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# TEAM C4ISR

HEADQUARTERED AT  
FORT MONMOUTH, NJ

from **Concept**  
to **Combat**

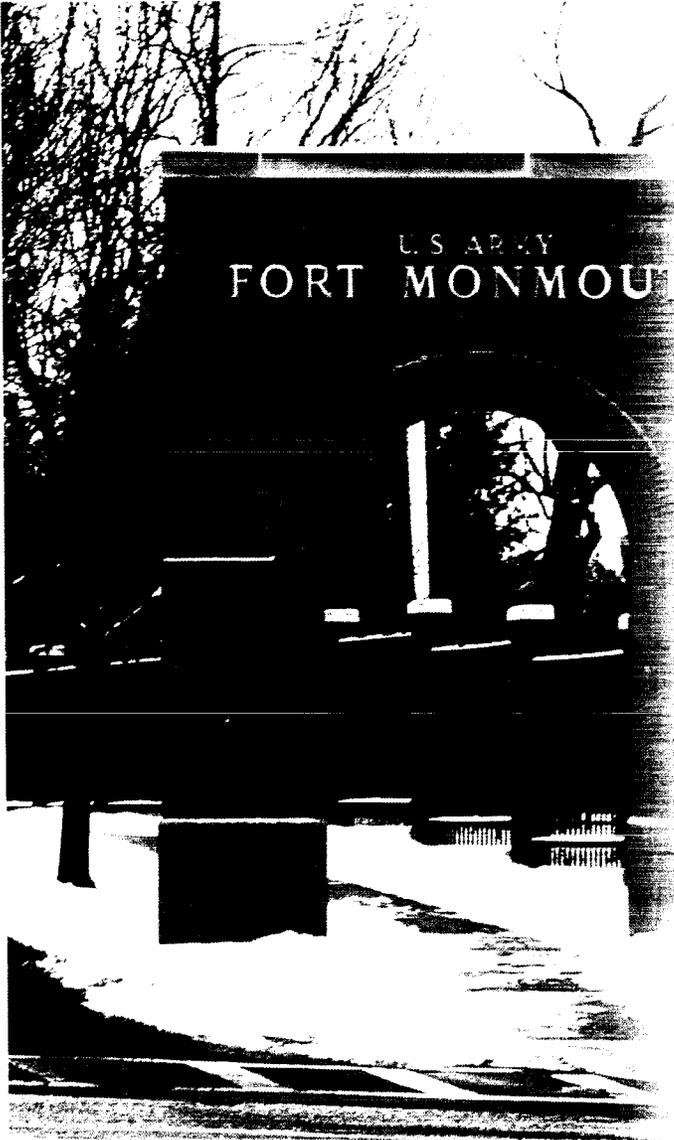


PEX EIS

103-06A -A8 - Base Input  
Army - Fort Monmouth-NJ  
BRAC COMMISSION - FY 2005  
COFF: \_\_\_\_\_ DISPOSITION: Permanent

**TEAM  
C4ISR**

# Agenda



- Team Overview
- C4ISR Mission
- Support to Current Operations
- Modularity
- Transformation
- Facilities
- Demonstration/Tours



# *Team Overview*

*from Concept  
to Combat*



PEX EIS

## *Mission:*

*As an Integrated Entity, Team C4ISR Develops, Acquires, Fields and Sustains Tactical, Strategic, and Sustaining Base Command and Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Systems for the Joint Warfighter*

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# C4ISR Life Cycle Management Center of Excellence

Program Management  
& System Acquisition



Readiness &  
Sustainment

Research Development  
& Engineering

Academia

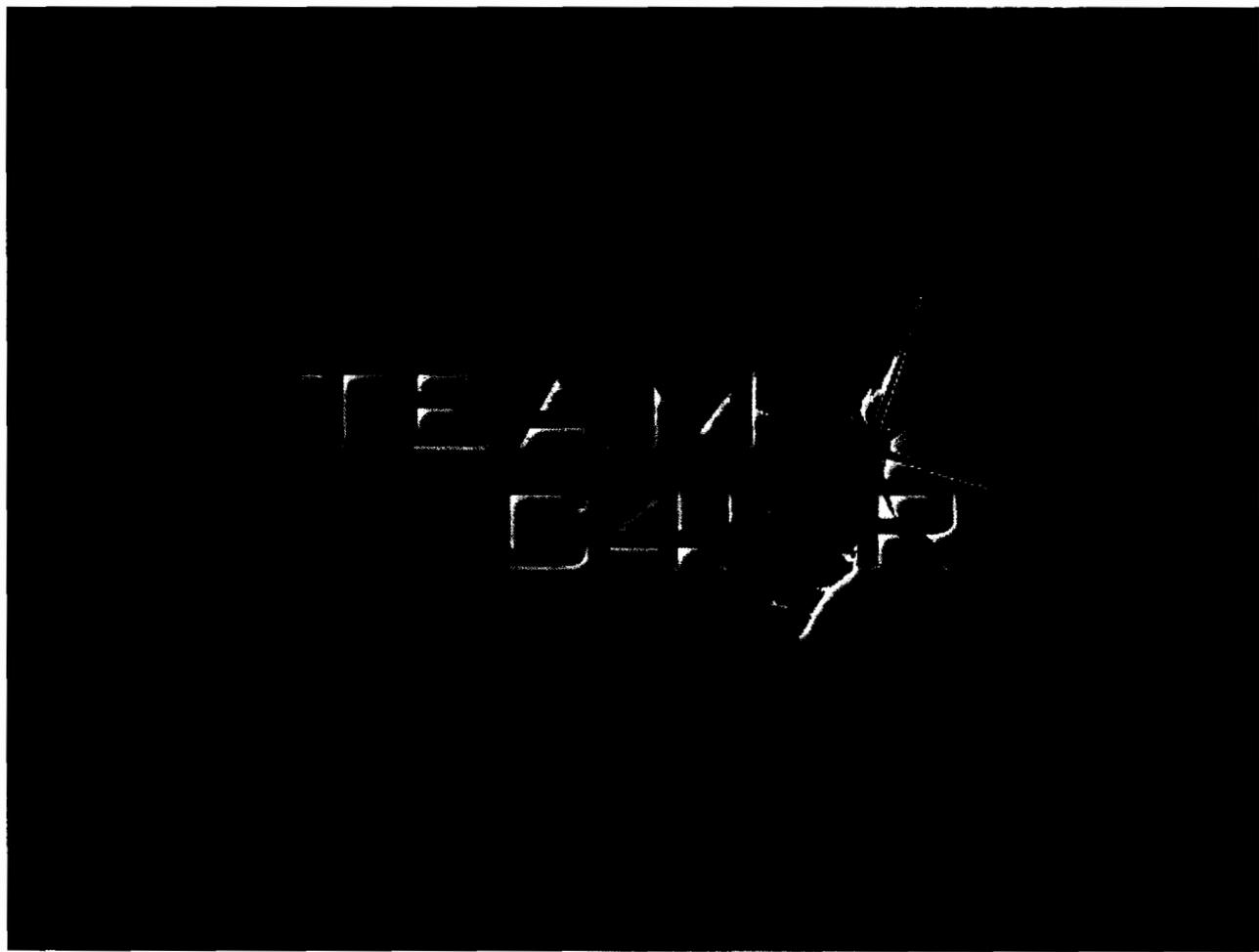
Industry

Mission Support

*A Multi-disciplined Team Linked to Accomplish the  
Lifecycle C4ISR Mission for the Joint Warfighter*



# Team C4ISR Overview



## What We Execute

### *Research Development and Engineering*

- Lead 3 of 8 Advanced Technology Demonstration Programs
- Manage and Execute 46 of 181 Army Science and Technology Programs
- 2nd Largest Army S&T Organization

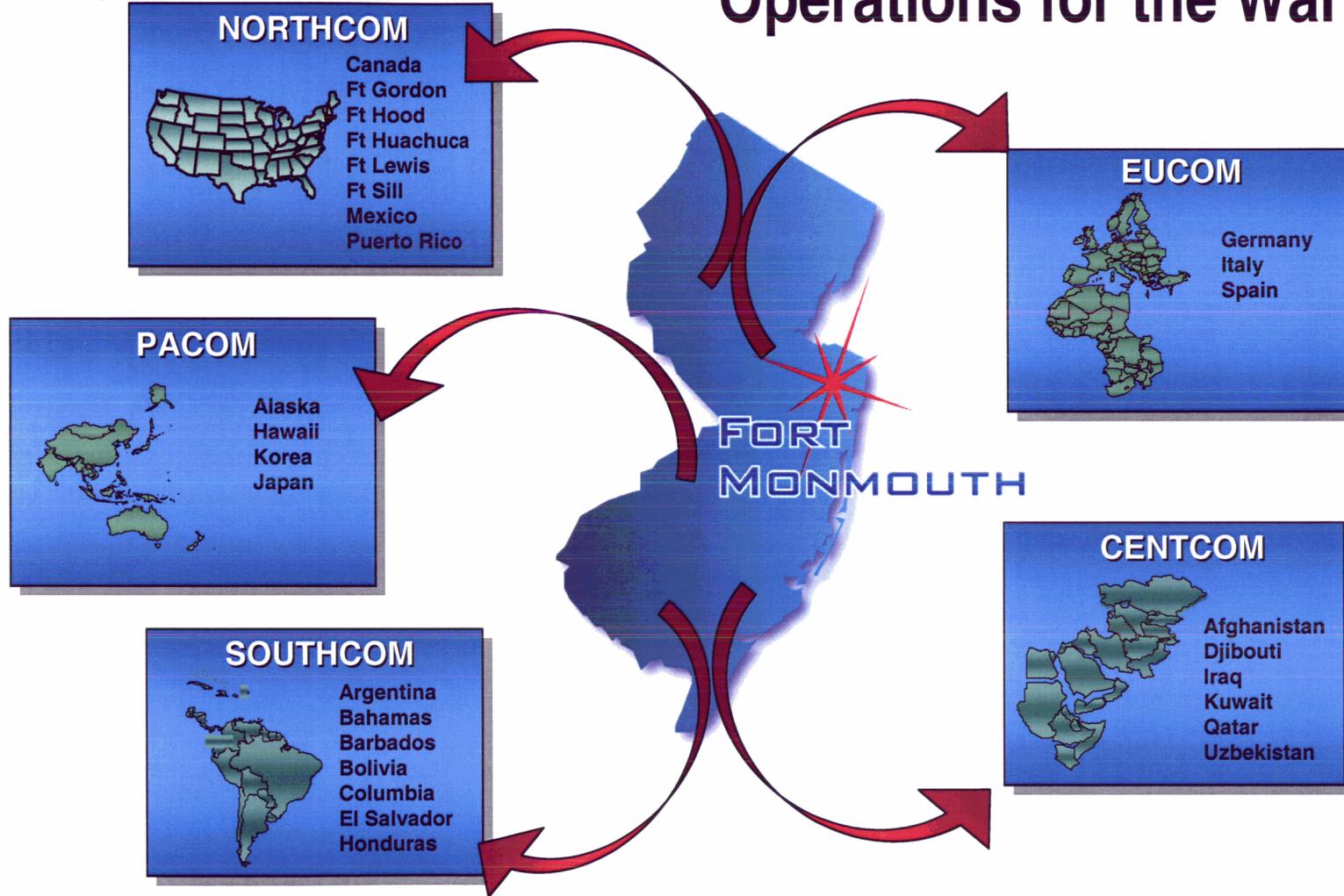
### *Readiness & Sustainment*

- Sustaining the Current Force - \$1.9B (FY04)
- 247 Logistics Assistant Representative / 161 Field Software Engineers
- 51,426 National Stock Numbers Managed - Half the Army Inventory
- 200+ Systems/215M Lines of Code – Software for the Majority of the Army's Deployed Systems
- 887 Fieldings/762 New Equipment Training Missions in FY04
- Managed and Executed \$714M in Joint C4ISR Depot Workload



