

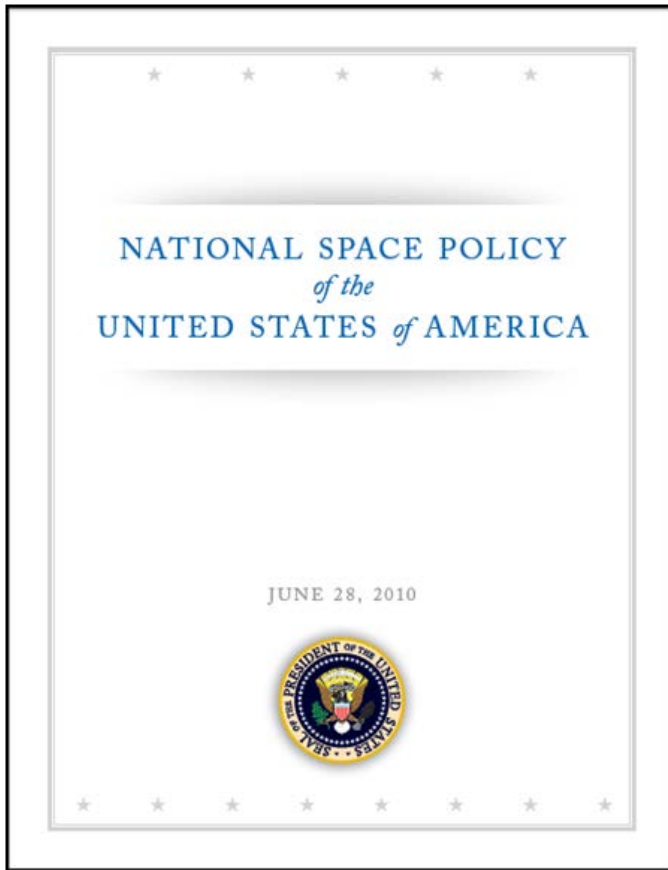
# NOAA's Experience Working with the Commercial Sector

Presented to CGMS-45, Plenary session 1, agenda item C.6.2

## Outline

- Policy development
- Commercial sector engagement
- Pilot program
- Key questions

## U.S. Policy Background



- Actively explore the use of inventive, non-traditional arrangements for acquiring commercial space goods and services
- Pursue opportunities to transfer routine, operational space functions to the commercial space sector where beneficial and cost-effective
- Encourage the purchase and use of U.S. commercial space services and capabilities in international cooperative arrangements
- Develop governmental space systems only when it is in the national interest and there is no suitable, cost-effective commercial service or system that is or will be available
- Refrain from conducting U.S. Government space activities that preclude, discourage, or compete with U.S. commercial space activities, unless required by national security or public safety

## Policy Development

### NOAA Commercial Space Policy



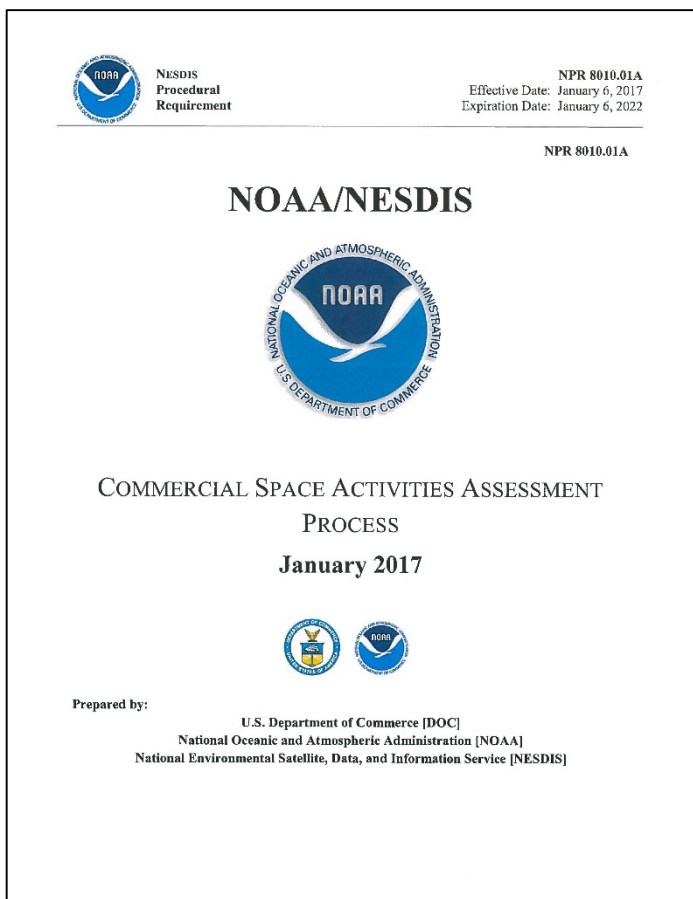
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- Sets a broad framework for use of commercial space-based approaches by NOAA
- Defines principles that will guide NOAA in its use of commercial capabilities, including sustaining service quality, ensuring access to global observations, and upholding national and international standards for full, open, and timely data sharing
- Calls for periodic identification of NOAA requirements that could be met by the commercial sector, and periodic canvassing of the commercial sector for available capabilities
- NOAA will apply the same validation, data integrity, and security criteria to commercial data and data products as to those obtained by other means
- Establishes demonstration projects to test and evaluate new potential data sources and provide an avenue to operational commercial data buys.

