

A NATO Perspective on CENTRIXS

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to the Internet

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

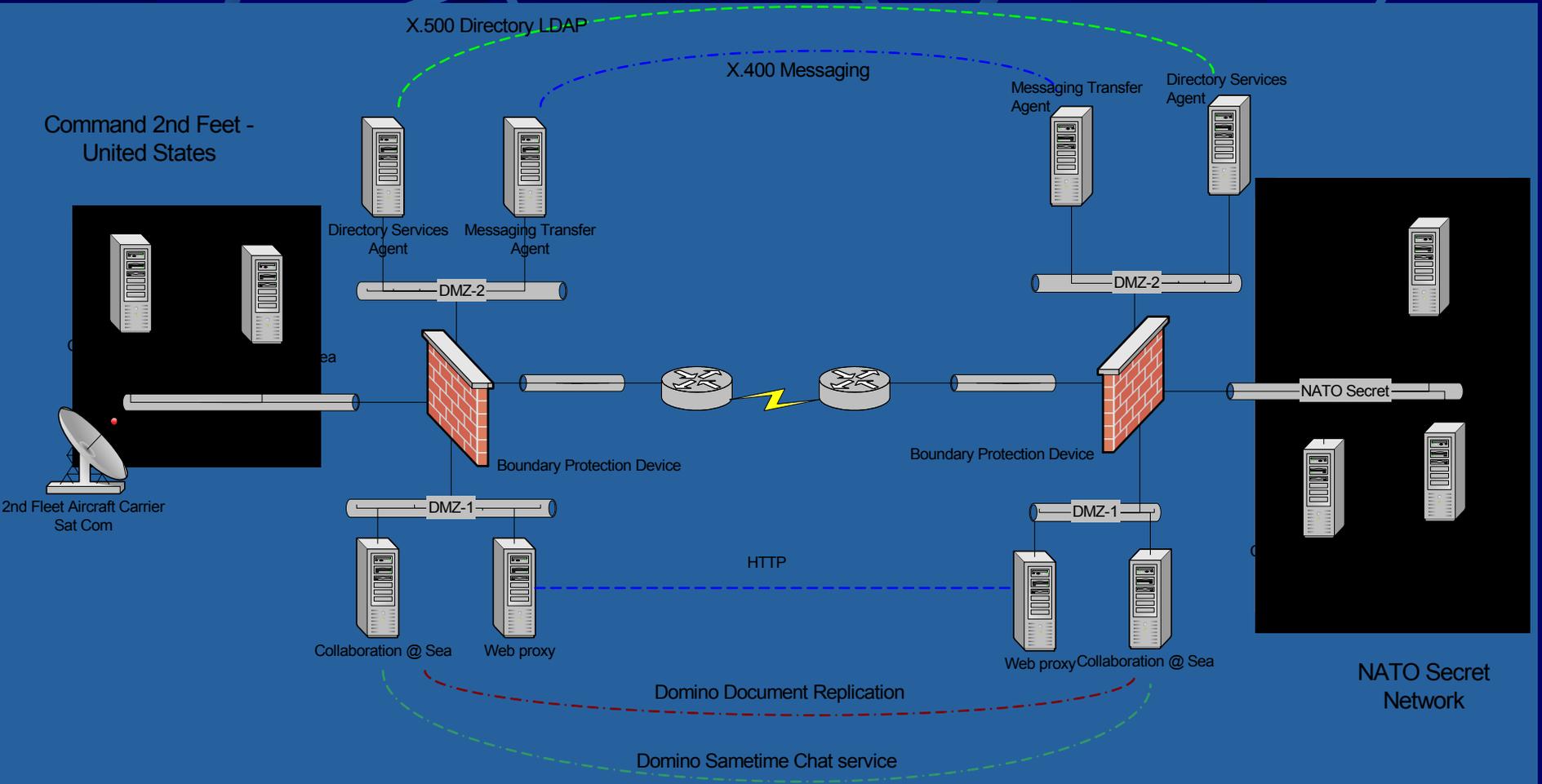


“two boxes and an arrow in both directions”

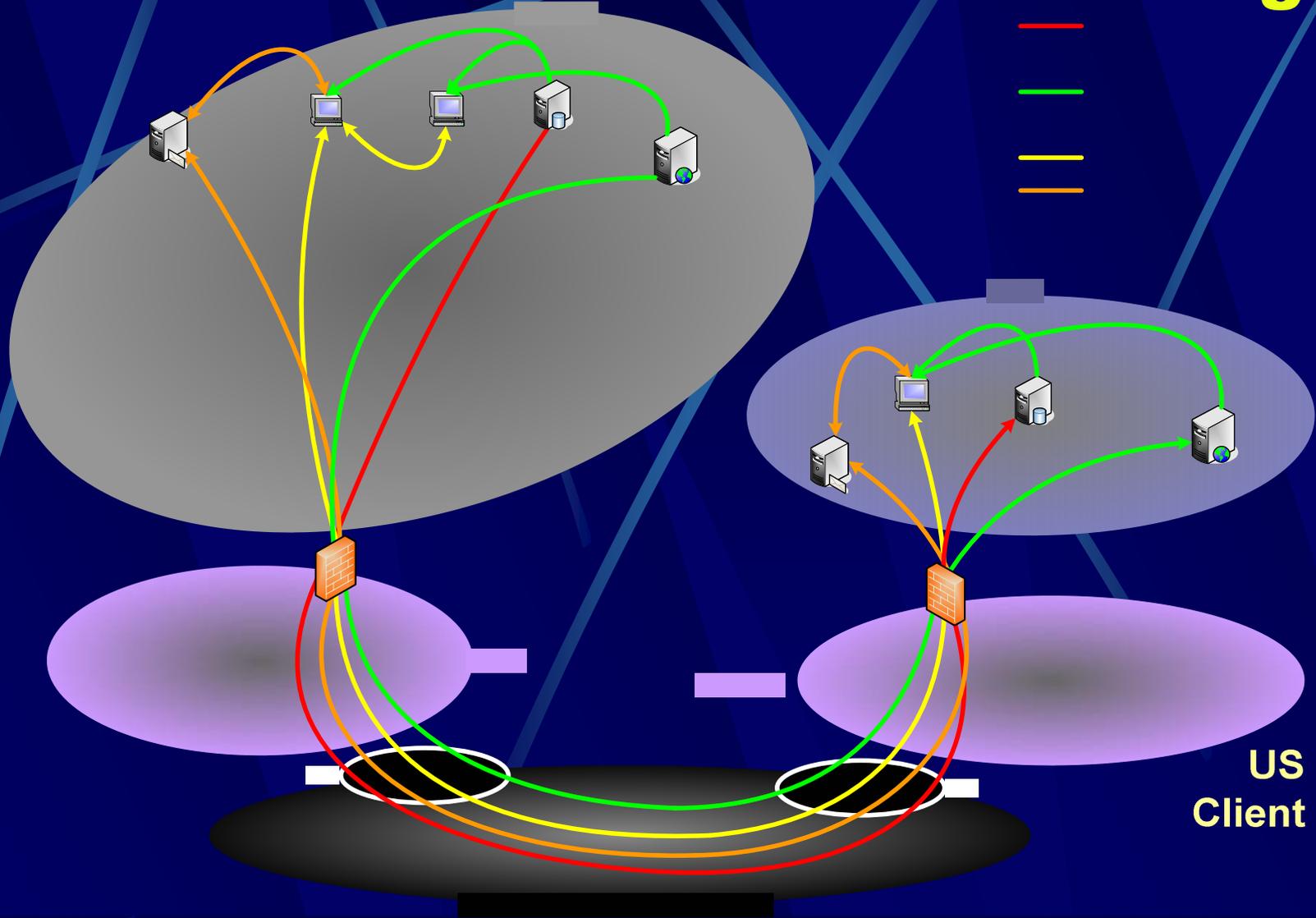
Network-Enabled Capability / Network-Centric Operations

