

# Forecasts across four million square miles of territory

## Vaisala renews Canada's synoptic upper-air observation network

Environment Canada is home to Meteorological Services Canada (MSC), the country's weather service. Formed 136 years ago, MSC is responsible for observing and providing forecasts of the weather across the country's almost four million square miles of territory stretching from the US border to the south to above the Arctic circle in the North and from the Atlantic provinces in the East to the coastal mountains of British Columbia in the West. This vast territory poses obvious operational challenges, but MSC has developed a world-class meteorological service to support its population of more than thirty million residents.

### Network of thirty-one stations

An important component of MSC's national observation program is its upper-air network of thirty-one stations. One of these stations, located in Whitehorse, Yukon, operates a Vaisala DigiCORA® Unmanned Sounding System AUTOSONDE® for automated and unattended soundings twice per day for up to twelve days before requiring re-loading. This AUTOSONDE has been operating since 1997, and has been upgraded to use Vaisala's new RS92 family of radiosondes.

At the thirty other upper-air stations, automatic soundings are carried out with manned balloon launches. These stations have relied on the Vaisala DigiCORA® Sounding System MW15 since the early 1990s, originally with Vaisala Radiosondes RS80 and later upgraded to use the Vaisala Radiosondes RS92. Navaid wind finding is based on the cross-chain

LORAN C signals available at most sites while the northernmost sites and those out of range of LORAN C rely on GPS technology.

### *MSC benefits from the high reliability of the Vaisala equipment and services.*

Twenty-seven of these thirty sites are operated by contracted employees at government-owned facilities. These upper-air stations and, especially, the high arctic stations of Alert, Eureka, and Resolute Bay, pose unique challenges due to the remoteness of their location and limited supply possibilities. MSC benefits from the high reliability of the Vaisala equipment and services to keep the network at maximum uptime.

### Reliability brings savings

In 2006 MSC published a tender to replace its network with newer systems to maintain its required operational uptime well into the future. The tender was open to global competition and required testing of the most attractive systems to ensure compliance with MSC's stringent specifications.

As a result of this selective process, MSC awarded a contract to Vaisala in July 2007. The contract covers the supply of thirty-five Vaisala DigiCORA® Sounding Systems MW31 and 150,000 radiosondes, including documentation, French and English operation, training, and other services over the next ten years. Options are included for additional ground



*Ted Gresniuk and Andrea Faechner launching a Vaisala Radiosonde.*

systems, radiosondes, spare parts, and services throughout the contract period, which ends on March 31, 2017.

Building on the long history of working together, Vaisala plans to add this provision of new upper-air stations to the long list of other equipment in use today meeting Canadian observing requirements. We are working in partnership with MSC to provide instrumentation and optical sensors used for surface observation of the Canadian Lightning Detection Network (CLDN) of 83 lightning sensors, wind profilers and weather radar upgrades. As Mr. Lee Suddick, National Manager for Upper Air and Lightning Networks puts it: "MSC plans to realize savings in maintainability and reliability with the new MW31 systems from Vaisala in our network." ■