



US and Allied Defense Initiatives

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Agenda

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- **Commercial Off The Shelf (COTS) in Defense**
- **Support to the battlefield**
OIF
- **Supporting Infrastructure**
NMCI
- **Supporting Combat Systems**
AAAV
- **Supporting Allied/Coalition Operations**
CENTRIX
- **Supporting new technologies**
Mobile Access Router
Mobile IP and Manet

Commercial Technology

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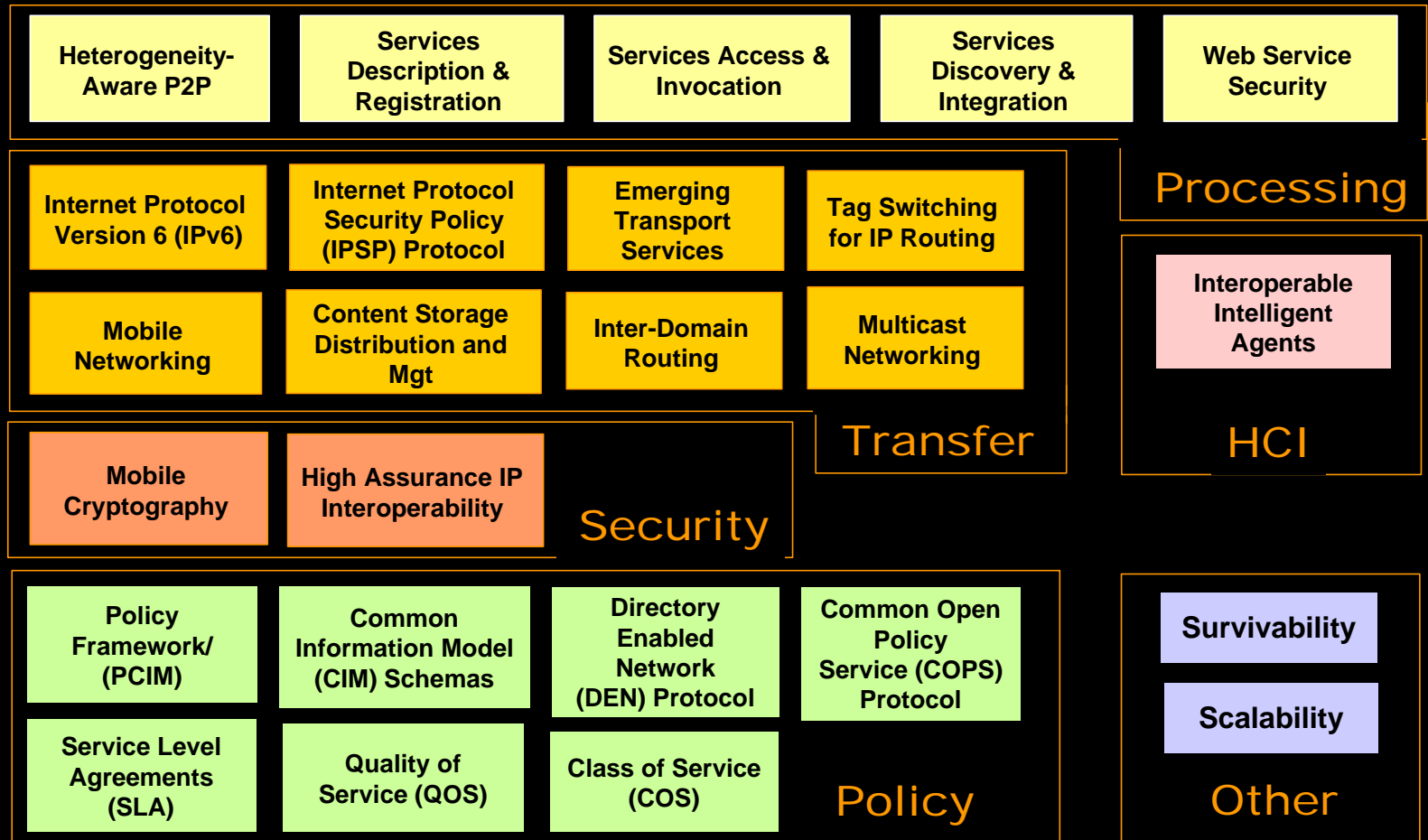
What makes COTS equipment so attractive?

