A NATO Perspective on CENTRIXS

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**Introduction / Caveats**

- Study undertaken to investigate information exchange between CENTRIXS and the NATO coalition support systems
  - NATO Network-Enabled Capability
  - Information Information Exchange Gateway
  - NATO Secret WAN (NGCS/CRONO/NIDTS)
  - Still evolving

- CENTRIXS is still evolving
  - A number of (very influential) people & organizations have strong (and sometimes conflicting) perspectives on the future of CENTRIXS
- Based on review of *published, public-domain documents*
What the Customer Asked For

“two boxes and an arrow in both directions”
Network-Enabled Capability / Network-Centric Operations

• Changes information exchange within a Coalition
• Ubiquitous, generic client, not an application-specific client that requires adjudicated acquisition, special support components or expert operators
  ● E.g., Browser
• Information discovery and data pull, not data push
• Self describing data structures
  ● Data + metadata (e.g., XML)
Solution Proposed to Client

NATO Secret

Network

2nd Fleet Aircraft Carrier
Sat Com

DMZ-1

DMZ-2

Directory Services Agent
Messaging Transfer Agent

Boundary Protection Device

Boundary Protection Device

HTTP

Collaboration @ Sea
Web proxy

Wisdom Portal

Collaboration @ Sea

Demand Document Replication

Domino Sametime Chat service

X.500 Directory LDAP

X.400 Messaging

Messaging Transfer Agent
Directory Services Agent

Command 2nd Feet -
United States

2nd Fleet Aircraft Carrier
Sat Com
Another View of the Same Thing
Introduction of RELNATO LAN
Introduction of Guards
Alternate approach – air gap
Network-Level Reality Check
PLEASE NOTE !!! – This diagram illustrates possible future connectivity; many of the illustrated components do not yet exist in the field and may be subject to change.
Sidebar – NGCS Node Detail

Project 24, Bi-SC AIS
Sidebar – Email over NGCS

National NS User

Message to

NS/Rel
KFOR

National Crypto

NATO-cleared
Secret User

in NATO Nation

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Information Flow and the IEG Concept
PLEASE NOTE !!! – This diagram illustrates possible future connectivity; many of the illustrated components do not yet exist in the field and may be subject to change.
CENTRIXS Features & Issues

- CENTCOM/PACOM CENTRIXS tend towards centralized services
  - Centrally-managed email/directory/web
- GRIFFIN CENTRIXS tends towards ISP-style services
  - Single (set of) intermediate email/directory/web servers
- Service discovery and directory exchange still missing
  - Security/crypto services (key exchange / management)
Potential CENTRIXS – NATO Interconnection
How It (Sort Of) Works Today
Conclusions

• IEG-based information flow between US and NATO is viable
  ● Extension of IEG capability beyond Bi-SC AIS Core Services

• US view of release to NATO implies RELNATO components / LAN
  ● Information passed from US-only LAN to RELNATO LAN will likely require review-and-release, i.e., guards or air-gap

• Latency-sensitive data streams (e.g., Chat or Distributed Collaboration) will present special challenges
  ● JWID 2004 experiment with ISSE guard extensions may provide insight

• Insight into operation of IEG with GRIFFIN, COWAN, CBIS and/or COSINE could prove to be worth the effort alone
The Bottom Line

- CENTRIXS changes US connections to Treaty and Coalition Partners
- IEG/NGCS changes NATO connections to Nations and Coalition Partners
- Multiple Coalitions with different constituent Nations and Organizations exist simultaneously (this trend will continue)
- Network-Enabled Capability / Network-Centric Operations changes how information is exchanged/shared within a Coalition
  - Ubiquitous, generic client (e.g., Browser)
  - Information discovery and data pull, not data push
  - Self describing data structures – data + metadata (e.g., XML)

- We have to solve the interconnection problem in order to support the information exchange/sharing aspirations of NATO Network-Enabled Capabilities (NNEC)
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