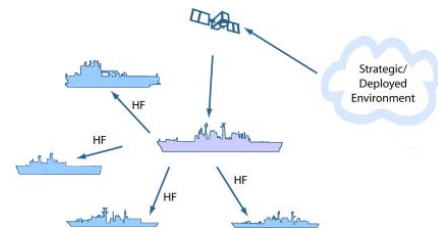


# Tactical Messenger

## Standards based, reliable IP based communications in low bandwidth environments for Maritime and Deployed Land Forces

With military forces deployed internationally in coalition environments, appropriate communication methods are paramount. Messaging systems are a vital part of the infrastructure for the modern military, but rely on two-way communication and are therefore unsuitable for environments where “radio silence” is needed.

Boldon James has developed Tactical Messenger, for deployment with Microsoft Exchange, to provide a reliable multicast protocol in a connectionless oriented network. The solution provides data compression, manages message priority and precedence, and can intelligently manage message queues, interrupting low priority messages to ensure delivery of the most important first. Tactical Messenger supports NATO STANAG 4406 Edition 2 Annex E and ACP142 (P\_MUL) standards.



### The Technical Challenges

There are a number of basic technical challenges that arise from military messaging deployments, some of which are particularly relevant to constrained communications channels. These are summarized below and will be illustrated in the scenarios described subsequently.

- Low bandwidth. Many of the communication channels used are very slow, down to as little as 300 bits per second. With bandwidth this constrained, it is imperative that protocols make efficient use.
- High latency. Very often, slow links have long round trip times. Satellite links are faster, but have very high latency. To work well in high latency environments, protocols should be “non blocking” as much as possible.
- High error rates. Typical communication channels will often have high error rates, and applications must be robust to this.
- Multicast. Many of the communication channels used are inherently multicast (e.g., radio, satellite). Messages are often sent to multiple destinations, and it is desirable that protocols can take advantage of the multicast nature of the underlying media. To some extent, this can compensate for low bandwidth.
- EMCON (Emission Control). Deployed units will in many situations wish to not broadcast signals, in order to help hide their location. The situation where signals can be received but not sent is referred to as EMCON. It is essential to be able to send messages to a unit in EMCON.
- Priority. Formal military communications have an associated priority (precedence). In a low bandwidth environment, it is easy for message queues to build up, and so it is critical to have mechanisms which will ensure that the highest priority messages get through first.

### Key Features

- Works with Microsoft Exchange server 2003 and 2007
- Emission Control - ACP142 P\_Mul 'A Protocol for Reliable Multicast Messaging in Constrained Bandwidth and Delayed Acknowledgement (EMCON) Environments' is a CCEB standard for multicast and EMCON
- Designed to support NATO's STANAG 4406 Annex E.
- Reliable Multicast to reduce the overall traffic on the network
- General purpose data compression to help reduce data transfer volume
- Supports mobile operations using radio based networks

### Benefits

- Reduces the cost of expensive satellite communications by using compression and multicasting.
- Allows critical information to be supplied to users even when in “radio silence” by removing the need for “handshaking”.
- Simple to use, preventing the need for specialist operational personnel.
- Can be deployed with Microsoft Exchange and Active Directory, reducing cost of implementation, training, support and hardware.

### Conformance

- ACP 123, "Common Messaging Strategy and Procedures", August 1997. ACPs (Allied Communications Publications) are issued by the CCEB (Combined Communications Electronics Board).
- STANAG 4406, Edition 1, Version 3. "Military Message Handling System", March 1999. (*STANAG documents are NATO standardization agreements*).
- STANAG 4406, Edition 2. "Military Message Handling System", March 2005 (to be ratified)
  - Annexe A: "Military Message Handling System Extensions"
  - Annex E: "Tactical MMHS Protocol and Profile Solution"
- ACP 142, Version 1.0, "P\_MUL - A PROTOCOL FOR RELIABLE MULTICAST MESSAGING IN BANDWIDTH CONSTRAINED AND DELAYED ACKNOWLEDGEMENT (EMCON) ENVIRONMENTS". December 2001.

### Related Products

**SAFEmail** - STANAG 4406 and ACP123 conformant messaging based on Microsoft Exchange and Outlook

**SAFEmail Web Client** – A companion product to SAFEmail delivering a similar capability via a zero footprint version of the Microsoft OWA (Outlook Web Access) client.

**Multi-function Gateway** - A Microsoft Exchange based implementation of the new ACP145 gateway protocol. The innovative Boldon James design can be rapidly implemented and offers transition support between many legacy protocols and the new ACP145.

**SAFEagent** – An Exchange Mailbox to XML 2-way gateway supporting import and export of military messages between Exchange and external applications.

**SAFEchat** - A defence enabled CHAT solution. Based upon Microsoft Live Communications Server (LCS) SAFEchat adds persistence, labelling, archiving and conversation access control.

Boldon James, a wholly-owned QinetiQ subsidiary since October 2007, has over 20 years' experience specialising in secure messaging solutions tailored to meet the formal information exchange requirements of the worldwide defence and secure government sectors. Its Version 3 Secure Information Exchange (SIE) architecture now provides a suite of Microsoft commercial off-the-shelf (COTS) functional extensions across the Unified Communications collaboration and conferencing suites, resulting in solutions with a low total cost of ownership (TCO) and significantly reduced deployment risk. Boldon James is a Microsoft Gold Certified Partner and exclusive “Global Go-To-Market Partner for Secure Messaging”

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