



The Army Signal Command

Army Transformation and the Network Enterprise Technology Command (NETCOM)

By

Dr. Michael L. Gentry

Senior Technical Director/Chief Engineer

U. S. Army Signal Command

April 24, 2002

REPORT DOCUMENTATION PAGE*Form Approved*
OMB No. 074-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE 4/24/2002	3. REPORT TYPE AND DATES COVERED Briefing 4/24/2002	
4. TITLE AND SUBTITLE Army Transformation and the Network Enterprise Technology Command (NETCOM)			5. FUNDING NUMBERS	
6. AUTHOR(S) Gentry, Dr. Michael L.				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Signal Command			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) IATAC 3190 Fairview Park Drive Falls Church, VA 22042			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; Distribution unlimited			12b. DISTRIBUTION CODE A	
13. ABSTRACT (Maximum 200 Words) Breifing from the Phoenix Challenge 2002.				
14. SUBJECT TERMS IATAC Collection, knowledge management, NETCOM, asymmetrical warfare			15. NUMBER OF PAGES 21	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UNLIMITED	

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. Z39-18
298-102

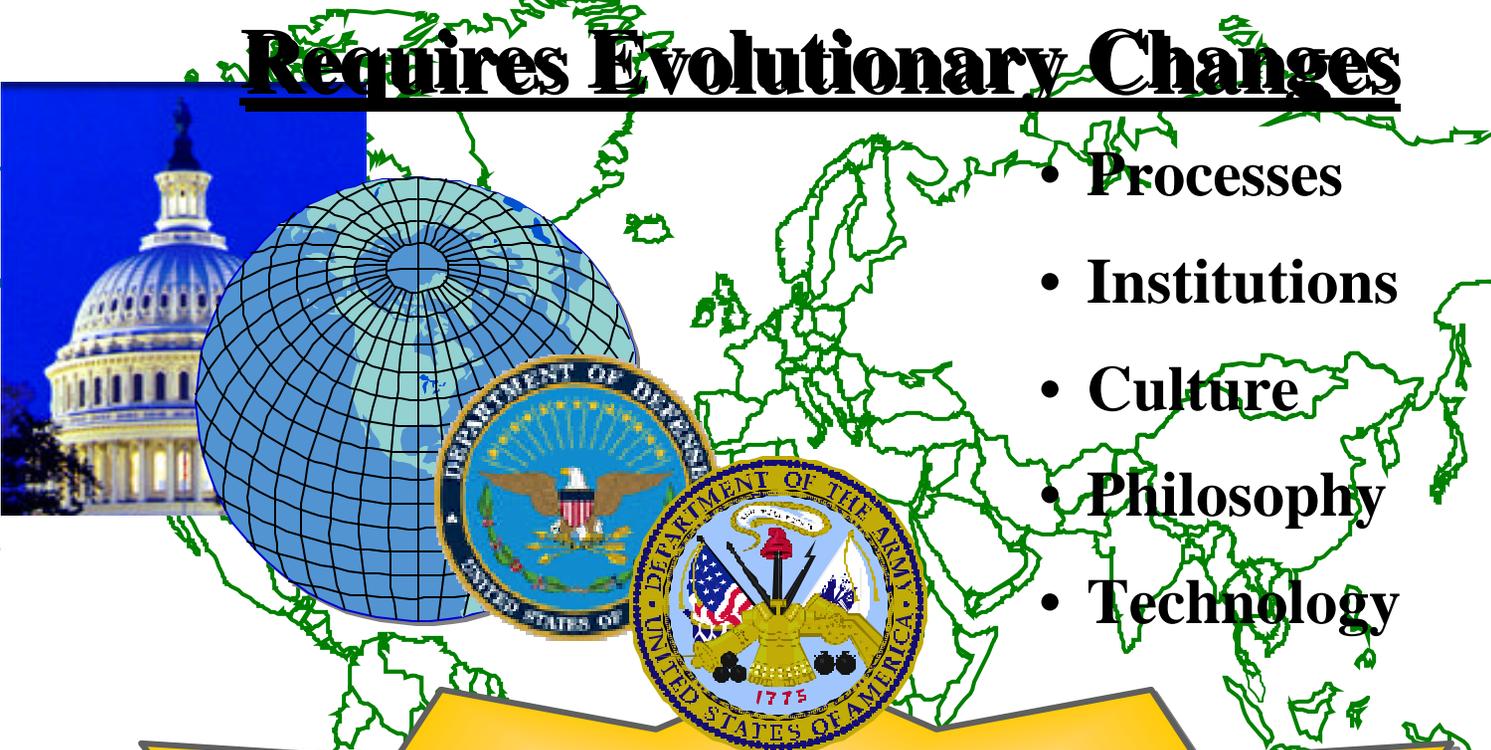


The Army Signal Command

Transforming the Army . . .

