



SMART INFORMATION DISSEMINATION AND MANAGEMENT SERVICES

Leonardo and SVGC have teamed to combine their highly successful capabilities in data prioritisation, dissemination, management and bandwidth reduction techniques to offer the Smart Information Dissemination & Management Services (SmartIDMS) software application for use by Joint Forces.

Based on the Leonardo I2D and the SVGC IMU products, SmartIDMS is a bearer-agnostic data prioritisation and dissemination management tool. It utilises Cloud Technology; and allows users automatically to prioritise and manage the transfer of data, minimising bandwidth usage. SmartIDMS ensures that high fidelity 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/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 and quality/fidelity. Significant bandwidth savings allow data to be transferred quickly, which - in turn - allows for more data to be transferred in a set time, reducing both time and cost if over a satcom bearer, where bandwidth is invariably limited and costly. The implementation of innovative technologies (such as compression, lossless compression/differencing, bandwidth management and intelligent data management) enables SmartIDMS to rapidly transfer data files, even those larger than the available bandwidth.

SmartIDMS is a combination of the company's highly successful Intelligent Information Dissemination (I2D) product and the SVGC Information Management Unit (IMU) currently deployed on UK RN submarines. Both products have been very successfully fielded by the UK defence community; I2D since 2007, providing a vital role supporting the transfer of various essential information types, whilst providing significant bandwidth savings.

SMARTIDMS

Now available off-the-shelf and on the open market, Smart IDMS 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.

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%
Configuration files	PowerPoint	≈ 95%	≈ 65%
	EW data	N/A	≈ 90%
Folders	XML files	N/A	≈ 75%
	Databases	N/A	≈ 95%
	Websites	≈ 90%	≈ 90%

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

As a bearer-agnostic application, SmartIDMS's innovative techniques also increase 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.

SPECIFICATION

Information gateway

- SmartIDMS has 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 directed by his operational commander ('Smart Push'), whilst benefiting from the ability to self-select information which he deems to be necessary for his immediate needs ('Smart Pull')
- The IMU 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 requiring no external assistance.

Information management

- The definition of communities of interest allows automatic distribution only to interested groups. Users can be profiled for roles and information categories to ensure they find the product required, and do not have to request it to be re-sent
- Information scheduling to plan the delivery of regular information updates during quiet network periods dramatically reduces 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 transportation to ensure delivery with feedback and audit trail
- Delivery mechanisms have been designed to work securely through boundary protection devices on the network

Bandwidth reduction

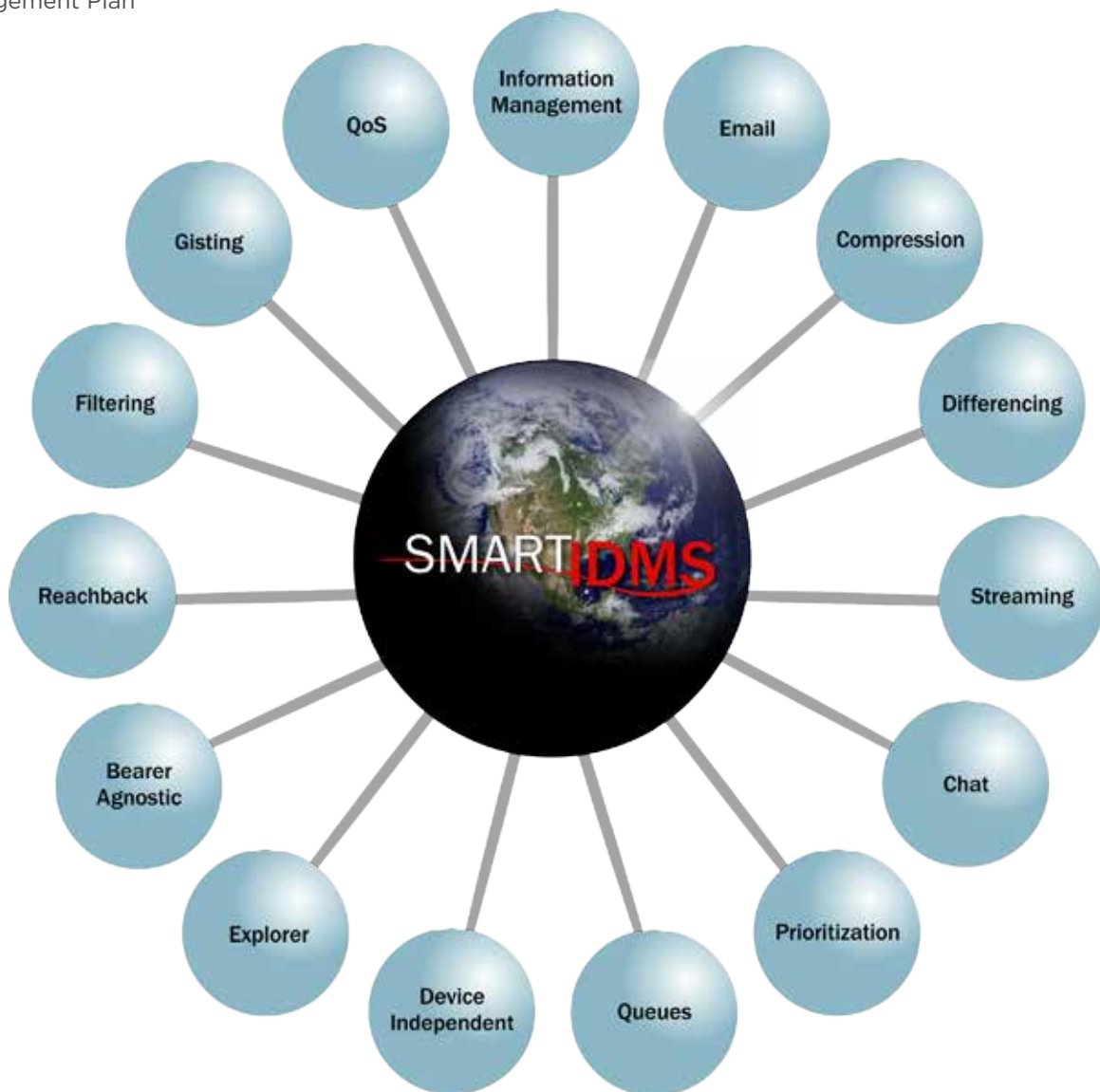
- SmartIDMS delivers information around the network more efficiently than ever before by utilising technologies that:
- Use difference engines: sending only the deltas and reconstructing information on reception
- Make use of broadcast and multicast: delivering the same information to all or some users at the same time

- Utilise specialist compression techniques: compressing information prior to transmission using optimal methods

TOP-LEVEL COMMUNICATIONS ARCHITECTURE

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, CDs, etc. 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 - control access to information based on caveats and/or the 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/systems
- Works with and enhances systems such as the UK military's Steelhead
- Ideal for the upkeep and maintenance of all sorts of data-base backups and the contents of e-libraries
- SOA enabled transparently by other systems
- Application Programming Interface (API) - comprehensive API that enables easy integration with other applications
- Windows Explorer - for ease of use SmartIDMS is able to transmit via Windows Explorer



SMARTIDMS

Inmarsat

Leonardo is an Inmarsat Gold member, belonging to the premier tier of Inmarsat service providers. Independent bandwidth saving tests have been carried out by Inmarsat and can be found on the Inmarsat website:

http://www.inmarsat.com/Downloads/English/bgan/User_guides/ID2.pdf

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