



XXLSEC Digital battlefield with end-to-end encrypted comms solutions





Digital battlefield with secure X-MESH IP communication solutions

XXLSEC offers secure end-to-end encrypted communication solution suitable for mission critical users at multiple operation environments. Encrypted voice, video, messaging, sensor data over Mobile Networked MIMO (MN-MIMO) waveform IP mesh radio products specifically designed to address the growing demand for distributing loads of encrypted high bandwidth IP-data in harsh tactical environments. XXLSEC X-MESH radios, featuring MN-MIMO at the core, join together to form a robust, self-healing, self-forming fluid mesh network with encrypted communication terminals.

X-MESH digital battlefield

- Proprietary RF Waveform, best security with end-to-end encrypted XPTT terminals
- Data Rain encrypted broadcast
- XPTT encrypted Push-To-Talk and voice calls
- Open Source based software – full security of supply
- Radios Automatically Connect / Reconnect
- No Central Control / Single Point of Failure





Digital battlefield with X-MESH and XPTT

XXLSEC Digital Soldier is a concept for special units with high requirements for online situational awareness and totally secure and multiple communication methods.

XXLSEC solution offers IP-MESH network with PTT, HD-video, mapping, location, sensors and other data capabilities with top secure end-to-end encrypted comms solutions.



XPTT tablet with PTT, mapping and video stream

XXLSEC Digital Soldier



XPTT terminal for digital soldier to use Digital multi-channel PTT, receive and send video stream and use mapping data and situational scope to locate the troops on the map.



Tactical MIL-STD-2525 icons to indentify the units and their locations at the operation field.



Mounting to vest with customized bracket and easy access usability.

Front deployed knowledge for front line users.

Carry along solution with full blown server capabilities inbuilt. It can receive tracking information from tenths of targets and serve hundreds of users. It communicates through cell network, satellite or X-MESH radios. Dispatcher for video streams, situational scope with MIL-STD-2525 icons for command and HQ needs. Sensor data storage and encrypted calls, messaging and file transfer. Centralized UI for MESH network setup for all nodes.



There is also an option to Track TETRA and P25 radios in local. Design allows it usage in over the horizon missions where network exposure should be minimized and optionally Tactical Tracking Server can host your mission critical mapping data on board as well. This makes it breeze to use in hostile environments where network access is monitored or possibly targeted.

X-MESH4200 series IP-radios are available in 1-watt and 4-watt output versions, and are effective, when size and weight are of concern. These are ideal for body-worn systems, un-manned vehicles, and other small and portable applications.

- 2x2 MIMO
- 1mW - 4 Watts Output Power
- TX Beamforming: 2-3dB Additional EIRP
- Multiple frequency band options
- Ruggedized IP67 enclosure
- Data rates of 100+Mbps
- Integrated Bi-Directional Voice Comms
- Ethernet, Serial, and 2x USB Interface
- FPGA Based / Software Defined Radio





X-MESH IP-RADIOS 4400 Series

XXLSEC Digital Battlefield

X-MESH4400 series radios are available in 1-watt and max 8-watt output versions, and are effective for applications that require the benefit of additional power, and receive sensitivity. These are ideal for vehicle integration, fixed infrastructure, long range airborne and maritime systems.

- 4x4 MIMO
- 1mW - 8 Watts Output Power
- TX Beamforming: 5-6dB Additional EIRP
- Multiple frequency band options
- Ruggedized IP67 enclosure
- Data rates of 100+Mbps
- Integrated Bi-Directional Voice Comms
- Ethernet, Serial, and 2x USB Interface
- FPGA Based / Software Defined Radio



Helmet and headsets

XXLSEC digital soldier



Ballistic helmet with rail and Peltor rail mounted headset with noise cancelling boom microphone and "talk-thru" function.

Helmet rail also allows camera, NVG, flash light etc. accessory mountings.



Headset options:

- 2 side tactical Peltor TAC headset, noise canceling
- 1 side tactical
- Covert headsets
- Etc

PTT button options:

- Centralized PTT-button for heavy conditions
- Supports tactical and covert headset options
- IP66/67
- Equal to MIL-STD-810G
- Remote action bluetooth button option



Unlimited Options

XXLSEC Digital Battlefield



Our Digital Battlefield solutions offer X-MESH radios which interface directly with encrypted tactical terminals equipped with IP video cameras for transmission across the mesh network. Any IP enabled device can be connected to our terminals for utilization on the network. Land - Sea - Air environments.

XXLSEC encrypted communications solutions are built with open source linux based code with full source code visibility and US patent pending encrypted TCP/IP traffic.



X-MESH4200 or 4400 Series Radios



PriveBook



Tactical Server



XPTT tactical terminal



Data Rain encryption unit



HD Body-Worn IP Camera with IR



Mini-IP Pinhole Camera



HD Helmet IP Camera with IR



30x Zoom HD PTZ with IR Illumination



IP Thermal Camera⁹

Analog Video Source Options

XXLSEC Digital Soldier



XXLSEC X-MESH radios have the ability to interface directly with our mini encoder to encode composite SD video sources for transmission across the mesh network.

The encoder is powered directly from the radio's MBITR battery and can provide 200mW to power certain types of external cameras including our prismatic look through camera for use on rifle and spotting scopes.

We have power options to also enable providing power to other video cameras and sources.





Simple Deployment - Easy Operation

The X-MESH radios have been designed to enable rapid deployment, and provide ease of operation. XPTT and other XXLSEC encrypted tactical communication solutions are total off-the-grid secure capability for serious users working in operation environments where cellular ends.

- AES256 E2E-encryption TCP/IP communications and data streams
- Full source code level development capability in all communication solutions
- Ability to adjust network wide settings from GUI of any radio
- Wide range of frequency band options (400MHz-6GHz) for MESH network
- Ethernet/USB/Serial interfaces
- BDA options for extended range
- Multiple operating power options including MBITR battery
- Very effective in urban, multi-path environments

Multiple Deployment Scenarios

Possible Network Applications with X-MESH radios

- Intelligence sensor data streams and monitorin
- ISR-operations globally
- SOF operations globally
- Last Mile network connectivity
- Pre-planned event security (Festivals, protests, parades, races, sporting events)
- Siege/Hostage video assets back to Command
- Standoff monitoring of multiple HD cameras
- Ship-to-shore communication and internet sharing network
- Provide commanders the ability to verify sniper targets
- UAS control and video downlink, elevated mesh repeater
- Vehicle mobile-network applications for video/voice/data
- Manned aircraft downlink, elevated mesh repeater
- Any situation where IP devices need to connect wirelessly

Digital soldier with body worn capabilities

XXLSEC Digital Soldier

Peltor headset with PTT button, microphone and hearing protection mounted to ballistic helmet



X-MESH radio vest mounted with body worn antennas or gooseneck antennas

Mini IP HD Helmet Camera with Mic, IR illuminator



XPTT tactical terminal with multichannel PTT audio, video stream receive and map view.

Central MIL-standard wearable battery for radio, XPTT tablet, sensors, cameras



Tactical Vest with advanced molle and ballistic protection



NBC sensors, NVGs and other sensors

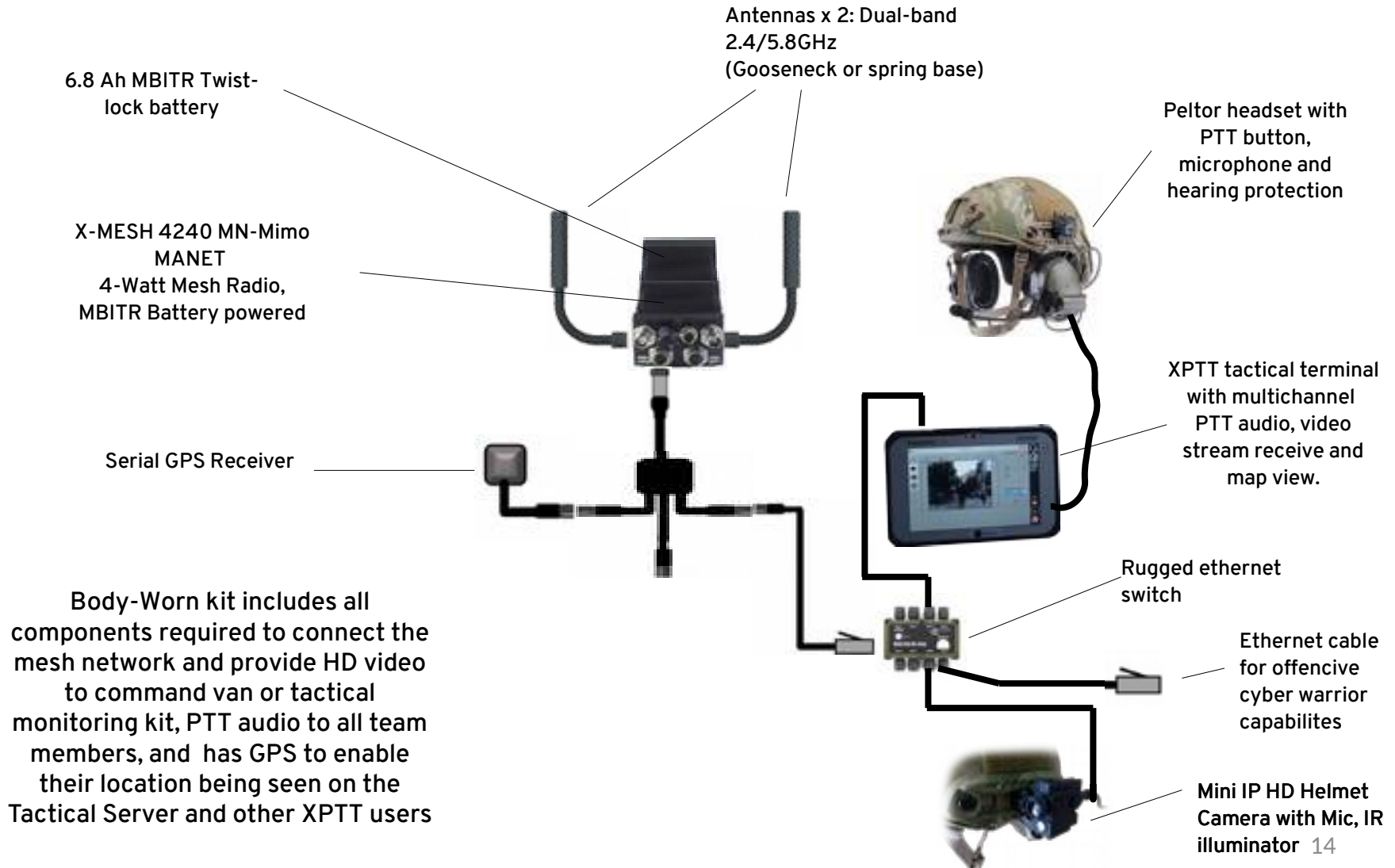


Cyber Warrior capabilities with possibility to connect target systems with ethernet cable in the vest → connect eg to target area video surveillance system



