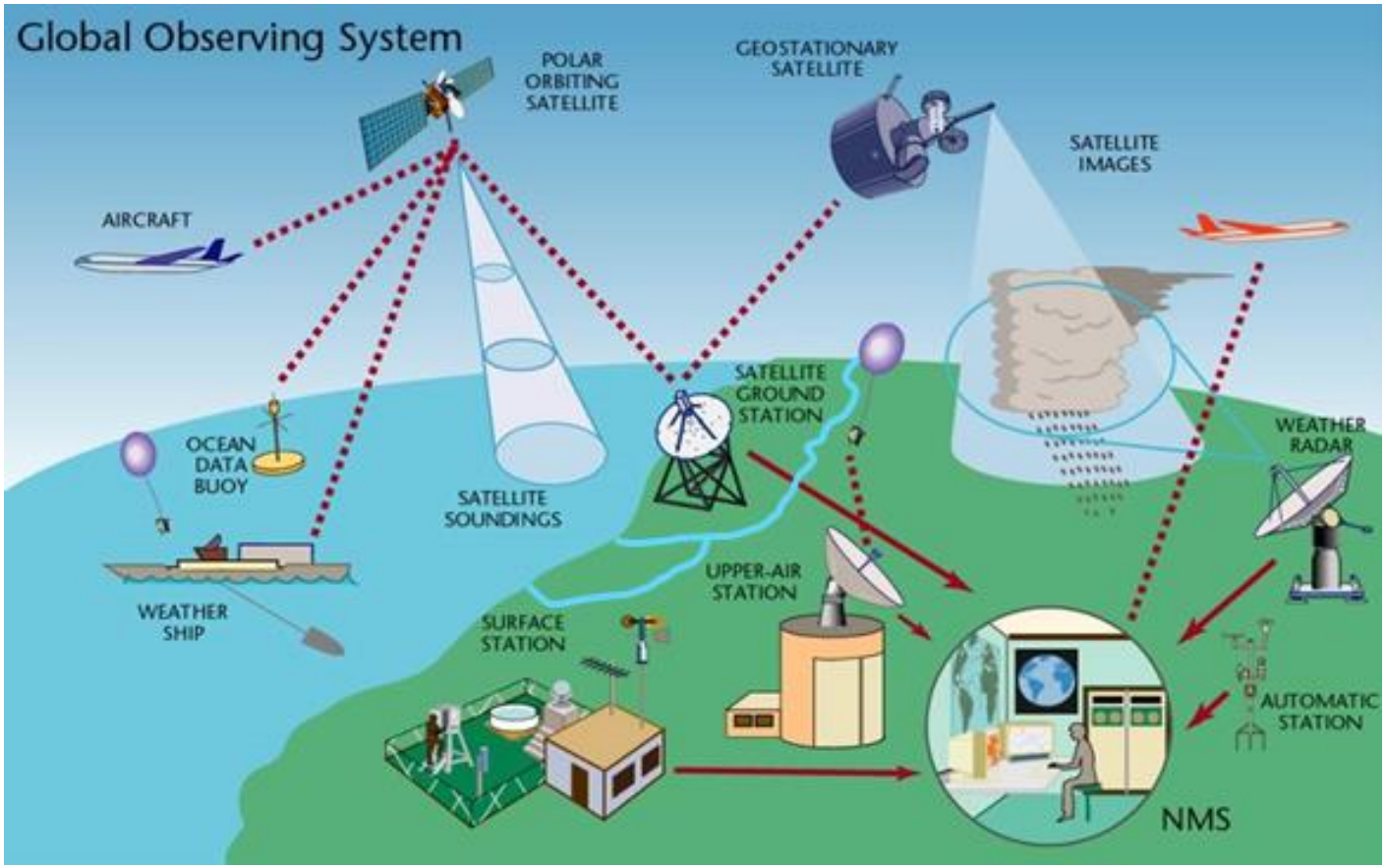
“Observations Lead the Way”

NWS Partners Meeting
January 26, 2017

NWS Office of Observations

Observations Portfolio

Responsible for the collection of space, atmosphere, water, and climate <u>observational data owned or leveraged</u> by the NWS