Requires Evolutionary Changes

- Processes
- Institutions
- Culture
- Philosophy
- Technology



*Our Leaders are The Army's
Strategic Change Agents for achieving a
network centric, knowledge-based
Objective Force*



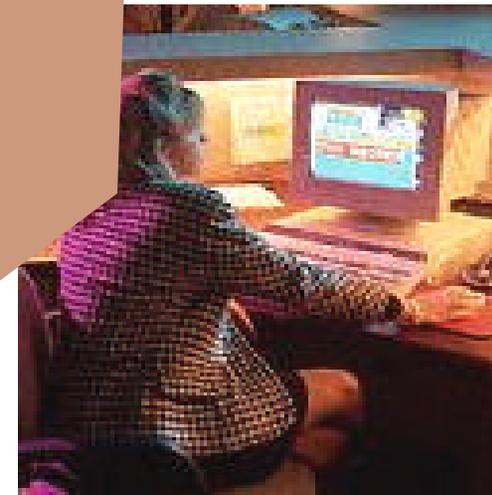
The Army Signal Command

Army Knowledge Management



The Army strategy to transform itself into a network-centric, knowledge-based force. This effort is an integral part of Army Transformation.

AKM is intended to improve decision dominance by our warfighters and business stewards – in the battlespace, in our organizations, and in our mission practices.

