



# Automated Surface Observing System

briefing to

## Friends and Partners of Aviation Weather

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# Agenda

- ASOS Strategic Goals 2023 - 2032
- Service Life Extension Projects
  - Wind Sensor
  - TRH Sensor
  - TS Sensor (Navy only)
  - Weighing Rain Gauge
  - Present Weather/Visibility
  - Pressure Sensors
  - Ceilometer
  - Freezing Rain Sensor
  - Tipping Bucket
  - Pyranometer
- ASOS 2.0 ACU/DCP Replacement Details
- Temperature Dew Point (TRH) Sensor Replacement Details





# ASOS





# ASOS Strategic Goals

- By end of 2024:
  - Complete 432 remaining Ice Free Wind Sensor installations on legacy ASOS network
  - Complete T/Td/RH Sensor replacement deployment on legacy ASOS network
  - Begin transmitting ceilometer attenuated backscatter data sets for operational use
- By end of 2026:
  - Design, validate and deploy all ACU/DCP/SCA Replacements (aka ASOS 2.0)
  - Replace all copper voice and data lines with Internet Protocol communications
  - Deploy new ceilometer
  - Deploy new precipitation weighing gauge
  - Deploy new barometer
- By end of 2027:
  - Deploy new visibility and present weather sensor across ASOS 2.0 network
  - Achieve GCOS Surface Reference Network Instrumentation standards for wind and temperature







# ASOS 2.0

- Upgraded:
  - Acquisition Control Unit
  - Data Collection Package
  - Single Cabinet ASOS
- Retains:
  - Legacy Operator Interface
  - Weather Algorithms
  - METAR/SPECI/OMO, 5-Min, SHEF, summaries etc
- Adds:
  - Ceilometer Derived Planetary Boundary Layer Height
  - Attenuated Backscatter Dataset
  - IP communications
  - Ubiquitous access to OMO (goal)





# Acquisition Control Unit

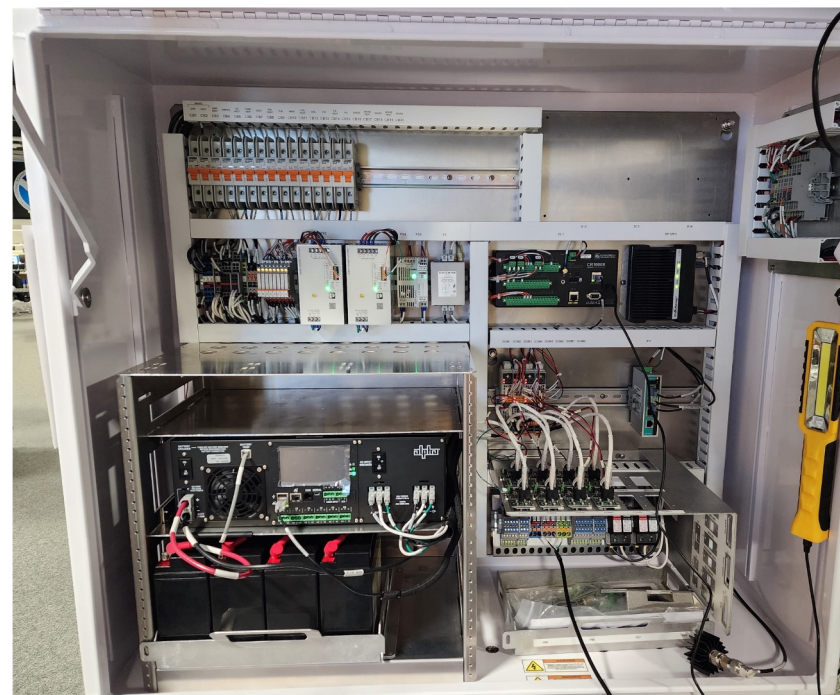
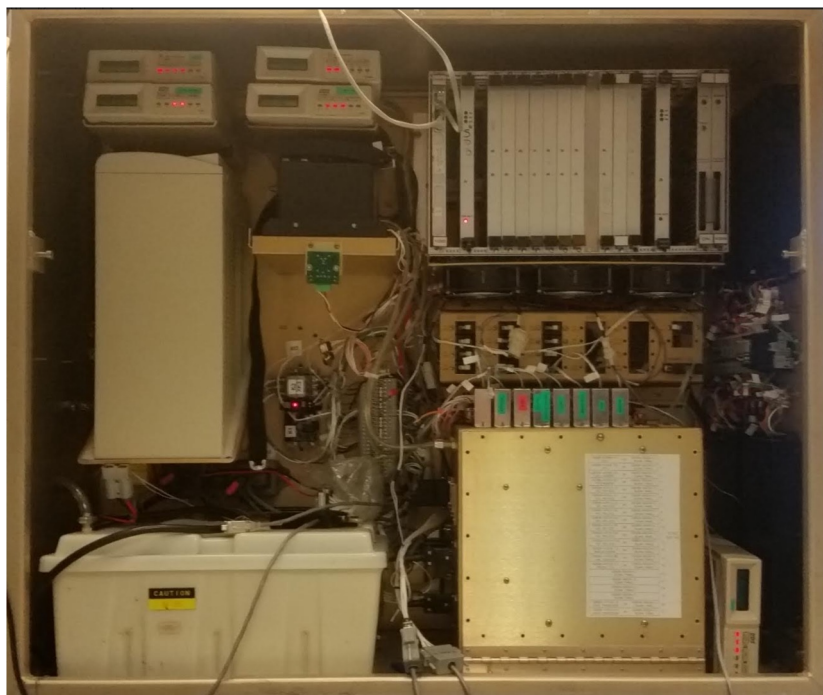
- Legacy ASOS ACU • ASOS 2.0 ACU





# Data Collection Package

- Legacy ASOS DCP • ASOS 2.0 DCP







# TRH Vaisala HMP-155

- Commercially available
- Dual Probe
- T in Aspirated Radiation Shield
- Td in non-aspirated Radiation Shield
- Redundant (goal)
- Works in Legacy and ASOS 2.0
- Operational Test Summer '23
- Full deployment FY24





# T/Td (RH) Replacement





# Questions

Ken Boutin - Program Manager  
Automated Surface Observing System

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