**TEAM  
C4ISR**

# Expertise Projected in Support of Worldwide Operations for the Warfighter



*Deployed in 25 Countries*



# Single Portal For the Warfighter



- 24/7 Emergency Operations Center for C4ISR Systems
- Quick Reaction Solutions
- Immediate Access to Subject Matter Experts
- Urgent Acquisition of Supplies and Services

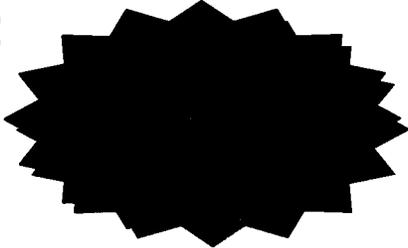
# Intellectual Capital

*Today's Status Report*

- Government Engineers and Scientists: 1,885
- Government Technical and Subject Matter Experts: 1,164
- Mission Support: 1,095
- Government Other: 632
- Scientific and Engineering Technical Assistance (Embedded): 1,543

1,543

6,319



*Management of  
Budget  
and Assets*

**Certified Acquisition Positions: (2,135)**

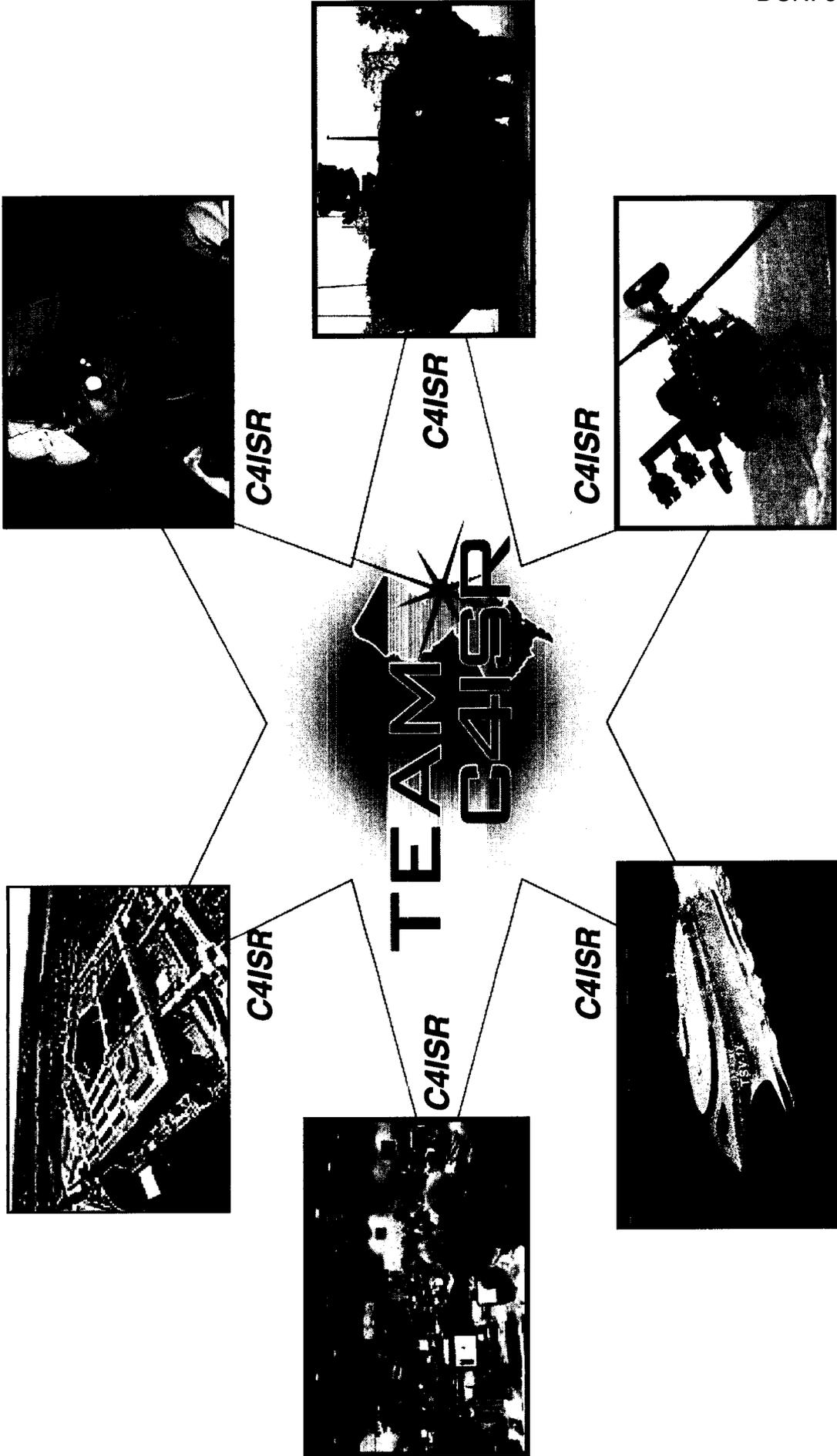
**Patents: 46 Applications Filed in FY04 (Portfolio of Over 3,000)**

**Degrees: 66% with Bachelors Degrees  
25% with Masters Degree or Higher**

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# TEAM C4ISR System of Systems Integration

Tactical, Strategic and Sustaining Base



DCN: 3700

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CECOM

PEB IEW&S

CERDEC PE&EIS

CE•LCMC

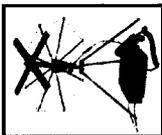
# Soldier

## Comms

MP HF



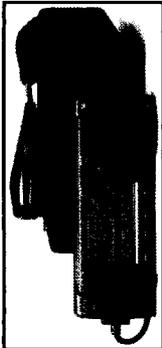
MP SAT



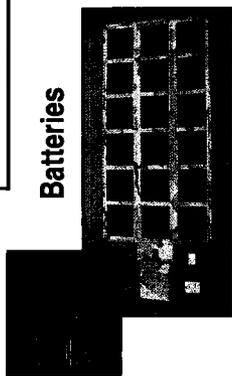
ASIP



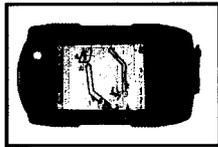
ICOM



Batteries



Command and Control



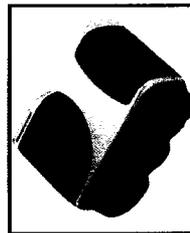
GPS



Night Vision



Laser Range Finder



Antennas





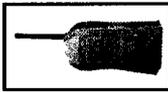
# Aviation

## Comms

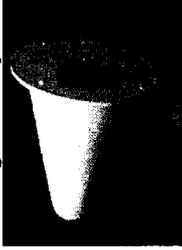
HF/SINGARS



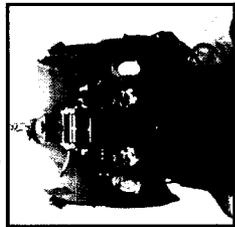
PRC 112



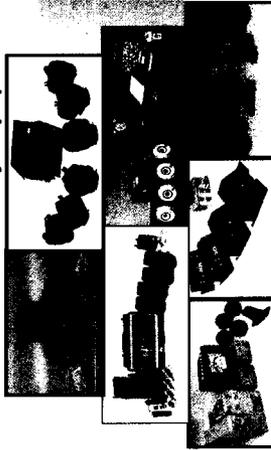
Antenna Designs  
Cosight Analysis



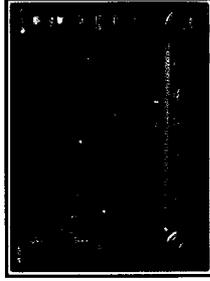
Night Vision



Aircraft Survivability Equipment



GPS



Embedded ISC  
BFT



Target Acquisition  
and Pilotage Vision



DCN: 3700



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PEB IEWSS

CERDEC



CE LCMC



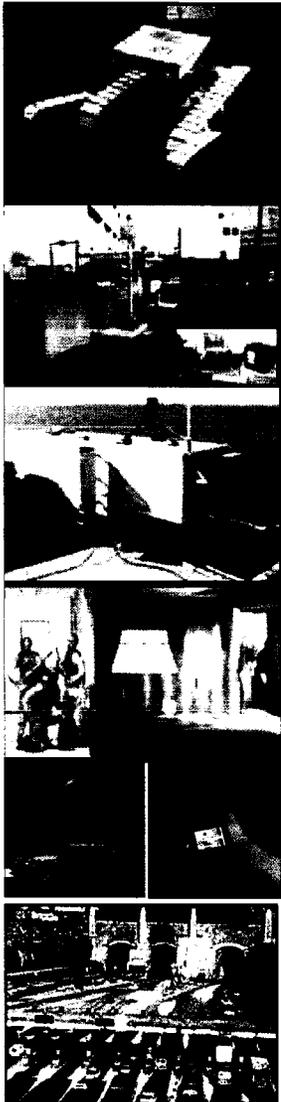
# C4ISR for Homeland Defense



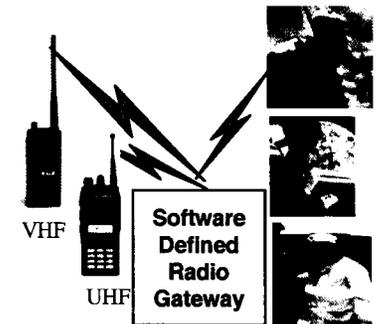
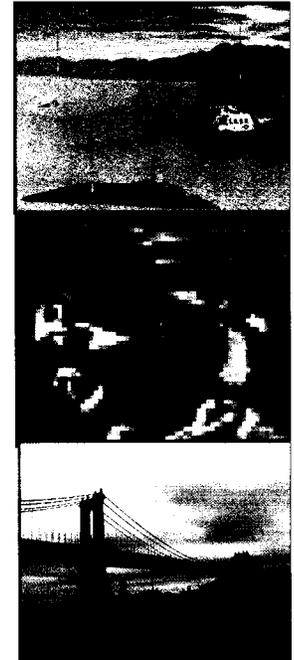
- The Army and the Department of Homeland Security Should Join Forces to Better Equip Emergency Responders to Handle Terrorist Attacks
- Improved C4ISR for Homeland Security Would Yield a High-payoff Capability that Offers Great Return On Investment for the Nation
- The Army's Network-centric Approach to Operations Could Serve Emergency Responders Equally Effectively
- The Requirement for C4ISR is Ubiquitous, Whether for The Army's Future Force or for the Future Emergency Responder