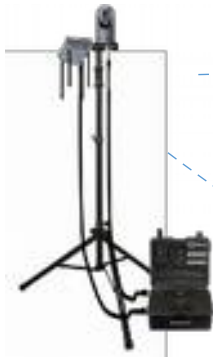
Body-Worn Equipment Kit with Helmet Cam

XXLSEC Digital Soldier



Tactical Mesh Network - example

X-MESH4400 with PTZ Camera, Tactical Power Kit



X-MESH with XPTT tablet and connected video device



X-MESH4200 with Tactical Server unit with PTT, voice and video dispatcher, map and location data etc.

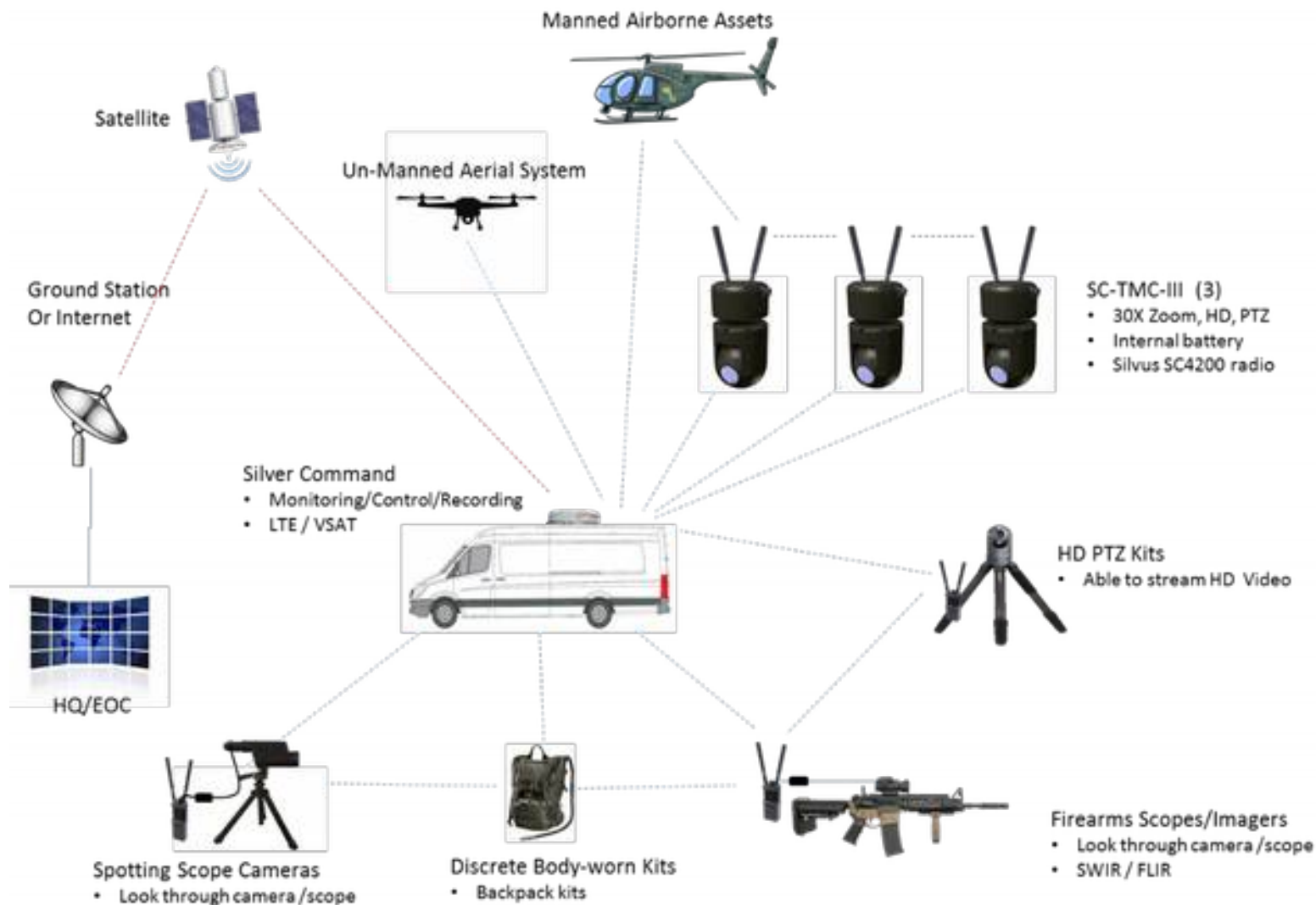


X-MESH with XPTT tablet and connected video device



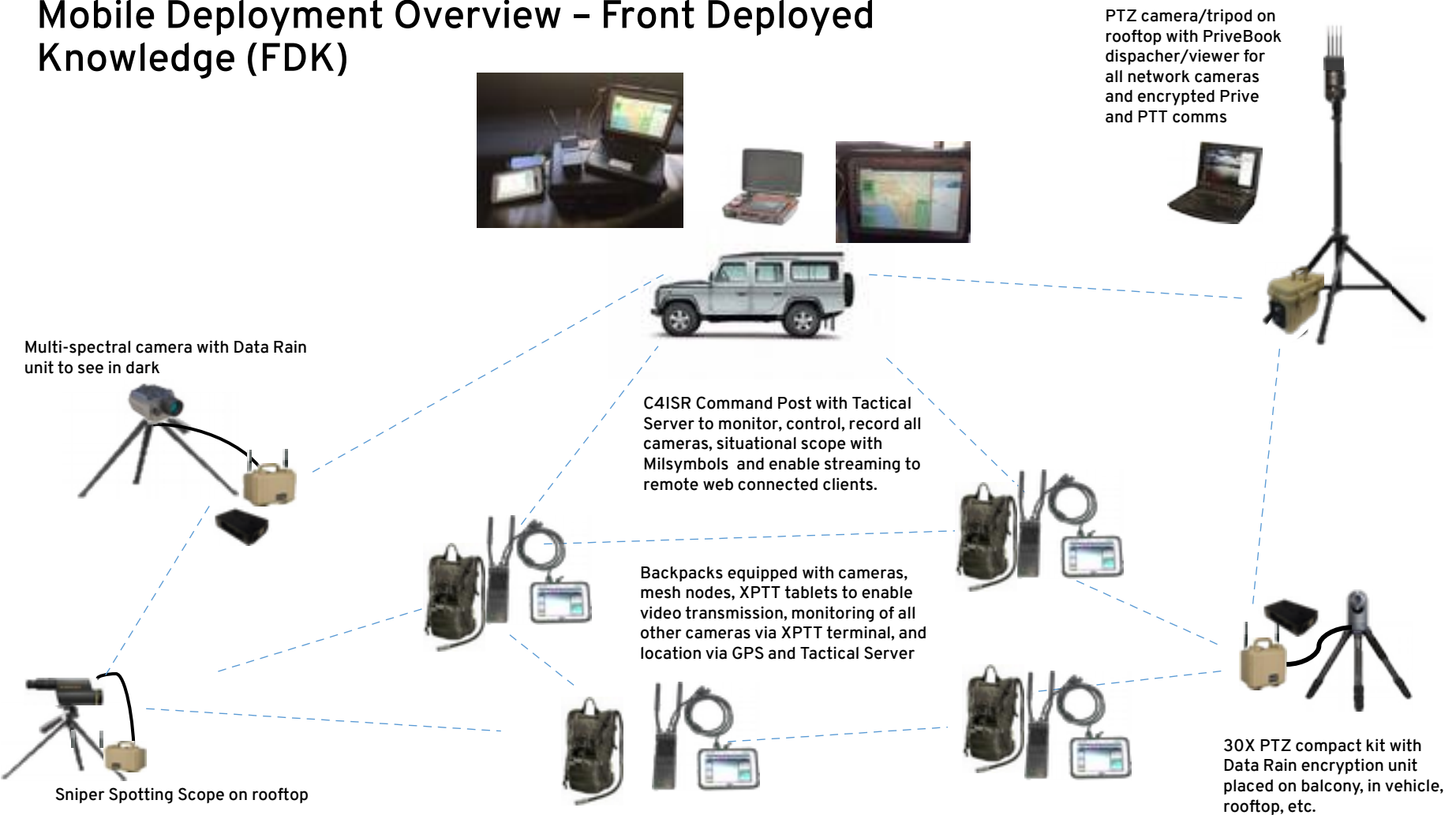
SC4200 with PTT Audio, and connected video device

