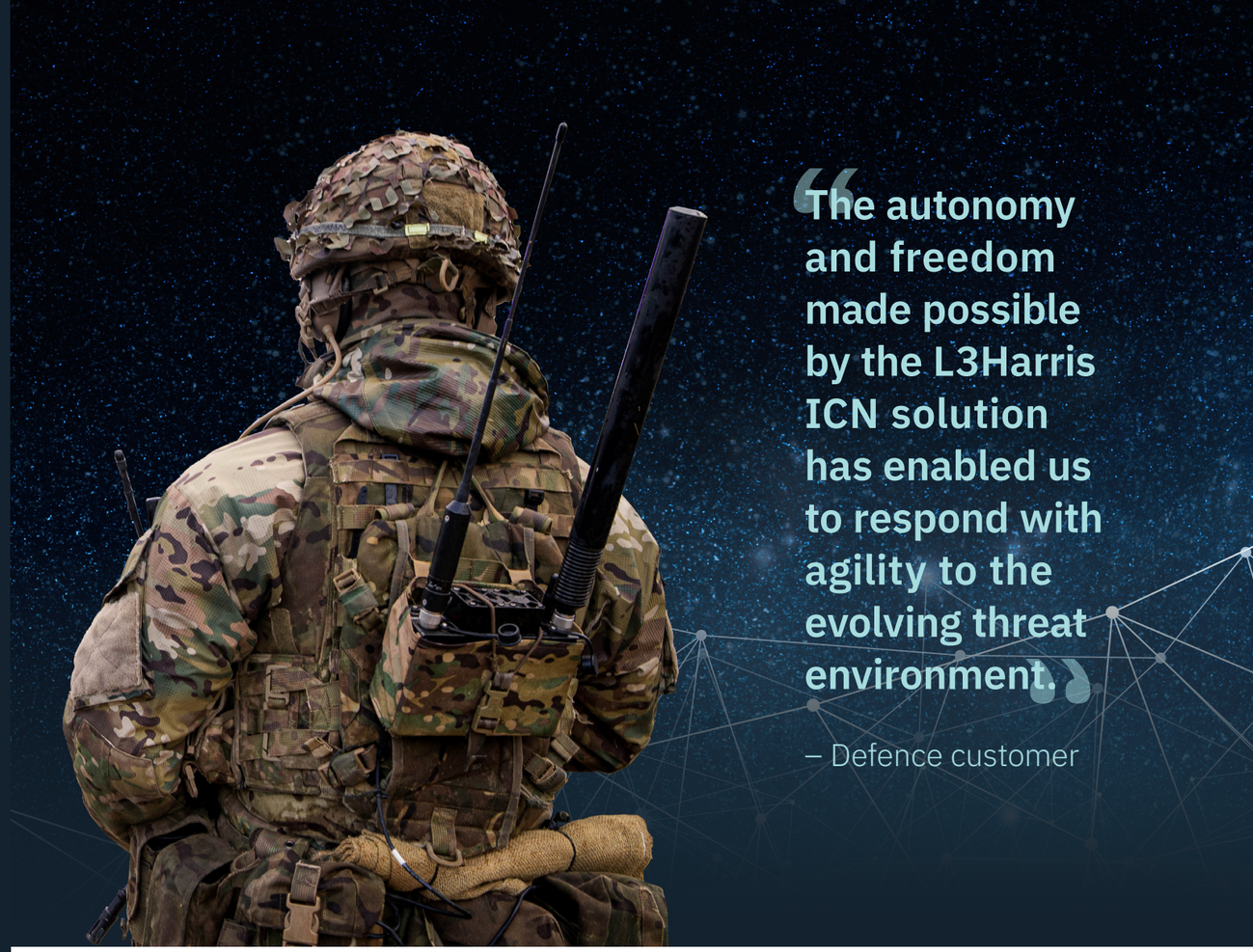
L3HARRIS®
FAST. FORWARD.