# Support to Homeland Defense



- NYC Critical Infrastructure Protection
- Port Authorities NY/NJ Emergency Operations Center
- First Responder Communications
- Network Information Assurance Solutions for New Jersey
- Federal Emergency Management Agency Region II and Corps of Engineer Continuity of Operations Site

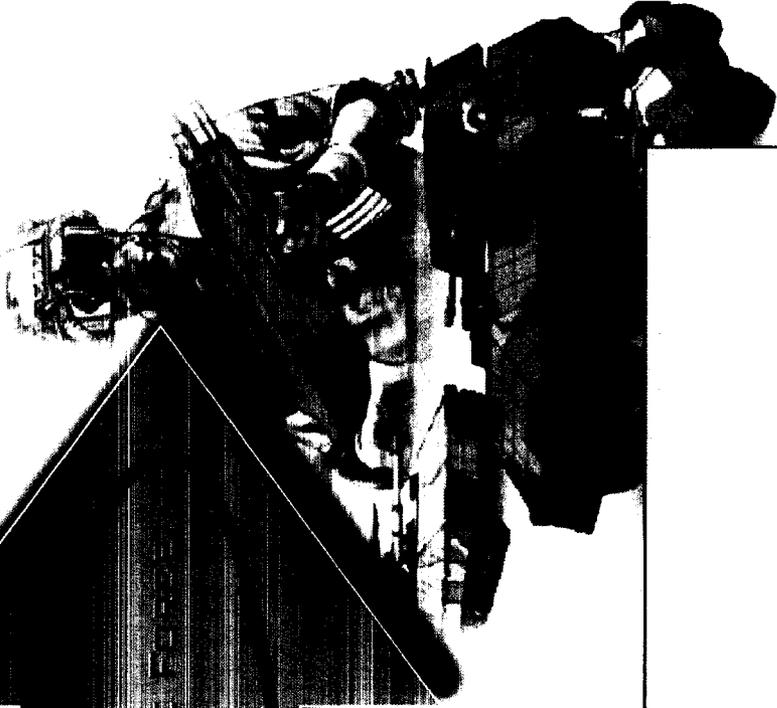




# ... from Current to Future Force

*Accelerated Financing  
And Development*

*Enhanced Capabilities*



***Simultaneously:***

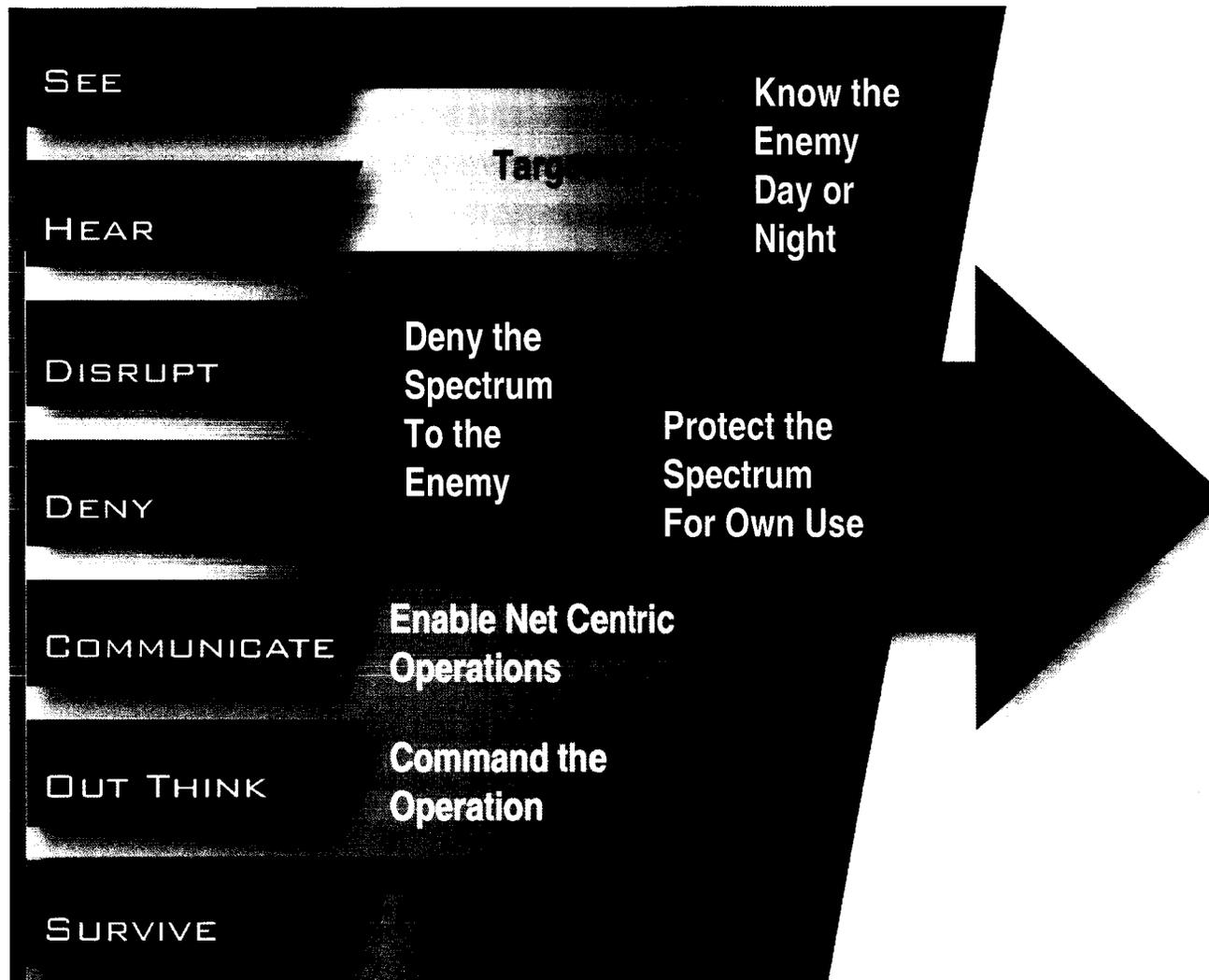
- Supporting Current Operations
- Architecting and Equipping Modular Brigades and Deploying Units
- Developing Future Force Capabilities

# CAISR Mission

from Concept  
to Combat



# C4ISR Missions



**Intelligence Systems**



**Surveillance Systems**



**Reconnaissance Systems**



**Communication Systems**



**Computers**



**Command and Control Systems**

**C4ISR**



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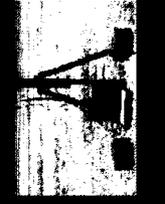


# See, Hear, Disrupt & Deny

## Airborne Sensors



## Ground-Based Sensors



LRAS3



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CECOM

PEB JEWSS

CERDEC



CE-LCMC

DCN: 2700



# See, Hear, Disrupt & Deny (Cont'd)

**Targeting**  
**Sensor-to-Shooter**

TUAV Payload

CGS

Profiler

Firefinder

DCGS-A

GR/CS

DCN: 3700

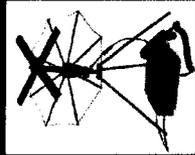
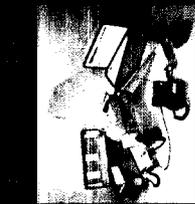


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**TEAM  
C4ISR**

# Communicate

## Space



SMART-T



Teleport



## Airborne Comms and Relays



Predator



Global Hawk



Apache



Hunter/Shadow

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**IEWSS**

**CERDEC**

**PE&EIS**

**CE/LCMC**

Fort Monmouth, NJ

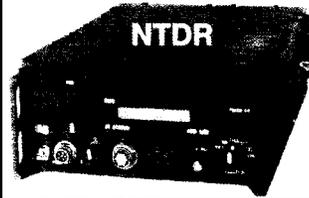
# Communicate (Cont'd)

**Terrestrial**

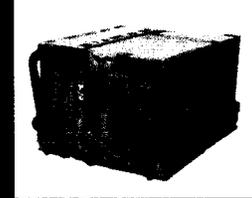
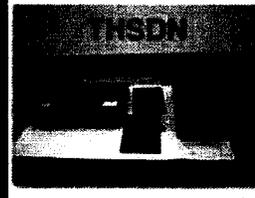
EPLRS



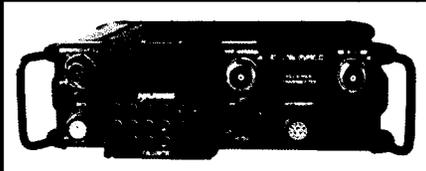
NTDR



THSDN



**Man Portable/SFF**



UGS



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# Out Think



CFLCC

FBCB2

Tactical

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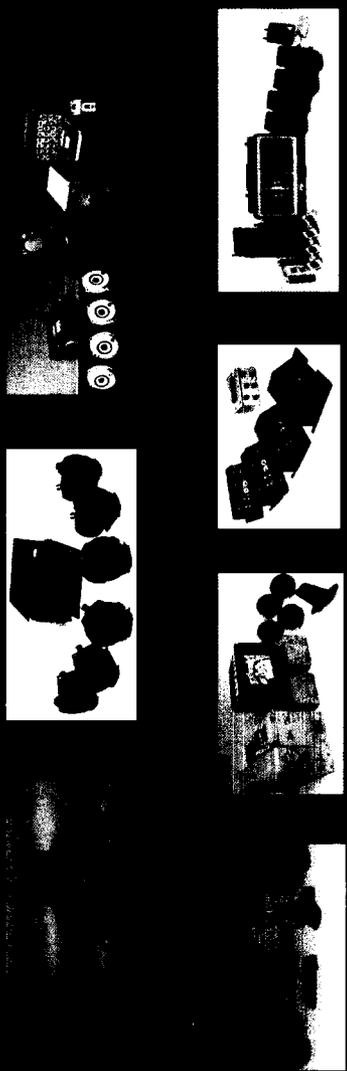
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# Survive



## Aircraft Survivability



## Ground Survivability



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**CECOM**

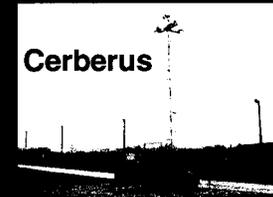
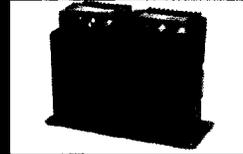
**PEB IEWSS**

