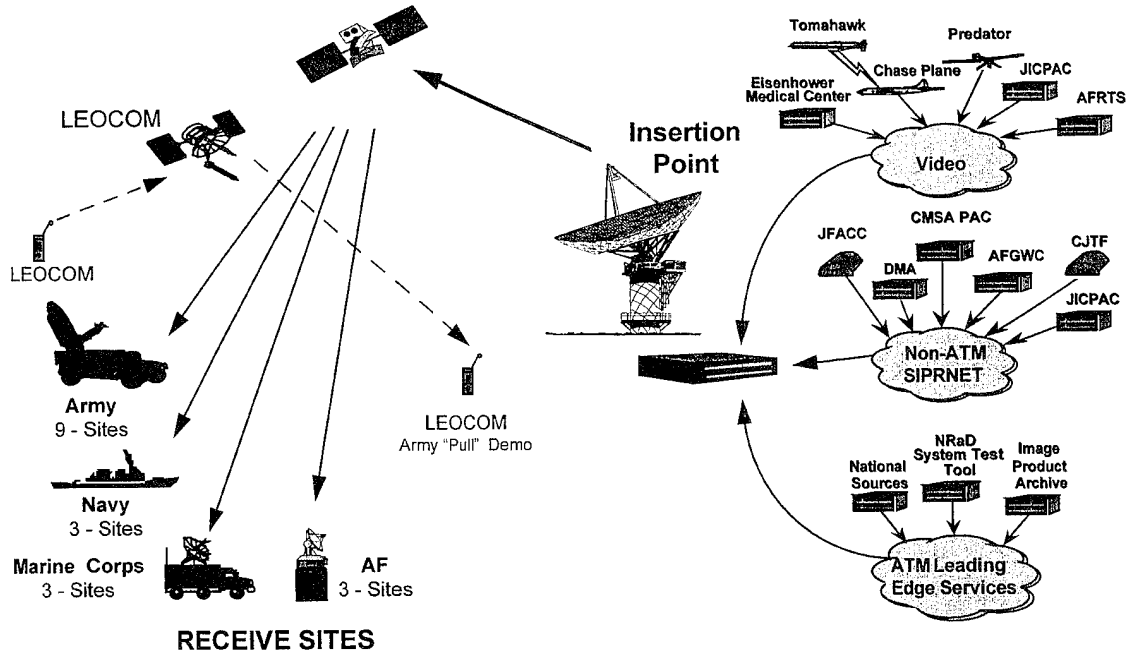
Global Broadcast Service (GBS)



- Provide High-Speed Data Dissemination
- Develop Applications and Concepts to Influence Joint GBS System Design
- Apply Low-Cost Commercial Technology to Military GBS Needs
- Offload Traffic from Legacy Communications Systems

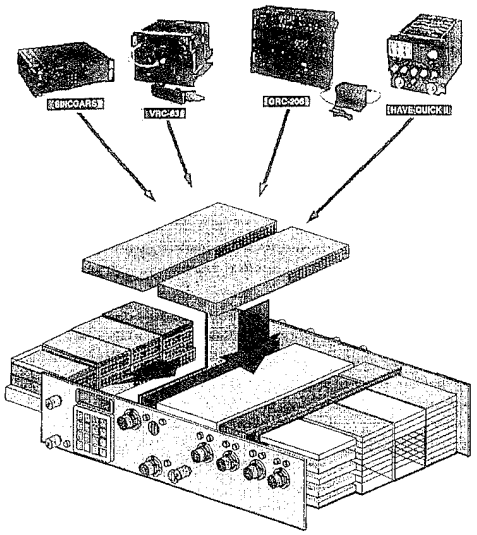
C3ISG inc

Global Broadcast System
JWID



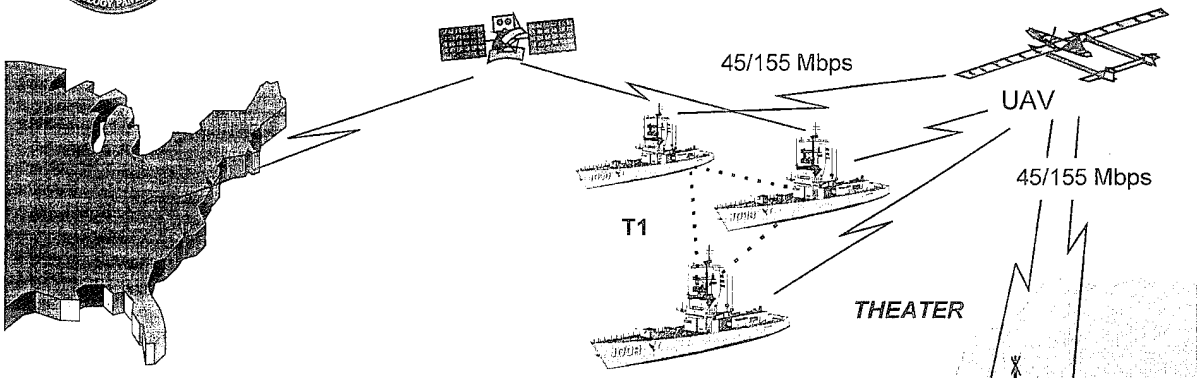
C3ISG inc

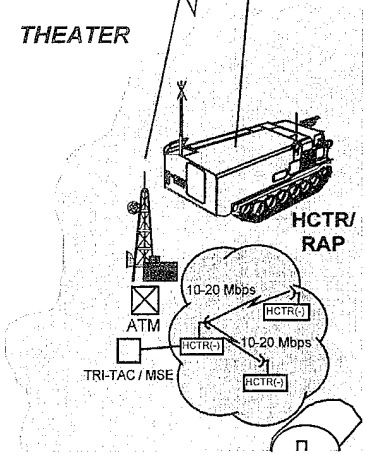
Tri-Service Radio
Objectives



- Modular, Open-System Architecture Based on Widely-Accepted Commercial Standards
- Software Re-Programmable
- 2-MHz Through 50-GHz Operations
- Interoperable With Legacy Radios
- Simultaneous Channels
- High Capacity Waveforms
- Embedded Networking Capability
- LPI/LPD Capable
- Secure and Anti-Jam
- GPS and Cellular Embedded
- Commercial Market Potential

High Capacity Trunk Radio/ Radio Access Point (HCTR/RAP)

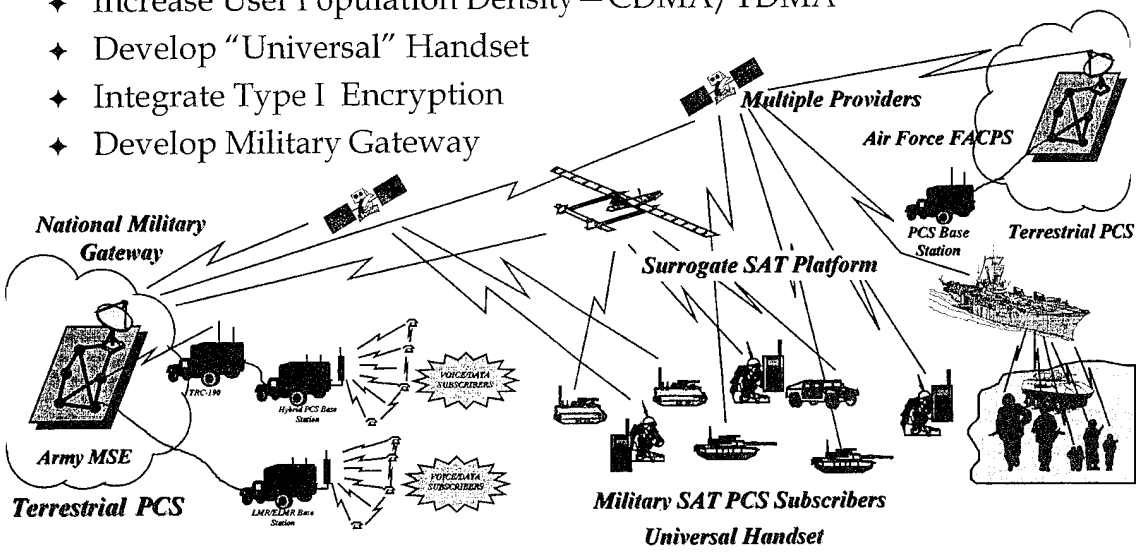


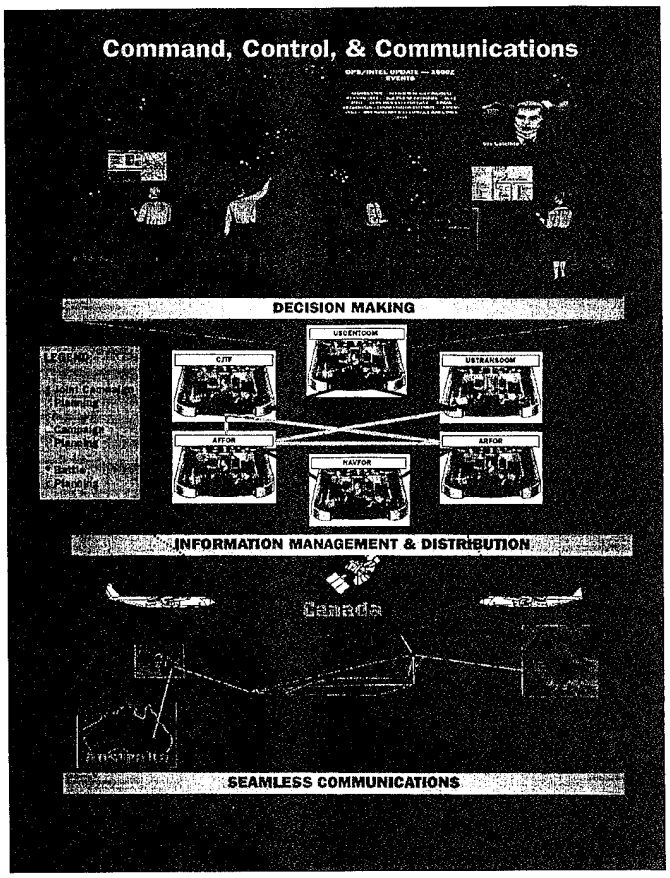


- Multimedia LOS Transmission at Trunking Rates of 1.544 to 155.52 Mbps
- Wide-Bandwidth ATM-to-ATM Switch Interconnections Up to 40 km Links
- On-the-Move Operation Over Land and Sea
- High Reliability and Low Delay Times for Efficient Transmission of ATM cells

Personal Communications System

- Use Commercial PCS for Mobile Users – Data Capability to 125 kbps
- Increase User Population Density – CDMA/TDMA
- Develop "Universal" Handset
- Integrate Type I Encryption
- Develop Military Gateway

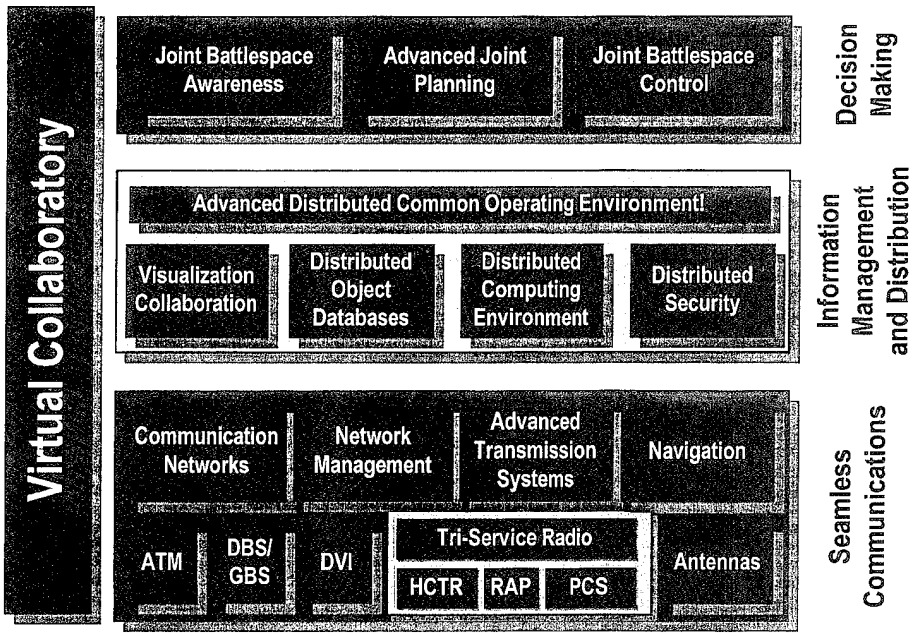




Tri-Service Technology Focus

C4I for the Warrior Architecture

- Distributed
- Secure
- Survivable
- Adaptive
- Consistent in Perception for Decision Making



C3ISG inc

Information Management and Distribution Goals

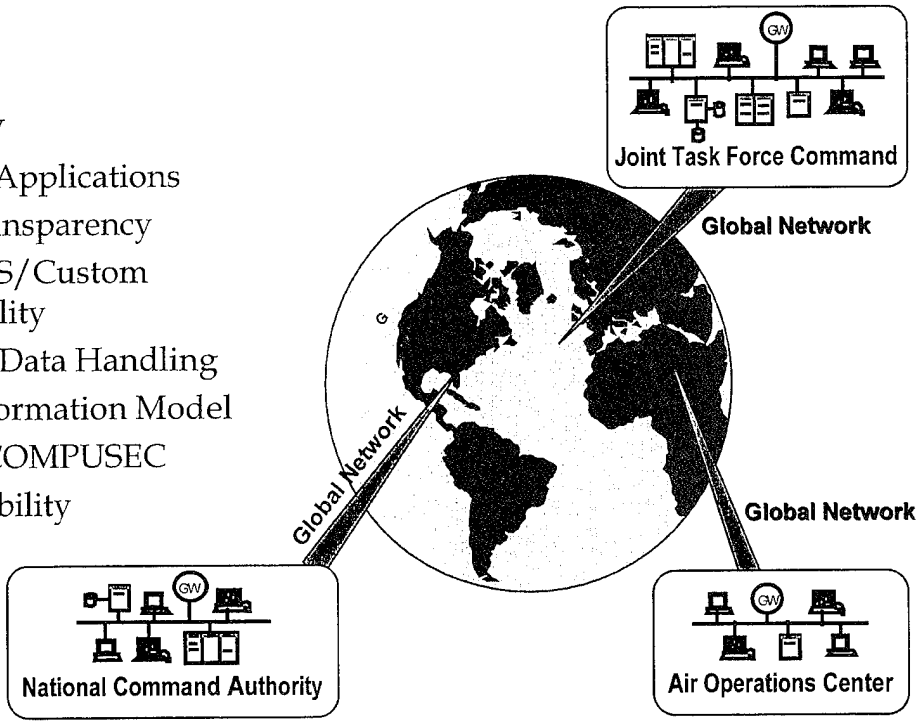
- Globally Distributed, Dynamically Reconfiguring Heterogeneous Information Infrastructure Which Supports
  - Location Transparency
  - Time-Critical Processing
  - Multilevel Security
- Accommodation of Hybrid Configurations Which Support
  - Fixed and Mobile Nodes
  - Multi-Echelon Networks
- Distributed Database Management Which Supports
  - All Classes of Data
  - Consistency, Concurrency, and Fault Tolerance
- Individual and Group Interfaces Which Support
  - Natural User Interfaces
  - Collaborative Decision Making

C3ISG inc

C3 Information Infrastructure

Functionality

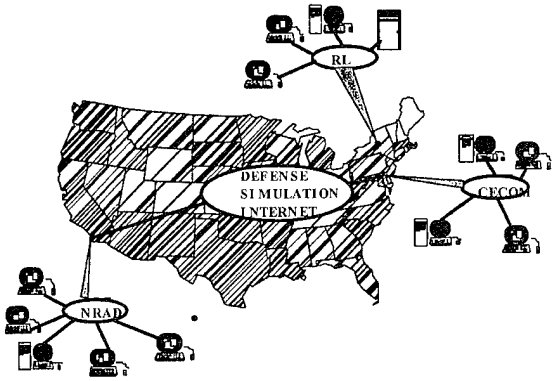
- Distributed Applications
- Location Transparency
- COTS/GOTS/Custom Interoperability
- Multimedia Data Handling
- Uniform Information Model
- COMSEC/COMPUSEC
- Reconfigurability



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C3ISG inc

JDL Tri-Service Distributed Computing Testbed



- **Supports Joint Development**
  - **AF Lead — Distributed Computing Environment, Multi Media DBMS, and Distributed System Security**
  - **Navy Lead — Federated DBMS, Secure Protocols**
  - **Army Lead — Low Bandwidth Distributed Systems**

