CISCO IN DEFENSE
NETWORK CENTRIC
SOLUTIONS & TRENDS

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AGENDA
Challenges
Network Centric Operations (NCO/NEC)
Technical Approach
IP Brigade – an architecture blueprint
Benefits
Conclusion
Case Studies
asymmetric WARFARE

Non-state actors

Non-Traditional warfare

Technological advances
Advantages accrue to organizations that successfully master the art of creating and leveraging an information advantage.

Understanding Information Age Warfare
- Alberts, Garstka, Hayes, Signori

The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.

- Alvin Toffler
In every war zone that I’ve been in, there has been a reality and then there has been the public perception of why the war was being fought. - John le Carre

WHAT MILITARIES DO

• Warfighting
• Humanitarian
• Peacekeeping
• Evacuation
• Homeland Security
Military IT Challenges & Imperatives

- New Services
- Phased Migration
- Legacy Integration
- Interoperability
- Cost Effectiveness

Network Centric Operations
NETWORK CENTRIC OPERATIONS

Robustly Networked Forces
Improved Information Sharing

Getting the right information to the right people at the right time for the desired effects.
NETWORK CENTRIC OPERATIONS
Information Sharing

NEED TO KNOW

XX

NEED TO SHARE

NETWORK CENTRIC OPERATIONS

Collaboration

Cultural Change

Robustly Networked Forces

Improved Information Sharing

Reorganization

New Tactics
TRENDS

WHAT PREVENTS NCO/NCW/NEC?
SEPARATE NETWORKS
“Stovepipes” between services...

...or between other countries
POLICY CHALLENGES

- Communicators – must be recognized
- Doctrine – Commanders must take a leadership role
- Technology – Pace & Proliferation
- Managing Information
- Competing Weapon Systems

IP-Enabled Collaboration
Desired End State - Integration

- The Ideal Situation!
Network Centric Operations
Capabilities
Security Deployability Awareness

CAPABILITY ALIGNMENT

Self Defending Network
Mobility
IP COMMS
Application Intelligence

ARCHITECTURE

Modularity
Commonality
Application Intelligence
Security
MODULARITY

- Deployable
- Plug-n-play
- Reusable

COMMONALITY

- Interoperability
- Convergence
APPLICATION INTELLIGENCE

Prioritization
Virtualization

SECURITY

Infrastructural
Self-Defending
THE ROAD AHEAD

Ad-Hoc Mobility
IP-Based Sensors
Soldier Wearable Routers
Command HQ TelePresence
Benefits

Benefit of IP COTS:
Joint Communication Support Element

<table>
<thead>
<tr>
<th>Circuit Based</th>
<th>Improvement</th>
<th>All IP</th>
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<tbody>
<tr>
<td>7.1 m³</td>
<td>95%</td>
<td>0.3 m³</td>
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<tr>
<td>998 kg</td>
<td>87%</td>
<td>132 kg</td>
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<tr>
<td>$1.9M</td>
<td>86%</td>
<td>$270K</td>
</tr>
<tr>
<td>9 Personnel</td>
<td>66%</td>
<td>3 Personnel</td>
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Conclusion

CISCO DEFENSE SUPPORT

Government Advanced Technologies

Global Defense Space and Security

Civilian, Armed Forces, National Programs

Pre-Sales Engineering, Post Sales Engineering, and Government Mission Support

Critical Infrastructure Assurance

System Integrator and Government Partnerships
What Governments Can do..

- Use IP for horizontal integration
- Use the right IP – international standards, RFCs, etc
- Fund what you say you want
- The network is a mission system
- Buy – don’t build
- Think Enterprise – not one piece at a time

IP provides the capabilities that directly enable NCO.
Theatre Independent Tactical Army and Air Force Network (TITAAN) Solution deployed with the Royal Netherlands Army
Theatre Independent Tactical Army and Air Force Network (TITAAN) Solution deployed with the Royal Netherlands Army

TCTS Voice Endpoints & IP Phone Services

All tactical network services except MLPP

Speed Dials:
Operator
Helpdesk

IP Phone Services:
Affiliation
Alarm State
Information
Public Announcement

Browsable Directory
Service Numbering Plan is ST5046 & 4214 compliant
Convergence in AUS HQ Project

“...This new building will be a world’s best practice in delivery of NCW and C4ISR capabilities using convergence and the worlds best partners and vendors”

Capability
- Voice over Secure IP
- Video (Telepresence & Video Conference)
- On Site and off Site Data Centre
- Collaborative Tools

Technology
- DMS scoped (TP being inserted)
- Meeting Place express - being considered
- 6500 in Core with 3560/4500’s in the distribution/edge on the unclassified LAN
- The classified networks have a similar breakout, just on a smaller scale
- Security - ASA, CSM and current MARS
- Storage - MDS 9500’s, 9216’s
- VoSIP – large number of IP Phones

Transforming the Military:
Allied Interoperability – Korea/USA

“...III Corps in Korea deploy for UFL using Cisco Unified Communications and Collaboration Tools”

- More Effective
- Exploit non used Bandwidth
- Less technical staff required to maintain
- Improved Interoperability
- Easy to use Directory Systems
- Vxmail, Messaging, Collaboration
- Improved Situational Awareness
- Access to real time conferencing
- Collaboration in multiple domains

“...the Corps implemented and Everything Over IP (EoIP Strategy) For VOIP, VTC and Collaboration Tools to enable planning and collaboration between the Joint Forces and Combined HQ”  Signal Magazine Winter 2006
Cisco Gear in Current Operations

“Your stuff was caked in sand but still worked”