**CERDEC PE EIS**

**CE LCMC**

# Survive (Cont'd)

**Force Protection**



ICE



PSDS2

**Mine Detection**



HSTAMIDS



GSTAMIDS

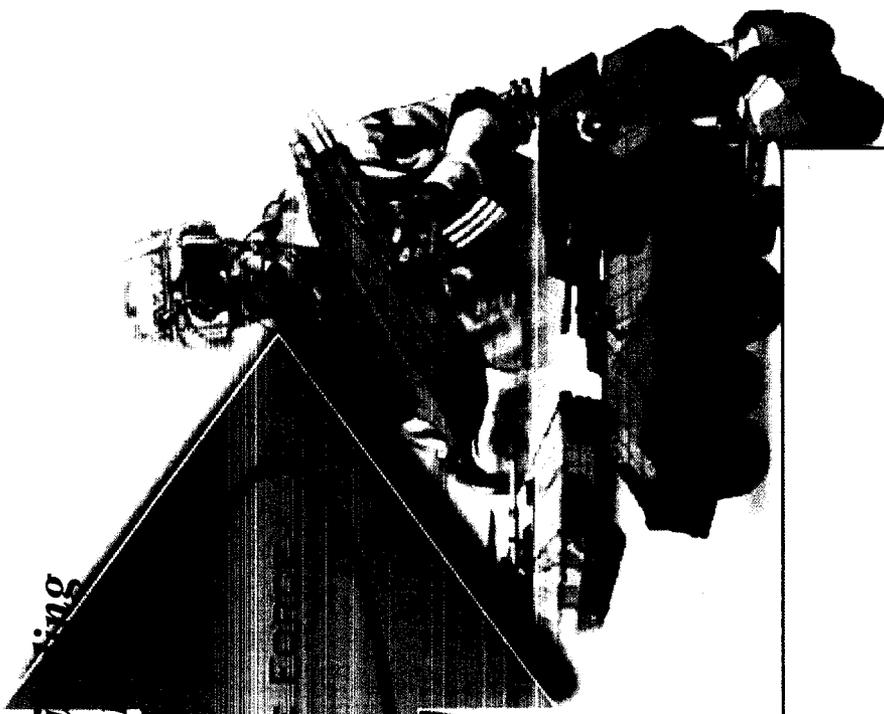
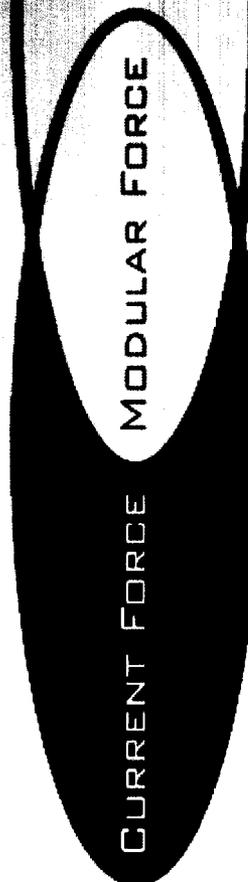




# ... from Current to Future Force

*Enhanced Capabilities*

*Accelerated Financing  
And Development*



***Simultaneously:***

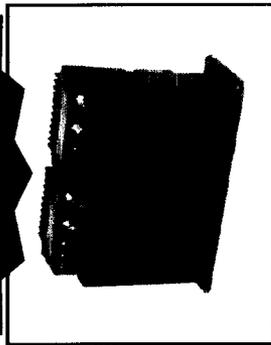
- *Supporting Current Operations*
- *Architecting and Equipping Modular Brigades and Deploying Units*
- *Developing Future Force Capabilities*





# From Concept to Combat

92 Systems in 5 Weeks  
10,000 Fielded to Date



WARLOCK

384,000 Systems  
in 90 Days



Joint Combat ID

650 Systems  
in 36 Months



HSTAMIDS

1,200 Systems  
in 5 Months

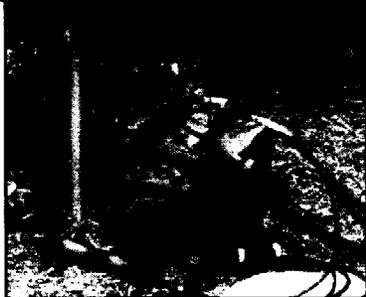


FBCB2

*Quick Reaction Capabilities  
Adapted and Adopted to Wartime Needs*

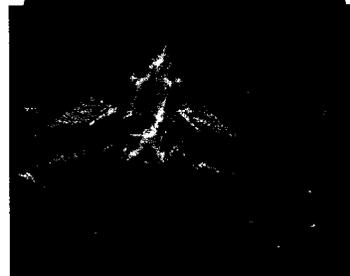
# From Concept to Combat (Cont'd)

62 Units  
in 1 Month



**Omni Sense**

3 Systems  
in 3 Months



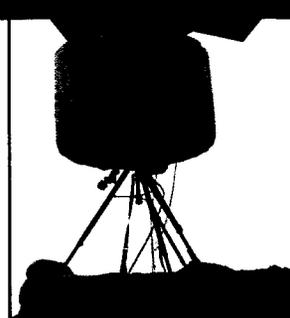
**Lynx SAR**

2 Systems  
in 4 Months



**GUARDRAIL**

29 Systems  
in 12 Months



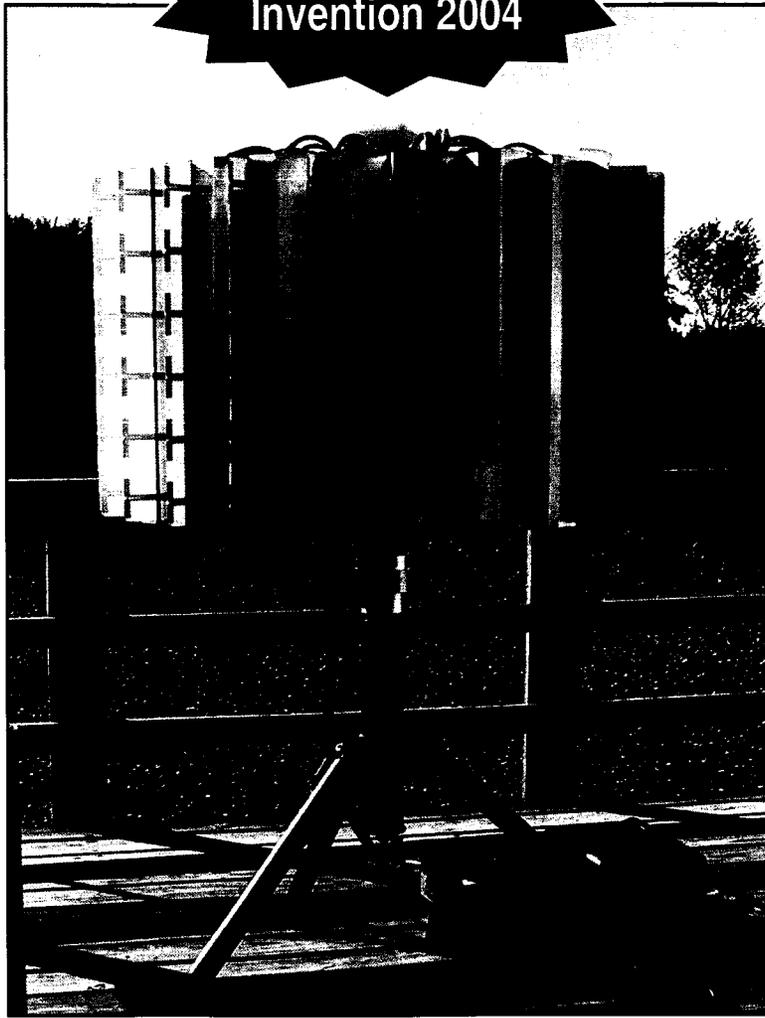
**LCMR**

*Quick Reaction Capabilities  
Adapted and Adopted to Wartime Needs*

**TEAM  
C4ISR**

# Lightweight Counter Mortar Radar

Army Greatest  
Invention 2004



- Rapid Response to Special Operation Forces Requirements and three Operational Need Statements
- 18 Systems Delivered in 2004 (29 Total)
- Detects and Locates Mortar Fire Beyond Mortar Range; 360 Degree Coverage
- Locates with Accuracy Sufficient to Respond with Combat Air or Counter Fire
- Man Packable
- Communicates with Operator via Personal Digital Assistant





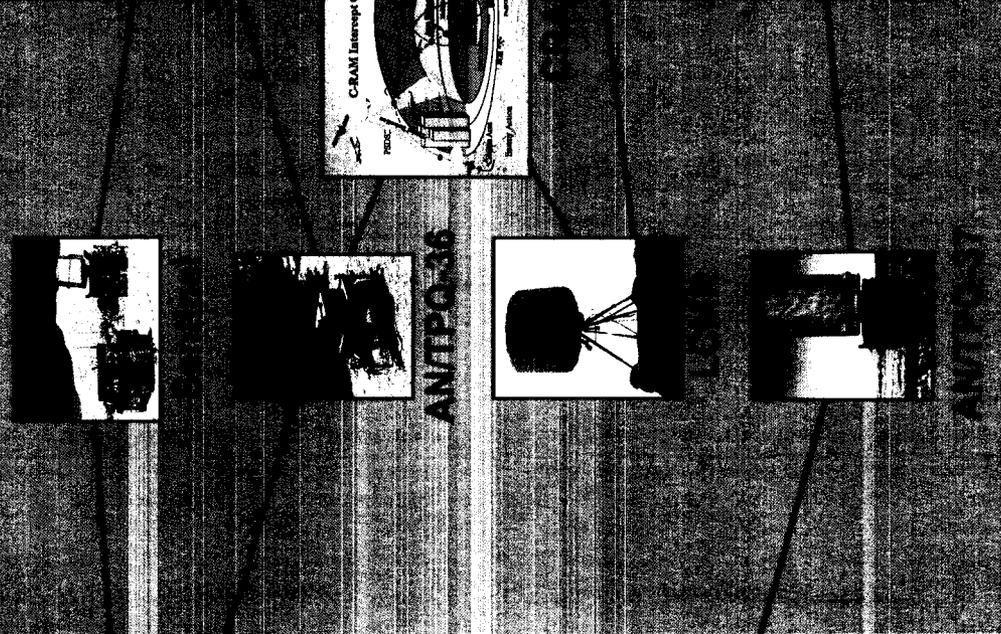
# Radar Roadmap

*Past*



AN/TPQ-36

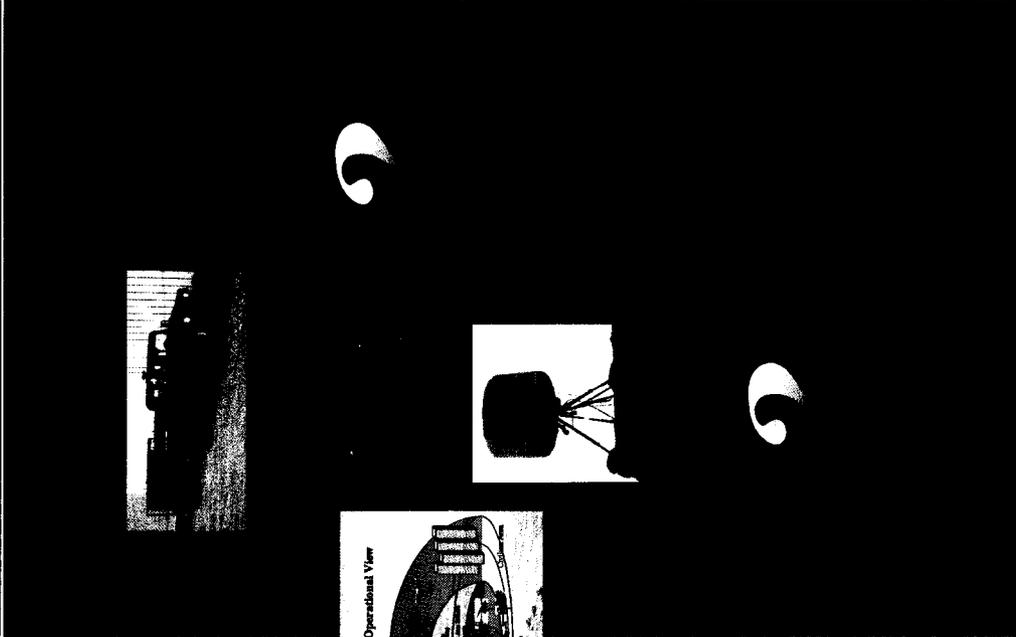
*Present*



AN/TPQ-36

AN/TPQ-37

*Future*



*Systems and Capabilities Have Been Developed, Updated and Upgraded as the Threat Evolves, to Enhance and Extend the Product's Life*