DISTRIBUTED SIMULATION

DISTRIBUTED HETEROGENEOUS DATABASE MANAGEMENT

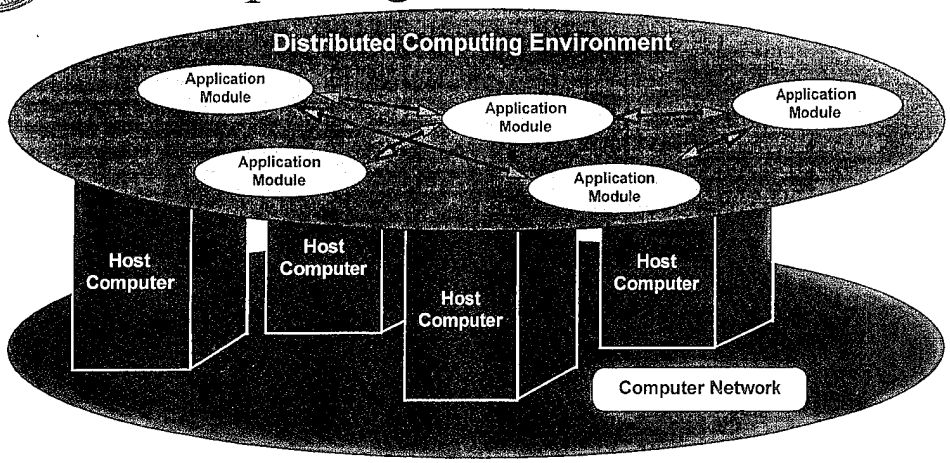
LOCATION TRANSPARENT ACCESS TO MODULES AND DATA

RECONFIGURABLE PARTITIONING

20
C# 0201-5

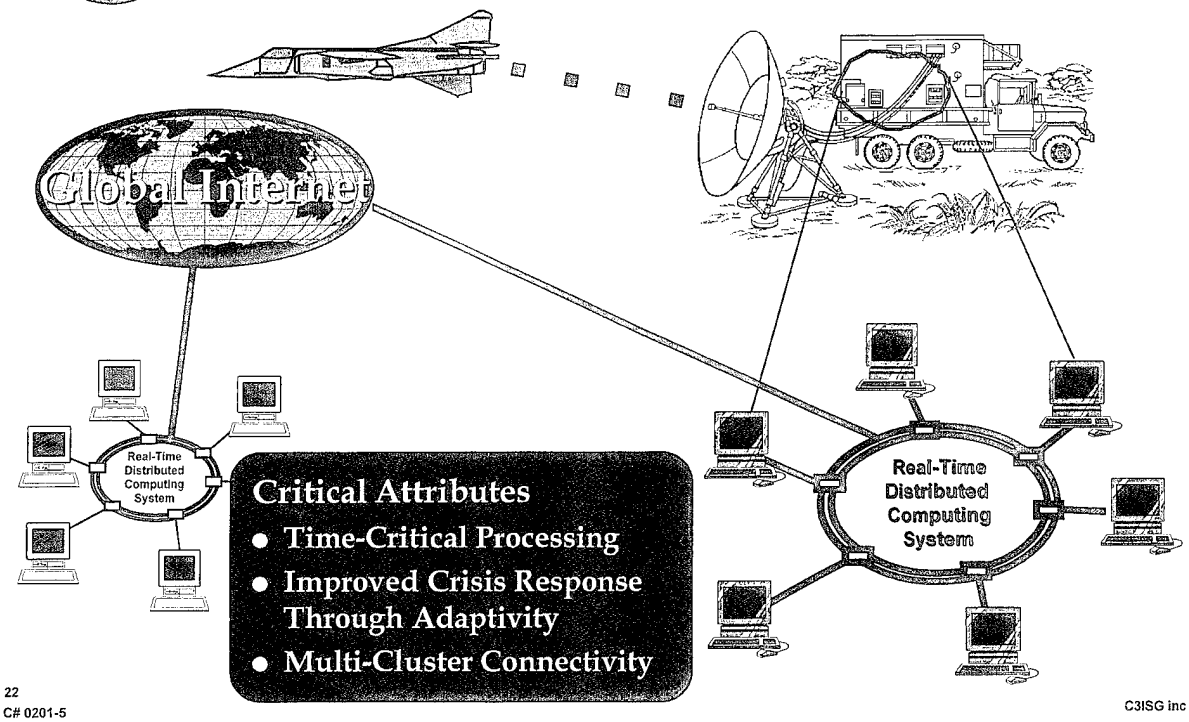
C3ISG inc

Heterogeneous Distributed Computing Environment



- Integration of Distributed Processing Elements
- Environment for Creation of Distributed Applications
- Environment for Control and Execution of Distributed Applications
- Location-Independent Access to Processes and Data

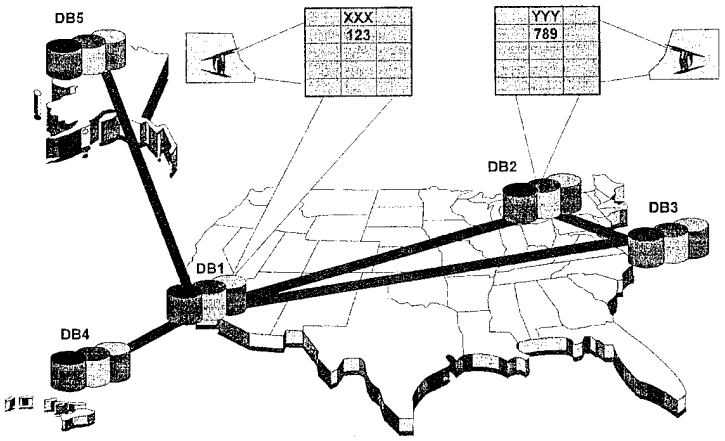
Real-Time Distributed Computing Environment



Critical Attributes

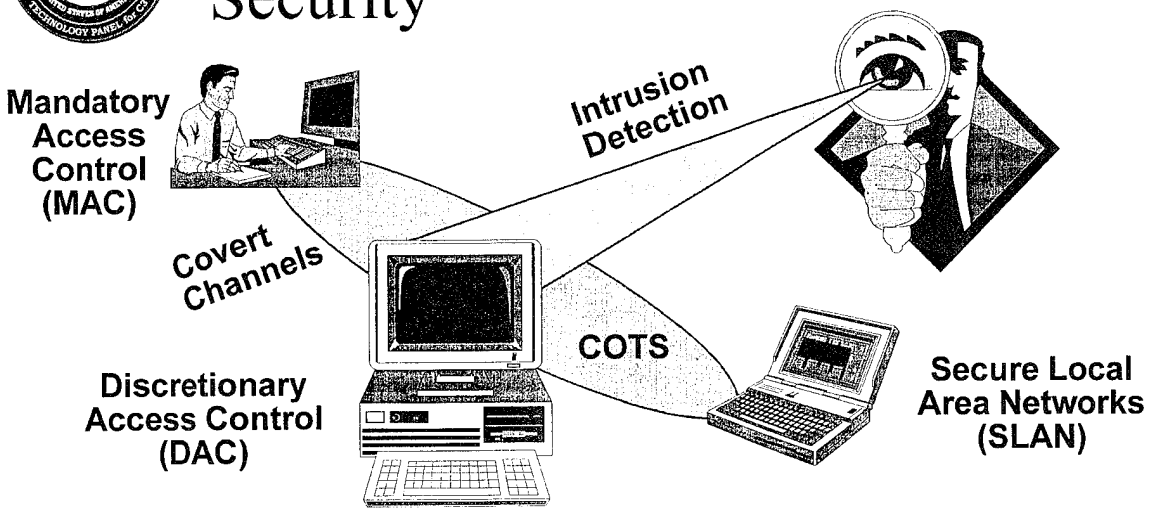
- Time-Critical Processing
- Improved Crisis Response Through Adaptivity
- Multi-Cluster Connectivity

Distributed Database Management Systems



- Location Transparency
- Concurrent Access
- Consistency
- Multimedia Data
- Integrity
- Fault Tolerance

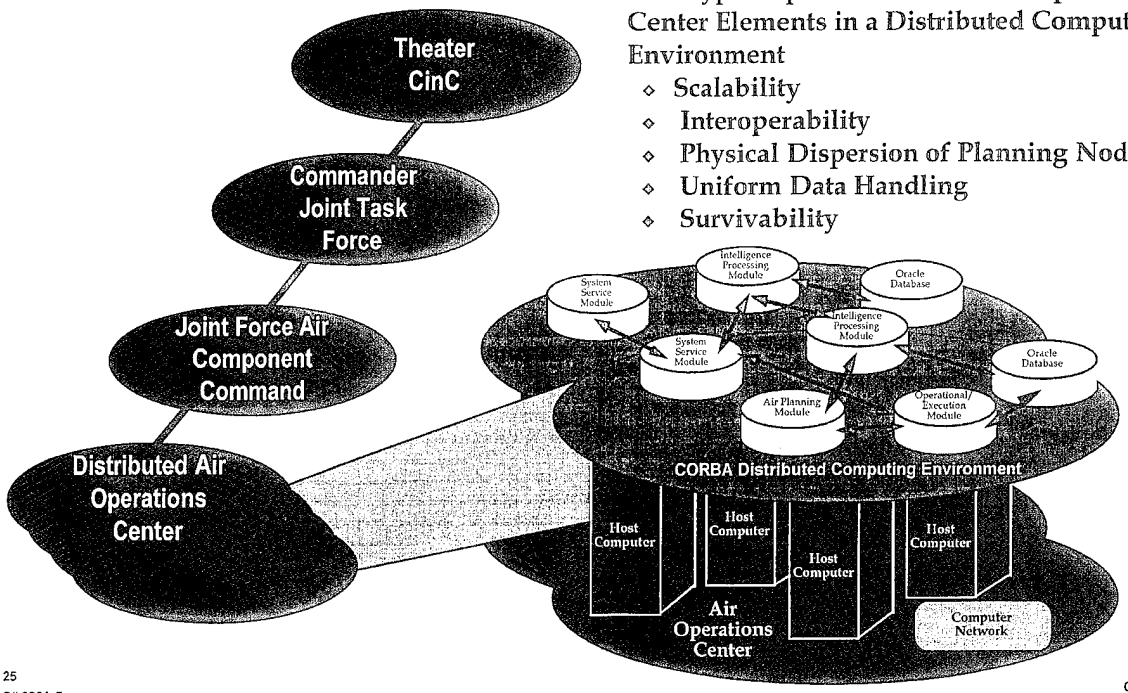
Multi-Level Information System Security



- Secure Distributed Computing Environments
- Secure Database Management Systems
- Adaptive Security Policy
- Commercial Off-the-Shelf (COTS)
- Tools

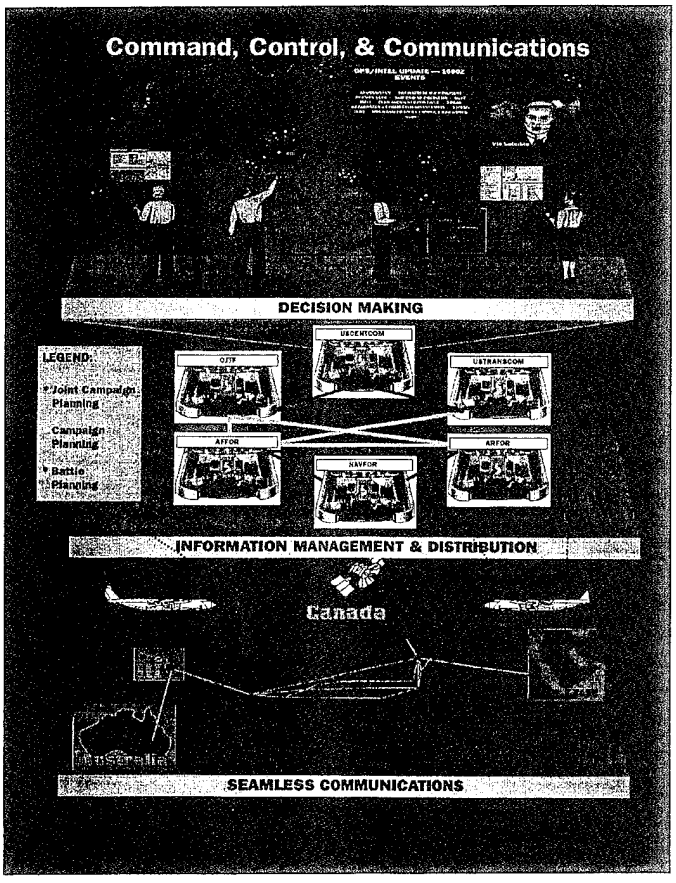
Distributed Air Operations Center

- Prototype Implementation of Air Operations Center Elements in a Distributed Computing Environment
  - Scalability
  - Interoperability
  - Physical Dispersion of Planning Nodes
  - Uniform Data Handling
  - Survivability



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C3ISG inc



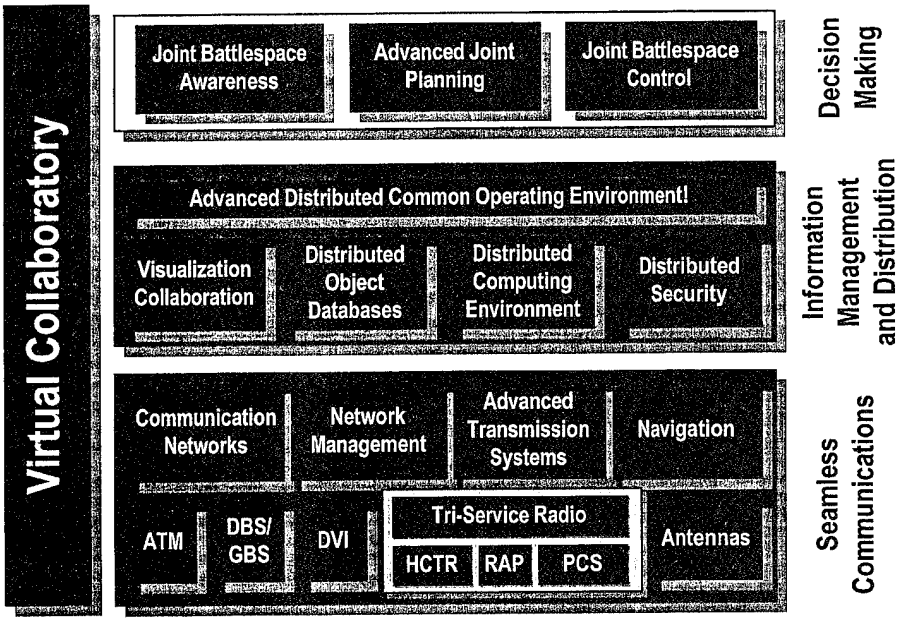
26
C# 0201-5

C3ISG inc

Tri-Service Technology Focus

C4I for the Warrior Architecture

- Distributed
- Secure
- Survivable
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- Consistent in Perception for Decision Making



C3ISG Inc

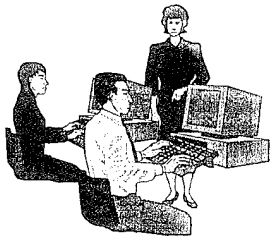
Decision Making Goal/Scope

- *Develop the Technology for a Real-Time Joint Service, Common Planning and Execution System*
- *The Core will be a Common Operating Environment (COE)*
- *Activities Address Three Technology Efforts*
  - Tactical Picture and Situation Assessment
  - Planning and Resource Allocation
  - Dynamic Execution Management

C3ISG Inc

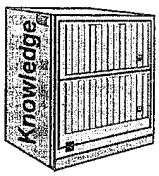
Decision Making Vision

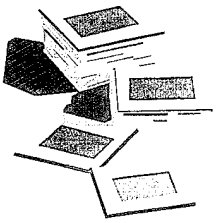
Ascending the Cognitive Hierarchy



Understanding
- Cognitive/Collaborative

Knowledge
- Machine Processing
- Reasoning





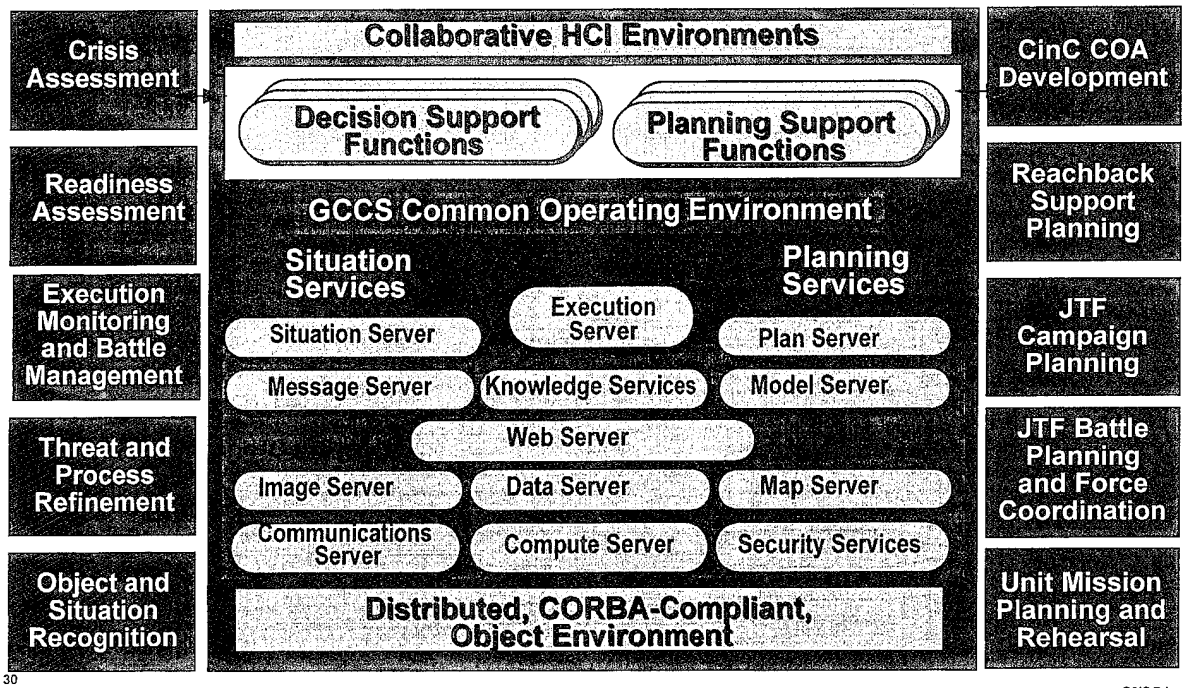
Information
- Raw Data
- Pre-Processed

. . . Consistent Across Echelons, Missions, and Services

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C# 0201-5

C3ISG inc

Common Mission Planning Architecture

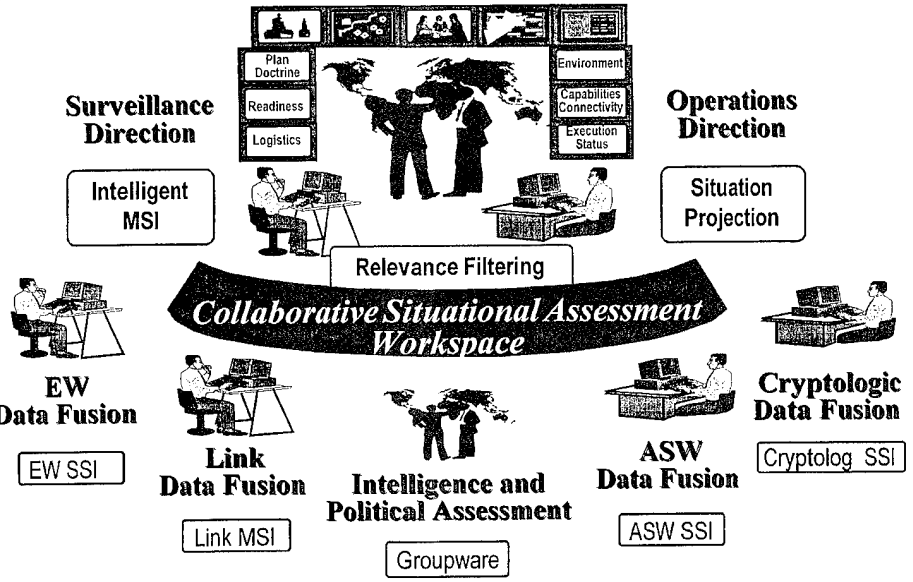


30
C# 0201-5

C3ISG inc

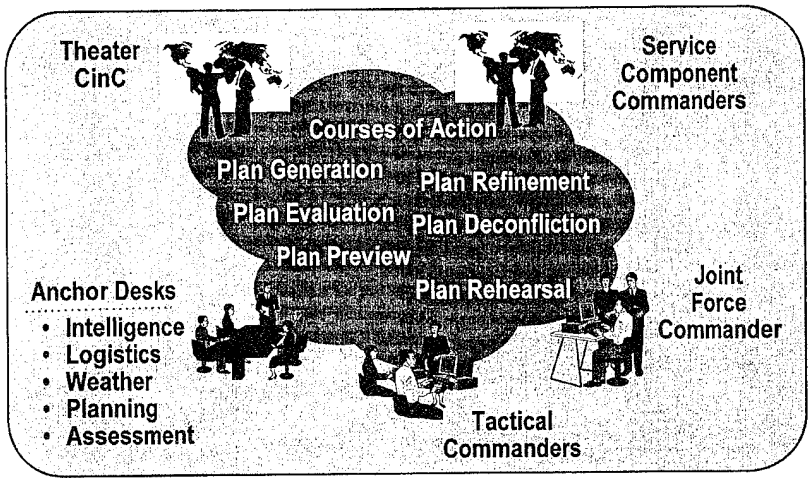
Battlespace Awareness Vision

The "Virtual Situation Room"