- Reduced product initial and ongoing development costs
- Economies of Scale
- **Interoperability**
- Experience in using technology to develop competitive advantage
- Reduced technology lag
 - enabling feature-rich equipment to be procured today and be replaced with improved, more technologically advanced equipment as necessary.
- Greater flexibility at the design state



Network Centric Operations and Warfare Reference Model Target Technical View (Technical Areas by Core IT Category)

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Is COTS up to the challenge

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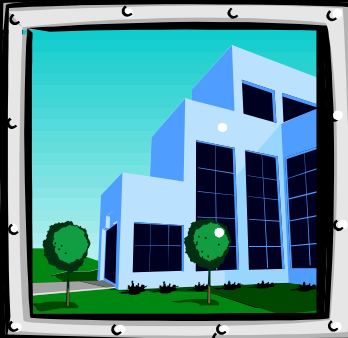
- Harsh environments
- Shock and vibration
- Critical timing requirements
- Security, security, security



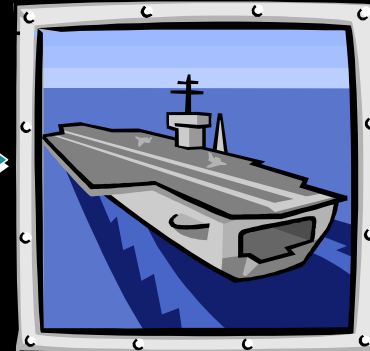
Transferring COTS

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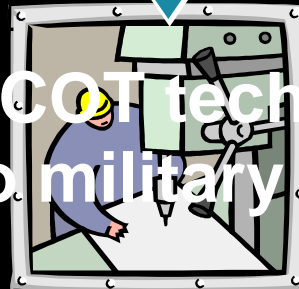
COTS



KOTS*



- About 85% of COT technology is directly transferable to military applications adapted

