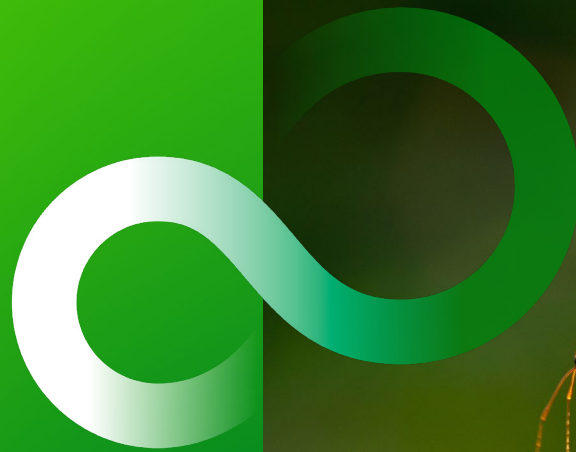




C4ISR toolset

Empowering operational users through enhanced collaboration and sharing of secure intelligence from trusted sources that improves critical decision-making



Enabling access to information is critical to the success of military operations. However, as the boundary between fixed and deployed operations blurs, providing operational users with access to the tools and systems they require to do their jobs effectively is becoming increasingly important. Numerous disparate systems and sources along with an ever-increasing number of devices used for gathering, analysing and applying context to this information adds further layers of complexity to the challenge.

Seamless access to a single information environment

Fujitsu's comprehensive C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance) toolset capability has been developed to address this challenge, by delivering a secure, single information environment. Implementation of our complete suite of C4ISR applications can transform military operations by providing operational users with access to a single, coherent view of the most relevant and trusted information sources.

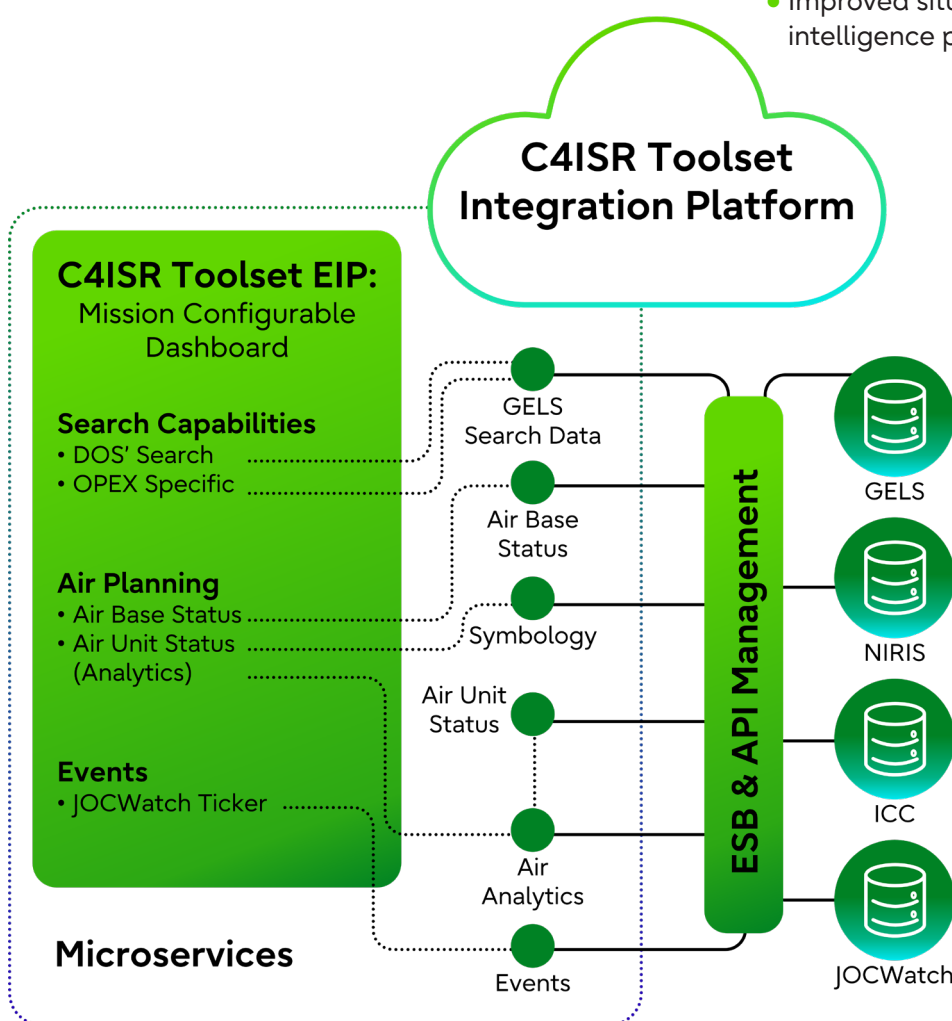
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So rather than operational users having to access several different systems, usually via different platforms or devices, to reach the information they require, Fujitsu's implementation of the C4ISR toolset delivers a way for these users to effectively access the information via a single pane of glass.