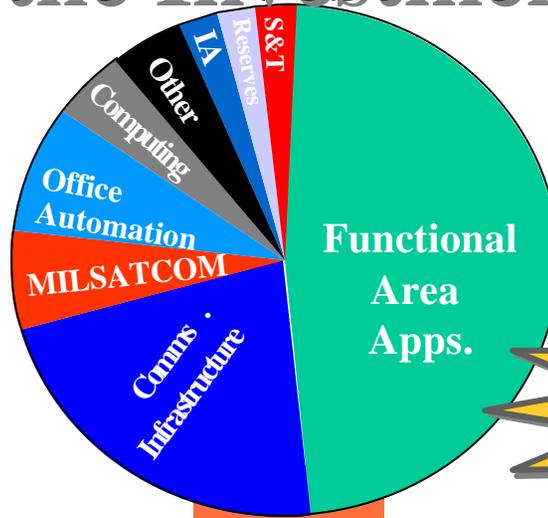




The Army Signal Command

Reshaping the Investment Strategy

**\$5B FY02
C4/IT BUDGET**



**Leadership
will change the
balance!**



**ARMY
KNOWLEDGE
MANAGEMENT...**
The Strategic Transformer

**Warfighting
Capabilities**

**Business
Overhead**

**Warfighting
Capabilities**

**Business
Overhead**

Traditional

Transitional

Transformed



The Army Signal Command

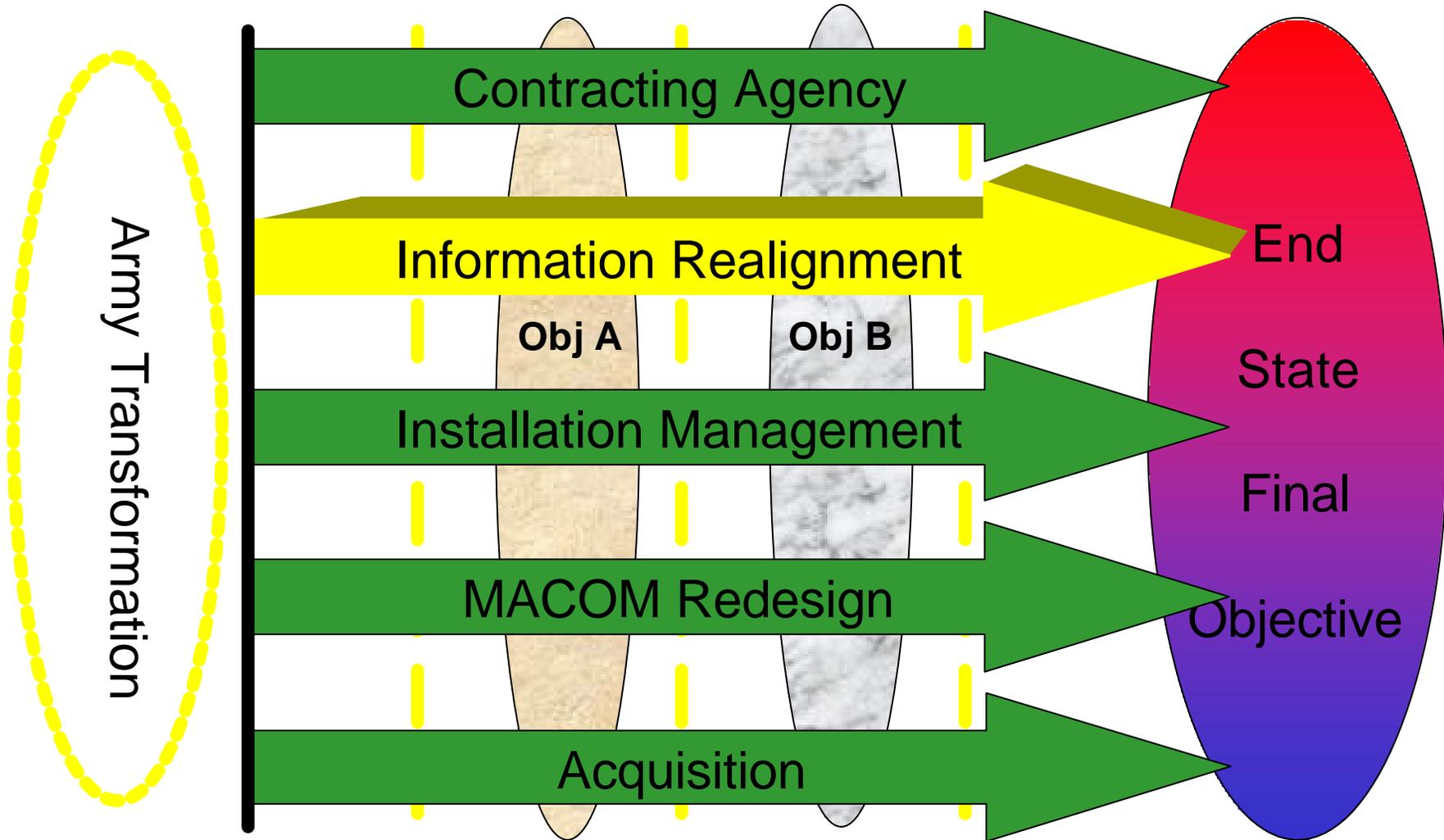
AKM Strategic Goals

1. **Adopt governance and cultural changes to become a knowledge-based organization**
2. **Integrate knowledge management concepts and best business practices into Army processes to improve performance**
3. **Manage the Infostructure as an Enterprise to enhance capabilities and efficiencies**
4. **Scale Army Knowledge Online (AKO) as the Enterprise Portal to provide universal, secure access for the entire Army**
5. **Harness our human capital for the knowledge-based Army**



The Army Signal Command

Army Transformation





IM Realignment Background (Objectives)

- **Army CIO is the single corporate leader responsible for the Army Enterprise Infostructure (AEI)**
- **Provide policy and oversight at the HQDA level to insure consistent IM policy across the Army**
- **Realign operation and management functions under a single Operating Agency (NETCOM) responsible to the Army CIO at the Enterprise Level**
- **Achieve IM resource equities across the Army**
- **Flatten the organizational structure of IM operations – clear chain of command**



The Army Signal Command

Evolving Missions

CURRENT ARMY SIGNAL COMMAND MISSIONS

Provide a warfighting competent strategically responsive Signal force support to:

- Combatant CINCs
- Army Service Component Commanders
- Joint and Combined Operations
- Establish, operate, protect, sustain, integrate, and manage the Army's portion of the Global Information Grid
- Protect and provide for the well-being of our people.

NEW AKM MISSIONS:

U.S. Army Signal Command (USASC) is the Army's single authority to operate and manage the enterprise level infostructure. USASC will have technical command and control and configuration management authority for the Army's critical networks and systems, and will have operational review/coordination authority for any standards, system, architecture, design, or device that impacts enterprise level Army infostructure and Network Operations (NETOPS).