Multi-Asset Network



Tactical Mesh Network

Mobile Deployment Overview – Front Deployed Knowledge (FDK)



Tactical Mesh Network

SpecOps Deployment Overview – Front deployed knowledge

Command Center with PriveBook to share the situational scope and encrypted comms



Cellular System



Tactical command post

- Van, Car, Building or Man Portable CP
- Tactical Server and PriveBook
- Monitoring/Control/Recording...
- Storage/Transit for all equipment
- X-MESH radio and LTE modem



(10) Body-worn Kits Forward deployed knowledge



(4) Pan/Tilt/Zoom Camera Kits



(4) Spotting Scope Camera Kits





Maritime Deployment Example

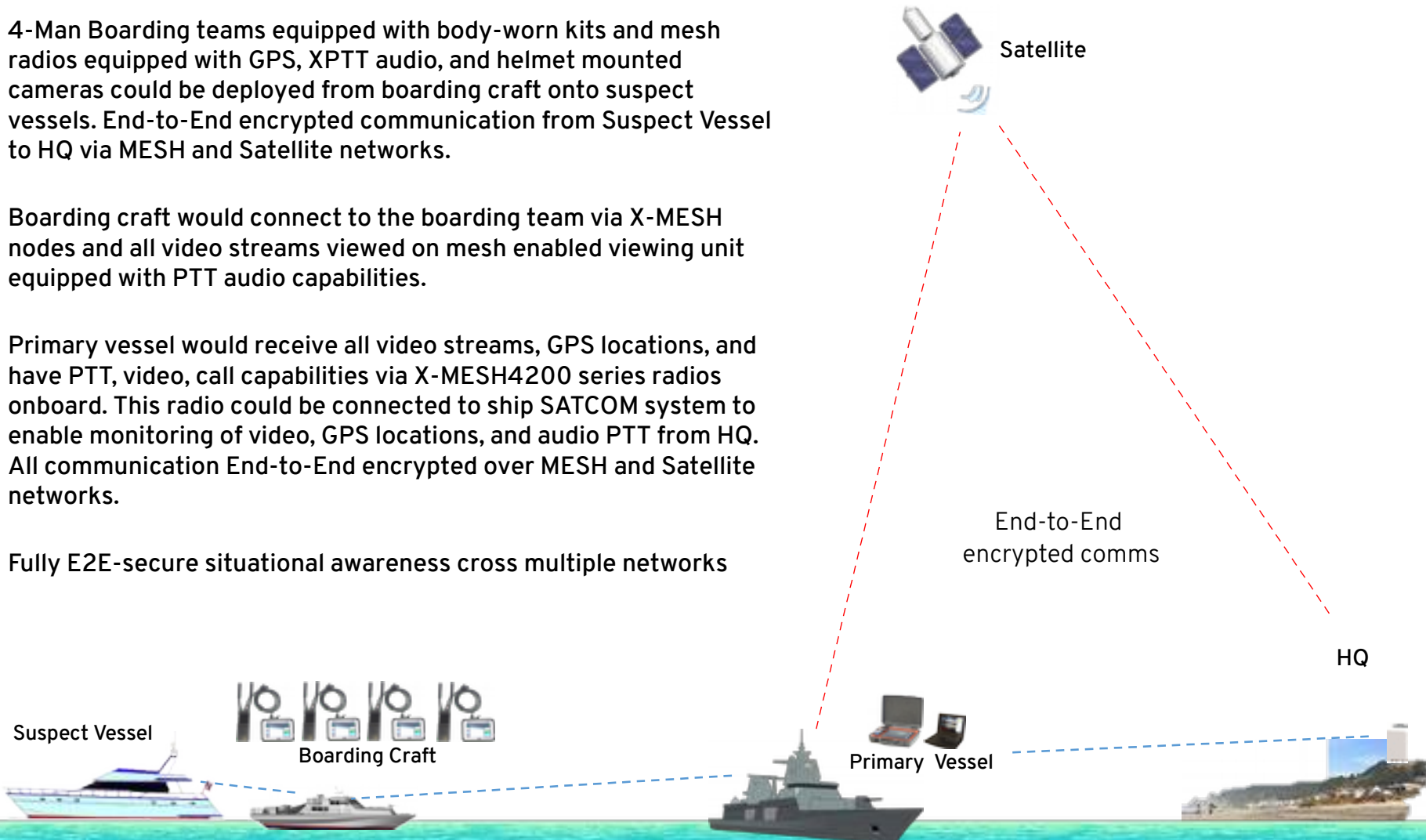
XXLSEC Digital Soldier

4-Man Boarding teams equipped with body-worn kits and mesh radios equipped with GPS, XPTT audio, and helmet mounted cameras could be deployed from boarding craft onto suspect vessels. End-to-End encrypted communication from Suspect Vessel to HQ via MESH and Satellite networks.

Boarding craft would connect to the boarding team via X-MESH nodes and all video streams viewed on mesh enabled viewing unit equipped with PTT audio capabilities.

Primary vessel would receive all video streams, GPS locations, and have PTT, video, call capabilities via X-MESH4200 series radios onboard. This radio could be connected to ship SATCOM system to enable monitoring of video, GPS locations, and audio PTT from HQ. All communication End-to-End encrypted over MESH and Satellite networks.