CORVUS®

Next-generation Land EW capability



> **“The autonomy and freedom made possible by the L3Harris ICN solution has enabled us to respond with agility to the evolving threat environment.”**
>
> – Defence customer

FURTHER INFORMATION

To learn more about how L3Harris can help you address your electronic warfare challenges, contact:

Hello@L3Harris.com
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CORVUS

THE ELECTRONIC WARFARE SYSTEM THAT EVOLVES AS FAST AS YOUR THREATS

In an evolving battlespace, agility is key to staying ahead. Traditional electronic warfare (EW) technology is no longer enough and those hindered by expensive hardware refreshes or lengthy procurement procedures will fall behind.

Where decisions need to be made quickly, a software-defined multirole, multifunction approach is required to give commanders and troops the ultimate advantage.

Through its modular, software-defined architecture, CORVUS enables troops to rapidly shift mission focus, from force protection to surveillance, electronic attack to intelligence streaming, all through a single platform. Whether dismounted, vehicle-mounted or fixed, it’s built for mission flexibility.

From emissions detection to electronic attack, counter-improvised explosive device (C-IED) to counter-small unmanned aircraft system (C-sUAS) capability, CORVUS is the electronic warfare system that evolves as fast as your threats.

INDIVIDUAL CORVUS NODE

Lightweight, wearable system that can switch between mission roles within seconds

PORTABLE CORVUS NODE

Powerful, portable system that can switch between high-powered mission roles within seconds

CONFIGURABLE CORVUS SYSTEM

Modular system that can rapidly role and re-role multiple applications at the touch of a button

SENSE: UNDERSTAND

Electronic surveillance to stay ahead of the threat

SHIELD: PROTECT

Force Protection for troops, assets and locations

ACT: EFFECT

Techniques to disrupt and deny the adversary

STREAM: INTERPRET

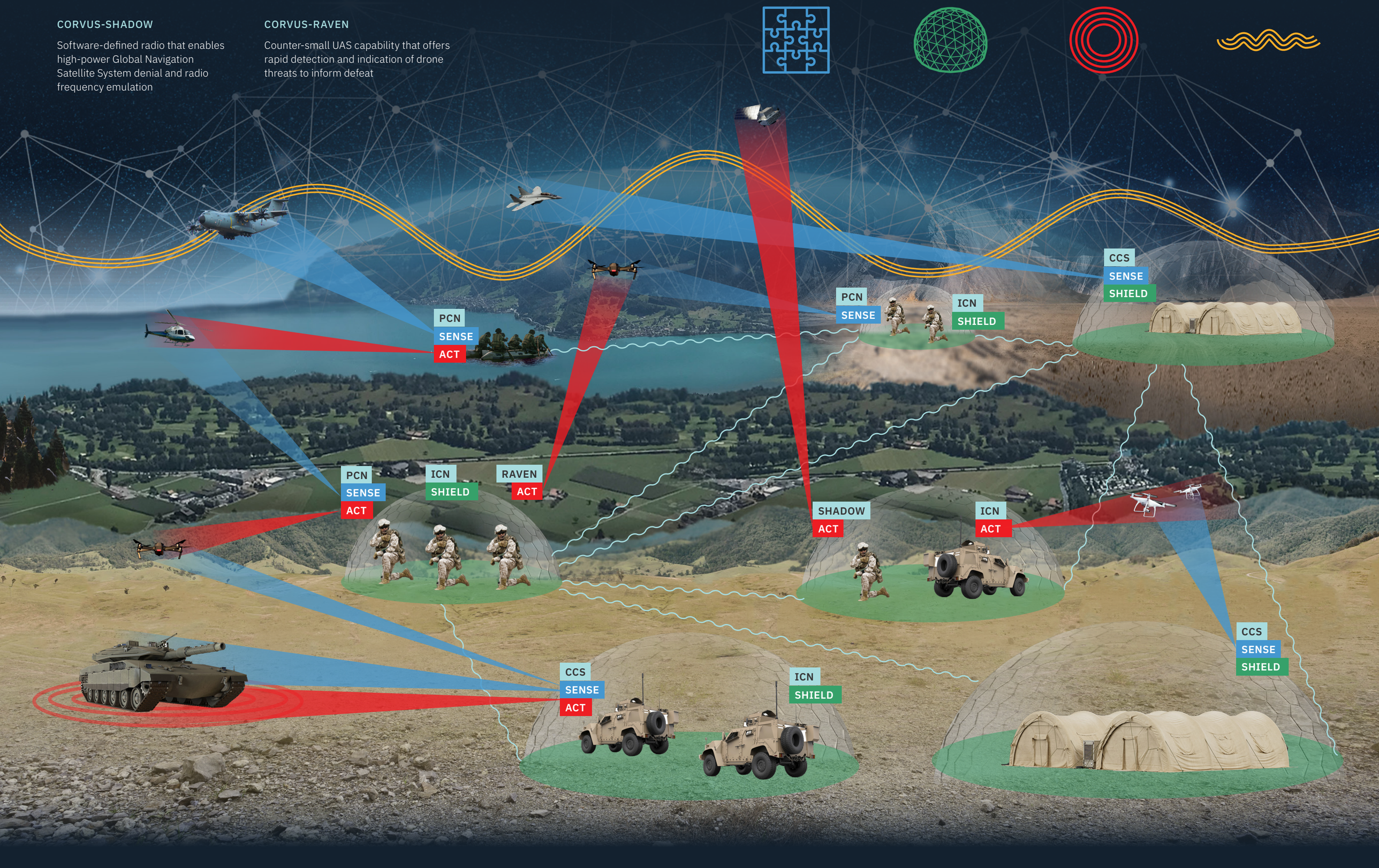
Third-party data streaming for signal classification, demodulation and decoding

