LANDWARRNET 2020 AND BEYOND
Improving Network Operational Effectiveness & Security

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Agenda

★ The Army of the Future
★ Army Network Modernization
★ Network Modernization Lines of Effort & Major Objectives
★ A Modernization Example – Fort Hood
★ DoD’s Top Level Security Architecture
★ Network Integrated Evaluations Update
★ The Value of the Joint Information Environment (JIE)
★ Closing Remarks
The Realm of the Possible

82nd Sustainment Brigade Demonstrated Single Device for Instant Messaging, Voice, Video and Data

... We Lack the ‘Interstate’ for Our Information Highway
Strategic Challenges

“Our military will be leaner, but the world must know the United States is going to maintain our military superiority with armed forces that are agile, flexible and ready for the full range of contingencies and threats.”

– President Barack Obama
Defense Security Review, 5 Jan 12
Network Modernization: Remains A Top Priority

“The Army's new information Network remains our top modernization priority. With tighter budgets but an active threat environment, the Army will have to produce a force that is smaller yet still highly capable. The Network is the core of that smaller but highly capable force.”

—John McHugh, Secretary of the Army, 5 November 2012

“A cutting-edge, end-to-end network is essential for every Army mission; a robust, versatile, lethal force cannot exist in the 21st century environment, under tightening fiscal conditions, without a capability set management approach.”

—John McHugh, Secretary of the Army, Directive 2013-02, 11 March 2013
Network Modernization: A Key to Success

“The Army has global responsibilities that require large technological advantages to prevail decisively in combat – “technological overmatch,” if you will... Modernizing, especially as end strength is reduced, is the key to ensuring that the Army’s dominance continues. As I reflect upon the pace of technological change in today’s modern world and the impact of rapid, global information exchange upon our overall security environment, I am both inspired and encouraged by the Army’s approach to building a network able to connect our forces at all echelons. This remains our number one modernization priority.”

– GEN Ray Odierno, Chief of Staff of the Army, “Army Live” Blog, 7 August 2012

★ Retain Our Technological Overmatch
★ The Ability to Rapidly, Globally Exchange Information in a Secure Environment
★ Connect Our Forces at All Echelons

A Modernized LandWarNet Will Meet These Challenges
The Army of the Future

We Start from a Position of Strength with an Army of Combat Proven Leaders

Our Nation’s Joint Force must operate in a complex and dangerous physical, cultural and information environment, while balancing readiness requirements and limited resources.

Adapting to the Strategic Environment by prioritizing leader development and leveraging technology to empower the Soldier.

Adapting Readiness and Training Models to better prepare units to operate in complex environments.

The Army of the Future is Stronger

The Army will be optimized for a broader range of missions in support of the Joint Force.

Empowered Soldiers & Squads, connected to the network in vehicles that increase mobility and lethality while retaining survivability.

Implementing plan to Regionally Align Forces to better support Combatant Commanders.

Reducing end strength and optimizing the force structure mix while remaining engaged in Afghanistan and adapting to meet the demands of the Defense Strategy.

"Can You Dummy this Brief Down for Us?"

We Have a Capacity Problem

Network Demand is Outpacing Capacity

Voice over IP

Video over IP

Mobile (BYOD)

Thin-Zero Client

Continuous Monitoring
The Future of DoD IT

Modernization of the Network Must be Effective, Affordable and Sustainable

The IT Dilemma

Demand for Capacity, Security, and Services
Represented by # of anticipated users in increments of 1500

Requirements & Threats

Budget & Funding

Trend Indicates Increasing Network Demand

FY13 FY14 FY15 FY16 FY17 FY18 FY19 FY20

Distributed OPS
Training
ERPs
Almost EoIP

“The Network is Often a Constraint and is Costly to Upgrade, But Planners Need to Prepare for a Massive Increase in Bandwidth Consumption”

- Gartner Report: IT Market Clock for Enterprise Networking Infrastructure, 14 MAR 2012
Army Network Modernization

BLUF: Implement the Improved Security Aspects of LandWarNet 2020 and Beyond at a Faster Pace by Resourcing Enterprise Regional Network and Security Capabilities for CONUS Installations in FY13