Fully E2E-secure situational awareness cross multiple networks

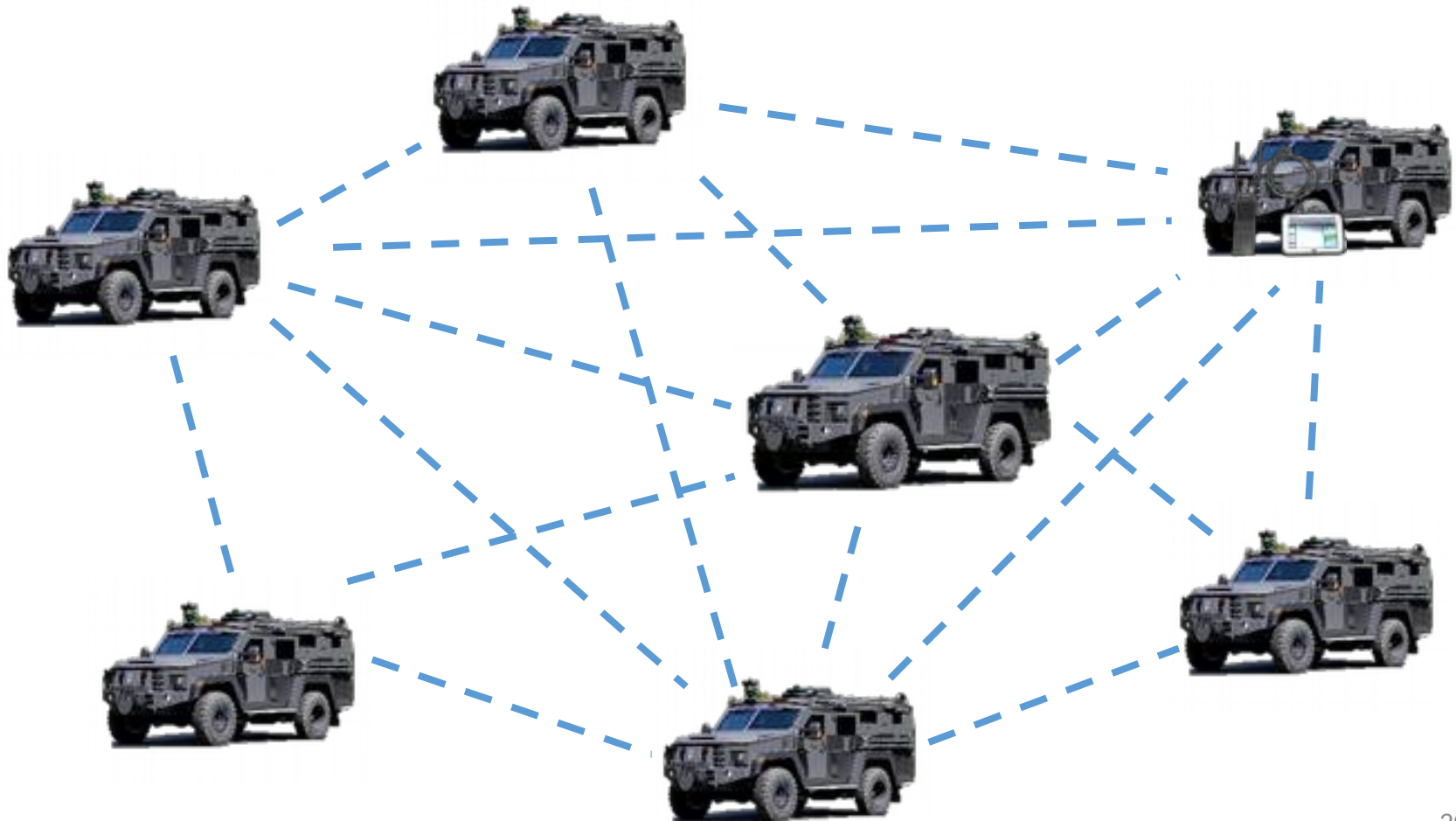




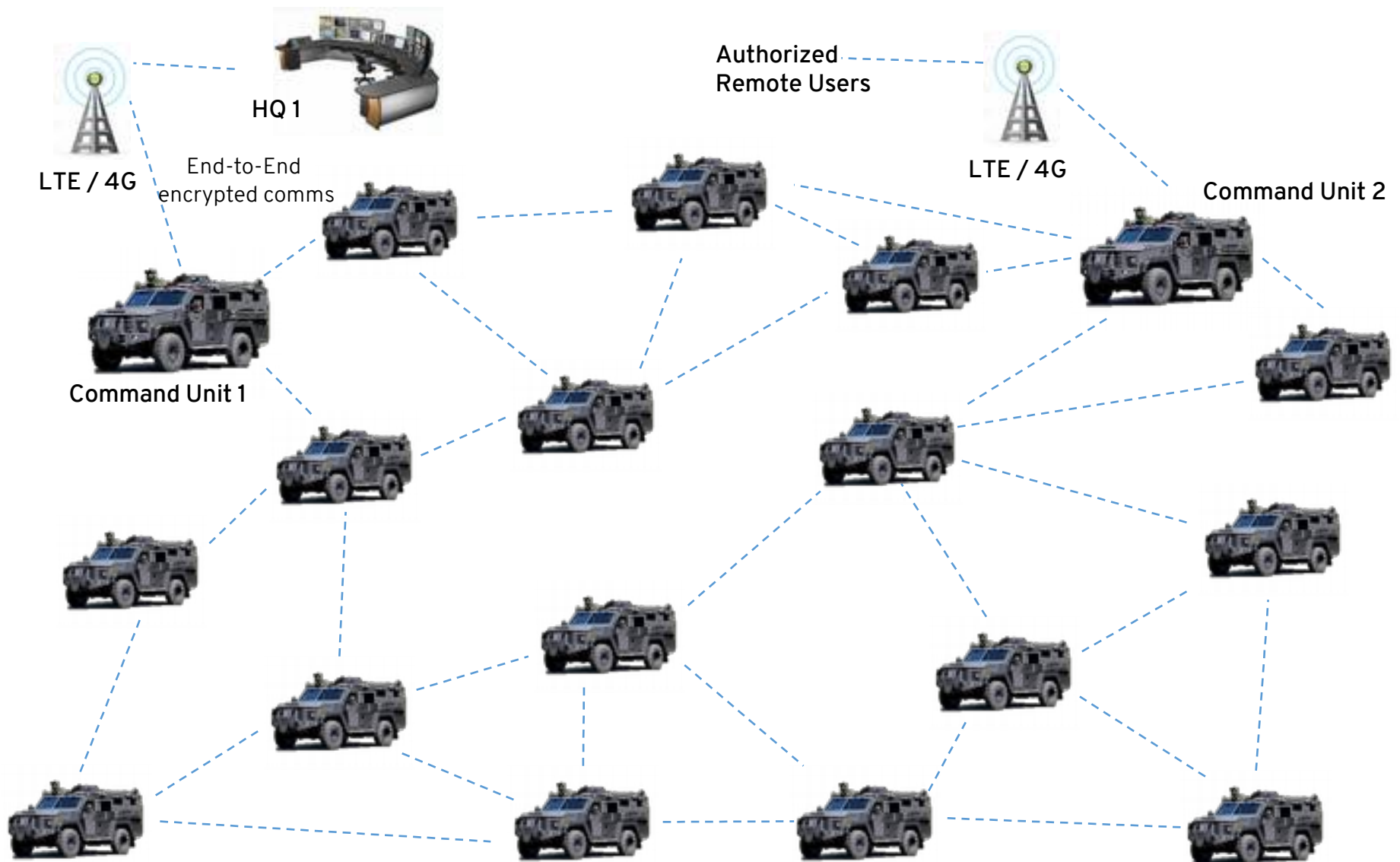
Armored Vehicle Voice/Video/Data Network

XXLSEC Digital Soldier

With X-MESH Radios, each vehicle is part of a self-forming, self-healing high-performance mesh network. This network can provide up to 100+ Mbps of throughput to support HD cameras, XPTT talk groups, Radio-over IP solutions, GPS location of all vehicles, and data capabilities to support a wide range of tactical applications. Every vehicle is a repeater enabling extension of the network, and provide connectivity in extremely hostile environments.