- **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

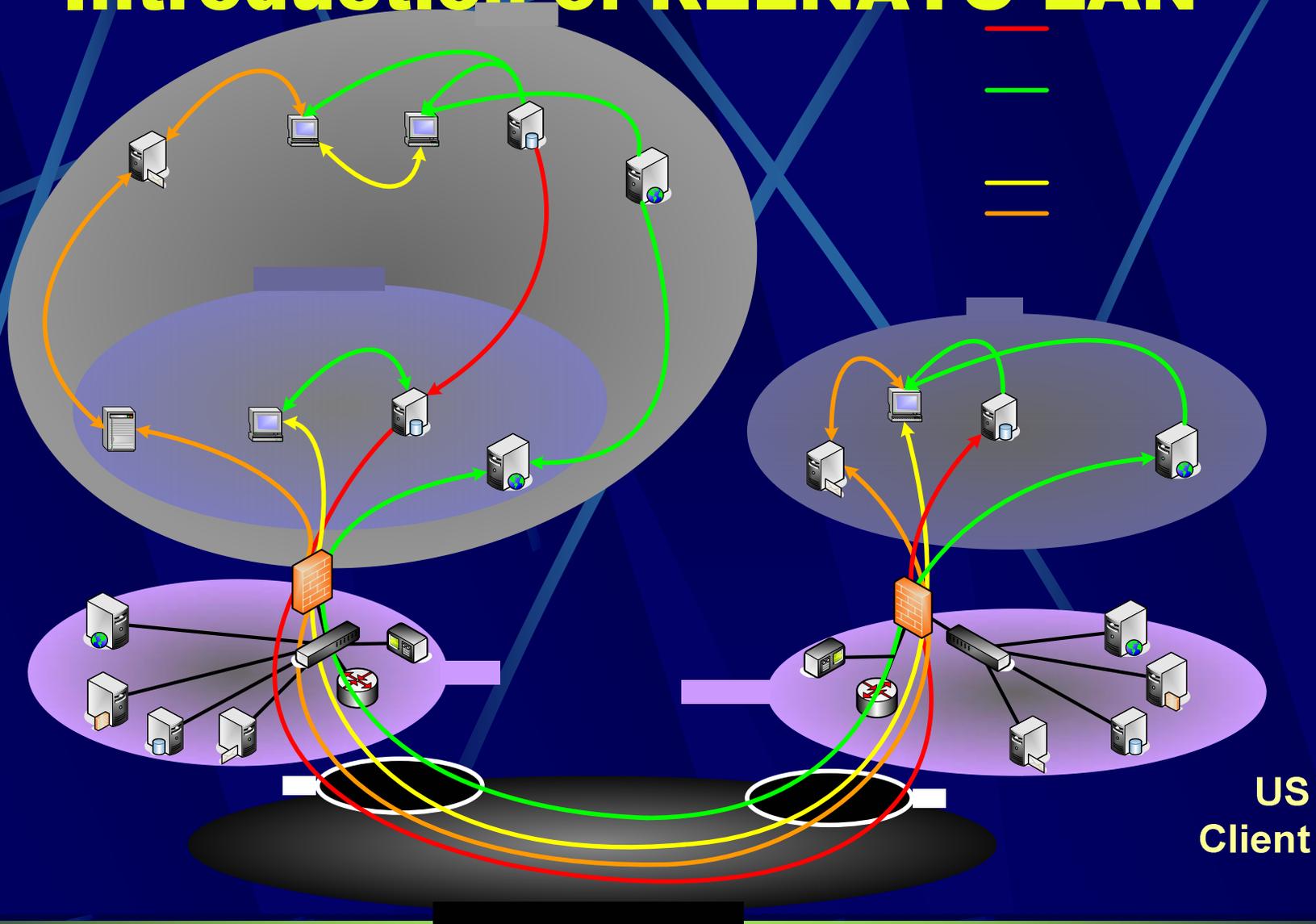


Another View of the Same Thing

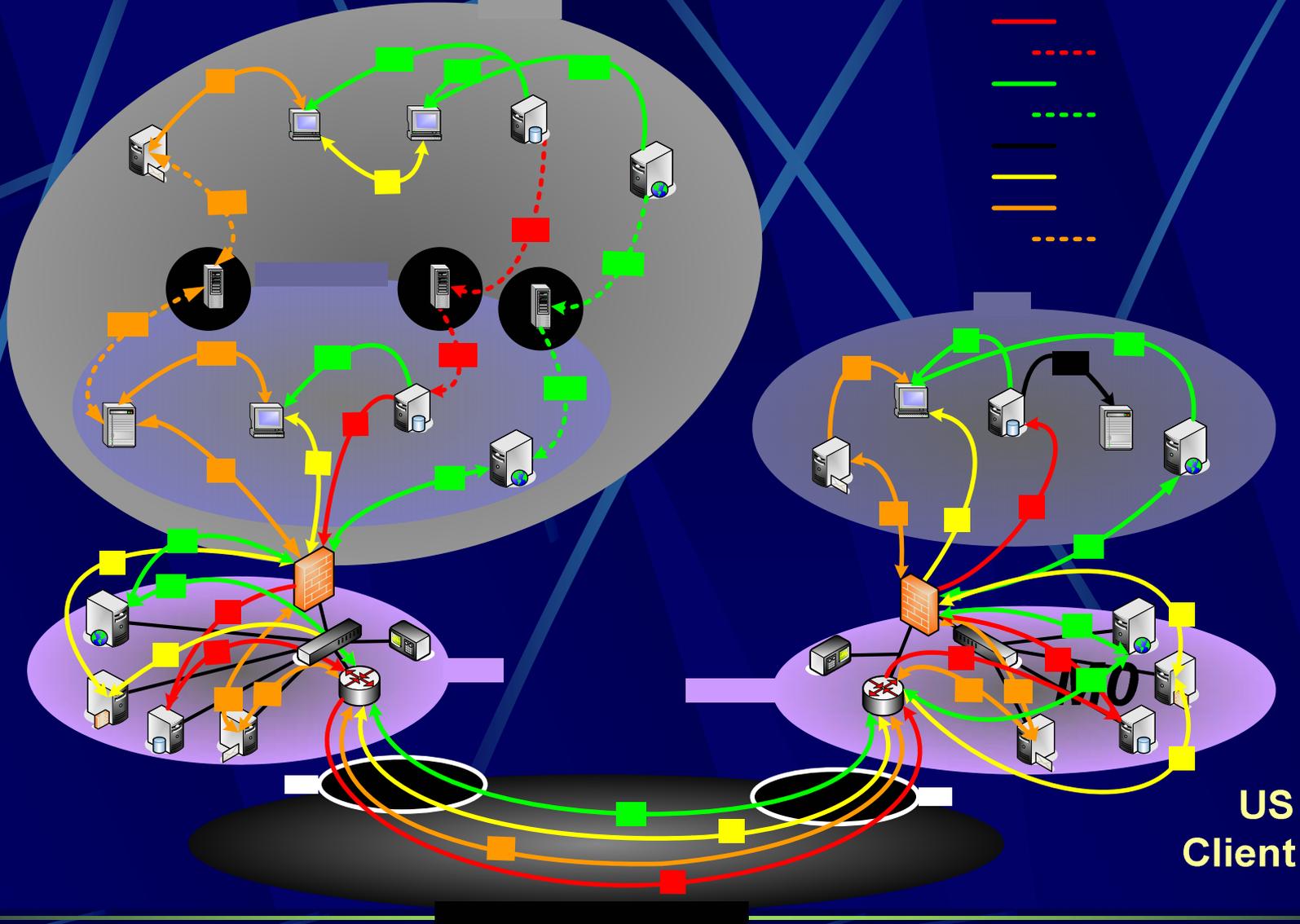