This functionality is enabled by the application of integration middleware and Fujitsu's GELS (Georeferenced & Encyclopaedic Lookup Service) capability:

- **Integration middleware** links the applications that operational users are accessing on a day-to-day basis with the information sources that contain the data and associated contextual analysis, seamlessly applying any required protocol translation. This all takes place within the C4ISR toolset's highly secure single information environment that enables the different components to coherently and seamlessly talk to each other, delivering a fusion of near real-time information to operational users. As such, the integration middleware accelerates the development and delivery of new capabilities while reducing cost and complexity.
- Meanwhile, **Fujitsu's GELS (Georeferenced & Encyclopaedic Lookup Service)** is a search and visualisation capability which enables operational users to discover and gather situational awareness data from a wide range of source systems providing:
 - Improved situational awareness and informed intelligence picture



Enhanced collaboration and secure intelligence sharing

GELS provides operational users with the ability to fully exploit both real-time and historic information across the enterprise to inform military decisions. GELS is based entirely on open web standards having been developed using primarily open-source, enterprise class technologies. It has been designed to support a range of military standards as used by UK, US and NATO partners. In-built collaborative tools, such as Microsoft SharePoint that can be linked to GELS, enables Commanders from different operations to collaborate easily and effectively by securely sharing trusted intelligence and situational awareness.

Given the nature of the information being exchanged, the security of the system is of paramount importance. Fujitsu's C4ISR toolset has been designed and built with security

at its heart. Fujitsu consults extensively with the National Cyber Security Centre (NCSC), the Information Security arm of GCHQ, and the definitive voice on the technical aspects of information security in Government. The result is that any implementation of the Fujitsu C4ISR toolset is an inherently secure system that is CESG Tailored Assurance Service (CTAS) certified¹. Full cybersecurity capabilities are built in to the core of all of Fujitsu's ICT solutions for the Defence & National Security sector.

Agile, flexible virtualisation approach

Fujitsu's C4ISR toolset is an augmentation of existing IT environments, which means there is no need for complex infrastructure rollouts. The use of appropriate integration middleware accelerates the development and delivery of new capabilities while reducing cost and complexity. This means the C4ISR toolset is a highly agile, virtualised capability that can be deployed effectively anywhere to any suitable existing secure private cloud platform or infrastructure. Such an agile, virtualisation approach is highly effective, particularly where space is at an absolute premium, such as in the Maritime environment.

Fujitsu's C4ISR toolset can integrate with practically any system, unlocking information in legacy systems or exploiting new capabilities provided by the latest web and private cloud-based services. And the system is completely scalable, from a highly available, highly resilient data centre environment to smaller applications in deployed operations, with the flexibility to scale up or down, dependent on operational circumstances. Furthermore, when the appropriate integration middleware is introduced, functionality duplications and unnecessary dependencies are often discovered, which means that legacy systems may be eliminated, rationalising the IT landscape, and further cutting costs.

¹ A CTAS evaluation provides a view of assurance on the IT security attributes of a system, product or service and will be carried out by a company having a CESG-approved test laboratory with CTAS capability. The scope of the evaluation is specified in a Security Target and the range of evaluation activities is detailed in an Evaluation Work Programme. The Accreditor and CESG, with other key stakeholders, will agree the scope and technical approach of the evaluation and will review the CTAS activities and results documented in an Evaluation Report. At the end of the evaluation, CESG will issue a CTAS Assessment Statement to the Accreditor on the results of the evaluation, making recommendations on the significance of any issues that are discovered.