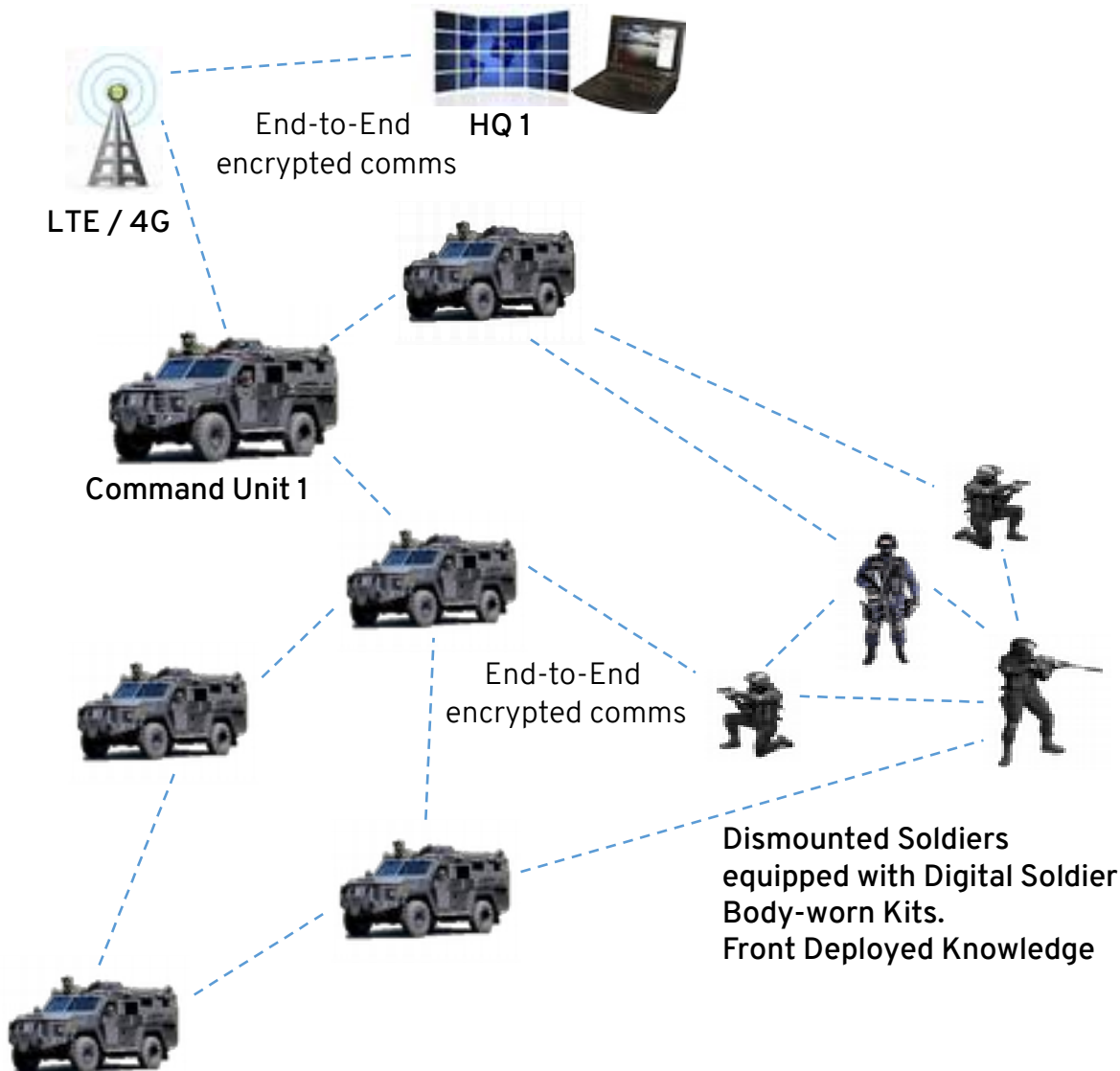


Armored Vehicle Voice/Video/Data Network with End-to-End encrypted communication



Dismounted Operator Scenario

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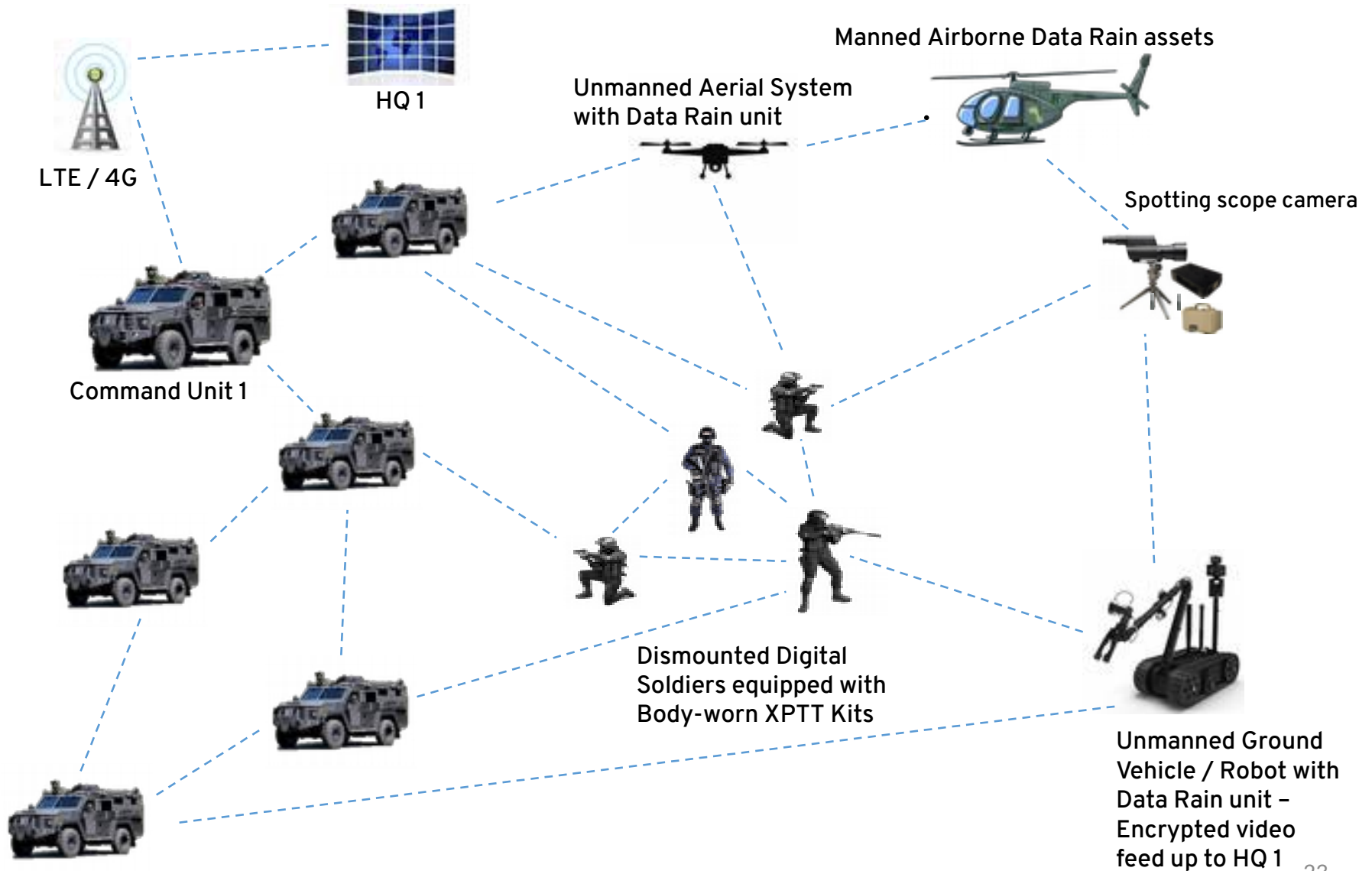
Soldiers could be equipped with body-worn kits to enable deployment into buildings, crowds, and other positions outside of the vehicles.

Command Units would see their location, have voice (XPTT and calls) communications to them, and be able to view their body-worn camera.

Dismounted soldiers equipped with rugged XPTT-tablets to enable collaborating with team, seeing their locations, and viewing other cameras. All communication End-To-End encrypted over mesh and LTE networks.