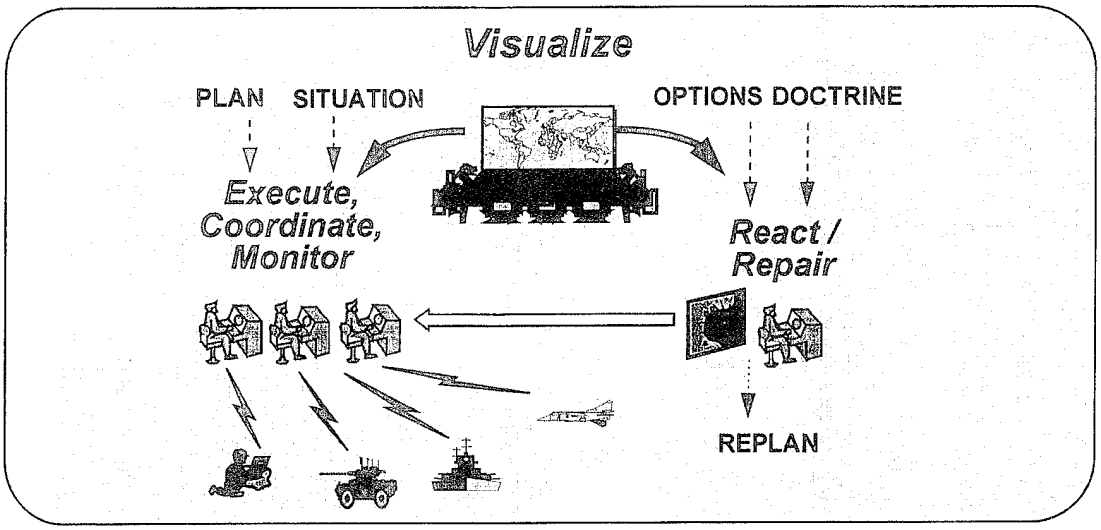
- ✦ Timely, Consistent Understanding of the Battlespace
- ✦ Available to All Warfighters
- ✦ Expedites Planning and Execution Decisions
- ✦ Reduces Fratricide

Advanced Joint Planning Vision



- ✦ Dynamic, Integrated Planning
- ✦ Common Joint Planning "Core"
- ✦ Commonality Reduces Acquisition and Support Costs
- ✦ COA Development Time Reduced at All Echelons
- ✦ In-Theater Logistics Reduced

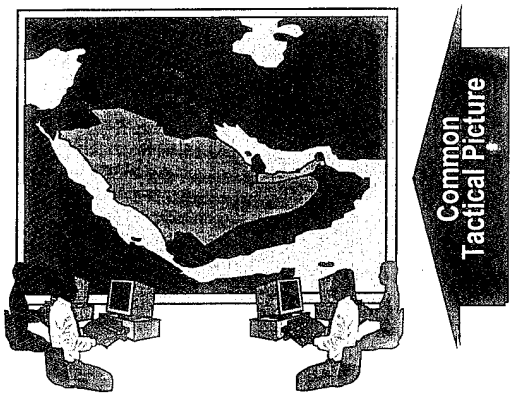
Joint Battlespace Control Vision



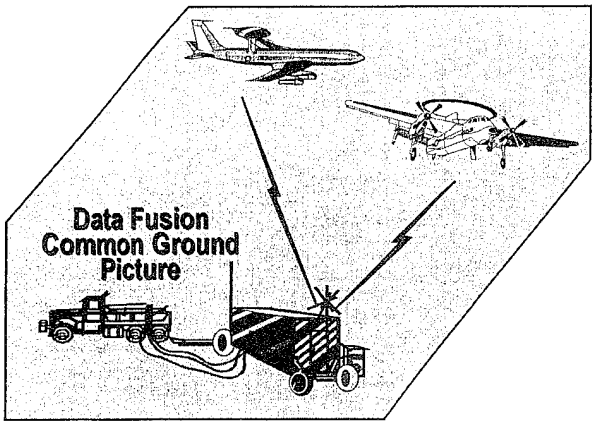
- Automated, Reactive COA Generation
- Collaborative, Real-Time Resource Employment
- Dynamic Plan Repair—Retasking, Retargeting, and Deconfliction

Technology Demonstration of Theater / Force Tactical Picture

Battlefield Visualization (Army)

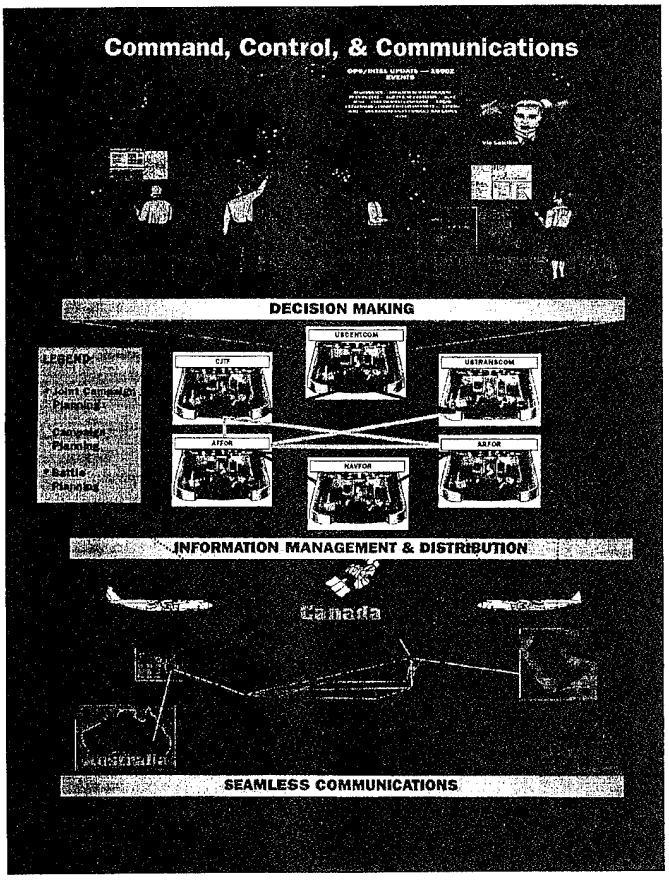


Common Ground Station (Army)*

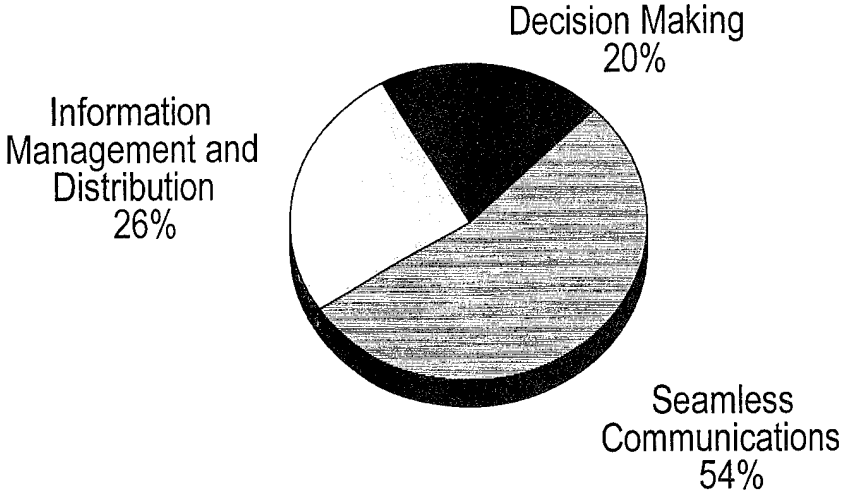


- Advanced Visualization and 3-D
- Direct Broadcast Satellite Displays
- Feature Extraction and Compression
- Advanced Situation Awareness

* = Completes in FY96



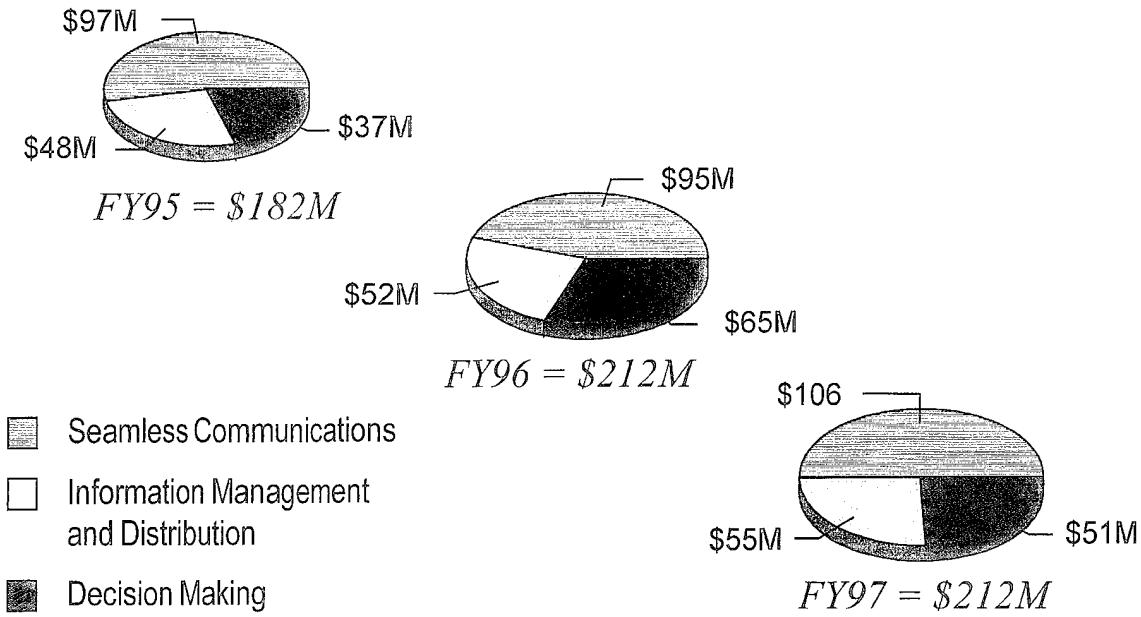
Funding Breakout by Technology Area



(Based on Final 1995 DDR&E C3 TAP, FY95 Through FY98)

Funding by Technology Subarea

(Based on Final 1995 DDR&E C3 TAP)



Summary/Conclusions

- Considerable Improvement in Integration of Programs
  - Continue Emphasis to Institutionalize
  - Make Sure Tri-Service Engineers "Buy In"
- Shared Common Goal of Global, Multimedia Information Flow to Enhance Decision Making
- Recognize Leveraging Multiplies Service Effectiveness
- Capitalize on Commercial Hardware and Standards for Commonality
- Use Collaborative Experimentation to Increase Joint Activities

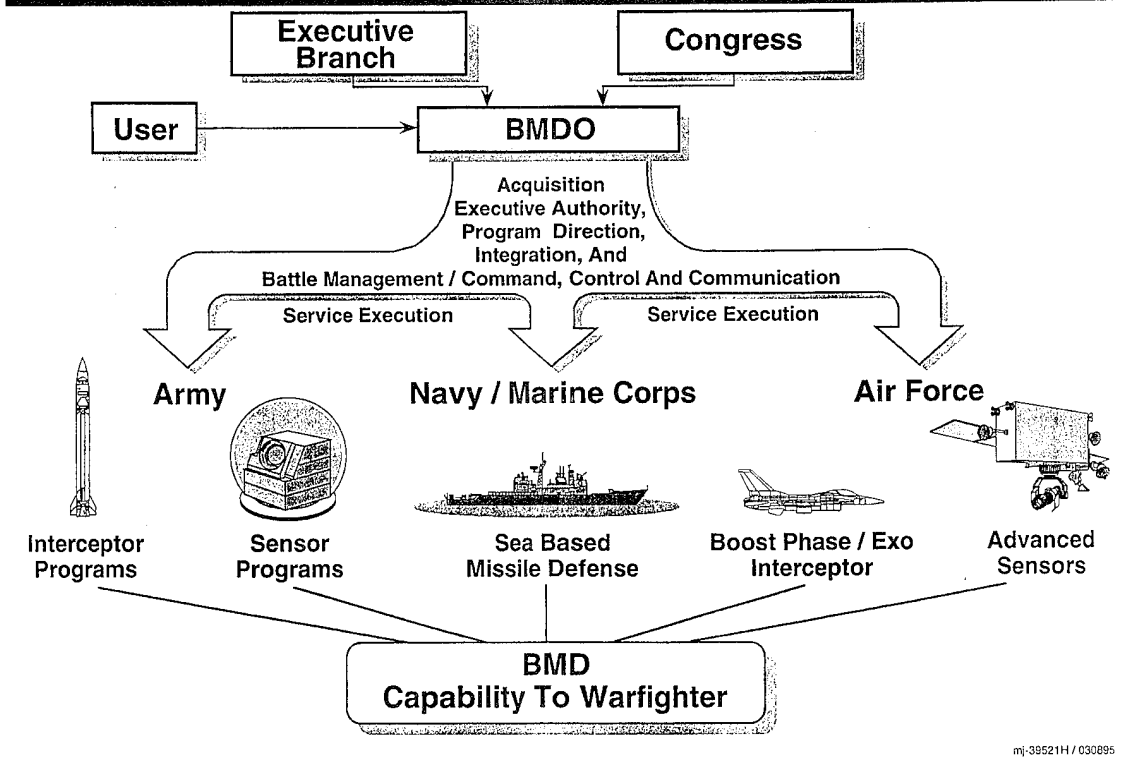
BMDO C^3 And Information Management Programs 1995 Advance Planning Briefing To Industry

29 NOV 95

LTG Malcolm R. O'Neill, USA
Director
Ballistic Missile Defense Organization

mj-58325 / 112795

BMD PROGRAM



mj-39521H / 030895

BALLISTIC MISSILE PROLIFERATION

Theater

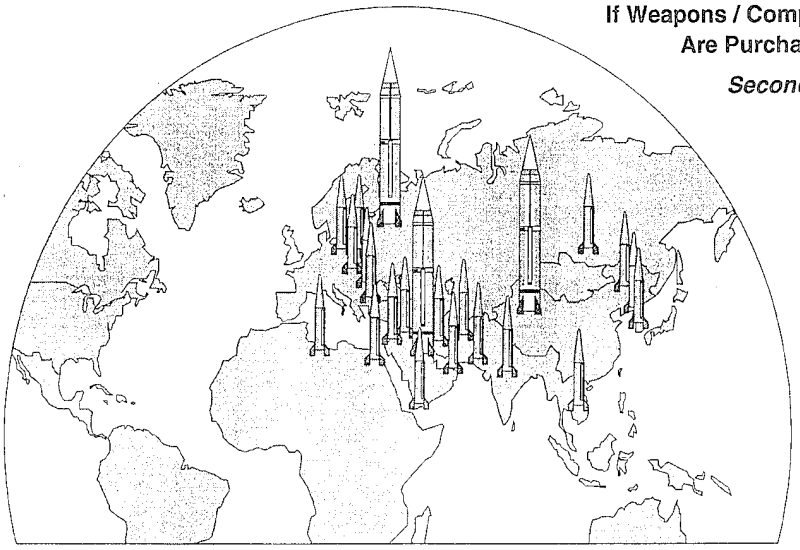
- Threat Is Here And Now
- Threat Is Proliferating

First Priority

Homeland

- FSU And Chinese Threat Here But Attack Is Unlikely
- ROW Threat Projected For First Decade Of Next Century (Sooner If Weapons / Components Are Purchased)

Second Priority



mj-41811 / 061394

FY 95 BALLISTIC MISSILE DEFENSE PROGRAM

Theater Missile Defense

- First Priority
- Acquisition
- $2,332 Million

(80%)

National Missile Defense

- Second Priority
- Technology Readiness Program
- $397 Million

(14%)

Advanced Technology

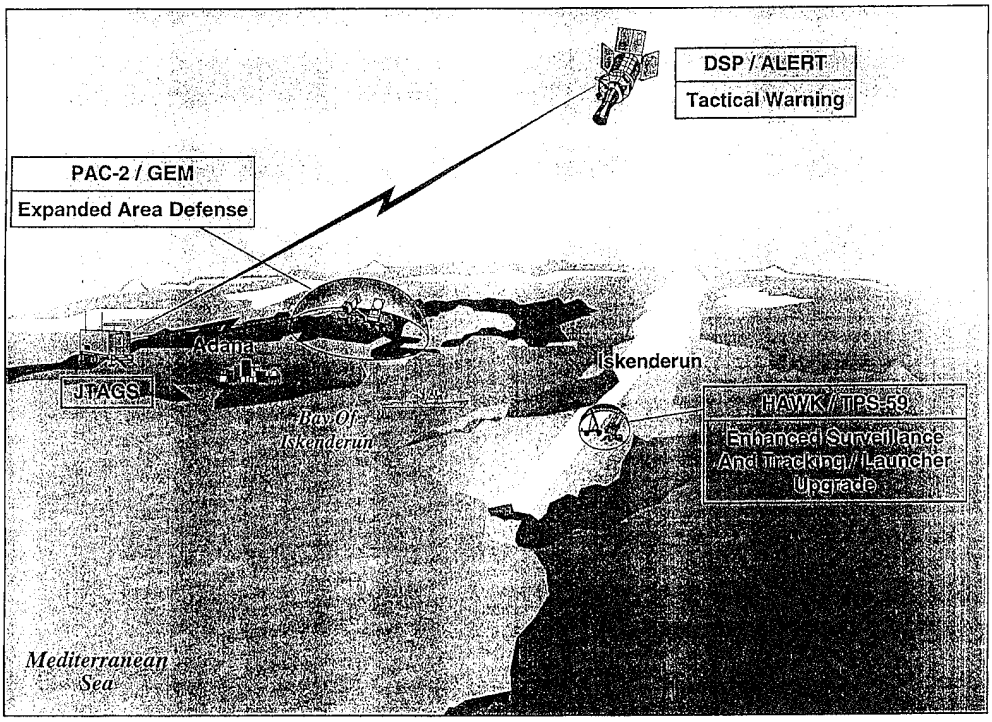
- Third Priority
- Component And Advanced Concepts R&D
- $184 Million

