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FAST. FORWARD.

NETWORK CENTRIC WAVEFORM (NCW)

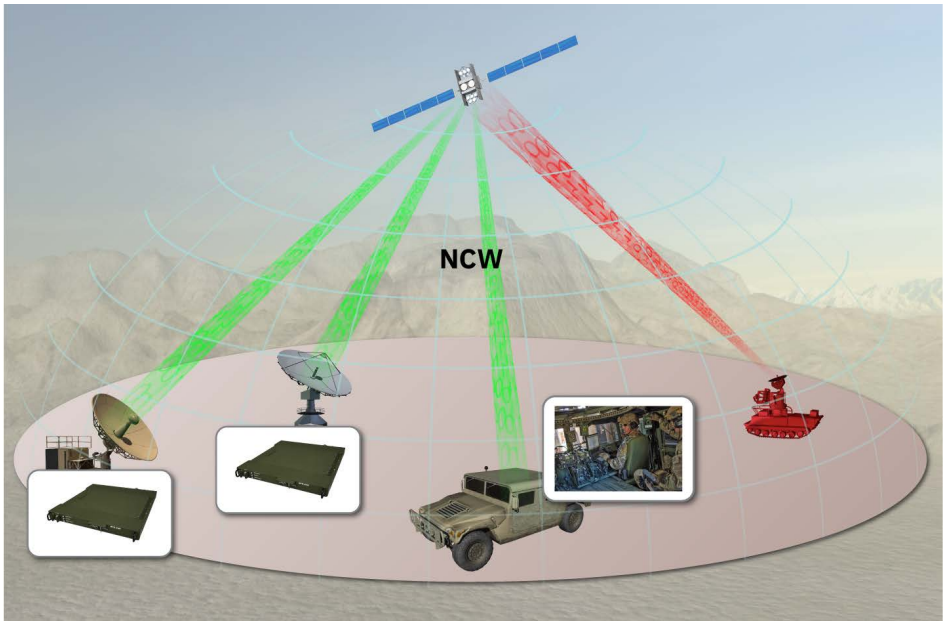
Automated, Full-mesh Multimedia Satellite Communications Networking Technology for U.S. Army Tactical and Mobile Warfighter Platforms

L3Harris provides the only full-mesh IP over Super High Frequency SATCOM for the U.S. Army. Our ARSTRAT-certified network controllers and modems implement NCW across a variety of terminals including large-aperture fixed and small-aperture tactical/mobile.

PRODUCT DESCRIPTION

Network Centric Waveform is a multimedia transport system allowing full-mesh, packet-switched IP communication networks over SHF transponded geosynchronous satellites, such as the Wideband Global Satellite constellation.

An NCW network consists of up to 255 SATCOM terminals. One terminal operates as the Network Controller, serving as the source for network time synchronization and the focal point for network control and resource. Certain network members, depending on terminal configuration and performance capabilities, may be capable of assuming the network controller function, and can also serve as store and forward hubs to assist network members that cannot close single-hop.



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Full-mesh IP Network for Strategic, Tactical and Mobile Terminals (Military and Commercial)

KEY ADVANTAGES

- Reduces satellite resources, enabling peer-to-peer communication without routing through a large hub
- Enables mixed mesh communications between terminals of different sizes and capabilities
- Reduces the delays associated with two-hop communications
- Allows the creation of a single network, with terminals operating under different beams
- Removes human-in-the-loop decision making
- Avoids the need for specialized and expensive hardware for network control

SUPPORTED HARDWARE

- RMPM-1000
- MPM-2000
- MPM-3000

NETWORK TOPOLOGY

- Point-to Point
- Full Mesh
- Hub-Spoke

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PRODUCT DESCRIPTION CONTINUED

NCW is unique in that If the NCW's Network Controller becomes unavailable (disrupted, terminal goes down, etc.), the rest of the network can automatically self-heal allowing another node to take over the network control function. This unique adaptability provides more resilience in a denied, Degraded Command and Control Environment (DCDE) environment than a traditional hub and spoke network.

NCW automatically adapts to support a diverse terminal population.

- VSAT Terminals: The system provides simultaneous Direct Sequence Spread Spectrum (DSSS0 and narrow band operations to address off-axis power spectral density regulatory limits for antenna beam-widths illuminating satellites adjacent to the targeted satellite.
- On-The-Move Operations: L3Harris modems support open-loop and closed-loop beacon-tracking antennas, with frequency acquisition performance to meet high-speed Doppler requirements (30 kHz shift, 1000 Hz/sec velocity, and 1000 Hz/sec2 acceleration).

NCW capitalizes on existing waveform/modem technology to provide spectrum utilization and network resource efficiencies — critical for SHF SATCOM networks with mobile/tactical terminals. NCW capabilities allow networks of heterogenous terminals to be realized in a scalable, cost-effective manner.

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