



L3HARRIS™
FAST. FORWARD.

Better-Informed Combat Decision Making Starts with **Mission-Ready C4ISR** **Network Gateways**

L3Harris Technologies

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Better-Informed Combat Decision Making Starts with Mission-Ready C4ISR Network Gateways

EXECUTIVE SUMMARY

As the battlespace expands and military technologies evolve, the only real constant is the need to collect and analyze ever-more-numerous and complex data sets. The difference between knowing a situation (*looking at sensor data*) and understanding it (*connecting the data to a larger context and central command*) is enough to stop or start a conflict and make or break a career. It can mean the difference between life and death.

Combining the right Intelligence, Surveillance and Reconnaissance (ISR) technologies creates smart systems that connect and control disparate data collection and analysis points, opening a gateway to true situational understanding. Without these combined ISR “system of systems” and the communications infrastructure they provide, developing an accurate, real-time, shared view of the entire battlespace—from the most remote tactical edge to airborne and marine assets and into space—would be difficult, if not impossible.

Trying to integrate multiple ISR systems from the ground up creates costly implementation roadblocks that leave many sovereign nations behind. Today’s defense and procurement complexities demand turnkey, mission ready ISR systems that are field-tested and ready to deploy.

To be truly mission- and cost-effective, the best network gateways will be automatically interoperable with legacy communications and sensor equipment, delivering a seamless, modern Command, Control, Computers, Communications, Intelligence, Surveillance and Reconnaissance (C4ISR) network solution that is primed and ready for modular upgrades throughout its entire lifecycle. They will also be easy-to-use and sustainable over time, minimizing initial and ongoing training for users.

THE CHALLENGES OF ACCELERATING YOUR STRATEGIC INFORMATION ADVANTAGE BY CREATING A REGION-WIDE VIEW OF THE BATTLEFIELD

The ultimate military ISR objective is to connect battlefield sensors to shooters—and critically, everything in between—so decision-making can move at machine speed. Multi-dimensional ISR systems can deliver on this objective, allowing militaries to gain an essential strategic information advantage: the ability to outpace, outthink and outmaneuver adversaries across multiple domains—space, air, land, sea and cyber.

Putting the necessary systems in place to accomplish this level of modernized, multi-dimensional ISR—especially in remote locations—has traditionally been time consuming and expensive. These challenges are amplified by the procurement realities many sovereign nations face: declining budgets, program-focused acquisitions, pressures to purchase from one vendor over another, or mandates that delay large-scale strategic modernization efforts indefinitely.

Adopting a phased approach to ISR modernization, however—one that produces quick wins without impacting future ability to affect essential, systemwide C4-, C5-, or even C6ISR—offers an easy-to-implement solution to traditional challenges.

An ideal way to implement a phased approach to ISR modernization is through modular, mobile network gateway systems. These gateways are pre-built to drop into virtually any terrain, ready to help defense forces gather and synthesize multi-mission data at a rapid pace. A well-designed system will accelerate the transfer of actionable intelligence, strengthen existing tactical communications networks and enhance sovereign protection.

Modular, mobile network gateway systems offer four key benefits:

- 1 Strategic network extension:** Network gateway systems interoperate easily with existing technology investments such as currently fielded tactical radios, quickly expanding their reach and facilitating a real-time Common Operating Picture (COP) by gathering and distributing battlefield ISR data.
- 2 Fast, easy, cost-effective deployment:** Network gateway systems are field-tested and pre-configured to specific missions or programs, while retaining the ability to be quickly customized to specific threat vectors—bypassing the time required to develop, build and test proprietary, one-off solutions. Rapid deployment and simplified repositioning are integral to the systems.
- 3 Resilient PACE plan support:** Network gateway systems provide or augment PACE (Primary, Alternate, Contingency and Emergency) communications via preconfigured and tested hardware platforms for establishment of Local and Wide Area Network (LAN/WAN) resilient networks.
- 4 Upgrade readiness as new mission needs emerge:** Network gateway systems are ready to expand in the future, building from the initial equipment investment. A modular system design provides true investment protection by delivering immediate results while also enabling a spiral path to achieve longer-term goals.

