SCi-Toolset

MULTI-DOMAIN OPERATIONS WITH COALITION PARTNERS

NATO Coalition Shared Database interoperability using the SCi-Toolset

Collins Aerospace

INTRODUCTION

Multi-domain integration of land, sea, air, and space assets has been a key ambition of sovereign nations for many decades. Defence budgets have tightened and technological advances have meant a greater focus on specific capabilities. Interoperability between allied nations has become essential in the international battlefield to share the output of specific capabilities and contribute specialist skill-sets.

NATO Coalition Shared Databases (CSDs) provide a standardised architecture for the sharing of intelligence, surveillance and reconnaissance (ISR) data across sovereign nations. The same framework enables individual sovereign nations to integrate the output of their individual forces to form a common operating picture. Whether nationally or internationally, it provides commanders with timely and focused intelligence for critical decision making.

Collins Aerospace's SCi-Toolset provides a comprehensive set of sensor and platform agnostic tools built on top of the NATO CSD architecture. It is utilised by over 14 nations and is a proven capability for multi-domain operations and interoperability with other NATO allied organisations or coalition partners.

SIMPLIFY COMPLEX INFORMATION WITH A PROVEN SOLUTION

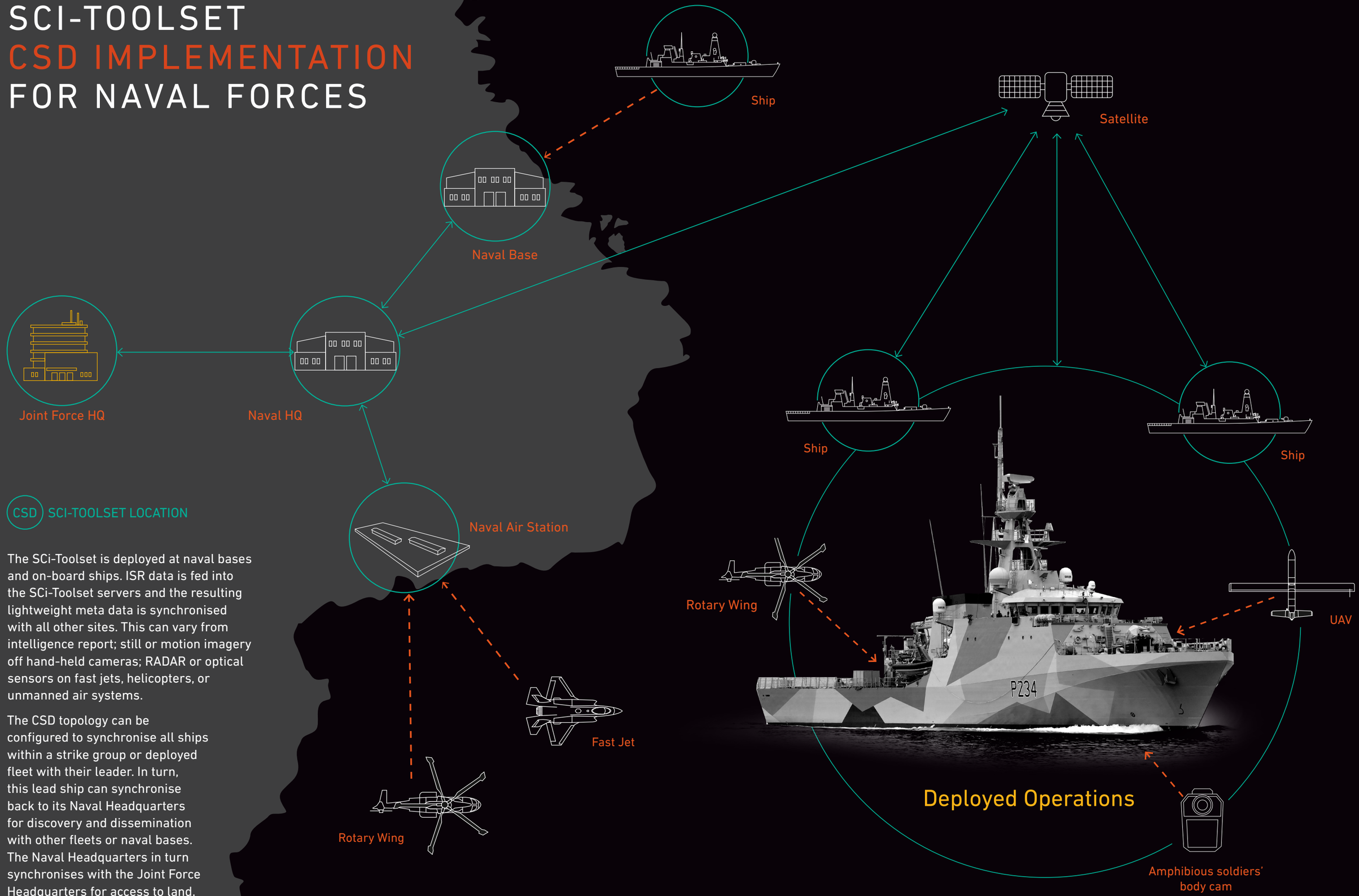
The SCi-Toolset is designed around the Joint ISR work flow, with a simple and intuitive interface. It is capable of handling very large data volumes, facilitating expedient processing, exploitation and analysis.