# Support to Current Ops

- *Reset*

- \$2.0B Through FY05
  - \$721M Executed in FY05 to Date
- 180 Battalions
- 75 Different Weapon Systems
- 4,495 Items Done to Date

- *Software Support*

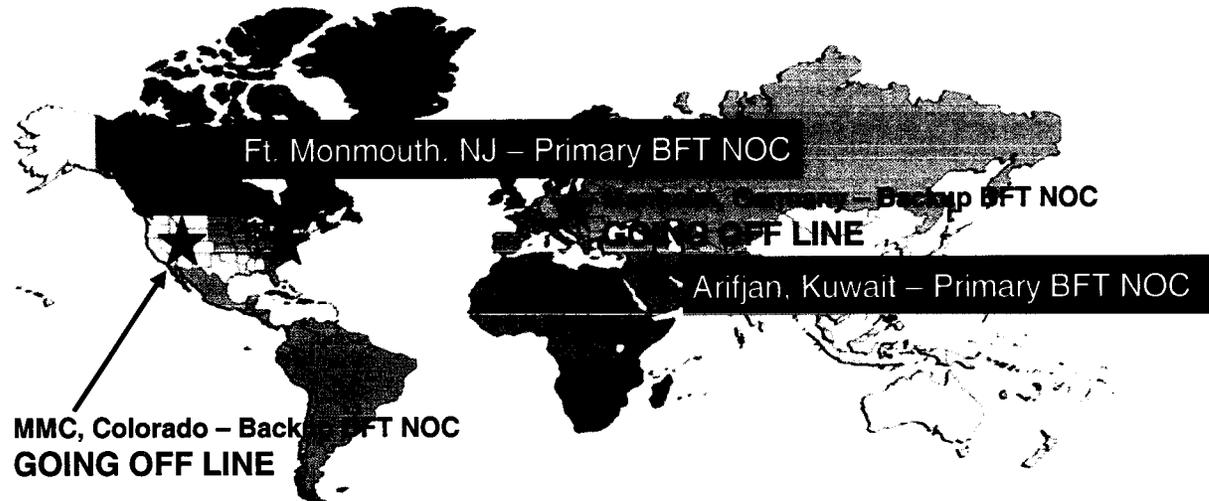
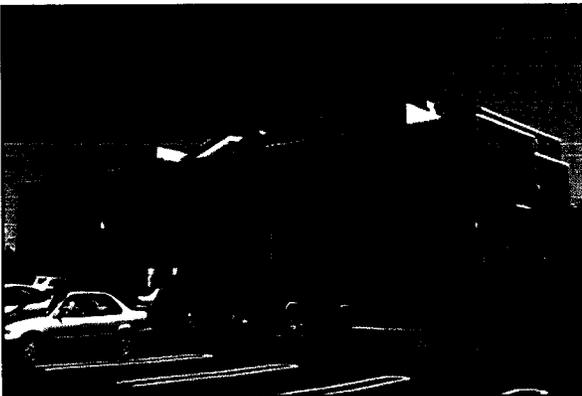
- Responded to Over 8,500 Software Support Requests (OEF/OIF)
- 171 C4ISR Software Upgrades Fielded in the Last 12 Months
  - 83 to OEF/OIF
- 161 Field Software Engineers
  - Average 45 in Theater at Any Time



# TEAM C4ISR

## Support to Current Ops (Cont'd)

- Specialized Services to Warfighters
  - The Network Operations Center for Logisticians
  - The Network Operations Center for Joint Task Force
  - Other Contingency Sites Both Classified and Unclassified



### What does the Ft Monmouth NOC do?

- Information Hub via Reachback
- Provide Coverage for Units Training to Redeploy OCONUS
- Diagnostic Cell for Testing and Integration



**TEAM  
C4ISR**

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# ... from Current to Future Force

*Enhanced Capabilities*

*Accelerated Fielding  
And Development*

CURRENT FORCE

MODULAR FORCE

FUTURE FORCE



## *Simultaneously:*

- Supporting Current Operations
- **Architecting and Equipping Modular Brigades and Deploying Units**
- Developing Future Force Capabilities

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**CECOM**

**PEB  
IEW&S**

**★ CERDEC**  
US ARMY - CERDEC

**PEE EIS**

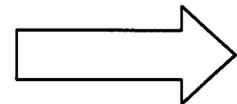
**CE•LCMC**  
Communicative • Electronic Life Cycle Management Command  
Fort Monmouth, NJ

# Building the Modular Army as We Execute the War on Terrorism

	OIF/OEF 05-07 Rotation		OIF/OEF 06-08 Rotation		OIF/OEF 07-09 Rotation	
<b>ACTIVE</b>	FY04		FY05		FY06	
Division (UE)						
Brigade (UA)					TBD	
Stryker	<sup>1/25</sup>			<sup>2/25</sup>		

**Modularity:** The Army's Major Force Transformation Initiative that Involves the Total Redesign of the Operational Army Into a Larger, More Powerful, Flexible and Rapidly Deployable Force

<b>ARNG</b>	FY05	FY06	FY07	FY08
Division (UEx)				
Brigade (UA)				<sup>56</sup>



- Reengineered the Architecture to Allow for Technology Insertion
- Integrated and Delivered 20 Battle Command, 7 Communications and 15 ISR Systems (42 total)
- Inserted Selected Capability Upgrades
- Sustained the Unit (\$48M, 73,000 parts)
- Reset (\$23M)

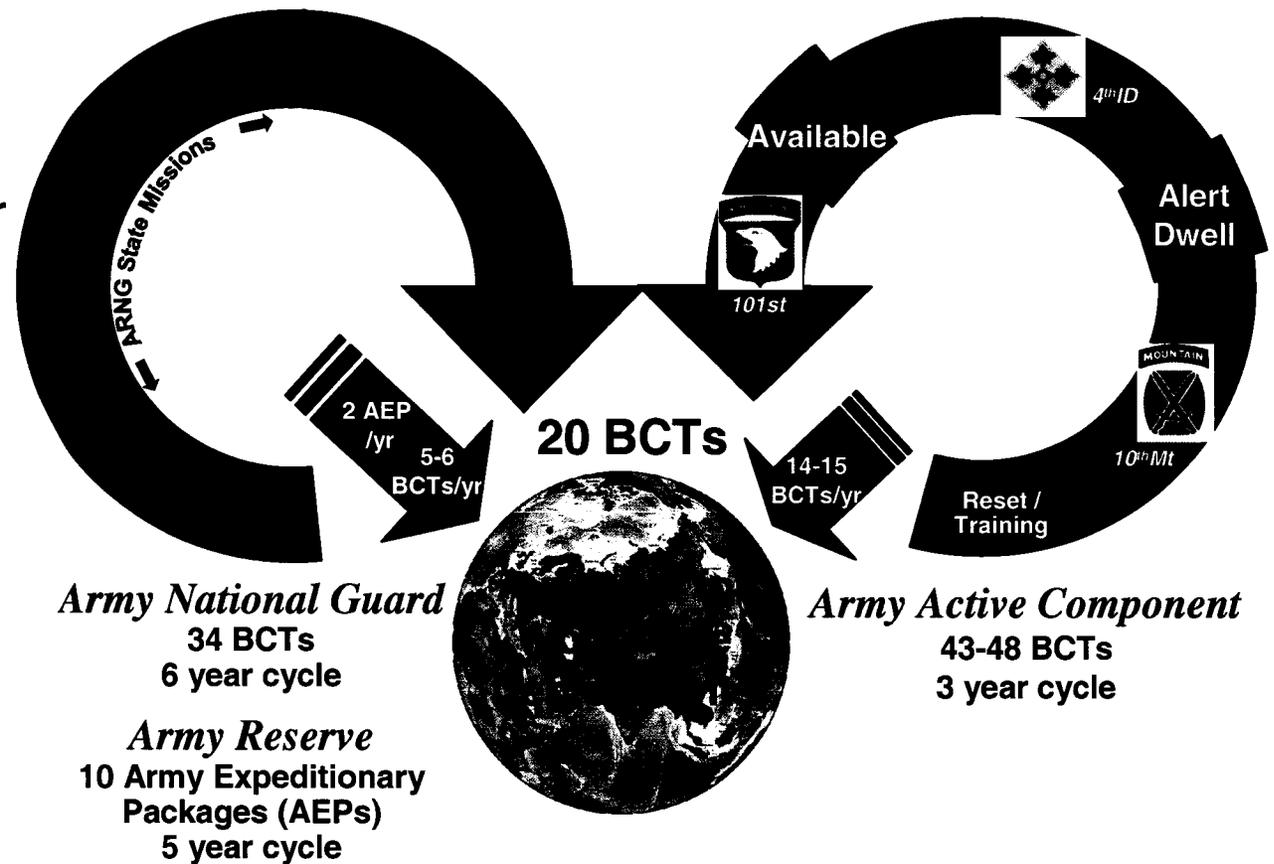
**Fielded Over 10,000 Items**

*12 Months from Concept to Combat*

# Army Force Generation Model

## *Our Role:*

- Engineer the Architecture to Allow for Capability Upgrades
- Equip and Reset the Unit
- Train the Unit
- Field Selected Systems
- Sustain the Unit
- Assess for Technology Insertion



*77 Brigade Combat Teams (BCT) to Be Built  
OpTempo Has Increased*

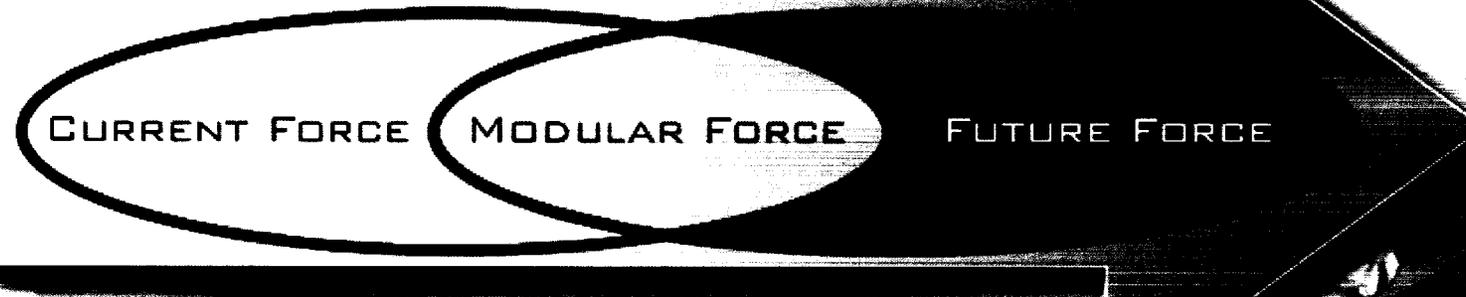
**TEAM  
C4ISR**

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# ... from Current to Future Force

