"It is not enough to be joint, when conducting future operations. We must find the most effective methods for integrating and improving interoperability with allied and coalition partners........and increasingly, our procedures, programs, and planning must recognize this reality". ~ Joint Vision 2010.
• High to Low End
• High End - US/UK IP Net trial
  - Plan
  - Requirements
  - Security
• Mid - NATO WAN
• Low End Developments
• New guidance on security accreditation issued by J6
High to Low End Capability

• In response to Allied requirement to “plug-in” to US IT-21
• Limitations
  - bandwidth
  - security
• Leads to
  - High End (IT-21 Core - 128kbps) and US/UK trial
  - Low End (2.4kbps) and US/Allies trials
• CINCLANTFLT/C2F requirement to extend NATO LAN into deploying CVN/LHA-LHD & USN NATO Flagships
Example: Hi-Low IP Requirement

- **Basic COP**
- **Secure Email**
- **Voice (Analog)**

**Bandwidth** - Restricted Allies Non-Government Organizations (NOG)

**Primary Imagery**
- **Collaborative Planning**
- **Common Tactical Picture**
- **Common Operational Picture**
- **Message Traffic**
- **Email with attachments**
- **Telemedicine**
- **Command Voice Net (DAMA)**

**Bandwidth - 2.4kbps**

**2.4kbps**
- **Basic COP**
- **Secure Email**
- **Voice (Analog)**

**NATO WAN**

**128Kbps Core Requirement**
HIGH END - US/UK IP NET

• SATCOM dependent
  - UK SHF
  - US SHF/INMARSAT B HSD
• Bandwidth/Data Rate - 128 kbps
• Link between nations - CNE London
• Trial commenced Dec 98
  - extended to HMS INVINCIBLE on 26 Mar 99
  - next phase for UK CVSG deployer in Jan 00
Allied High Bandwidth - Satcom

SIPRNET/ NIPRNET

CNE LAN
London

Multi-level Web Server
(2000?)
GCCS-M/UK CSS
E-mail

Secure E-mail attachments

Northwood
UK Domain
## US/UK IP NET - PLAN

<table>
<thead>
<tr>
<th>PHASE</th>
<th>Email without attach Class</th>
<th>Email with attach Class</th>
<th>Prevent TX of email</th>
<th>ATO Exchange</th>
<th>WEB Browsing</th>
<th>GCCS-M / UK CSS interop</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>Yes</td>
<td>Yes with current mail-guard</td>
<td>Yes - with current mail-guard</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>31 Dec 98</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E2</td>
<td>Yes - with current mail-guard</td>
<td>Yes - gap with current mail-guard &amp; fortezza</td>
<td>Yes - with current mail-guard</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<tr>
<td>30 Nov 99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E3</td>
<td>Yes - New Wang Guard, fortezza &amp; UK mail-guard</td>
<td>Yes - New Wang Guard, fortezza &amp; UK mail-guard</td>
<td>Yes - New Wang Guard &amp; UK mail-guard</td>
<td>Yes</td>
<td>Potentially - US MLS server</td>
<td>Yes - Initial capabili ty to be tested</td>
</tr>
<tr>
<td>30 Apr 00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
US/UK IP NET - Requirements

- Attachments require Fortezza digital signature
  - Fortezza offered to and accepted by UK for “trial”
- US recommended extension of capability to COMUKTG shore HQ
  - Establish link with Arabian Gulf BG
  - Early operational planning/liaison
- US recommended for next UK deployer
  - Increase number of Clients above that of HMS INVINCIBLE
    - Leads to significant increase in rapid exchange of info between warfighters
US/UK IP NET - Security

• KIV7 - 1 year loan to UK (Northwood)
  - expires Nov 99
  - UK to replace with purchase or compatible/interoperable security device

• Secure Mail Guard (SMTP)
  - Emails exchanged automatically between US/UK approved addressees
  - will allow receipt of attachments into US domain if fortezza signed. SMG reconfiguration

• DII High Assurance Guard (X.400)
  - Planned to be in place Apr 00
  - Fortezza still required
NATO WAN EXTENSION

• SATCOM dependent
  - USN SHF for Large Decks
  - USN NATO Flagship INMARSAT B HSD
• Bandwidth/Data Rate - 64 kbps
• Link between USN/NATO - NCTAMSLANT Det/SACLANT TCF using DSCS
• Alternative NATO IVD- limitations
NATO WAN - FITTED

- FY 99
  - USS KEARSARGE - SURFLANT
  - USS BATAAN, J.F. KENNEDY, EISENHOWER, WASP, WASHINGTON & NASSAU (fitting now) - CNO
- NCTAMSLANT Det - HW & S/W
- FY 00
  - USS SAIPAN, TRUMAN, TORTUGA, MOOSBRUGGER, TICONDEROGA, ROOSEVELT & ENTERPRISE - CNO
Low End US/Allies

- Battle Force Email selected
  - SMTP, KG84, JNOS software, Harris 5710 modem (2.4 kbps)
- Installed in CVBG in Persian Gulf for CCDG, US MIO ships and US Support ships
- Installed in COMNAVCENT / C5F Bahrain
  - SMG set-up similar to US/UK IP SMG at CNE
- Installed in Australian, Canadian & NZ ships operating with US MIO Ships
- Being installed in UK DDG for FBE F
Allied Low Bandwidth Information Flow -

SIPRNET/NIPRNET

NOC

HAG/MLS Web server
US shore node eg Bahrain

Secure HF/UHF E-mail & attachments

HAG/MLS Web server
Battle Force E-Mail

• Operational Use
  - ATO
  - METOC
  - Flag/Operations Briefs
  - Archived Message Traffic
  - BG Admin
  - Logistics - Supply Queries
Battle Force E-Mail

- **Hardware**
  - Client PC w/Ethernet card
  - Server PC w/Ethernet card
  - Serial E-Mail card
  - MILSTD 188-110A or STANAG 4285 Modems for HF or UHF LOS use

- **Software**
  - Server - “JNOS” Amateur Radio Shareware
  - Client - SMTP/POP3 compatible
    - Eudora-Pro e-mail software
Battle Force E-Mail

• **Network & Server Operation**
  - Automatic upon net establishment
  - Data conveyed point-to-point like Ethernet
  - Half-Duplex connection
  - Adaptive Link quality
  - “Return to Sender” if delivery not achievable
  - Data compression capable with Pentium
BFEM Connectivity

Issues:
- Stovepipe as outside of ADNS/IT21
- Not network capable yet
BFEM Development

- Software rewrite to Windows 98/NT
- Software rewrite to work with new STANAG 5066 Annex G compliant 9.6kbps modems
  - Move to network capability
- Lab test & field BFEM 9.6kbps capability
- Adopt STANAG 5066 (HF Data Profile)
- Trials/Operational with Allied nations and included in FBE F & G
- Trial at 19.2kbps in Jan/Feb 00
- BFEM development within IT21 matrix
  - Planning fit of 3 MEFs & 4 CVBGs in FY 00
  - Follow matrix for FY01
Security Accreditation - JS Guidance

• Joint Staff Issued Interim Guidance for Temporary Connectivity to DISN Secret Net
  - Accreditation Letter (Interim Authority to Operate)
  - SIPRNET Access Authorization (SAA)
  - Signed consent to monitoring
  - An Interim Topology Diagram
  - MOU between US Command and Ally
  - Training Package
• Changes to Mail Guard, Topology or Ally requires resubmit
ALLIED INTEROPERABILITY

ANY QUESTIONS?