



Awareness decides outcome. Software that provides decision makers at all levels with an overview of the available information to assist them in making the correct decision each and every time has become vital.

By Rune Homann

In the defense industry there has been a shift in how operations are tackled; multinational operations are now the norm rather than the exception from peacekeeping to combat, and from crisis management to counter-insurgency. Any forces taking part in these kinds of operations have to be able to communicate with the other units involved. They have to be able to exchange data effectively, regardless of origin and regardless of the equipment they're using. Orders and reports have to flow back and forth quickly through complex multinational command structures, and be able to deal with different rules of engagement in different places and at different times. The new agendas in modern operations have created a need for strong communication and information systems, where the right software becomes the glue that holds together all the information and makes communication possible.

Systematic has specialized in software products and solutions that make information available to its customers to help them make life-and-death decisions, often under

extremely difficult circumstances. The majority of the customers operate in the defense and healthcare sectors, where Systematic delivers mission-critical off-the-shelf software. It began its support of defense forces with the development of the IRIS Suite, a series of products specifically designed for structured exchange of information between different systems, organizations and nations. With IRIS Suite, it was the first to launch a standardized commercial product for effectively establishing messaging interoperability, which is accurate, reliable exchange of information between different military systems. Today, IRIS is the de facto standard within NATO for the handling of military data exchange formats.

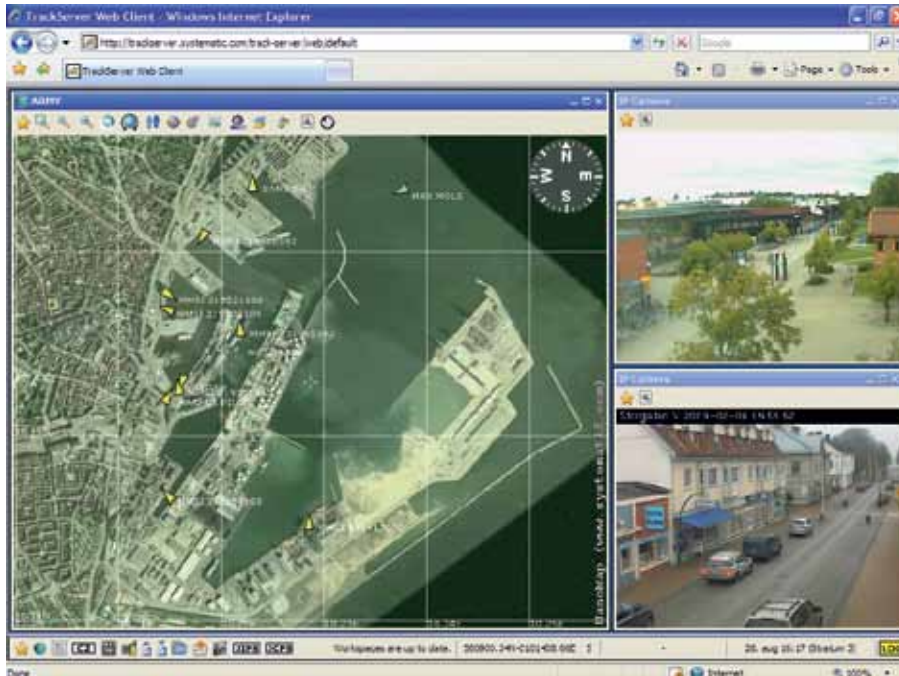
The geographic advantage

Since the success with the IRIS Suite Systematic has launched the SitaWare Suite, which is built on ArcGIS technology. "SitaWare is optimized for combined and joint interoperability. It feeds near-real-time data through the command system at low bandwidth from war fighter to headquarters for a wide range