(6%)

Note: Includes Administrative / Management Costs Of $186 Million

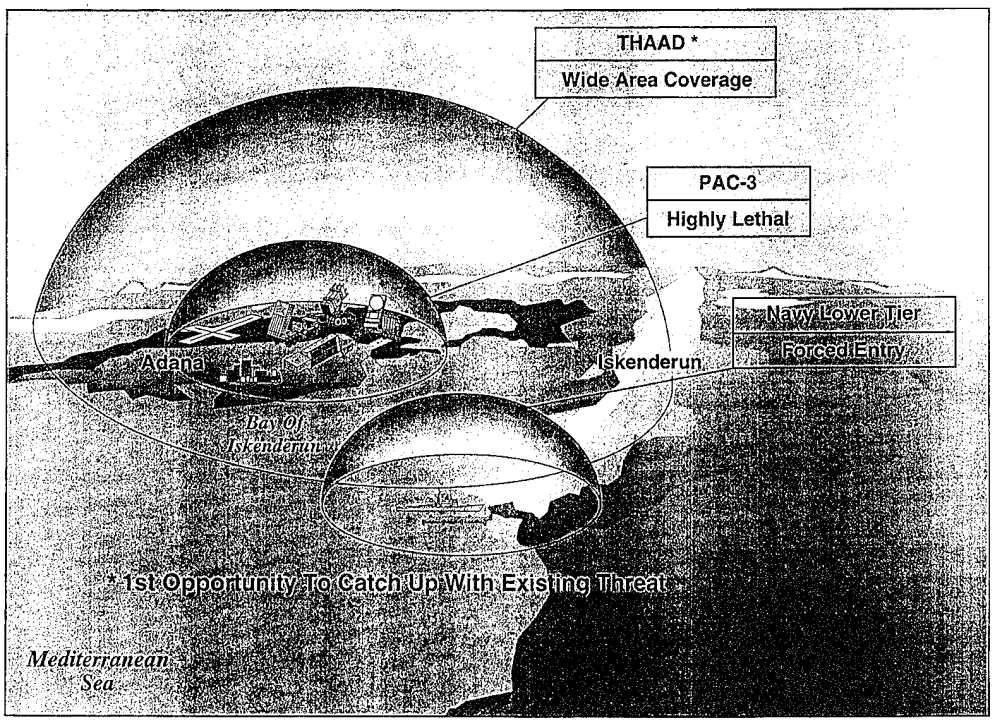
mj-50787P / 111595

CURRENT BMDO FIELDED CAPABILITIES - TMD



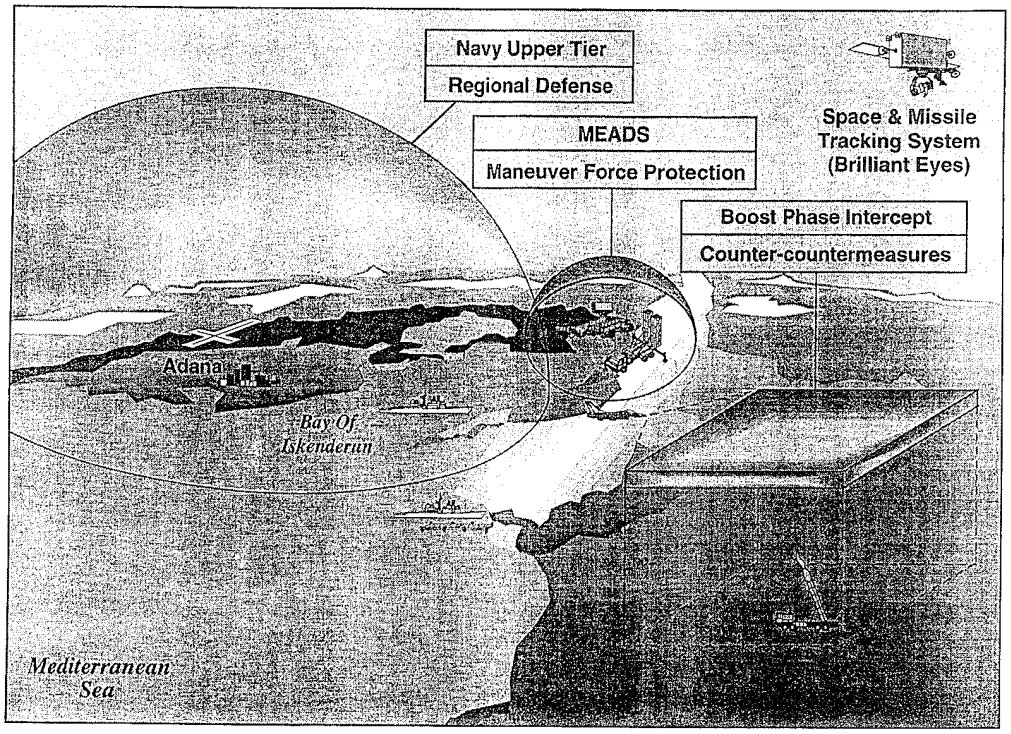
mj-55059C / 111595

MIDTERM CAPABILITIES - TMD (FY 97-2002)



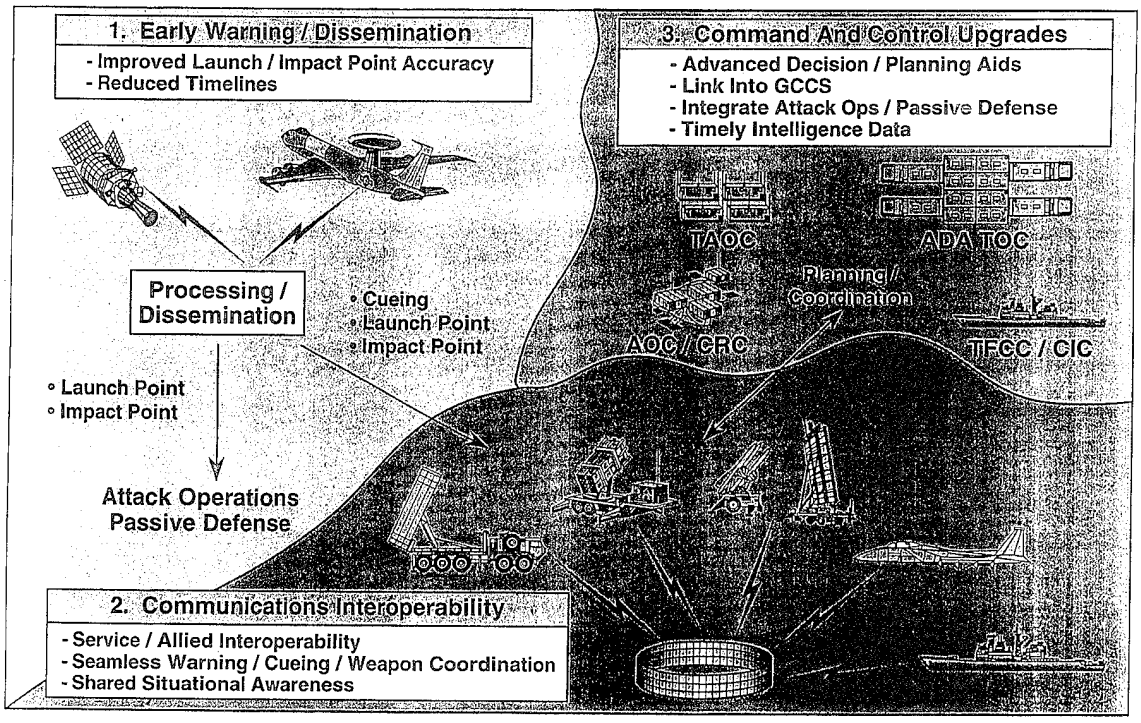
mj-51901H / 111595

ADVANCED CONCEPTS - TMD
(FY 2002+)



mj-51902E / 111595

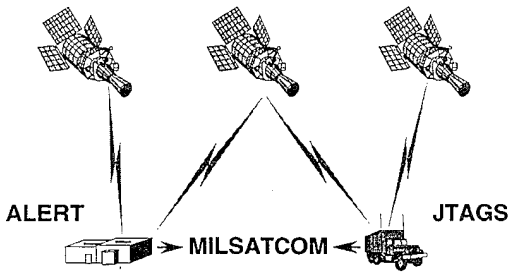
TMD C^3 PROGRAM
MAJOR THRUSTS AND OBJECTIVES



mj-49095 / 101995

EARLY WARNING AND DISSEMINATION

Stereo DSP Processing



AWACS EAGLE
IRST And Laser Ranger



ALERT / JTAGS
Ground Processing Stations

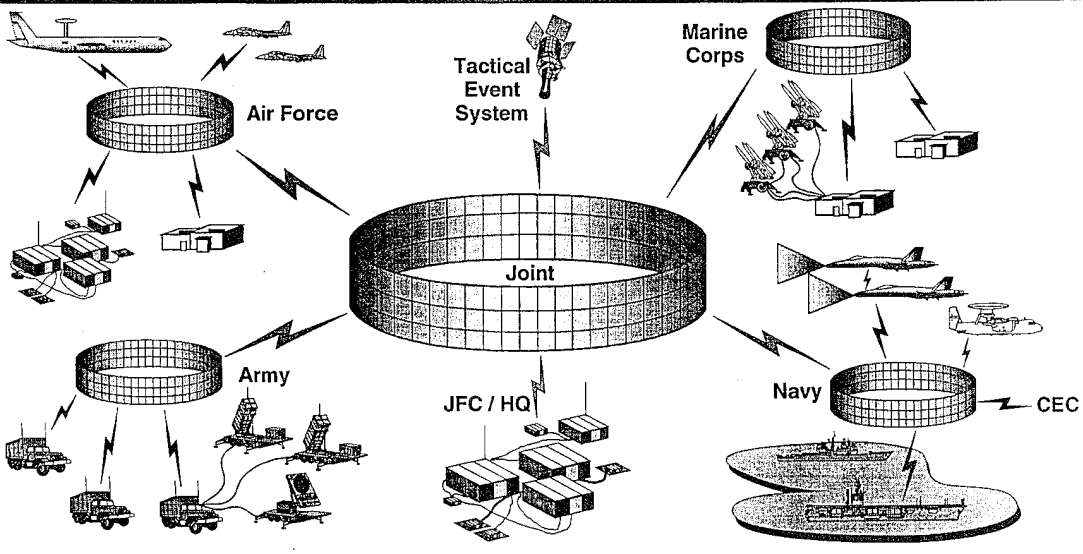
- Prime Contractor: Aerojet
- Executing Agents
  - Air Force (ALERT)
  - Army (JTAGS)

Dem / Val Program

- Prime Contractor: Boeing
- Major Subcontractor: Texas Instruments
- Executing Agent: Air Force

mj-49775D / 112195

COMMUNICATIONS INTEROPERABILITY
JOINT DATA NETWORK: TADIL-J

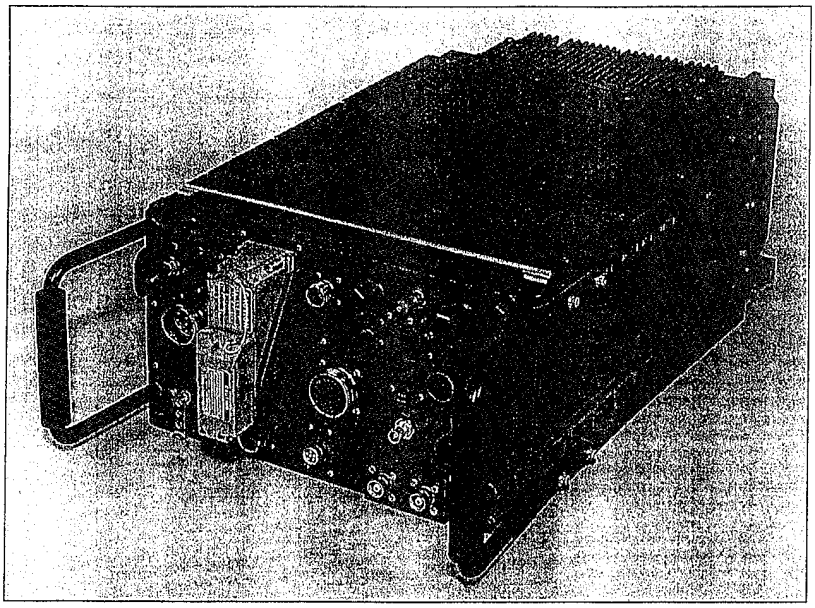


- Based On JTIDS / TADIL-J (Link 16)
- Supports ASD C^3I Tactical Data Link Policy

JTIDS Radios	*Host Platform Integration*
• Prime Contractors: GEC Marconi, Rockwell Collins	• Prime Contractors: Many
• Executing Agent: Air Force	• Executing Agents: Services

mj-31034N / 112795

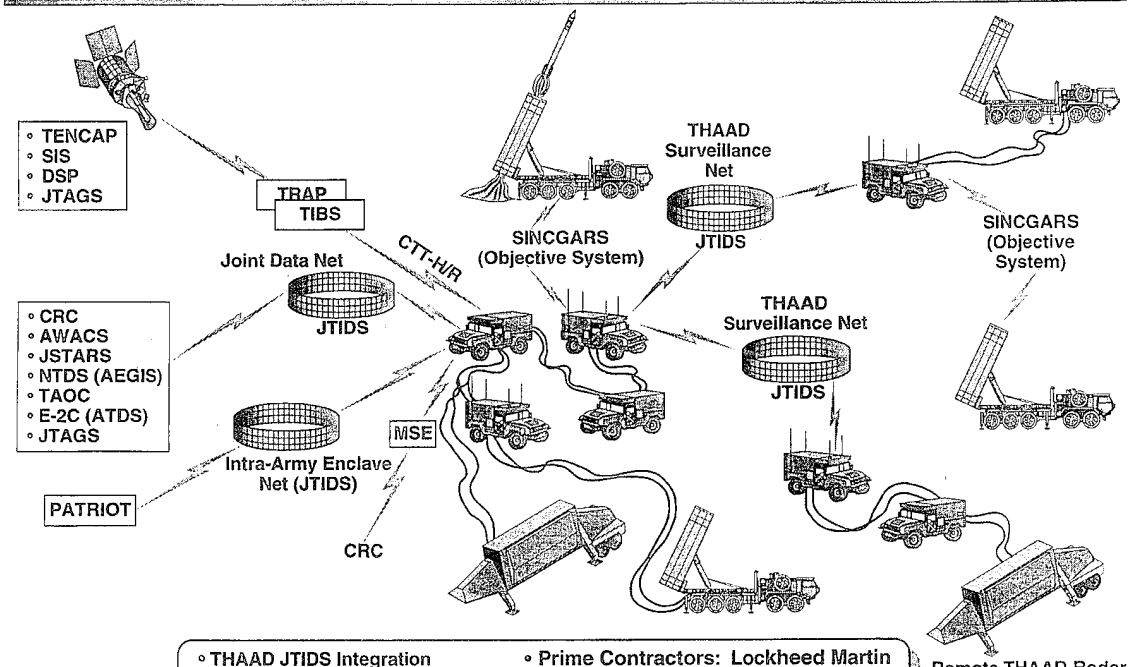
JTIDS CLASS 2M TERMINAL



- FY 96 BMDO Plan: 35 Units
- Customer: Army PATRIOT And THAAD Programs
- Executing Agent: Air Force
- Prime Contractor: GEC Marconi
- Subcontractor: Rockwell Collins

mj-57956B / 112795

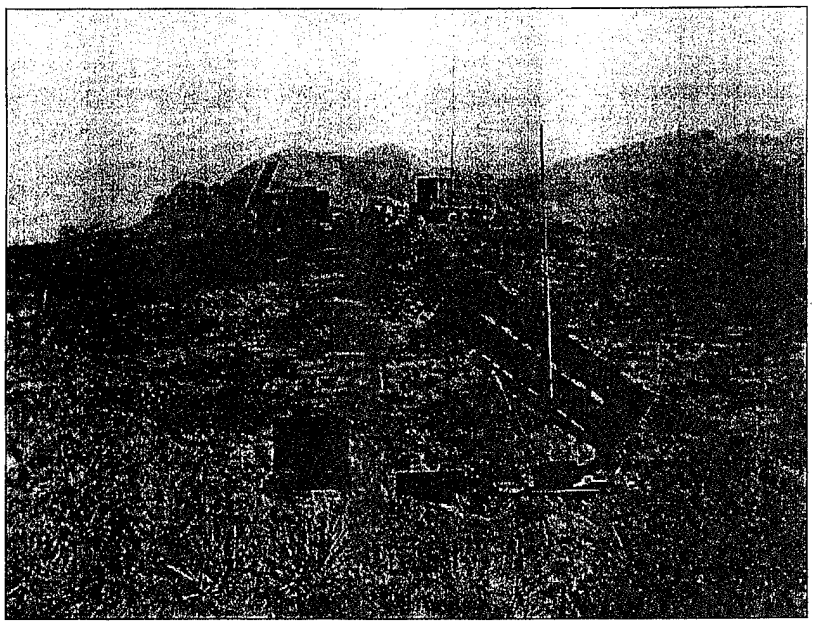
THAAD BM/C^3 ARCHITECTURE



- THAAD JTIDS Integration
  THAAD Ops Shelters Comm / ADP
  THAAD Radar
- Prime Contractors: Lockheed Martin
  Raytheon
- Executing Agent: Army