The Situation:
- Throughout a Decade of Conflict, the Army Correctly Invested in Network Infrastructure Where Forces Were Deployed and Sustained the Network Infrastructure at Home
- The Installation Network Infrastructure Now Requires Modernization to Support Demand Expected From Split-Based and Distributed Operations; Live, Virtual, Constructive Training; Business Systems; and Convergence of Voice, Video and Data

Focused Implementation:
- Enterprise Applications and Services
- Regional Implementation of Commodity Network Services
- Installations Infrastructure & Capacity

Impacts If Resourced:
- Fiscal: Lower Sustainment Cost for a Single, Standardized Network vs. Multiple, Complex Stove-Piped Networks
- Operational (One Network):
  - Efficiently/Effectively Supports Split-Based, Live/Virtual/Constructive Training, Installation as a Docking Station, and Foundry-Intelligence Readiness Operations Capabilities
  - Improved Readiness
  - Links Global ERPs from Institution to Warfight
- Technical Impacts: Improved Network Capacity & Less Congestion/Latency/Application Interruptions
Network Modernization Objectives

1. Network Capacity
   - Bandwidth Should no Longer be an Issue When Soldier Needs New Capability
     - Upgrade Core Routers to 10Gb/s (Capable of Supporting 100 Gb/s)
     - 10 Gb/s Across B/P/C/S: DISA Router to End User Building

2. Enterprise Services
   - Reduce Number of Entry/Exit Points to NIPRNET
     - From 435 Points in CONUS to Less Than 20 Globally
     - Enable Capabilities Such as IP-to-IP VTC

3. Network Operations (NetOps) & Security
   - Move to Single Network Resulting in the Collapse 30+ Army Networks
   - Standardize Configuration of Army Inter-Campus Area Networks (ICANs)
   - Centralize Data – Approximately 80% of Army Data is User Files
   - Improve Content Management
     - Emplace Behind Security Stacks
     - Reduce Malware and Malicious Code

We are Architecting as an Enterprise to Create an Infrastructure that is Inherently More Secure, More Efficient and More Effective
Installation Example - Fort Hood

- Insufficient Bandwidth (On and Off Post) to Support Enterprise (Cloud) Applications
- Obsolete Phone Switch
- Maintenance Down Time due to Single Points of Failure
- Multiple Phones on Desks (POTS, STU/STE, Red Phone, VOSIP)

100% Utilization

- Not postured to support Home Station Training (Installation as a Docking Station)
- Not postured to support Soldier Self Development (SSD) bandwidth requirements

Bottom Line: Poor Communications Infrastructure Holds Fort Hood Hostage to Obsolete Ways of Business and Does Not Support Current/Future Requirements
Fort Hood After

- 1000 x Bandwidth Increase (On/Off Post) to Support Enterprise (Cloud) Apps
- Modern VoIP Switch Provides Converged (Unified) Comms (Phone, VTC, Computer), all Inter-Operable
- Reduced Phones on Desks/Phone Via Computer (Supports CJCS IT Efficiencies Goal)
- Fully Capable of Supporting Home Station Training (Installation as a Docking Station) and Soldier Self Development (SSD)
- Significantly Improved Security Framework and Vulnerability Reduction

Bottom Line: Modernized Communications Infrastructure Meets Current and Future Needs While Improving Security
Security Architecture Overview (DoD Top Level Architecture (TLA))

- Improving the Perimeter – Eliminating Security Infrastructure at Installations (97.5% Reduction)
- **First Line of Defense** is DoD’s Top Level Security
- Provide Installation Defense by a Full Security Suite Capability at Every Installation to **Protect Installation Network Nodes** and use of Multi-Protocol Label Switching Technology
- For the First Time, We Can Put all Classification Levels on the Same Transport
- Can Operate, Monitor, and Defend IT Assets to **Attain and Maintain Information Dominance**
Network Integration Evaluation

Why NIE?
(The Army Culture Adapting to Current Information Environment)