US
Client

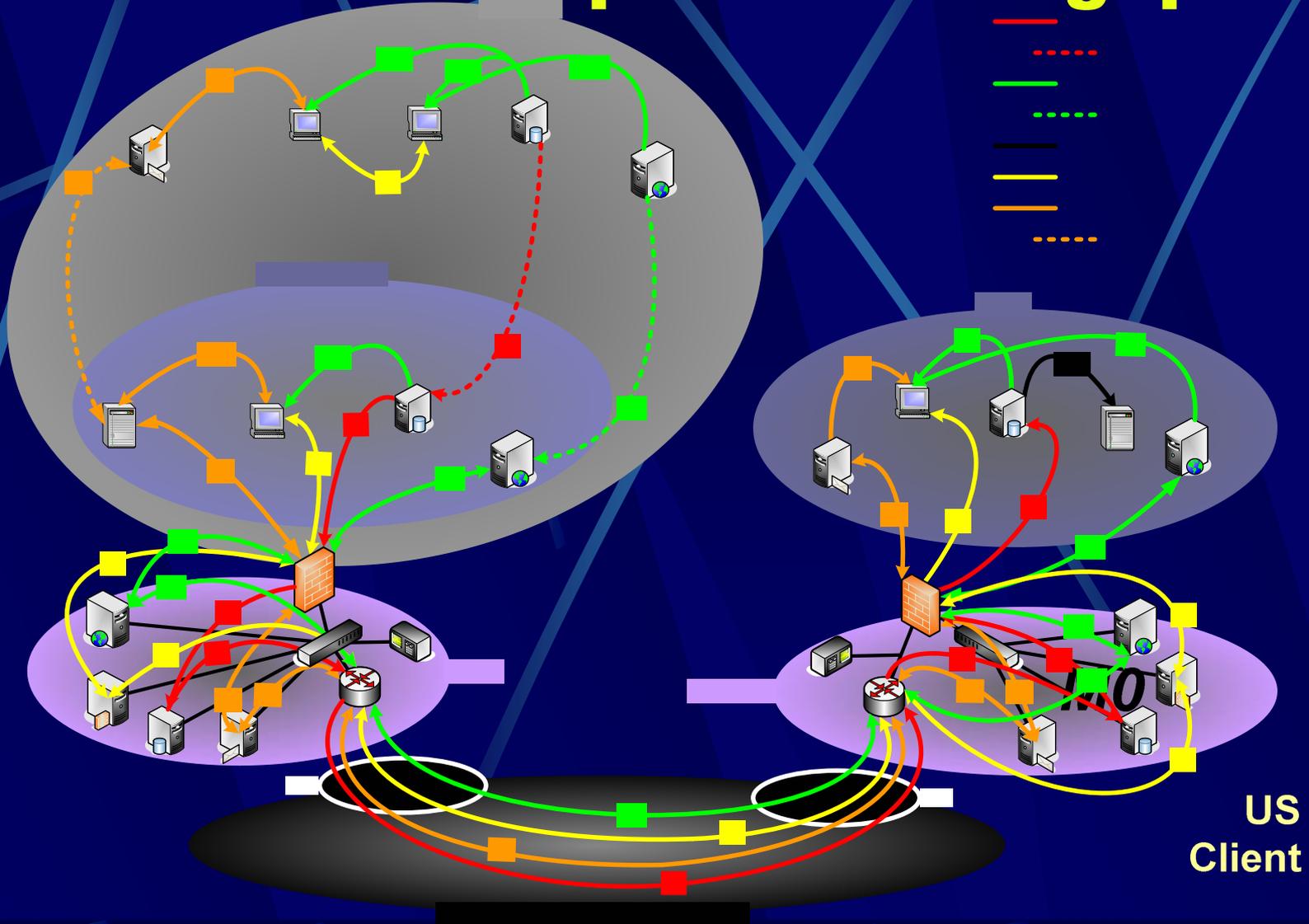
Introduction of RELNATO LAN



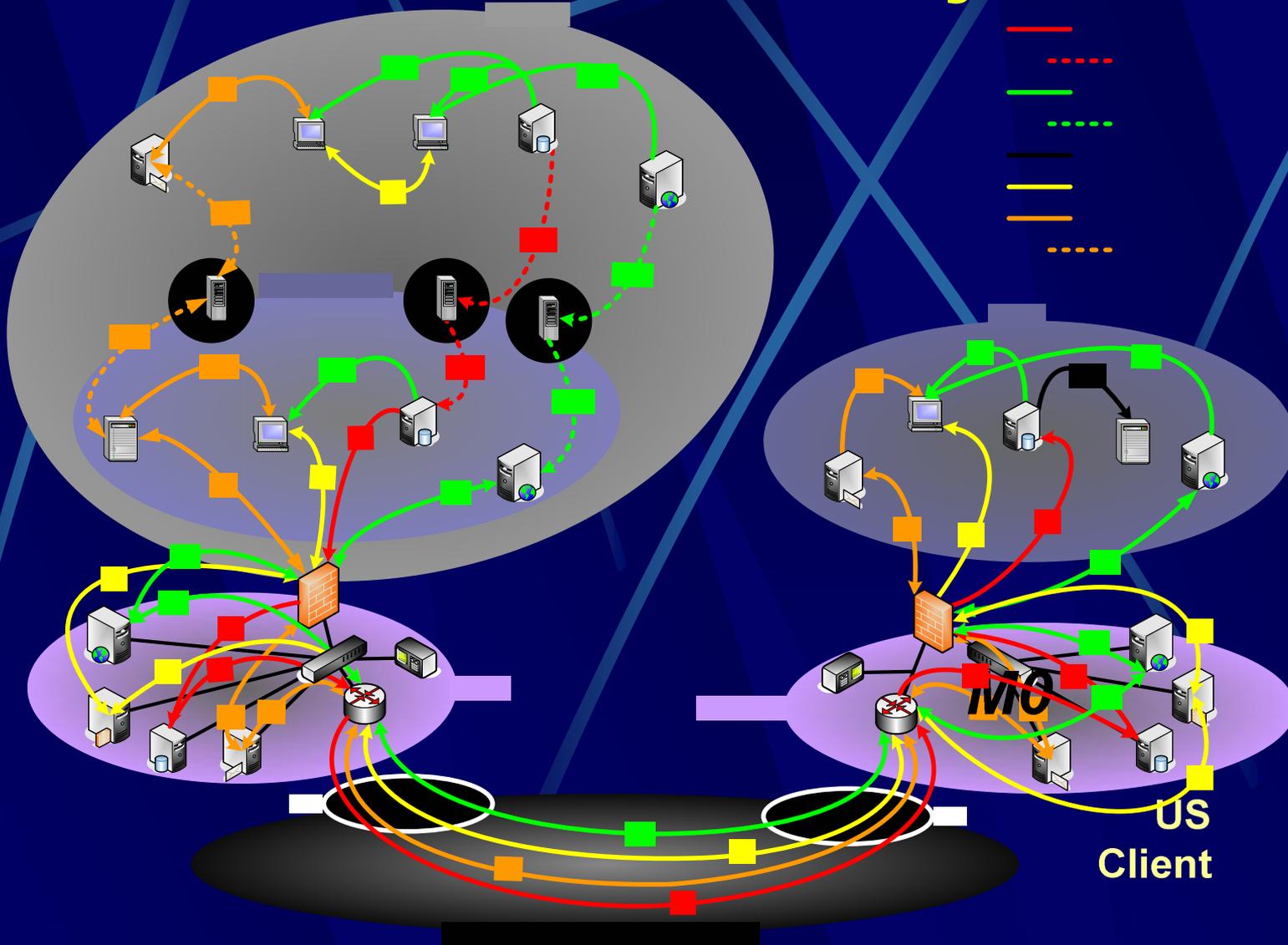
Introduction of Guards



