Satellite technology for telecommunications in humanitarian operations

Lionel Marre
IT Emergency Preparedness and Response branch
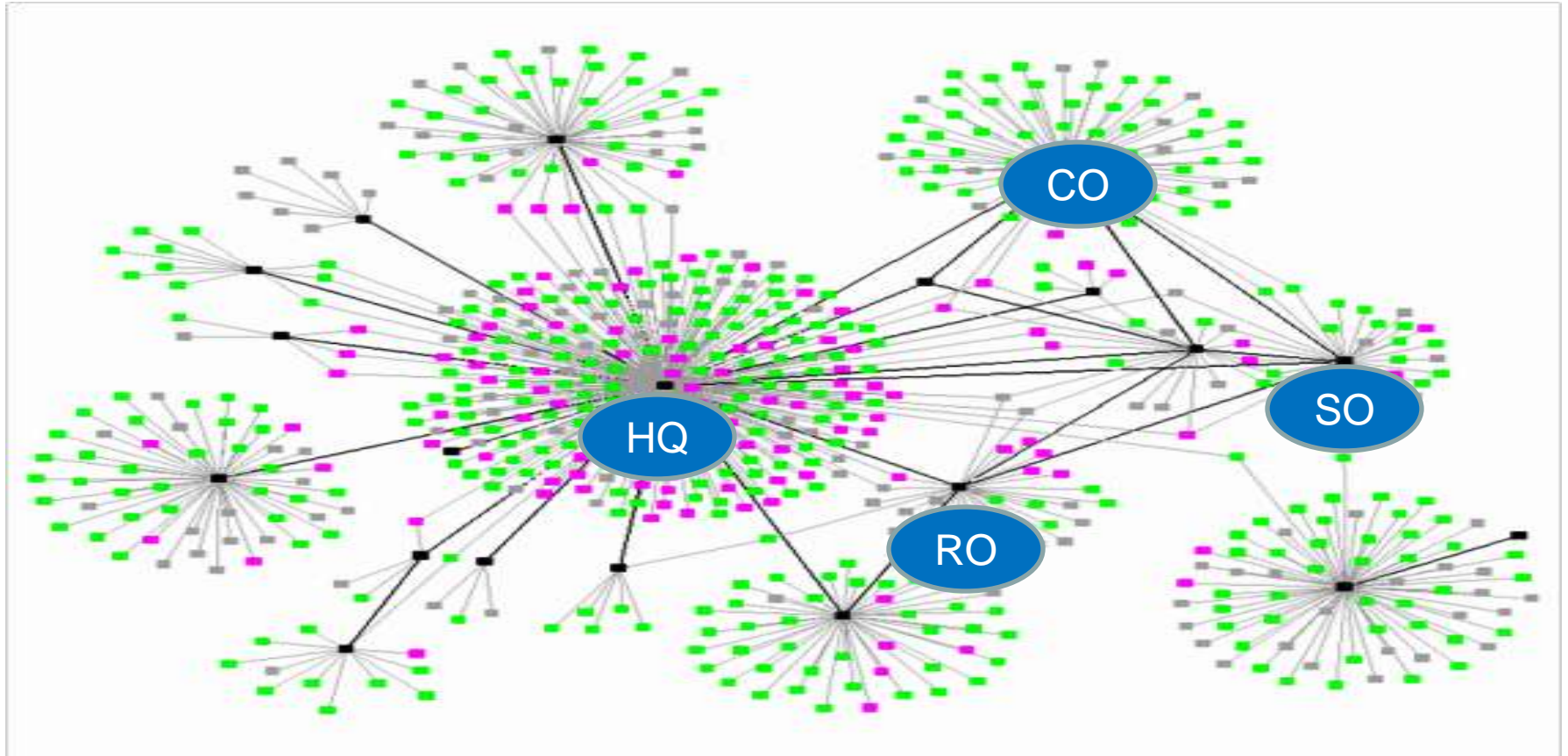United Nations World Food Programme (WFP)

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About World Food Programme

- World's largest humanitarian agency fighting hunger worldwide

- In 2010 aim is to reach more than 90 million people in 73 countries

http://www.wfp.org/ict-emergency

WFP Worldwide Satellite Network

More than 350 offices and sub-offices are connected via VSAT

http://www.wfp.org/ict-emergency

IT Emergency Leadership

- WFP is one of the leading agencies in the humanitarian community in terms of IT emergency preparedness and response

- Sole service provider for the Emergency Telecommunications Cluster (ETC):
    - Common data communications services
    - Common security telecommunications services

WFP IT has supported emergencies in:
Afghanistan, Cameroon, Central African Republic, Chad, Colombia, Comoros, Democratic Republic of Congo, Gaza, Georgia, Haiti, Indonesia, Kenya, Mozambique, Myanmar, Pakistan, Philippines, Somalia, Yemen,

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Emergency Communications

Initial phase of an emergency, ETC provides:

- Basic voice and web-based email access facilities through quick deployment satellite terminals.
    - Voice phone service in a central location
    - Stand-alone PC terminals

- Systems mainly used:
    - Thuraya
    - Iridium
    - Inmarsat BGAN
    - VSAT and Mini VSAT

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Emergency Communications continued

Initial phase solutions replaced
(within 48 hours of government import approval) by:

- VSAT from *EMC* and *ASG*
  - From 32 Kbps to 6 Mbps

- Linking central site to individual organisations at remote location on best effort basis
  - Sites linked via wireless bridges/ microwave

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Case Study: Haiti earthquake

- Estimated 220,000 people killed
- 3+ million people affected

- 1000+ users required access/day
- Total devastation of existing infrastructure

- High speed data, voice and internet connectivity using VSAT and local ISPs

- ETC networks used by over 1200 aid workers from 50 NGOs and UN agencies daily

Made possible through coordinated and strong collaboration between partners of the ETC

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Safety & Security

Capacity to Communicate

Access to Information

EPIC

http://www.wfp.org/ict-emergency

EPIC: Emergency Preparedness Integration Centre

Capacity to Communicate

- Communication Interoperability without intervention
  - Regular phones - fixed, cellular, satellite
  - Analogue and digital radios
  - Security compliant work stations

Access to Information

- EPIC Online Portal
- Applications
  - Compatible with EPIC
  - Functional from device

EPIC: Emergency Preparedness Integration Centre

Situational awareness:

- Embedded GPS

- Online portal with map-based command and control solutions

Situational awareness:

Emergency alert system:

- Situational awareness enables advance warning

- Fast dissemination of information to EPIC users

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Who is EPIC for?

- Benefit all organisations
  - Logistics
  - Camp coordination
  - Aviation
  - Agriculture
  - Health care etc.

- Versatile solution
  - Embed applications relevant to organisations

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Next Steps

Evaluating further technology for EPIC solution:

- Compact satellite modem
  - Fast deployment satellite terminal
  - Connectivity on the move
  - Built-in WiFi hotspot for data connection to internet

- Satellite-terrestrial smartphone
  - Runs on Windows Mobile operating system
  - Can be used as mobile phone in a GSM network or a satellite phone

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