

Weather resiliency and early warnings in The Bahamas

Case Study



The client:

The Bahamas Department of Meteorology

Vaisala solution:

4 Doppler Weather Radars

9 AviMet® Automatic Weather Observation Systems (AWOS)

16 Automatic Weather Stations

Trusted weather observations for a sustainable future

According to the World Meteorological Organization, investing in meteorological service and research results in a tenfold return of socio-economic benefits. Early warning systems, especially when part of a holistic approach to meteorological service investments, are critical to saving lives and property around the world.

THE CHALLENGE:

Large geographical area with limited weather coverage

The Bahamas had a single Doppler Weather Radar located at one airport, but the lack of insight in other locations left several islands vulnerable to approaching storms. The Bahamas Department of Meteorology, who is responsible for tracking weather and operates the weather radar, recognized the limited capacity and sought more complete coverage across the country.

In a small island nation like The Bahamas, a comprehensive storm detection and warning system can save lives. Based on their long history of working with Vaisala technology, the Department engaged Vaisala to help make the country stormproof.

THE APPROACH:

Comprehensive insights with modernized technology

In late 2016, The Bahamas decided to invest in a new nationwide meteorology network to improve their weather forecasting capabilities. The solution included 4 Vaisala Doppler Weather Radars plus a radar upgrade on 5 islands, 9 AviMet® Automatic Weather Observation Systems (AWOS) for airports, 16 Vaisala Automatic Weather Stations, and meteorological forecasting and warning

"We have over 40 years of history with Vaisala, and Vaisala has provided the most robust and reliable equipment. In this case, it was also important that Vaisala thought of the whole picture for The Bahamas – not just trying to make a deal. Training, for example, was an essential part of the contract for us."

*Trevor Basden
Director, The Bahamas Department of Meteorology*

software SmartMet as well as civil works, training and installation services.

Based at airports across the islands, the networked radars and sensor equipment allow The Bahamas Department of Meteorology to see current weather including the presence, speed and severity of tropical cyclones in any area of the country.

The Department is using SmartMet to collect and edit data on all observations, improving their capability to forecast and issue warnings on severe storms. Created by the Finnish Meteorological Institute (FMI), SmartMet integrates and visualizes observation data and tools into a single weather forecasting and warning system. As part of the solution, the Department also gained a meteorological TV studio so they can quickly communicate with the public.

Vaisala began delivering the project in 2017, providing both hardware and software, as well as meteorological training through their partnership with FMI.

When Hurricane Dorian hit the Bahamas in September 2019, the technology was put to the test. With the weather monitoring and warning solution in place, The Bahamas Department of Meteorology was able to send out more accurate information and alerts which enabled thousands of citizens and organizations to prepare for and

seek shelter from the hurricane. If not for the improved early warnings and comprehensive monitoring, the results could have been much worse.

THE RESULTS:

Facing the future with confidence

The three AviMet AWOS on the Northern islands of the Bahamas were destroyed, and Vaisala donated and installed three new ones to help the Bahamas recover from this natural disaster. Not only does the solution help The Bahamas to make data-based decisions on how to manage challenging weather, it helps ensure the continuity of international flights to this tourism dependent area.

The Bahamas now has a reliable early warning system that combines all weather observations for complete situational awareness. They also have greater capacity to issue timely warnings to the public about hazardous weather conditions, preserving lives and property.

Why Vaisala?

For over 45 years, Vaisala has been a pioneer in aviation weather technology, ensuring that every measure is taken for unparalleled safety, efficiency, and sustainability.

Our gold standard suite of solutions is trusted in more than 170 countries and over 2000 airports globally. In fact, every commercial flight around the world will use weather observations produced by Vaisala equipment or forecasts driven by our sensor measurements at some point in their journey.

With a commitment to constantly evolving our portfolio, Vaisala remains at the forefront of the industry, continuously exploring new horizons.

