Non-Fed Automated Weather Observing System (AWOS): Vaisala Overview and Perspective

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Vaisala Market Segments

Weather

Controlled Environment

Vision:

- We believe in a world where environmental observations improve daily life

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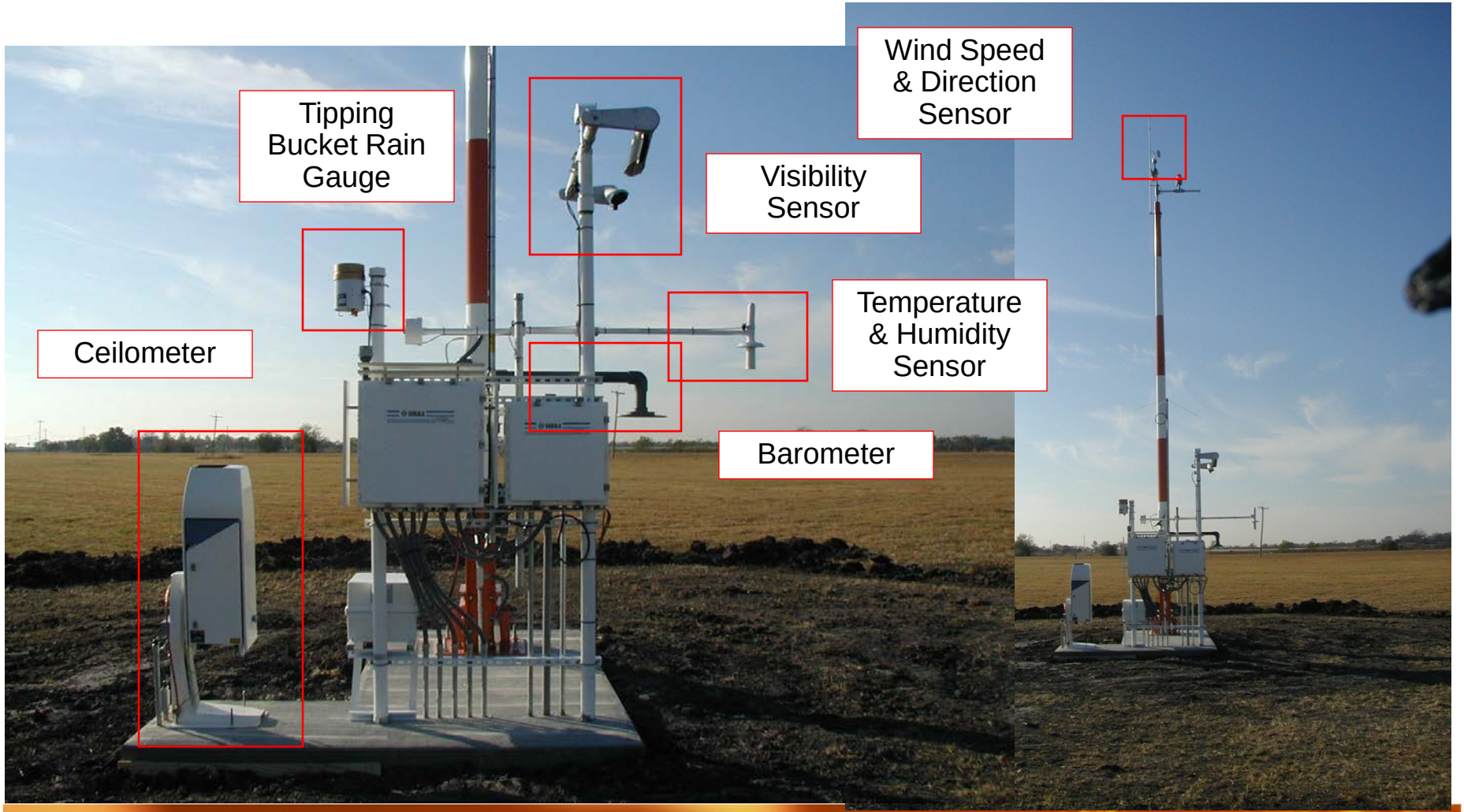
Overview

- One of only two companies in U.S. with FAA certification in all levels of AWOS
- AWOS is one of many aviation weather products:
  - Designed and Manufactured the FAA PC-Base Runway Visual Range (RVR)
  - Sensors for the NWS ASOS and FAA AWOS programs
  - Thunderstorm warning systems
  - Runway Weather Information Systems (RWIS)
  - NAVAID Maintenance
  - AviCast deicing decision support
- Primary purpose of AWOS is to increase situational awareness for takeoff and landing.
- AWOS provides real-time weather information to pilots via telephone, VHF radio, and local display.

