X-BAND: Filling the weather knowledge gap at airports

At the airport, the weather means everything. Inclement weather can disrupt, delay or cancel flights – impacting travelers and industries worldwide.

Reliable and accurate weather information reduces the impact of bad weather, helping to ensure smooth operations and avoid disturbances. With constantly changing conditions, radar plays an essential part in situational awareness.

**The weather effect**
Weather causes more than 20% of aviation accidents and 70% of delays.

<table>
<thead>
<tr>
<th>Accidents</th>
<th>Delays</th>
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<td>70%</td>
<td>20%</td>
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**Wind and turbulence**
- High-resolution weather forecasting with short lead times
- Helps approach control to sequence and guide arriving and departing air traffic in the most safe and efficient manner

**Visibility**
- Closes the knowledge gap between the forecast and current airport conditions
- Helps you anticipate where and how the weather will change in the near future

**Why radar is essential**

Weather radar is one part of a comprehensive airport weather observation system. The job of the system is to support weather-critical decision making.

With its high accuracy and dependability, radar supports decision making by detecting current and approaching weather conditions.

Conventional weather systems provide weather data at the airport.

Radar provides weather data around the airport.

**Conventional weather systems**
- Compared to larger weather radar systems, X-band provides:
  - Lower investment and lifecycle costs
  - Easier civil works requirements
  - Smaller, highly focused coverage

**Example of weather radar nowcasting**
The forecast and the nowcast

The difference between weather forecasting and nowcasting is the difference between the rest of the day and just the next hour. For operational efficiency, seeing what’s coming can keep you moving ahead of the storm — and pause just long enough for the storm to pass.

Radar shows more than the weather at and around the airport: It reveals approaching convective storms, frontal systems and other weather hazards.

X-band (9.3 – 9.7 GHz)
- Built for 100km range

C-band (5.5 – 5.7 GHz)
- Made for large-scale networks

S-band (2.7 – 2.8 GHz)
- Made for large-scale networks

X-band radar provides great value for airport weather operations:
- It’s versatile
- It provides exceptional resolution
- It offers excellent performance

**Example of weather radar nowcasting**
- Helps approach control to sequence and guide arriving and departing traffic in the most safe and efficient manner

Vaisala X-band Weather Radar WRS400

Highly accurate measurements in the observation range
- High-resolution wind measurement
- High-resolution wind measurement with short lead times
- Helps approach control to sequence and guide arriving and departing traffic in the most safe and efficient manner

Learn more
vaïsa.com/x-band

Note: The weather effect is a major contributor to 20% of aviation accidents and 70% of delays.