mj-52520C / 112795

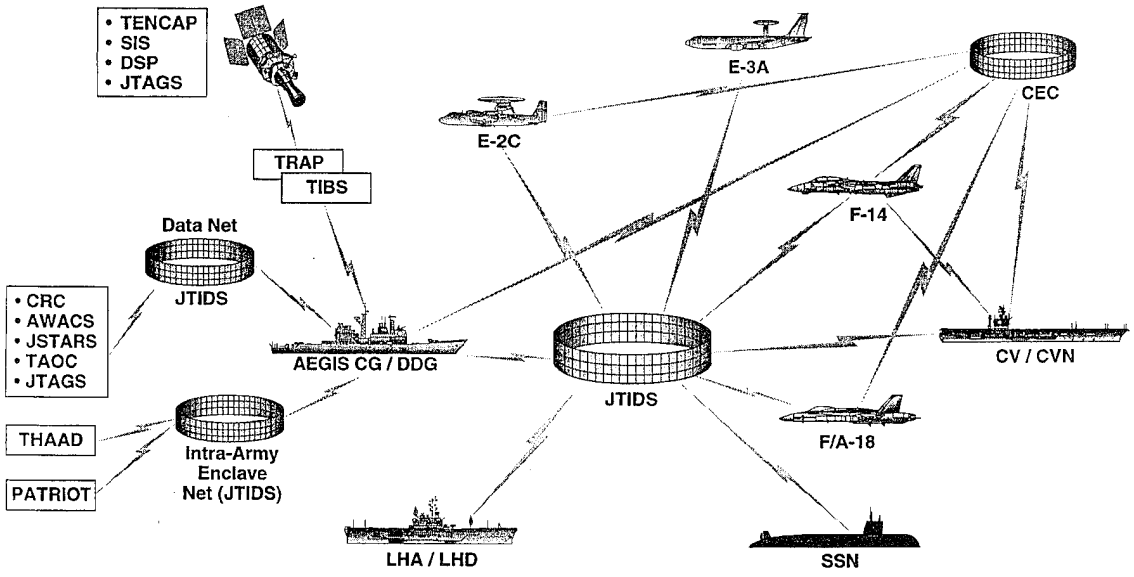
PATRIOT



- JTIDS Integration
- Prime Contractor: Raytheon
- Executing Agent: Army

mj-38007F / 112195

AEGIS TMD BM/C^3 ARCHITECTURE

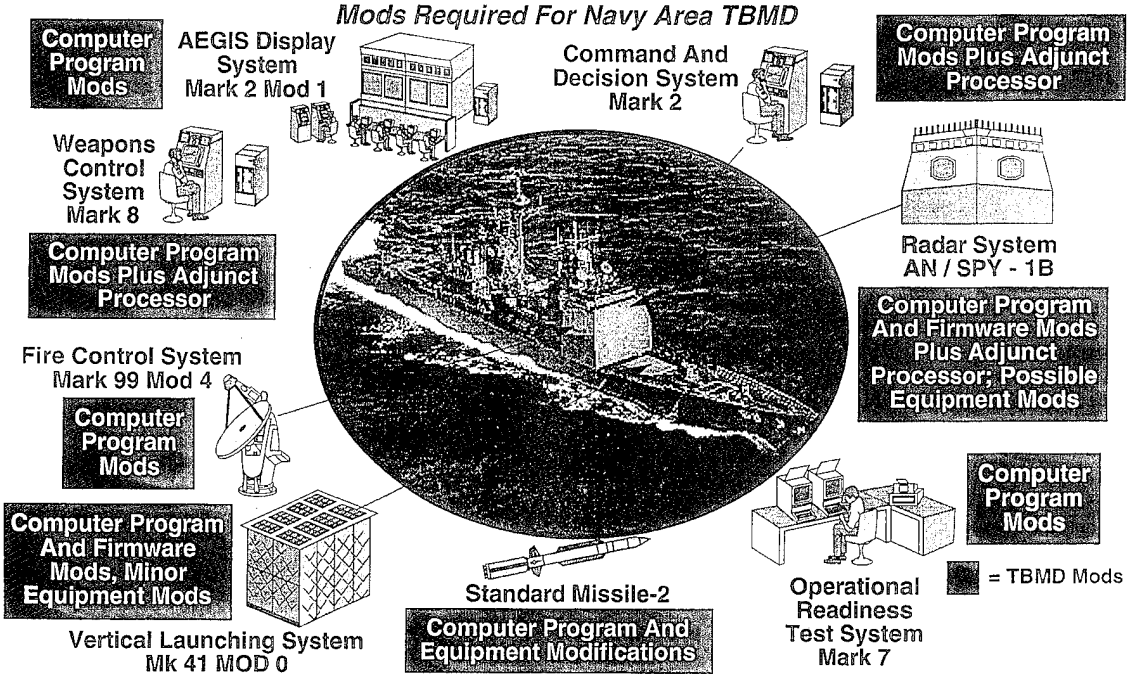


- JTIDS Integration: Platforms - AEGIS CG / DDG, Carriers, F/A-18, F-14, E-2C, Submarines, Large Deck Amphibious Ships
- Prime Contractors: Many
- Executing Agent: Navy

mj-58703 / 112795

AEGIS WEAPON SYSTEM MARK 7

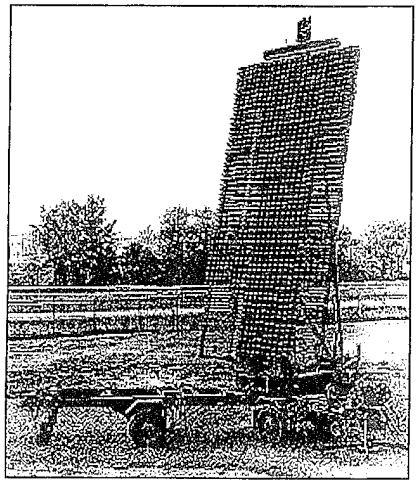
Mods Required For Navy Area TBMD

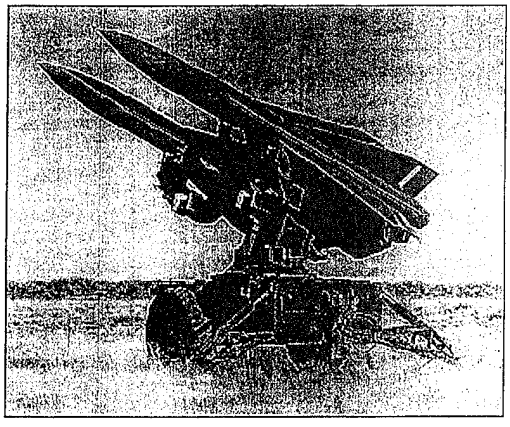


- Navy Area Computer System Mods
- Prime Contractors: Lockheed Martin, Hughes, Raytheon, Motorola
- Executing Agent: Navy

mj-41782E / 112195

TPS-59 AND USMC HAWK

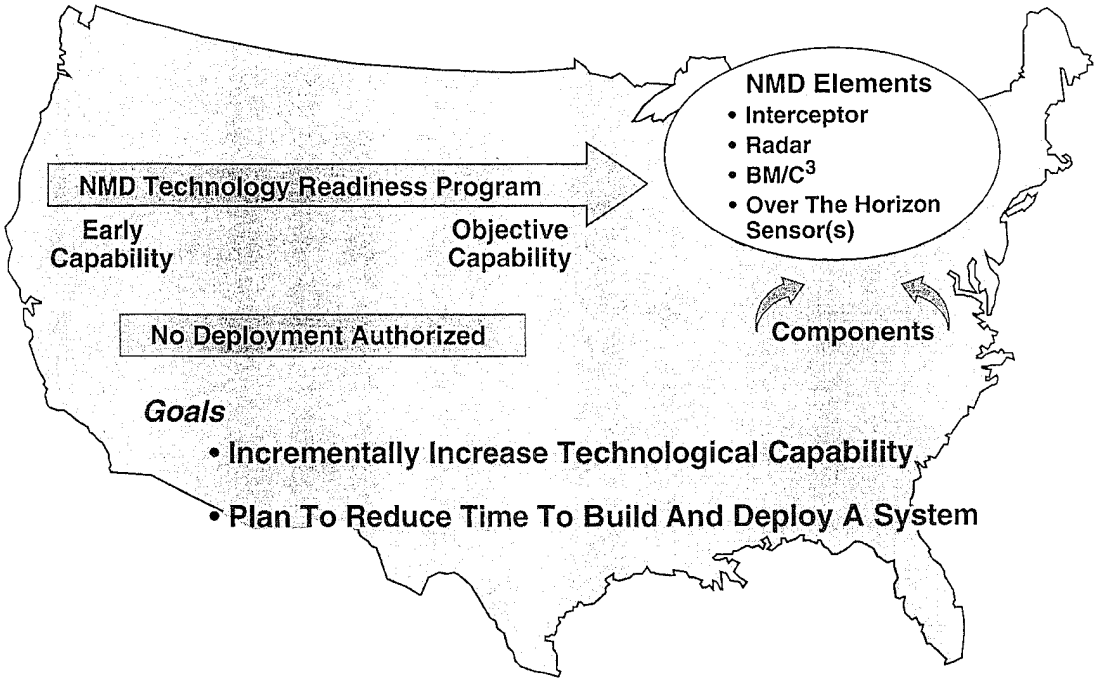




- HAWK Upgrade To Battery Command Post To Process TPS-59 Cueing Data
- Prime Contractor: Lockheed Martin
- Executing Agent: U.S. Marine Corps

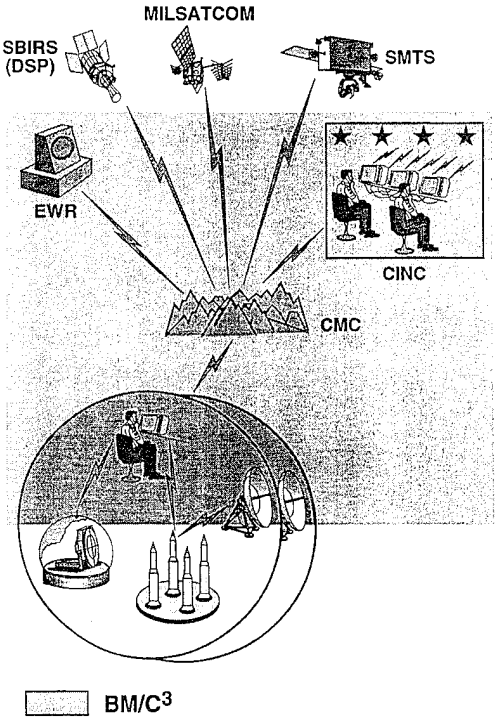
mj-31871H / 112195

NATIONAL MISSILE DEFENSE PROGRAM



mj-42713H / 032595

NMD BATTLE MANAGEMENT / COMMAND, CONTROL, COMMUNICATIONS (BM/C3)



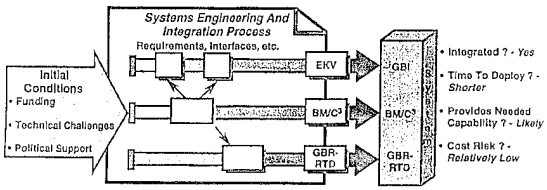
Includes

- Upgraded Early Warning Radars
- Missile Defense C3 At Cheyenne Mountain Complex
- C3 At Missile And Radar Site(s)
- Integration Of Early Warning Data
- Prime Contractor
  - TRW (Part Of SE&I Contract)
- Executing Agents
  - Air Force (EWR, Overall C2)
  - Army (Radar And Firing Point C3)

mj-46248N / 112795

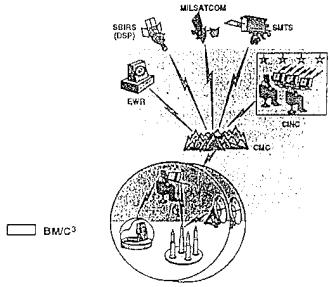
STRUCTURE OF BMDO'S NMD / TMD BM/C^3 / SE&I CONTRACT

NMD SE&I



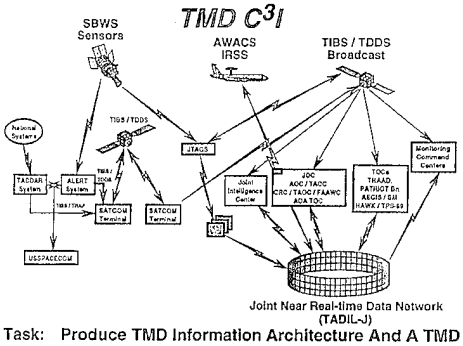
Task: Provide NMD Systems Engineering, Test Requirements Planning, Interface And Configuration Management, Maturity Tracking And Deployment Readiness Support To BMDO

NMD BM/C^3



Task: Produce Information Architecture And NMD BM/C^3 Prototypes To Support NMD Integrated Tests And Users CONOPS

TMD C^{3}I

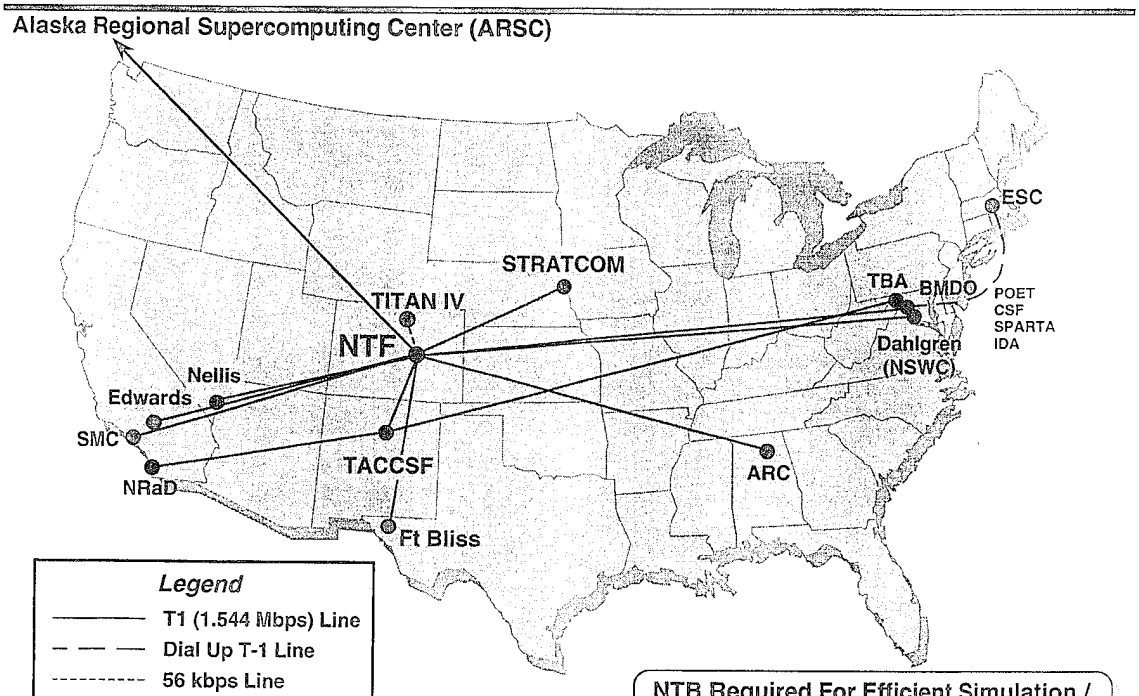


Task: Produce TMD Information Architecture And A TMD Integration And Interoperability Road Map

- Prime Contractor
  - TRW (Level Of Effort)
- Subcontractors
  - Hughes
  - McDonnell Douglas
- Executing Agents
  - BMDO
  - Air Force
  - Army

mj-56655C / 112795

NATIONAL TEST BED COMMUNICATIONS ARCHITECTURE

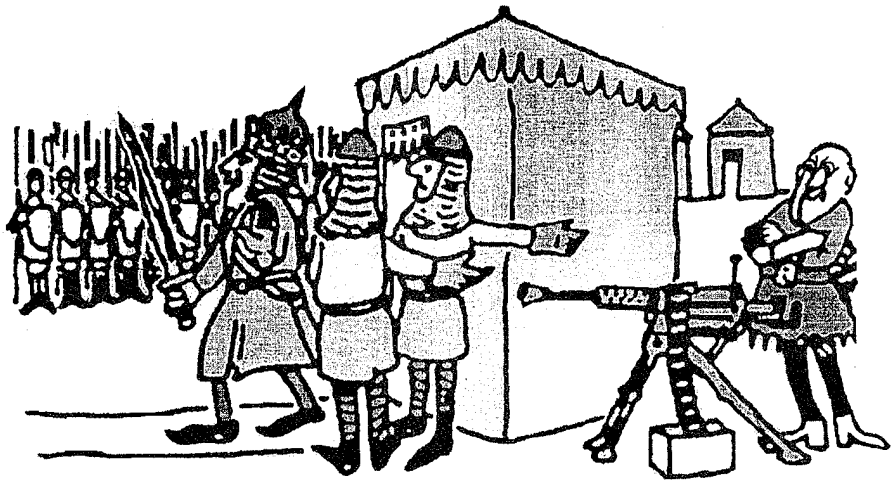


NTB Required For Efficient Simulation / Modeling Of TMD / NMD Systems

mj-58550 / 112795

POSITION BMD TO SEIZE TECHNOLOGY OPPORTUNITIES

No ! I Can't Be Bothered To See Any Crazy Salesman, We've Got A Battle To Fight !



"Modernization... Is What Is Meant By Long-term Readiness."