THE SOLUTION: L3HARRIS C4ISR NETWORK GATEWAYS

L3Harris C4ISR Network Gateways are self-contained, portable- or fixed-site communications systems, rapidly deployable in places devoid of any existing high-capacity Local and Wide Area Network (LAN/WAN) infrastructure. These turnkey systems seamlessly interconnect with existing communications technologies, providing maximum, accelerated information sharing between echelons while offering expansion capabilities to meet mission needs.

Network Gateways are pre-configured with battle-tested military communications technologies that can be fielded as-is or customized with additional L3Harris or partner capabilities.

They enable the formation and exploitation of a more robust Common Operational Picture, channeling sensor, GPS tracking and other battlefield sensor data into an easy-to-understand Battle Management System (BMS) interface that facilitates collaborative planning and makes mission management faster and more effective.



Figure 1: The base L3Harris C4ISR Network Gateway

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STRATEGIC NETWORK EXTENSION: BETTER INFORMATION, EXPANDED REACH

Traditionally, transmitting information in challenging environments and across domains and command echelons would require an operator to rebroadcast information between different equipment operating at different frequencies—wasting time and creating the potential for distortion and costly operational errors. When the stakes are life, death and sovereign protection, the ability for commanders to gather, process and share accurate, real-time data is essential.

Accelerate the process of gathering data and synthesizing it into actionable intelligence:

L3Harris C4ISR Network Gateways avoid common network extension challenges by enabling resilient communications through fully integrated High-Capacity Line-of-Sight (HCLOS), VHF/UHF/LTE, and Beyond Line-of-Sight (BLOS) satellite communications—preconfigured and tested to integrate without interference. Together, these interoperable technologies provide extremely flexible and layered communications hubs that cover almost any deployment, eliminating the time and cost associated with fielding custom, one-off solutions.

Network Gateways enable bandwidth-heavy applications like video teleconferencing, soldier-mounted video and a wide range of new and emerging battlefield technologies designed to enhance situational awareness. When coupled with powerful BMS software components like HC2 Patrol Software, Tactical Chat, Soft KDU and additional options capable of fusing disparate data sources into highly visual mission-, echelon- and operator-specific dashboards, Network Gateways can radically transform battlefield communications and management.



Figure 2: L3Harris C4ISR Network Gateways enable seamless, resilient communications across challenging terrain

2 FAST, EASY, COST-EFFECTIVE DEPLOYMENT: ACCELERATE YOUR NETWORK EXTENSION

A primary objective of Network Gateways is to create communications infrastructure in remote locations, difficult terrain, or under otherwise challenging circumstances—such as RF dead zones or blind spots. Network Gateways are available in several different form factors—each pre-configured with ready-to-use, battle-hardened technologies—so they can deliver on this objective as quickly and easily as possible.

Easy-to-deploy form factor:

The pre-configured Network Gateway technologies can be fitted to portable shelters mountable to a 4x4 or 6x6 vehicle with no modifications and can be airlifted or transported by standard truck. Larger shelters can be set up as headquarters or semi-permanent installations, while more mobile shelters can be easily positioned—and repositioned—to bridge comms network gaps at the tactical edge.

Built-in infrastructure:

Network Gateways come equipped with a built-in power system, including a generator, an AC/DC inverter, surge protection and power backups. They also include Environmental Control Units (ECUs). The result is a fully functional communications infrastructure for mission management, intelligence gathering and distribution, and other critical needs—ready to field in a fraction of the time needed for clean sheet, ground-up development.

Simplified setup:

Once fielded, Network Gateways are easy to use, streamlining and integrating the many different technologies required for strategic C4ISR. While other shelters might need months of planning, multiple suppliers, specially trained personnel and significant onsite resources available to install and test once arriving on location, **a Network Gateway can be operational in as little as ten minutes.**



SECURE GATEWAY

Stop the vehicle and secure the Gateway using provided struts.

APPLY POWER

Apply power to the Gateway by generator or local source.

DEPLOY + AIM

Raise the masts and deploy satellite dishes and other antennae/receivers, depending on mission needs.

COMMUNICATE

Once connected, the Network Gateway is ready to gather data and synthesize it into actionable intelligence.

Figure 3: **Simplified setup is standard for all L3Harris C4ISR Network Gateways**

3 RESILIENT PACE PLAN SUPPORT: UPDATE EXISTING FIELD COMMUNICATIONS INFRASTRUCTURE

A PACE (Primary, Alternate, Contingency, Emergency) plan makes militaries more resilient by assuring every sensor, shooter and echelon has a means of transmitting and receiving messages and data as the spectrum becomes increasingly challenged.