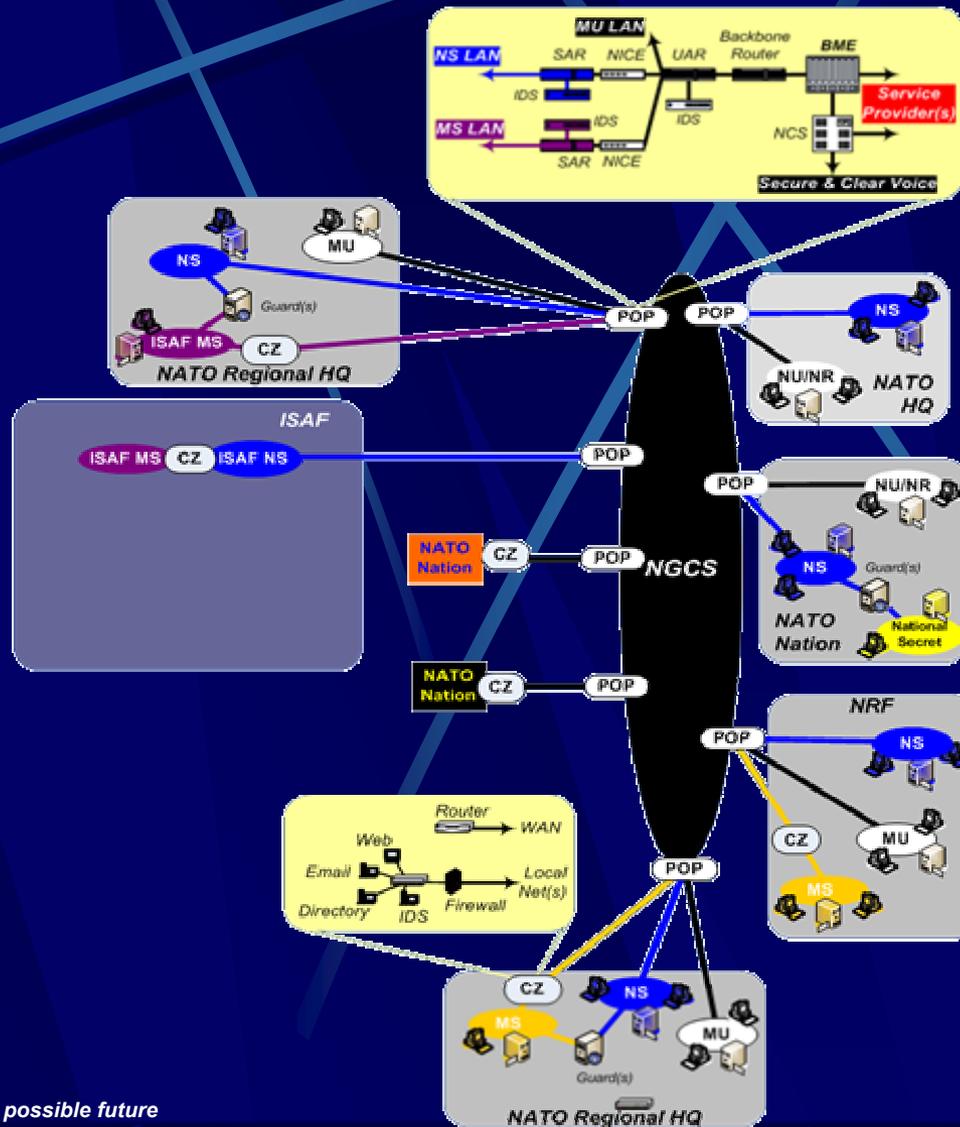
Alternate approach – air gap



Network-Level Reality Check

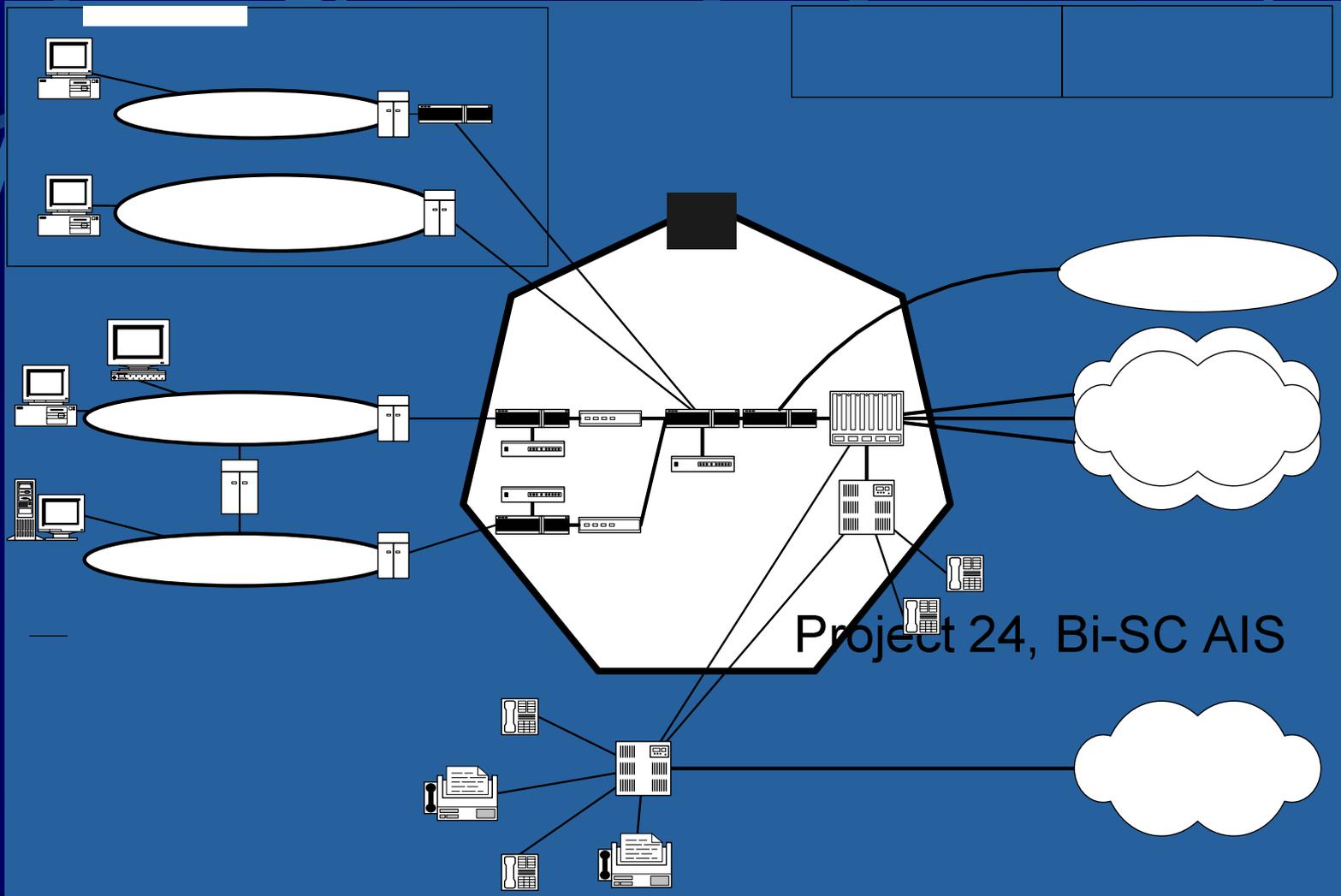


NATO Coalition Information Exchange