18 September 2001
AKM Implementing Guidance

NETCOM/9th Army Signal Command Mission Statement

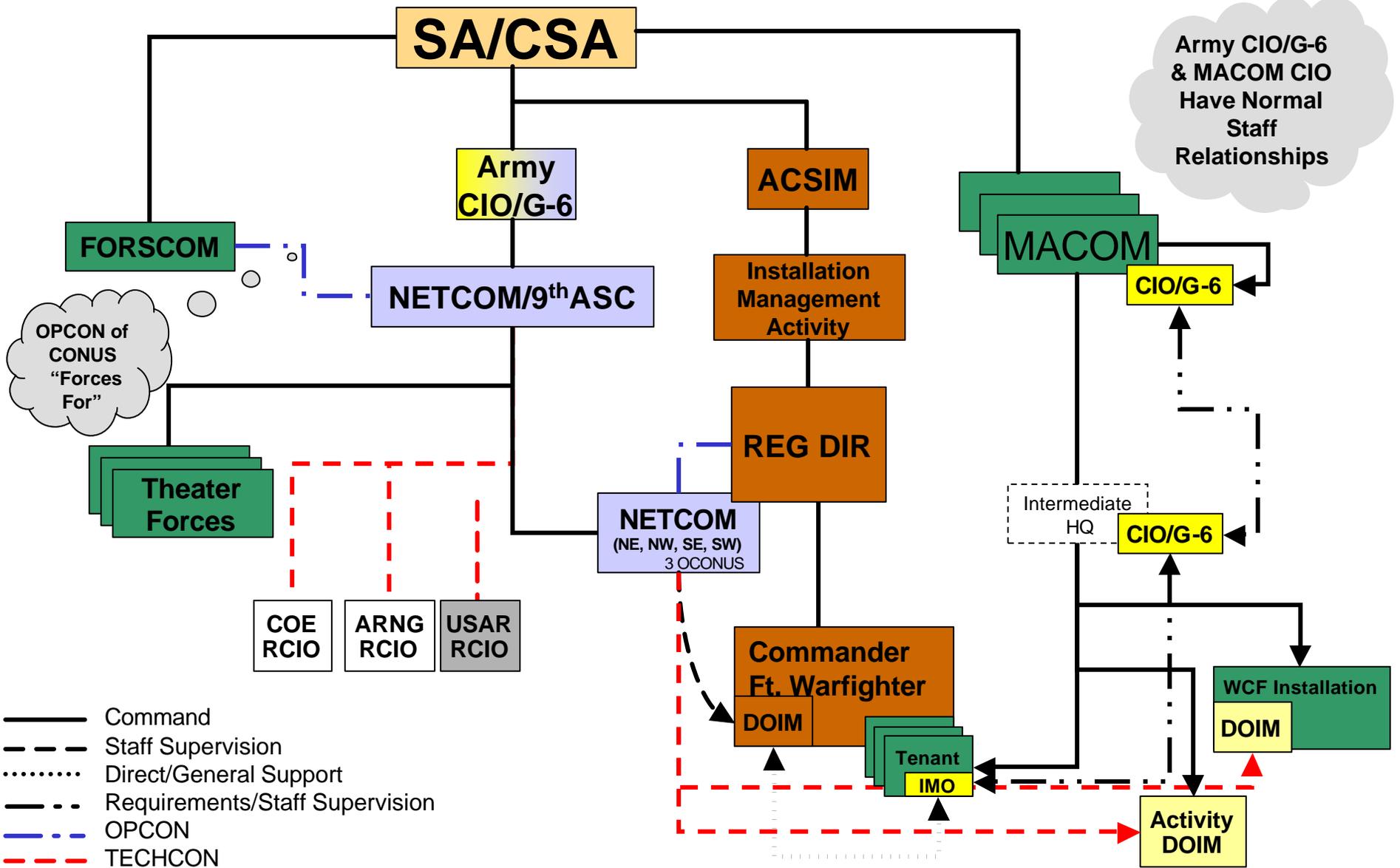
NETCOM is the single authority to operate, manage, and protect the Army's enterprise level infostructure. NETCOM will deliver seamless enterprise level C4/IM common user services and warfighting forces in support of the Commanders in Chief (CINC) and Army Service Component Commanders (ASCC). NETCOM operates, sustains, and protects the Army's portion of the Global Information Grid, enabling force projection and the delivery of decisive combat power.

