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A Demonstration of Applications over HF

Steve Kille
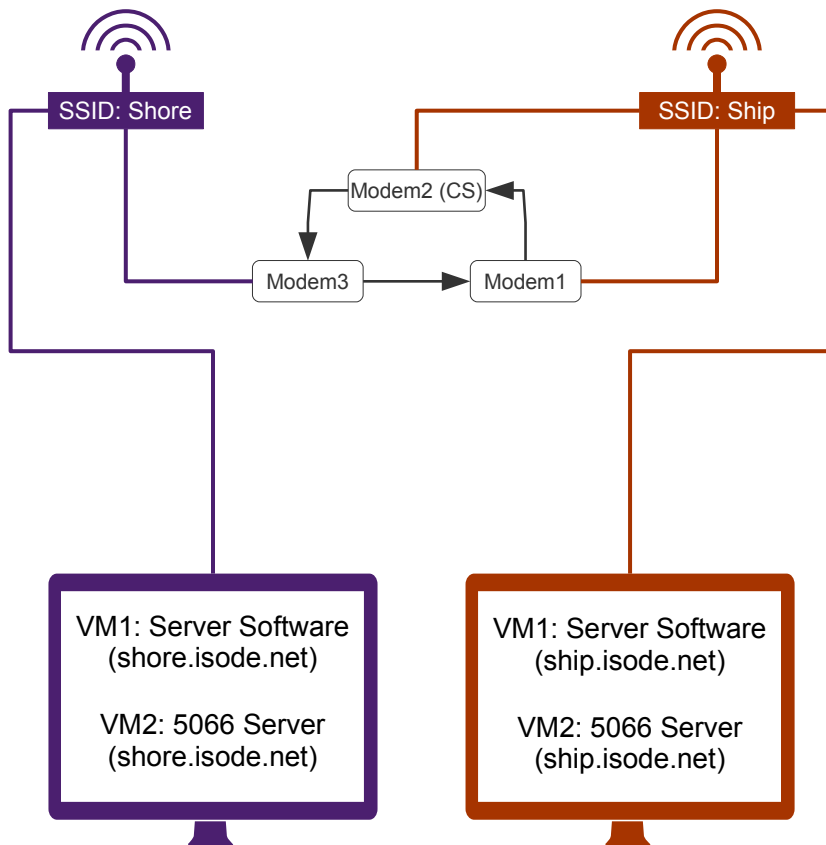
CEO – Isode Ltd

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Demonstration Goals

To demonstrate the proposed LFSN (Long Frame Sequence Number) extensions to STANAG 5506 described in previous talk.

To show that "bulk" and "time critical" applications can usefully co-exist over narrow-band and wide-band HF

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The Demo Scenario

- ▪ "Ship" and "Shore" systems
  - ▪ Connected by WBHF Modems
  - ▪ Each with its own WiFi network
- ▪ Clients running applications connected to servers by WiFi
- ▪ Presentation laptop represents the operator console on "Ship"
  - ▪ Each of the three applications running to show information received from user on ship and shore
  - ▪ Message Management Console to show queued messages
  - ▪ Modem Console to show "transmit/recieve" & "constellation"