## Policy Development



- NESDIS implementation of the NOAA Commercial Space Policy
- Review existing observing system capabilities and assess their impacts on NOAA mission objectives, and to perform analyses of gaps in our ability to meet requirements
- Canvass the commercial sector periodically, typically every 2 to 3 years or as indicated by changing markets or technologies, by issuing general Requests for Information (RFIs)
- Issue one or more solicitations, in accordance with the Federal Acquisition Regulation, for NOAA to acquire and evaluate on-orbit observations from commercial sources
- Subsequent to the identification of a promising demonstration project, NESDIS may issue one or more solicitations to purchase on-orbit observations from commercial sources, for NOAA to use these data operationally.

## Commercial sector engagement

NOAA believes regular engagement with the commercial sector is a key aspect of making the best use of commercial capabilities

- NESDIS has held regular workshops open to the public:
  - April 2015: Overview of NOAA's approach to working with the commercial sector
  - December 2015: Discussion of the content of the NESDIS Commercial Space Activities Assessment Process
  - July 2016: Industry Day focused on Commercial Weather Data Pilot Round 1 draft Request for Quotation for radio occultation data
- The NESDIS Process states that NESDIS will sponsor periodic meetings or workshops to facilitate communication among NESDIS, the scientific community, and the private sector
- NOAA and NESDIS have identified entry points for commercial sector engagement
  - The NOAA Policy names the Office of Space Commerce as the entry point for engagement with NOAA
  - The NESDIS Process names the NESDIS Office of System Architecture and Advanced Planning as the entry point for NESDIS

## Commercial Weather Data Pilot

- The NOAA Commercial Space Policy and the NESDIS Commercial Process call for demonstration projects for NOAA to acquire and evaluate on-orbit data from commercial sources
- The CWDP is a pilot of the demonstration projects called for in these documents, and is serving two roles for NESDIS.
  - An understanding of procedures and formulate best practices that will serve as a foundation to any future commercial data demonstration projects and operational data purchases.
  - Potentially serve as a demonstration project itself, informing decisions on procurement of certain data sets operationally.

### FY16 \$3M Round 1



### FY17 \$5M Round 2



## Commercial Weather Data Pilot: Round 1

- CWDP initiated with \$3M in FY 2016
- NOAA identified radio occultation as initial data set for evaluation
- Requirements set to enable maximum participation:
  - Requested 3-6 months of data in specified format
  - No minimum requirement for occultations per day, distribution of occultations around the globe, or secure real time data delivery
- Round 1 activities addressed processes for contract writing and initial evaluation
  - Round 1 does not address NESDIS processes for IT security, data rights and distribution, real time data ingest
- In parallel, NOAA continues to develop internal capabilities to ingest and process commercial data from a variety of potential sources and domains.





## Commercial Weather Data Pilot: Round 2

- \$5M received in FY 2017
- NESDIS released a draft RFP in May for a second assessment period for commercial radio occultation data
- NESDIS will use Round 2 to further support the demonstration of radio occultation data and the development of internal infrastructure needed to pursue procurement of commercial radio occultation data operationally:
  - NESDIS processes not examined in Round 1 (see table)
  - The draft RFP seeks input on the following vendor requirements approaching operational needs:
    - Global coverage and repeat period
    - Longer period of data covering two full weather seasons
    - Number of daily RO soundings
    - Measurement of data latency
    - Addition of space weather (ionospheric) data
    - Limited license for distribution to domestic and international operational partners
    - Optional acceptance of vendor-produced atmospheric profiles for analysis
  - NWP impact analysis to inform procurement of data sets operationally

Commercial Data Purchase Procedure	Round 1	Round 2
Contract Writing	X	X
Data quality assessment	X	X
Real time secure data ingest		X
Numerical weather prediction impact assessment		X
Data rights negotiation		X
Data archive		X

## Key questions

Key questions will continue to emerge, including those below, as NOAA continues to engage an evolving commercial sector. We welcome conversation on these questions and others as we proceed.

- What is the market beyond government for meteorological data, and how will this affecting commercial data pricing?
- How will national meteorological agencies approach commercial data purchases from companies outside their country?
- What are the challenges of upholding full and open data policies within commercial data purchases?
- What is the appropriate risk for the government to take on when making use of commercial sector capabilities (e.g. up front commitments, evidence of companies' long term viability)?
- Are there types of data that should be inherently governmental?
- What are the synergies and differences across agencies and organizations in considering use of commercial data?

## Next steps

- Execute Commercial Weather Data Pilot Round 2, with results possible in 2019
- The Weather Research and Forecasting Innovation Act of 2017 became law in April, which authorizes continuation of the Pilot through 2020 and consideration of operational commercial data purchases following Pilot results
- Per the NESDIS Process, NESDIS plans to continue to canvass the commercial sector for available data sets that can meet NOAA mission needs
- The NOAA Satellite Observing System Architecture Study is underway now to determine the NOAA observing system architecture 2030-2050, and is systematically considering commercial capabilities as a potential part of future architectures, along with NOAA programs of record and international partner missions

## Key issues of relevance to CGMS:

- Engaging the private sector
- Availability of commercially-purchased data for international use