



NATO Communications and Information Agency



The Association for Communications,
Electronics, Intelligence & Information Systems Professionals



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

25-27 March 2014

Bucharest, Romania

NATO C4ISR Industry Conference & TechNet International 2014

“on the occasion of the 10th anniversary of Romania’s accession to NATO”



NATO Communications and Information Agency
Agence OTAN d'information et de communication

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

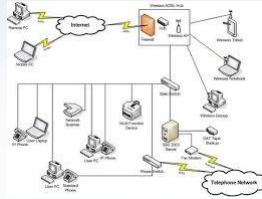
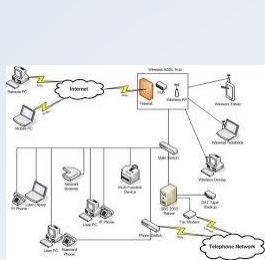
Dr Gernot FRIEDRICH
26 March 2014

Outline

- 1. AMN Background**
- 2. Federated Mission Networking**
- 3. FMN Milestone 1**

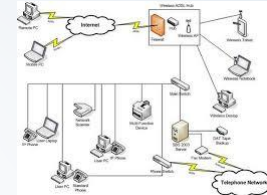


Networking in the Bad Old Days

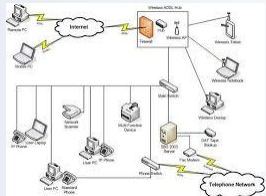


Enkeltstående netværk

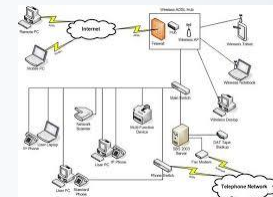
