CCRTS Conference

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Network Centric Warfare is the theory.

Net-Centric Operations is the concept.

FORCEnet is the process of making the theory and concept a reality.

“FORCEnet is the operational construct and architectural framework for Naval Warfare in the Information Age which integrates Warriors, sensors, networks, command and control, platforms and weapons into a networked, distributed combat force, scalable across the spectrum of conflict from seabed to space and sea to land.”*

*CNO’s Strategic Study Group - XXI definition from 22 July 02 CNO Briefing
FORCEnet Reference Model

► Supports Development of the FORCEnet Architecture
► Outlines the Elements that Support the Implementation of FORCEnet
► Provides the Foundation to Advance the Re-use of Technology and Component Services
FORCEnet Reference Model Level 0

Application Services

Enterprise Services

Communications & Networks

Quality of Service (QOS)
Information Assurance (IA)
Human Systems Integration (HSI)
Systems Mapped to FORCEnet Model

- Application Services
  - Quality of Service (QOS)
  - Information Assurance (IA)
  - Human Systems Integration (HSI)

- Enterprise Services
  - Teleport

- Communications & Networks
  - DSCS
  - NIPRNET
  - Link-16

- ACDS

- DCGS-N

- NMCI
Services Mapped to FORCEnet Reference Model

Application Services
- Service A
- Service B
- Service C
- Service D
- Service E
- Service F

Enterprise Services
- Service B1
- Service B2
- Service a
- Service b
- Service c
- Service e

Communications & Networks

Quality of Service (QOS)
Information Assurance (IA)
Human Systems Integration (HSI)
FORCEnet Technical Views
“The Building Code”

Technical View Revised Every Six Months to Keep Pace With Changing IT Standards in the Commercial Market
FORCEnet Standards Categories

Categories
- Communications and Networks
- Enterprise Services
- Applications
- Human System Integration
- Information Assurance
- Quality of Service
Standards Selection Process

1. Identify a standard
2. Node Level? (Yes/No)
3. Enterprise Level? (Yes/No)
4. Mandated? (Yes/No)
5. Emerging? (Yes/No)
6. Working Group
7. Compile/Refresh Standards List
8. TV-1 and TV-2
9. FIT
10. FORCENet Architecture
11. DISR On-Line
12. NESI/OA/Other

FORCENet Applications
Networks
Comms
QOS
HSI
IA
### Data Management Services

**SQL Database**
- Note—OACE lists several additional SQL STDS
- SQL Data Base Management Standards—Sharing of data between applications; application clients and database servers.
- ISO/IEC 13249-3-1999 Management of Multimedia
- Supports independent management of data shared by multiple applications.
- Supports exchange of data between applications, and to/from external environment.
- Support SQL Multimedia and application packages

<table>
<thead>
<tr>
<th>Fn Service Category</th>
<th>Standards</th>
<th>Function of the Standards</th>
<th>Services of the Standards</th>
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<td>Data Management Services</td>
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Allied and Coalition

► Allied and Coalition Interoperability Standards
► List of IT Standards
► STANAGs and Commercial Standards
  – Combined Operation Wide Area Network (COWAN)
  – CENTRIXS
FORCEnet Process – Bringing it all Together

“As Is”

System A

System B

System C

System D

MIGRATE TO

Modeled “Target”

SVS-8 Services Evolution Description describes the overall strategy for migrating FORCEnet subsumed systems.

SV-8 Systems Evolution Description describes the incremental migration of POR systems.

GUIDED BY

TV-1 Technical Standards Profile describes applicable standards

FOCUSED BY

Incremental Update

TV-2 Technical Standards Forecast forecasts expected changes in standards over time
Summary

► The reference model provides a framework for program managers to migrate systems to the FORCEnet target architecture

► FORCEnet provides the target architecture that programs or systems ‘plug into’
  – FORCEnet is the Navy instantiation of the Global Information Grid (GIG)
  – FORCEnet Operational Views (OVs), Systems Views (SVs) and Technical Views (TVs)