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Mine vs. machine

How USVs are bolstering European
minesweeping capabilities

The right app for the job

In order to fully realise the NEC concept, Chief Architect at Glue Reply Dave Madigan explores how dynamic planning can be enabled via mobile applications…

In the last issue of *DMJ*, I described the improvements being driven through defence logistics by the UK MoD as a result of moving from linear logistics chains and 'top-down' command and control to a Logistics Network Enabled Capability (NEC). This gave commanders access to dynamic planning and connected them to a ubiquitous information network operating across defence, with gateways to partners. A parallel set of networks available to each commander would assist him in carrying out his mission and help the chain of command to understand the overall picture and intervene as required.

The MoD is now looking to the consumer world and mobile 'apps' in particular to provide a new way for the commander to access these networks.

Empowering the commander

To operate independently and be able to carry out dynamic planning, each commander needs to access the networks using a personal device over which he has full control. The model for the device and control has been demonstrated in the consumer world with the emergence of personal mobile and tablet devices such as the iPhone, iPad and Google Android powered devices, while a vast range of apps have been developed for these.

However, to make this model work within the NEC concept, the apps must be able to operate with each other through a set of standardised information services, using well-defined application programming interfaces (APIs). The model for this is service-oriented architecture (SOA), under which sets of standard information services are defined and the potentially numerous service providers adhere to the same APIs.

The SOA infrastructure on which the apps rely must allow the commander to interact with people and information in many different ways: to issue requests and commands; receive and search for information; and interact with others through a range of media.

Specifically, it must allow each commander to:
- Access a catalogue of the services that he is permitted to use;
- Declare an interest in receiving particular information;
- Search for sources of information;
- Search for people to contact and see how they can be contacted;

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- Produce a list of services that he is able to provide to others;
- Provide a list of ways in which he can be contacted.

An 'App Store' for the military

Anyone who uses an app-enabled device will recognise this catalogue of services as the 'App Store'. In a military context an additional layer of security and policy must be added to ensure that the commander can only obtain apps, and therefore access services, in line with his security classification and 'need to know'.

Equally, the builders of the apps must have a list of the information services (within the SOA infrastructure) for which they can build an app allowing the commander to invoke a service and monitor progress towards service delivery. For example, he may be waiting for some material to undertake a mission; there is bad weather and all aircraft are grounded. He needs to know this as the delay could impact his ability to complete the mission.

A building block within NEC

In conclusion, the 'app' and 'App Store' model, with suitable extensions, is a fundamental building block in realising the NEC concept. However, in order to benefit from this approach, the MoD must understand and define its operations as a set of loosely coupled and interacting services, accompanied by well-defined information services that enable the user to initiate new instances of those services and monitor them. The payback for the empowered commander will be huge.

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