

Keeping Watch Over New Zealand's Skies with Vaisala

Challenging topography and geographical isolation mean that weather forecasting in New Zealand is no easy task. MetService, the country's national meteorological service, trusted Vaisala to underpin its five-year, NZD 12 million weather radar expansion program.



Securing Valuable Information For Severe Weather Forecasting In a Challenging Environment

MetService provides the weather forecasting services that keep New Zealand moving and help protect the country's residents, tourists,

and businesses alike. As part of an initiative to improve its capacity for providing warnings of short-term, severe weather events, the organization initiated a five-year, NZD 12 million weather radar expansion program in 2007. MetService was confident that

Vaisala was the ideal partner, thanks to its ability to offer a solution that would integrate seamlessly with its existing data processing systems and its established reputation for providing high quality, innovative weather radar technology.

Challenge

- Improve capacity for providing accurate warning of short-term, severe weather events
- Enhance the overall availability and quality of weather data for forecasting
- Increase operational reliability of equipment

Solution

- Vaisala Dual Polarization Weather Radar WRM200, initial installation at two locations
- Two further WRM200s to be installed in 2011 and 2012

Benefits

- Greatly improved warning accuracy, helping safeguard lives and property
- More detailed analysis of individual weather systems, especially precipitation types
- Extension of Severe Thunderstorm Warning Service range
- Reduced downtime and maintenance costs through remote monitoring and fault diagnostics capabilities

“The dual polarization capability of the new Vaisala radars provides us with a lot more detail. We can now distinguish between precipitation types in clouds, analyze raindrop size, and identify the presence of super-cooled water droplets, which can cause icing problems for aircraft. Our forecasting range is also much wider than previously, and because we have much more detailed information about weather systems at our disposal, it makes planning for any potential problems much easier for the local authorities.”

John Crouch,
MetService
radar meteorologist

Improving Forecasting Accuracy, Coverage, and Reliability

The installation of the first WRM200 dual polarization radar on Mahia Peninsula in October 2009 filled a significant gap in the MetService network. With a range of 300 kilometers, the radar enables monitoring of weather systems over the Pacific Ocean immediately to the east of the North Island, as well as over its central and eastern parts. Expansion of the network continued with the installation of the second WRM200 at Mamaku in the Bay of Plenty, enabling MetService to further extend its Severe Thunderstorm Warning Service. Dual polarization capability brings a host of benefits for forecasters, providing them with much more detailed information on weather systems – including the ability to distinguish between liquid and frozen precipitation within rainclouds – and, therefore, enabling much more accurate and timely forecasting.

Expanding Capabilities and Ensuring Continued Reliability

In terms of maintenance, the rugged territory of New Zealand presents its own set of unique challenges. Radar sites can be hundreds of kilometers apart and often challenging to access, so excellent equipment reliability and remote-monitoring capabilities are vital. The real-time remote monitoring and fault diagnostic capabilities of the MetService WRM200 radars have helped reduce the need for site visits, thereby lowering maintenance costs. Highly impressed with the performance and excellent reliability of the WRM200, MetService is continuing its cooperation with Vaisala by expanding its network with two further radars, in Westland in 2011 and Northland in 2012.



The Mahia weather radar. Photo courtesy of New Zealand MetService.

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