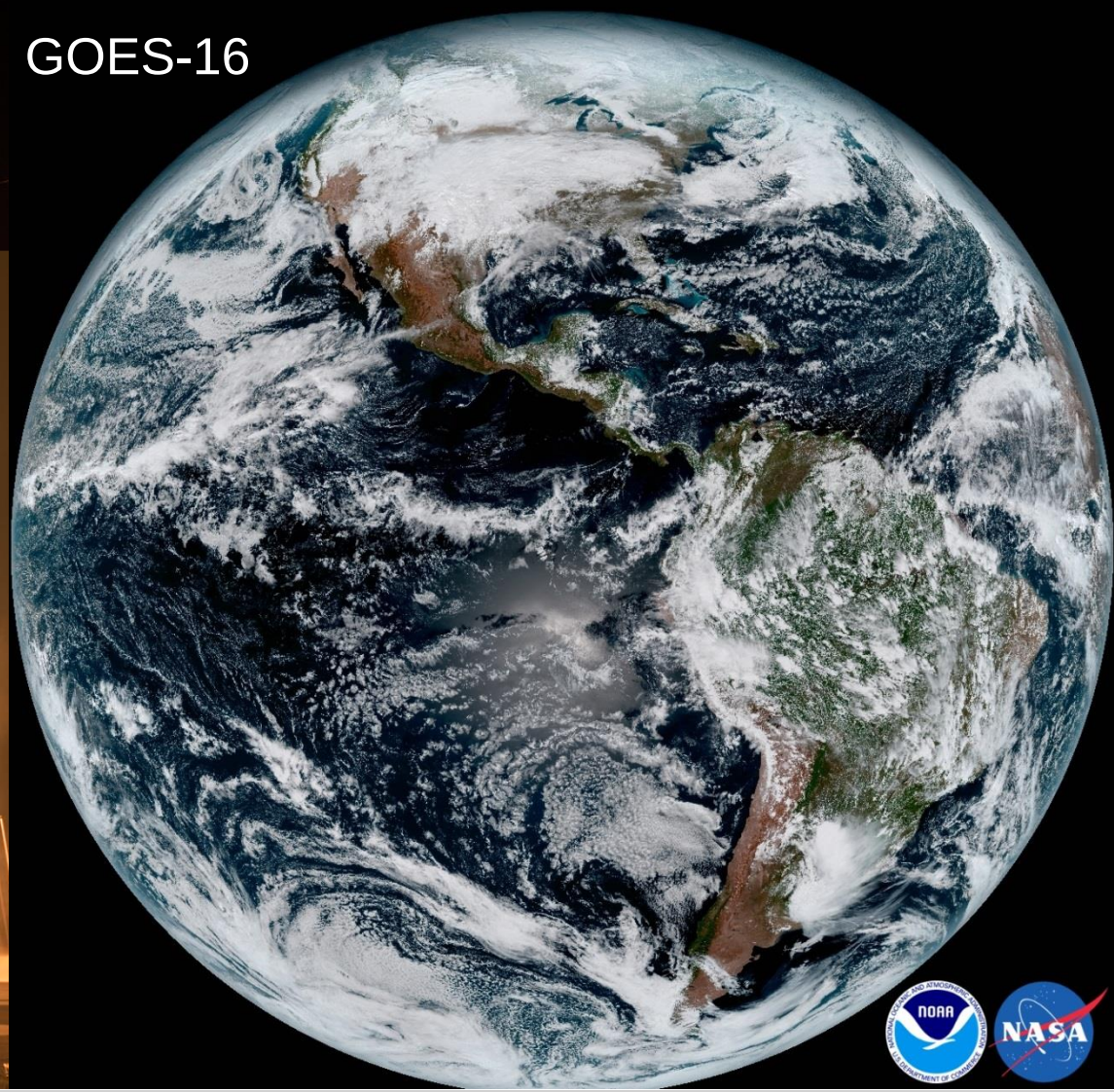


2

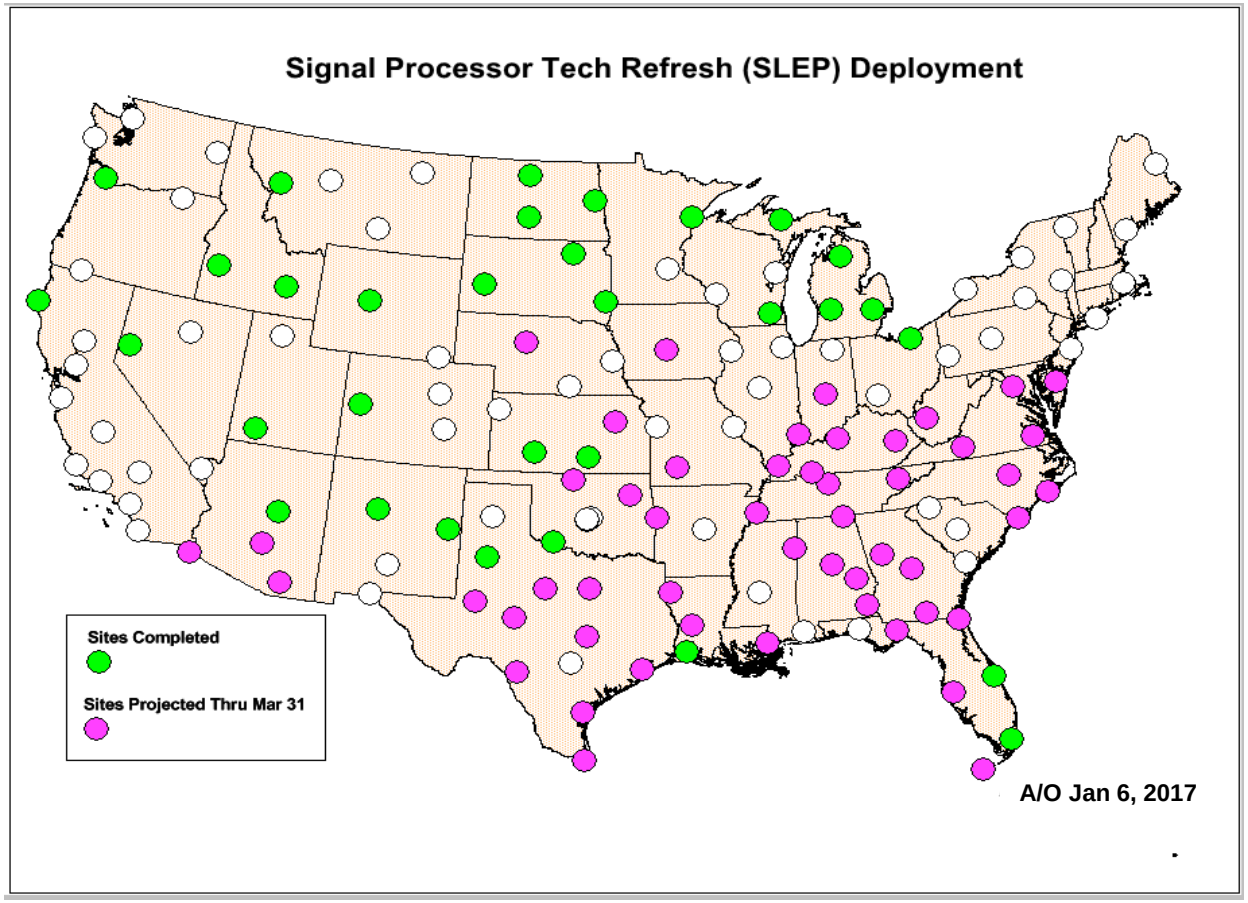
Investing in Observation Infrastructure - Satellites