The product cataloguing, distributed information management, and tasking capabilities behind the SCi-Toolset are STANAG 4559 Edition 4 (AEDP-17 and AEDP-19) compliant. The SCi-Toolset can be deployed across physically distributed sites interconnected on existing network infrastructures. Each instance of the SCi-Toolset is a Coalition Shared Database (CSD) server, which persistently shares its content with other STANAG 4559 Edition 3 and Edition 4 compliant CSDs. It uses minimal network traffic to ensure users from anywhere across the enterprise can rapidly discover ISR products by simply looking at a common operating picture.

Interconnected instances of the SCi-Toolset give operators richer features beyond STANAG 4559 Edition 4 CSD structure. Enhanced visualisation provides users with web-based exploitation and analysis. Automated data transfer features across two or more instances of the SCi-Toolset enable organisations to perform reach-back operations and central archiving. This keeps personnel and high-value data at austere and high-risk areas of operation to a minimum.

SCi PULSE | SCi X | SCi DISCOVER | SCi PROGRESS | SCi CONTOUR | SCi MAPS | SCi GATHER

SCI-TOOLSET
CSD IMPLEMENTATION
FOR NAVAL FORCES



CSD SCI-TOOLSET LOCATION

The SCi-Toolset is deployed at naval bases and on-board ships. ISR data is fed into the SCi-Toolset servers and the resulting lightweight meta data is synchronised with all other sites. This can vary from intelligence report; still or motion imagery off hand-held cameras; RADAR or optical sensors on fast jets, helicopters, or unmanned air systems.

The CSD topology can be configured to synchronise all ships within a strike group or deployed fleet with their leader. In turn, this lead ship can synchronise back to its Naval Headquarters for discovery and dissemination with other fleets or naval bases. The Naval Headquarters in turn synchronises with the Joint Force Headquarters for access to land, air, and coalition data.

The appearance of U.S. Department of Defense (DOD) visual information does not imply or constitute DoD endorsement.