Using a PACE methodology, the primary means of communication would generally deliver the most robust capability, including secure voice, video and situational data. Because primary systems are a frequent target for denial/disruption of service—through electronic warfare (EW) for example—an alternative communications channel approaching the same capabilities is desired. Contingency and emergency systems, although less capable or robust by comparison, must provide enough resilience to allow for mission completion.

Establishing a workable PACE communications plan can be extremely complex, especially in low infrastructure environments. The level of planning and implementation required can become time-consuming and expensive, which ultimately impacts warfighter effectiveness.

C4ISR Network Gateways provide a robust PACE communications platform—even in their most basic configuration—and are easily adaptable to specific missions or tasks over time.

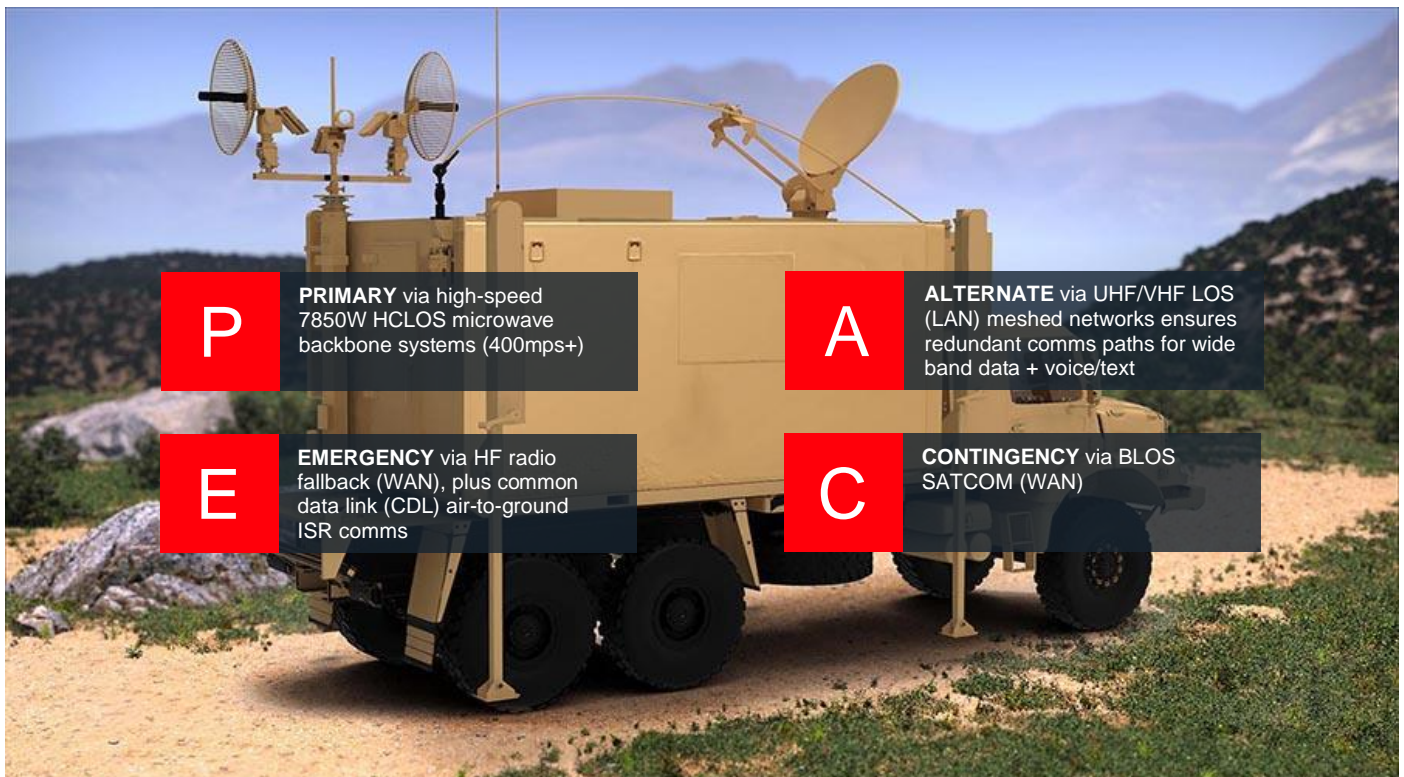


Figure 4: L3Harris Network Gateways provide a robust PACE platform

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UPGRADE READINESS AS NEW NEEDS EMERGE: EXTEND YOUR INVESTMENT

The L3Harris C4ISR Network Gateway is built on a platform ready to evolve far into the future. Because of its modular nature, additional off-the-shelf capabilities and customizations—those available now and/or currently in development—can be added easily at time of purchase, or later, in the field.