Launch of GOES-R

GOES-16

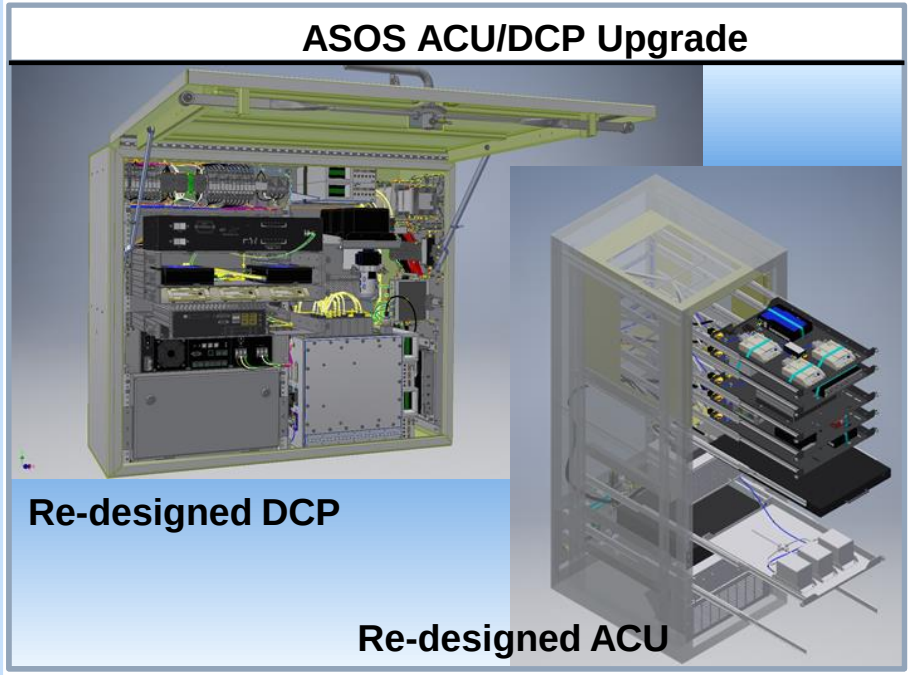


Investing in Observation Infrastructure – NEXRAD SLEP



- **NEXRAD Service Life Extension Program (SLEP)** ensures viability thru at least 2030
- Signal Processor Suite Technology Refresh scheduled to be complete in 2017
- Transmitter Refurbishment (second of 4 projects) has begun
- Overall, the project is ahead of schedule and under budget

Investing in Observation Infrastructure – ASOS SLEP



Automated Surface Observing System (ASOS) SLEP includes the following:

- Acquisition Control Unit / Data Collection Platform (ACU/DCP) replacement
- Telecommunications upgrade
- Replacement of 3 sensors
  - All-Weather Precipitation Accumulation Gage
  - Wind sensor
  - Dew point sensor