DEFINING THE NEXT GENERATION OF ISR SOLUTIONS

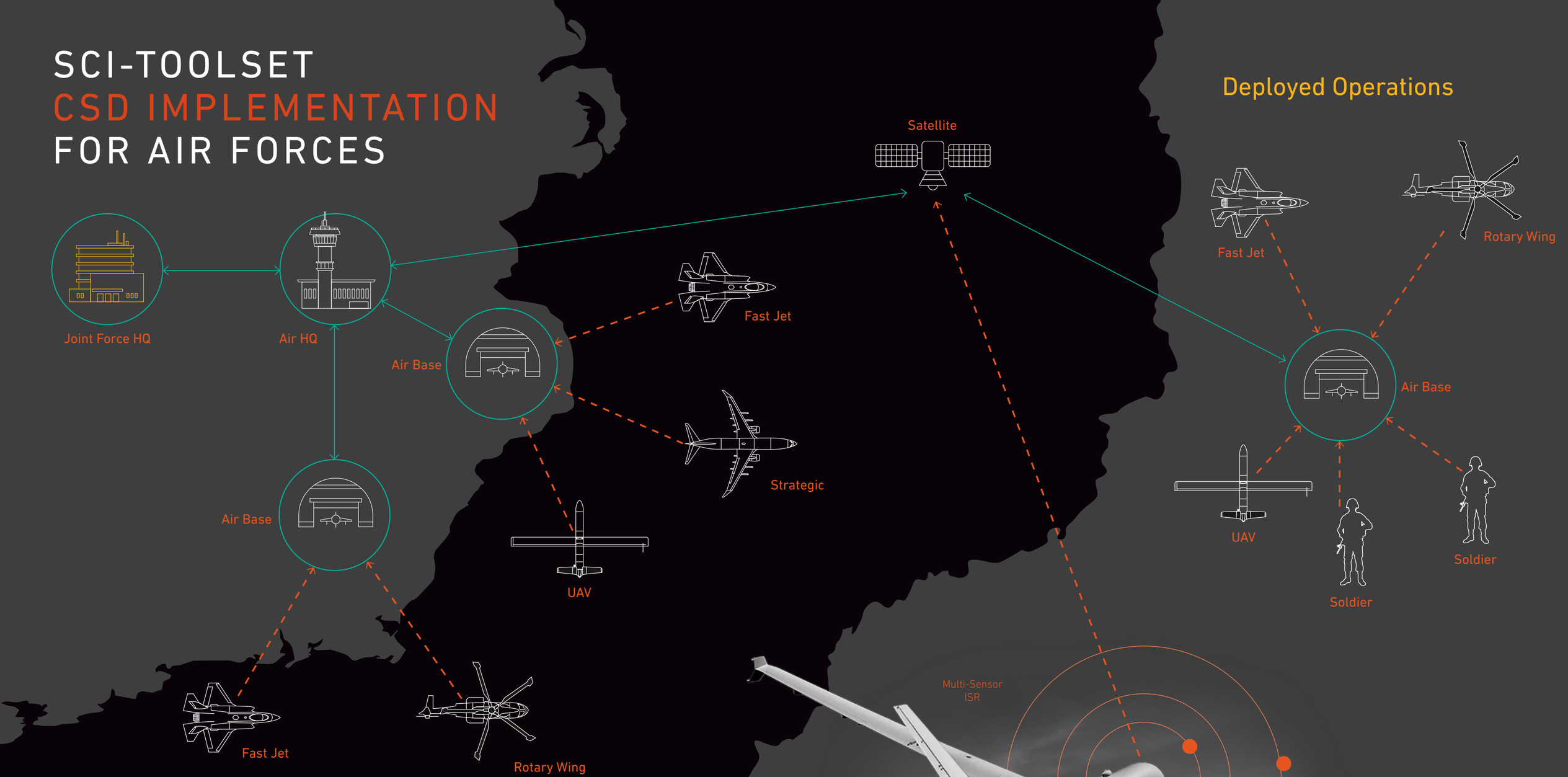
The gathering of ISR data is growing at an ever increasing pace. This is exacerbated by the digitalization of sensors, the increasing variety, and more cost-effective solutions replacing traditional military platforms.

In the air, on the ground or at sea, Collins Aerospace brings innovative and trusted solutions to manage ISR data, regardless of the collection platform or data format. Leveraging our diverse experience, assets, capabilities and breadth of products, we deliver solutions to manage and process large volumes of data for time-critical environments.

Collins is the industry leader in solutions that streamlines the tasking, collection, processing, exploitation and dissemination of ISR data. Since the early 2000s, we have supported armed forces in over 14 countries. Our products are proven in missions worldwide. We make it easy for customers to stay mission-ready with full aftermarket support services anywhere in the world.

Collins Aerospace covers the full lifecycle of products - from design, development, manufacturing and testing to aftermarket and support – we define the future of ISR technologies.

SCI-TOOLSET
CSD IMPLEMENTATION
FOR AIR FORCES



CSD SCI-TOOLSET LOCATION

The SCi-Toolset is deployed at air bases or force Headquarters. ISR data is fed into the SCi-Toolset servers and the resulting lightweight meta data is synchronised with all other sites. For persistent capabilities, the SCi-Toolset is connected at point of capture, such as sensor Ground Stations for unmanned air systems or fast jets.