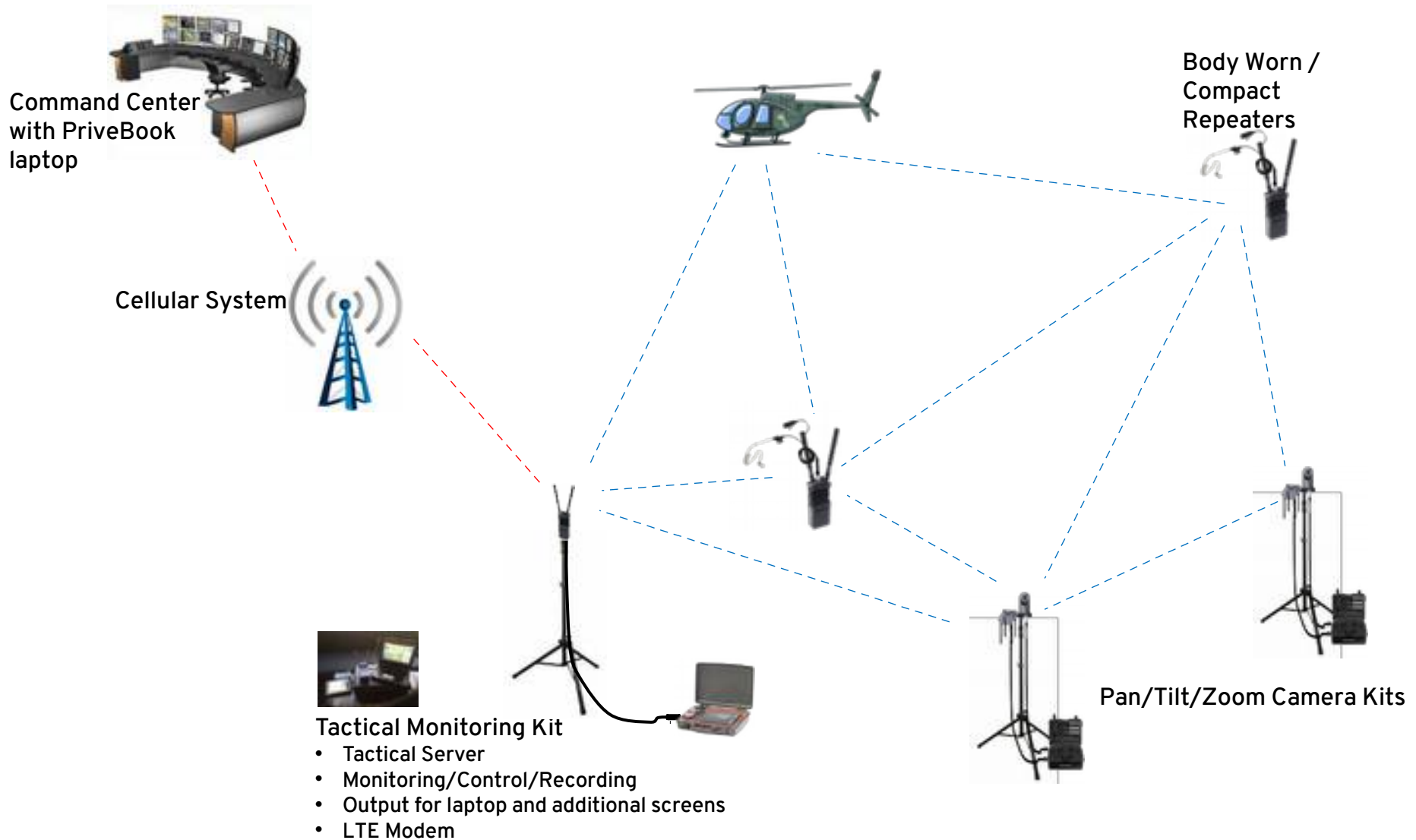
Multiple Asset Scenario

XXLSEC Digital Soldier

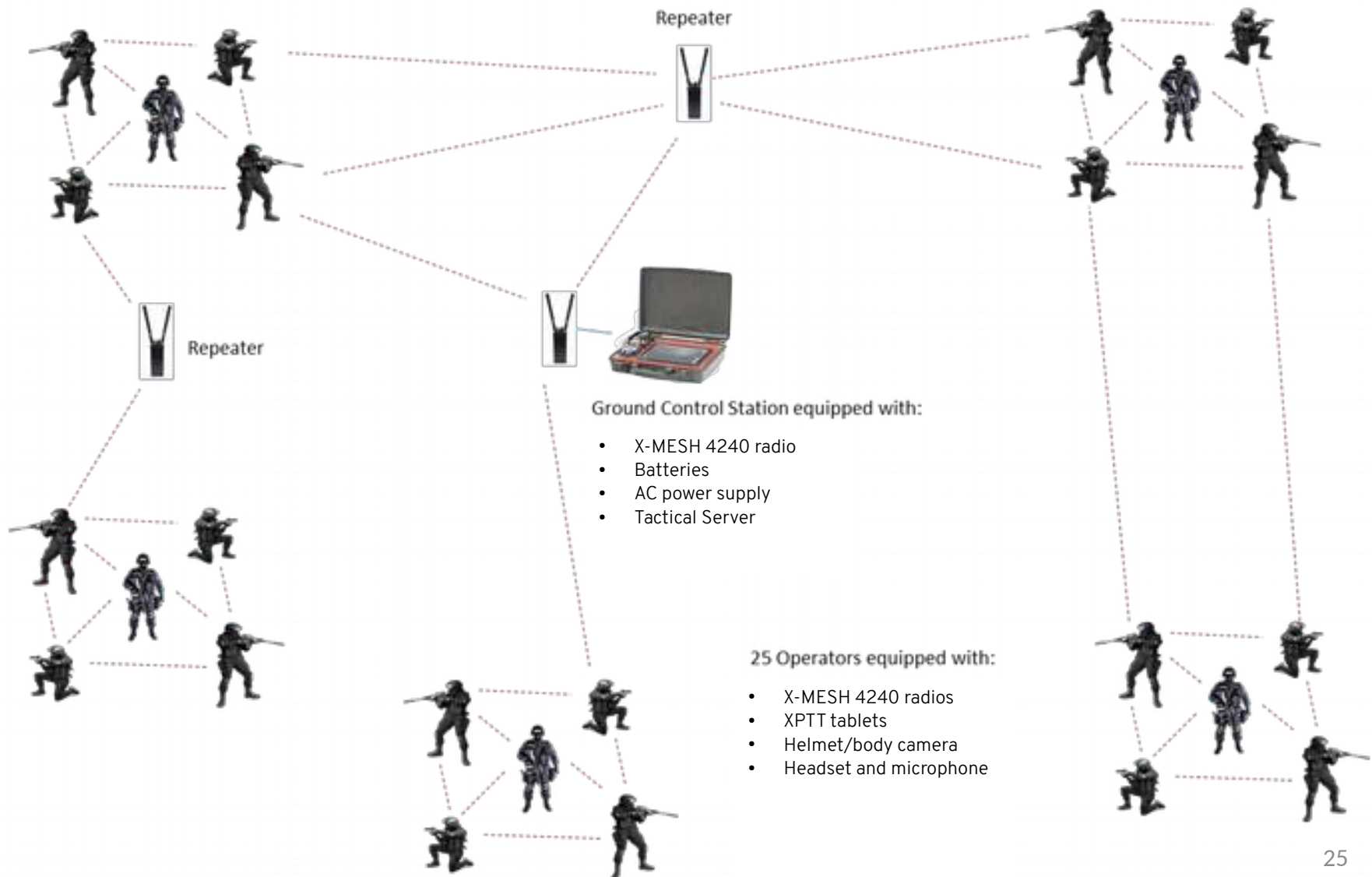


Airborne Downlink with MESH Tactical Network

Basic Deployment Overview



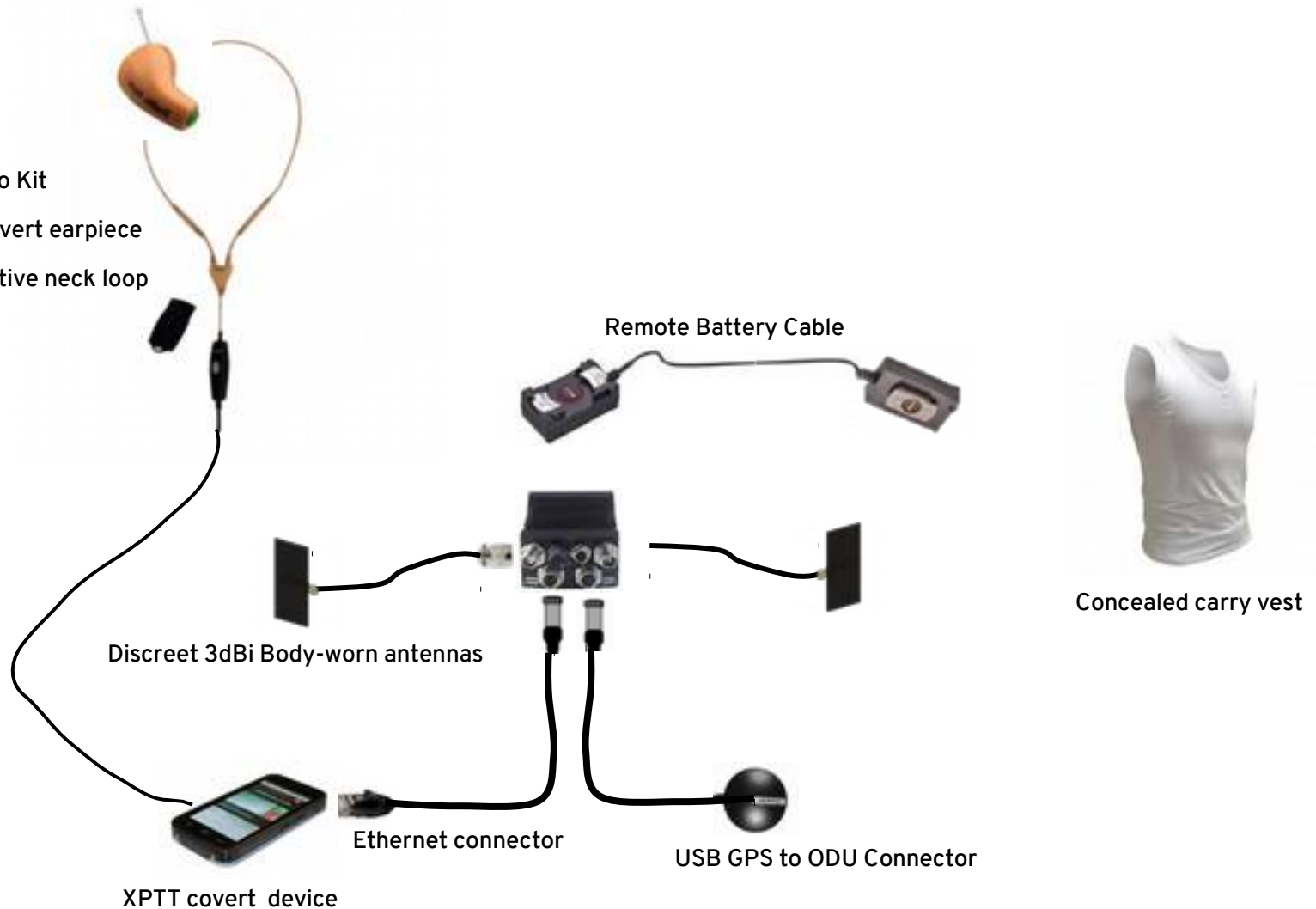
Multi-Squad Tactical Network with Front Deployed Knowledge



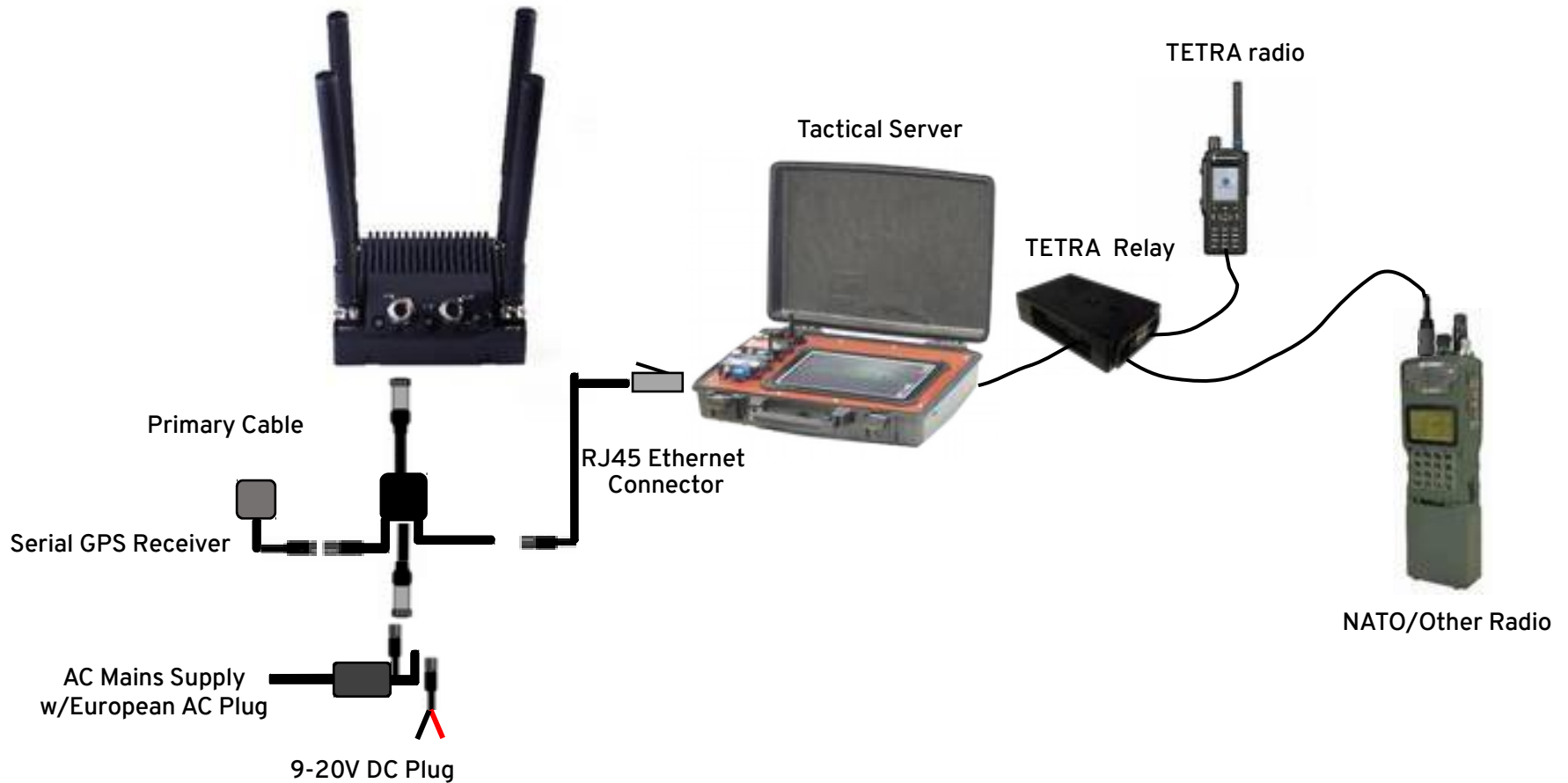
Discreet Vest-Deployed X-Mesh encrypted XPTT comms system

