

Delivering shared situational understanding NATO Intelligence Fusion Centre



Challenge

- Deliver new levels of capability to meet the increasing demands of IFC's users

Outcome

- Faster intelligence product delivery
- New levels of clarity and consistency
- Enhanced intelligence sharing capability



Delivering shared situational understanding



Whether NATO is conducting air strikes on enemy targets or organising sea patrols to prevent maritime piracy, it has to have rapid access to accurate and timely information that is easy to interpret. The Intelligence Fusion Centre's use of Geospatial Information Systems (GIS) helps to provide NATO commanders from twenty eight countries with the insight they need, when they need it.

Client

The North Atlantic Treaty Organisation (NATO) is a political and military alliance of twenty eight countries that promotes peace, helps to manage the resolution of international crises and encourages cooperation on issues of defence and security. In recent years, it has supported national governments in Iraq and Afghanistan, undertaken peace-keeping activities in Africa and Kosovo, responded to threats of piracy and terrorism, and taken action to protect the people of Libya.

For all of its missions, the organisation has to have access to accurate, up-to-date and easy to assimilate information about the environments in which it is operating. The Intelligence Fusion Centre (IFC) was formed in 2005, to meet precisely this need.

It develops sophisticated, up-to-the-minute intelligence products, which are used exclusively by NATO to support strategic and tactical decision making on a daily basis.

Challenge

The IFC produces a large number of intelligence products that range from fairly straight-forward large-scale maps of a region, to highly focused intelligence products, combining a wide range of data and high-resolution satellite imagery. Some of the larger intelligence reports produced by the IFC may contain many hundreds of component images and maps that come together to make up the final delivered product. Large and small, all of the products produced by the centre play a vital role in supporting NATO's peace-keeping, military and humanitarian operations.

To produce its intelligence products, the IFC makes extensive use of Geospatial Information System (GIS) technology. Indeed, as much as 80% of the output of the organisation has an integral GIS element. Although the IFC's image and geospatial analysts were highly skilled, the organisation realised that not everyone used the same processes, symbols or formats in their work. This meant that

reports weren't always consistent in their appearance and could be inappropriately interpreted.

Over the years since its foundation, the IFC had also built up a very large library of imagery and mapping data. However, many of these important resources resided on CDs, in multiple versions, in different desks and cabinets around the offices. What is more, the IFC's processes for managing its data relied on file-based storage and were failing to keep up with the rapidly expanding data store. "The time had come for a new approach to data management," explains Ric Diaz, chief of geospatial intelligence at the IFC. "We needed to create a centralised data store and adopt new standard ways of working across our business."

At the same time, the IFC wanted to make its intelligence products more accessible to NATO commanders. It often received requests for the same information, again and again. This was particularly the case in regions like Afghanistan, where NATO commanding officers changed every few months. Once products had been delivered to the original requestor, it was difficult for other people to find them, because there was no way of searching the product database spatially. Instead, users had to



“The Esri consultants sat side by side with us, asked a lot of questions and offered a lot of advice. It was a great partnership.”

Ric Diaz, chief of geospatial intelligence at the IFC

rely on searching long lists of product names, which frequently failed to identify relevant products and was not very user friendly.

Solution and capability delivered

The IFC had been using Esri GIS software since its foundation in 2005, and it relied heavily on Esri desktop tools for geo-analysis, in particular. The organisation recognised that it could address its data management and workflow challenges through Esri's latest GIS technology (ArcGIS Server) and support services (software implementation, development of standard operating procedures and support in data management). “We did consider alternative GIS vendors at the time, but other products didn't appear to meet our needs as well as the Esri software,” says Diaz. “NATO has also standardised on Esri solutions for its core GIS platform, so it didn't make sense for the IFC to change to a different supplier.”

Prior to deploying the new solution, Esri UK analysed the IFC's processes to establish how the team worked with the existing GIS and verify the requirements of the business. Esri UK then specified and proposed the new technical architecture to meet specific business needs. “The Esri consultants sat side by side with us, asked a lot of

questions and offered a lot of advice,” says Diaz. “It was a great partnership.”

As a result of the business process analysis, the IFC realised that it needed to establish the new role of data manager. “It quickly became apparent to us that the role of the data manager was actually one of the most important roles in the geospatial team,” Diaz remarks. “It would be the job of the data manager to ensure that the whole team always had the most up-to-date data to work from – in the very demanding timelines that we have to work with.” With no-one immediately available with the right skill sets within the IFC, Esri UK provided one of its own team to fill the critical role of data manager. This gave the IFC the time it needed to secure a permanent appointment.