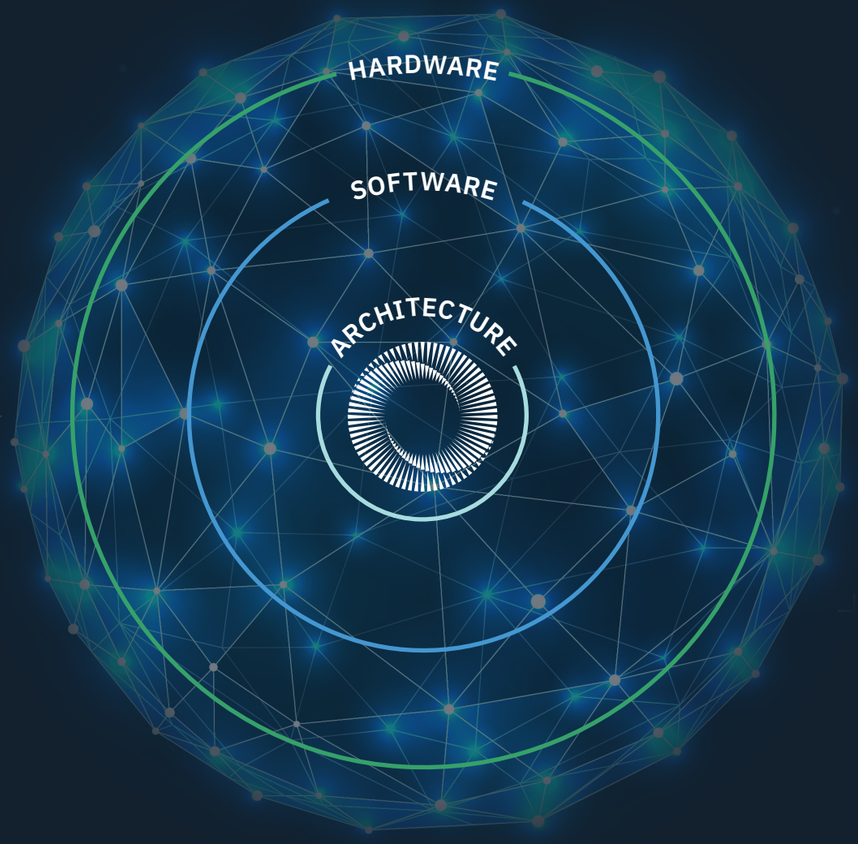
CORVUS-SHADOW

Software-defined radio that enables high-power Global Navigation Satellite System denial and radio frequency emulation

CORVUS-RAVEN

Counter-small UAS capability that offers rapid detection and indication of drone threats to inform defeat





ARCHITECTURE

OPEN. SCALABLE. AGILE.