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What you will see

1. Applications Running on narrow-band HF

   - STANAG 4539: 2400 bps

   - Three applications with a user for each on ship and shore

2. Message Transfer over wide-band HF

   - MIL-STD-188-110C Appendix D: 120,000 bps

   - Standard STANAG 5066

   - Transfer of 0.5 Mbyte message in 170 seconds

3. Demonstration of proposed STANAG 5066 Extensions

   - As above but using LFSN extensions

   - Transfer of 1.0 Mbyte message in 120 seconds

4. Applications (as in 1.) running over wide-band HF
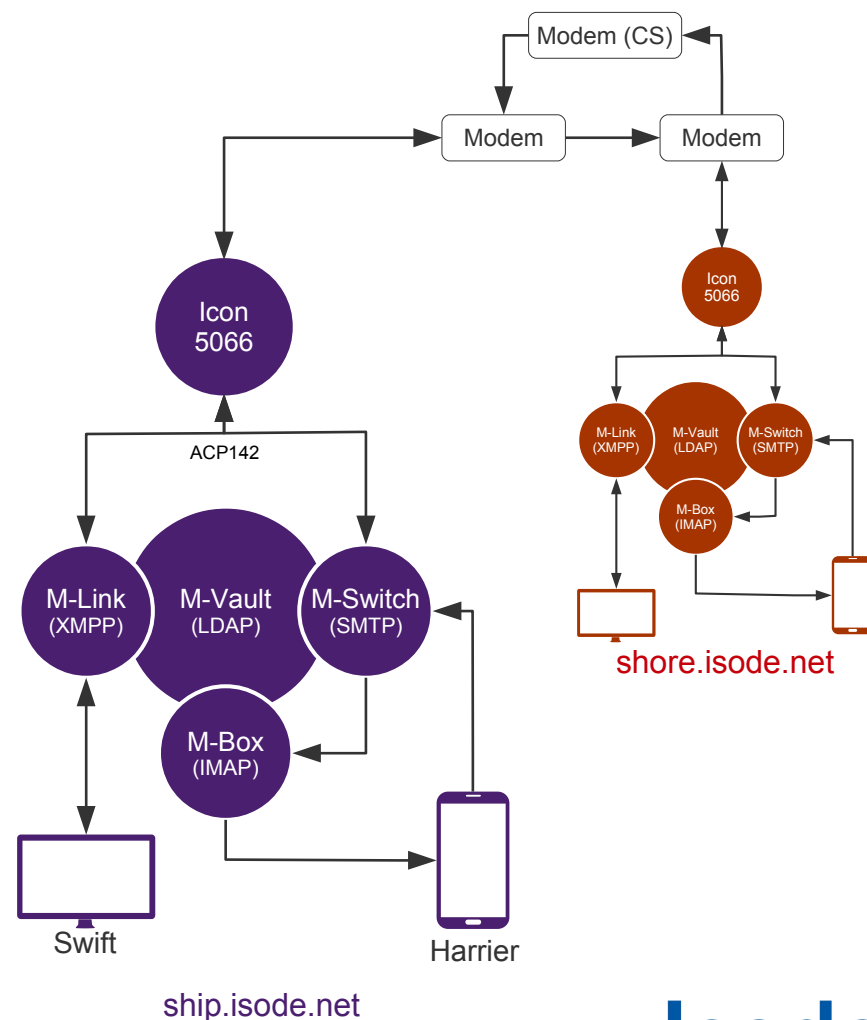
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Demonstration Infrastructure

Modem Infrastructure

- Using Rockwell Collins HSM-2050 WBHF modems (and simulator)

- Perfect link from shore to ship (we have only one channel simulator)

- Channel simulator ship to shore

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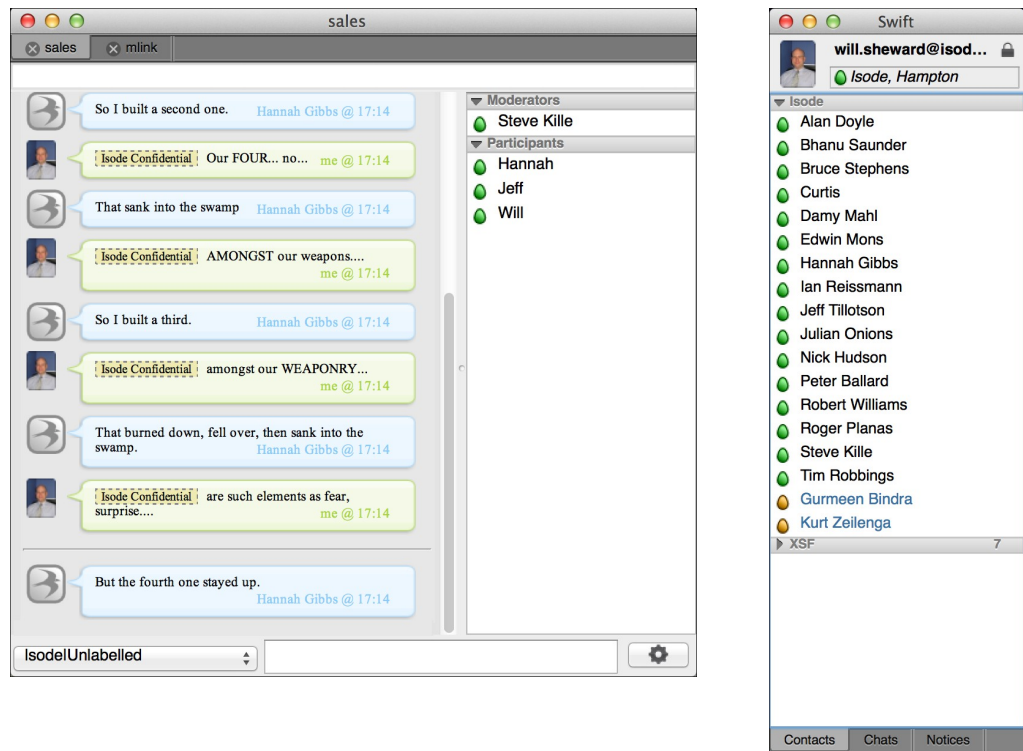
Isode Server Infrastructure (ship & shore)