AWOS Types

- AWOS A – Altimeter only
- AWOS AV – Altimeter and Visibility
- AWOS I
  - Altimeter, Wind Speed & Direction, Temperature, Dew Point, and Density Altitude
- AWOS II
  - AWOS I + Visibility
- AWOS III
  - AWOS II + Cloud Height & Cover
- AWOS III PT
  - AWOS III + Present Weather, Thunderstorm/Lightning
- AWOS IV
  - AWOS III PT + Freezing Rain, Runway Surface Condition

AWOS Sensors



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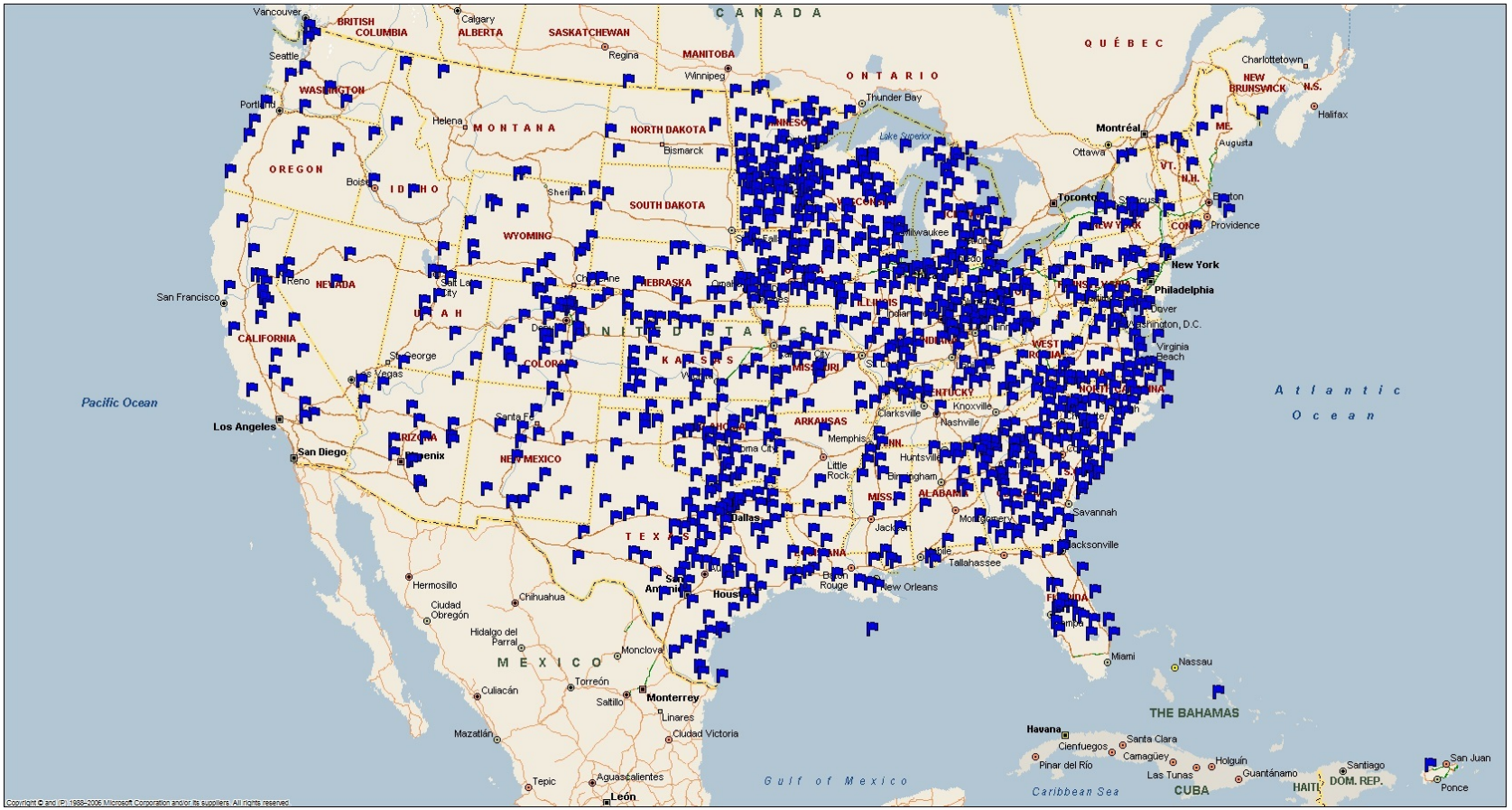
Vaisala AWOS Install Base