Stand Alone Network



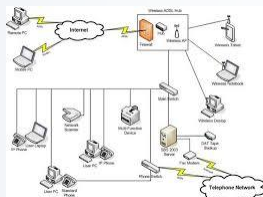
Αυτόνομο Δίκτυο



Bağımsız Ağ



Autonome réseau



Alleenstand Network



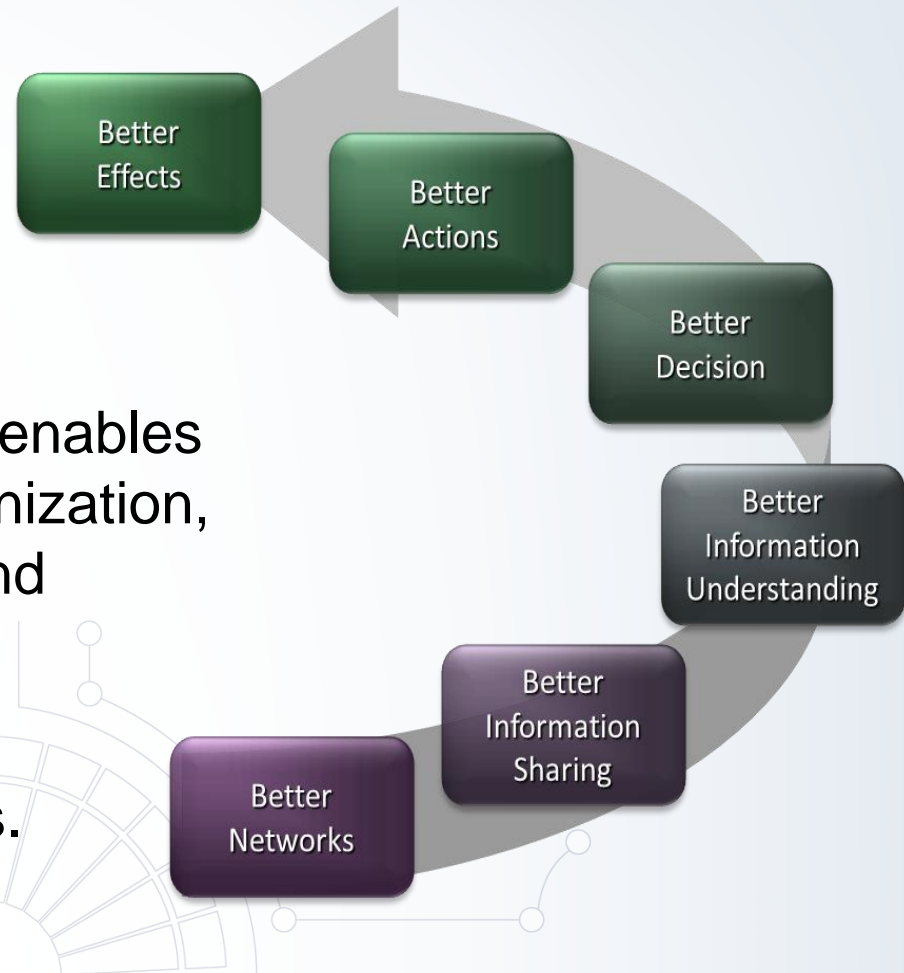
Niezależne sieci



NNEC Feasibility Study

2005

- 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

2010



Federated Mission Networking – Why?



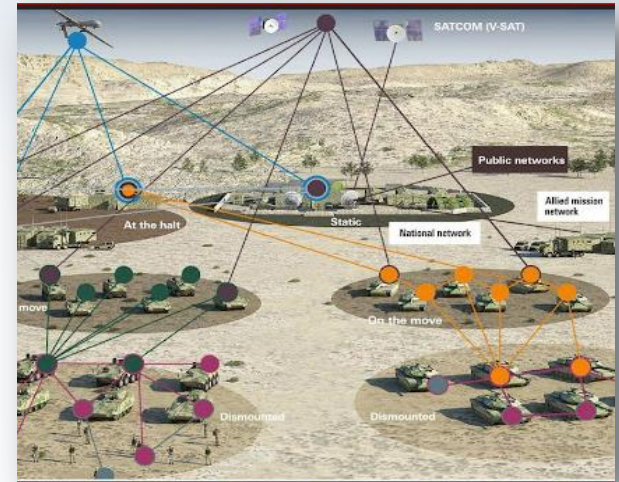
► CoNNECtingForces

- 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 pot. coalition participants
- Enables NATO to act as a mission partner for nations



Federated Mission Networking – defined

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

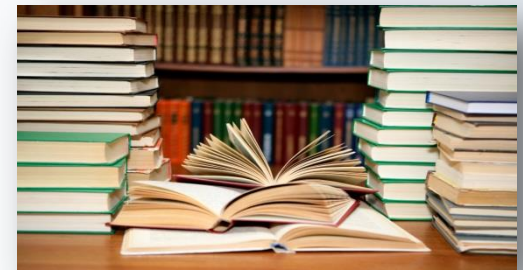
► **connected forces.**

Federated Mission Networking – What is it?

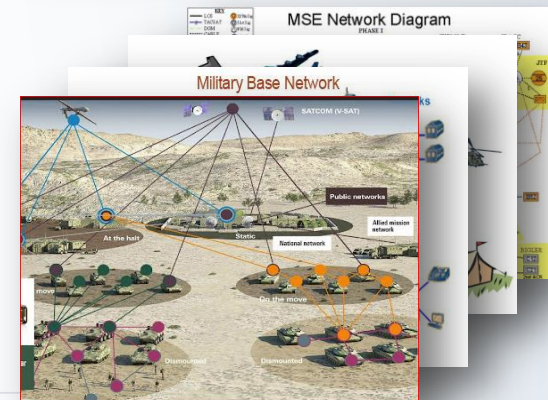
Governance – organizations and processes to govern and manage the Framework and each Mission Network Instance – The “*Culinary Institute*”.



