AMF2 FACILITY OVERVIEW

The following slides illustrate the basic AMF2 configuration. All systems are configurable and the foot print can be adjusted to meet the particular requirements of a deployment such as locating on ships. The modules can be distributed remotely from other AMF2 systems, taking advantage of limited space or complex configurations. Instrumentation in the OPS van is somewhat fixed but some subsystems can be removed and run independently if needed. Power requirements are only estimates and they will vary depending on the cooling and/or heating requirements of a deployment. Most systems are designed to accept 120 up to 480 VAC input power.

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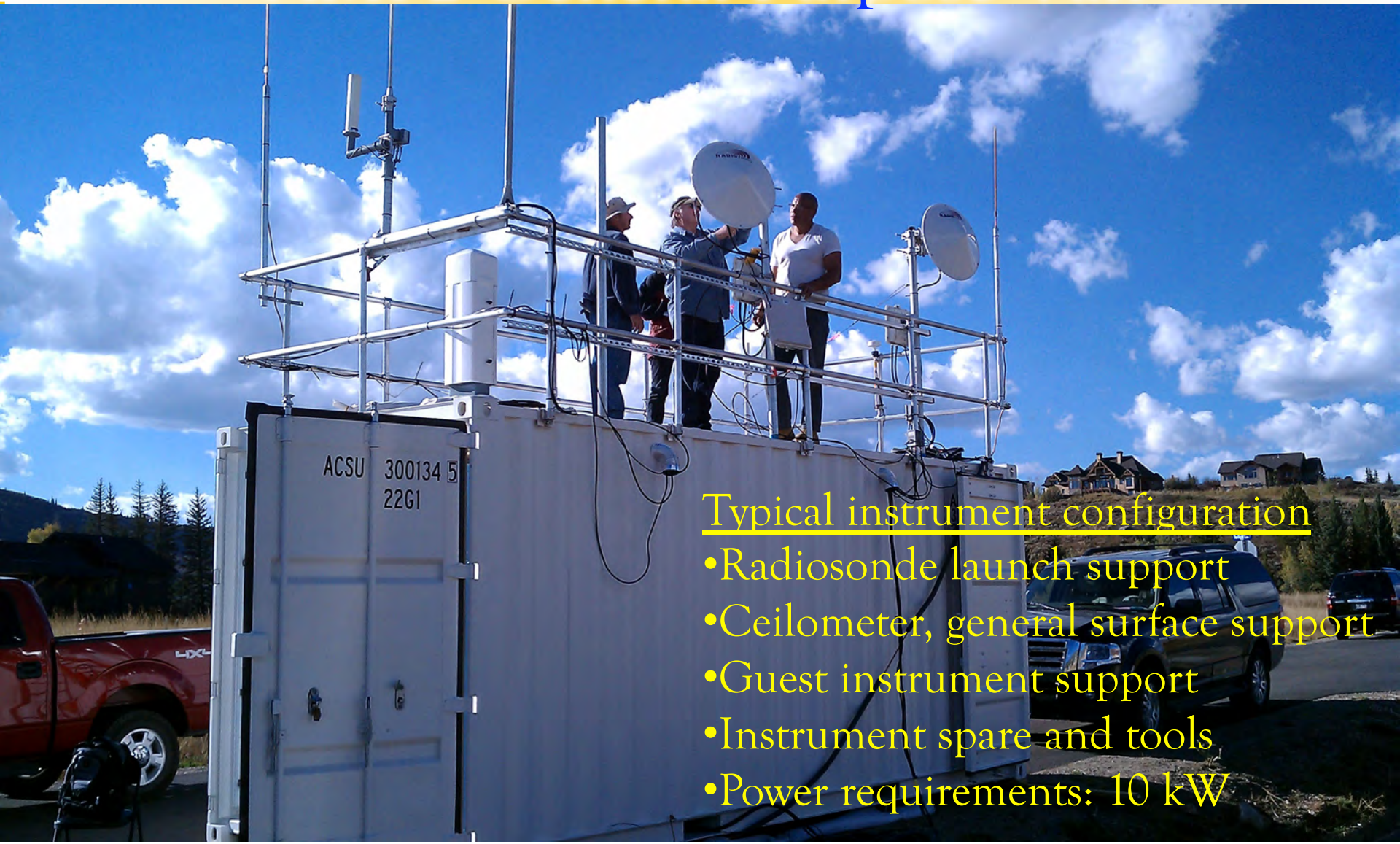
AMF2 OPS Van


Typical instrument configuration
•MPL
•HSRL
•ASSIST II
•Wind Profiler
•MWR
•Power Requirements: 10 KVA