*Enhanced Capabilities*

*Accelerated Fielding  
And Development*



***Simultaneously:***

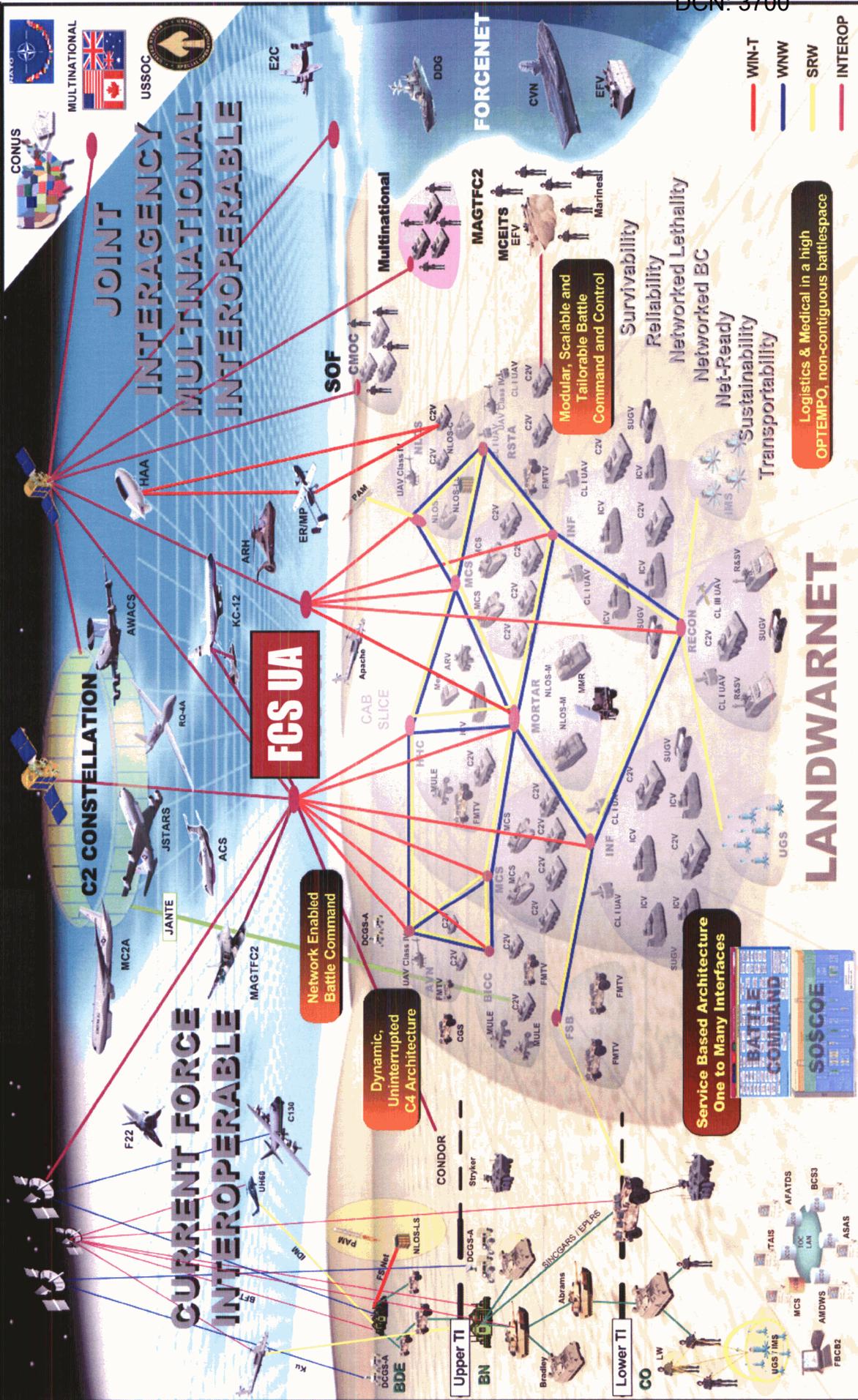
- Supporting Current Operations
- Architecting and Equipping Modular Brigades and Deploying Units
- *Developing Future Force Capabilities*





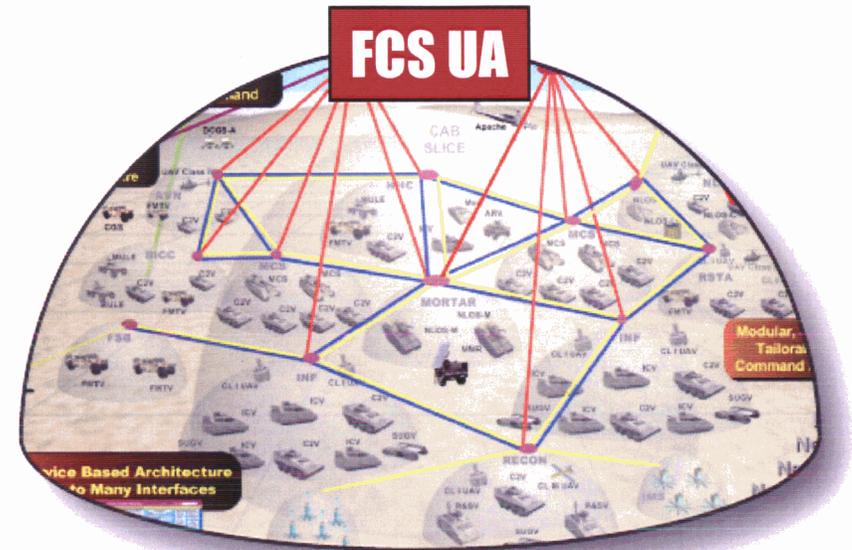
# DoD Transformation is Complex

## Now Through CY2020



# Enabling Transformation

- Future Force C4ISR Systems
  - 19 Programs of Record
- C4ISR Technology
  - Providing 67% of Future Force Critical Technologies
- Collocated Program Management and Engineering (PM UA NSI)
- Experimentation & Test
  - Executing Risk Reduction Testing and Evaluation for Spiral 1 and Joint Expeditionary Force Experiment 06



- Future Force Characteristics – Responsive, Deployable, Agile, Versatile, Lethal, Survivable, Sustainable...
- A New Way of Joint Warfare
  - Dominant Situation Awareness
  - Networked Weapons Systems
  - Joint Interdependence to Small Unit Level
- More Strategically Responsive Land Force
  - Lighter, More Air and Sea Transportable
  - Reduced Sustainment Footprint/ Reachback/3 Days Combat w/o Re-Supply
- Technology Enabled - Spiral Development/Insertions
- Capabilities Based Force for Combatant Commanders Now. . .Future!

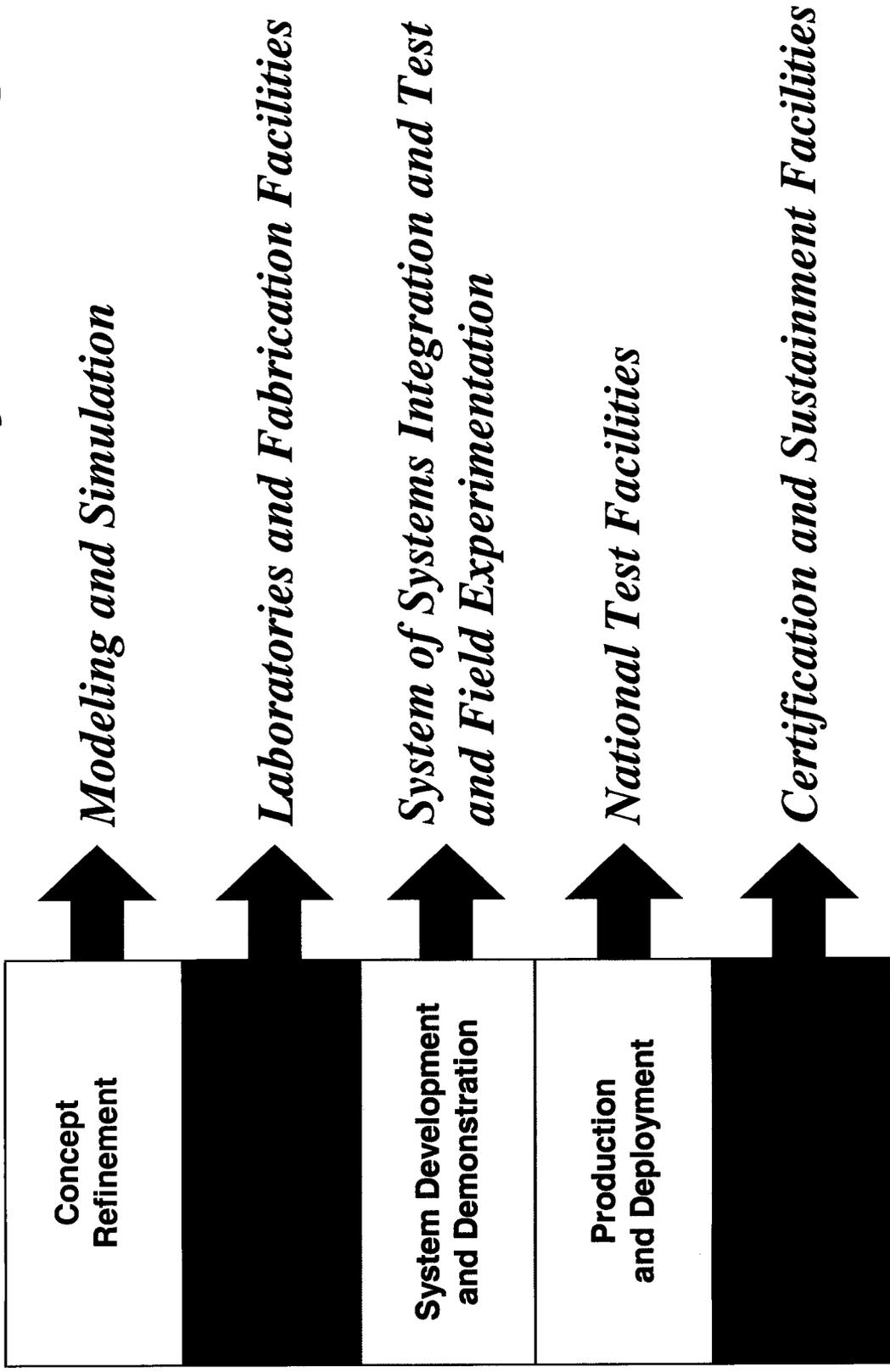
# *Laboratory, Experimentation, and Certification Facilities*

from Concept  
to Combat



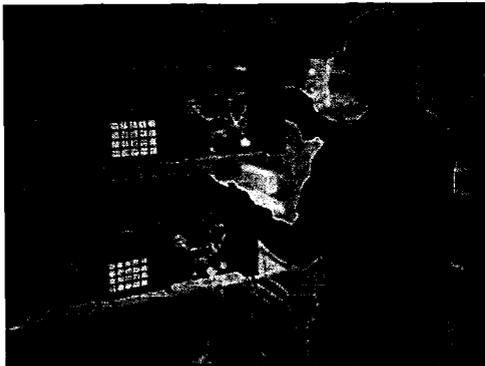


# Facilities in Support of Program Lifecycle Management



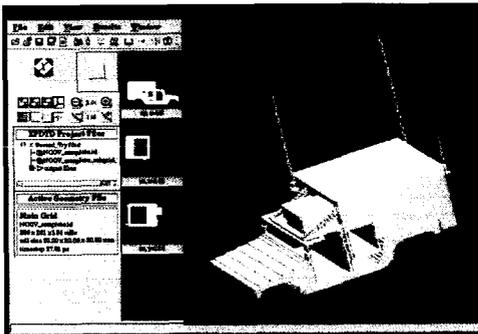
# TEAM C4ISR

## Modeling and Simulation



### *Virtual Prototyping Lab*

- Allows for interaction between design engineers and customers/users to compare alternatives prior to investing large resources in manufacturing
- Networked with computer-aided design and manufacturing for rapid hardware prototyping