Secretary Of The Army Togo West, February 28, 1995

mj-51553 / 053095

TECHNOLOGY PROGRAM

Component	Advanced Concepts
• Sensors - Dim Objects, Low Noise - Low Vibration, 10 Year Life - Radiation Tolerant - Better Tracking Accuracy - Resist Countermeasures - Solid-state Radar Modules • Interceptors - Longer Range - Small, Cold Targets - Lightweight • Phenomenology - Discriminate Targets From Other Objects	• Directed Energy Boost Phase Intercept - High Payoff Leap Ahead Technology vs Evolved Threat • Airborne Kinetic Energy Boost Phase Interceptor - Defend Against Countermeasures - Avoid Collateral Damage • Innovative Science & Technology And SBIR - Accelerates Application Of Breakthrough Science
Support To Program	Create New Options
• PATRIOT • THAAD • GBR • AEGIS • BE • GBI	Future TMD And NMD

mj-41886E / 022495

INNOVATIVE SCIENCE AND TECHNOLOGY PROGRAMS

Sensors
◦ Missile Signatures ◦ Infrared Focal Plane Arrays ◦ Ultraviolet Sensors ◦ Laser Radar And Autodyne Doppler

Propulsion
◦ Electrical Propulsion ◦ Advanced Propellants

Interceptors
◦ Interceptor Propulsion ◦ Miniature Interceptor Components

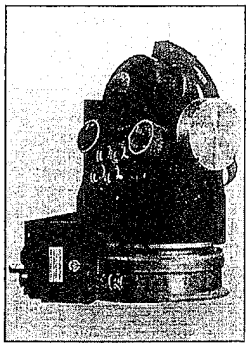
C^4
◦ Distributed Simulation ◦ Laser Satellite Communications ◦ Terahertz And Millimeter Wave Sources ◦ Secure Computer Networking ◦ Mathematical Methods And Algorithms ◦ Multisensor Tracking And Communications ◦ Optical Computing And Communications

Power
◦ High-power Electronics ◦ Energy Conversion Technology

Materials	
◦ Electronic And Optical Materials ◦ Materials Plasma Processing ◦ Molecular Electronics ◦ Space Environmental Effects	◦ Superconducting Materials ◦ Wideband Gap Semiconductor ◦ Propulsion Materials

mj-53218A / 112195

LASER COMMUNICATIONS: GREAT PROMISE FOR HIGH ALTITUDE LOW PROBABILITY OF INTERCEPT



1995
Engineering
Development

- 1 GBps
- < 1 / 6 Power Of Comparable RF Space System
- < 1 / 2 Weight Of Comparable RF Space System
- Cooperative Project With DARO

mj-58511 / 112795

SUMMARY

- Program Designed To Address Post Cold War Environment And Affordability Issues
- Priority On Protection Of Regionally Deployed Forces
- Programs Include New / Upgraded Weapon Systems, Upgraded C^2 Systems, Sensors, And Communications
- Programs Involve Research, Advanced Technology, Dem / Val, EMD And Production
- System Prime Contractors Include Aerojet, Boeing, TRW, Raytheon, Lockheed Martin, Hughes, GEC Marconi, And Rockwell Collins

mj-58381 / 112795

BASE OPERATIONS (BASOPS)

MG FRANK L. MILLER, JR.
Assistant Chief of Staff for Installation Management

29 November 1995



STRATEGIC GOAL

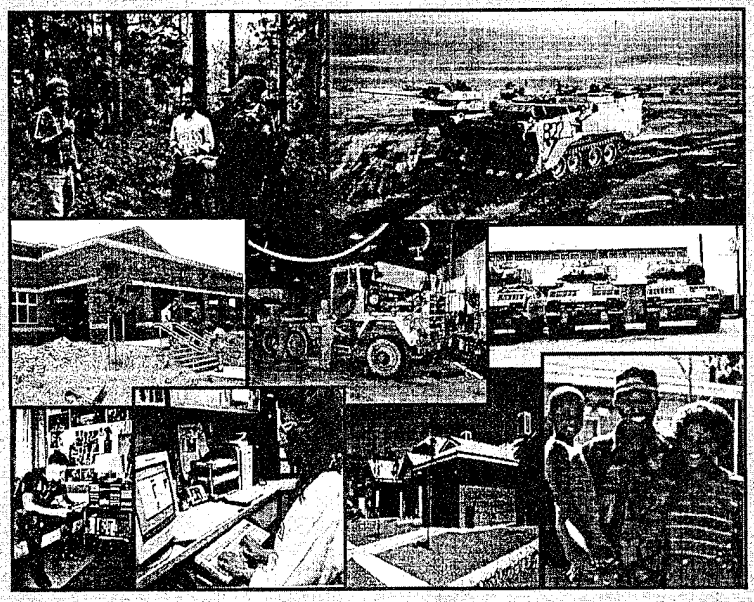
To exceed our customers expectations in each area and function for which the ACSIM is responsible

CHANGING INSTALLATION ENVIRONMENT

INDUSTRIAL AGE	INFORMATION AGE
• Forward presence	• Forward deployed
• Large overseas presence	• Split-based operations
• Army Focus	• Increased focus on joint interoperability
• Direct Links (stovepipes)	• Internet/ABCS/AGCCS
• Simple comm grids over limited geography	• Worldwide Web/GCCS
• Three distinct foci -- sustaining base; strategic; tactical	• One Single focus -- sustaining base to foxhole
• Military led evolution	• Commercial led revolution
• Simple user instruments	• Complex user instruments
• Mainframe - batch processes	• PC based - enhanced individual performance

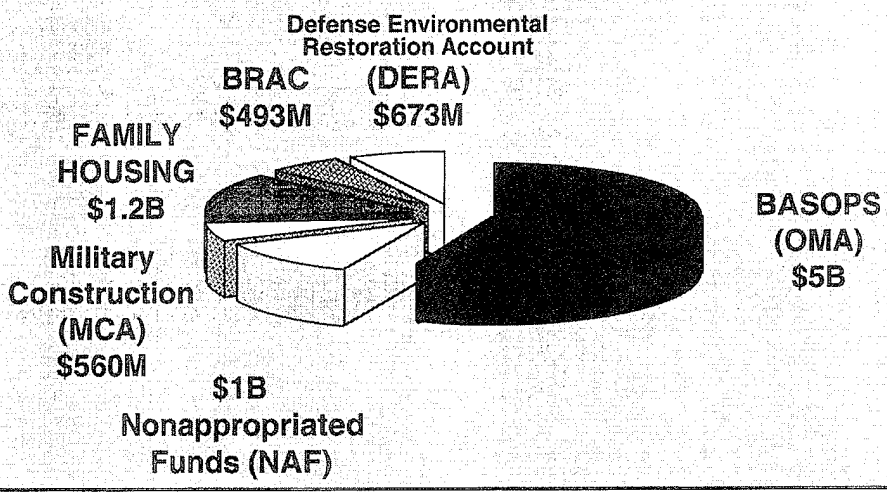
PROCESSES MUST CHANGE WITH AUTOMATION

BASOPS IS A KEY ELEMENT OF READINESS



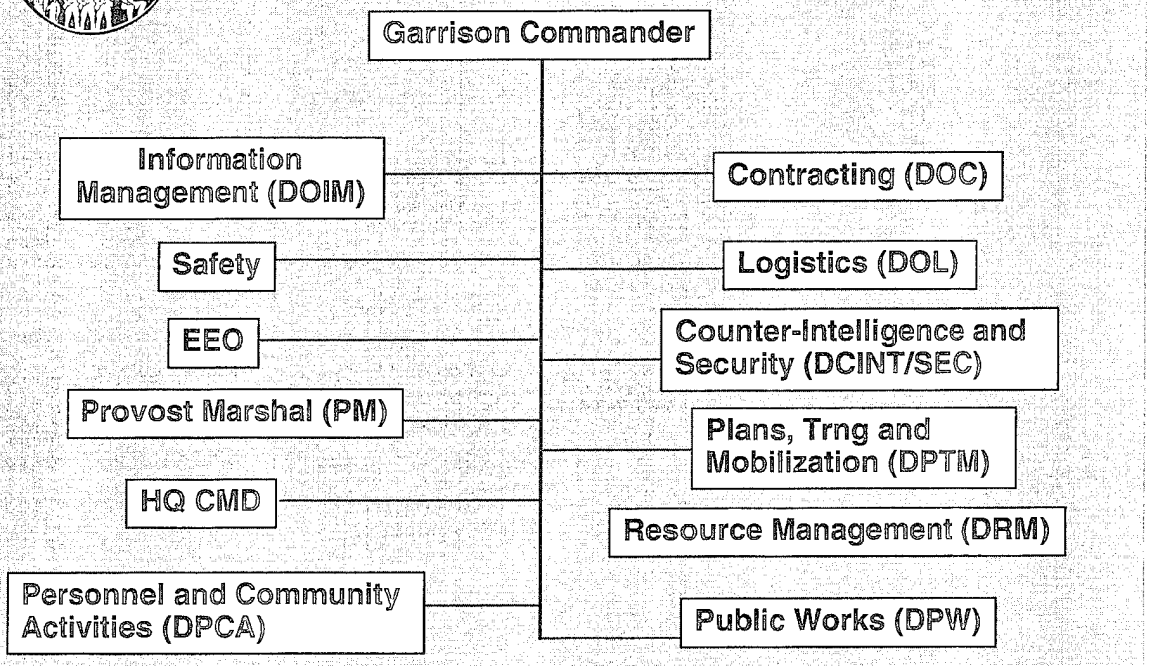
BASOPS MAKES SOLDIERS STAY IN THE ARMY....WE ENLIST SOLDIERS BUT REENLIST FAMILIES

INSTALLATIONS ARE BIG BUSINESS



FOR FY95 ACSIM MANAGED DEFENSE AND ARMY RESOURCES IN EXCESS OF $8 BILLION.

TYPICAL GARRISON STAFF



COORDINATED VERSUS DIRECTIVE STAFF

WHAT INDUSTRY CAN DO FOR US

Improve performance (state-of-the-art management), leverage new technology, better business practices and eliminate "MILSPECS"

DESIRE OUTCOME:

- Manage better
- Measure how we are doing
- Make our job quicker, better, faster
- Better cost benefit analysis
- Real time data to make smart business decisions

Issues: Cost, quality, speed, interface, flexibility, malleability

Partnership between industry and DoD

BASOPS TODAY

HQDA
MACOM
Installation
Customer

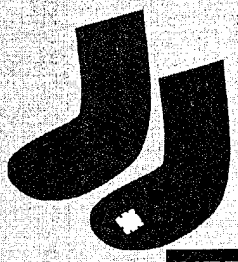
NOT TRUE

~~HQDA~~
MACOM
Installation
Customer

HQDA
~~MACOM~~
Installation
Customer

HQDA
MACOM
~~Installation~~
Customer

One Size Fits All

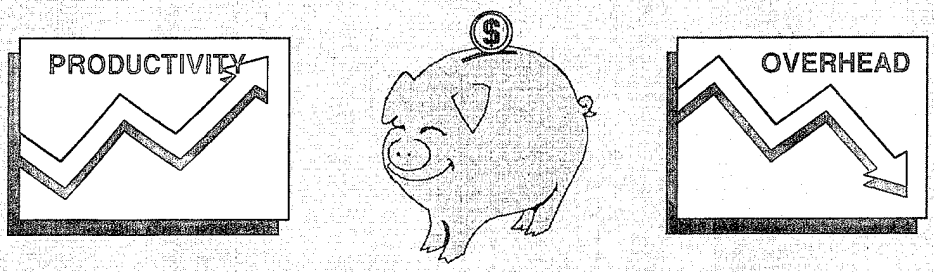




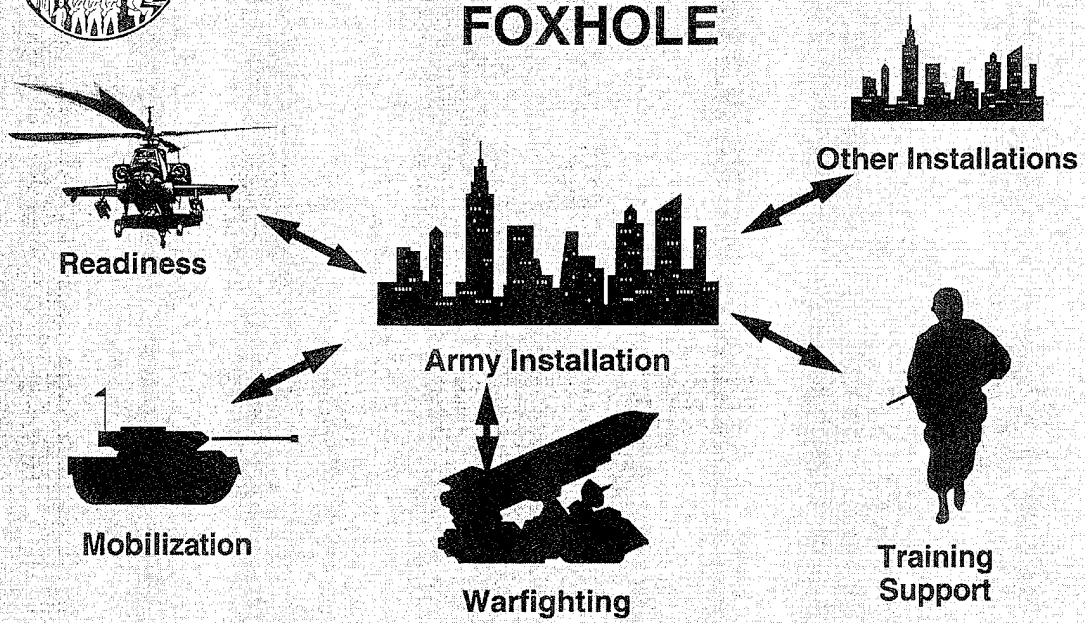
NEED TO BE MORE RESPONSIVE TO CUSTOMERS

FUTURE OF BASOPS

- Privatize where we can
- Save money
- Increase productivity
- Cut overhead
- Set and enforce priorities
- For every dollar spent get a dollar's worth of benefit
- Exceed customer expectations

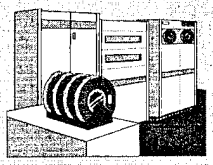


SUSTAINING BASE TO FOXHOLE

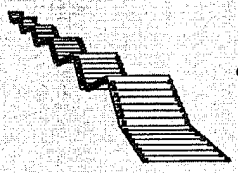


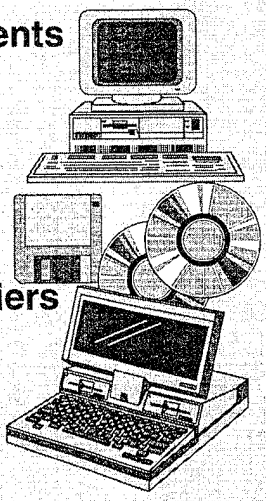
Whether fighting wars or paying TDY we need to leverage information technology to improve every aspect of what we do

KEYS TO SUCCESS FOR THE 21ST CENTURY



- Know your information requirements
- Use off-the-shelf products
- Minimize writing codes
- Maximize use of Internet to share information
- Take portable PC's from the soldiers desk to the field
- Develop partnerships with major software developers





The way it was

The way it should be

GOAL: SEAMLESS AUTOMATION - TACTICAL...NON TACTICAL

WHAT INDUSTRY CAN DO FOR US

Improve performance (state-of-the-art management), leverage new technology, better business practices and eliminate "MILSPECS"

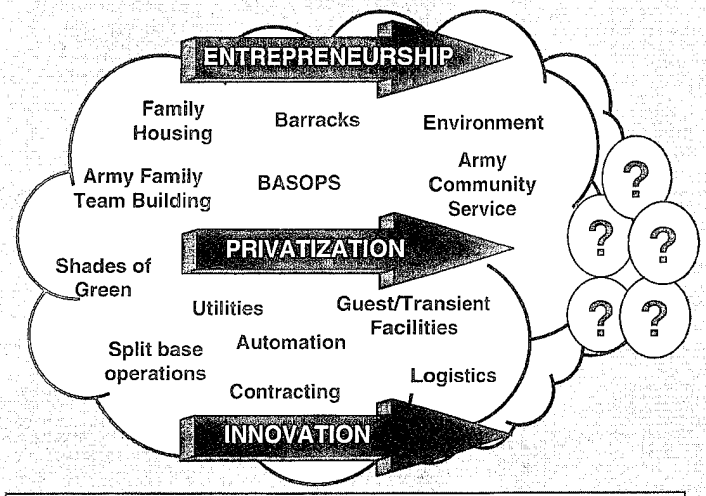
DESIRED OUTCOME:

- Manage better
- Measure how we are doing
- Make our jobs quicker, better, faster
- Better cost benefit analysis
- Real time data to make smart business decisions

Issues: Cost, quality, speed, interface, flexibility, malleability

Partnership between Industry and DoD

BASOPS FUTURE



- Use better business practices
- Maximize use of privatization
- Get more value out of traditional dollars
- Exceed customers' expectations

GOAL: ENHANCED READINESS

PRESENTATION OUTLINE

FORUM: Advanced Planning Briefing to Industry (AFBI)
SPONSOR: ODISC4, HQDA
THEME: C4, The Future: One Vision, One Architecture, One Voice
TOPIC: Medical Information and Technical Requirements
DATE: 29 November 1995
PLACE: Ritz Carlton, Tysons Corner, Virginia
AUDIENCE: 500 participants, representing 300 Companies
PRESENTER: MAJ Clyburn, U.S. Army AMEDD Center & School Liaison to the U.S. Army Medical Research and Materiel Command

Introduction: Slide # 1- Commander's Vision

- First off, on behalf of BG Zajtchuk, Cdr, U.S. Army Medical Research and Materiel Command, I want to thank LTG Guenther for the opportunity to present to you the Army Medical Department's vision of a digitized medical battlespace: a medical battlespace that is consistent with the DISC4 vision of a common technical architecture, that leverages high technology insertions developed by ARPA, and that supports that Army Digitization's Office strategic thrusts for Force XXI.

- In support of this medical vision, I am happy to report that we have been recently awarded HQDA approval of the Mission Needs Statement for Medical Communications for Combat Casualty Care (MC4), the formal articulation of the Army Medical Departments effort to integrate telemedicine into the Army force structure. I am also pleased to report that MC4 has been designated a critical system in the recently concluded TRADOC, War Fighting Lens Analysis.

- These two actions, formally validate the potential value of telemedicine on the battlefield for the upcoming POM budget allocation process. They also open enhanced opportunities for the Army Medical Department to further develop its already close working relationship with PEO, STAMIS and DISC4 to devise the appropriate technical architecture, programmatic framework and funding to develop the 21st Century infrastructure necessary to deliver the finest available medical care irrespective of time, distance or the remoteness of a deployed American soldier.

- Today's briefing will accomplish three objectives:
  * One, it will describe the Army Medical Department's rationale for adopting these technologies.
  * Two, it will describe the 6 thrust areas that compose MC4
  * Three, it review some of the challenges we anticipate ahead.

- Phone number, contact information: _____

Slide # 2: Military Telemedicine

- In recent years, professionals in military medicine have done a careful analysis of WWII, the Korean War and Vietnam to determine where deaths occur on the battlefield.
  * Most battlefield deaths occur quickly
    - 67% of KIAs died within 10 minutes of wounding

- Of the remaining 33%, most died within an hour
    * Of these deaths, 50% were due to exsangination(bleeding)
        - 20% could have been prevented by prompt first aid
        - Another 10% were the result of tension pneumothorax, another treatable condition
    * Based on this analysis, about 30% of KIAs can be saved
* This leads to the conclusion that more timely delivery of effective care is literally a life saver.

- The next step of the analytical case for these technologies was to identify the obstacles to the timely delivery of effective care. Some of the most important obstacles identified were:
    * An inability to quickly locate the casualty
    * An unawareness that a casualty had occurred
    * Required treatments that exceeded the skill level of a frontline medic
    * And, inadequate diagnostic & resuscitative capabilities far forward
- So, what are some of the potential solutions to these obstacles:
    * A family of enabling technologies we call telemedicine
        - We envision that they will re-engineer the way we deliver care
            * By providing medical situational awareness
                - we will know when a casualty occurs
                - we will know the location of casualties
            * We will transmit case specific exert medical knowledge far forward to the combat medic
            * We will push, using information technologies, telecommunications and advanced diagnostic technologies, the ability to diagnose and resuscitate casualties further forward on the battlefield

Slide #3: The Basis for our Strategy

- As we move from a hierarchical approach to health care delivery to an information age ad hocracy approach telemedicine technologies enable time & distance independent opportunities for sharing critical medically relevant information. Such as:
    * Where is the casualty?
    * How badly is he wounded?
    * How badly is he wounded in comparison to others?
    * What evacuation assets are available?
    * What medical assets are available?
    * How can his wound be most effectively treated? (Etc)

Slide #4: Operation Primetime

- Here is a real world example of the principle at work.
    * Since 1994 there has been a telemedicine network in place to support troops deployed in Croatia and Macedonia.

