Scanning the Southern Seas
Australian Customs CoastWatch
Needing to police one of the world’s longest coastlines, Australian customs requires the very best in airborne data communications.

With its immense 30,000km coastline and reputation for prosperity, opportunity and stability, Australia is a magnet for illegal immigration. To cope with the problem, the country’s federal government launched its ‘Protecting our borders’ programme – a multi-million-dollar drive to apply high technology to the huge task of keeping watch over Australian territorial waters.

The first line of defence is a fleet of aircraft equipped with the very latest in air-to-surface surveillance systems. Inmarsat SwiftBroadband aeronautical data solution has been chosen as the best way to deliver the information gleaned by the eyes in the sky back to commanders on the ground.

Australia’s Border Protection Command operates 15 aircraft carrying advanced radar and electro-optical sensors to scan the coast and economic exclusion zone for intruders. Flying up to 1,800km offshore, the aircraft cover a maritime area larger than Australia itself, recording over 1,300 missions and 20,000 hours a year.

Prior to the adoption of the Eye in the Sky solution, it sometimes took several hours for the results of their patrols to get back to the decision makers in the Customs National Surveillance Centre. This delay could make the difference between a successful interception and letting an illegal vessel slip through.

Australian Customs Border Protection Command decided to find a system that would deliver video and other data to the ground within seconds rather than hours. Customs called on a Sydney-based Inmarsat partner to provide a solution. The Sydney company TC Communications came up with an Inmarsat SwiftBroadband system now operating on-board several of the aircraft in the coastwatch fleet.

The Australian company worked with other Inmarsat partners to integrate the antenna and video into the solution.

Speed, ubiquity and flexibility

Inmarsat SwiftBroadband Service

SwiftBroadband is a UMTS-based service provided over the fourth generation of Inmarsat satellites. The SwiftBroadband service is an ‘always-on’ background service which enables broadband speeds to airborne assets. As an IP-based packet switched service, SwiftBroadband provides a connection of up to 432kbps throughput per channel on a contended basis.

Up to four channels can be used per aircraft. If an application needs guaranteed bandwidth, it can request a streaming class session (available in 8k, 16k, 32k, 64k, 128k and SwiftBroadband X-Stream which offers full channel streaming).

SwiftBroadband will allow for a combination of packet switched services to run concurrently which means a streaming class can be used for video conferencing whilst Internet browsing and email applications are simultaneously occurring in the background over contended IP.

In addition to the packet switched services, a high quality voice channel is also provided which allows the full functionality of traditional phone services. The SwiftBroadband service also provides a circuit switched ISDN line.
When Australian Minister for Justice and Customs, Senator the Hon Chris Ellison, formally inaugurated the new capability, two of the aircraft were on patrol hundreds of kilometres away, each supplying live video feeds to the Canberra centre.

As the minister spoke over the simultaneous voice link to the crew of one of the Dash-8’s, the aircraft flashed back pictures of a large merchant ship cruising below. The images were displayed on a video wall and individual workstations around the centre. The video system also allows an aircraft returning to base at the end of a spell of duty to ‘hand over’ any current tasks quickly and efficiently to the crews of the aircraft coming on-station to continue the patrol.

“This system will provide the latest information and allow enhanced decision making when dealing with complex events in remote and maritime environments patrolled by Customs Coastwatch aircraft,” the minister says. “This is the technology we need to look out for Australian borders.”

Ellison also points out the potential use of the system by defence forces and law enforcement agencies across Australia. “That’s becoming more and more important in the current security environment.” The introduction of SwiftBroadband to the Coastwatch fleet promises an immediate boost to operational effectiveness, according to Coastwatch chief Rear-Admiral Max Hancock. “To those who hope to avoid detection by Coastwatch aircraft and try to mask illegal or inappropriate activities, I say the game has changed. The risk of being found are now much greater and with luck we’ll put you out of business completely.”

Canberra Times

Instant information for safety heroes

**Fire Fighting Observation Systems**

Border Protection isn’t the Australian Government’s only application for Inmarsat. More than ever Australia is faced with the potential threat of natural disaster. Each of the nation’s states maintains a highly effective professional and volunteer firefighting service.

The Rural Fire Service required a system that would allow critical fire scanning and situational data to be transmitted directly from a small airframe to incident control and command centres on the ground. A state of the art solution that exploited SwiftBroadband’s smaller aircraft equipment allowed the Rural Fire Service to transmit fire scanning data directly to their incident control centres. This ensured the aircraft could continue on their mission and patrol ever-increasing areas without having to stop, or circle, to transmit information. The client reported a healthy reduction in operating expenses and fuel utilisation through the ability to fly further and longer whilst maintaining contact with command and control for mission instructions.
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