Fujitsu delivers **AWARD–WINNING** maritime system for Australian government

New AMIS solution improves early identification and assessment of maritime threats to safeguard Australia's borders

> *"The new approach to maritime security and vessel tracking provided by AMIS has been "Game Changing", revolutionising the way agencies value information, track vessels and assess the risk posed by the vessel, her passengers, cargo and crew."*

Australian Customs & Border Protection Service

Challenge

An integrated knowledge solution about vessels operating near Australia was required as a way of protecting the nations borders from the entry of illegal and harmful goods and unauthorised people.

Since much of the data needed to come from secure systems within other government agencies as well as various commercial systems, the solution required an advanced level of integration and data fusion as well as high security accreditation.

Solution

The Australian Maritime Identification System (AMIS) brings together maritime data from a disparate and widely dispersed array of systems into a single database for data fusion, analysis and threat assessment. The system provides advice and warning to support Government responses to a wide range of maritime threats by enhancing Maritime Domain Awareness (MDA).

Developed as a partnership between Fujitsu Australia and the Australian Customs and Border Protection Service, AMIS relies almost exclusively on Commercial off the Shelf (COTS) products as a way of mitigating risk, reducing costs and speeding deployment.

SUMMARY OF THE KEY FACTS

Industry:
Federal Government

Region:
Australia

Challenge:
Improve Australia's ability to detect and respond to potential threats from approaching vessels.

Solution:
The Australian Maritime Identification System (AMIS) is a highly secure, Commercial off the Shelf (COTS)–based system that integrates data from a wide range of government and commercial sources to support the Australian Customs and Border Protection Service in addressing maritime threats.

Results:
Australia's ability to safeguard its physical borders has been radically enhanced by the development of the Australian Maritime Identification System (AMIS) in a joint project between Fujitsu Australia and the Australian Customs and Border Protection Service (ACBPS). The multi award winning system is the most advanced solution of its kind in the world, supporting the Government's ability to proactively respond to maritime threats through the early identification and threat assessment of vessels.

As part of the product selection process, Fujitsu Australia prepared a detailed document comparing the various features and capabilities of all the most advanced technologies on the market.

Since the size and complexity of the requirements for the AMIS database and integration were unprecedented by global standards, it was critical that the final solution be both robust and highly secure with advanced capabilities and capacity reserves.

Fujitsu Australia's systems designers explored and incorporated the best ways to:

• fuse and integrate data from a huge range of sources and associate the information
• deliver automated threat analysis and threat warnings;
• provide a geospatial display of maritime contacts and vessels with associated threat rankings;
• disseminate relevant maritime pictures; and
• co-ordinate and control any response activities.

As an accredited security system within an accredited facility, AMIS also required a complex security infrastructure comprising firewalls, data diodes, network intrusion detection and analysis systems, and a comprehensive whole-of-system transaction audit logging capability. With the ability to integrate and process data classified at SECRET level, it also includes secure email and formal messaging capabilities to support Australian Customs and Border Protection Service's mission and inter-agency co-operation.

System designers had to develop a unique data format specification to support the successful ingestion, fusion and association of information from all the various locations to maritime vessel tracking data. This feature alone makes AMIS the most comprehensive Maritime Domain Awareness system in the world. Data retrieval occurs primarily via the geospatial display of tracks, which required careful design of the system's many graphical user interfaces.

Data coming into the system is filtered through a rules-engine to scan vessel and voyage information to identify threats, risks and information inconsistencies, that can then be reported for response by the Australian Customs and Border Protection Service or other law enforcement agencies.

AMIS was designed to be highly scalable, accommodating growth in the number of users, data sources and the database itself in order to support the Government's changing requirements well into the future.

Fujitsu Australia applied relevant industry standards to the system's design and build, and where these were not available or consistent with Australian Customs and Border Protection Service's unique requirements, it invoked its own quality management system and the Fujitsu Infrastructure Implementation Methodology to ensure consistency of implementation and deliverable quality.

Benefits

AMIS enables information sharing and ensures Government agencies are able to access necessary information. By bringing together disparate data to produce a comprehensive Australian Maritime Picture, AMIS allows a more thorough threat analysis and dissemination of MDA threat alerts across agencies.

Fujitsu Australia's use of innovative development methodologies enabled a rapid, staged deployment of the system that allowed Australian Customs and Border Protection Service staff to quickly begin familiarising themselves with their new capabilities.

This not only supported the capture and inclusion of early feedback from operators, but allowed the Government to start benefiting from the new system even before it went into full production as operators became better at recognising suspicious vessel activities.

These real operational outcomes have prompted several of Australian Customs and Border Protection Service's international peer organisations to label AMIS the most sophisticated MDA system of its type in the world.

According to the Australian Customs and Border Protection Service, the new approach to maritime security and vessel tracking has been "Game Changing", revolutionising the way agencies value information, track vessels and assess the risk posed by the vessel, her passengers, cargo and crew.

The use of COTS products with only minimal customisation has been a major contributor to the stability and reliability of the AMIS system. Additionally, the staged delivery of products supported the early integration of high volumes of data from Defence and international vessel reporting systems, allowing AMIS to demonstrate strong performance with high capacity reserves.

The AMIS Program received a Commendation in the 2008 Prime Minister's Program Management Awards and was recognised as the National IT Project of the Year in the Australian Institute of Project Managers 2009 awards.

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