“From Assets to Services - Capability Delivery in the 21th Century”

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Session 2 – New Generation C2 Services
“From Afghanistan Mission Network to Federated Mission Networking”

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Outline

1. AMN Background
2. Federated Mission Networking
3. FMN Milestone 1
Networking in the Bad Old Days

Stand Alone Network

Bağımsız Ağ

Enkeltstående netværk

Autónomo Δίκτυο

Alleenstand Netwerk

Niezależne sieci

Autonome réseau
A robustly networked force improves information sharing.

Information sharing enhances the quality of information and shared situational awareness.

Shared situational awareness enables collaboration and self-synchronization, and enhances sustainability and speed of command.

These, in turn, dramatically increase mission effectiveness.
Afghanistan Mission Network

NATO provides the AMN Core
Dedicated National Extensions
Centralized Network Administration
Same security level
CoNNECtingForces

- Provide graduated options for participation
- Exploit existing capabilities in the best way
- Save resources by sharing services
- Ensure being constantly federation enabled
- Enable federated mission threads
- Synchronize capability evolution of potential coalition participants
- Enables NATO to act as a mission partner for nations
Federated – there is no one king. Participants commit to common processes, organisation and provide materiel.

Mission – operational (including exercises); scenario driven.

Networking - interaction of people, processes, and technology to exchange information and/or services connected forces.
Federated Mission Networking – What is it?

**Governance** – organizations and processes to govern and manage the Framework and each Mission Network Instance – The “Culinary Institute”.

**The Framework** – Pre-planned “stuff” to minimize the time and money required to generate a mission network in a federation – The “Cookbook and the Pantry”.

**Mission Network Instance(s)** – one of a kind federated network(s) (people, processes, technology) tailored for a specific operation (or exercise) and using the pre-planned information and arrangements (‘the stuff) in The Cookbook/Pantry – The “Dinner Party”.
Environments of the FMN Capability

1. Verification and Validation
2. Collective Training
4. Mission Execution
Options for participating in a Mission Network

Capability Levels

- **A. Network Element**
- **B. Network Extension**
- **C. Hosted User**
- **Z. Other Entities**

Nation and Organizations will determine their level of involvement in each Mission Network based on their goals.

Options describe a level of participation in a network instance and not just capability.
Concept: FMN Capabilities by Milestone

**FMN Framework**
(Governance, Life-cycle Mgt....)

- **Col** (Service Orientation and Data Centricity)
- **Multi-level Security on Protected Core Network**

**Major Live Exercise 2015**

- **Col (AMN: COP/JISR)**
- **Human to Human**
- **Single Security Domain with Gateways**

**AMN Scope**

- **NRF Scope**
- **AMN Scope**

**ADN Mgmt.**

- **AMN Gov**

**FMN Framework Plan**

**Milestone 1**
- **2015 -2017**
- **Spiral 1**
- **Spirals 2.1…2.x**

**Milestone 2**
- **2020+**
- **Spiral 3.1...3.x**

**Milestone 3**
- **2025 -2030**

**Human to Human CoI**

- (AMN: COP/JISR)
- (COP/JISR SOA)
- (Service Orientation and Data Centricity)
- **Additional Col Capabilities**
Federated Mission Networking – How?

NATO FMN Implementation Plan

- Develop NATO led implementation plan (NFIP) with:
  - a federated evolution & development line, and
  - a federated operational readiness line.
- Develop, provide & evolve a “manual” with common standards, templates, procedures and processes.
- Provide & evolve a standing NATO FMN capability
- Execute federated governance & management.
FMN Milestone 1: applying AMN lessons learned

Replicate the good parts of the AMN and make it repeatable and:

1. simpler ► less joining options
2. robuster ► redundant peering / TACOMS
3. faster to set-up ► template solutions
4. easier to manage ► common Svc. Mgmt.
5. more flexible ► no dependency on a single core
6. easier to share information ► data labelling
7. more cost effective ► cross provisioning of services
Specification for FMN Milestone 1

► Spiral 1 Requirements Specification

• Reference Architecture
• Interoperability Standards Profile
• Instructions & Configuration Templates
Minimum User Services for Milestone 1

The following "Human to Human" Collaboration Services must be made available to support mission agnostic information exchange requirements:

2.Informal Messaging Services (eMail)
3. Text-based Collaboration Services (Chat)
4. Video-based Collaboration Services (VTC)
5. Audio-based Collaboration Services (Voice)
6. Web Platform Services (incl. Browser Applications)

In addition interoperable **Situational Awareness and ISR services** are required to support nearly all military functions.