L3HARRIS®
FAST. FORWARD.

CORVUS®

Next-generation Land EW capability

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“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

CORVUS

LEADING-EDGE MULTIROLE EW FOR SUPERIOR MISSION AGILITY

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 a leading-edge, disruptive multirole approach to EW, L3Harris’ next-generation CORVUS portfolio revolutionises how mission-critical EW capability is harnessed across the battlespace. Built on an open standards-based architecture, it enables users to effortlessly perform multiple EW and cyber roles, and switch between them, at the touch of a button.

From emissions detection to electronic attack, counter-improvised explosive device (C-IED) to counter-small unmanned aircraft system (C-sUAS) capability, CORVUS doesn’t just put you one step ahead of the threat – **it makes sure you stay there.**

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 decode

PCN
SENSE
ACT

PCN
SENSE
SHIELD

ICN
SHIELD

CCS
SENSE
SHIELD

PCN
SENSE
ACT

ICN
SHIELD

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CCS
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MISSION CONFIGURABLE MULTIROLE INTEROPERABLE UPGRADABLE EXTENSIBLE SECURELY NETWORKED AGILE SCALABLE EVERGREEN

INDIVIDUAL CORVUS NODE

PORTABLE CORVUS NODE

CONFIGURABLE CORVUS SYSTEM

ARCHITECTURE QUICK VIEW

OPEN. SCALABLE. AGILE.

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

Our 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 our range of L3Harris-developed apps to add onto our 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 is able to evolve at pace with 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 is able 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

Developed in three configurations, the CORVUS portfolio consists of:

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 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.

TRADITIONAL SOLUTIONS

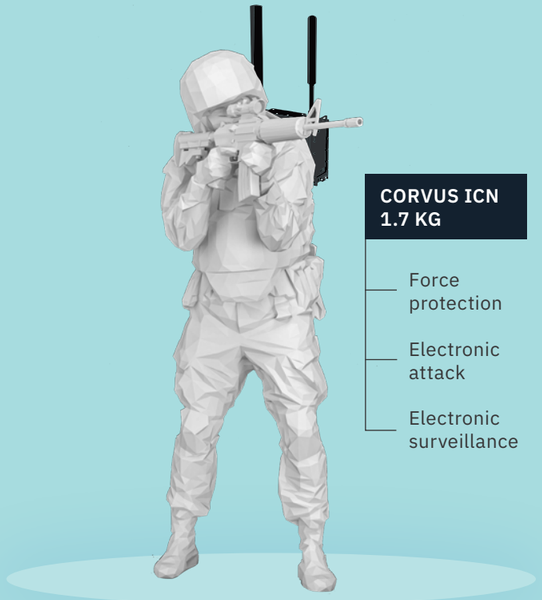
Electronic surveillance equipment **~10 kg**

Electronic attack equipment **~10 KG**

Force protection equipment **~10 kg**

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

INDIVIDUAL CORVUS NODE: FREEDOM ACROSS YOUR FORCES

It is often the case that military forces either have to physically carry or transport in vehicles several different EW systems at once to achieve all of the capabilities they need. One piece of equipment for surveillance, one for C-IED and another for C-UAS; all of this gear creates a considerable operational and physical burden.

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

CORVUS ICN offers:

> Increased mission agility
> Improved SWaP profile
> Reduced physical and operational burden
> Rapid reconfiguration in the field
> Enhanced freedom of manoeuvre

CORVUS' modular, open architecture and vendor-agnostic approach enables ICN to achieve huge through-life cost savings, offer reduced vendor lock-in and provide greater agility for specialist teams due to its compact size.

CORVUS ICN IN ACTION

OPERATIONAL PARTNERING

When threatened by insurgency from violent extremist political, economic or radical religious groups, governments around the globe need to call upon the support of allied first world nations to protect their people against this threat. In such scenarios, small specialist military teams are relied upon to help bolster the capability of partner forces through training, specialist skills or resources.

This requirement for operational partnering means these specialist teams are constantly on-the-move and not always in traditional gear. They need lightweight, unobtrusive hardware that enables them to accrue a clear, resilient picture of the electronic battlespace while remaining agile, drawing upon capabilities such as surveillance and monitoring to detect threats and adversarial activity.

Small, lightweight and high-performing, ICN is the ideal choice for such operations. Its size makes ICN a highly covert capability for specialist military teams, offering both a high-capability receiver and transmitter in one modest system. This enables forces to have greater freedom of manoeuvre, allowing them to expend less energy on missions while maintaining all-important survivability.

CORVUS PCN

PORTABLE CORVUS NODE : SPECIALIST EW FOR THE SPECIALIST USER

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 shifting threat landscape, it's vitally important for troops to be able to respond and adapt to change as rapidly as possible.

The 30 W system was 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
> Enhanced freedom of manoeuvre

Due to the extensible design of the CORVUS architecture, PCN can be coupled with other open standards software developed in-house, by partners or trusted developers, increasing flexibility and improving SWaP for soldiers on the ground in need of rapid, reliable, portable capability.