CORVUS' agile, open approach to EW ensures that the capability is not limited to solving current conflicts, but able to evolve in response to emerging technologies and threats.

CORVUS EW systems harness OpenCPI, an open source software framework that makes it easy to port across existing apps, introduce third-party apps or select from a range of L3Harris-developed apps to add onto the ruggedised CORVUS hardware.

Thanks to CORVUS' modular, flexible and open architecture, it is also possible to rapidly apply hardware upgrades using OpenVPX cards, ensuring capability can evolve at the same pace as the changing threat environment.

The open and extensible nature of CORVUS' architecture means that:

> Software built upon it can be integrated across multiple CORVUS platforms, as well as third-party or customer-owned open standards platforms

> CORVUS hardware can to deliver software applications developed in-house, by partners or by trusted developers

This leads to increased mission agility, impressive through-life savings, tactical and strategic interoperability, no vendor lock-in and an improved size, weight and power (SWaP) profile.

CORVUS SYSTEMS

NEXT-GENERATION, SOFTWARE-DEFINED EW CAPABILITY

Individual CORVUS Node (ICN)

Under 2 kg, the ICN maximises EW mission success. Fixed, mounted or portable, it offers multirole, multifunction EW capability in a small form factor, significantly reducing the physical burden.

Portable CORVUS Node (PCN)

A lightweight wearable system, the 30 W PCN is designed for on-the-soldier, vehicle or fixed deployments. Under 10 kg, this medium-weight capability generates a critical information advantage.

Configurable CORVUS System (CCS)

Fixed, vehicle- or semi-mounted, CCS enables users to switch between highly effective EW capabilities to perform tactical and strategic missions simultaneously, offering 350 W of output.

CORVUS-SHADOW

Fixed or vehicle-mounted, CORVUS-SHADOW is a software-defined radio that enables high-power GNSS denial and RF emulation, offering a range of power outputs.

CORVUS-RAVEN

CORVUS-RAVEN is a counter-small UAS capability that offers rapid detection and indication of drone threats to inform defeat, providing passive detect and visual display of bearing to battle management applications.

CORVUS ICN

INDIVIDUAL CORVUS NODE: LIGHTWEIGHT, MANPACK FOR DISMOUNTED AND ON THE MAN OPERATIONS

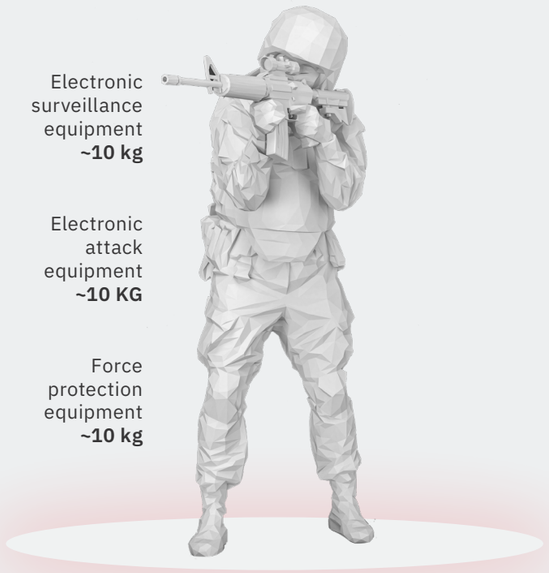
It is often the case that military forces have to physically carry or transport several EW systems to achieve all the capabilities they need. All of this gear creates a considerable operational and physical burden.

ICN is a lightweight, portable EW system that enables forces to switch between multiple EW roles such as C-IED, electronic attack and electronic surveillance.