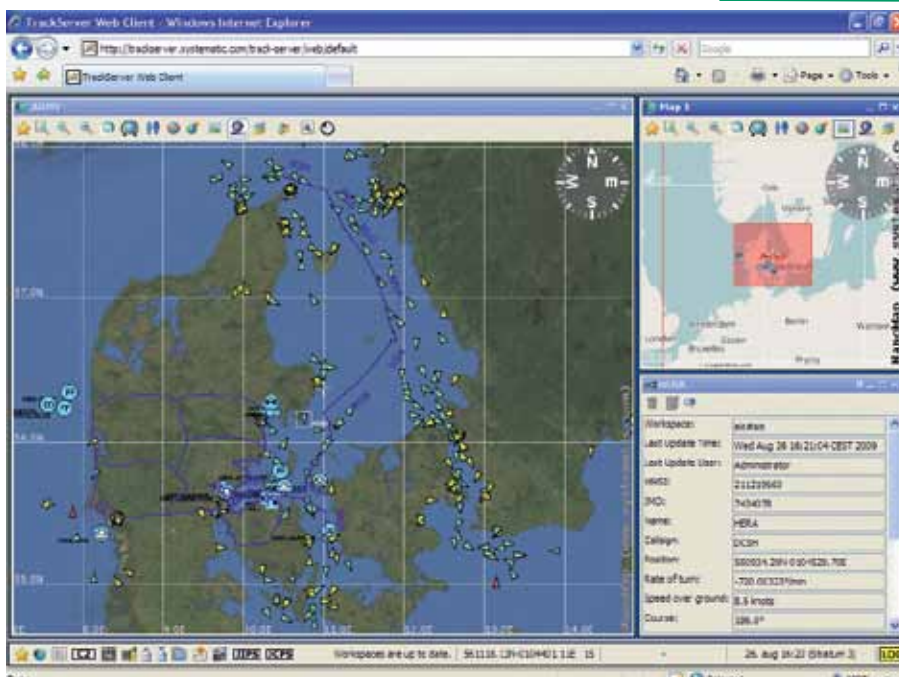
About

Systematic was founded in 1985. Today, it has some 450 highly qualified employees in Denmark, the UK, the US and Finland, and customers and partners all over the world. The headquarters is in Denmark.

of applications such as updating the common operational picture," says Jeppe Nielsen, Senior Vice President of Business Development and Sales for Defence Systems at Systematic. He explains that modern warfare is Network Centric. The premise for Network Centric warfare is that having a networked force improves information sharing and that information sharing and collaboration enhances the quality of information and shared situational awareness. And again, shared situational awareness enables collaboration and self-synchronization and enhances sustainability and speed of command, which dramatically increases mission effectiveness. "It is vital to our customers that information and communication can be



You can view multiple maps and video feeds either independently or at the same time. You can also see how each fits into the broader picture.



Real-time overviews of large-scale operations on land, at sea or in the air, seen in easy-to-grasp visual form.

Interoperability and service-oriented architecture

Systematic's SitaWare and Esri's ArcGIS platform are high-quality, proven commercial off-the-shelf technologies. Their open, service-oriented architecture ensures interoperability with existing systems and easy customization to fit specific demands. SitaWare is the leading commercial solution based on the Command and Control Information Exchange Data Model (C2IEDM) standard.

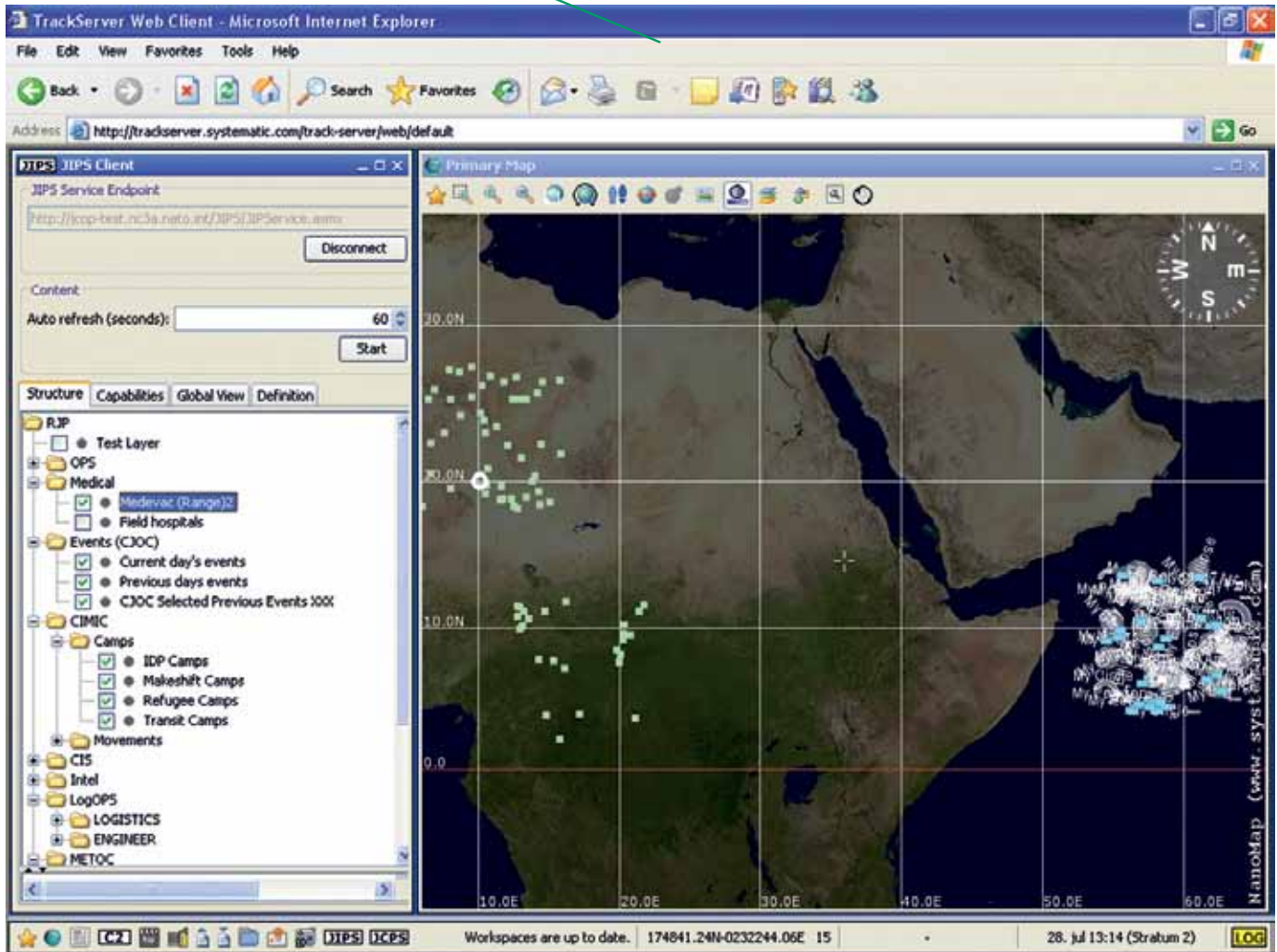
spread throughout the network. Our SitaWare is used to plan operations and show the current status of military units during operations, and the geographic way of approaching this kind of information is by far the best."