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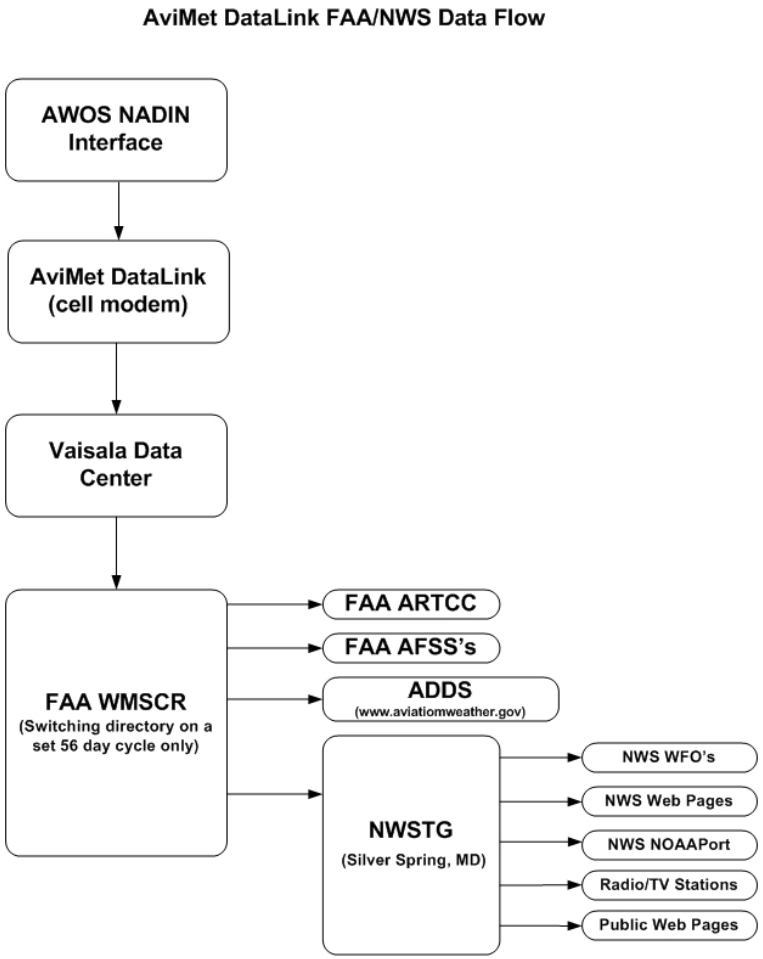
Vaisala Perspective on AWOS Data

- Weather parameters disseminated via the Weather Message Switch Center Replacement (WMSCR) should be certified
- Only certified weather parameters should be reported
  - The accuracy and timeliness of weather data used in critical, real-time decision making are vital
  - Minimize the need of discriminating between certified and advisory, particularly during critical situations
    - In some cases, pilots don't understand the difference
    - In some cases, pilots disregard the differentiating information
  - Downstream processes (e.g., forecasting, flight planning, etc.) that support weather-based decisions also depend on accurate, timely observations

Data Acquisition and Dissemination



- Disseminate 15, 35, 55 after the hour observations to WMSCR
- Vaisala manages data storage for about 475 AWOS
- Vaisala stores all 5 min. data (starting over 1 year ago)
- Considering storing 1 min. data
  - Disk space
  - Comms. Costs

- Benefits of large data store and high temporal resolution data
  - Data mining
  - Data QC
  - Nowcasting/forecasting techniques
  - NWP/data assimilation