CORVUS ICN offers:

- Increased mission agility
- Reduced physical and operational burden
- Improved SWaP profile
- Rapid reconfiguration in the field

TRADITIONAL SOLUTIONS



Traditional solutions force soldiers to carry an extensive range of EW equipment to cover each mission role, leaving less space for other key mission items.

CORVUS

With CORVUS ICN users can perform multiple mission roles with just one piece of equipment, resulting in increased agility and freedom of action.

CORVUS ICN IN ACTION

OPERATIONAL PARTNERING

When threatened by insurgency from violent extremist groups, governments around the globe need to call upon the support of allied First World nations to protect people against these threats. In such scenarios, small specialist military teams are relied upon to help bolster the capability of partner forces. These specialist teams need lightweight hardware that enables them to accrue a clear picture of the electronic battlespace while remaining agile.

Its size makes ICN a highly covert capability for specialist military teams, offering both a high-capability receiver and transmitter in one lightweight system, enabling forces to have greater freedom of manoeuvre while maintaining survivability.

CORVUS-BOLT

MORE POWER FOR A GREATER RANGE

A fully ruggedised, lightweight 6 kg unit, CORVUS-BOLT seamlessly integrates with ICN to provide up to 40 W of transmit power with full frequency band coverage. Rapidly reconfigurable, it quickly enhances the capabilities of the ICN platform to support missions requiring improved transmit power.

CORVUS PCN

PORTABLE CORVUS NODE: FOR MOUNTED AND DISMOUNTED OPERATIONS

Adversaries are increasingly replacing offensive technologies with repurposed, available commercial-off-the-shelf (COTS) devices that grant them fast access to evolving capabilities. To stay ahead of this threat, it's important that troops can respond and adapt to change as rapidly as possible.

The PCN is designed to deliver individual and team force protection, electronic surveillance and electronic attack capabilities.

CORVUS PCN offers:

> Increased mission agility
> 30 W output in 10 kg form factor
> 20 MHz to 6 GHz operational bandwidth
> Rapid reconfiguration in the field

CORVUS PCN IN ACTION

LITTORAL EFFECT AND AREA DENIAL

Deploying allied forces to distantly situated countries often requires a littoral, or shore-based, landing to transport all necessary equipment most effectively. Mindful of this tactic, adversaries will use submarines or other offensive naval means to stop and damage ships before they can reach their destination.

The powerful and portable PCN's 30 W of output in a compact 10 kg package offers strong support for soldiers on the ground during these amphibious deployments. Easily wearable, the system enables troops to engage high-level local situational awareness and surveillance capabilities.

CORVUS-SHADOW

ENHANCED DECEPTION AND DENIAL

In a fast-paced environment where adversaries are becoming smarter and more resourceful, it is essential to ensure local and allied capabilities are on hand to respond quickly to the changing landscape of threats. Modular, reconfigurable technology is essential to ensure mission success.

CORVUS-SHADOW is a software-defined radio system that provides high-power GNSS jamming and RF emulation across a variety of different power outputs.

CORVUS-SHADOW offers:

> Deception to interrupt the adversarial Observe, Orientate, Decide, Act (OODA) loop
> GNSS to interrupt adversarial targeting
> Future scope for counter-UAS capability

Capable of transmitting on five GNSS frequencies simultaneously, CORVUS-SHADOW provides full coverage of Lower and Upper L-bands at the same time across a range of 70 MHz – 6 GHz. Modular and configurable, power amplifiers can be switched out as required for different mission types, enabling true electronic attack. A rapidly deployable rack-mounted system, CORVUS-SHADOW can be fixed or vehicle-borne.

CORVUS CCS

CONFIGURABLE CORVUS SYSTEM: HIGH-POWER SYSTEM FOR MOUNTED OR BASE DEFENCE

CCS is an open standards-based EW system that enables users to switch between highly effective multirole, multifunction capabilities to perform tactical and strategic missions simultaneously.