28 November 2001
Based Info Mgt Implementation Plan - Phase I



The Army Signal Command

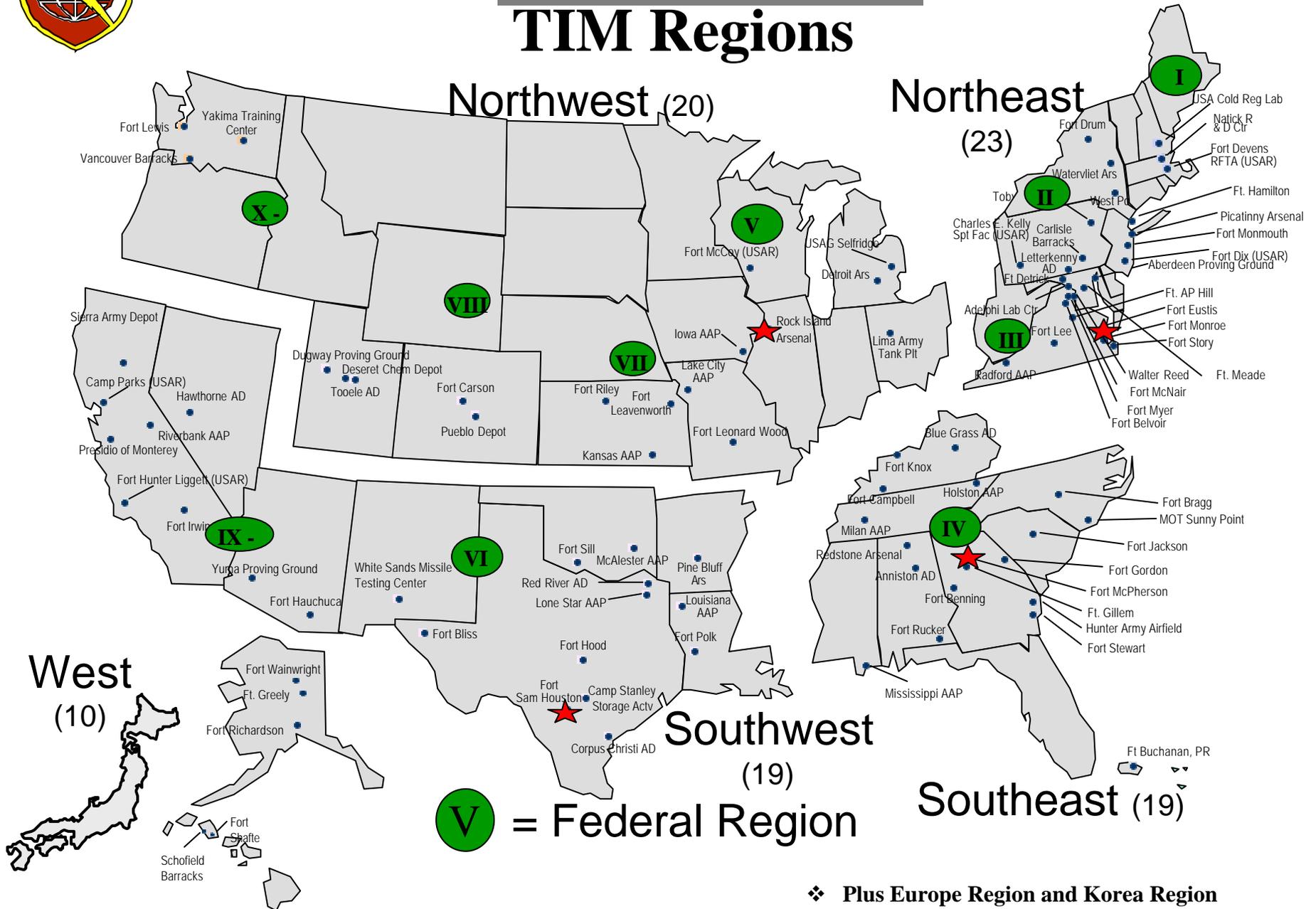
NETCOM/TIM Relationships for C4IM





The Army Signal Command

TIM Regions





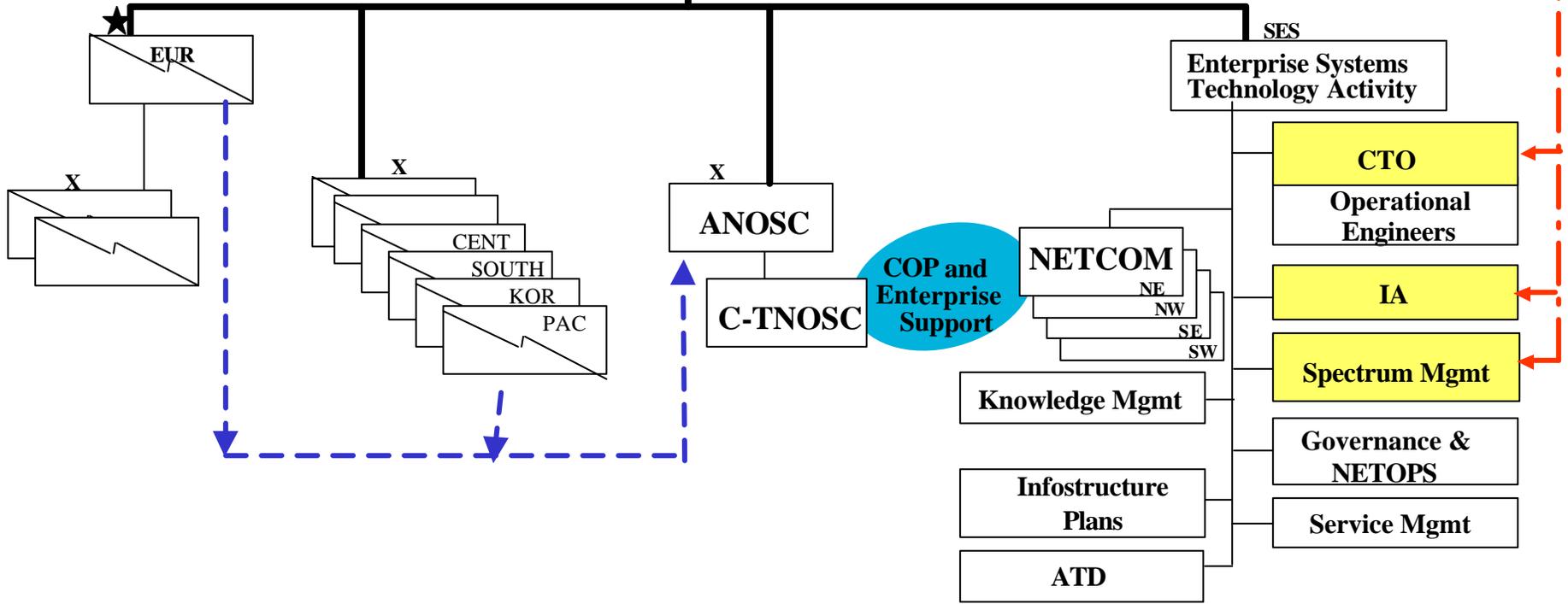
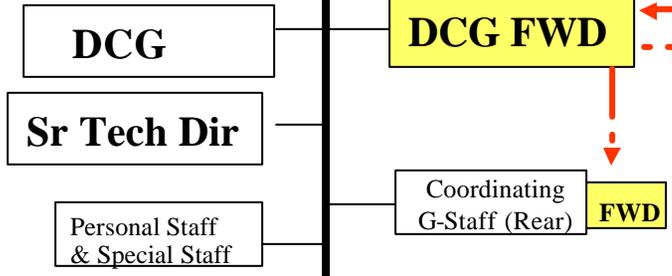
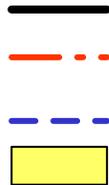
The Army Signal Command

