



ENVIRONMENT CANTERBURY HARBOURMASTER, NEW ZEALAND

The Environment Canterbury Harbourmaster's Office is responsible for managing all maritime-related activities that may affect safe vessel navigation on Canterbury's many waterways. The Harbourmaster's Office oversees all rivers, lakes, harbours, and ports in the region, as well as coastal areas up to 12 nautical miles offshore.

The Harbourmaster's work includes the operation of cruise ships and commercial vessels, plus a wide range of recreational boating activities. Their main concern is safety, and ensuring the safe and efficient management of ships in Canterbury ports and harbours.

SITUATION

Adding to consistent local tourism and fishing vessels, the number of cruise ships visiting Akaroa increased dramatically following the 2011 earthquakes. Existing communications at Akaroa Harbour did not have the capability for increased usage, resulting in compliance staff having to take a very manual and time-consuming approach to contacting and monitoring ships visiting Akaroa Harbour.

It is the responsibility of the Harbourmaster's Office to contact each ship prior to it reaching the harbour to discuss weather conditions, navigation, and granting permission to enter. The Harbourmaster's Office must then keep in contact with each vessel to discuss any issues, provide updates on conditions, and enforce navigation and safety requirements. Communications need to be maintained with each ship and its tenders to ensure the safety of everyone using the harbour. This process is then repeated in reverse for vessels leaving the harbour.

Environment Canterbury sought a communications system for Akaroa Harbour that would increase coverage; handle more marine channels; and give the ability to remotely monitor conditions and other harbour activities. They also needed a network capable of integrating Automatic Identification System (AIS) maritime software.



CANTERBURY,
NEW ZEALAND

LOCATION



EXPERTISE

MARITIME

SOLUTION OVERVIEW

- ▶ Tait Analog Network
- ▶ 1 site
- ▶ 3 marine channels
- ▶ 3 Tait Tough Base Stations
- ▶ Sonim X8 Rugged Smartphones
- ▶ Push-to-Talk over Cellular
- ▶ GPS Location Services
- ▶ Voice Recording
- ▶ ROIP Module



RESPONSE

Local Tait dealer Outback Communications worked with the customer to design a new communications system. Robust specifications, quality reception, and a proven track record made Tait the preferred radio equipment supplier. Tait base stations were chosen for their superior RF performance and receiver selectivity, which is of particular importance due to the minimal separation between marine channels.

A repeater location was chosen near Akaroa Heads to provide maximum coverage around shipping paths. The site is powered by solar energy and was built to a disaster standard, meaning it can withstand 250kph winds and other extreme conditions that affect the exposed location.

The site contains three marine channels, including the international distress channel. An AIS system was installed, which runs on the VHF spectrum. This maritime-grade software provides ship location tracking up to 400km away, time-stamps for incidents, and can transmit virtual navigation aids visible to transiting vessels. A PTZ (Pan/Tilt/Zoom) camera is also installed at the site, allowing for remote-monitoring of conditions, weather, and ships around the harbour and outside the entrance.

The Harbourmaster's Office connects to the marine channels via Sonim Rugged Smartphones. They can talk with any vessel via Push-to-Talk over Cellular on any of the channels, they can see GPS locations of ships, they can live-stream conditions, and they can monitor all harbour operations from their single device.

OUTCOMES

The Harbourmaster's Office now has increased visibility of operations, and the flexibility to oversee and communicate with vessels from anywhere. This has significantly increased the efficiency and safety of harbour management.

The ability to remotely communicate has also saved Environment Canterbury money as now there doesn't always have to be someone in Akaroa.

Communication is possible with vessels several hours before the ship reaches the heads. The PTTtoC interface records all calls so compliance staff can use instant playback to ensure all communications are heard and comprehended. This improves overall navigation safety.

BUSINESS BENEFITS

- ▶ Time and money is saved as staff now have reliable communications on-the-go.
- ▶ Safety and efficiency is increased by improved coverage.
- ▶ Communications are clear due to industry-leading RF performance.
- ▶ All voice comms can be played back for better comprehension.
- ▶ Less equipment is needed, improving efficiency and maintenance requirements.
- ▶ Improved Redundancy ensures the network is always available.
- ▶ There are many opportunities for future convergence due to the flexibility of the solution.

"The safety and efficiency gains from the comprehensive system are remarkable, and show the value of choosing a great team and the right equipment to get the job done."

Ian Fox, Harbourmaster's Office,
Environment Canterbury



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