Defence Communications Systems

SMART INFORMATION DISSEMINATION AND MANAGEMENT SERVICES

The Smart Information Dissemination & Management Services (SmartIDMS) software application is a high performance bearer-agnostic Information Management (IM) tool which automatically optimises data transfers utilising hard and soft techniques such as prioritisation, reachback and high performance compression algorithms. It offers significant operational benefits, typically saving between 80% and 90% in transfer times and bandwidth usage.

Using Cloud Technology, SmartIDMS operates over any commercial or military Internet Protocol bearer network ensuring that high quality data is intelligently and efficiently managed within communications networks and systems, markedly reducing the burden upon the operator.

SmartIDMS addresses the common issues associated with data transfers over disadvantaged, intermittent and ad hoc links. It ensures that the most important information takes priority and that it is transferred in the most bandwidth-efficient manner, whilst maintaining content, quality and fidelity.

The implementation of innovative technologies, such as compression, differencing (lossless compression), bandwidth management and intelligent data management, enables SmartIDMS to transfer data files rapidly, even those larger than the available bandwidth.

Significant bandwidth savings allow data to be transferred quickly, which - in turn - enables more data to be transferred in a set time. This provides significant cost benefits for Satcom systems and operational benefits over other disadvantaged bearer systems such as HF and hand-held radios. A key benefit is in the dissemination of high priority, data-hungry products, such as high-definition images and documents containing high-definition images.

SmartIDMS is a combination of the company's highly successful products: Intelligent Information Dissemination (I2D) which has been deployed by the UK defence community since 2007, and, more recently, the Information Management Unit (IMU). Both products provide a vital role in supporting the transfer of various essential information types, whilst delivering significant bandwidth savings.

SMART IDMS

SmartIDMS has been selected by the Royal Australian Navy to manage the communications of the Modernised Submarine Communications System (MSMCS) component for their Collins Class fleet of submarines.

Available off-the-shelf and on the open market, SmartIDMS offers the ability for any organisation to prioritise, maximise and manage information transfer around any network, internal or external. It improves performance and substantially reduces the demands on limited and costly bandwidth.
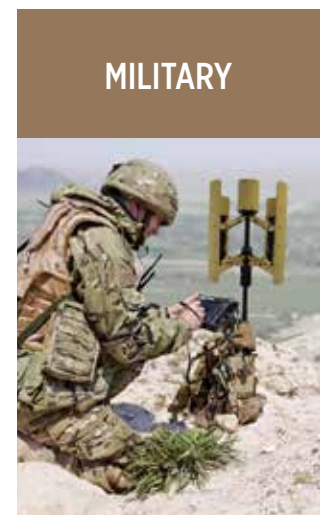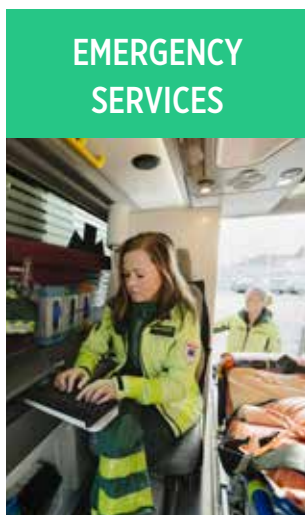
SmartIDMS has been tested on a wide range of systems including over the Inmarsat Broadband Global Area Network (BGAN) and Fleet Broadband networks.

In addition to the bandwidth savings, prioritisation, gisting (summarising) and reachback techniques deliver a further 40% to 70% saving when processing e-mail queues.

As a bearer-agnostic application, SmartIDMS increases the utility of low bandwidth systems, such as HF and hand-held data radios, supporting data distribution to disadvantaged users. These techniques enable the dissemination of high priority, data-hungry products, such as high definition images.

