

The IBM Government Network Centric Operations Framework

Creating the strategic platform for delivering mission capability and interoperability



Highlights

- Helps reduce risk and cost by using a common operating environment that can help eliminate system stresses and save development time
 - Increases agility with a common framework for new applications and application modifications to be designed quickly in response to arising need
 - Enables greater interoperability for the integration of data between services and allies
 - Enables process flexibility that eliminates many of the limitations that are placed on systems designers when working with retained legacy systems
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Overview

The defense industry is undergoing a transformation from the industrial to the net-centric age. At its core, network-centric operations (NCO) is about creating strong networks within and across coalition forces so you can share information securely and effectively and create common situational awareness. NCO enables effective collaboration and improved mission execution.

While the goal of NCO is now widely accepted, getting there is proving difficult. Given the scale of the challenge, defense leaders must undergo a core transformational change to break through industrial-era patterns. The urgent question is how to undertake this journey and deliver improved effects and tangible benefits. Working with leading defense agencies, IBM® has addressed this challenge by developing a service-oriented architecture (SOA) based on a standardized solution set.

The IBM Government NCO Framework provides a software platform and architecture for transformation, interoperability, and integration in defense. Using the Framework can help accelerate implementation and lower risk while using SOA. The IBM NCO Framework can become your central portfolio of mission and defense applications, all built on an interoperable core.

The consequences of inefficiency and waste

Many defense forces have bought into NCO concepts of integrated systems architecture, but have had considerable difficulties making them happen because of the complexity of their existing systems. Traditionally, the military has bought customized systems that are aimed at single purposes, and they have a vast number of legacy systems that are often bespoke and based on proprietary standards from many separate vendors. These systems are often inflexible and expensive to maintain, with changes to one system having a domino effect on other systems in the network. It is difficult for these systems to communicate, and this problem is multiplied when trying to share information with coalition partners.



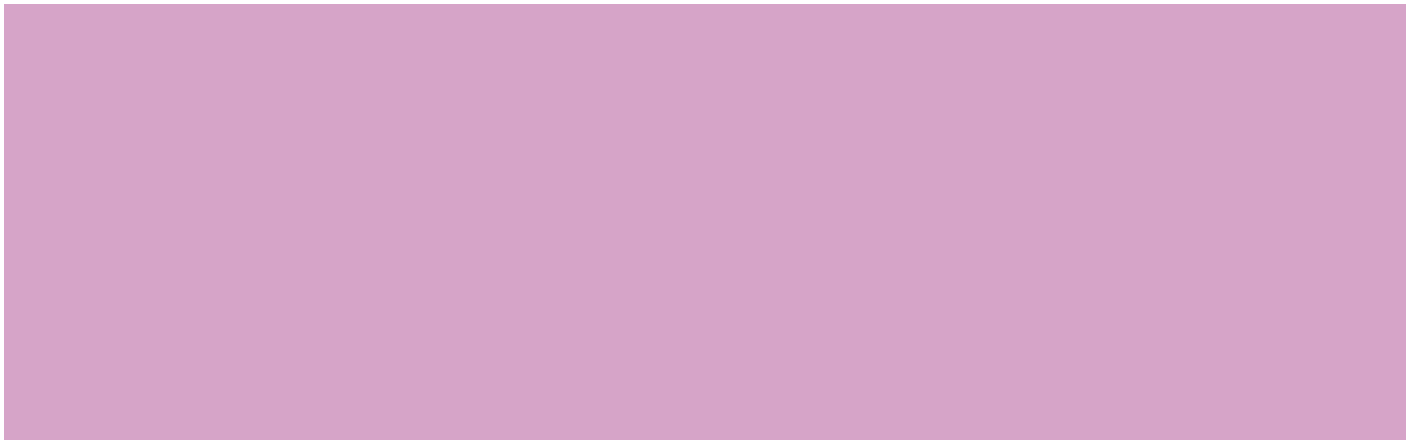


Figure 1 NCO Framework

IBM Government NCO Framework solutions are built on a common platform with an integrated, pre-tested suite of architecture, modeling, code management, and deployment tools. Using this approach makes the development of building and testing mission applications easier and more predictable, dramatically increasing efficiency while lowering risk.

The challenge of interoperability

Today's military faces the challenge of managing and adapting to increasingly dynamic and complex situations with limited resources. In addition, the scope of defense organizations has widened into various global roles such as nation building, disaster relief, counter-terrorism, and peacekeeping. Closer coordination between service branches as well as other nations is essential. Deeply entrenched silos in current command, control, communications, and computing (C4) systems present a major barrier.

