Enabling Interoperability of Existing Communication Systems

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Who is TPS ?

- Established 1999
- Based in Seattle, WA
- Specialize interoperability of legacy systems
- Customers in financial, federal, military, commercial and state & local sectors
- Strategic partnership with Cisco for LMR
- Key partnerships with leading integrators and resellers worldwide

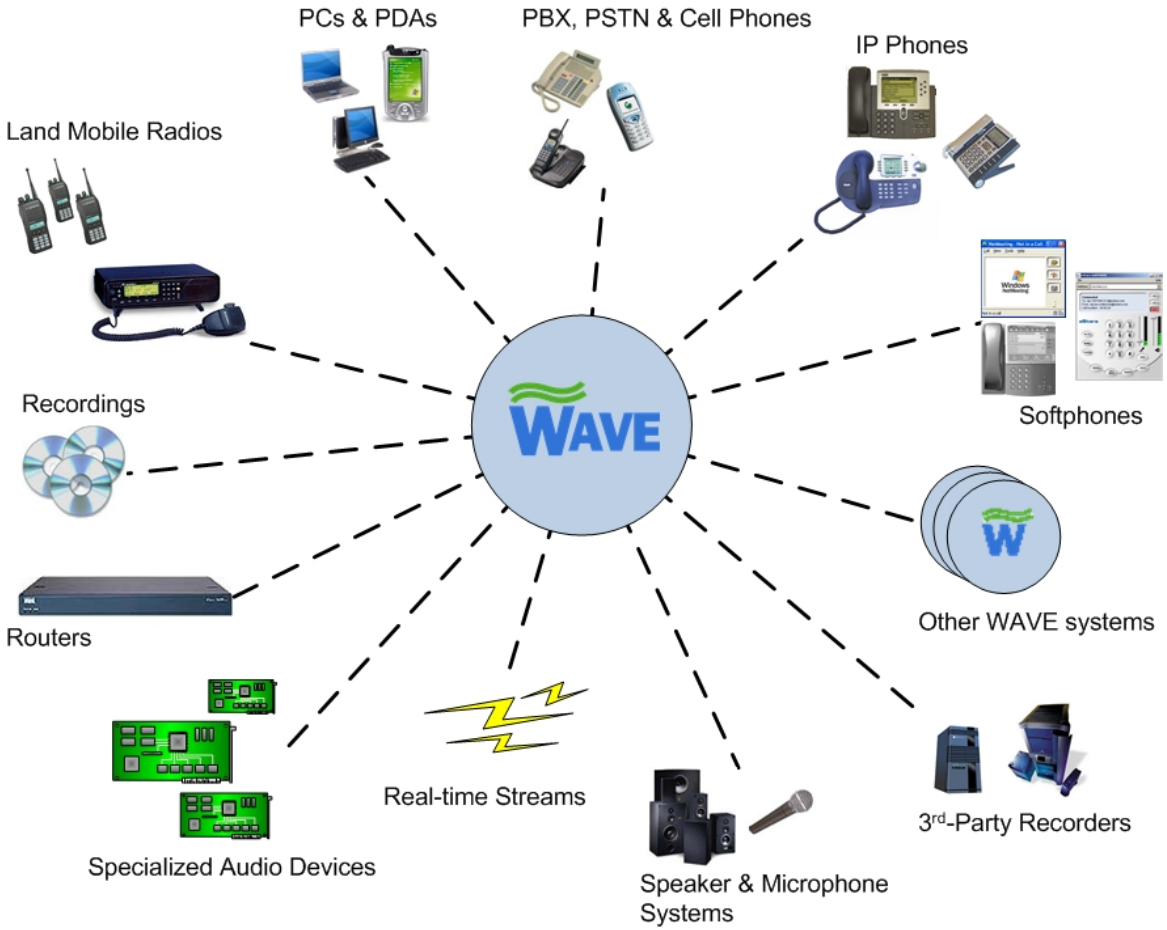
What is WAVE ?

A secure IP-based **W**ide **A**rea **V**oice **E**nvironment that creates massively scalable group communications among disparate communication devices.

Applications include:

- Hoot & Holler
- Meet-Me Conferences
- Group Calls
- Team Intercoms
- Paging
- Emergency Announcements
- Amber Alerts
- Land Mobile Radio Interoperability

Who Can Communicate?