SmartIDMS offers benefits in many situations, saving cost and time in the transfer of a range of data types:

- Office documents
- Websites
- Imaging
- Mapping
- Publication sets
- Medical records
- Databases
- Biometric data
- Meteorological data
- Sound files
- Binary data
- Situation awareness reports
- Classified data

TYPICAL BANDWIDTH SAVINGS (PROVEN)

Category	Project	Bandwidth savings (typical) using compression (lossy)	Bandwidth saving (typical) using differencing (lossless)
Images	JPG	≈ 99%, very high quality	N/A
	Map overlays BMP	N/A	≈ 99%
	NTIF – Standard	≈ 95%	N/A
Office documents	Word	≈ 99%	≈ 75%
(Versions)	Excel	N/A	≈ 75%
	PowerPoint	≈ 95%	≈ 65%
Configuration files	EW data	N/A	≈ 90%
	XML files	N/A	≈ 75%
Folders	Databases	N/A	≈ 95%
	Websites	≈ 90%	≈ 90%

EMERGENCY SERVICES

MARITIME

INDUSTRY

MILITARY

BENEFITS

Smart IDMS supports e-mail, e-mail with attachments or single and multiple files within a folder hierarchy. Typical data sets include maps and overlays, high-definition imagery, database backups, Office documents (Word, Excel, PowerPoint, PDFs), publications sets, websites, binary data and CDs.

Smart IDMS:

- Automatically prioritises data transfers
- Maximises throughput via differencing, high performance compression and management
- Enables the disadvantaged user - markedly enhances low bandwidth links
- Bearer and media-agnostic - can be used for internal or external CIS
- Security enhanced - controls access to information based on caveats and/or an Information Management Plan
- Information managed - provides visibility of information distribution
- Delivery management - supports push, pull and scheduled delivery
- Fully auditable

- Guaranteed data delivery - full data integrity checking on all transfers and transmission restoration, even on poor quality links
- Defence Information Infrastructure (DII) ready - works over DII and other infrastructures
- Simple and quick to integrate with in-service architectures and systems
- Works with and enhances systems such as the UK military's Steelhead
- Ideal for the upkeep and maintenance of a range of database backups and e-libraries
- SOA enabled transparently by other systems
- Application Programming Interface (API) - comprehensive API that enables easy integration with other applications
- Enables transmission via Windows Explorer.

SMART IDMS

SPECIFICATION

Information gateway
- The software offers many different mature protocol options: UDP, HTTP, IP, serial, FTP or defined API, delivered through the SmartIDMS Service Oriented Architecture (SOA).
- This allows the system to interconnect disparate networks automatically, acting as a transparent transport mechanism, or with manual intervention.

Data prioritisation
- SmartIDMS implements 'soft' information management techniques to provide Prioritisation, Filtering, Gist (summary) and Reachback.
- It employs software driven rules-based processing and prioritisation techniques that enable operational commanders to assign priorities according to, for instance, information/data type, role or message type or content. Consequently, the Mobile Battle Unit Commander will receive the highest priority information, as directed by the Operational Commander ('Smart Push'), whilst being able to self select information which is deemed to be necessary for the immediate needs ('Smart Pull').
- Prioritisation algorithm forces higher priority information to the head of the queue irrespective of when it is submitted.
- Operational commanders can activate alternative rule policies or change individual rules as and when circumstances change, using an intuitive user interface that requires no external assistance.

Information management
- Communities of Interest can be defined to restrict distribution to interested groups.
- Users can be profiled for roles and information categories to ensure that they find the product required and do not have to request it to be re-sent.
- Information scheduling enables the delivery of regular information updates during quiet network periods, dramatically reducing traffic spikes.
- Meta data more accurately defines information for easier searching, retrieving and pairing with interested user communities.
- Secure separation of information to enforce security policies.

Information delivery
- Reliable and secure data transportation ensures delivery with feedback and audit trail.
- Delivery mechanisms work securely through boundary protection devices on the network.

Bandwidth reduction
SmartIDMS delivers information around the network more efficiently by using technologies that:
- Use difference engines: sending only the deltas and reconstructing information on reception
- Make use of broadcast and multicast: delivering the same information to all or some users at the same time
- Utilise specialist compression techniques: compressing information prior to transmission using optimal methods.

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SmartIDMS

Information Management	Email	Compression	Differencing	Streaming	Chat	Prioritization	Queues

QoS	Gisting	Filtering	Reachback	Bearer Agnostic	Explorer	Device Independent