Transforming C4ISR capability – from HQ to foxhole

The real value delivered by the implementation of Fujitsu's C4ISR toolset though is its ability to transform C4ISR capability. The C4ISR toolset achieves this due to its ability to host multiple enclaves simultaneously, supporting multiple operations within each enclave. By unlocking data and information and providing it in a way that empowers operational users through improved information management, situational awareness and the delivery of the overall intelligence picture, the C4ISR toolset ultimately improves operational decision-making when and where it matters most.

So, from HQ to foxhole, the C4ISR toolset can be tailored to meet the needs of the specific operation, and has the flexibility to adapt as these needs evolve. Fujitsu's C4ISR toolset enables the single information environment required by your operational users, providing the services needed to run operations at HQ, but can equally be tailored for the deployed space. And the vision for the future is to enable tracking in the tactical space, of individual soldiers operating in the traditionally hard-to-connect battlespace.

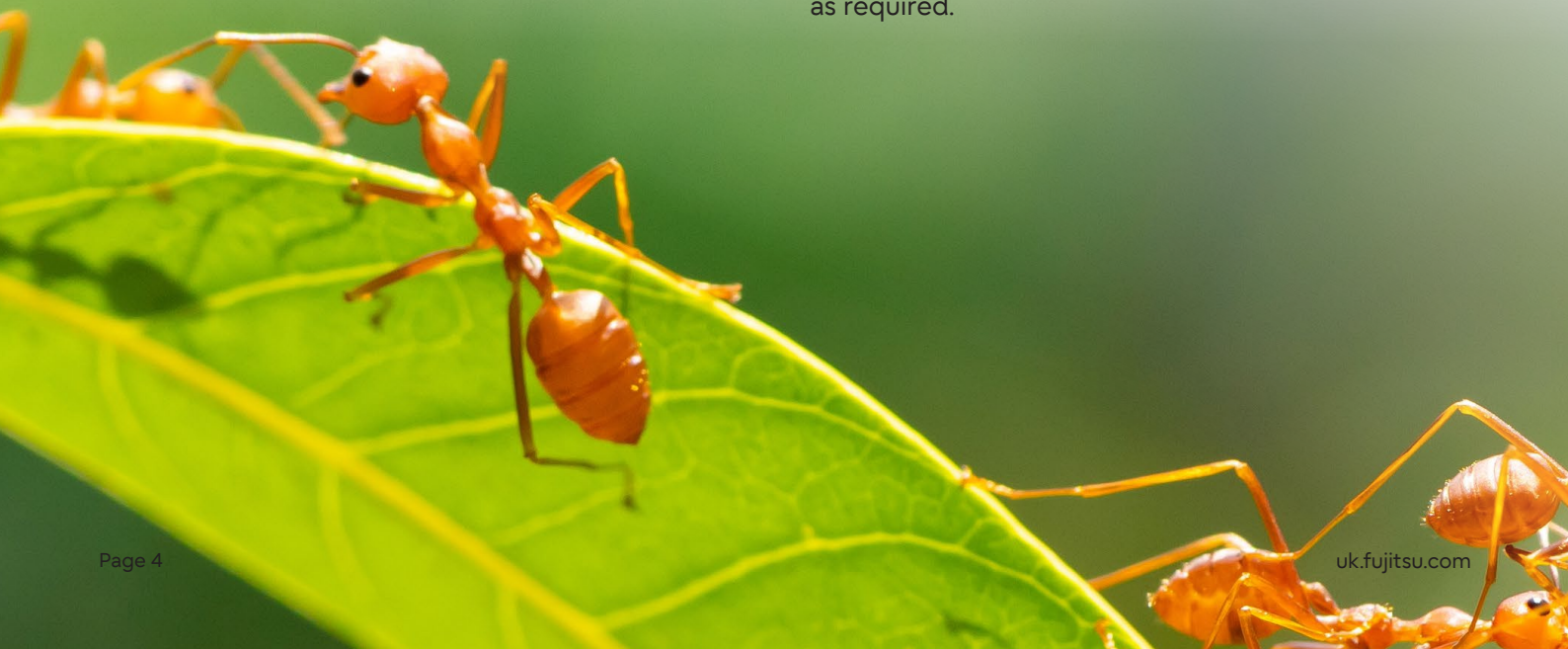
Integrated tailor-made application suite and future developments