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

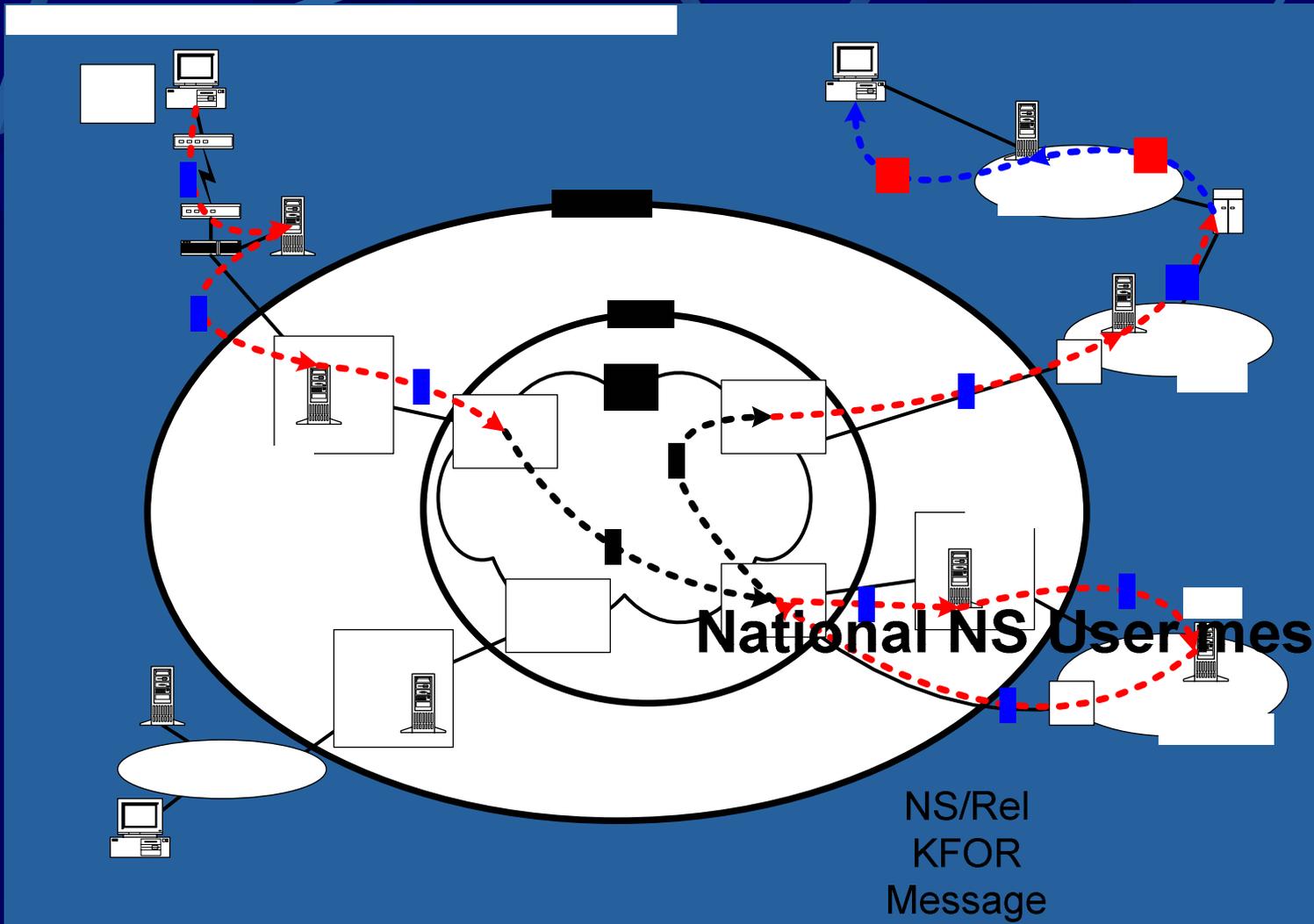
Sidebar – NGCS Node Detail



FAS3

NR/NU LANs