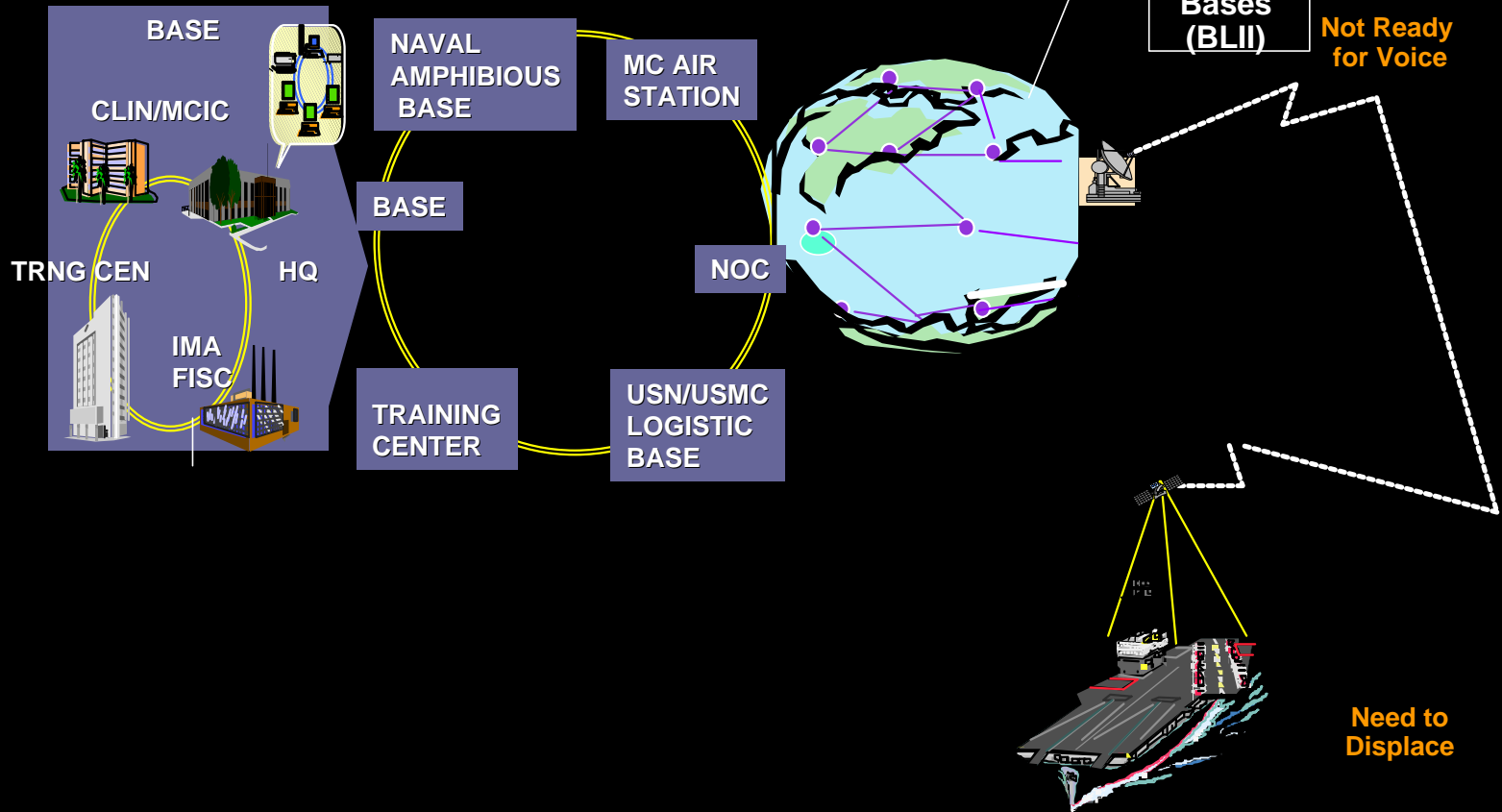


*Kinda Off The Shelf

US Navy Architecture

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Navy-Marine Corps Intranet



Cisco and The US Navy / Marine Corps

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Cisco Technologies

- Voice
- Storage
- Optical
- Content
- Network Mgt.
- Wireless
- Security
- Switching
- Routing

Shore Based Infrastructure

- NMCI
- ADNS-Shore
- NAVSEA Voice
- CNET
- PHNSY Voice

International Infrastructure

- BLII
- STEP Sites
- CENTRIX

Ship Board Infrastructure

- ADNS
- AEGIS
- DDX
- USS George Washington Carrier
- USNS Mercy
- USNS Comfort

Battlefield Infrastructure

USMC Tactical Systems

- TDN
- UOC
- CAC2
- JECCS
- AAV

Supporting Defense Cisco Product Deployment

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**CISCO equipment
as their most
reliable piece of
communications
gear**

**Dawn Meyerriecks
CTO, DISA**

Support to Operation Iraqi Freedom

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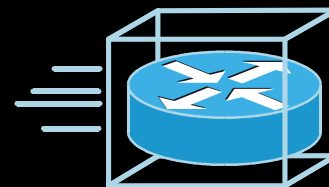
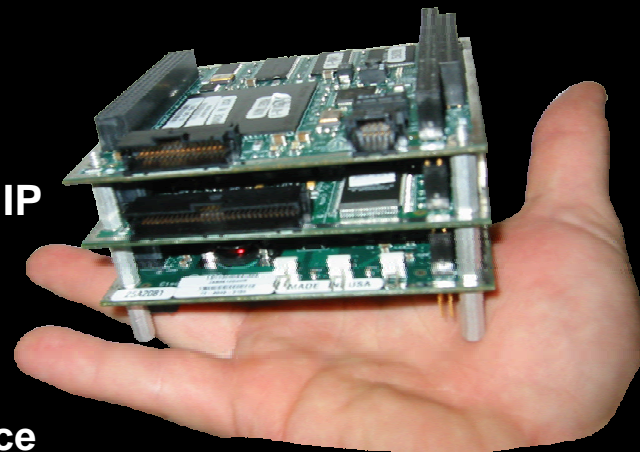


