



Case Study: ARINC SwiftBroadband

How Rockwell Collins have reduced costs and improved efficiency for the Swedish Coast Guard

ARINC aviation voice and data systems help Swedish Coast Guard cut in-flight communications by over 50%

For almost 24 hours every day, Swedish Coast Guard aircraft fly surveillance missions along Sweden's coastline. Communication to and from the aircraft, tracking their location and providing access to applications and information to support operations used to be expensive, slow and in some cases, impossible. But following the installation of SwiftBroadband, provided by Rockwell Collins, the Swedish Coast Guard has seen costs fall by more than 50 percent and the ability to share vital rescue and environmental surveillance information significantly improved.

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The main aim of the Swedish Coast Guard is to create a sustainable marine environment as well as improve safety along the entire coastline of Sweden. With the help of aircraft, ships, and small boats from the mainland, the organisation protects the Gulf of Bothnia, the Baltic Sea, Kattegat and Skagerrak and the lakes of Mälaren, Vänern and Vättern.

Effective, efficient in-flight communication at all times is critical to the success of every deployment.

“In terms of the role that the Swedish Coast Guard needs to perform, ARINC SwiftBroadband supports that role. I don’t think that we could really afford to go back to what we had before.”

Erik Bjureén
Project Manager
Swedish Coast Guard

Challenges

- › Improve communication for reconnaissance and rescue aircraft while on airborne surveillance missions
- › Reduce the impact of environmental damage, especially from oil, on Swedish waters and coastline
- › Reduce the cost of voice and data communications

Solution

- › ARINC voice and data aircraft communications
- › ARINC SwiftBroadband
- › ARINC AviNet Mail
- › ARINC Web Aircraft Situation Display

Benefits

- › Cuts monthly satellite communications bill by more than 50%
- › Improves safety and provides a more efficient method of tracking planes in the air
- › Provides crew with instant access to online applications and information
- › Removes the cost and time needed to obtain aircraft adaptation certification

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Challenges

The Swedish Coast Guard has 26 coast guard stations, including one flight division, which are controlled by two regional command centres in Stockholm and Gothenburg. The organisation has 800 staff and is headquartered in Karlskrona. The Swedish Coast Guard is a civilian authority under the jurisdiction of the Ministry of Defence. The overall aims of the Coast Guard are decided by the Swedish Parliament while the government takes decisions on more detailed aspects.

The Coast Guard perform many tasks one of which is to monitor commercial shipping and recreational vessels and provide rescue and connaissance support if they get into difficulty. The organisation also ensures vessels within Swedish waters are meeting the appropriate laws and regulations, such as fishing quotas, in and around the Swedish coast. However, the Coast Guard's primary function is environmental response, surveillance and protection.

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One of several methods for surveillance that the Coast Guard deploys is a fleet of three Dash 8 Q-300 fixed-wing specialist aircraft. Between them, they provide airborne surveillance for 24 hours a day, all year, monitoring Sweden's coastline and are able to remain airborne, gathering information, for up to six hours.

The Coast Guard's aircraft have a very important role in environmental response operations especially when it comes to calculating the size and spread of an oil spill and in providing an overview of an incident.

These aircraft have surveillance equipment, including stills and video cameras, scanning devices and a specialist radar system, called Side-Looking Airborne Radar (SLAR) that can detect oil spills on the water surface. If an aircraft

spots an incident or potential hazard at sea or near the coastline, this information needs to be communicated back to a command centre so that vessels can be sent to the location to take appropriate action. This could include testing sea water, searching for evidence, helping a vessel before a spill occurs or undertaking rescue operations.

Erik Bjureén, Project Manager at the Swedish Coast Guard, says, “For the country of Sweden one of the most common threats to the environment is an oil spill and the coast line is particularly sensitive to oil pollution. The Swedish Coast Guard has been given a specific objective - which it is achieving - to ensure that oil pollution around the coast of Sweden remains minimal. So prevention, and therefore surveillance, is critical. The Swedish Coast Guard uses aircraft as the primary surveillance system because they are able to cover a much larger area

and do it faster than ships. For the Swedish Coast Guard they are the eyes of the ships.”

Historically, information from the aircraft was sent via a combination of voice calls and data communications. The speeds, costs and limited nature of information that could be sent were not enough to support the Coast Guard’s ongoing communications strategy so when the time came to upgrade the present Satcom system on its fleet of aircraft introducing SwiftBroadband was the natural choice.

Bjureén says, “When we were going to select a satellite communication service provider we looked at most of the main players in the market. We checked for things like performance and level of support. In the end, we found that ARINC SwiftBroadband delivered the best value for money and it had skilled engineers who could help us with this special type of solution.

Rockwell Collins has played a role suggesting solutions and tailoring its commercially available systems for Swedish Coast Guard needs. When it comes to the support we find Rockwell Collins customer-focused and efficient.”



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Solution

The Swedish Coast Guard has deployed an Rockwell Collins' ARINC aviation communication solution using ARINC SwiftBroadband high-speed, IP-based voice and data system over the Inmarsat I4 network. The Rockwell Collins solution provides simultaneous voice and data communication to and from aircraft. The system also provides the crew on board the aircraft with in-flight Internet access. Voice communication via the Rockwell Collins solution sits alongside existing radio-based voice systems in the aircraft.

As well as the core communication system, Rockwell Collins also suggested ways in which the Coast Guard could leverage and improve the system.

For example, Rockwell Collins recommended its Web Aircraft Situation Display (WebASD), which is an interactive, web-based tool that displays the real-time location of aircraft. This allows the Swedish Coast Guard to track where an aircraft has been, where it is currently located and where it is heading. It increases safety for the Swedish Coast Guard's aircraft and air crew because the command centres always know, in real-time, where the aircraft are located.

Rockwell Collins acted as the prime contractor to supply and implement the ARINC SwiftBroadband infrastructure for the complete voice and data communication in its role as service provider.



Results

“In terms of the role that the Swedish Coast Guard needs to perform, ARINC SwiftBroadband supports that role. I don’t think that we could really afford to go back to what we had before,” says Bjureén.



The new communication system enables aircraft to send an email containing much more detailed information of a spill, potential spill or incident. As well as detailed information related to incident location and type, emails can also include photos, video clips and live video streaming, which are sent to the Coast Guard’s command centres, vessels and even other authorities when needed. Having this kind of information instantly allows the Swedish Coast Guard to respond to situations with important data more easily available.

One of the key business benefits of the Rockwell Collins solution is cost savings. It has enabled the Coast Guard to significantly reduce communication costs - by more than 50 percent. This saving has been achieved because the ARINC SwiftBroadband system means the Coast Guard only pays for the data it sends and receives instead of having an always-on communication system which is expensive. Additionally, the organisation is saving even more money by using ARINC AviNet Mail, instead of a voice call, to send regular safety messages back to the command centre.

“Because Rockwell Collins’ ARINC SwiftBroadband provides aircraft with more efficient Internet access, the crew is now able to access a range of applications and databases that provide them with more information to carry out rescue, reconnaissance and surveillance operations.”

“In-flight Internet means that our crews have almost instant access to information that was not available before. This is a step forward for us and helps make our operations more effective,” says Bjureén.

About Rockwell Collins

Rockwell Collins is a pioneer in the development and deployment of innovative communication and aviation electronic solutions for commercial and government applications. Our ARINC information management services offer seamless, secure and reliable solutions to customers in the aviation & airport, rail and critical infrastructure sectors.

Rockwell Collins' Information Management Services (IMS) business, formed after Rockwell Collins acquired ARINC Incorporated in 2013, enables mission-critical data and voice communications and management throughout the world.

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