The central focus is the cost-effective sharing of information at all levels and in all directions throughout the chain of command, and SitaWare presents an easy way to view and manage operations through a geographical

window. It enhances the situational awareness and helps users at all levels make the right decisions based on real-time information. "To gain an advantage you need to have a high refresh rate of your data. And when it comes to making information available it is very important that all information can be exchanged across all spheres of the operation, i.e. organizations, persons, equipment, facilities, geographical features, weather phenomena and

military control. Basically it is all about having the right information at the right time at the right place."

With the geographical overview of an operation all stakeholders are provided with the best situational awareness, and SitaWare is also a platform for exchanging information, such as change of strategy, during the operation. "The difficult part in all this is not so much what happens on each computer. The



With built-in support for internationally recognized interoperability standards collaborative decision making involving forces from many different nations is made easier.

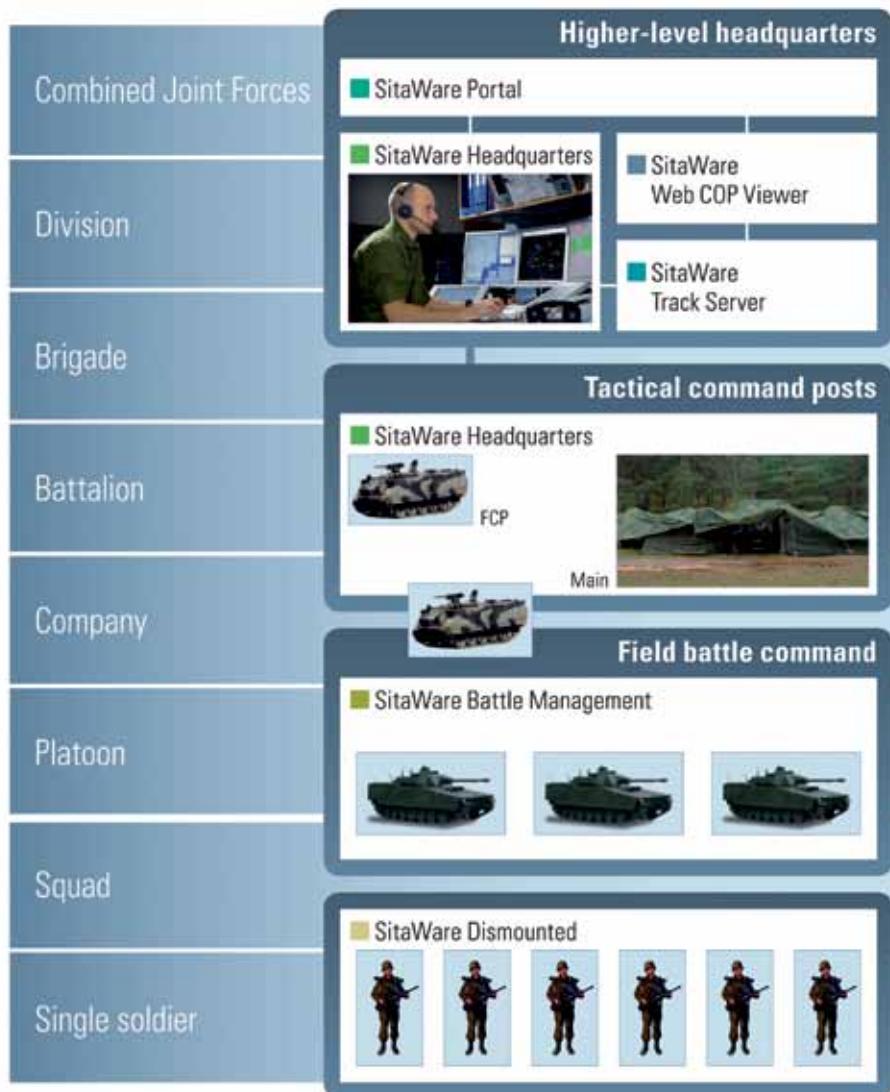
difficult part is to have 1,000 vehicles, planes, and troops moving at once and constantly accommodate the information across the network and make sure the information is shared. First of all you can forget everything you know about networks. Forget about Wi-Fi and things like that, most likely there are no networks available in the area you are in. So the first problem is how to pass your information around. It must be sufficiently mobile so everyone can have it, it must be sufficiently secure, it must then be encrypted, and it must have sufficient bandwidth so that it can move relatively large volumes of data. To move data with an acceptable speed in a network under difficult conditions—that is a

