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EMERGENCY MANAGEMENT ISSUES
SPECIAL INTEREST GROUP

Launching Emergency Management Leadership

Mobile Camera & Communication Hub (MC^2H)

Emergency Management Issues – Special Interest Group

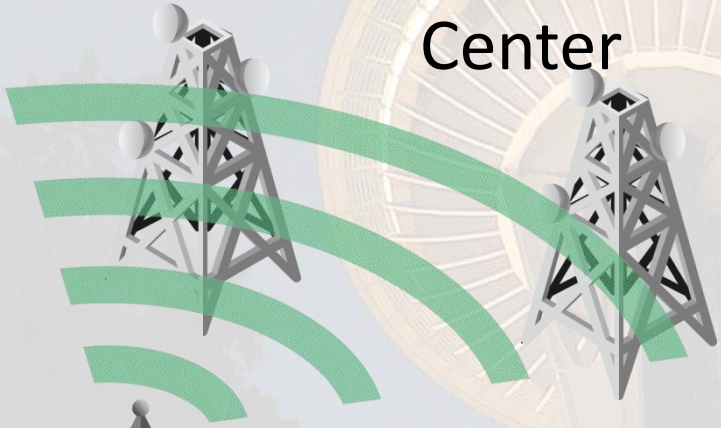
Conference

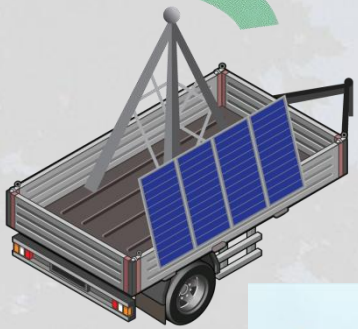
May 14, 2012

Mobile Camera & Communication Hub (MC^2H)

Ready mobilization - Extending data and video communication to remote event sites

MC²H Provides Video Feed Displayed at an Emergency Center





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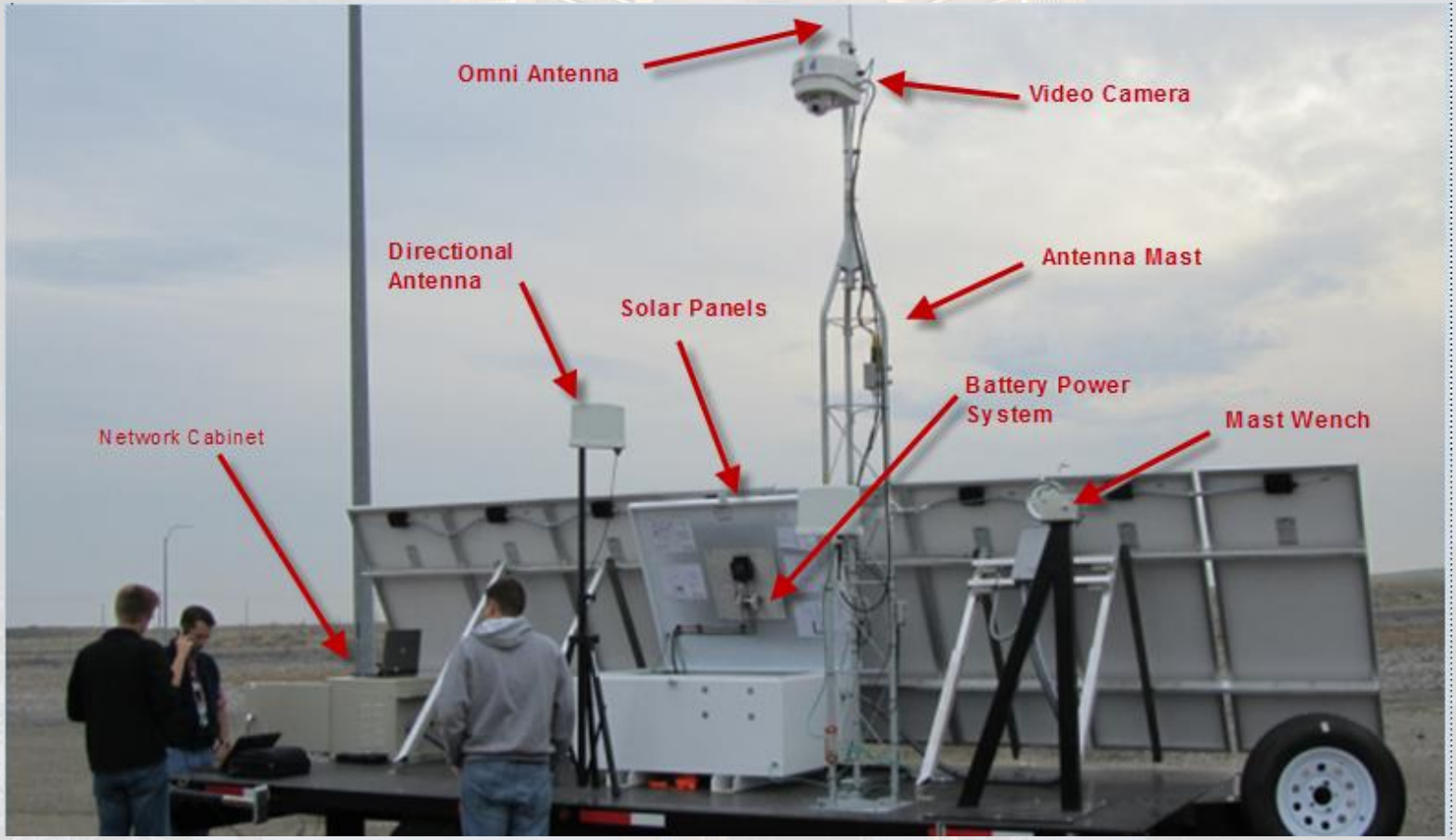
MC^2H Functionality