### *Antenna Simulation Lab*

- Optimizes installed antenna performance on platforms
- Minimizes co-site interference between multiple antennas on individual platforms



OTM Lab / M&amp;S

OTM Applications



GIC Network Operations Center

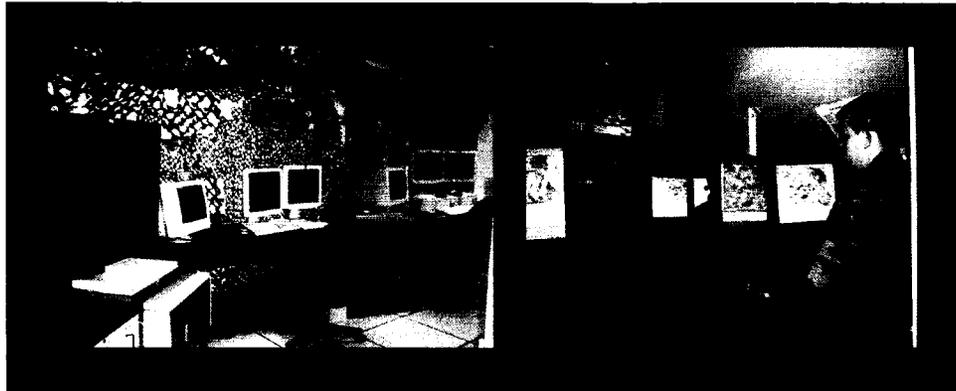
ABCS Suite

### *Government Integration Center*

- Network Hub which provides connectivity between virtual and live experimentation facilities



# Laboratories



## *Command and Control Development Lab*

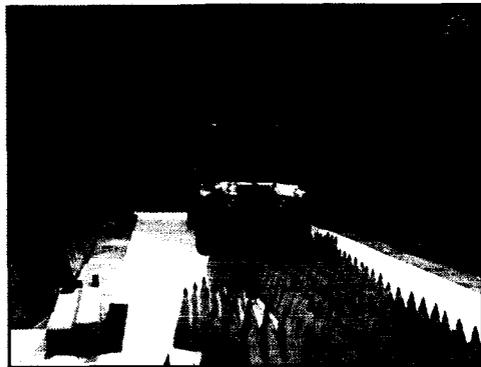
- Supports development of command and control applications for tactical and strategic levels
- Interconnected to communications labs for system level performance assessments



## *Electronic Warfare and Signals Intelligence Lab*

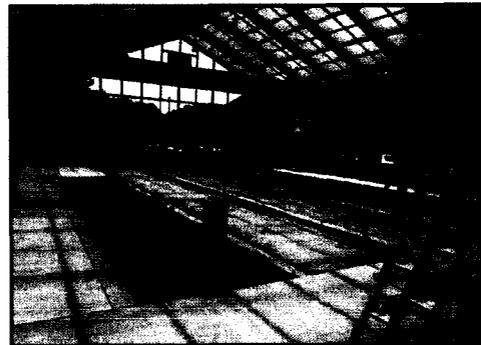
- Simulates Guardrail/Common Equipment representative of all Army fielded systems
- Provides near real-time Enemy Situational Awareness, Intercept ID, Precision Location
- Supports Analysis of Communications and Electronic Intelligence Emitters

# System of Systems Integration and Test



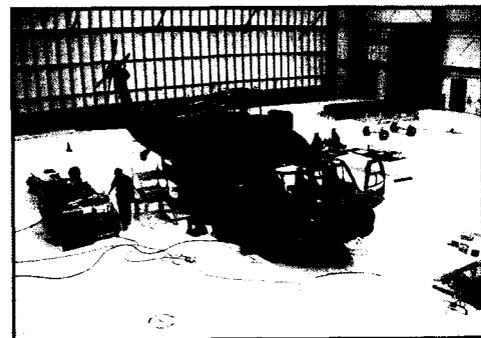
## *Anechoic Chamber*

- Shielded Facility which protects highly sensitive Testing from counter-intelligence
- Controlled environment which allows for the measurement of technical performance with the greatest accuracy without external interference



## *Mine Lane Facility*

- Environmentally controlled and instrumented facility to test state of the art mine detection technology in world wide representative soils.
- Supporting military and humanitarian demining efforts



## *Aviation Fabrication and Test*

- Installation of C4ISR Mission Packages
- Designated as Joint UAV Flight Test Facility
- Designated As An Experimental Flight Activity

# Certification and Sustainment

## *Replication, Distribution, Installation, and Training Support Facilities*

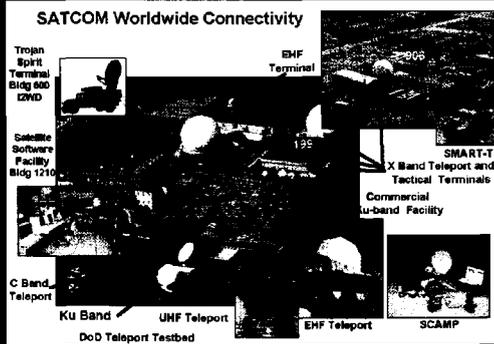
- Provides software/firmware and data products and services such as battlefield software, digitized maps, etc. to the soldier on the battlefield

## *Satellite Communications Facility*

- Provides the Capability to simulate actual problems reported from the field, develop fixes and test proposed solutions

## *Joint DOD Satellite Communications Certification Facility*

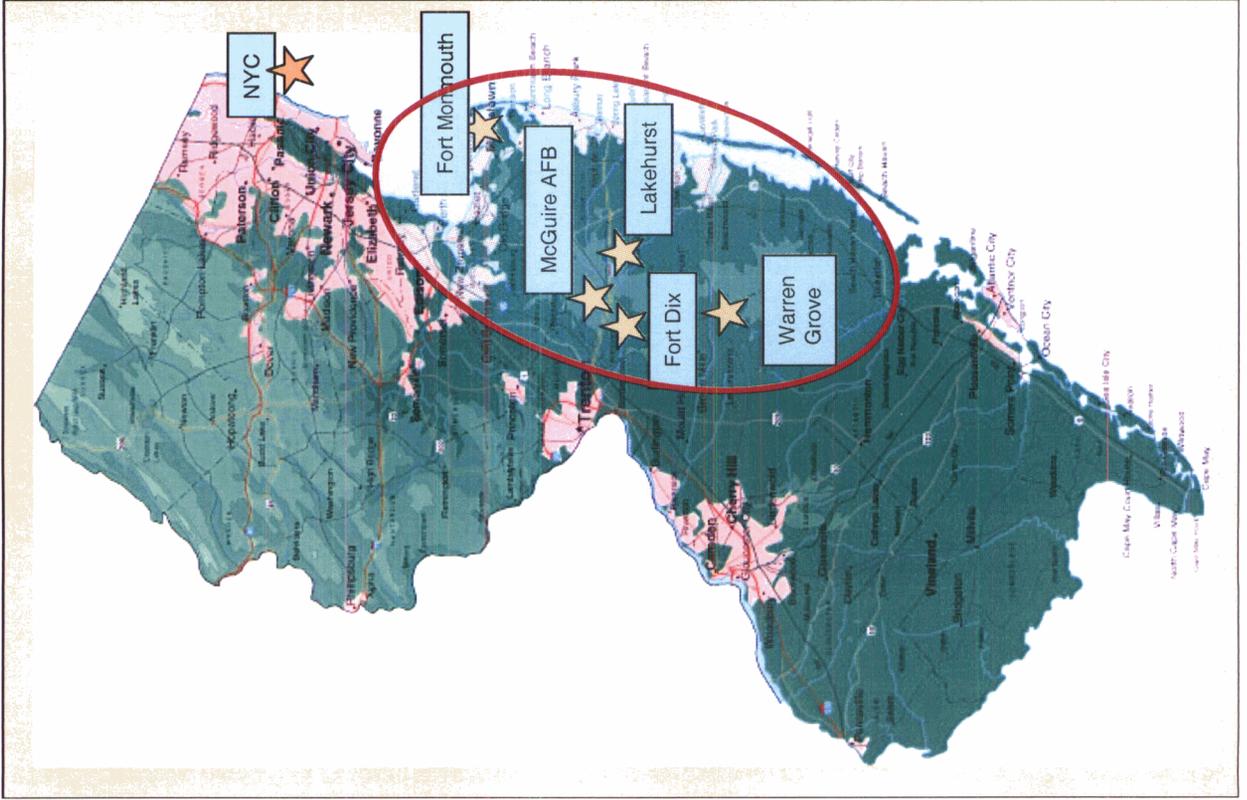
- Strategic Satellite Ground Station Teleport Mega Center
- Tactical Satellite Ground Station Center
- DOD Global Information Grid Access to all Command, Control, Intelligence and Communications Centers



# C4ISR On-The-Move Live Experimentation

## *Testbed and Ranges*

- Access to a Unique Environment, Distributed Between the Laboratories and Workshops at Fort Monmouth and the Fields, Forests and Ranges of Fort Dix, McGuire AFB and Lakehurst NAES
  - Extensively Instrumented and Calibrated to Collect C4ISR Data
- Access to U.S. Army Reserve and National Guard Units
- Connectivity to TRADOC Battle Labs, Industry, Academia and Coalition Partners