Our Vision

ARMY CIO/G6

NETCOM/9TH ASC

C2
Oversight
(incl rating)
NETOPS Reporting
Located in DC





The Army Signal Command

Road Ahead

- **Stand up NETCOM Regions with the TIM RD**
 - Same time
 - Same places
- **Stand up NETCOM FWD and Rear**
 - Incorporate new missions
 - Reorganize staff
- **Continue to execute/implement new enterprise initiative**
 - Gain visibility on health and security of all Army networks.
 - Issue Enterprise Systems Management CONOPS
 - Implement Active Directory/Exchange 2000 across the enterprise
 - Establish worthiness process for additions to the infostructure
 - Develop Service Level Agreements for common user services across the Enterprise



The Army Signal Command

Infostructure Operations – Objective State

- **Enable universal (and secure) access to authorized infostructure services to all Army customers within the Army infostructure – PKI enables single sign-on “plug & play” capability**
- **Accurately display a total and integrated Situation Awareness of the AEI**
- **Predict impacts on the AEI of new/changed systems and operational contingencies**
- **Redirect and reallocate AEI resources in near real-time to support Army response to crisis or unplanned event anywhere within the Army infostructure Area of Operations (AOR)**
- **Provide a consistent, robust, base-level of infostructure services to all authorized Army customers at the least cost feasible within Army operational constraints**
- **Provide additional (above base level) infostructure services to Army customers on a reimbursable basis**
- **Perform continuing and non-intrusive technology insertion based on improving service levels or reducing cost of providing current base-level services**

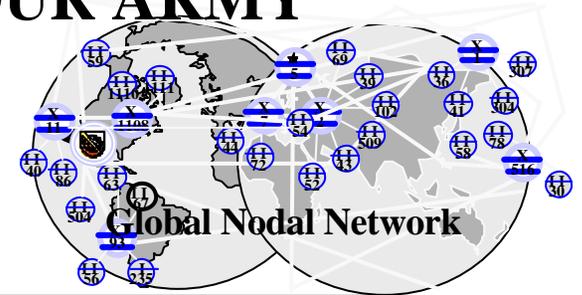


The Army Signal Command

ADDING CONTINUED VALUE TO OUR ARMY

AKM Enterprise Operations Requires Single Voice:

Standard architectures
Joint interoperability
Real world situational
awareness
Strategic links to the National
Command Authority
Seamless Information Systems
for the Unified CINCs and
Army Component Commanders



NETCOM added benefits:

