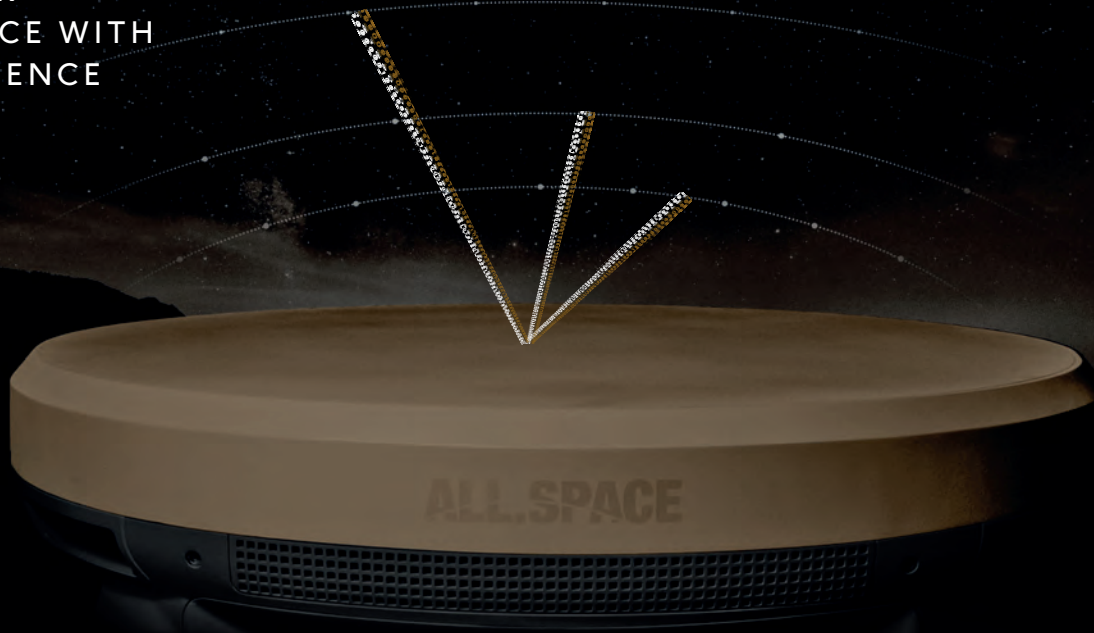


ALL.SPACE

DELIVERING
NETWORK
RESILIENCE WITH
INTELLIGENCE



RESILIENT COMMS FOR MOBILE COMMAND POSTS

Empowering Today's Armies
with Mobile Intelligent
Resilient Connectivity
and Communication
at the Tactical Edge

ALL.SPACE's Hydra multi-link multi-orbit terminals enable resilient, flexible, and secure satellite communications on the move on military vehicles for command and control operations in congested and contested environments.



2025

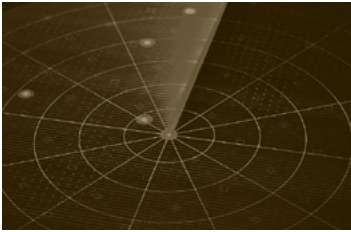
USE CASE | ARMY

THE CHALLENGE

PEER/NEAR-PEER CYBER-ATTACKS AND JAMMING (EW)



GPS DENIED ENVIRONMENTS (A-PNT)



Modern SATCOM (Satellite Communications) systems are essential for mobile command and control posts, providing advanced capabilities that enable reliable and secure communication. These systems facilitate timely decision-making and enhance operational effectiveness, especially in dynamic and challenging operational environments, making them crucial for both military forces and emergency response operations.

The current command-and-control systems in the U.S. Army require reevaluation to meet the demands of modern warfare, especially in large-scale combat operations (LSCO) where survivability and effectiveness are crucial. There is a need to move away from traditional, rigid command post structures towards more agile and service-oriented models enabled by modern communication and information technologies. This shift aims to enhance decision-making capabilities and integrate joint and Army functions more effectively. There is a focus on the concept of convergence, which emphasizes data-centric command posts that can adapt to the dynamic nature of contemporary conflicts. The Army is encouraged to reduce its reliance on physical infrastructure, instead prioritizing resilience, protection, and stealth. While immediate revolutionary changes may be challenging, preparing for future conflicts by embracing emerging technologies and aligning command post capabilities with the principles of multi-domain operations (MDO) is essential.

Satellite communications, a swift, scalable, and global reach solution, plays a vital role in modern defense operations.

It is extremely difficult for Armies to have to buy and install on military vehicles different satcom terminal kits to manage each of those new LEO and MEO satellite constellations. Armies want to be able to unify the management of any constellations and satellites in any orbit and use that bandwidth collectively so that they can provide resiliency through diversity.

