



# Overarching Architecture at NATO as foundation for Service-Oriented Enterprise

## Capgemini leverages its Integrated Architecture Framework to streamline a best practice approach

### The Situation

NATO's medium to long-term (up to 15 years) requirements warrant an interoperable capability to meet the political consultation, crisis management, civil emergency planning, and military command and control needs of the Alliance.

In order to meet and manage these requirements the organization uses an overarching architecture (OA) to develop and maintain a top-down description of the desired configuration of the NATO C3 (Consultation, Command & Control) System.

### The Solution

NATO's OA has been developed by applying the Agency's Architecture Engineering Methodology (AEM), an amalgamation of best practice from industry as well as

academia, and including Capgemini's Integrated Architecture Framework. The architecture products are formatted according to the NATO Architecture Framework

### The Result

The OA was developed using a Service-Oriented approach. All types of services are included: Operational /Business, Information, User/IS and Technical Infrastructure.

The scope of services coming under the OA umbrella is now being extended to include NATO Network Enabled Capabilities (NNEC). NNEC encompasses elements like linking collectors, effectors and decision makers together

“In order to achieve real collaboration, it is essential that people, organizations and services work together seamlessly.”

Olaf Kruidhof  
Senior Systems Architect  
NATO C3 Agency



and enable development of a NATO, network-centric, effects-based, operational capability composed of multi-national contributions.

### How NATO and Capgemini Worked Together

The role of the North Atlantic Treaty Organisation (NATO), formed in 1949, is to protect the freedom and security of all its member states in the Euro-Atlantic Area. It does this by political and military means. NATO spreads to Turkey in the East and has forged partnerships with many other European, African and Middle Eastern countries.

NATO is in transformation to adapt to changing times. Its role has changed heavily, especially since the end of the Cold War; it now represents an alliance of 26 member nations. The alliance demands tight and close collaboration between the political wings and armed forces of all those nations. The medium to long-term goals demanded a tuned, interoperable capability for NATO.

NATO wanted to create an Overarching Architecture (OA) to describe relationships between systems necessary to perform NATO C3 functions (Consultation, Command & Control) regardless of the originator. The latter could be from NATO common funding, multi-national co-operative efforts or use of national assets. The long-term goal is to transform NATO into a flexible, highly responsive organisation. It has been recognized that the concept of Service-Oriented Enterprise is an important stepping stone for success — OA is foundational for that success.

Capgemini has worked with NATO for 15 years and was well-respected for thought leadership on Enterprise Architecture and how organizations can build adaptive structures for robust, scalable and flexible services.

During 2004/5, Capgemini worked closely with the NATO C3 Agency to develop the first two editions of OA.

The Agency and Capgemini established and enhanced an Architecture Engineering Methodology, basing it on industry best practice as well as Capgemini's Integrated Architecture Framework.

Having laid foundations, the team, which comprises Certified Architects and System Engineers from Capgemini and NATO Architects, collaborated on the project. Major achievements are:

- Comprehensive use of the service oriented paradigm, spanning business to technical infrastructure
- The architectural foundation of NNEC

- Identification of a roadmap to transform existing systems into NNEC compliant services
- Provision of guidance to architects of member nations for national architecture developments
- Development of the first true Enterprise Architecture for NATO

The next increment of OA guides the development a common and shared multi-national Network Information Infrastructure. This will result in deployment of the NATO Network Enabled Capabilities (NNEC).

NNEC facilitates the transformation of NATO into a Service-Oriented Enterprise for superior information-gathering and decision-making capabilities. The result will be more effective systems and operations



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