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 and armaments in the most effective way. Mindful of this tactic, adversaries will use submarines or other offensive naval means to stop and damage ships before they can reach their destination.

Certain countries around the globe are ideally located to enable allied forces to protect against such offensive action. By deploying forces to these locations, soldiers can defend equipment and peers from submarine or submersible attacks, but are likely to come face-to-face with the enemy.

The powerful and highly 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 will enable troops to engage high-level local situational awareness and surveillance capabilities, delivering optimal performance without compromising freedom of manoeuvre.

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CORVUS CCS

CONFIGURABLE CORVUS SYSTEM. MULTI-ROLE. MULTI-FUNCTION.

As adversarial technology grows smarter and more sophisticated, the modern mission space is becoming saturated with constantly evolving, highly complex threats. Forces must be able to evolve even faster.

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 is able to 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.

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

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, our 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

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.

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

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.

COUNTER-sUAS

ENABLING OPERATIONAL FREEDOM

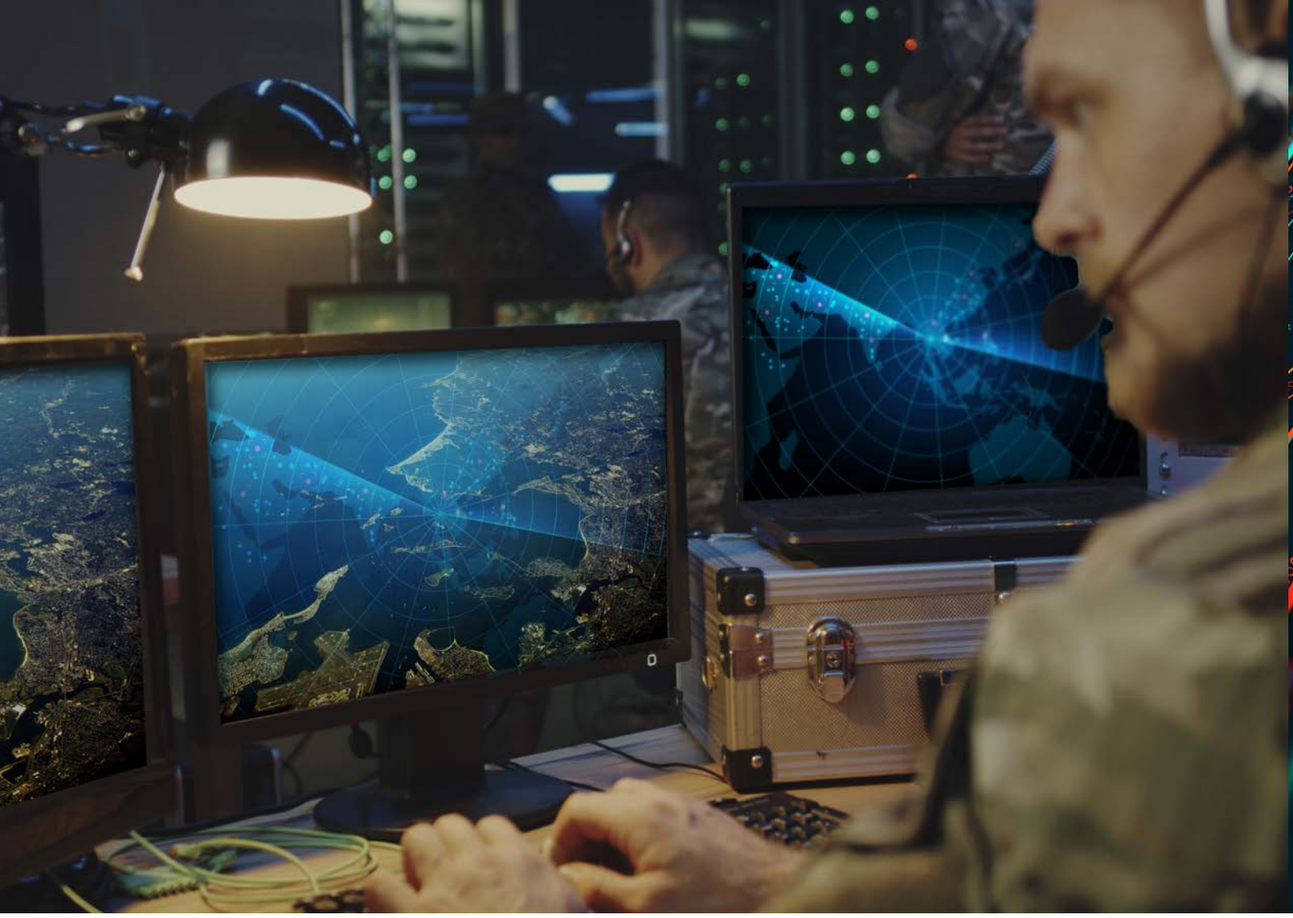
The need to understand, extract and exploit information has never been more important than in today's modern and evolving battlespace. Unmanned aerial system (UAS) threats in particular are becoming increasingly difficult to manage and regulate, placing greater emphasis on the need to accurately detect, track and identify these systems to determine intent and respond appropriately.