Pre-defined Network Gateway options deliver extended mission capabilities—today:

Robust, pre-defined options are available today that extend the capability of a base Network Gateway system. These technology options—along with additional, localized customizations—can be combined to create a virtually unlimited number of mission-specific, ready-to-deploy solutions.



GROUND SURVEILLANCE OPTION PACKAGE

Border Security:
Integrate and manage additional unattended and soldier-mounted sensors, Electro-Optical/Infra-Red (EO/IR) long-range cameras, ground-based radar and specialized software to detect, track and confirm targets of interest.



UAS/UAV DETECT AND MITIGATE OPTION

Counter UAS/UAV Operations:
Add Class I-III detection and mitigation systems, enhancing battlefield awareness and security through radar detection of flying objects (drones) and mitigation via kinetic (weapons) and/or RF jamming.



MARITIME SURVEILLANCE OPTION

Maritime Domain Awareness:
Integrate with radar, sonobuoys and long-range cameras for land-based analysis of maritime sensor data—facilitated by the Network Gateway—allowing coordination between maritime and land forces for hostile target interdiction and apprehension.



SPECTRUM DOMINANCE OPTION

Electronic Warfare:
Add both passive and active capabilities with real-time spectrum analysis and direction-finding to automatically jam hostile signals and achieve spectrum dominance.

Figure 5: Domain-specific options extend the value of a base Network Gateway system

Committed to ongoing innovation and support:

Ongoing development, testing, training and support are always included to ensure any added capabilities are onboarded seamlessly and with full effectiveness.

L3Harris also offers tailored training and through-life support packages in native language (onsite or in the USA) and are flexible enough to incorporate training on existing inventory, integration requirements and other related system needs.

SUMMARY: ACTION WITHOUT COMPROMISE

Military leadership is often faced with difficult choices when it comes to program development. Cost and other purchasing pressures can force an emphasis on short term gains at the expense of long-term goals—like establishing C4ISR capability. The L3Harris C4ISR Network Gateway offers an opportunity to accomplish both, along with the additional, critical capabilities described above:

They extend military communications networks, creating a nearly instant communications hub where none existed before. Dropping L3Harris C4ISR Network Gateways into remote areas seamlessly connects essential communication nodes, enabling better situational understanding without the cost/time/challenges involved with building permanent facilities.

They are fast, easy and cost-effective to field. L3Harris C4ISR Network Gateways are built for interoperability with all currently fielded waveforms and hardware, regardless of model or manufacturer. They are delivered by land, air, or sea, pre-configured and tested, with all baseline capabilities ready to go out of the box—eliminating the typical months- to years-long training, sourcing, and testing complexities inherent in other systems. Where needed, they are supported by focused training delivered by front-line experts in technology and user roles.

They enable immediate PACE plan implementation. Fielding a PACE plan can be complex under the best of circumstances, but in areas of little-to-no infrastructure, the challenges are exponential. L3Harris C4ISR Network Gateways provide the essentials right out of the box, with HCLOS, Multiband and HF radio in the baseline configuration.

They are modular and upgrade ready as new mission needs emerge. It's easy to add capability-enhancing options—such as modernized ISR—to L3Harris C4ISR Network Gateways, whether at the time of purchase or as mission needs shift and technologies evolve. Their modular nature anticipates add-ons and future upgrades. As new sensing technologies, waveforms and other capabilities are developed by L3Harris or by others, they can be easily integrated to strengthen sovereign defense.

As we move closer to the reality of artificial intelligence based, real-time analytics, the L3Harris C4ISR Network Gateway will be a necessary component—because without the advanced communications infrastructure it provides, collection of data throughout the battlespace would be difficult or impossible.

In this way, the Network Gateway allows militaries to act on long term goals while delivering immediate, expanded capability that can be used today.

**For a deeper discussion of the L3Harris C4ISR Gateway
and its flexible option packages, contact Tony Full:
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