Moving to the Edge – The Cisco 3200 Mobile Access Router

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New Cisco IOS router platform that extends the IP frontier to mobile vehicular environment

- **Small Footprint & Low Power consumption**
- **Ruggedized**
- **Fully capable, 50,000 packet/second performance**
- **Optimized for embedded applications**



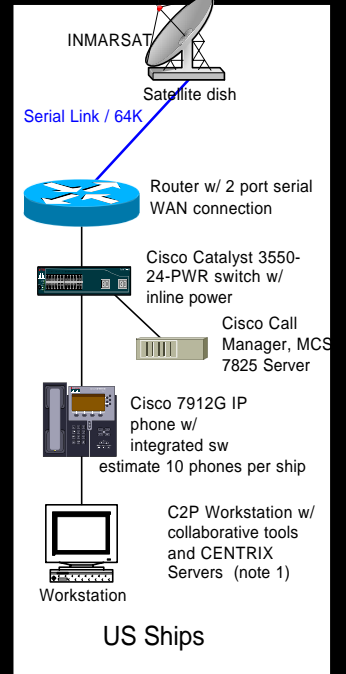
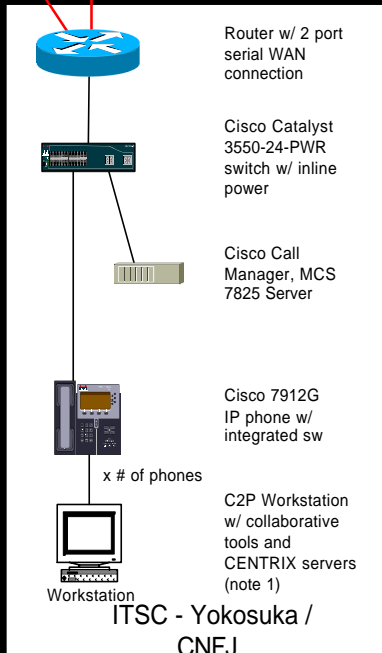
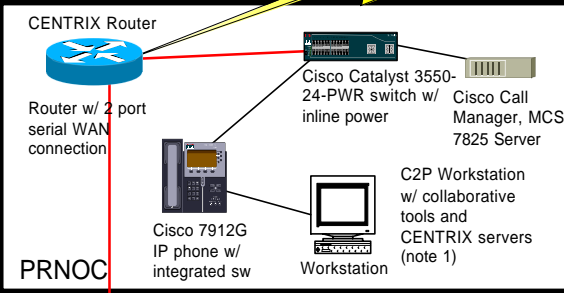
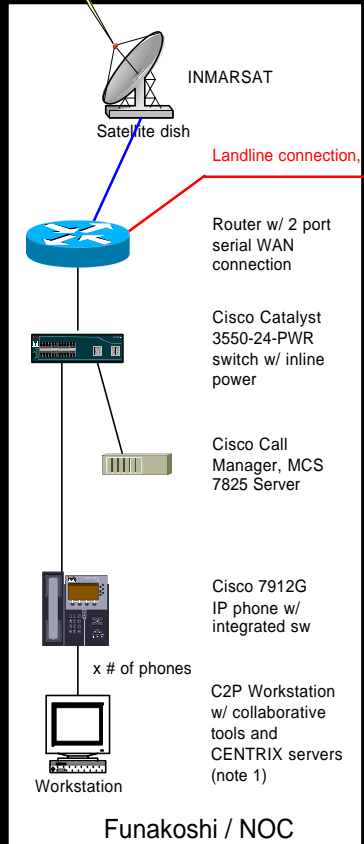
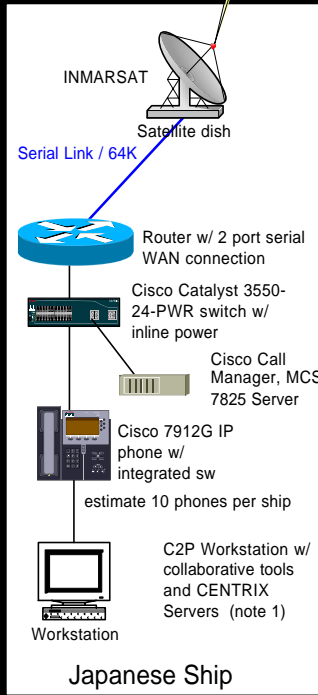
Mobile Access Router in action