Fujitsu's implementation of the C4ISR toolset allows new applications to be added to the already-extensive Defence applications catalogue. This ensures a completely tailor-made application suite, capability can be developed to fit the requirements dictated by C4ISR operations. Previously, this process has not been capable of matching the operational need, but the flexible application onboarding process - which meets MOD governance and network joining rules - ensures new applications can be tested and validated to work within the C4ISR toolset's single information environment much faster than ever before.

Furthermore, Fujitsu's agile, dynamic approach ensures the C4ISR toolset can be continually developed and takes advantage of leading-edge technology from both commercial off-the-shelf (COTS) products (that are available via Fujitsu's long-standing partnerships with the likes of Microsoft, IBM and VMware) and Open Source. This continual development keeps costs to a minimum and ensures that Fujitsu's solutions integrate the latest product enhancements, as they become available.

Automated through-life support model

While the deployed environment can often present significant challenges from a support and maintenance perspective, Fujitsu has extensive global experience of supporting deployed customer implementations via an automated support model. For any C4ISR toolset implementation, Fujitsu will develop a close working relationship with the Military Service Provider (MilSP) to ensure the provision of fully sustainable, through-life support and maintenance, such that the MilSP has the necessary training and knowledge, backed-up by Fujitsu as required.



Delivering the complete C4ISR capability across Defence & National Security

Fujitsu's C4ISR toolset delivers seamless access to the single information environment required by operational users to do their day-to-day jobs effectively:

- **Seamless access to the right information:** the C4ISR toolset enables operational users to access the information available to them effectively via a single pane of glass, enabled by integration middleware and GELS.
- **Agile, virtualisation approach:** the C4ISR toolset is a highly agile, virtual environment that can be deployed effectively anywhere to any existing secure private cloud platform or infrastructure with no need for complex infrastructure rollouts.
- **From HQ to foxhole:** regardless of location, the C4ISR toolset can transform your C4ISR operations, enabling disparate components to coherently and seamlessly talk to each other.
- **Fully tailored application suite:** new applications can be added to the already-extensive Defence applications catalogue ensuring a completely tailor-made application suite can be developed to fit the C4ISR operation's requirements.
- **Fully scalable solution:** from a highly available, highly resilient data centre environment to smaller applications in deployed operations, with the flexibility to quickly scale up or down dependent on operational circumstances.
- **Automated support:** Fujitsu will develop a close working relationship with the Military Service Provider (MilSP) to ensure the provision of fully sustainable, through-life support and maintenance, backed-up by Fujitsu's extensive global capabilities and experience of delivering automated support.
- **Enhanced collaboration and intelligence sharing:** Commanders from different operations can collaborate easily and effectively by securely sharing intelligence and situational awareness.

Why Fujitsu in Defence & National Security?

Our world is being disrupted. But together with you, Fujitsu's ambition is to build a brighter, more sustainable future for us all.

We want to work together to navigate this digital disruption collaboratively, and explore solutions to the evolving threats we face today. Together, we can exploit technology that will drive high-impact improvement, transform our digital future, and help to make us more sustainable in every way.

We can do this by harnessing technologies such as AI, machine learning, digital twin, quantum, and high-performance computing. Our vision uses the power of everyone, bringing together our integration capabilities and knowledge in managed services with cognitive and advanced technologies that will drive your digital transformation. By elevating people higher up the value chain allows the smartest ideas to emerge to tackle tomorrow's big challenges today – whatever they may be.

With our technological inspiration and business vision from Japan, we touch the lives of millions of people around the world every day. For over 60 years, we've been working at the highest levels of security demanded by militaries, governments, and industry to ensure the UK's most critical infrastructure operates smoothly, 24/7.

We've continually had to adapt to a changing world, and we will keep evolving in the face of future threats. We are diverse, creative, talented, and different. And we are committed to building new possibilities for everyone. By connecting people, technology and ideas, we are making the world more sustainable by building trust in society through innovation.

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