A compact, integrated high-power multirole EW system, CCS can support roles such as electronic surveillance, electronic attack, C-IED, C-sUAS and much more.

CORVUS CCS offers:

- Increased mission agility
- 350 W of denial capability, waveforms or effects
- 20 MHz to 6 GHz operational bandwidth
- Rapid reconfiguration in the field
- Reduced through-life costs

CCS utilises configurable OpenCPI software and modular OpenVPX hardware to facilitate the development and deployment of mission-critical apps as required, delivering impressive EW capability ready for even the most demanding, high-intensity tasks.

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CORVUS CCS IN ACTION

MAJOR COMBAT OPERATIONS

Today's highly congested and contested electromagnetic environment (EME) has increased the need for leading-edge, innovative and disruptive EW capability, which is often competitively vied for by multiple countries looking to conduct major combat operations. To gain the operational advantage over allied peers, powerful capability output, actionable analytics and processing on the edge are becoming essential tools for modern EW teams.

Highly scalable depending on the configuration, CCS provides up to 350 W of denial capability and user-specified waveforms or effects, increasing mission agility and reducing through-life cost. Designed from the ground-up for networked, standardised tasking and collection, CCS supports both tactical and strategic outcomes, ensuring the delivery of actionable intelligence locally and remotely. This exceedingly high EW capability is made available in a modest 40 kg size, enhancing SWaP.

CORVUS APPS

MADE FOR YOUR MISSION

Whether the need is to protect our own troops or to detect, understand, affect and defeat the adversary, CORVUS applications offer it all and can switch between mission roles in seconds.

CORVUS applications fall under four core mission sets:

SHIELD

Force protection for troops, assets and locations

ACT

Techniques to disrupt and deny the adversary, including counter-drone capability

SENSE

Electronic surveillance and situational awareness to stay ahead of the threat

STREAM

Third-party data streaming app

Due to the Open Standards design of the CORVUS architecture, our mission applications can be integrated with other Open Standards hardware and platforms, offering increased flexibility.

SHIELD: PROTECT

PROTECTING PEOPLE, INFORMATION AND ASSETS

While it's impossible to predict what the future threat landscape might become, we can count on the fact that the adversary will always seek to deter us. Ensuring that our people, information and assets remain protected from those attempts is critical.

Simple to deploy and highly configurable, CORVUS EW systems are continuously evolving and designed to provide flexible, targeted countermeasures against IEDs for convoy protection, troop protection, VIP protection and explosive ordnance disposal teams.

Software applications under the SHIELD mission set enable:

- Force Protection for troops
- Force Protection for assets
- Force Protection for locations

ACT: EFFECT

DISTRACT, DETER AND DENY THE ADVERSARY OBJECTIVE

Part of maintaining the advantage over the adversary is to ensure they stay unsuccessful in their attempts to prevent you from achieving mission success by employing distraction, deterring and denial techniques.

Whether spoofing signals or degrading networks to destroy enemy communication channels, CORVUS delivers both the actionable intelligence required to make the decision as well as the tactical ability to carry it out and dominate the spectrum.

Software applications under the ACT mission set enable:

- Electronic attack
- Offensive cyber

SENSE: UNDERSTAND

DELIVERING INFORMATION ADVANTAGE

Without the ability to detect, locate and analyse communications across the spectrum, the enemy will always hold the element of surprise. Operators need as much visibility as possible to effectively defend against potential threats.

In a congested EME where advantage over the adversary is everything; CORVUS provides enhanced electronic surveillance and situational awareness roles by working across platforms to ensure fast, seamless intelligence delivery that creates information and operational advantage.

Software applications under the SENSE mission set enable:

- Electronic surveillance
- Situational awareness
- Direction finding

STREAM: INTERPRET

THIRD PARTY DATA STREAMING

Our SENSE mission set provides users with a comprehensive intelligence suite. STREAM enables the user to add further signal analysis to this using their preferred software suite.