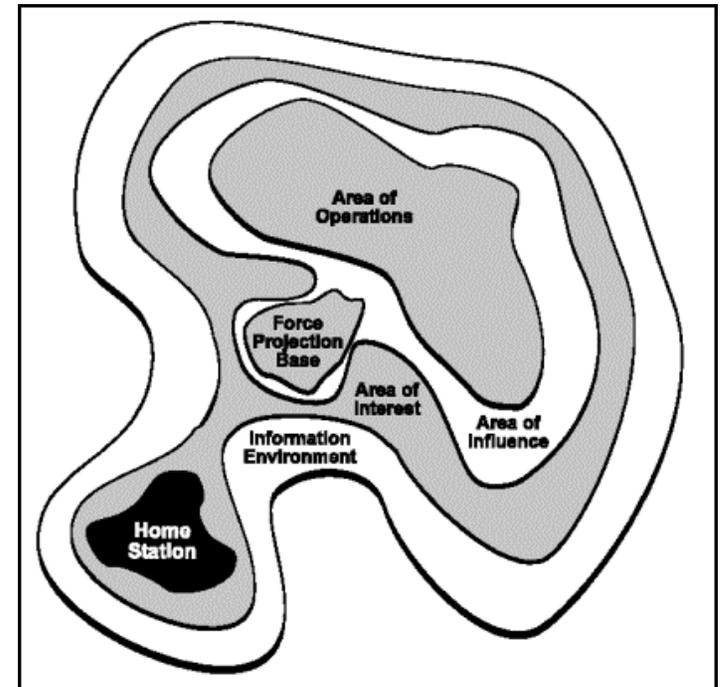
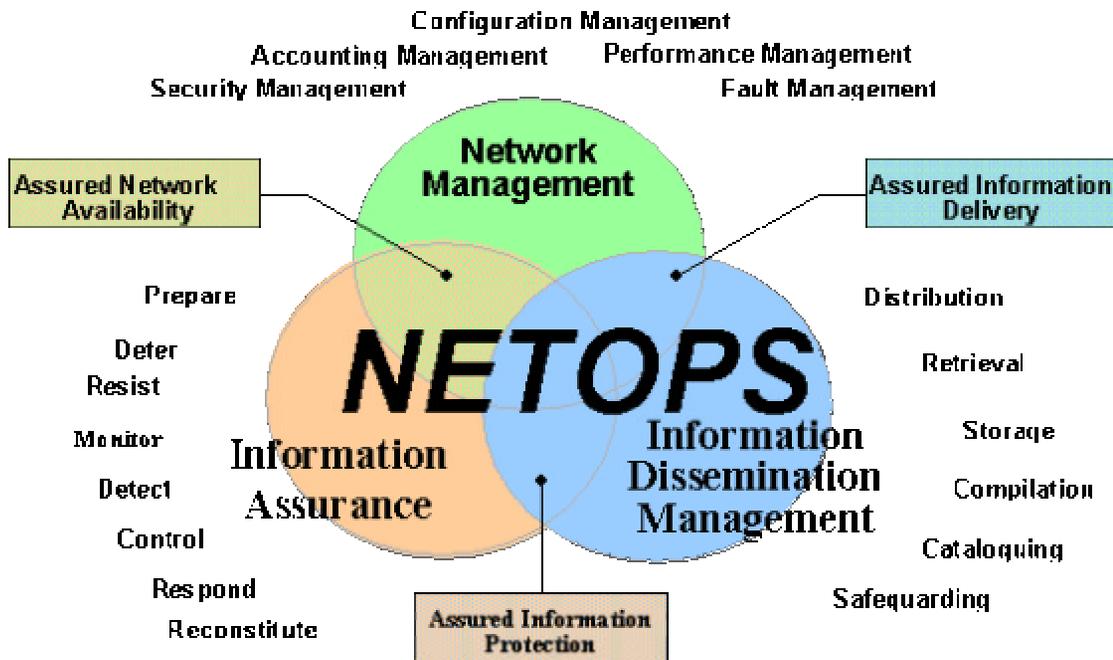
- Worldwide, rapid deployment
- Tailored communication solutions
- Specialized comms engineering
- Global Network Operations & Information Assurance
- Rapid technical insertion (COTS)
- Integrated Enterprise Operations
- Army Network Common Operational Picture
- Provide Single NETOPS Operational Crew Chief for all levels of war to Army
- Operationally focused, responsive

**Enabling Strategic Dominance through Global
and Regional Communications**



The Army Signal Command

Why NETOPS is Critical!