- Provides Real-time streaming video with pan/zoom/tilt capabilities
- Transports data via secured AES encrypted VPN connection
- Backhaul can be configured to connect to a variety of cellular service carriers, WiMAX or intranet networks
- Interchangeable components utilizing onboard Ethernet network
- Extends intranet services such as Wi-Fi; extending LAN connectivity
- Self-sustained power via solar power and battery backup

Potential System Uses

- Real-time feedback of critical events
  - Emergency Preparedness
  - Fire
  - Security
  - Significant Operational Events
- Monitoring of operational situations & observation of training exercises
- Management of remote culturally sensitive areas
- Network connectivity to LAN in remote areas via Wi-Fi hotspot

MC²H Equipment Configuration

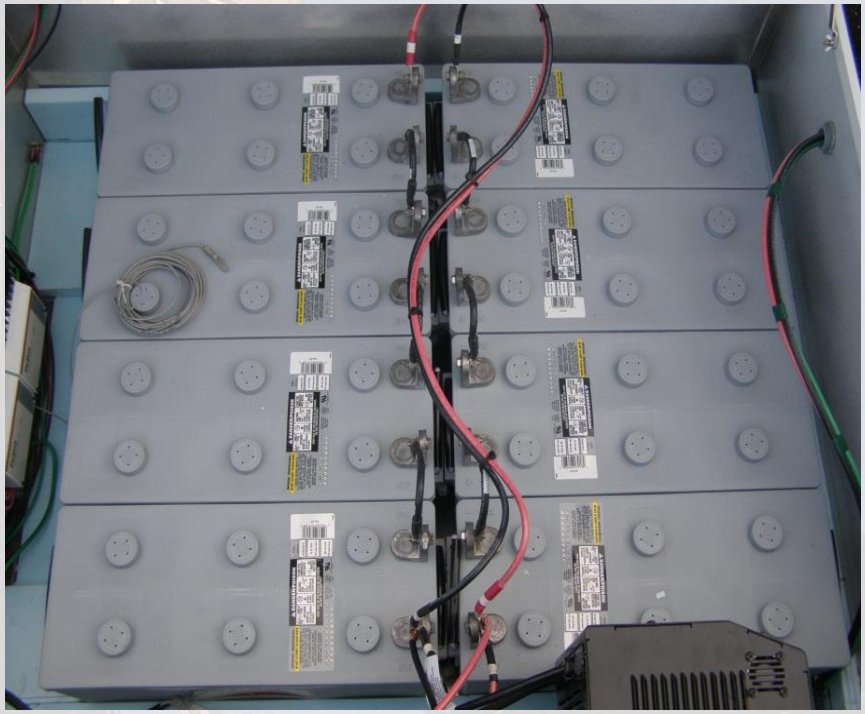


MC²H Camera

- Camera Mast Deployed
- Camera in Enclosure

MC²H Solar Power Generation

- 1200 Watt Solar Array
- 420 AH Battery Bank



Securing Fixed WiMAX

- Hanford WiMAX uses site-to-site VPN to secure data from fixed locations
  - Routers with FIPS 140-2 approved cryptographic modules.

    http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/1401vend.htm
  - Uses same security policies as remote users from untrusted networks, i.e. the Internet
  -

MC²H Camera's Zoom Capability

System Capabilities

- Self sustained power system
  - 10 -12 day run-time on a 24 x 7 basis
  - Full solar recharge within 4 hours of sun light
  - Outfitted with portable generator back up
- High resolution camera with Pan/Zoom/Tilt controls
- WiMAX back-haul network connection (up to 1 Mbs) utilizing an AES encrypted VPN channel (Video can be seen anywhere on LAN)

System Capabilities (cont'd)

- WiMAX back-haul network connection (up to 1 Mbs) utilizing an AES encrypted VPN channel (Video can be seen anywhere on LAN)
- COTS products, less cost to assemble and replace equipment
- Hardened design (extreme out-door environments and theft proof components)
- Easily adaptable to meet multiple monitoring/surveillance and remote communication requirements

Benefits

- Enhances productivity (do more work with less staff and more efficiently)
- Allows Emergency Centers to observe live video of an on-going event
- Going Green:
  - Self sustaining power system
  - Reduces Gasoline Consumption and air emissions
  - Avoids environmental impacts to sensitive areas
- COTS based products design – cost effectiveness
- Configuration Changes Quickly: The system is adaptable to an infinite amount of electronic communication surveillance equipment with Ethernet interface
- Mobile Readiness – Ready to deploy within a moment's notice

Demonstrating the MC^2H Operating in the Field

Live streaming video from field units deployed in Richland, WA. (205 miles away)

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Discussion and Questions