Interoperability requires understanding of culture, business value, governance, and technology

Interoperability: finally an innovative approach

by Harald Kujat, General (ret), former Chairman of the NATO Military Committee, Berlin

Recently I had the opportunity to contribute to a paper on interoperability that went to the president of the United States. Of course many papers reach his desk, but I know that he read this paper and had an initial good reaction, saying: "We're not doing this already?"

No, Mr President, we are not doing this in the US, nor in NATO, nor in Europe. Something he considers so common sense as to be shocking in its absence is nevertheless accepted.

The paper outlined that the cost of systems integration will be 180 billion dollars a year. It highlighted several major US programmes that will require extensive improvements in the near future and it also portrayed uncalculated damage that has resulted and will result again because products and services do not work currently together.

This short document comes from the Network Centric Operations Industry Consortium (NCOIC), a small non-profit organisation formed of individuals who firmly believe that making information flow as easily as possible between systems is a global issue *(see page 46–47)*. This issue has industry and governments on both sides of it and is thereby producing noise rather than clarification. National budgets squandered, lives risked, and the required conversation is muted by both industry and the governments that serve the populace. Interoperability is the solution, integration is the perpetual fix and money and social benefits are the cost. Interoperability built into the systems that carry information. Interoperability

built into the devices that soldiers, doctors and first responders carry to their jobs, interoperability from the first second to the last as each product is designed, built and used.

Initiative enhancing interoperability

It is this understanding that is the starting point for NCOIC and NATO Allied Command Transformation on an initiative to enhance the interoperability of NATO's Federated Mission Networking (FMN) capability. The latter is being developed to support command, control and decision making in future operations through improved information sharing.

"**Interoperability is the solution, integration is the perpetual fix and money and social benefits are the cost.**"

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NCOIC will assess the evidence of interoperability within different solutions and whether they meet FMN needs. Having this evaluation in hand before products and services are purchased can help reduce cost, delays and risk in the development of the FMN environment.

By getting products and services that work together before acquisition, the investment needed for integration can be lowered or eliminated: fixing interoperability issues after system acquisition can add up to 40 percent in integration costs.

Interoperability – a broad approach

Interoperability requires a foundational understanding of culture, business value, governance and technology. This broad approach requires simplification of thought. It also requires the government to ask the product suppliers very basic questions: "Are you interoperable with my system?" Simplicity at a macro level does not trans-

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Photo: private

Closing ceremony for multinational exercise Iron Sword 2014 with nine NATO member countries, 13.11.2014, Lithuania

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late to interoperability at a micro level. However, the basic failure of government agencies is the inability to maintain a macro level simplicity. Without the macro effort first and foremost, broad government interoperability fails every time, integration costs increase, so does the time necessary for implementation and social impacts continue.

Most organisations and agencies view making a technical change as the quickest path to achieving an interoperable solution. Yet as is typically the case, a single technical solution completely fails or falls significantly short of the objective,

► terminology

The Federated Mission Networking (FMN) capability aims at supporting command and control and decision-making in future NATO operations through improved information-sharing.

FEDERATED FMN is a key contribution to the Connected Forces Initiative (CFI), helping NATO and Partner forces to better communicate, train and operate together.

MISSION FMN enables a rapid instantiation of mission networks by federating NATO organisations, NATO Nations and Mission Partner capabilities, thereby enhancing interoperability and information sharing.

NETWORKING Federated Mission Networking is a governed conceptual framework consisting of people, processes and technology to plan, prepare, establish, use and terminate mission networks in support of federated operations.

Source: www.nato.int

primarily because it has become obsolete by the time it is implemented.

The concept to win the future

A three-step concept creates the overall intertwined high level direction:

1. What are the communities of interest?
2. What attributes make the products in the community interoperable?
3. Do the products purchased have those attributes?

First responders, health providers, surveyors and even librarians are all communities of interest. Each has unique as well as not so unique aspects. The aspects become attributes. Communities have attributes and the products and services that the communities purchase also have attributes. The attributes may exist in one or more community. One community, one attribute – simple! Multiple communities, multiple attributes – complex!

This three-step thought process is simple in the macro sense, keeps government agencies aligned, and moves toward the simple goal of interoperable products and services.

Stop wasting common goods

The small group of NCOIC thinkers has defined the process so that interoperability is phased into a short term period, aligning products with legacy systems, as well as providing a future that is far more effective and cost effective. Governments, starting with our defense ministers, will need to step back and determine that for the common good and because of the waste of resources, it is no longer acceptable for the solution to remain at our doorstep.