The CSD topology can be configured to synchronise all forward deployed air bases with their regional Headquarters. In turn, the Headquarters can synchronise back to its Air Headquarters for discovery and dissemination with other Headquarters or air bases. The Air Headquarters in turn synchronises with the Joint Force Headquarters for access to land, sea, and coalition data.

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RISE ABOVE THE DATA WITH A PROVEN LEADER

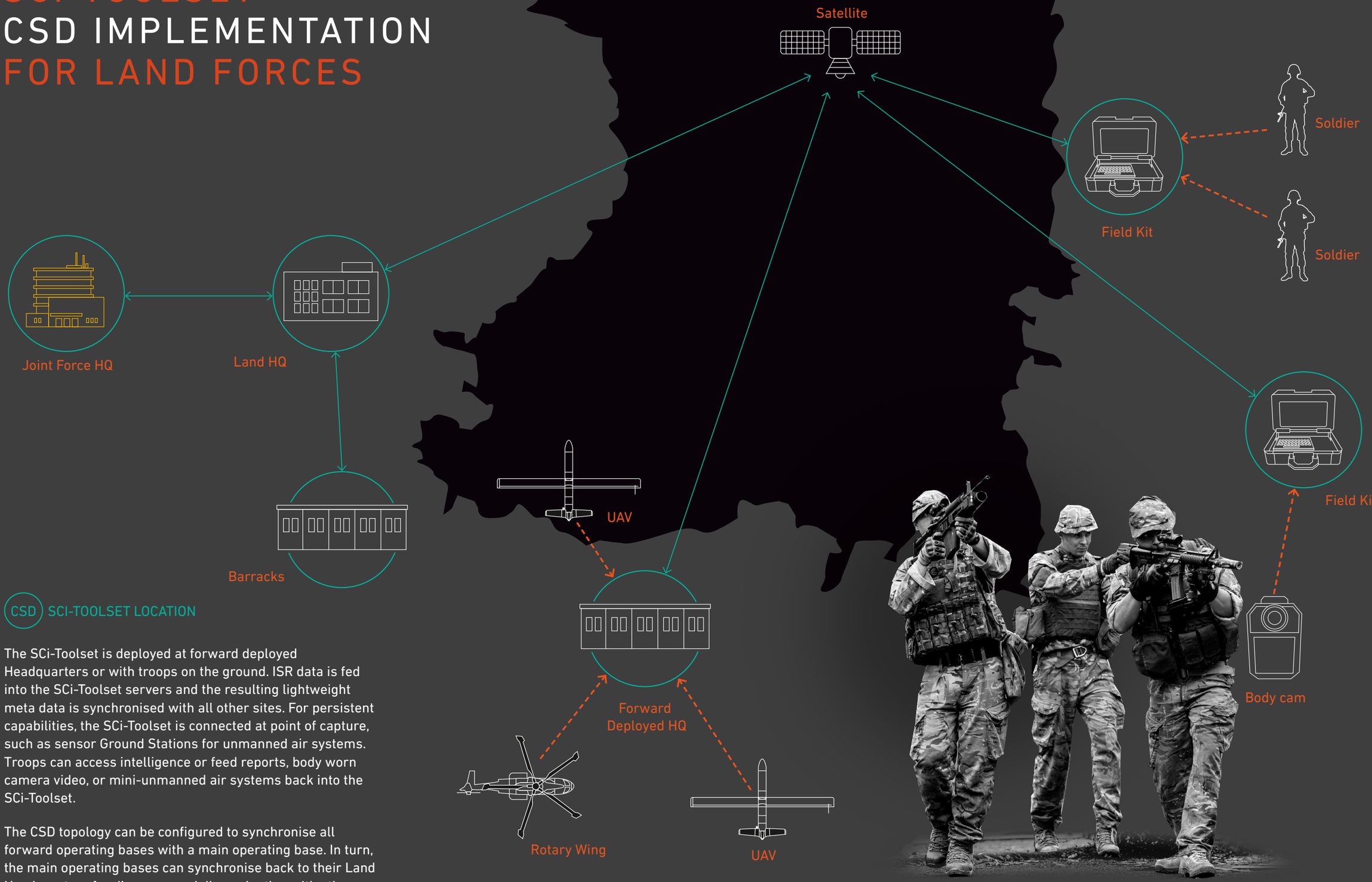
Modern battlefields are highly complex. Their dynamic and fast paced environment requires actionable intelligence to be in the hands of the commanders for timely decision making.