- Rather than follow the traditional hierarchical model it follows the ad hocracy model
    * Even far forward Aid Stations have access to specialty consultation from the military's foremost expert clinicians at Walter Reed Army Medical Center, Bethesda Navy Medical Center, Landstuhl in Germany or a deployed ATH in Zagreb.
        - This has resulted in over 175 digital radiology image consultations in an average week.
        - And, in one case the dramatic mentored treatment of a soldier suffering from severe pulmonary distress.

Slide #5: Worldwide Deployments

- In the past 24 months you can see the these technologies have received widespread use in numerous deployments.

Slide #6: Advanced Technology Program

- The Army MC4 program is embodied in the six thrusts shown:
    * Far Forward Appliques:
        - Hands Free Radio/Cam for telementoring and decision support
        - Sincgars enabled still and video image transmission
        - Medics Smart Pack-GPS enhanced, stylus based computer
        - Meditag/MARC casualty med record information availability
        - will include in future; Personnel Status Monitor -
    * Digital Field Medical Treatment Facility Appliques:
        - Intra-hospital medical image and data networking
        - Remote Specialty Consultation
        - Wireless communication
    * M3V
        - Mobile C2 medical situational awareness
        - On site live video, hi resolution still diagnostic transmit capability
    * Expert Host Medical Center Appliques
        - Allows in CONUS expertise to be projected into Area of Op
        - Interfaces with civilian medical centers
        - Digital archives access to all patient medical info
    * Advanced Research projects Agency Insertions
        - Include:
            * Personnel Status Monitor
            * Advanced-Miniature-Noninvasive Diagnostic Sensors
            * LSTAT- Mobile, Mini-ICU
            * Telepresence Surgery
            * Trauma Care Information Management System

* Human Physiology Simulations
* Telecommunications, Integration, Sustainment
- Operational costs
- R&D
* compression studies
- Infrastructure

Slide # 7: Taxonomy

- This graphically represents the capabilities tied together into an integrated system
* It is important to view as a system
- If one link is missing the system doesn't deliver the capability.

Slide #8: Medical Mentoring

- Now, for a closer examination of each of the elements
* Far forward telementoring can involve a number of possible combinations
* Involving a number of modalities

Slide #9: Desert Hammer

- Results from the first Battle Lab Advanced Warfighting Experiment examining these technologies was positive

Slide #10: Developmental Overview

- The M3V is based on the Army MITT in a HMMWV chassis
- Based on COTS hardware and software

Slide #11: Medical Command and Control

- Developmental Criteria
* Must be consistent with Army Architecture
* Must be able to go Joint
- Still a dynamic requirement as it relates both to overall Army and Joint

Slide #12: Medical Situational Awareness

- The key questions we are attempting to answer.

Slide #13: Evacuation Assistance

- Also, we want a system that can also maintain real time visibility of dynamic air and ground evacuation missions

Slide #14: Real Time Tele-imaging

- Integrated, multimedia workstations will be a key component of the digitized Medical Treatment Facility.
    * As you can see this workstation includes
        - video and audio
        - hi resolution still imaging
        - graphics
        - data

Slide #15: Digital Deployable MTF Clinically Driven Focus

- The Digital MTF will support a wide variety of medical interventions due to its connectivity with the CONUS based Expert Tertiary Care Medical Center

Slide #16: Deployable Digital MTF

- Four enabling technology support the MTFs ability to provide highly expert care in the theater of operations
    * Wireless
        - internal commo
        - MDA support
    * DINS
        - teleradiology
    * Distributed video
        - remote consultation
    * HIS
        - computerized patient records

Slide #17: ARPA Military Medicine's Vision of the Future

- ARPA will bring to bear a new level of diagnostics, resuscitation and medical informatics to the battlefield
    * PSM
    * TCIM
    * LSTAT
    * Telepresence surgery
- They build on the MC4 infrastructure to directly address the KIA issues highlighted at the beginning of the brief
    * Can't locate the casualty - GPS
    * Don't know a casualty occurred - Vital Signs monitor
    * Lack of required skill - Telementoring/Telepresence Surgery
    * Lack of diagnostic/resuscitative capabilities far forward - LSTAT

Slide # 18: The TMED Program (Telecom Stairway)

- As you can see the more robust Telemedicine applications require robust bandwidth throughput.

* It is our strategic plan to work closely with DISC4 and PEO, STAMIS to develop a plan to climb this stairway to the higher levels of telemedicine capability.

Slide # 19: R&D - A Comparison of Approaches

- Information technology integration is posing the whole Army with a different set of programmatic challenges than we have faced with conventional developmental requirements.

* Because of the rapid rate of advancing cost-performance ratios of information and telecommunications technologies, it has been difficult to follow the conventional milestones we are familiar with in traditional R&D.

- The AMEDD has adopted a rapid prototyping, concurrent engineering approach to telemedicine development.

* This has been successful in allowing us to rapidly support real world operations, AWEs and TDA requirements at an accelerated rate.

- But, it has also left us with a lot of homework to do in terms of developing and articulating credible analytical underpinnings to support return on investment in these technologies.

- As a result, this is where much of our attention is currently focused, on the evaluation, analysis and programmatics of MC4.

- Over the next few months, we will be working closely with DISC4, PEO, STAMIS and DISA to solidify the business case for these technologies.

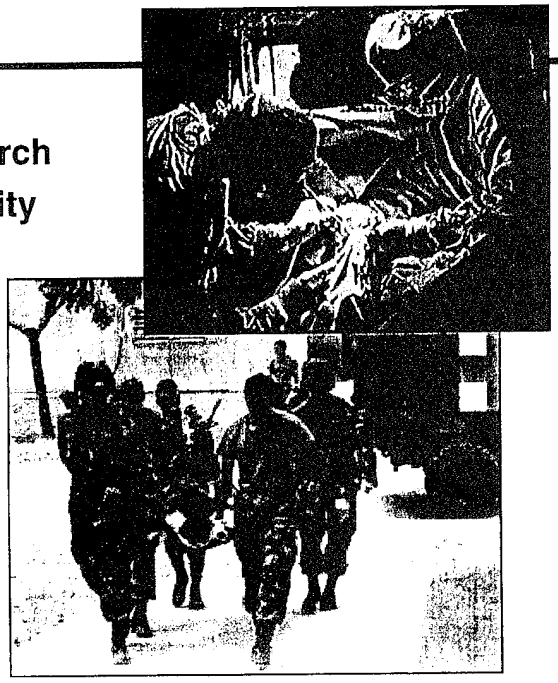
Slide # 20: Early Telemedicine R&D

- We are at the point now where we know we can use information technology and telecommunications to transport patient information and expert medical knowledge into situations that were impossible in the not too distant pass. Hopefully that will keep us from catapulting too many individuals unnecessarily.

Summary: Slide #21: Secretary Perry Quote

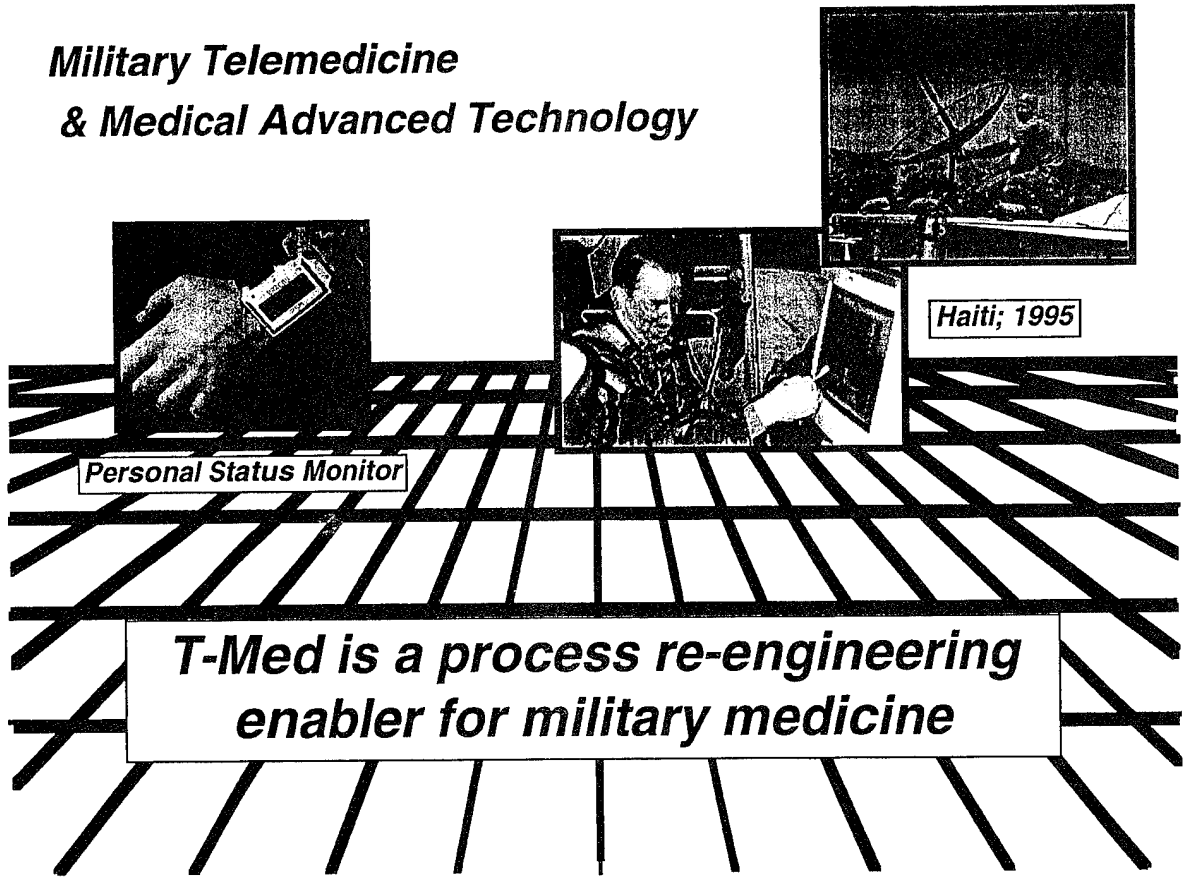
- We intend to implement Secretary Perry's guidance. To provide the best medical care, anytime, anywhere that science and technology can offer.

The Command's Vision

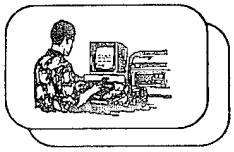


- **Provide world class research and materiel for total quality health care in support of America's warfighter at home and abroad, accessible to the total defense family, accountable to the American people ...**

Military Telemedicine & Medical Advanced Technology



T-Med is a process re-engineering enabler for military medicine

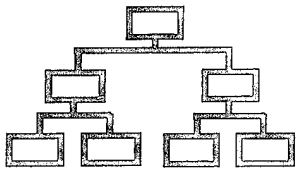


Military Telemedicine

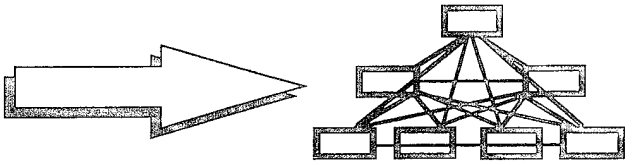
The basis for our strategy . . .

- *Information in Organizations has evolved . . .*

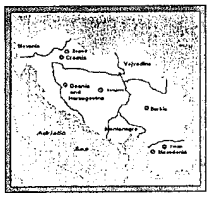
Hierarchical



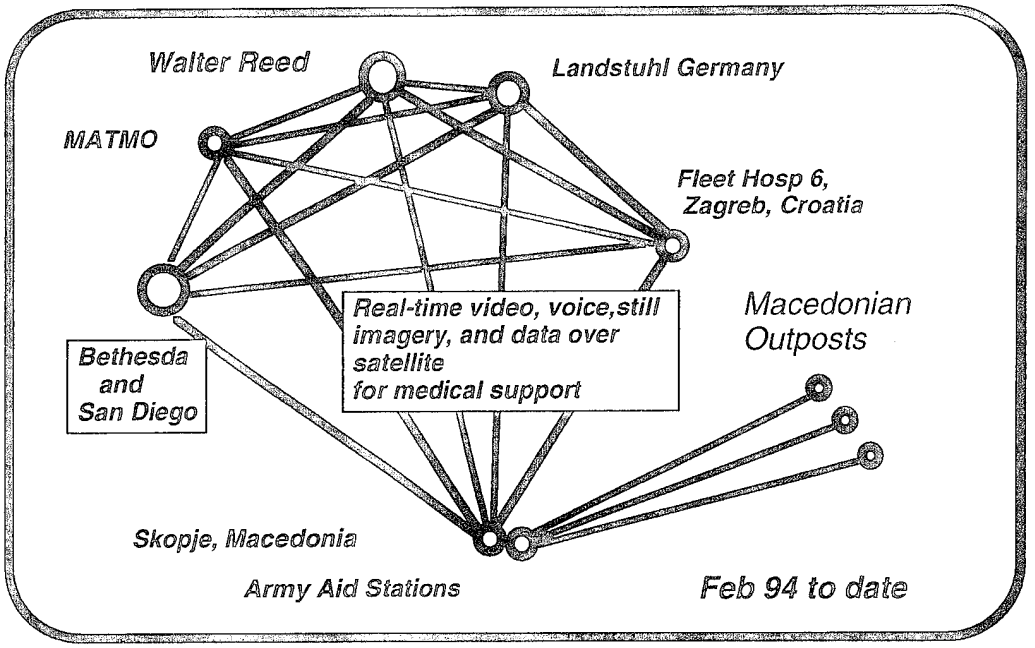
Ad Hocratic



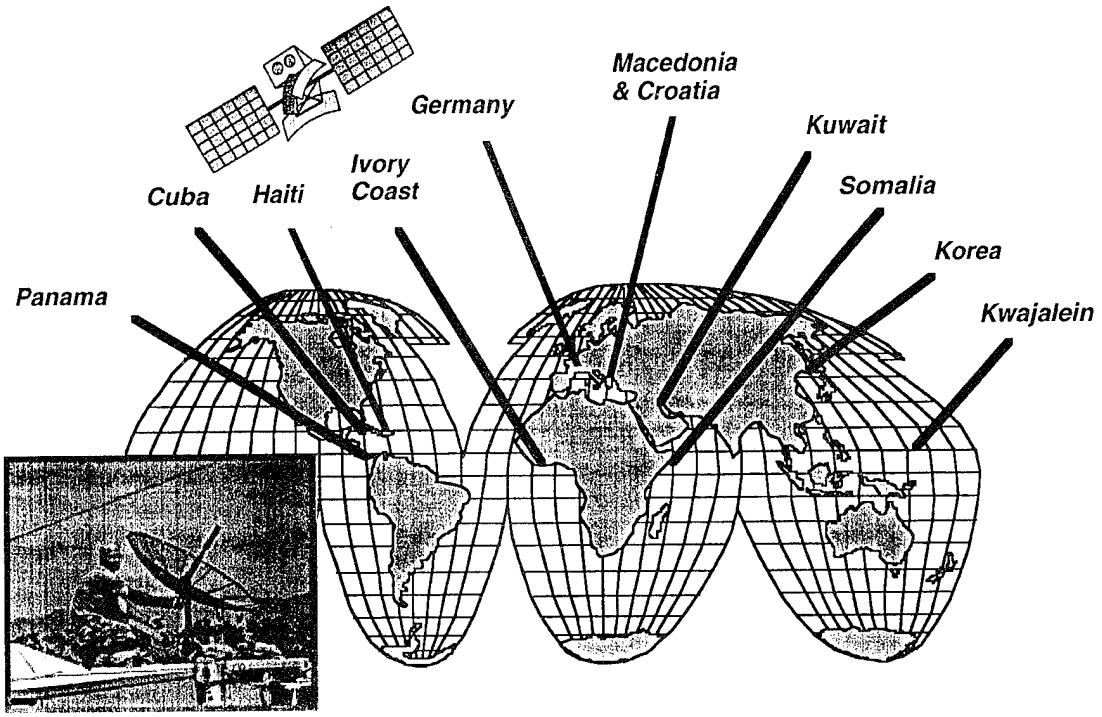
- *In Ad Hocracies...*
  Service organizations-such as health care--
  are enabled ...with time- and distance- independent opportunities
  for sharing information --in this case for patient care



Operation Primetime . . .



Worldwide Telemedicine Rapid Deployments in the past 24 Months . . .



