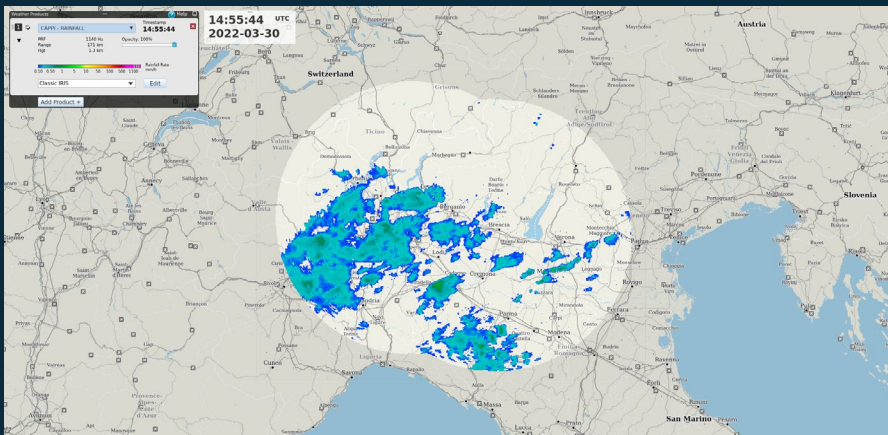


Modern weather intelligence improves storm preparedness in Italy

Case Study



The client:

ARPA Lombardia

Vaisala solution:

X-band Weather Radar WRS400

IRIS Focus

The Agency for the Protection of the Environment of Lombardia Region (ARPA Lombardia) works to safeguard people and the environment across the densely populated Lombardia region in northern Italy, including meteorology and weather preparedness. ARPA Lombardia provides real-time weather forecasts to more than 10 million residents and offers meteorological support to Civil Protection.

THE CHALLENGE:

Obtain detailed weather data to protect public safety

The Milan district is one of the most densely populated and urbanized areas in Europe, and has experienced increasing high-impact weather phenomena such as heavy rain and hail in recent years.

ARPA Lombardia maintains a network of nearly 320 weather stations. With the rise in severe weather events, the agency sought to enhance their ability to collect accurate weather data to improve awareness of approaching storms and mitigate damage to residents and property.

THE APPROACH:

Raise the bar in precision and reliability with modern weather radar

Through a tender process, ARPA Lombardia chose to fill the gaps in their observation network and national C band radar network with two Vaisala X-band Weather Radar WRS400s.

WRS400 is a dual-polarization Doppler weather radar that features innovative solid-state design. It is the ideal instrument for advanced hydro-

The WRS400 weather radars provide the near-ground precipitation field with excellent spatial resolution and timeliness, useful for helping citizens make self-protection decisions. Ongoing development aims to improve the QPE.

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meteorological applications and for medium-scale civil protection. The weather radar provides the exact path and precipitation level of a storm system, precipitation type and amount close to the ground, and ground-level storm disruptions such as tornadoes.

With proprietary state-of-the-art algorithms including HydroClass™ hydrometeor classification, the X-band radar uses polarization measurements in a proven fuzzy logic algorithm which dynamically classifies targets into categories such as hail, graupel, rain, snow and wet snow as well as non-meteorological targets.

THE RESULTS:

Efficiently help citizens better prepare for the weather

Vaisala and longtime Vaisala Italian Representative and Certified Service Partner Eurelettronica Icas guided the agency through site selection and installed one WRS400 in Milano and one in Brescia. Located about 100 km apart, the weather radars are perfectly positioned for monitoring severe convection in the area with high spatial and temporal resolution.

The summer after the WRS400s were installed, the region experienced severe storms including hail. ARPA Lombardia was able to provide

accurate severe storm warnings to the public, and good information about type of precipitation identification in terms of probability of hail.

In addition to providing more accurate storm warnings, ARPA Lombardia has developed new nowcasting services capable of delivering early warnings directly to citizens in the event of thunderstorms and hailstorms. The app, RadarLOM, provides easy access to the intensity and movement of precipitation in real time over the Lombardy region, and users can also monitor the evolution of precipitation within the two previous hours and the next hour with five-minute resolution.

Thanks to the accuracy and reliability of WRS400, ARPA Lombardia looks forward to providing accurate, actionable storm information to Lombardy for decades to come. The organization is developing new nowcasting services with the possibility of providing early warnings directly to citizens in the event of thunderstorms, hail, and snow.

Why Vaisala?

As the global leader in weather and environmental measurements, Vaisala provides trusted weather observations for a sustainable future. With nearly 90 years of innovation and expertise plus customers in 170+ countries from the North and South Poles to Mars, we help provide the most reliable and accurate weather and climate information for better and safer daily lives.

Our instruments and intelligence are known as the gold standard for precision and reliability. As a sustainability leader we enable meteorology professionals to better understand, forecast and explain climate change. We continue to channel our curiosity into climate action and new ways of enabling a better planet for all.