Collins Aerospace's data management solutions provide armed forces with a world leading ISR global enterprise framework. Forward deployed forces collect ISR data and disseminate it in near-real-time, across the enterprise, to command centres and Headquarters.

Reach-back capability ensures that intelligence analysts can discover, process, analyse, and fuse the right intelligence without being consumed by the data deluge or exposed to austere high-risk environments.

The SCi-Toolset provides intelligence agencies and military organisations with a proven software suite that helps form a common operating picture of the whole battlefield.

SCI-TOOLSET
CSD IMPLEMENTATION
FOR LAND FORCES



Ground Patrol

CSD SCI-TOOLSET LOCATION

The SCi-Toolset is deployed at forward deployed Headquarters or with troops on the ground. ISR data is fed into the SCi-Toolset servers and the resulting lightweight meta data is synchronised with all other sites. For persistent capabilities, the SCi-Toolset is connected at point of capture, such as sensor Ground Stations for unmanned air systems. Troops can access intelligence or feed reports, body worn camera video, or mini-unmanned air systems back into the SCi-Toolset.

The CSD topology can be configured to synchronise all forward operating bases with a main operating base. In turn, the main operating bases can synchronise back to their Land Headquarters for discovery and dissemination with other deployed bases. The Land Headquarters in turn synchronises with the Joint Force Headquarters for access to sea, air, and coalition data.

The appearance of U.S. Department of Defense (DOD) visual information does not imply or constitute DoD endorsement.

AN INTEGRATED APPROACH TO MEET ANY REQUIREMENT

The SCi-Toolset offers a modular approach to intelligence agencies and military organisations developing a complete and highly capable ISR solution.

Systems deployed as single stand-alone nodes, on the tactical edge of the battle space, or as part of a wider data-sharing enterprise solution spread across multiple independent sites; the SCi-Toolset has the capacity to develop and expand in-line with the end-users' ever-evolving ISR requirements.

As the data grows, a full long-term storage and archiving solution can be incorporated into the capability. This reduces the storage demands at the front-line and retains the availability of data for both legal and historical referencing.

Utilising its comprehensive functionality and suite of powerful interactive Tools, SCi Toolset delivers an interactive, information-based product that defines the actionable intelligence to support the decisions that matter.

SCI-TOOLSET
CSD IMPLEMENTATION
FOR COALITIONS

CSD SCI-TOOLSET LOCATION

The SCi-Toolset is deployed at the Joint Force Headquarters. This site typically connects and integrates all the forces. Data retention is often key for historical referencing and archiving. Typically the SCi-Toolset is used to manage a central data centre or long-term data store. This can either be setup at a Joint Headquarters level or at individual Force Headquarters levels. Automated data transfer and product ownership is implemented to assure limited data retention on the front line.

A central instance of the SCi-Toolset is connected to coalition Headquarters to enable the discovery and dissemination of ISR products and global tasking with allied foreign nations.

COALITIONS / ALLIED FORCES

YOUR FUTURE IS IN CAPABLE HANDS

FULL DESIGN, DEVELOPMENT, QUALIFICATION AND SUSTAINMENT

Since 2003, Collins Aerospace's Malvern facility in the United Kingdom has been providing proven data management solutions in support of deployed ISR platforms around the world. Utilising its experience and resources, Collins Aerospace continues to expand its capabilities to meet ever growing demand for data management and ISR capability-driven requirements as they emerge; in an ever evolving Battle Management landscape.

Collins Aerospace continues to invest in cutting-edge technologies that encapsulate Artificial Intelligence (AI) and Machine Learning (ML); all with the aim of increasing the understanding of the battle space, through the development of intelligence capability; both alleviating and minimising the impact and cognitive workload on the operator.

Capabilities

- Complete turnkey ISR Solutions
- Commoditised 'off the shelf' products
- Modular functionality
- Multiple hardware options and configurations
- Bespoke developed solutions
- Services as a subscription
- Artificial intelligence and machine learning technology
- Not subject to ITAR
- Developed in the United Kingdom

To learn more, go to
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22-2017-00 02/22 © 2022 Collins Aerospace.

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