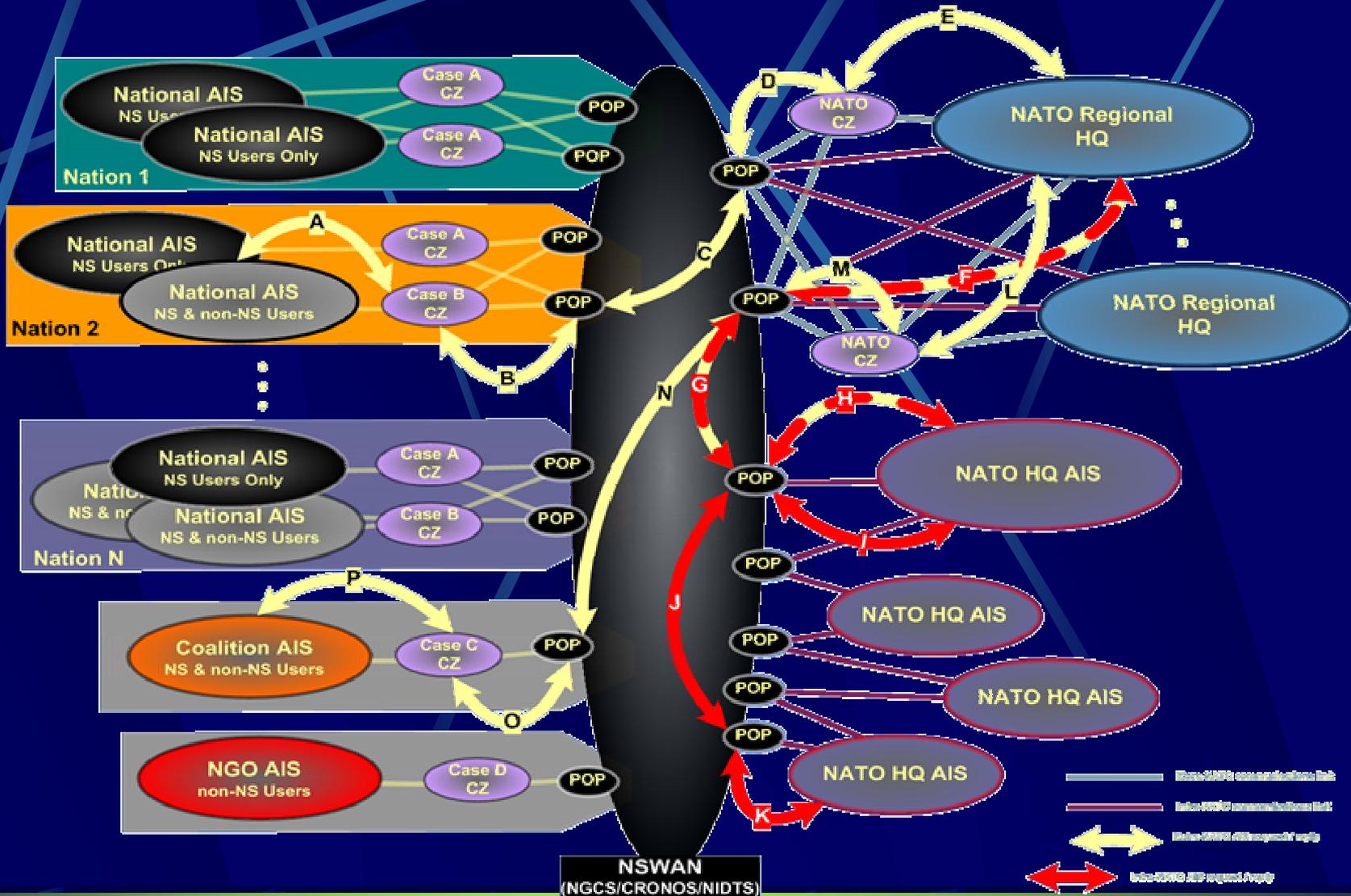
Sidebar – Email over NGCS



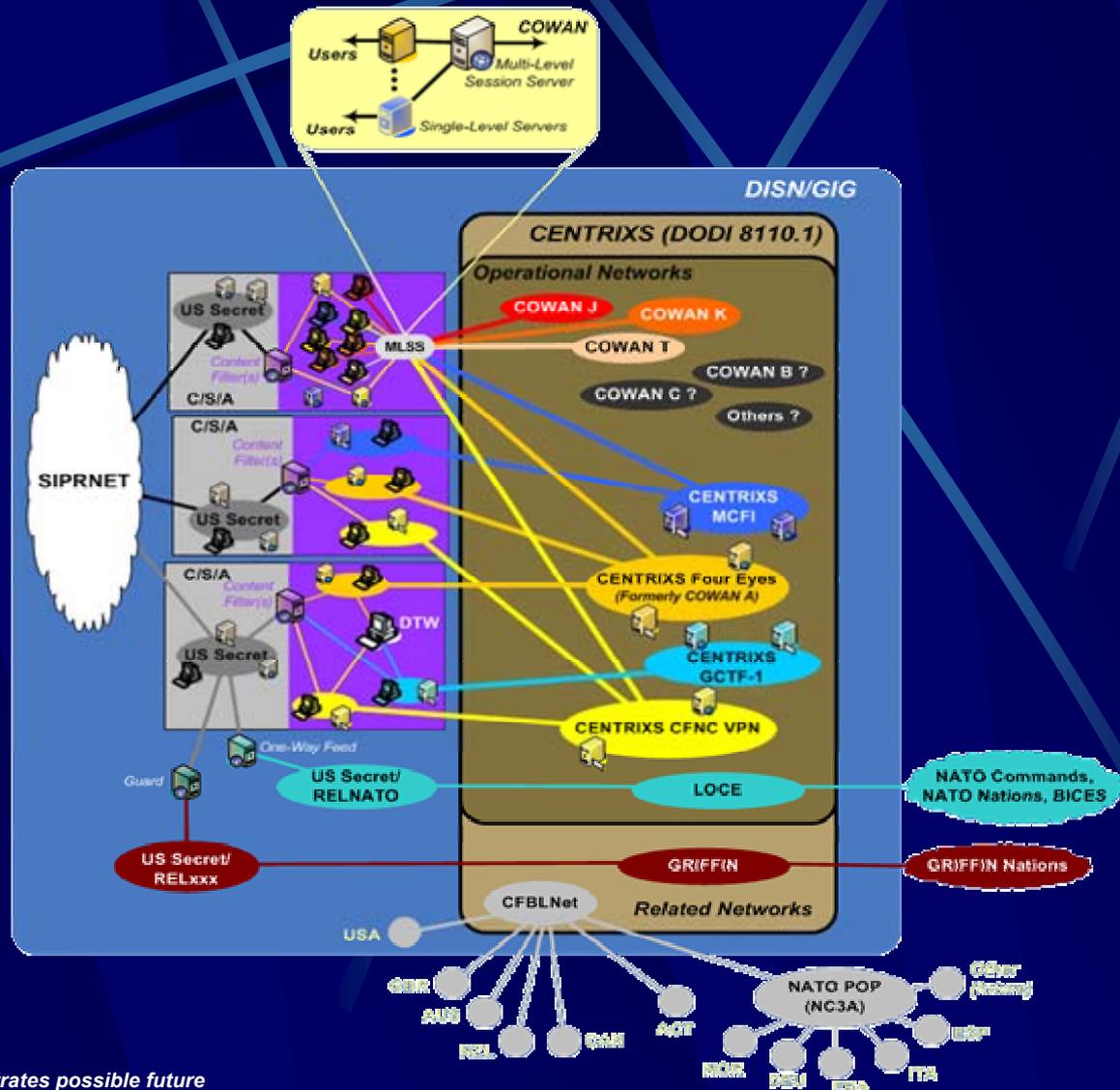
National NS User message

NATO-c
Secret U
in NATO