Covert Audio Kit

- NANO covert earpiece
- Transductive neck loop



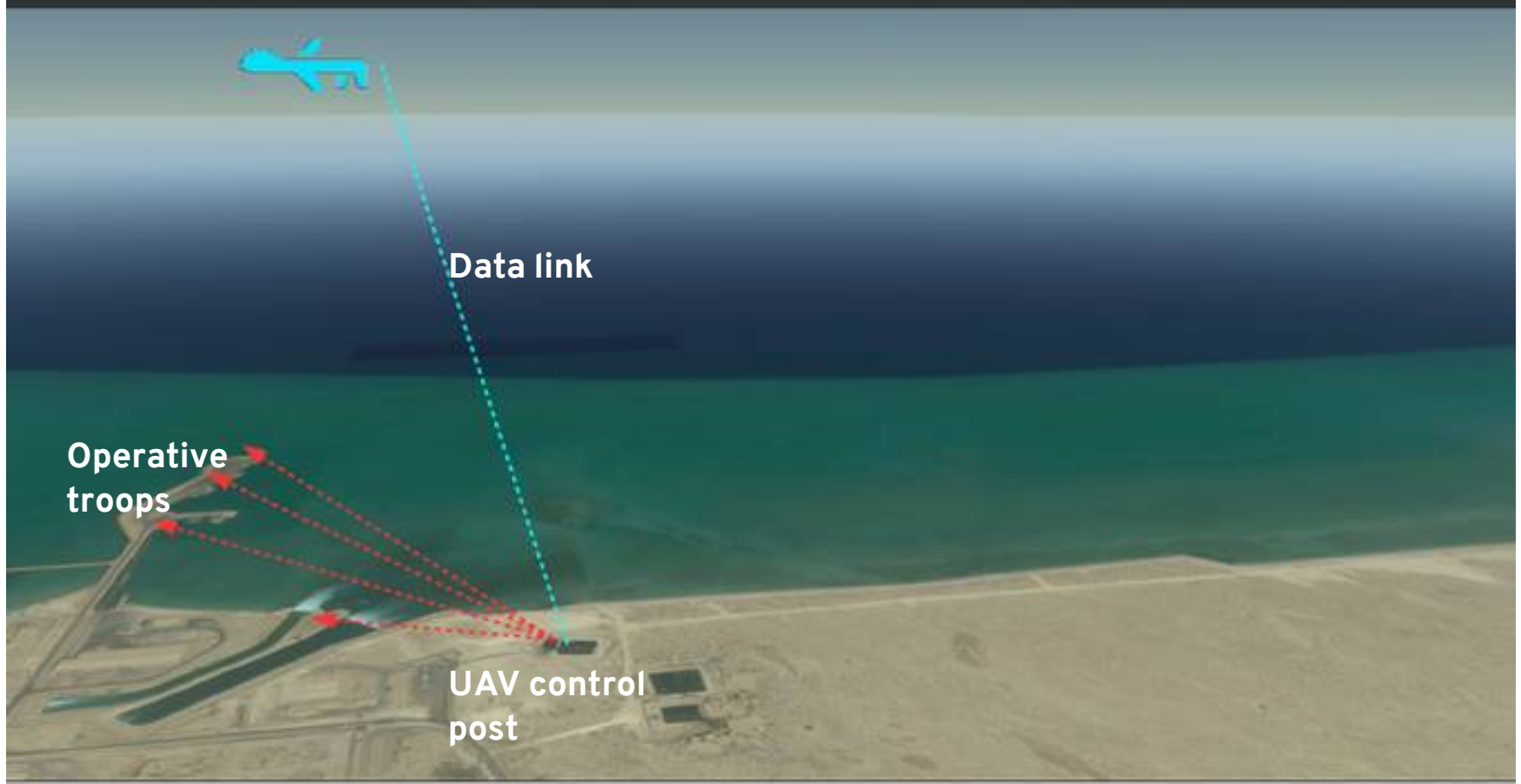
X-MESH4480 and Tactical Server used with TETRA Radio Interoperability Bridge