**TODAY, SOLDIERS RELY ON
A SINGLE LINK TO A SINGLE
END-POINT CONNECTIVITY.**

The key points for addressing the need for transformation to adapt to the challenges of modern warfare, particularly in the era of multidomain operations (MDO), are:

- Command Posts face survivability challenges in modern warfare scenarios.
- Tactical command posts in the U.S. Army face a significant vulnerability on the battlefield due to their size and electronic signature.
- The U.S. Army must transform its command and control systems to incorporate the principles of multi-domain operations.
- Command posts need to become more flexible, agile, and resilient without compromising their effectiveness.

The need for readiness, innovation, and a cohesive strategy in modernizing command post systems is essential to ensure their effectiveness in future conflicts. Modern SATCOM communication requirements for military command and control posts demand secure, reliable, inter-operable, and scalable systems that support effective decision-making and coordination in dynamic operational environments. This is precisely what ALL.SPACE offers.

THE SOLUTION



GIVEN ITS CRITICAL ROLE, SATCOM URGENTLY REQUIRES TECHNOLOGICAL ADVANCEMENTS TO MEET THE VISION OF A MORE MOBILE, SECURE AND INTERCONNECTED BATTLEFIELD NETWORK.

ALL.SPACE'S HYDRA MULTI-LINK MULTI-ORBIT TERMINALS DELIVER RESILIENT AND FLEXIBLE COMMUNICATIONS ON THE MOVE AND ON THE PAUSE TO SUPPORT THE WARFIGHTERS ON THE GROUND.

INTEGRATE



Seamlessly combine various components of the SATCOM network, such as modems, routers, compute modules, and other equipment to create a cohesive and interconnected communication infrastructure.

MANAGE



Manage multiple satellite constellations to ensure network resilience, optimize resource allocation, and handle the overall administration of the infrastructure.

AUTOMATE



Automate tasks such as routing communications, optimize satellite resource usage, and efficiently manage network resources.

PROTECT



Secure the network against various threats, such as cyberattacks, jamming, and interception, ensuring the networks operational integrity.

The U.S. DoD's Joint All-Domain Command and Control (JADC2) concept is a big part of this multi-domain approach, including a layered, resilient space-based sensing and communications architecture that ties together U.S. space resources (LEO/MEO/GEO satellites) and ground systems that are upgradeable and can evolve along with the threats they confront. The goal is to create a unified network of sensors from all service branches that provide AI-powered actionable intelligence.

An ALL.SPACE Hydra terminal, introducing an electronically steered antenna with optical digital beamforming technology, offers multiple full-performance, full-duplex simultaneous links to any satellite in any orbit. This advanced software-defined system provides multi-domain, multi-orbit network resilience with intelligent capabilities.

An ALL.SPACE Hydra terminal features a fully integrated, ruggedized, and stealthy design with a low probability of intercept. It is easy to install and operate, making it ideal for providing always-on communications-on-the-move (COTM) for any tactical military wheeled or tracked vehicle.

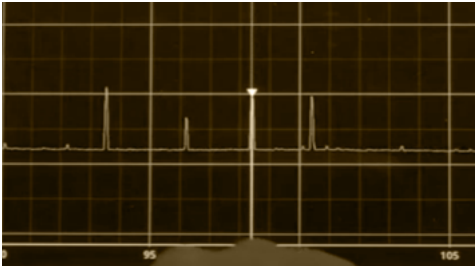
To address these challenges, an ALL.SPACE Hydra terminal provides the U.S. Army with the capability to manage multiple constellations from a single platform, ensuring network resilience. It serves as a robust Primary, Alternate, Contingency, and Emergency (PACE) plan, essential for maintaining communication in a Contested Communications Environment (CCE).

One Device. All Networks. No Compromise.

THE SOLUTION

ALL.SPACE's Hydra are the most resilient multi-link multi-orbit mobility military grade terminals able to sense, analyze and react to real-time conditions:

SENSE



- Catalog and confirm all available satellites
- Analyze routing options for throughput, latency, security
- Hunt and localize interferers
- Find and record blockages

ANALYZE



- Alternative-PNT capabilities in GNSS-denied environments
- Establish the best link to any desired endpoint
- Establish multiple links for resiliency and throughput
- Actively cancel interferers

REACT



- Report location of interferers
- Report SIGINT data
- Provide sensor data to other platform equipment
- Collect growing database of local characteristics

**Making the difference
in the moments that matter**

RESILIENT COMMS FOR
MOBILE COMMAND POSTS

2025 - USE CASE

For more information, contact:
sales@all.space

www.all.space

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