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Defense





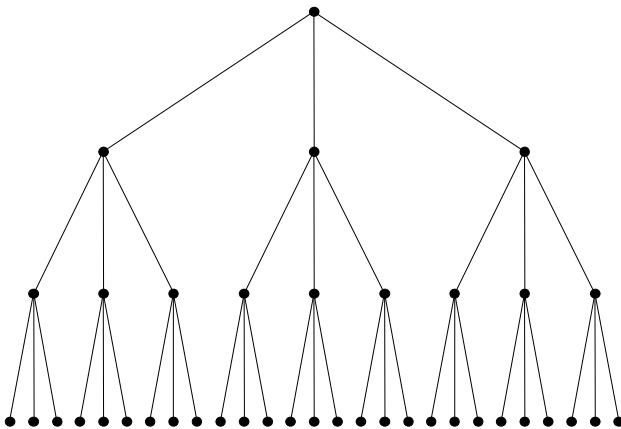
CISCO SYSTEMS

Mobile Ad Hoc Networking



Chains versus Networks

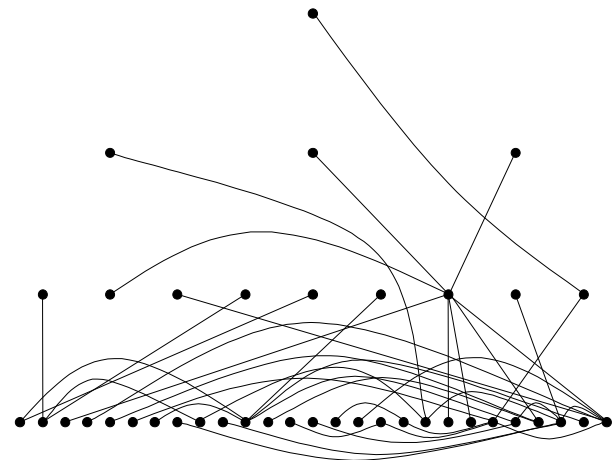
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Chain