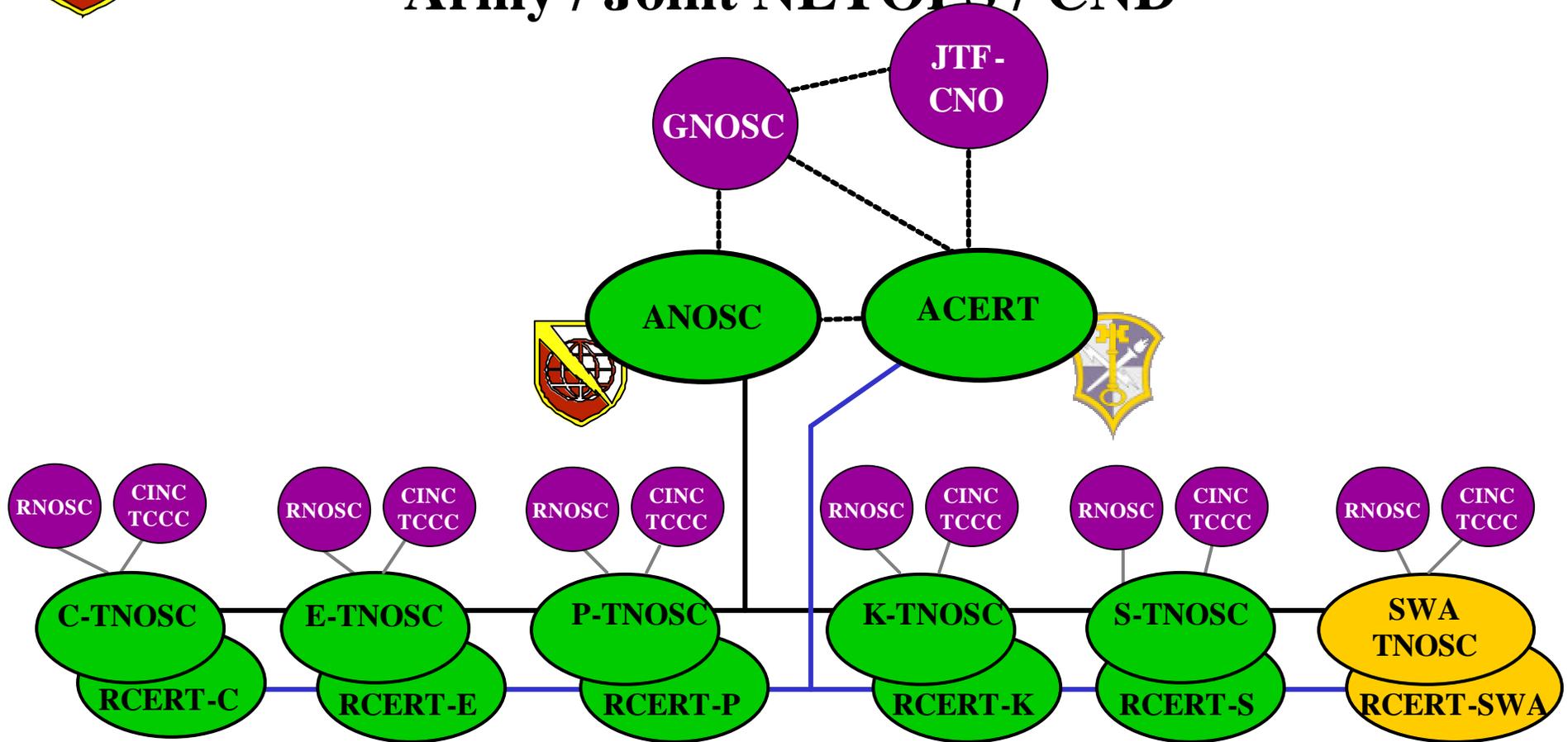


- **NETOPS is a key enabler ensuring the proper operation and protection of the Information Environment (IE) supporting the warfighter.**
- **The Information Environment is a center of gravity for US Military Operations.**
- **The IE is a prime target of Asymmetric Warfare.**



The Army Signal Command

Army / Joint NETOPS / CND



ANOSC – Army Network Operations and Security Center (NETCOM/9th ASC)

TNOSC – Theater Network Operations and Security Center (Signal Command/Brigade)

RNOSC – Regional Network Operations and Security Center (Battalion/Deployed Units/Others)

ACERT – Army Computer Emergency Response Team

RCERT – Regional Computer Emergency Response Team



The Army Signal Command

Asymmetrical Warfare and NETOPS

- **Defeated:** Maginot Line, Berlin Wall, US Borders (and the INS), and the National Transportation System on 9/11
- **Not (yet) Defeated:** The Al Queda and The Drug Trade
- **Reason:** Symmetric vs. Asymmetric Offensive and Defensive actions
- **Basic Questions to Consider:**
 - Do we treat our networks Symmetrically or Asymmetrically?
 - Does our enemy treat cyber warfare Symmetrically or Asymmetrically?
 - If the enemy uses Asymmetric Offenses, can our Symmetric Defense defeat the enemy?



The Army Signal Command

Friendly Asymmetrical NETOPS Warfare

- **Facts:**
 - The networks (military and civilian) are battlefields TODAY.
 - Our greatest strength (Information Superiority) can also be our greatest weakness.
 - DoD currently has a Symmetrical “Defense in Depth” strategy for our networks.
 - We depend on COTS products (created by US and foreign nationals) in our defense.
 - Skilled people are at the heart of our success.
 - Asymmetric NETOPS threats are a reality each day.
 - Cultural, legal and doctrinal barriers inhibit our NETOPS.
- **Assumption:** To battle the Asymmetrical threat to our infostructure, we must think
- in terms of asymmetrical defenses; remember – the best defense is a good offense.



Enemy Asymmetrical NETOPS Warfare

- **The Threat:**
 - Knows that we are dependent on military and commercial networks during peace and war.
 - Will adjust to focus on where we are least defended.
 - Attacks just under our detection thresholds, with more powerful tools and techniques.
- **Enemy Cyber-Attack:** High payoffs, little expenditure. Examples: Solar Sunrise, Moonlight Maze, etc.

Melissa Virus - \$80 million

SirCam - \$1.15 billion

Nimda – \$635 million

Love Bug - \$8.75 billion

CodeRed – \$2.62 billion

Pentagon 9/11 Repairs - \$700 million



The Army Signal Command

Possible Friendly Asymmetrical Warfare NETOPS Mitigating Solutions

- **TLA-Redesign**
- **Variable reactions to keep the enemy guessing**
- **Coordinated NETOPS between military, government, private, and allies / coalitions**
- **Decrease reliance on the commercial world's infostructure**
- **Develop / resource contingency capabilities**
- **Use of deception techniques ("honey pots")**
- **Recon of the Enemy "AO" BEFORE they attack**
- **Develop and legalize the use of asymmetrical offensive capabilities**
- **Don't treat our infostructure like a business – treat it like a weapon system.**



The Army Signal Command

Friendly Asymmetrical NETOPS Warfare Improvements

- **Improved Event Correlation Across Data Sources**
- **ACERT and ASC LNO Exchanges**
- **Enhanced Information Dissemination Management (IDM):**
 - **NETOPS COP at theater and global levels: provides relevant reports, status, directives, guidance, queries, and IA information.**
 - **Vertical and horizontal information sharing**
- **Standup of NETCOM**