Information Flow and the IEG Concept



MNIS CENTRIXS Information Sharing

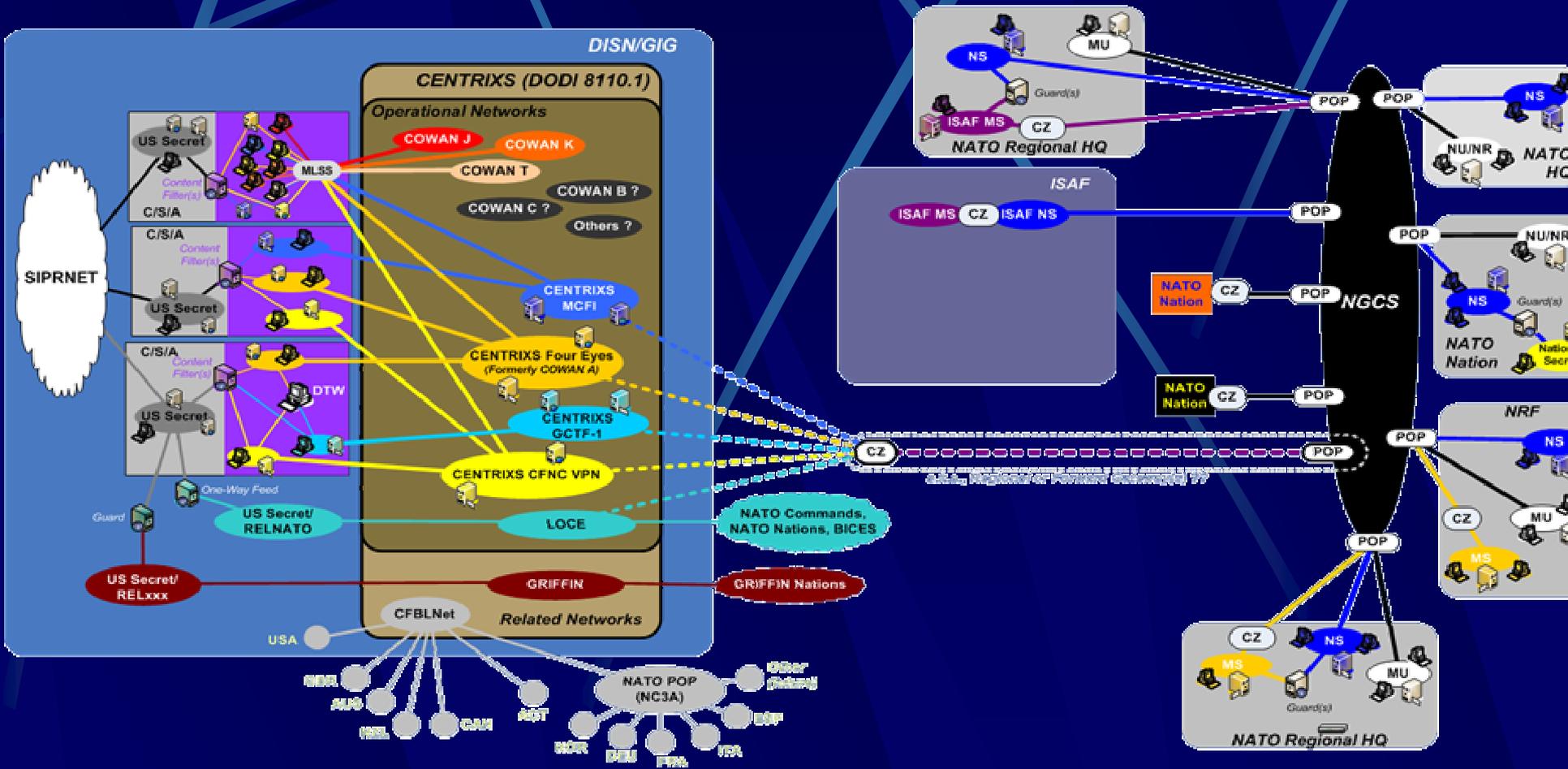


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