XXLSEC Data Rain concept

TRADITIONAL UAV APPROACH



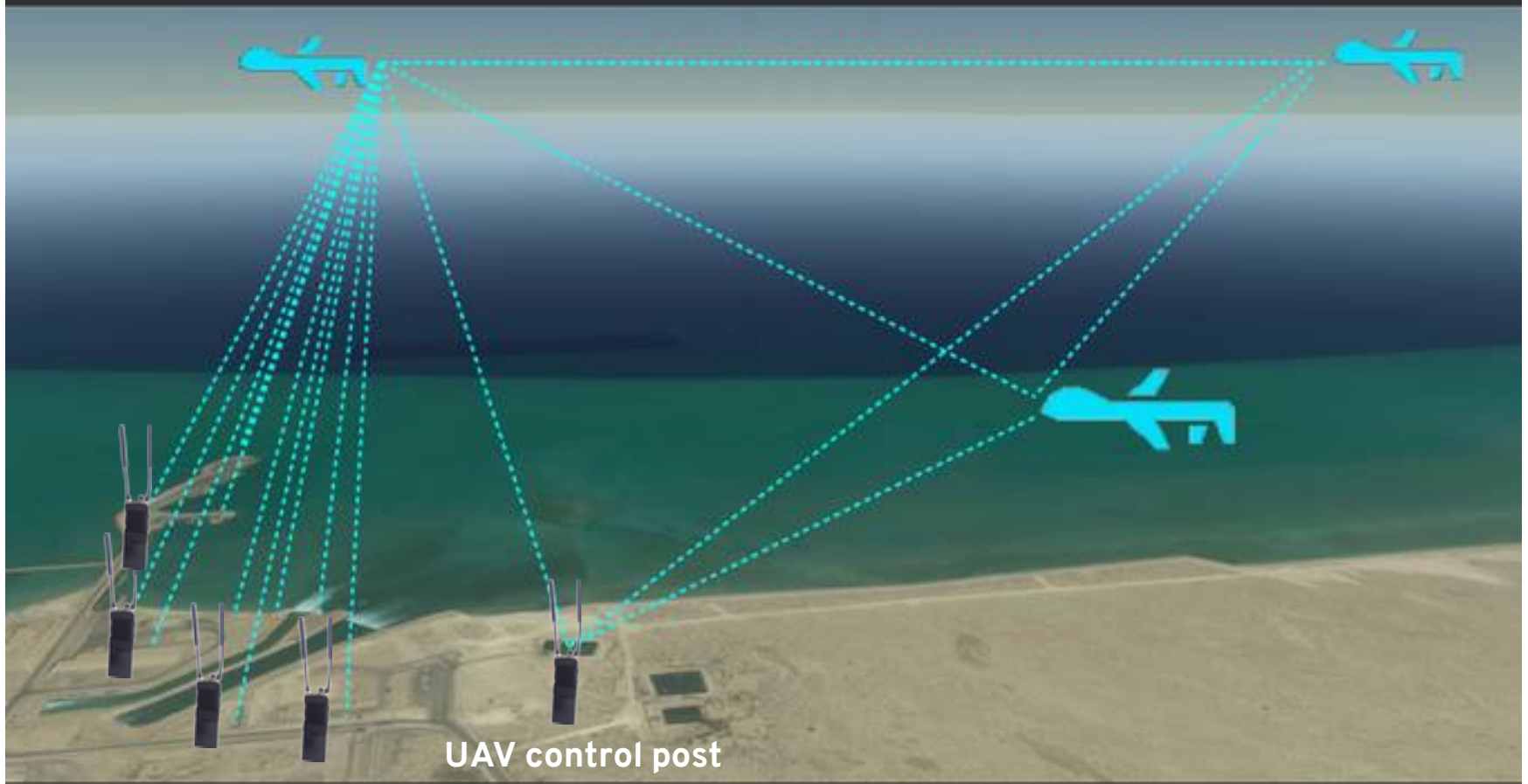


XXLSEC Data Rain concept

UAVs equipped with X-MESH radio and Data Rain encryption device

DATA RAIN

NEXT GENERATION UAV FUSION WITH MESH NETWORKED TACTICAL TERMINALS



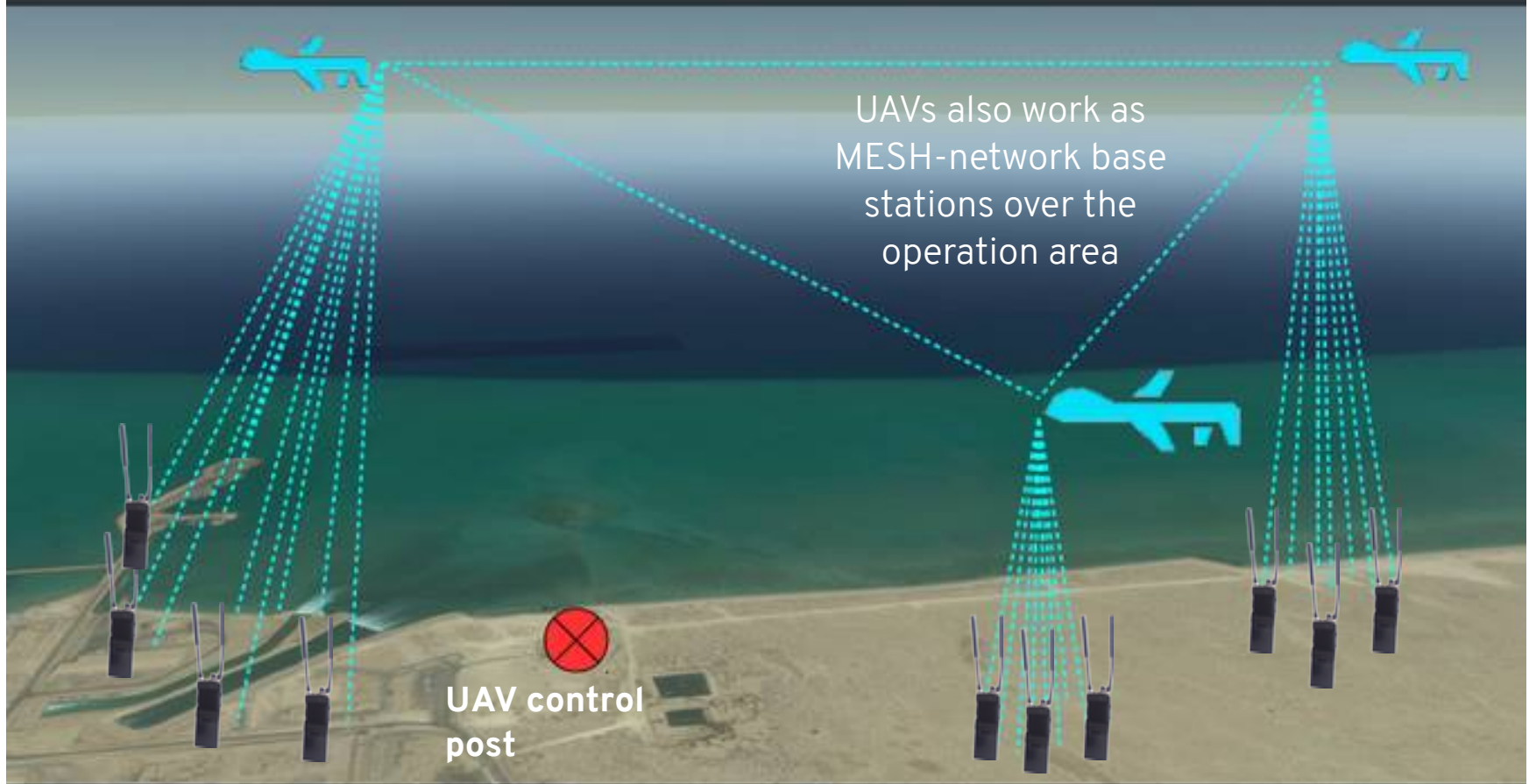


XXLSEC Data Rain concept

UAVs equipped with X-MESH radio and Data Rain encryption device

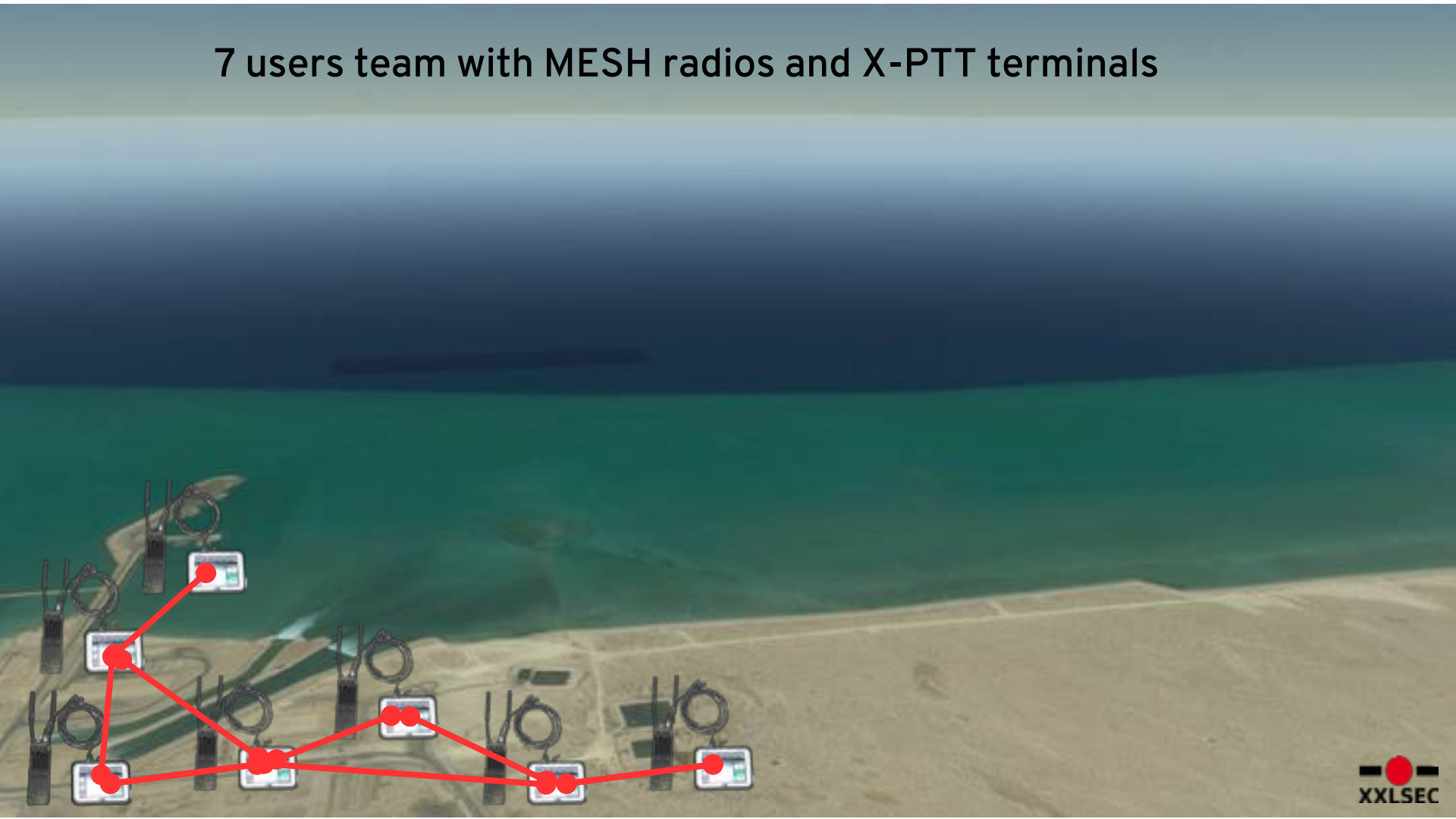
DATA RAIN

NEXT GENERATION UAV FUSION WITH MESH NETWORKED TACTICAL TERMINALS



MESH Networks for Network Centric Operations

7 users team with MESH radios and X-PTT terminals



MESH Networks for Network Centric Operations

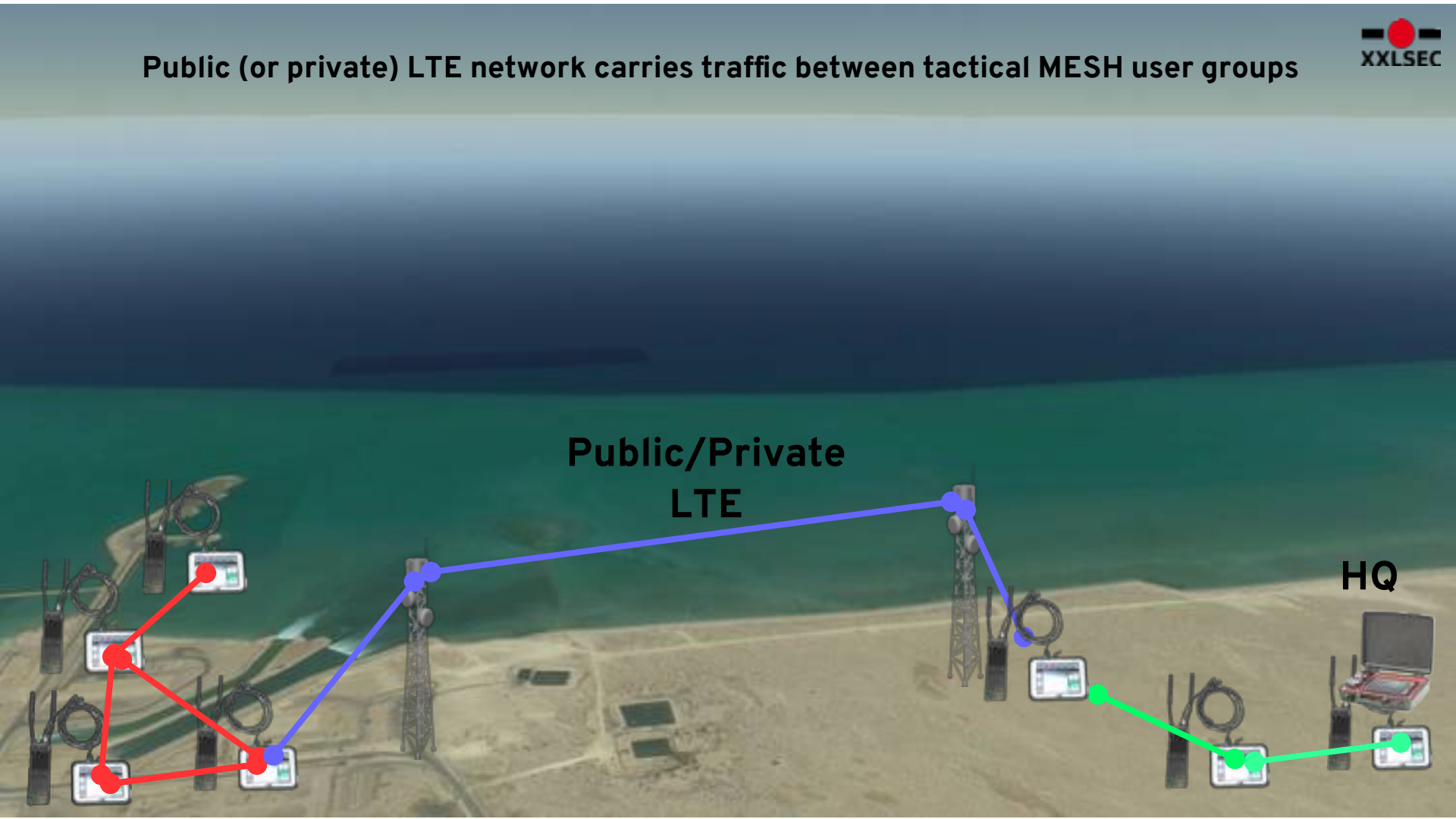
Team can split into two separate groups automatically





MESH Networks for Network Centric Operations

Public (or private) LTE network carries traffic between tactical MESH user groups



MESH Networks for Network Centric Operations

UAV's with MESH radios support troops at operation area and provides sensor data rain



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Read more:
www.xxlsec.com