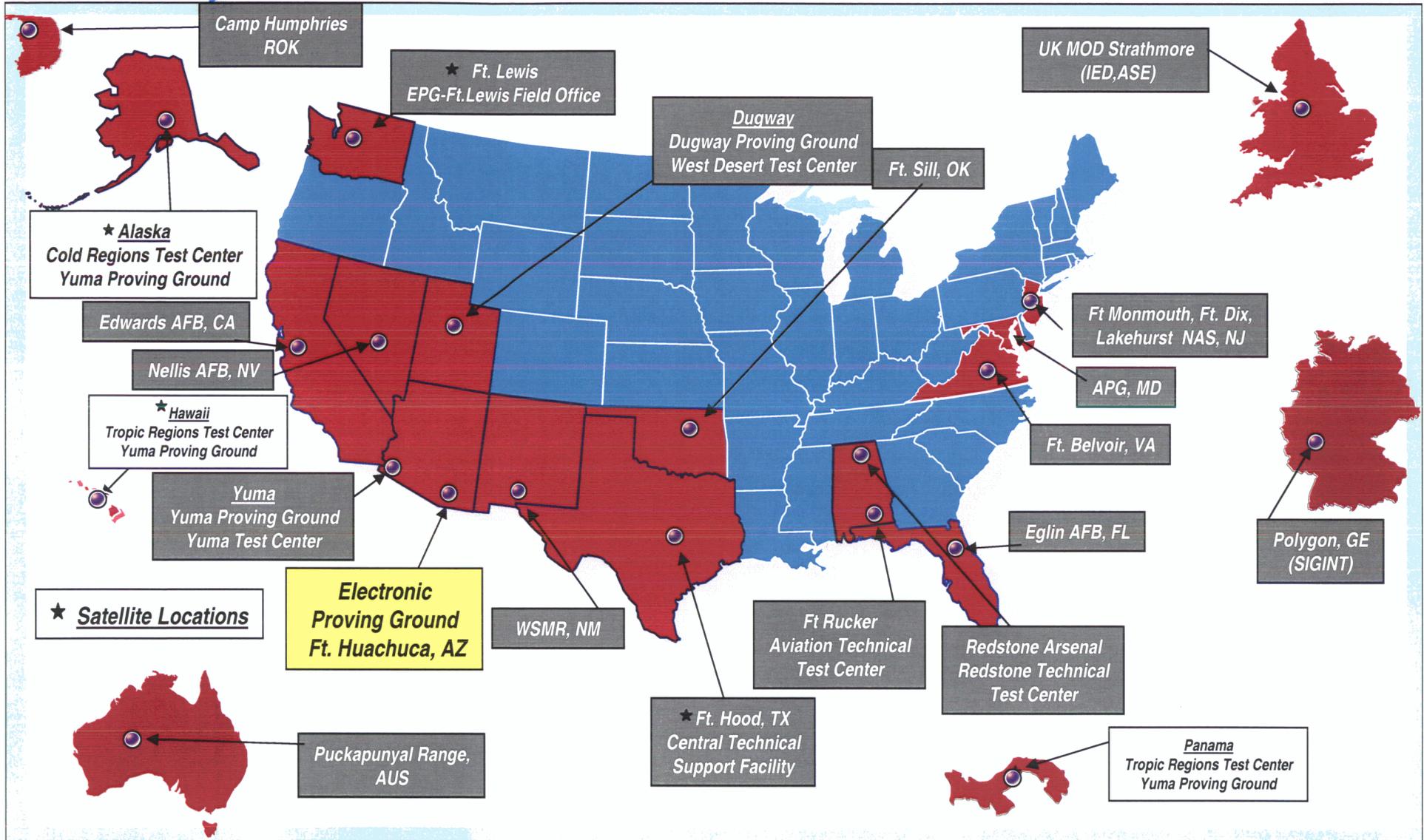


# C4ISR OTM Testbed Overview





# Major Ranges and Test Centers





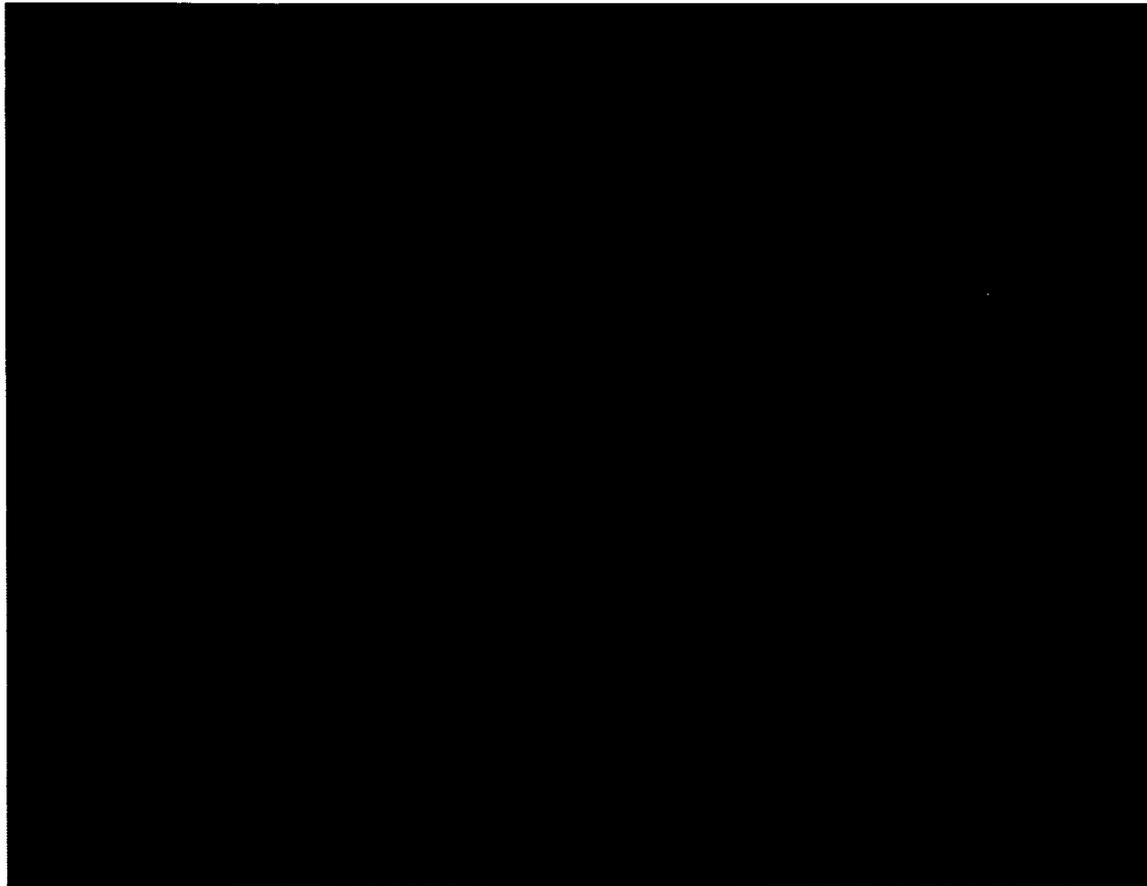
# Summary

- Team C4ISR Has Extensive Intellectual Capital in the Engineering, Development, Acquisition and Sustainment of Complex C4ISR Systems
- Team C4ISR's Location in NJ Provides Ready Access to Highly Trained Personnel from Both Industry and Academia
- Team C4ISR Simultaneously Leads the Execution of Support to Current Operations, Modularity, and Transformation to the Future Force
- Access to the Fort Dix Testbed Enhances Our Ability to Characterize Integrated C4ISR Systems of Systems Prior to Independent Testing at a Variety of Test Centers Around the US

**TEAM  
C4ISR**

FORT MONMOUTH, NJ

# Chief of Staff of the Army



**Winter AUSA**

[WWW.MONMOUTH.ARMY.MIL](http://WWW.MONMOUTH.ARMY.MIL)



**CECOM**

PEB  
**IEWSS**

★ **CERDEC**  
US ARMY - BUCKINGHAM

PEB  **EIS**

**CE•LCMC**  
Communications • Electronic Life Cycle Management Center  
Fort Monmouth, NJ

ABCS	Army Battle Command System
AD	Army Depot
AFATDS	Advanced Field Artillery Tactical Data System
AL&TWF	Acquisition, Logistics and Technology Workforce
ARL	Airborne Reconnaissance Low
ASIP	Advanced Signals Intelligence Program
AT/FP	Antiterrorism/Force Protection
BCT	Battlefield Command/Communications Terminal
BFT	Blue Force Tracking
BN & BDE	Battalion and Brigade
BRS	Base Radio Systems
C2	Command and Control
C3	Command, Control Communications
C4	Command, Control, Communications, Computers
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance & Reconnaissance
CCTV	Closed Circuit Television System
CECOM	Communications-Electronics Command
CENTCOM	Central Command
CERDEC	Communications-Electronics Research Development and Engineering Center
CFLCC	Coalition Forces Land Component Command
CGS	Common Ground Station
CHAMP	Commanders Hand-Held Application Mission Planning
CHIMS	CI/Humint Management Systems
CI/FP	Counter Intelligence/Force Protection
CONUS	Continental United States
CRDA	Cooperative Research and Development Agreement
DCGS-A	Distributed Common Ground System-Army
DESC	Defense Energy Supply Center
DoD	Department of Defense
DSCS/WGS	Defense Satellite Communications System/Wideband Gapfiller System
DVE	Driver's Vision Enhancer
ER/MP	Extended Range/Multipurpose
ESSC	Electronic Sustainment Support Center
EUCOM	European Command
FBCB2/BFT	Force XXI Battle Command Battalion/Brigade & Below/Blue Force Tracking
FCS	Future Combat Systems
FF	Firefighter
FLIR	Forward Looking Infrared Radiometer
FM	Fort Monmouth
GCCS-A	Global Command and Control System-Army
GPS	Global Positioning System
GR/CS	Guardrail/Common Sensor
GSTAMIDS	Ground Standoff Minefield Detection System
HQDA	Headquarters, Department of the Army
HSTAMIDS	Handheld Standoff Mine Detection System
IAFIS	Integrate Automated Fingerprint Identification System
ICE	Integrated Computer Engineering
INTEROP	Interoperability

ISEC	Information Systems Engineering Command
ISR	Intelligence, Surveillance & Reconnaissance
JNN	Joint Network Node
JSTARS	Joint Surveillance Target Attack Radar System
JTRS	Joint Tactical Radio System
JTT	Joint Tactical Terminal
LARS	Logistics Assistance Representatives
LCMR	Lightweight Counter-Mortar Radar
LLDR	Lightweight Laser Designator Rangefinder
LRAS3	Long Range Advanced Scout Surveillance System
LRC	Logistics and Readiness Center
MCS	Maneuver Control System
MCD	Missile Countermeasure Device
MI	Military Intelligence
MMR	Multi-Mission Radar
MSE	Mobile Subscriber Equipment
MWS	Missile Warning System
NORTHCOM	Northern Command
NTDR	Near-Term Digital Radio System
NV	Night Vision
OCONUS	Outside Continental United States
OEF/OIF	Operation Enduring Freedom/Operation Iraqi Freedom
OPTEMPO	Operating/Operations Tempo
OTM	On The Move
PACOM	Pacific Command
PEO C3T	Program Executive Office Command, Control, Communications-Tactical
PEO EIS	Program Executive Office Enterprise Information Systems
PEO IEW&S	Program Executive Office Intelligence, Electronic Warfare & Sensors
PEO/PM	Program Executive Office/Program Manager
PM	Program Manager
R&D	Research and Development
RDT&E	Research, Development, Testing and Evaluation
REMBASS	Remotely Monitored Battlefield Sensor System
RWR	Radar Warning Receiver (same as RSDS – Radar Signal Detecting Set)
SEC	Software Engineering Center
SINCGARS	Single Channel Ground and Airborne Radio System
SMART-T	Secure Mobile Anti-jam Reliable Tactical Terminal
SOF	Special Operations Forces
SOUTHCOM	Southern Command
SRW	Soldier Radio Waveform
SWA	Southwest Asia
TAIS	Tactical Airspace Integration System
TRADOC	Training & Doctrine Command (US Army)
TUAV	Tactical Unmanned Air Vehicle
UA	Unit of Action
UE/JTF	Unit of Employment/Joint Task Force
UGS	Unattended Ground Sensors
WIN-T	Warfighter Information Network-Tactical