Too brittle, simple pattern, simple control, scaled

“business end” most poorly connected, hard to reconfigure or change flow



Network

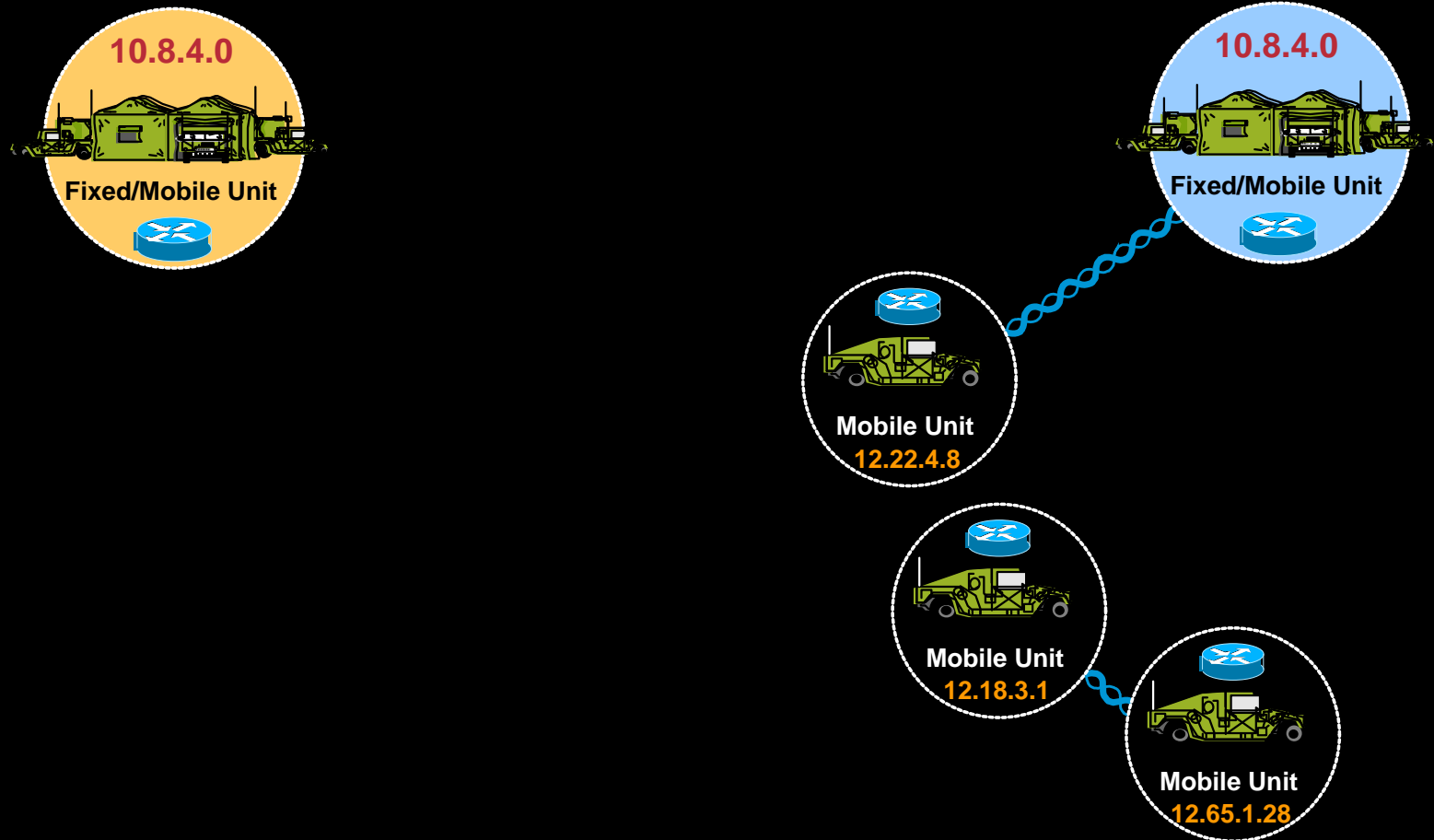
Very robust, complex pattern, complex control, scale free

“business end” best connected, natural to reconfigure or change flow

- **MANET (Mobile Ad Hoc Networking)**
- **a mobility solution where routers dynamically create and maintain a routed IP infrastructure in a highly mobile scenario, where no pre-existing infrastructure exists. Solution requires enhancements to routing protocols...it uses real-time information from Layer 2 to connect to existing networks.**

MANET Solution

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IP Mobility

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- **CISCO is committed to Mobile Networking**
 - MIPv4**
 - MIPv6**
 - MANET**
- **For addressing: IPv4 Mobility is more mature with a planned roadmap to IPv6 IP mobility**
- **MANET is under development**
- **There will be tradeoffs for any IP mobility solution**
- **This means there will be more than one IP mobility technology offered from CISCO.**

Summary

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- **Changing world...changing militaries**
- **Use of COTS in military systems is growing**
- **Different technologies...different behaviors**

Know what you're buying

Know how to buy what you want

If the application is critical...know your supplier