Key Features

- Supports industry standards including RTP, H.323, SIP
- Connects any communication device to any other via the IP network
- Browser-based administration & PC client
- Fully IP-based with full support for IP multicast
- Integrates with legacy systems
- Supports practically all LMR systems and doesn't distinguish between radio manufacturers, frequencies, or technologies
- Provides instant playback and full time recording

WAVE-LMR Value Proposition

- **Enables true interoperability** between different radio systems, phones and computers within or between organizations
- Extends the reach and robustness of **command and control anywhere** in the IP network from many devices
- **Utilizes the same solution for emergency & day-to-day operations**
- **Meets DHS Project SAFECOM and AGILE 2008 objectives for standards-based interoperability solutions**
- **Reduces infrastructure cost**, while increasing efficiency and robustness, using standard IP & COTS hardware

Who Uses WAVE ?

Select Customers

US Coast Guard

White House Communications Agency

US Forest Service

US Air Force

US Army

US Navy

South Carolina Highway Patrol

Honolulu PD

NORTHROP GRUMMAN Information Technology

BOEING

LOCKHEED MARTIN

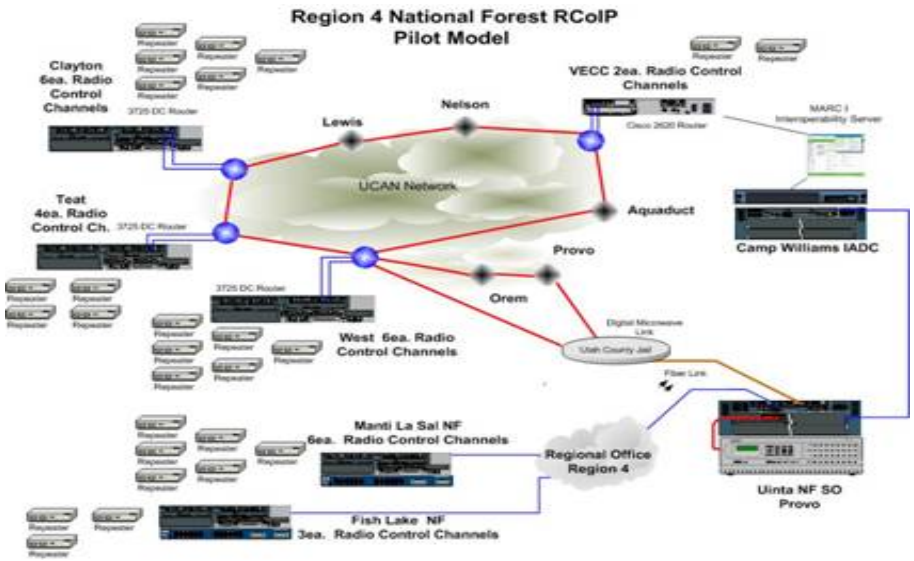
Royal Australian Air Force

Royal Dutch Air Force (NATO)

US Air Force

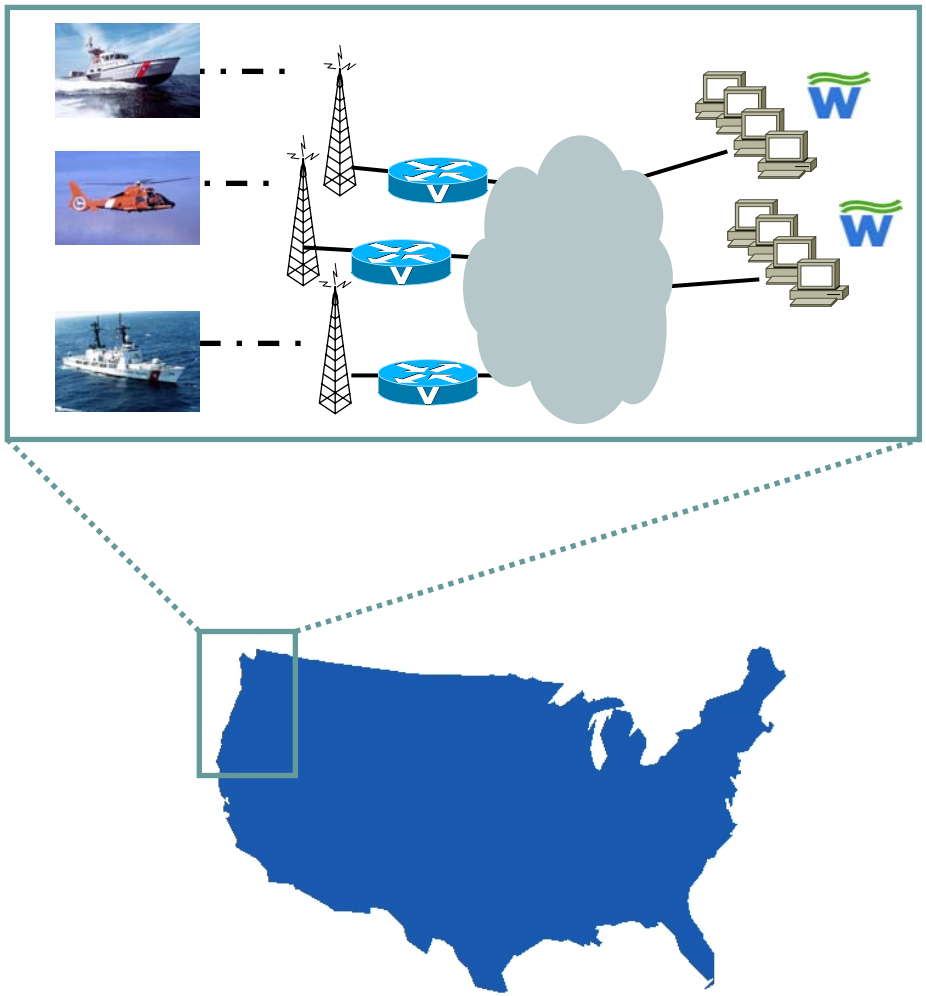
- Overview
  - “Global Hawk” UAV
  - Cisco CallManager system
  - Bridging between IPT, VoIP, analog, and LMR
  - “*Meet-Me”* and “*Group Call”* conferencing
- Benefits
  - Very fast deployment - under 24 hrs !
  - IPT + WAVE = survivable communications
  - Instant communications to field commanders
  - C2 compliance
  - Redundant systems ensure 100% uptime