Streaming data can be passed to third-party applications such as Procitec GO2Signals and GO2Decode, offering:

- Signal classification
- Demodulation
- Decode

Users are also enabled to develop their own applications. This provides powerful additional intelligence creation as well as the option to use the CORVUS platform as a remote radio head by relaying data. This would support, for example, the streaming of data into sensor fusion systems.

STREAM also enables L3Harris' expert team of engineers to explore concepts in separate application software, such as MATLAB, before committing any designs into the CORVUS platform.

CORVUS-RAVEN

INTEROPERABLE, PORTABLE COUNTER-UAS

Drones and small uncrewed aircraft systems (sUAS) are the most ubiquitous they have ever been. In such a contested and congested electromagnetic environment, it's essential to be able to rapidly detect, locate, classify and defeat sUAS threats before they are able to cause harm.

CORVUS-RAVEN offers rapid detection and indication of drone threats to inform defeat. With passive detection up to 4 km and visual display of bearing to battle management applications such as ATAK, this lightweight, highly portable solution addresses the counter-sUAS challenges on the battlefield.

ICN sits at the heart of CORVUS-RAVEN. Capable of supporting roles such as counter-IED, electronic surveillance, electronic attack and counter-sUAS, networked ICNs offer a holistic view of the battlespace, enabling greater visibility of UAS threats, streamlined airspace management and support for the wider threat space.

MISSION SUPPORT SUITE

DELIVERING FULL MISSION LIFE-CYCLE SUCCESS

Staying one step ahead isn't just about holding all of the information but ensuring that information is used in the most effective way possible. The CORVUS Mission Support Suite of tools generates and analyses mission data to improve and enhance operational effectiveness.

By examining this data and establishing context, spectrum analysis can be conducted to build a complete and recognised picture of the battlespace, enabling forces to readily locate and trace adversarial transmissions.

The Mission Support Suite enables:

> Mission preparation

> Mission orchestration

> Mission sustainment

> Iterative planning of future missions

This not only ensures that personnel are fully enabled to perform the capabilities and tasks needed for mission success, but also helps commanders to continually anticipate likely outcomes for the EW effects they employ as well as evaluate their success.

> “L3Harris has supported us every step of the way to achieve our requirements, solidifying our already strong and trusted partnership.”
>
> – Defence customer

APPLICATION DEVELOPMENT

RAPID APP CREATION TO ACCELERATE IN-THEATRE CAPABILITY

As the digital era evolves, the need for agile, next-generation EW technology evolves along with it. Tolerating the constraints of traditional EW hardware is no longer enough; equipment not fit-for-purpose only serves to delay and disrupt mission success. Threats are changing quickly, equiring flexible countermeasures that respond and adapt just as rapidly.

CORVUS enables new capabilities to be developed as part of a wider supplier ecosystem making it possible for these to be deployed faster than ever before.

Highly versatile, modular and scalable, CORVUS’ open architecture allows seamless application development through OpenCPI, enabling it to keep pace with emerging threats while remaining interoperable with key allies.

Application development can be orchestrated by:

- L3Harris
- Customers and partners
- Trusted developers

Real-life example:

Unfamiliar with OpenCPI, one customer worked closely with L3Harris to better understand how they could gain the most possible value out of the framework.

Having started the app migration process with a limited understanding of OpenCPI, the customer is now fully enabled to develop and port their own applications across to an ICN system.

PARTNER OF CHOICE

ACHIEVING NEXT-GENERATION LAND ELECTRONIC WARFARE

L3Harris’ proven heritage in software-defined radio EW solutions and the development of offensive cyber effects span more than 30 years. Trusted globally by leading civil and defence organisations, our EW solutions protect people, infrastructure and assets from emerging threats where and when it matters.

The cornerstone of adaptable and agile EW, the CORVUS portfolio expands the EW ecosystem well beyond the specialist user, providing a network of nodes that deliver focused EW capabilities at the tactical edge. Offering greater opportunities for intelligence exploitation, force protection and more, CORVUS ensures forces stay ahead with future-proofed information and operational advantage.

FAST. FORWARD.

CORVUS

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