5

Investing in Observation Infrastructure – Radiosonde Network

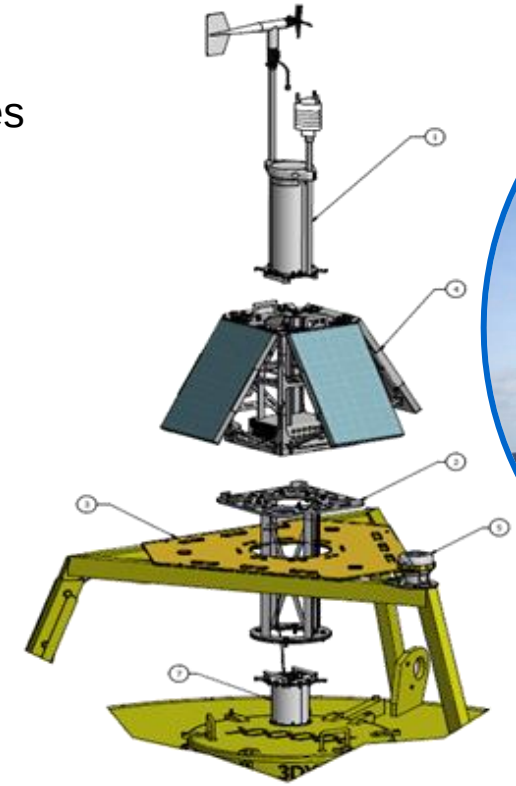
Radiosonde Autolauncher in Kodiak, AK

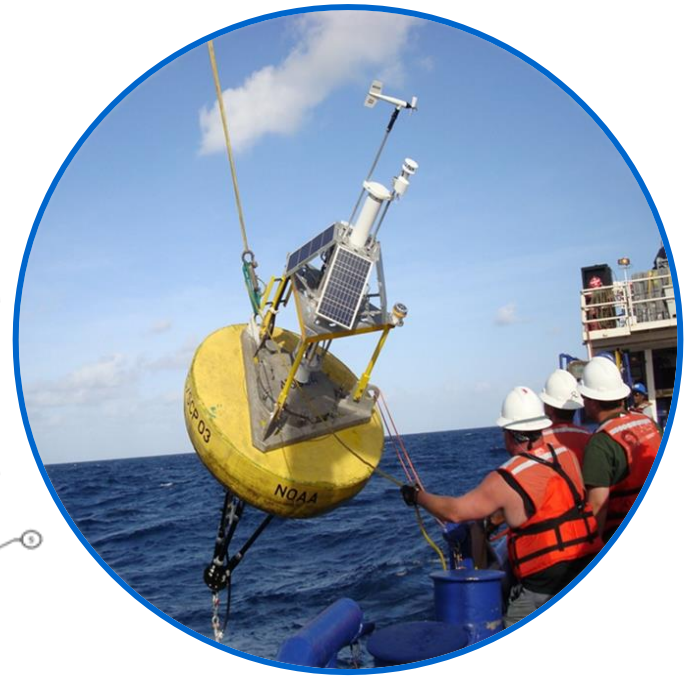
Sterling, VA

- Due to sale of “spectrum,” the **Radiosonde Frequency Migration Projec**t will move radiosondes from the 1680 MHz band to the 403 MHz band.
- Auto-launching technologies are being evaluated as preferred alternative.
- Funding from the spectrum sale is supporting this infrastructure investment.

Self-Contained Ocean Observations Payload (SCOOP)

- Less labor intensive assembly
- Allows use of ships with less lift capacity
- At-sea servicing
- Requires less time on station
- Expanded observing capabilities