Alongside the deployment of ArcGIS Server, Esri UK worked with the IFC to establish new Standard Operating Procedures (SOPs) and to define common symbols and formats for use across all of its intelligence products. “We were trying to identify and implement best business practices,” explains Diaz. “With their experience, the consultants quickly understood what we were doing, so they could show us the easiest and best ways to work.”

The deployment of the new GIS environment had to be carefully planned to ensure that it did not disrupt day-to-day operational work. For example, when military action was launched in Libya, the needs of the project had to be balanced against a sudden increase in demand for new intelligence products. “Esri understood the complexities of our working environment,” observes Diaz. “Its consultants worked with us every step of the way, to help us meet our own requirements.”

Using ArcGIS Server, Esri UK created a single central data repository for the IFC's geospatial data and imagery. Esri UK's technical services team then built an internal web service, through which all of the organisation's analysts are able to search for, retrieve, view, analyse and use that data as a part of their day-to-day work. In addition, Esri UK developed a new external web service, to give NATO personnel the ability to easily discover, view and download recent and historical intelligence reports. Deployed on a Microsoft SharePoint platform, the external web portal was initially developed as a stand-alone prototype, which reduced project risk for the IFC and allowed it to carry out a phased roll out.



“Esri understood the complexities of our working environment. Its consultants worked with us every step of the way, to help us meet our own requirements.”

Ric Diaz, chief of geospatial intelligence at the IFC

Benefits

Faster intelligence product delivery

All of the IFC's geospatial data and imagery is now stored centrally and maintained by a dedicated data manager. As a result, the organisation no longer maintains several versions of the same data, which was not only inefficient but could also result in inaccurate or inappropriate information being generated.

As well as being able to manage and work from a single, up-to-date source, analysts can be more time-efficient, because they don't waste time looking for the latest CDs and images. When urgent requests come in, analysts can start work on intelligence products straight away, without having to wait for relevant data to be found and assembled. "Whereas it used to take 24-48 hours to bring in imagery, that data is now right there, at our fingertips, already," says Diaz. "It's a cleaner and quicker process overall." This faster turnaround time enables NATO commanders to react more quickly to emergent new situations in theatre.

Improved intelligence product quality and consistency

With Esri UK's support, the IFC has introduced new, documented working

practices and established common standards for symbols and document formats, that are supported within ArcGIS. Consequently, all of the IFC's products now have a consistent look and feel. "This gives us more credibility in the eyes of our customers," Diaz believes.

An added, unexpected benefit of this approach has been that other defence agencies, in other countries, have started to copy the templates and standard methods articulated by the IFC. As a result, NATO commanders are receiving reports that are generally more consistent and, therefore, clearer and easier to interpret. Diaz says: "Hopefully, the improved quality of intelligence products means that NATO can be more effective in its operations."

Improved intelligence sharing

The IFC is currently in the process of introducing its external web portal, alongside the roll out of Microsoft SharePoint within NATO. Once SharePoint is fully deployed, all authorised personnel from NATO will be able to use the web portal to search spatially for any recent intelligence products relating to the area where they are working. Recent and historical reports will be much easier to find and should provide commanders with

almost instant access to useful situational intelligence. Because they won't have to put in specific requests for information – and wait for the resulting reports – they will be able to make appropriate tactical and strategic decisions much more quickly.

Future

The software and services provided by Esri UK have delivered real benefits to the IFC, and the two organisations have developed a strong collaborative relationship. Building on this, the IFC and Esri UK meet every four to six weeks to discuss emergent new requirements and make sure that the IFC's investment in GIS capability continues to be exploited to deliver real benefits. "Our migration to ArcGIS Server has far exceeded any expectations that we had before the project commenced," declares Diaz. "As a result, we are looking to further our relationship with Esri UK over the next three years."



“The time had come for a new approach to data management”

Ric Diaz, chief of geospatial intelligence at the IFC



Esri UK is part of the global Esri network, world leader in geographic information system (GIS) software. We mobilise the UK's largest pool of GIS expertise, with the worlds most proven geospatial capability, to provide solutions, consulting and training services to defence and intelligence organisations and system integrators. Its solutions are successfully deployed with wide application from Expeditionary Warfare and National Security to management of the Defence Estate.

Esri UK is helping these organisations make faster and more informed decisions by delivering the capability to extract the greatest value from their information and enabling this intelligence to be more easily shared.

For more information please visit our website at www.esriuk.com/defence