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

mission
agnostic

1. Verification and Validation
2. Collective Training

standing

mission
specific

3. Operations Planning
4. Mission Execution

episodic

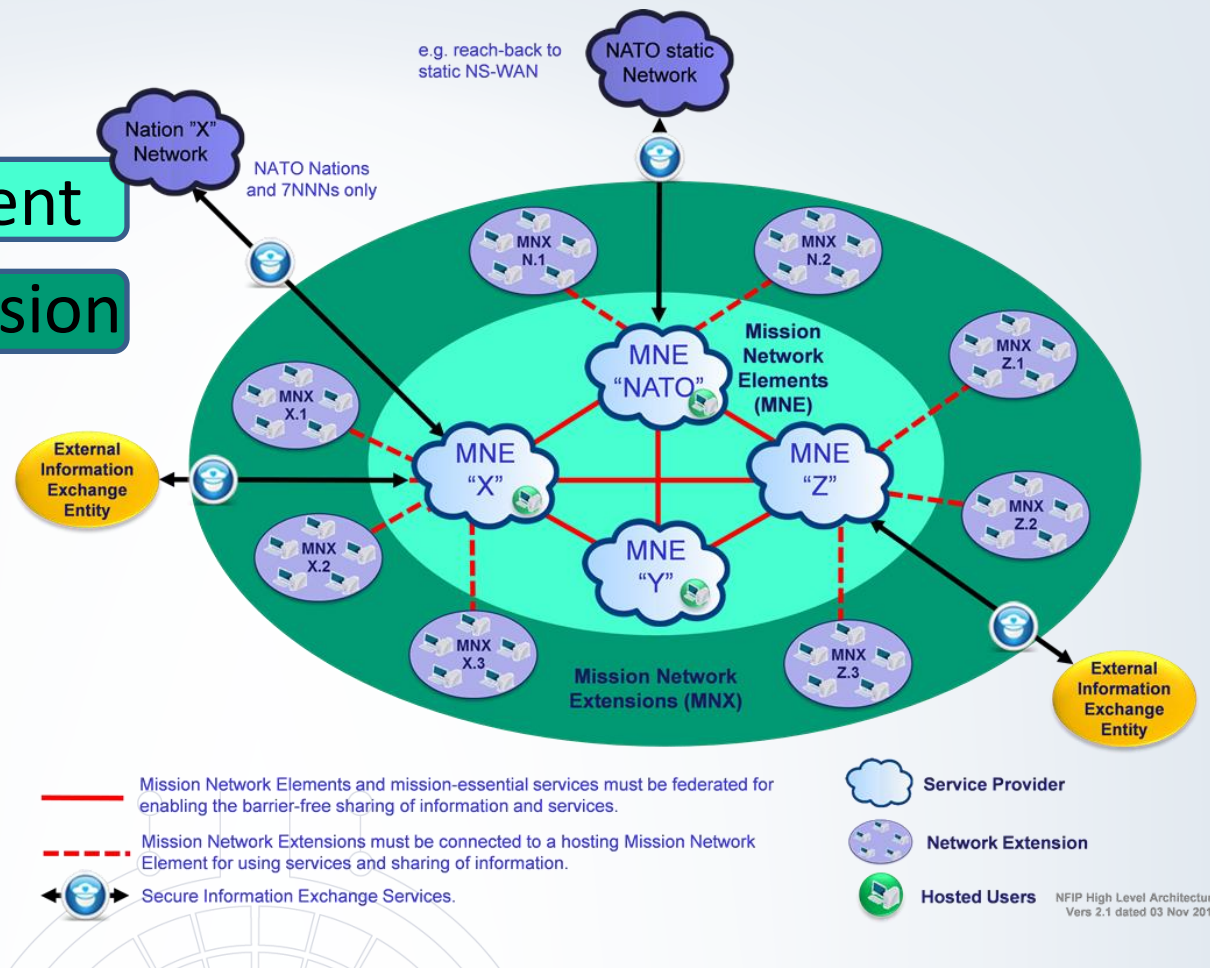


Options for participating in a Mission Network

Capability Levels

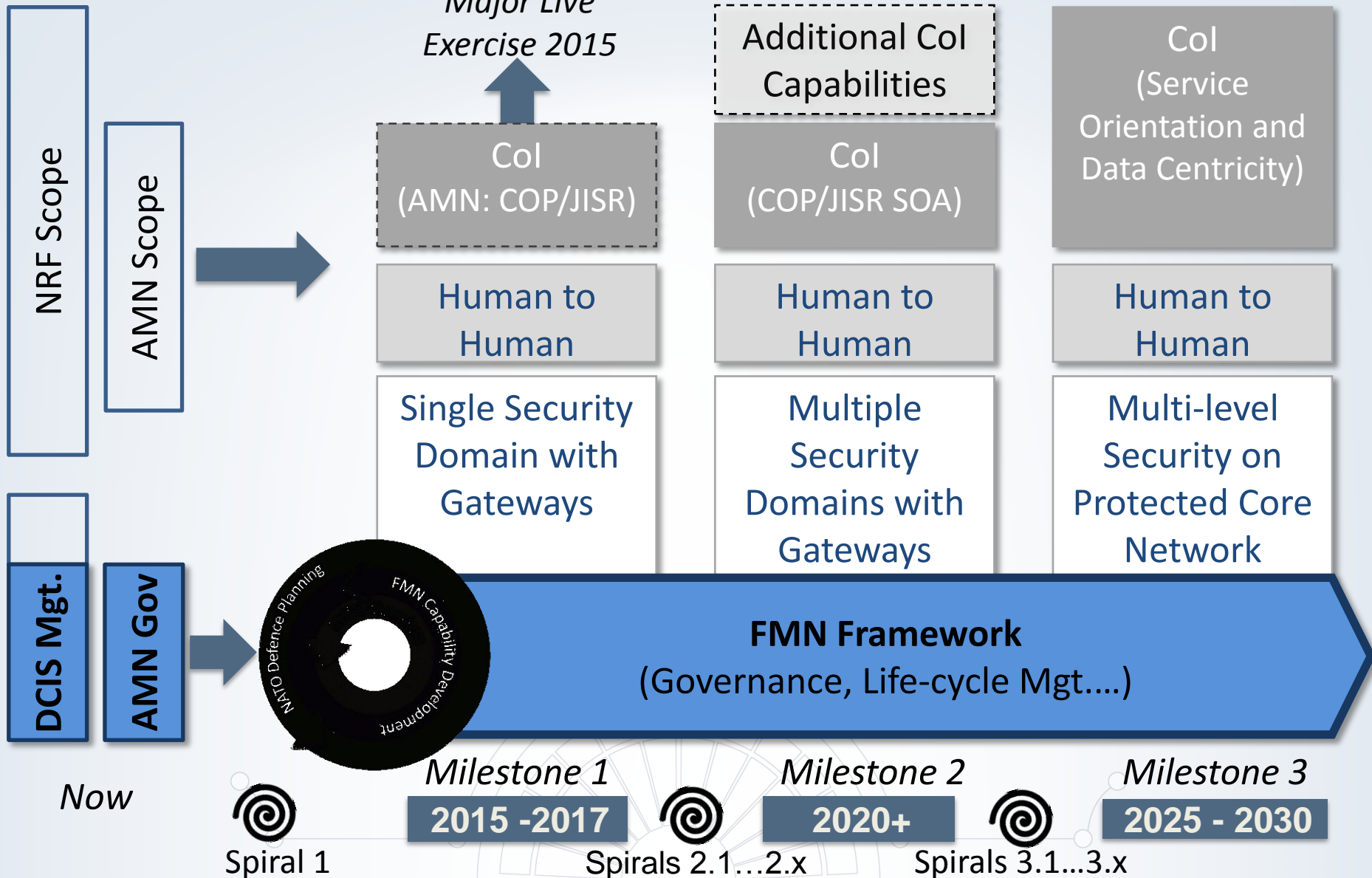
- **A. Network Element**
- **B. Network Extension**
- **C. Hosted User**
- **Z. Other Entities**

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

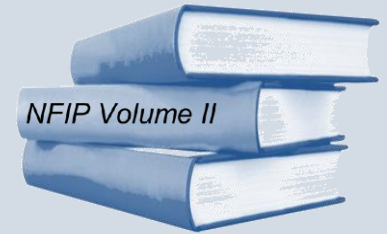
Concept: FMN Capabilities by Milestone



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:

1. Document Management Services (incl. Office Tools)
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.