



LEONARDO ELECTRONICS

SCIEM™

**SUBMARINE COMMUNICATIONS
INFORMATION EXCHANGE
MANAGEMENT**

DELIVERING NETWORK ENABLING CAPABILITY TO NETWORK DEPENDENT USERS IN NETWORK DEPLETED ENVIRONMENTS

Leonardo have combined their highly successful capabilities in data prioritisation, dissemination, management and bandwidth reduction techniques to offer the Submarine Communications Information Exchange Management (SCIEM™) product, a Smart Information Dissemination Management software application that is specifically tailored for use by Submarine services.

Submarine Communications Information Exchange Management (SCIEM™) is a proven in service, state of the art, fully automated rules based Information Management and Optimisation software application that typically reduces a submarine's time in comms and bandwidth usage by >80%. It supports the optimisation/prioritisation of e-mail and the compression of e-mail attachments.

SCIEM deploys a mixture of lossy and lossless compression in order to maximise transfer times and minimise bandwidth requirements, and also provides a 'Data Catalogue' to enable the sharing of compressed files between platforms.

. Typical data sets that benefit from the compression algorithms include standard image formats (JPG, PNG, BMP, TIF) and Office documents (Word, Excel, PowerPoint, PDF), text files and repetitive binary data.

SCIEM™ is bearer-agnostic and operates within any security enclave and associated cryptographic services. It automatically prioritises, optimises and manages the transfer of data, around the communications network, ensuring that the right information gets to the right place at the right time and in the most bandwidth efficient manner.

As an automated system, SCIEM™ ensures that high fidelity data is intelligently and efficiently managed within the submarine's communications networks and systems, markedly reducing the burden upon the operator. The implementation of innovative technologies and techniques such as prioritisation, filtering, reach-back, high performance lossy compression, lossless compression/differencing and multiple recipient management enables SCIEM to rapidly manage and deliver information around the comms network and with its state of the art compression algorithms can now rapidly transfer data files that were originally larger than the available bandwidth would allow.

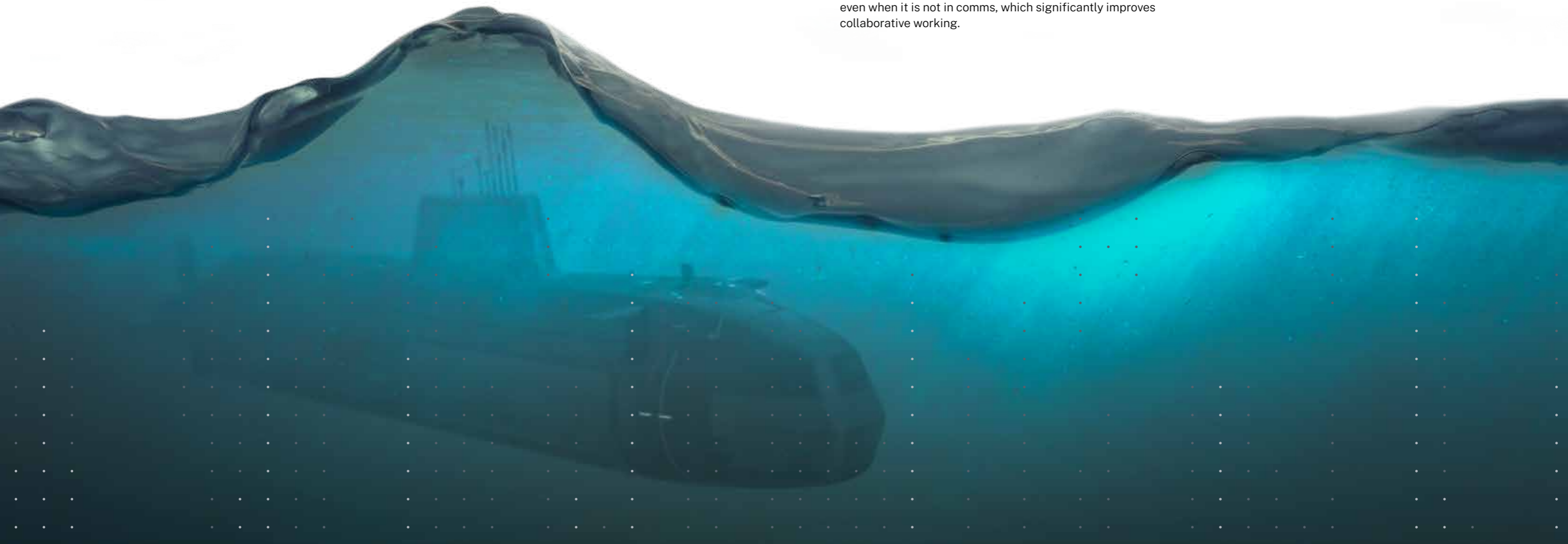
Crucially, in an increasingly sophisticated threat environment, SmartIDMS™ enables a submarine to spend the absolute minimum time at Periscope Depth (PD) in communications and receive only the information needed to continue its mission. Yet, despite potentially reducing time spent in communications by typically >80%, other users see a permanent presence on the network due to the submarine having its own virtual presence on the comms network, even when it is not in comms, which significantly improves collaborative working.

SCIEM™ is a breakthrough Information Management capability, which places the deployed user in control of the information that is assembled and delivered over the wide area network. It enables them to experience similar levels of service as users connected continuously to a fixed network.

SCIEM™ introduces a significant and proven uplift in operational tempo when exchanging information over any IP enabled Communications Network, significantly reducing bandwidth usage, time in comms and the associated financial impact when exchanging information over a satcom bearer, where bandwidth is invariably limited and costly. As a bearer-agnostic application, SCIEM™ employs innovative techniques that will increase the utility of low bandwidth systems, such as HF supporting data distribution to disadvantaged users.

SCIEM™ is a proven in service capability that has, so far, been delivered into the Australian Navy and successfully trialled by the UK Navy.

SCIEM™ is a high performance, off-the-shelf Licensable Information Management software application that is both scalable and tailorable to fit a particular user need. It typically reduces time in comms/bandwidth usage by >80% and is available on the open market, offering the ability for any organisation to automatically manage and optimise Information transfer around any IP enabled network.



SCIEM™ BENEFITS

OPERATIONAL BENEFITS

- Reduces Time in Communications and Bandwidth usage by typically >80%
- Reduces Time spent at Periscope Depth, due to comms activities, by typically >80%
- Ensures that the right information reaches the right place at the right time and in the most bandwidth efficient manner
- Provides a significant uplift in operational tempo

DATA TRANSFER BENEFITS

- Rules based system that automatically maximises email throughput via prioritisation, filtering, reach-back, and high performance compression algorithms ensuring maximum throughput of high priority data
- Data Catalogue: Provides a tailored shared library. Data can be publish to, and pulled from the library, maximising throughput via prioritisation, lossless compression and high performance Image compression algorithms

INFORMATION MANAGEMENT BENEFITS

- Provides visibility of information distribution queues
- Operates within any security encrypted bearer system.
- Data Catalogue-Ideal for the upkeep and maintenance of database backups and the contents of e-libraries
- Data Logging –All transfers are logged and archived

COMMUNICATION LINK BENEFITS

- Enables the disadvantaged user -markedly enhances low bandwidth (ie HF) and Ad Hoc links
- Bearer and media-agnostic -can be used for internal or external CIS
- Guaranteed data delivery -full data integrity checking on all transfers and transmission restoration, even on poor quality links

ARCHITECTURAL BENEFITS

- Simple and quick to integrate with in-service architectures/systems
- The Service Orientated Architecture offers a transparent service for other connecting applications



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