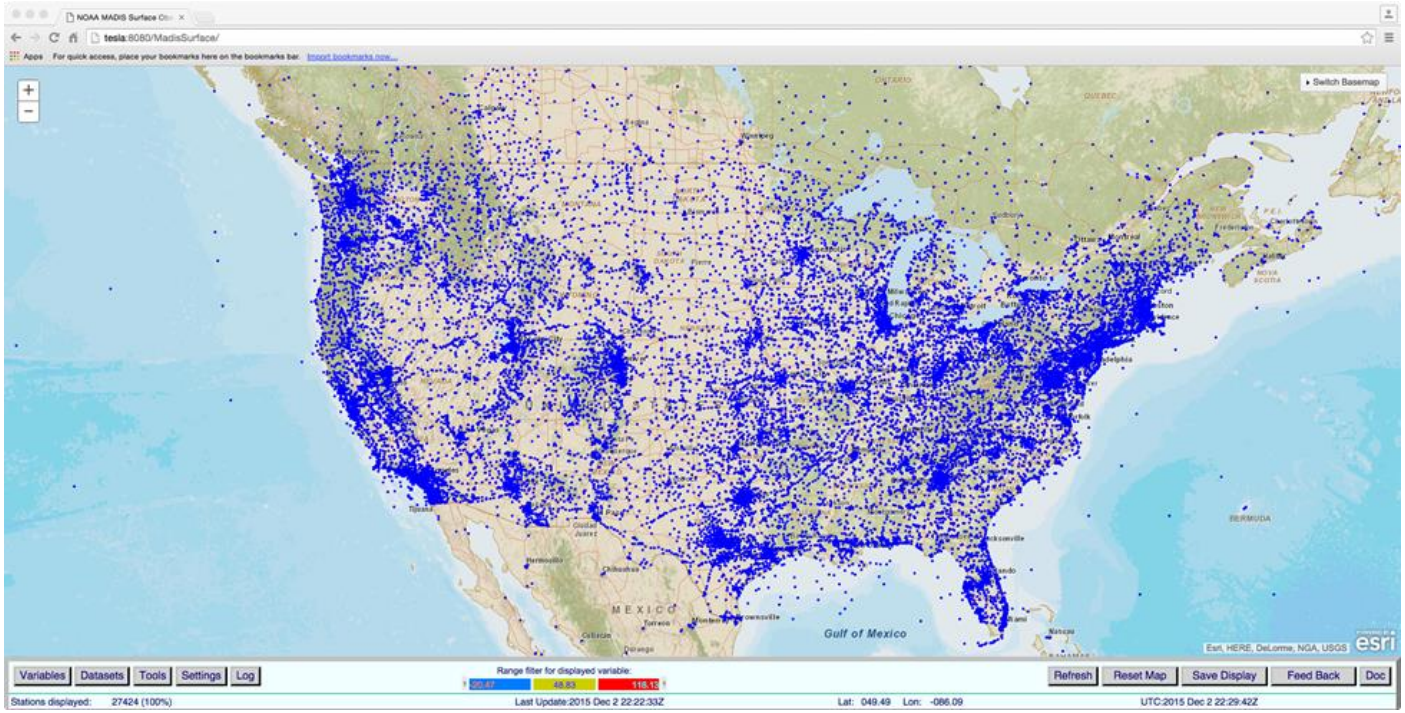


Increased reliability

7

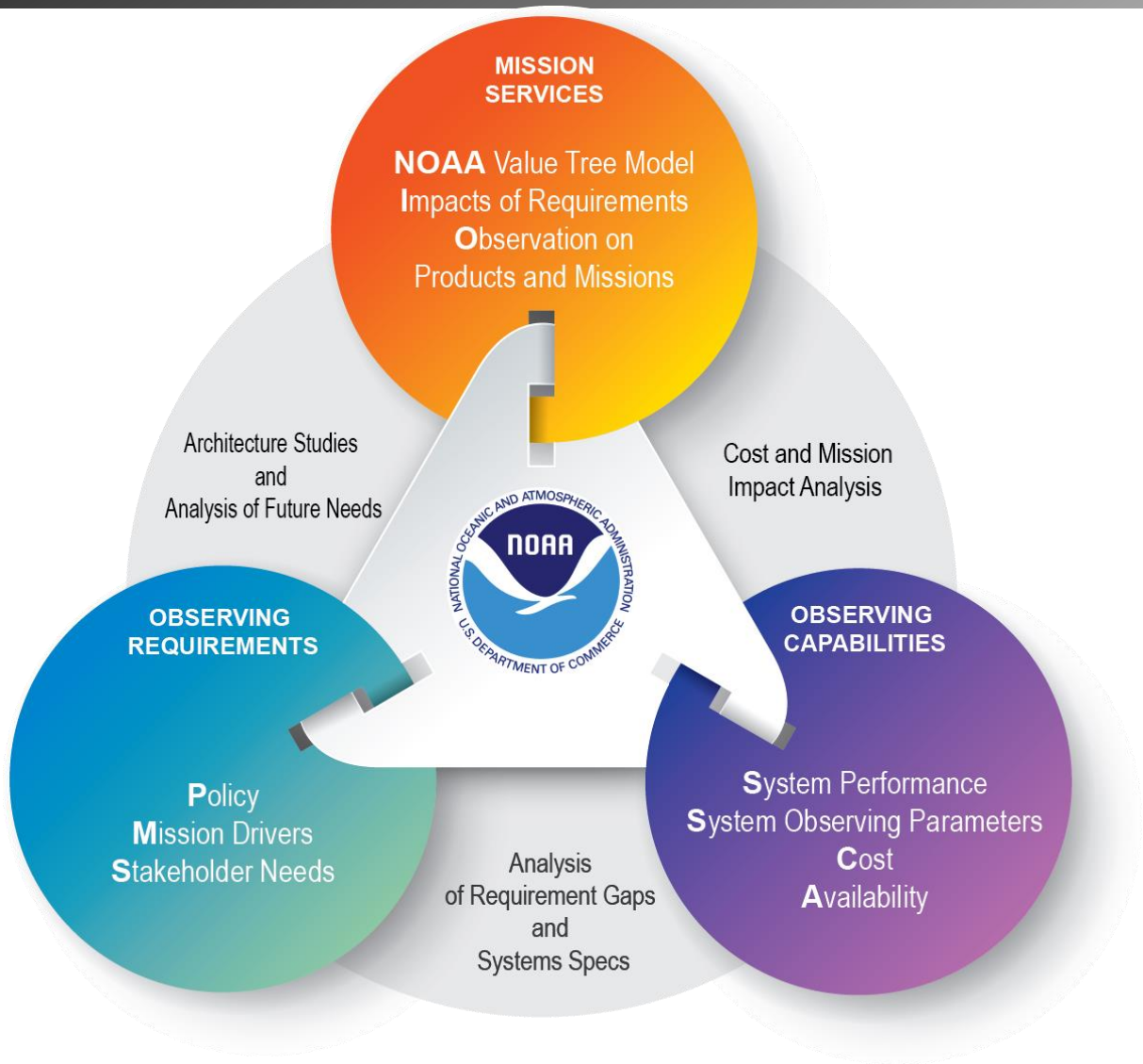
Leveraging Smart Data Buys

National Mesonet Program -



- **Aircraft Based Observations (MDCRS, WVSS)**
- **Lightning Data**
- **GPS-Met**
- **Commercial Weather Data Pilot** – evaluating Radio Occultation data from commercial providers