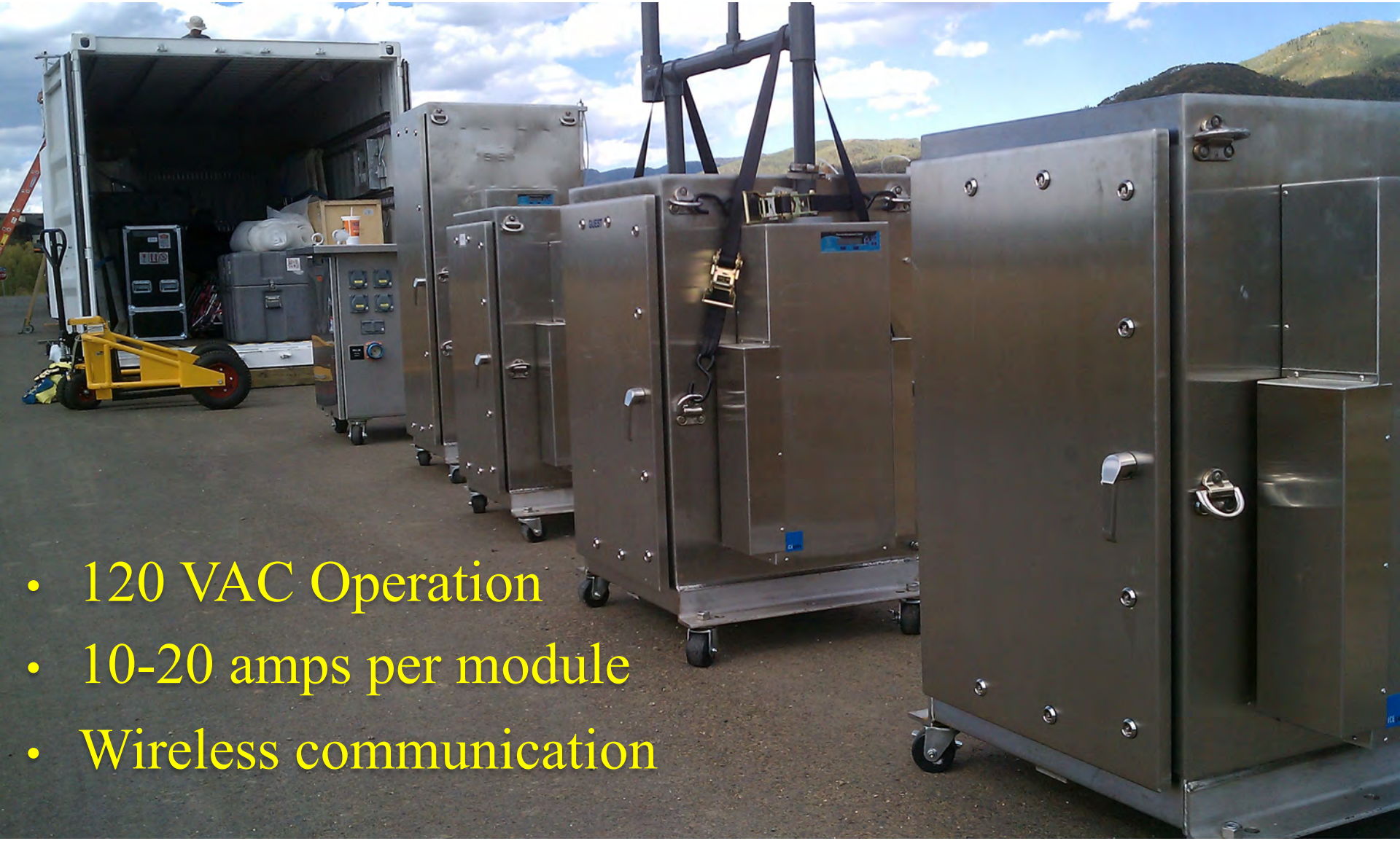
AMF2 General Purpose Van



Typical instrument configuration

- Radiosonde launch support
- Ceilometer, general surface support
- Guest instrument support
- Instrument spare and tools
- Power requirements: 10 kW

Modules



- 120 VAC Operation
- 10-20 amps per module
- Wireless communication

Aerosol Observing System

Current Instrument List

- Aerosol Inlet/Manifold
- DMT CCN-200
- Radiance PSAP
- TSI Nephelometer I
- TSI Nephelometer II
- TSI CNC 3772
- Humidigraph
- TEI O3 Analyzer
- HTDMA

Power requirement: 10 KVA

ARM X/Ka-band Scanning Cloud radar

The AMF2 radar is similar to the one above but it will have two large antennae instead of one large and one small as shown.

Estimated Power requirement: 10 KVA

Active Sensors

Micropulse Lidar (MPL)

Nd:YAG laser, 1.0 watt IR CW (30 mW pulses), 523 um, 8" telescope, eye safe

K_a-band Zenith Pointing Radar (KAZR)

K_a-band: 34.83–34.89 GHz, 200 W peak power

High Spectral Resolution Lidar (HSRL)

Nd:YAG laser, 0.6 W average power, 532 nm, 15" telescope, eye safe

Radar Wind Profiler (RWP)

Foreign deployments: 1283-1290 MHz, 1000 W peak power

U.S. deployments: 915 MHz, 600 W peak power

Scanning ARM Cloud Radar (SACR)

Ka-band: 35.29 GHz +/- 60 MHz, 1.4 kW peak power

X-band: 9.73 GHz +/- 20 MHz, 20 kW peak power

Active Sensors

Vaisala Radiosonde system

DigiCora III, 400-406 MHz, 60 mW average power

Module Wireless Communications

Standard 802.11

Microwave communication radios

Either 5.4 GHz or 5.8 GHz between primary deployment locations if needed

Vaisala Ceilometer CT31

910 nm, InGaAs Diode laser, 11 W peak power

Instrument Acronyms

AOS: Aerosol Observing system
ASSIST: Atmospheric Sounder Spectrometer by Infrared Technology (equivalent to an AERI)
CSPOT: Cimel Sunphotometer
ECOR: Eddy Correlation surface flux system
GNDRAD: Ground Radiometer for upwelling radiation
HSRL: High Spectral Resolution Lidar
MET: Surface Meteorology Measurements
MMCR: Millimeter Cloud Radar (Ka-band)
MPL: Micropulse Lidar
MWR: Microwave Radiometer
RWP: Radar Wind Profiler
SKYRAD: Sky radiometer for downwelling radiation
TSI: Total Sky Imager
X-SACR: Scanning ARM Cloud Radar – dual frequency X and Ka band
WACR: W-band ARM Cloud Radar