- Icon 5066 (STANAG 5066 Server)

- M-Switch (Mail Server)

  - SMTP and STANAG 4406 Messaging

  - HF Communication using ACP 142 over STANAG 5066"

- M-Link (XMPP Server)

  - Federated Multi-User Chat (FMUC)

  - HF Communication using RCOP over STANAG 5066

Modem (CS)

Modem

Modem

Icon 5066

M-Link (XMPP)

M-Vault (LDAP)

M-Switch (SMTP)

M-Box (IMAP)

shore.isode.net

Icon 5066

ACP142

M-Link (XMPP)

M-Vault (LDAP)

M-Switch (SMTP)

M-Box (IMAP)

Swift

Harrier

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Demonstration Applications

Application 1: Text Chat

Group Chat

Group chat or Multi-User Chat (MUC) is a critical military application enabling real time information sharing and time sensitive targeting.

XMPP is the preferred NATO standard.

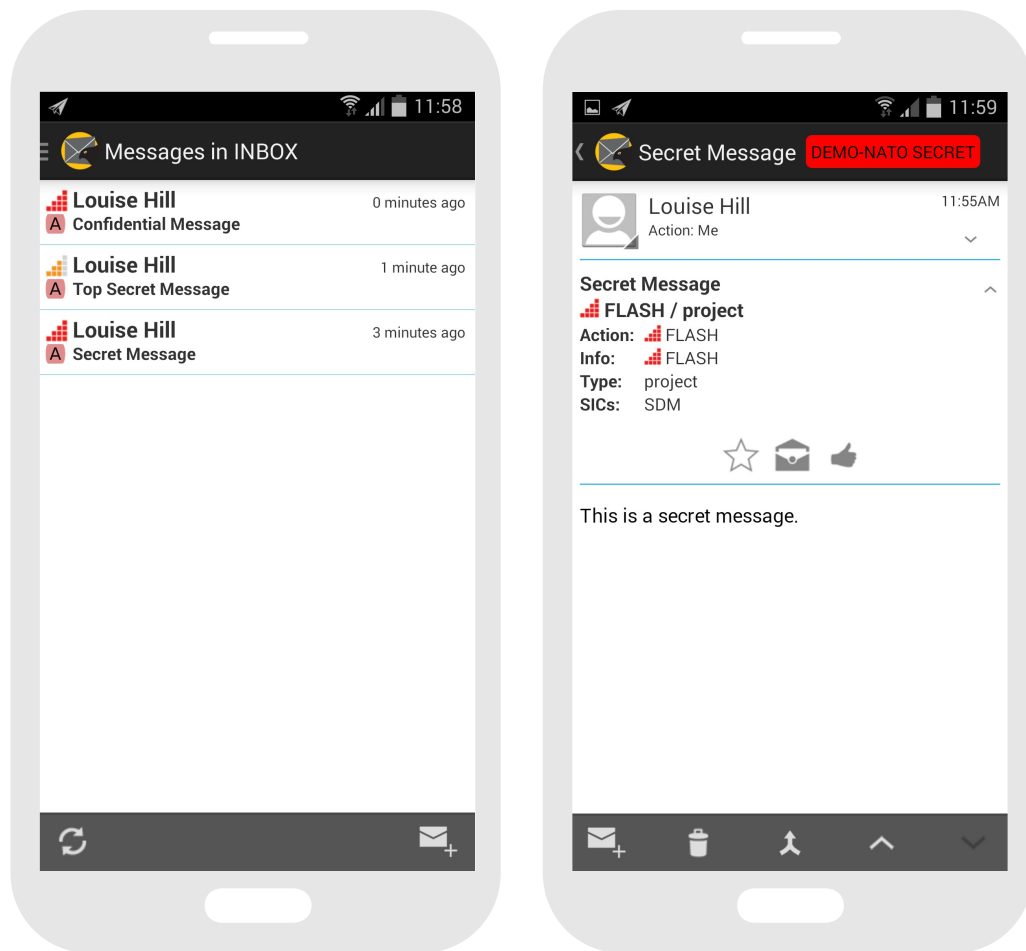**Isode**

Application 2: Real Time Military Forms

FDP (Forms Display & Publishing)

New XMPP standard development to support real time forms to provide NATO Dynamic Chat Forms service.

Forms help ensure information and accuracy in time critical communications involving many parties.

A MEDEVAC form is shown here.

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Application 3: Military Messaging

Harrier Mail Client

Harrier is Isode's new Military Messaging client (for Android devices). This is the first public demonstration of Harrier.

We'll be starting a private beta soon, contact us if you wish to participate or if you're interested in any of the applications shown today (contact details at end of presentation).

