The National Geospatial-Intelligence Agency

Providing On-Time Geospatial Information

CHALLENGE

Provide aeronautical, nautical, and topographic maps, charts, and data to customers with immediate, on-demand access to relevant geospatial intelligence where and when they need it.

RESULTS

- **Maritime charts are available the day after being cleared for release instead of the traditional six to eight weeks.**
- **Production time has dropped from hundreds of hours to less than one for some maps and charts.**
- **Production time is determined based on the intended use of the product—saving person-hours and reducing expenses.**

"ESRI's ArcGIS Server allowed us to create ePODS, a solution that meets our customers' needs for rapid, automated dissemination of relevant data and hard-copy products."

Susan Marchant,
ePODS Program Manager and Contracting Officers Representative, NGA

The National Geospatial-Intelligence Agency (NGA) is a U.S. Department of Defense combat support agency and a member of the national intelligence community. Its primary mission is to provide geospatial intelligence (GEOINT) to U.S. armed forces and government agencies in support of national security.

The geospatial intelligence that NGA provides is important on the home front as well. Navigation safety is a critical function of the agency and would be virtually impossible without knowing the geographic features that affect aeronautical and nautical navigation.
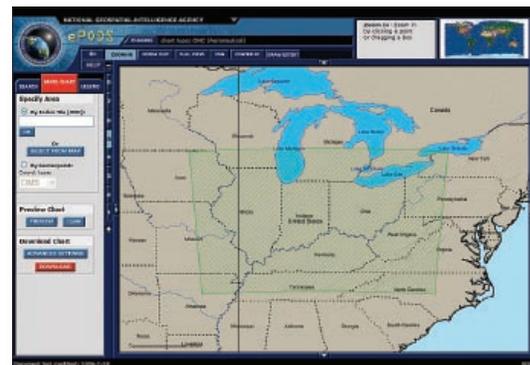
The Challenge

Geospatial intelligence is a critical tool for U.S. armed forces and the intelligence community, aiding the front line by providing accurate depictions of the geographic features relevant to the mission at hand. For NGA's GEOINT operations to function successfully, the data must be timely, relevant, and correct. NGA needed to supply updated, accurate data in support of their users' missions in a timely manner.

The Solution

Beginning in 2001, NGA began transforming its processes and system to better support its mission. The agency looked for new and innovative ways to improve its labor-intensive and time-consuming mapping, charting, and data management processes. Through a collaborative effort with ESRI Professional Services in 2002, NGA's Aeronautical Division created an automated, geographic information system (GIS)-based charting process that significantly reduced the time required to update, produce, and disseminate Flight Information Publications (FLIPs). The success of this project served as an impetus for NGA to modernize nautical and topographic mapping and charting as well.

With ePODS, a user can preview the extent of an existing Operational Navigation Chart (ONC). (International copyright 2007, NGA, U.S. government)

In 2004, NGA contracted again with ESRI Professional Services for a new initiative, Enterprise Product on Demand Services (ePODS). Using the aeronautical project as a model, NGA wanted to automate map and chart creation to gain efficiency and reduce errors. Allowing customers timely access to the most current NGA data in all domains was very important. The ability to design and print custom maps was also high on the list of desired functionality.

The ePODS project is a Web portal allowing users the on-demand access to the data they require. Via a Web interface, users select the data they need, configure it into a map, apply specific cartographic rules, preview the end product, and print it or download a source package (data, instructions, and media) to work locally on the maps for further refinement.

Learn more at **www.esri.com/maps**.

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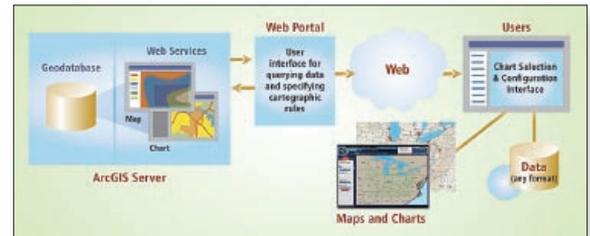
The first iteration of the ePODS system went into production in September 2007. The ePODS system was built on service-oriented architecture (SOA) using ESRI's ArcGIS® family of products. ArcGIS Server and ArcIMS® provide GIS Web services and portal functionality, respectively. Production Line Tool Set (PLTS™) for ArcGIS provides a robust final touch-up and finishing environment for aeronautical, nautical, and topographic maps and charts that NGA chooses to edit prior to publication.

The Results

With ePODS, NGA customers can access the most current NGA data holdings to build on-demand nautical maps and charts. For example, digital ePODS-Maritime (ePODS-M) charts are usually available for use the day after NGA clears a new edition nautical chart for release. By contrast, traditional paper nautical charts are available six to eight weeks later. For some maps and charts, production time has dropped from hundreds of hours to less than one.

The ePODS architecture is based on a service-oriented architecture (SOA) with a SOAP Web service exposed that allows the POD server to be called from multiple applications.

NGA further increased its efficiency by using ePODS to determine on a case-by-case basis how much production time to spend on a product based on the intended use of the product—there's no need to spend hundreds of hours finishing a one-off product that will only be used for quick analysis.

Using the ePODS system, navigation safety has been significantly improved for both military personnel and civilians with the improvements in accuracy and timeliness of aeronautical and nautical charts.

Learn more at **www.esri.com/maps**.