- A Series of Semi-Annual Evaluations Designed to Test Capabilities and Integrate & Mature the Army’s Network
- Synchronize Networked Programs in One Place, Integrated into the Broader Capability Set Architecture
- Combines Test & Evaluation to Integrate Network Components in one Operational Venue
- Validate Capability Set Prior to Fielding

What We Have Accomplished

Test:
- Executed 5 NIEs: 146 Systems Under Evaluation (SUEs) Evaluated, 22 Systems Under Test (SUTs) Completed

Synchronize:
- Aligned Programs of Record (PORs) to Capability Sets (JTRS, WIN-T, JBC-P, Nett Warrior)

Integrate:
- Established an Integrated CS Network Baseline
- Taking the Integration Burden Off of the Operating Force
- Cost Avoidance Through Integrated Operational Test (OT) Events and Integration of Systems

Field:
- Validated Capability Set 13 Prior to Fielding
- Informed Low rate and Full Rate Production Decisions (WIN-T, HMS MP, Nett Warrior)
- Transitioned Nett Warrior Program from ACAT I to III

Findings Restructured Two Programs (JTRS Ground Mobile Radio (GMR) and Nett Warrior) – Army cost Avoidance: ~$6B

Emerging Technology:
- Enhancing Common Operating Picture – Ringtail Common tactical vision
- Consolidated Mobile Mast Platform – Blue Sky Mast
- System Management Package for COTS integration- Network Operations tools (Pac Star IQ displayed at 13.1)
Value of Army JIE Implementation

**BLUF:** The Army Must Retain Our Technological Overmatch and Improve Our Ability to Rapidly, Globally Exchange Information in a Secure Environment, Connecting Our Forces at All Echelons.

★ **Mission Effectiveness:**
  - Rapidly and Dynamically Respond to and Support Changing Missions Information Needs for all Operational Scenarios
  - Warfighters Will Have Timely and Secure Access to Their Data and Services Needed to Accomplish Their Assigned Missions, Regardless of Location
  - Trusted Connectivity with DoD Single Identity and Confidence that Capabilities are Available, Even if Degraded

★ **Increased Security:**
  - Can Operate, Monitor and Defend IT Assets to Attain and Maintain Information Dominance
  - We’ll Know Who’s On the Network, What They’re Doing, and We Can Prove It

★ **IT Efficiencies**
  - Information Assets Are Joint Assets to be Leveraged for All Missions
  - A Standardized IT Architecture Supports Effective Fielding of Capabilities
  - Visibility of IT Expenditures Through Increased Budget Transparency
A Military of Millennials...
The New Online Generation

- Millennials (Gen Y), Born After 1978...Cannot Recall a Time When the Internet was Not at Their Disposal
  - Affinity for the Interconnected World and the Benefits of the Online Community
  - Gen Y ‘Lives’ on the Internet
- Well Known Ability to Multitask
- We Are Recruiting them on YouTube – How do We Train and Retain Them?

- “When Applying Mission Command – Collaboration and Trust Are As Important as Directive Authority” TRADOC Pam 525-3-1
- Millennials Are More Prepared to do Battle in Cyberspace and Fight on the Information Front
- How Do We Leverage Their Inherent Strengths?

The Network is Critical to Our Operational Missions, as Well as Training and Retaining Our Force
The Train

It’s not my job to run the train, the whistle I can’t blow;
It’s not my job to say how far the train’s allowed to go;

It’s not my job to let off steam, nor even ring the bell;
But let the damn thing jump the track, and see who catches hell!

The Life of an Signal/IT Professional
How You Can Help

★ Army Leaders Understand the Network is Foundational to Our Army’s Ability to Function and has Guarded it; Keeping it a Top Modernization Priority

★ Be Good Stewards/Partners – Work with Us on New Enterprise License Agreements (ELA); Don’t Let Us Write Stupid Requirements

★ Focus on ‘Open Systems’ and Common Operating Environment (COE) vs. Proprietary Interface Designs and Approaches

★ Participate in our Network Integration Evaluation (NIE)

★ We Can Only Achieve LandWarNet 2020 and Beyond with Your Continued Partnership
Your Commitment Ensures our Army Remains the Best Networked and Most Capable Land Force in the World
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