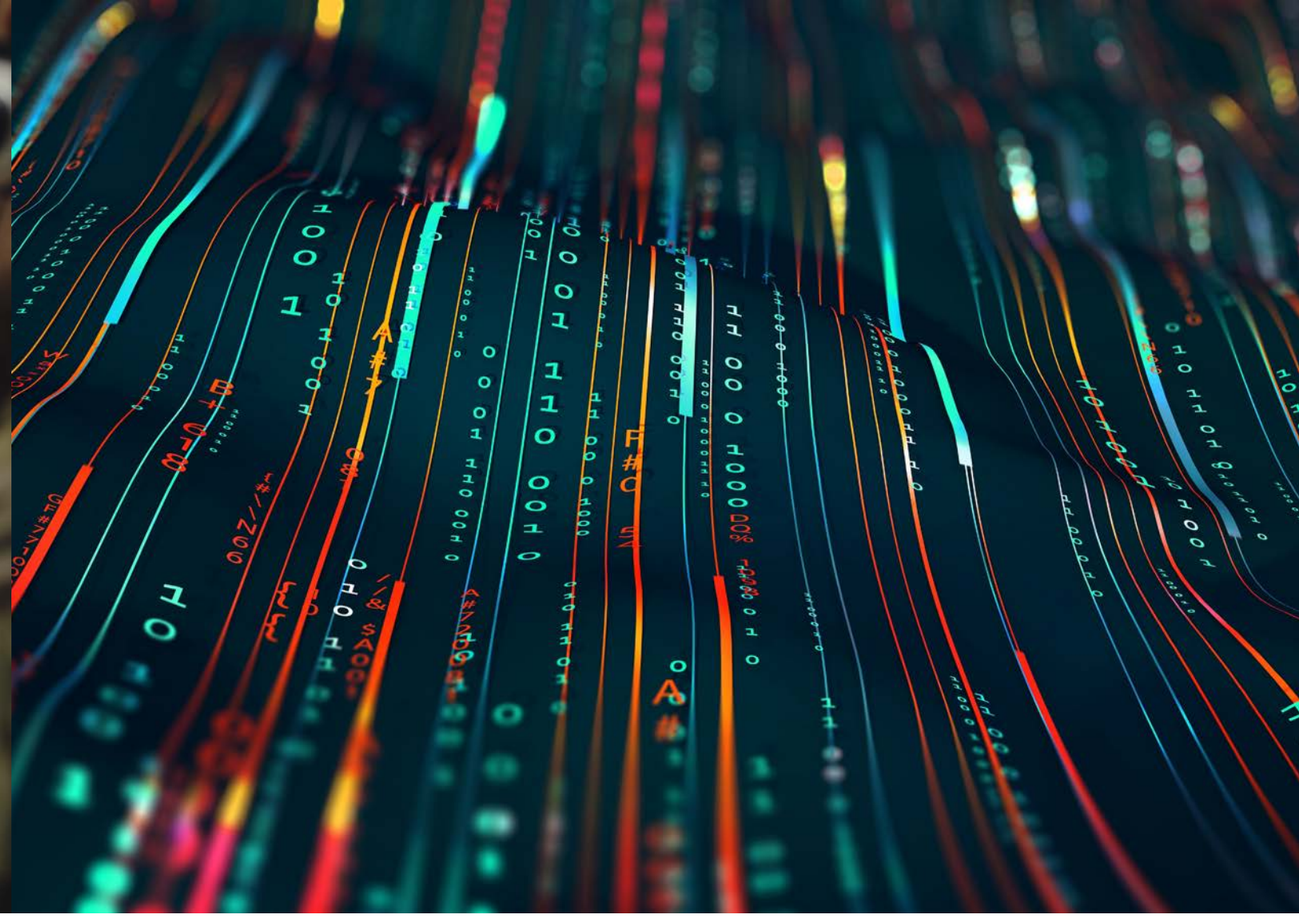
L3Harris' portfolio of non-kinetic CORVUS EW countermeasures can be integrated with counter-small UAS capabilities (where small denotes NATO Class I or below) to generate jamming signals across the 20 MHz to 6 GHz range for both comms denial and counter-drone. This enables the safe and reliable defeat of sUAS threats as needed.

Software applications under the COUNTER-sUAS mission set enable:

> Counter-small UAS
> Comms denial

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.





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

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.

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.

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. Our 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 helps to enable:

> 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 helps commanders to continually anticipate likely outcomes for the EW effects they employ as well as evaluate their success.

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, so must be matched by 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.

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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 spans more than 30 years, meaning the business is ideally placed to deliver leading-edge, next-generation land EW capability to its customers. Trusted globally by leading civil and defence organisations, L3Harris 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.

FURTHER INFORMATION:

To learn more about how L3Harris can help you stay ahead of the curve please get in touch:

Hello@L3Harris.com

FAST. FORWARD.

CORVUS BROCHURE
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L3Harris Technologies is the Trusted Disruptor for the global aerospace and defence industry. With customers' mission-critical needs always in mind, our more than 50,000 employees deliver end-to-end technology solutions connecting the space, air, land, sea and cyber domains.

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