US Forest Service



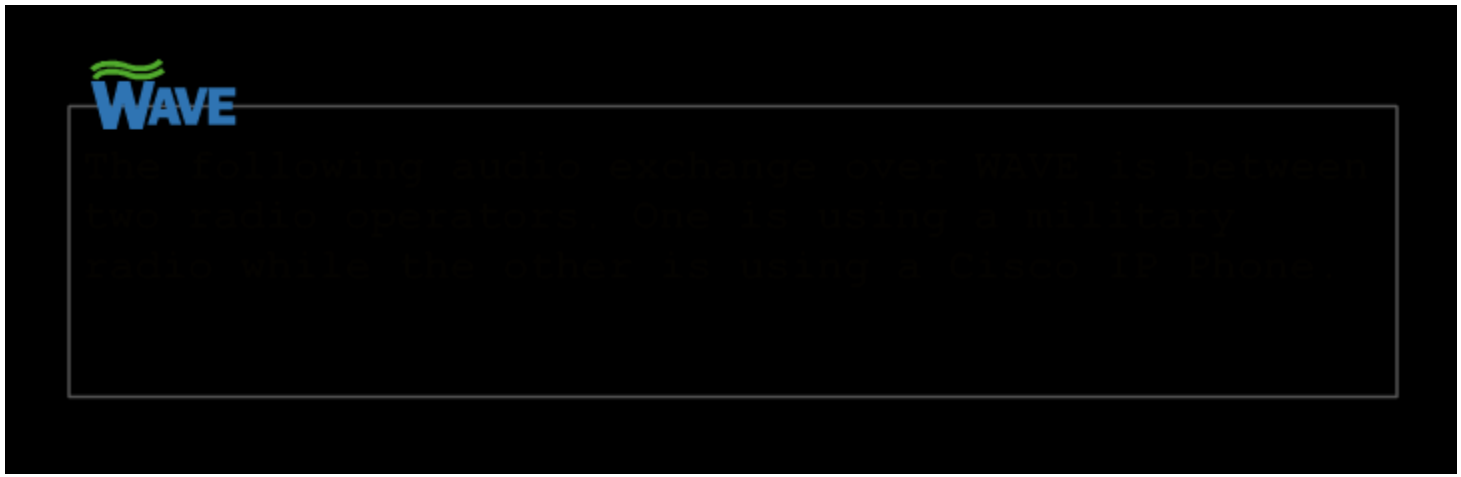
- Overview
  - Multiple forests in multiple regions across the country
  - Numerous repeaters
  - Mix of IP multicast and unicast
  - Conventional tones for radio control
- Benefits
  - Cost reductions and reliability
  - Backup dispatch
  - Shared dispatch (inter-agency)
  - “Flight Following”
  - Radio access direct from Cisco IP phones
  - Dial-in access to radios from any phone

US Coast Guard



- Overview
  - Fully IP multicast-enabled network
  - Numerous radio systems
  - Connected through E&M interfaces on Cisco routers
  - Conventional tones for radio control
- Benefits
  - Access to radio system from anywhere on the network
  - VPN support for remote access to radio system
  - Significant cost savings
  - Emergency response times reduced
  - "*Simulcast*" & "*Instant Replay*"
  - Recordings are instantly accessible - locally

Royal Australian Air Force



Demonstration

Bryan Fedus

Questions