The military cannot afford to develop future systems on top of old systems by patching to bridge gaps and trying to maintain old technology. Technical, data, and application integration can only go so far. With a common, standardized platform, defense forces can be confident that information is being made available to commanders or to the government in an accurate and timely manner.

The IBM Government NCO Framework approach

The Framework provides key advantages over traditional approaches such as customized solutions, which can be complex and costly to develop, or stand alone packaged applications, which can be too inflexible. The Framework enables defense organizations to choose from various industry solutions that are pre-integrated with common middleware and industry-specific extensions, such as defense-specific blueprints and defense logistics and intelligence solutions. As a result, organizations can deploy solutions in their current environment faster and at lower cost without compromising flexibility and choice.

The IBM Government NCO Framework can help deliver:

- *Speed:* Provides a proven software foundation, defense-specific extensions, pre-built solution accelerators, and implementation patterns for faster deployment at lower risk.
- *Flexibility:* Offers a road map that enables agencies to build capabilities over time on their existing environment.
- *Choice:* Taps into a broad ecosystem of IBM and third-party solutions that are built on industry standards and pre-integrated into the framework.
- *Interoperability:* Increases transparency across government entities for more efficient information sharing, service coordination, and record keeping.

The NCO Framework supports all levels from command posts to the tactical edge in the battle space, as illustrated in Figure 1.

Increasing agility with a common platform

The Framework is powered by the IBM Defense Operations Platform. The IBM Defense Operations Platform provides interoperability out of the box. The platform can give defense organizations and systems integrators a common, reusable, and interoperable software platform to help rapidly build, deploy, and monitor mission capabilities. By using frontline expertise and experience gained from work with relevant technology and defense clients and across related industries, the IBM Defense Operations Platform has a field-tested heritage. Working with leading NATO member countries, IBM has developed the platform to address NATO-specific needs for ease of installation, deployment, and cybersecurity.

The Framework is made up of defense-specific domain models and assets, such as data exchange models, data access, and security models, and addresses industry-specific requirements like security, accessibility, and interoperability that are required by the Ministries and Departments of Defense, North Atlantic Treaty Organization (NATO) and European Defense Agency (EDA). The Framework helps bridge the gap between general-purpose middleware and defense applications to help defense organizations solve their most challenging business issues - achieving operational effectiveness, agility, and speed of command in a complex coalition environment.

The NCO Framework is a set of integrated software solutions within four core domains:

- *Core infrastructure*: A common platform for interoperability and the rapid deployment of mission capabilities.
- *Command and control*: Creating a common operational picture for interoperability, collaboration, and improved decision making.
- *Intelligence*: Transforming structured and unstructured data into knowledge and actionable intelligence using integrated intelligence platform (IIP) and single view solutions.
- *Logistics*: Optimizing end to end military logistics and asset management operations with solutions such as Remote Operations and Management (ROaM).

The IBM Business Partner ecosystem is an important dimension of the IBM NCO Framework program. This ecosystem provides a choice of defense applications that are proven to run on the Framework. It delivers crucial industry

assets that are built on each industry's best set of vendor capabilities. The ecosystem enables pre-integration between IBM SOA Foundation offerings and industry-leading IBM Business Partner applications to provide:

- Faster deployment.
- Easier integration of new applications.
- Defense and public safety-specific capabilities.

Accelerating response time to operational and business challenges

The NCO Framework can help provide you with prebuilt and pretested IBM tools for stronger data integration and increased process visibility. You can deploy applications and services on any of three editions of the IBM Defense Operations Platform; the Command Center, Field or Mobile editions. The Framework can help deliver a faster time to value; for example, providing a SOA infrastructure in a few days, compared to a 12-to-18-month timeframe. The Framework can also help operations work more closely with other nation forces and—by enabling service reuse and rapid development—enables operations to adapt quickly in response to situational changes on the ground.

IBM understands your challenges

Successfully addressing the challenges facing defense organizations requires more than new technology; it requires a comprehensive approach that is based on a clear understanding of the issues our clients face, a deep understanding of their business, advanced business and technological thinking, and talented professionals who are passionate about what they do. IBM is committed to supporting and assisting defense organizations as they address the challenge of transforming from the industrial to the net-centric age.

The IBM Government NCO Framework combines IBM's deep insight into defense organizations with leading strategic consulting skills and unparalleled technical assets to help our clients forge a new path to more effective, more efficient, and



more responsive operationally relevant capabilities.

For more information

To learn more about the IBM Government NCO Framework, visit:

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December 2011
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