Managing the NOAA Observing System Portfolio



NOAA Observing Portfolio Management – Guiding Principles

- **Vision**: NOAA's vision is to achieve and sustain an observing system portfolio that is ***mission-effective, integrated, adaptable,*** and ***affordable***.
- **Superior Service and Reputation**
- **Adaptability**
- **Cost-Effectiveness, Affordability & Sustainability**
- **Integration**
- **Global Context and Commitments *(Data Sharing)***
- **In-House Expertise**
- ***Well-governed, Understood & Trusted***

Ref. NOAA Administrative Order 212-6, Effective 11/1/2016

NOAA's First Emerging Technologies Workshop

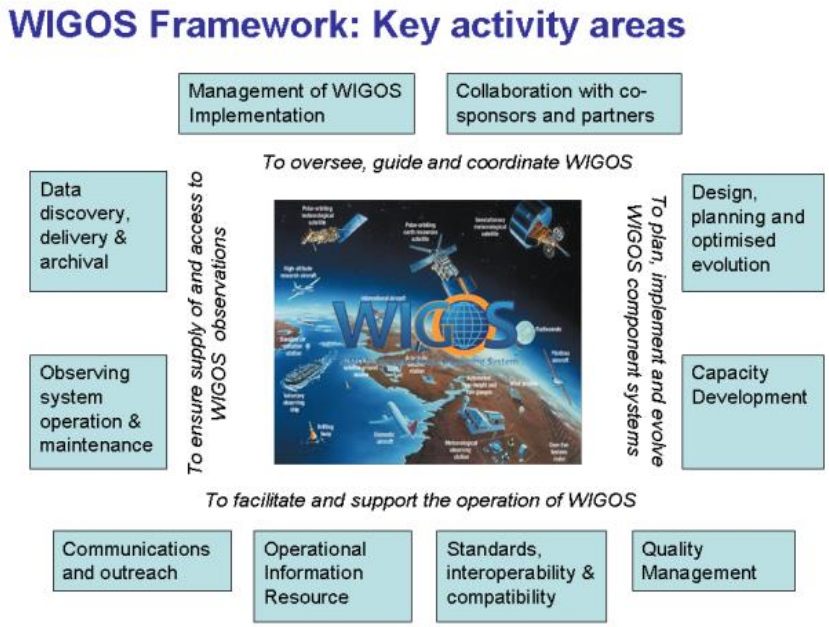
NOAA's Observing Systems Council hosted the first Emerging Technologies Workshop for Observations:

- Provided a forum for NOAA to gather, share, and communicate technology, research, and development activities
- Integration of all of our observing systems and technologies
- Solid requirement processes and sound prioritization methods are needed for mission efficiency, integration, adaptability, and affordability
- Smaller, more targeted, and nimble technologies could improve the time needed for acquisition and development, while keeping costs down and maintaining pace with rapid technology advances
- We need to find and leverage technologies that allow NOAA to share its data more readily and to a larger range of users

Saildrone USV developed by Saildrone Inc. & PMEL in the Aleutian Islands

Engaging in WMO efforts to define *"Vision for the WMO Integrated Global Observing System (WIGOS) in 2040"*

- Autonomous observing systems
- Optimal mix of fixed and mobile platforms
- Emerging crowd-sourced information
- Miniaturization and commoditization of sensors
- Efficient and new, novel uses of communications technologies
- Expected roles and ownership of government and private sector observations



Open Questions

- How can NOAA and NWS better understand the observation needs of the broader weather enterprise?
  - Where are we well aligned?
  - Where are there gaps between NOAA and Partners?
- Where is it vital for the NWS and NOAA to continue to focus with regards to observations?
- Where do you recommend NWS and NOAA shift its focus with regard to observations?
- How can NOAA collaborate more effectively with Partners (research community, private industry, international, etc.) to develop better or new observation techniques for the future?
- Are there any observations innovations you are excited to see for the benefit of broader weather enterprise?
  - What do you, as Partners, see as your role for innovation?