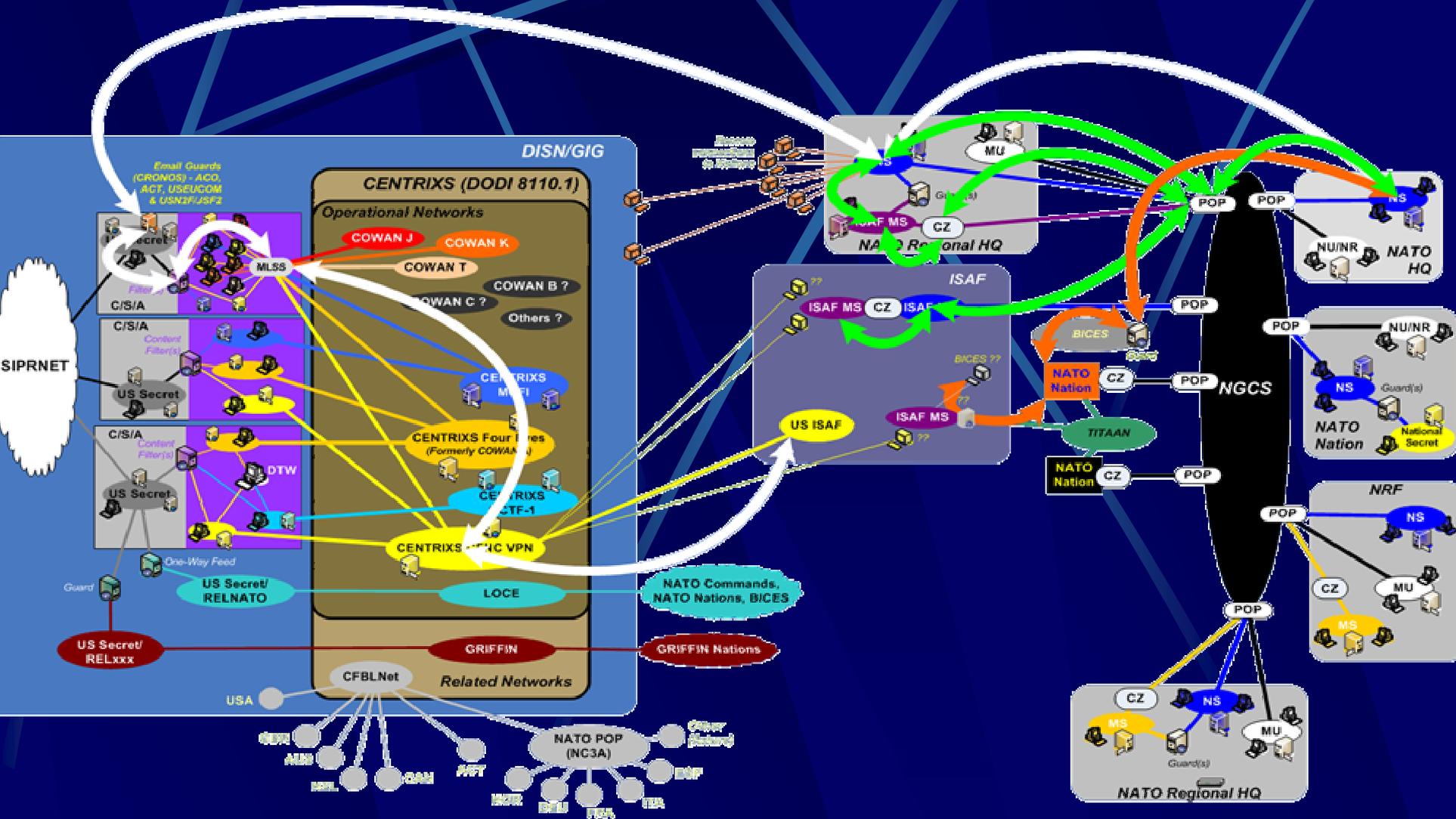
CENTRIXS Features & Issues

- **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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