Advanced Technology Program



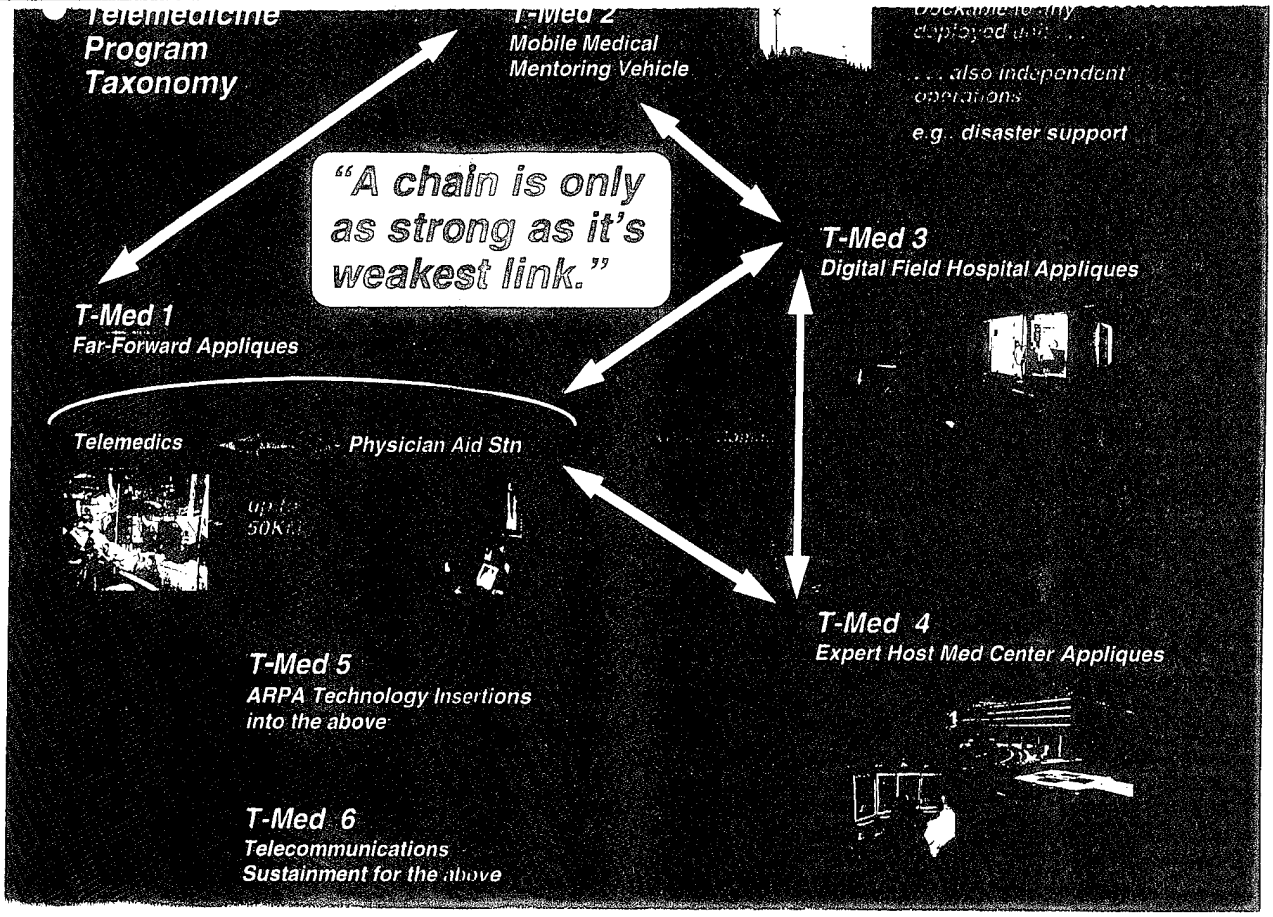
T-Med M3 Concept Vehicle at Fort Sam Houston, Oct 94

Six Program Thrust Areas . . .

- Far-Forward T-Med Appliques
- Digital Field Hospital Appliques
- Mobile Medical Mentoring (M3) Vehicles
- Expert Host Medical Center Appliques
- Advanced Research Projects Agency Insertions
- Telecom, Integration, Sustainment
  - consistent with Force XXI and Army's Digitization Strategy
  - totally integrated • foxhole to specialty care
  - open systems • scaleable • interoperable • upgradeable



Teleradiology Gateway



T-MED

- Medical Mentoring
  - Physician Assistant to Combat Medic
  - Physician to Physician Assistant
  - Physician to Physician
- Medical Consultation
  - Still Imagery
  - Motion
  - Specialist to Physician
- Digital Moulage
  - Still Images
  - Real Time Video

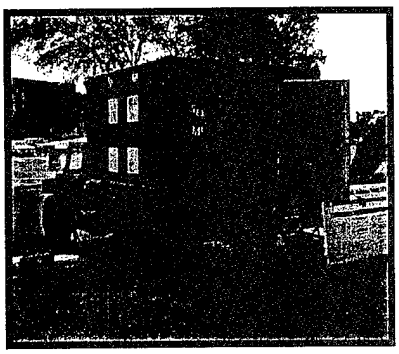


Desert Hammer . . .

Major Findings . . .

- Sincgars able to support Medical Imagery
- Medical Situational Awareness- Great Value
- Digital Moulage-- Training Enhancer
- Far-Forwrd Casualty Mgmt-- greatly enhanced with Imagery

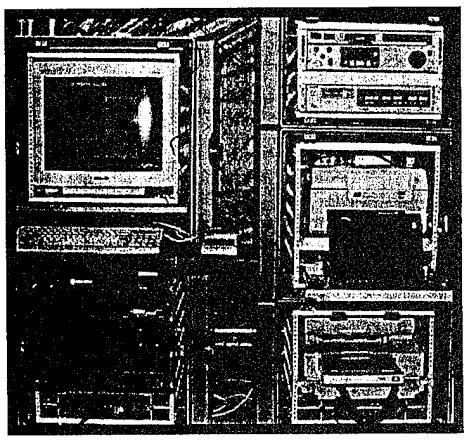
Time to treatment reduced 28%



T-Med M3 Concept Vehicle at Fort Sam Houston 4 Oct 94

Developmental Overview . . .

- 2 Basic Scenarios:
  - Dockable host
  - Forward deployed EMS T-Med



- "Hardware Downscaling" from MITT
- Commercial Medical Software Package

Medical Command & Control

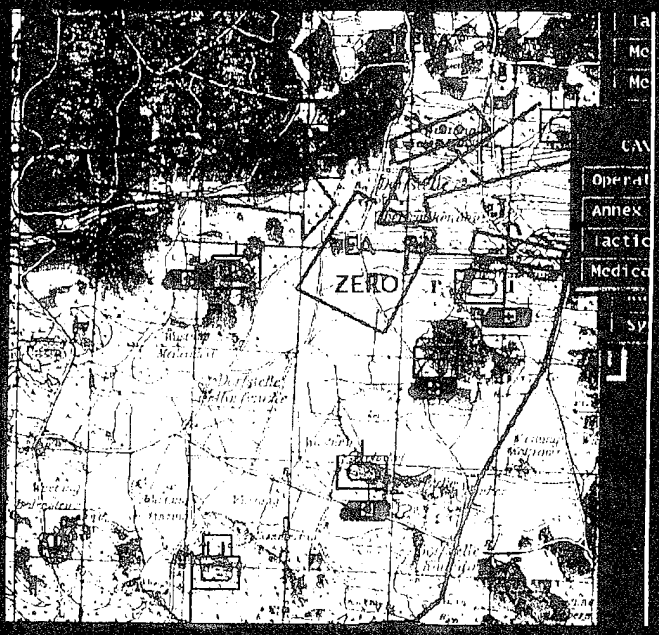
Battlefield Situational Awareness

- Any Medical C2 must be closely coupled to the Army's C2 system (Maneuver Control System (MCS))
- It must have high-level interface ("hooks") into Joint systems that impact patient flow (regulating), logistics and Joint mission planning and execution
- Could be separate systems - pro & cons
- Army's Phoenix system is current redesign effort for Army C2 (MCS and Decision Support)

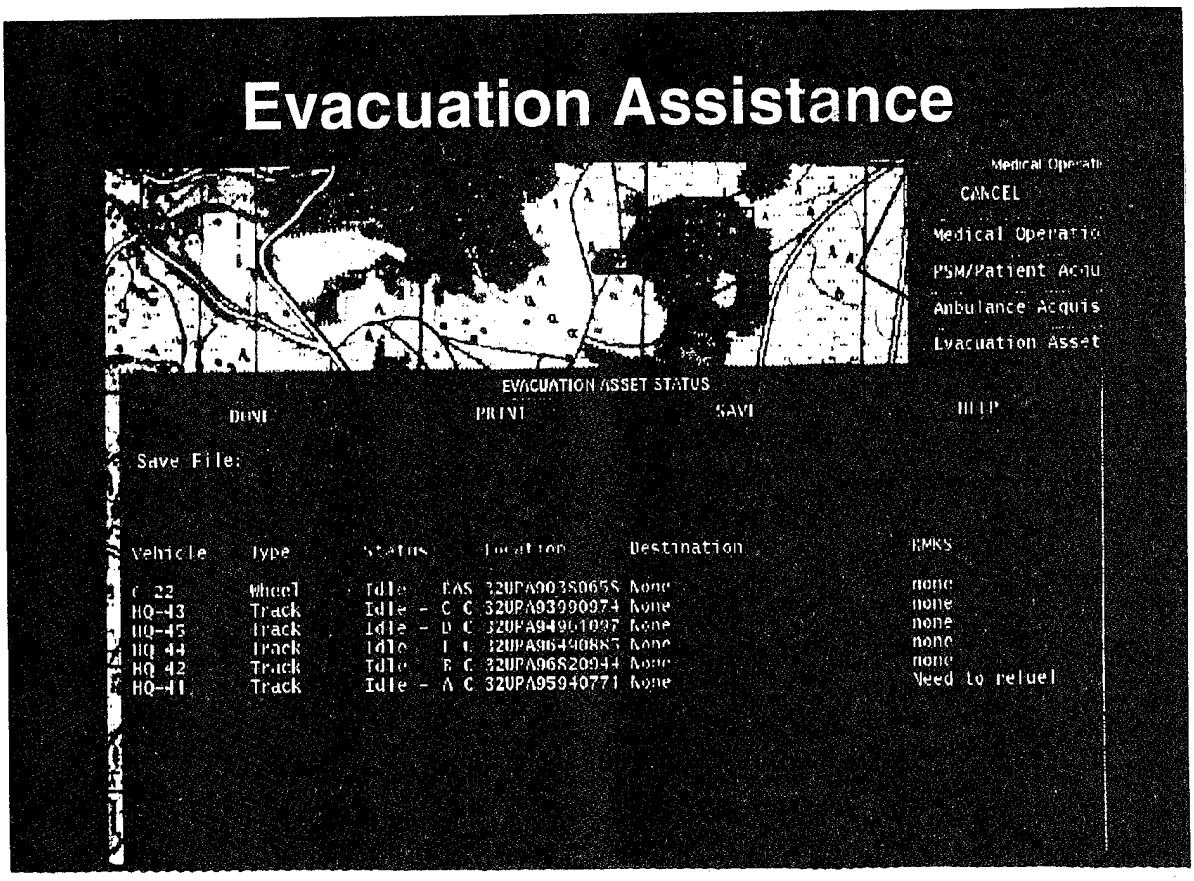
Medical Situational Awareness

Where on the Battlefield are your patients and medical assets?
Do you know their status and condition?
Are you able to leverage your assets to the greatest advantage?

- **Wounded (id by PSM-like device)**
- **Medics (mounted & dismounted)**
- **Ambulances (Ground & Air)**
- **MTF & FST (bed & OR availability)**
- **Unit movement plans**
- **Pt Movement & Logistic status**

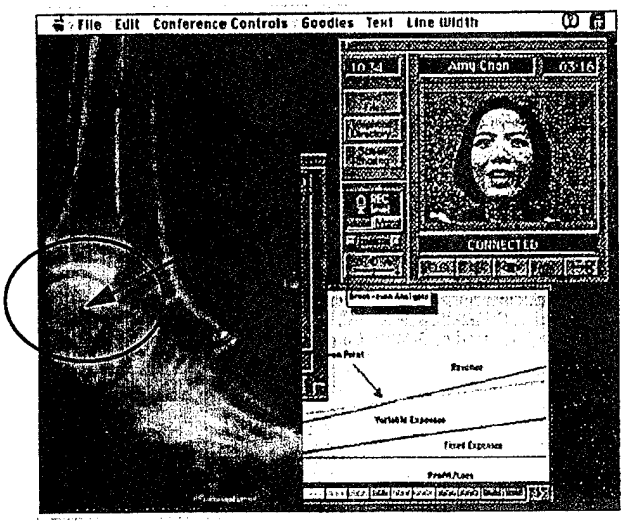


Evacuation Assistance





Realtime Tele-Imaging . . .



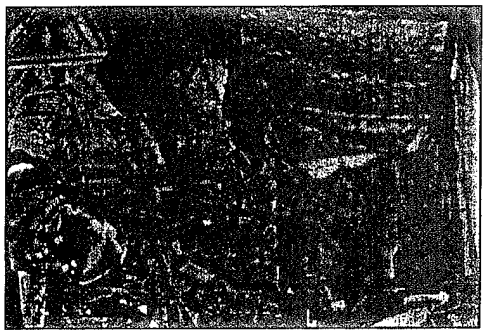
"Bob, what do you think about this ankle ?

Should we evac him or not ?"

. . . facilitates time and distance independent medical decisions

Digital Deployable MTF Clinically Driven Focus

- Design Constraint...
  - Optimized for rapid, high volume medical and surgical decision support



- Subspecialty Support
  - Dermatology
  - Radiology
  - Neurology
  - Orthopedic
  - Emergency Medicine
  - Behavioral Medicine
  - Pathology
  - Surgical

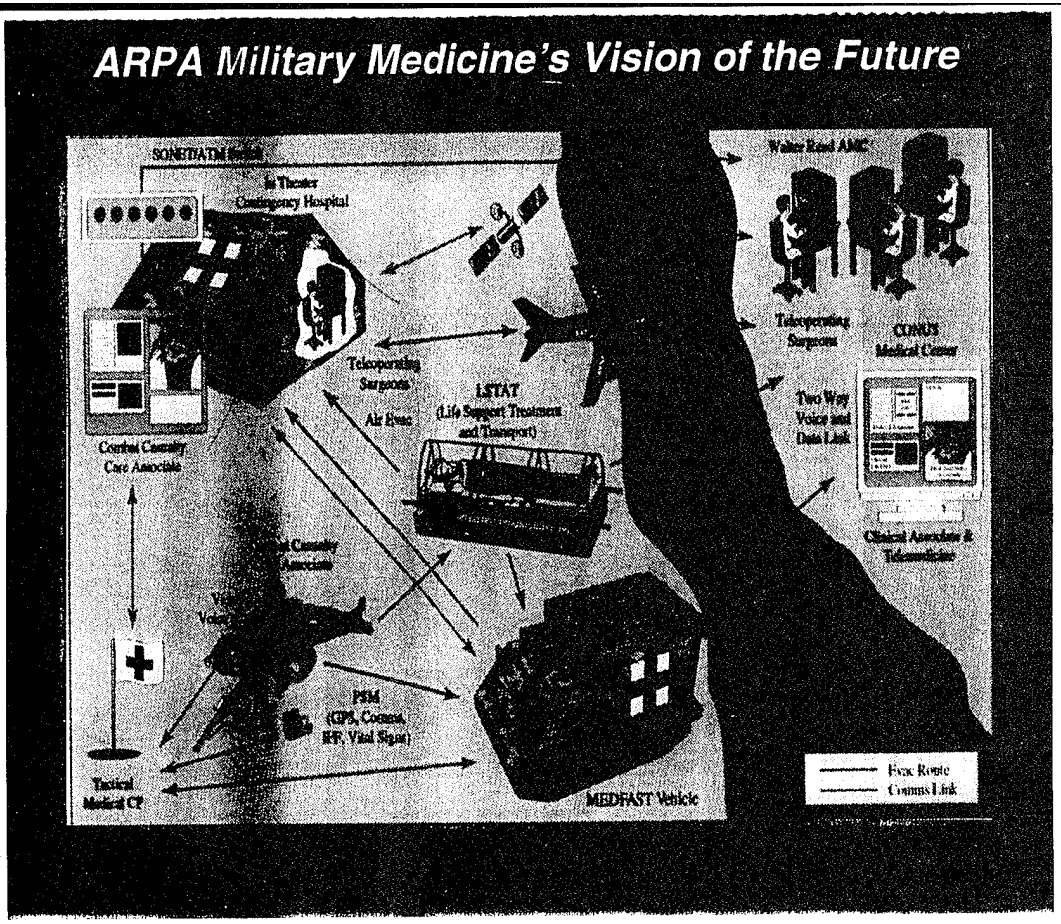
Deployable Digital MTF...

... a template for any size deployable MTF which integrates Telemedicine and hospital information and communications technologies

Four Subsystems...

1. *Wireless Telecommunications*
2. *DINS (Digital Imaging Network Systems)*
3. *Distributed Video*
4. *HIS (Hospital Information Systems)*

ARPA Military Medicine's Vision of the Future



The T-Med Program

- 6 Program Thrust Areas:
  - 6 Telecoms

DS3 /ATM: 45 Mbs

Real-time Multimedia
Warfighter XXI

T1 -
1.5 Mbs

Full Video
Real-time
Still Video
Hospital-Level

Satellite
56 Kbs

Video &
Batch Imagery
Aid stn level

Voice Grade

Voice &
Single Imagery
Aid man level

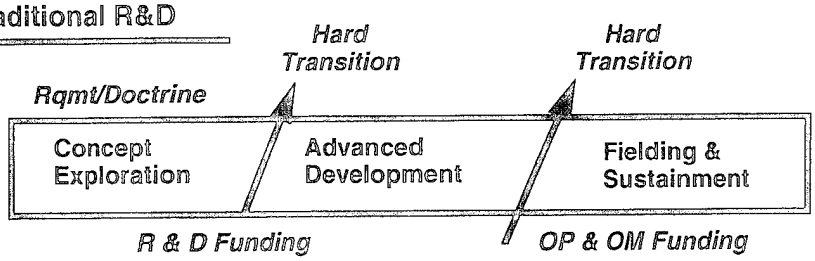
Upgradeable

Scaleable

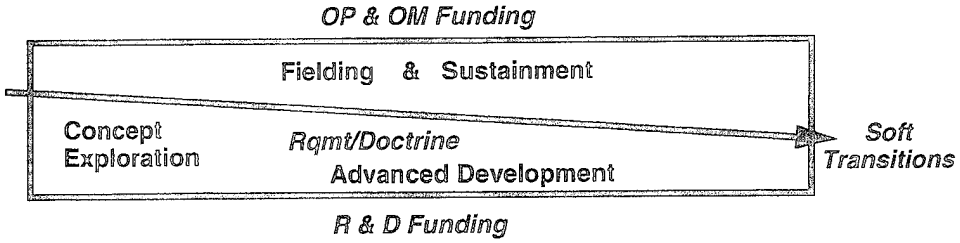
Inter-operable

Emerging Evolutionary Principles . . .

○ Traditional R&D

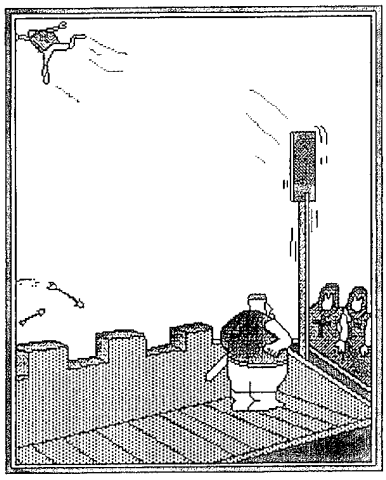


○ Rapid Prototyping R&D



"We must change the way we change "

Early Telemedicine R & D -



● "I told you guys . . .

we don't need to send the patient with the image."

The T-Med Program

6 June 95



- ***Secretary Perry...***

"We need to project our military forces anywhere in the world...Whenever they go, wherever they go, we want them to have the best medical care that science and technology can offer."