complex task, but vital for the success of our customers, and interoperability between both systems and nations is the heart of operations of all kinds.”

The capability to get a common vision of the land, air and naval situation within a unique display creates the ideal platform for collaborative parallel decision making helping eliminate misunderstandings. The spatial representation is at the disposal of the respective commands to improve their knowledge of the battlefield and situational awareness at a strategic and operational level and eventually at a tactical level.

Partner Strategy

Systematic has been delivering products, solutions and services to customers in the defense industry for nearly 25 years. Today, it has customers in 34 countries and a very good overall sense of the current trends, issues and concerns that are important for both defense organizations and defense industry suppliers throughout the world. “We have years of experience implementing software with and for demanding customers, and we work closely together with our customers, so we know exactly what their business needs are,” explains Jeppe Nielsen. Systematic is a strong believer in getting to know the end user and having a clear men-



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Systematic is CMMI Level 5 certified Capability Maturity Model Integration (CMMI) is a process improvement approach that helps organizations improve their performance. CMMI can be used to guide process improvement across a project, a division, or an entire organization. After eight years of determined effort and hard work and after investing more than 100,000 man-hours in the process, Systematic was accredited as a CMMI Level 5 company in 2005, and recertified in 2009. There are only 164 companies worldwide with this exclusive status, including a mere 7 in Europe. Systematic combines CMMI with principles from agile software development methods, such as Scrum, to keep both structure and flexibility in the process.

tal picture of where the software will be used. "Understanding the end users allows you to understand their needs. It is only when you know the pressures and dangers a user is facing on a daily basis that you can begin to truly build the intuitive software needed."

The software core in SitaWare is based on an open platform that enables both Systematic and its partners to develop additional supplementary applications for specific customer groups. In the long term, Systematic sees great potential for the standardized SitaWare core in system solutions outside the defense sector, in fields that include crisis readiness services, transportation and logistics, intelligence services and law enforcement.

Systematic has a strategy of creating user-friendly standardized products that act as a catalyst for the internalization of the business. It is a strategy that primarily takes place through a number of sales partners which include a number of established defense suppliers. According to Jeppe Nielsen this partner strategy creates a win/win-scenario: "The end-user customer gets a supplier with excellent knowledge of local conditions and requirements. The suppliers, our partners, expand their business and get access to opportunities of being responsible for a significant portion of the implementation, training and support tasks."

Thereby, Systematic is able to concentrate on its core business of developing products for sale to customers throughout the world. In addition to the sales partners, Systematic also has major companies as technology partners, including Esri and SAP. They provide Systematic with access to technologies and products which contribute to reinforce the overall competitiveness. "We think in partners and products when we build our products and solutions. There is no reason to build up our own GIS technology when creating a product like SitaWare. We find the best available GIS in the market, which is Esri's ArcGIS, and integrate it in SitaWare."