Operator View

On the main screen you'll see Outlook with the "BRAID" plugin for formal messaging from SMHS Ltd.

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Who's Who...

The Team

HF information will be shown and discussed on the main screen. If you are interested in a specific application then you're welcome to sit with the relevant person (or quiz them after).

Jim Peters
(Email)
Using the Harrier mail client on an Android phone

Mark Timberlake
(Main Screen - Monitoring)
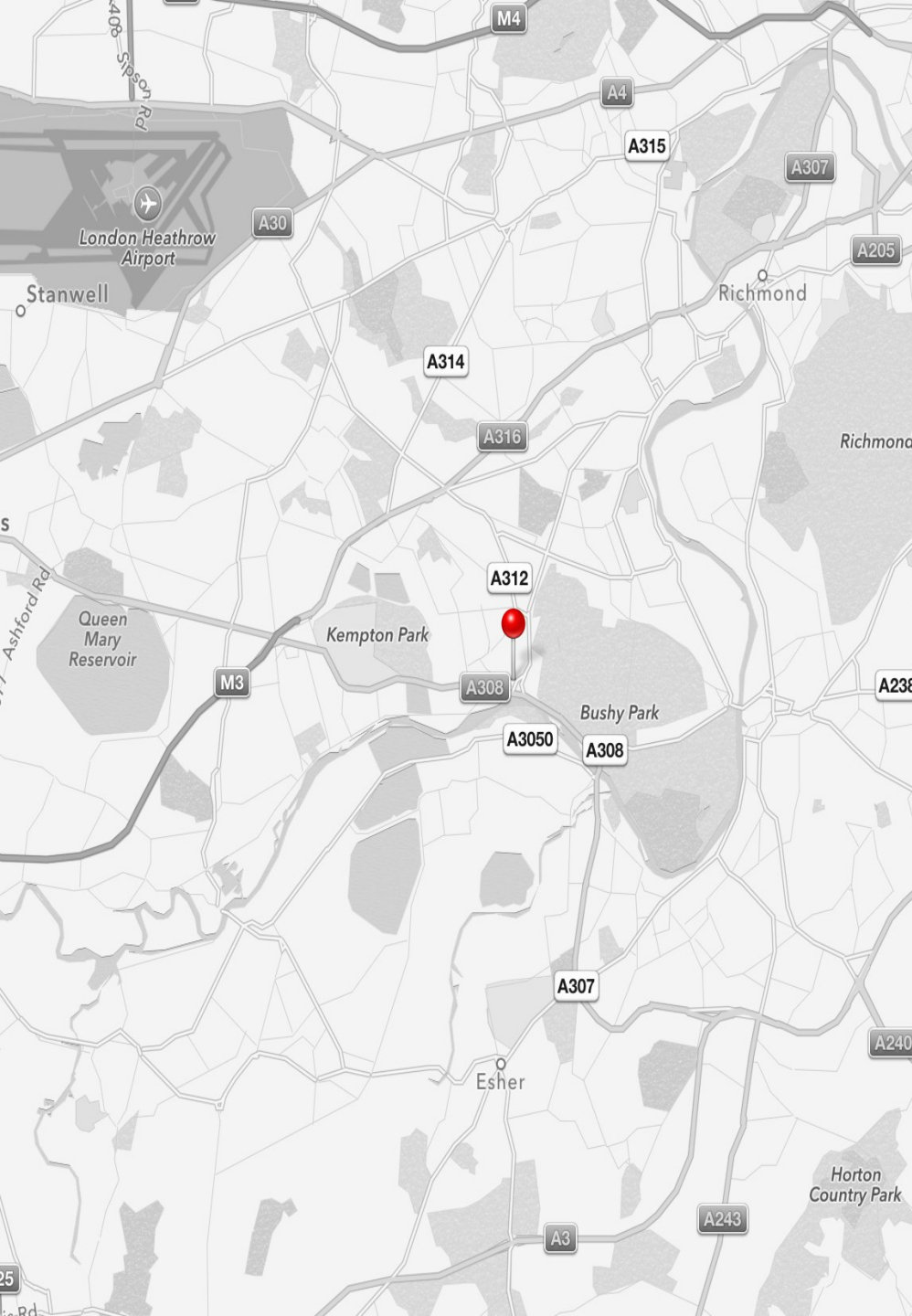Swift XMPP Client, Outlook + BRAID Email, forms receipt using GUI tool on Windows laptop

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Louise Hill
(Text Chat)
Using the Swift XMPP Client on a Windows laptop

Will Sheward
(Military Forms +Text Chat)
Forms submission using a browser, text chat using the Swift XMPP Client on a MacBook

Peter Adamson
(Email)
Using the Harrier mail client on an Android phone

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