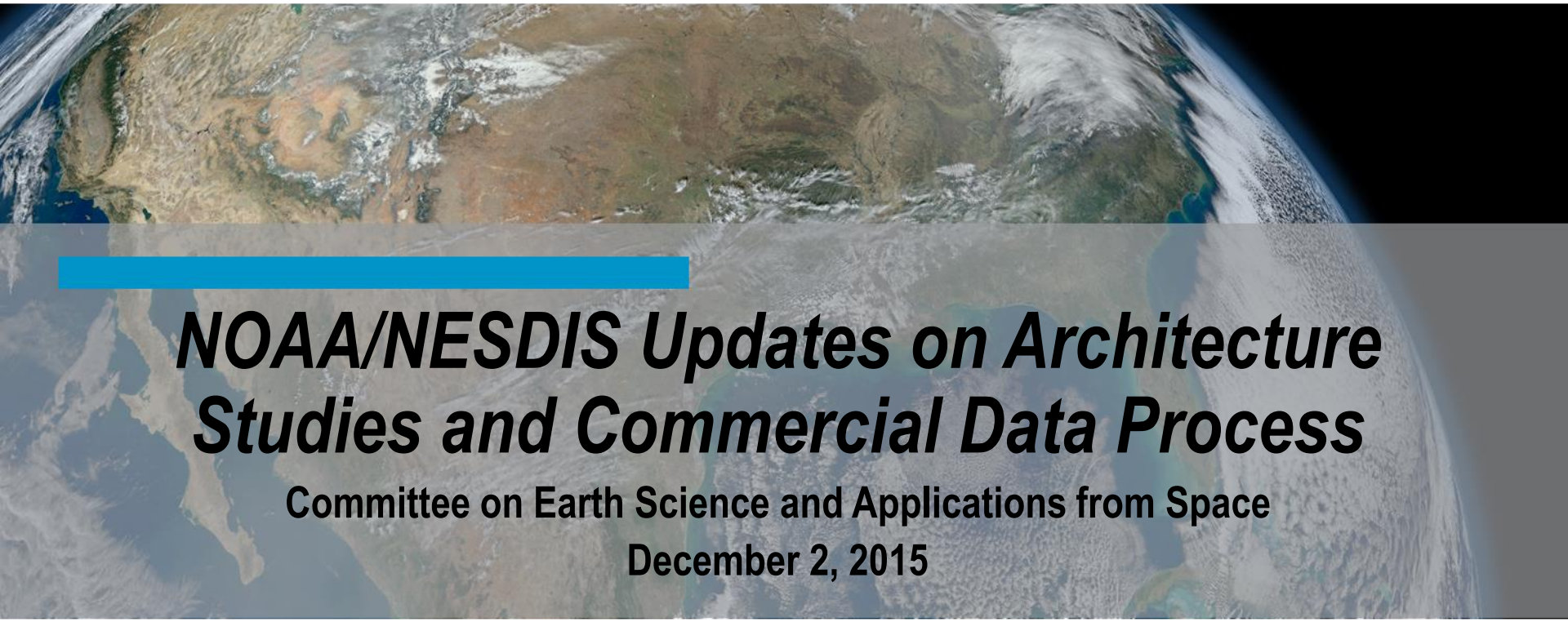


NOAA/NESDIS Updates on Architecture Studies and Commercial Data Process

Committee on Earth Science and Applications from Space

December 2, 2015

NOAA Satellite and Information Service

Dan St. Jean, NESDIS Office of Systems Architecture and Advance Planning

Overview

- Next generation architecture studies
- NOAA and NESDIS Commercial data activities
- Questions/Discussion

NESDIS Architecture Studies

- Next generation architecture studies underway through 2016
- Continuing work extends through 2020 to establish and begin development of programs with operational capability in 2030 epoch
- Space platforms requirements working group
  - Examine NOAA mission needs for 2030 epoch
  - Prioritize current/future space-based NOAA observational mission requirements and identify gaps in capabilities to meet these requirements
- Remote sensing capabilities examined which could be operational in 2030 epoch
  - Option: Can commercial solutions meet some NOAA observing system requirements?

NOAA/NESDIS Commercial Space Activities

- NOAA Commercial Space Policy
  - High level policy to guide NOAA in procuring space-based commercial data
  - Public comments adjudication currently being finalized
  - Final policy release expected in coming months
- NESDIS Commercial Process
  - Implementation steps for purchase, test, and potential operationalization of commercial space-based data
  - In final formulation pending NOAA policy

Commercial Activities: Fundamental questions

- Is there a market beyond government for meteorological data?
- What is the government's role in contributing to commercial companies' success up front?
- What is the appropriate risk for the government to take on (e.g. up front commitments, evidence of companies' long term viability)?
- Are there ways for full and open data polices to be compatible with commercial data purchases?
- Are there types of data that should be inherently governmental?
- What are the synergies and differences across agencies in considering use of commercial data?

Key NESDIS Commercial Activities

- Recurring canvas (e.g., RFIs every 2-3 years) of commercial sector for potential solutions to new or existing NOAA mission requirements
- RFPs for demonstration projects
  - Contract for data acquisition
  - NOAA to test and validate *on orbit* data
  - NOAA to assess data per value, cost effectiveness and exploitability criteria in NESDIS process document (e.g., accuracy, IT security, cost/value etc.)

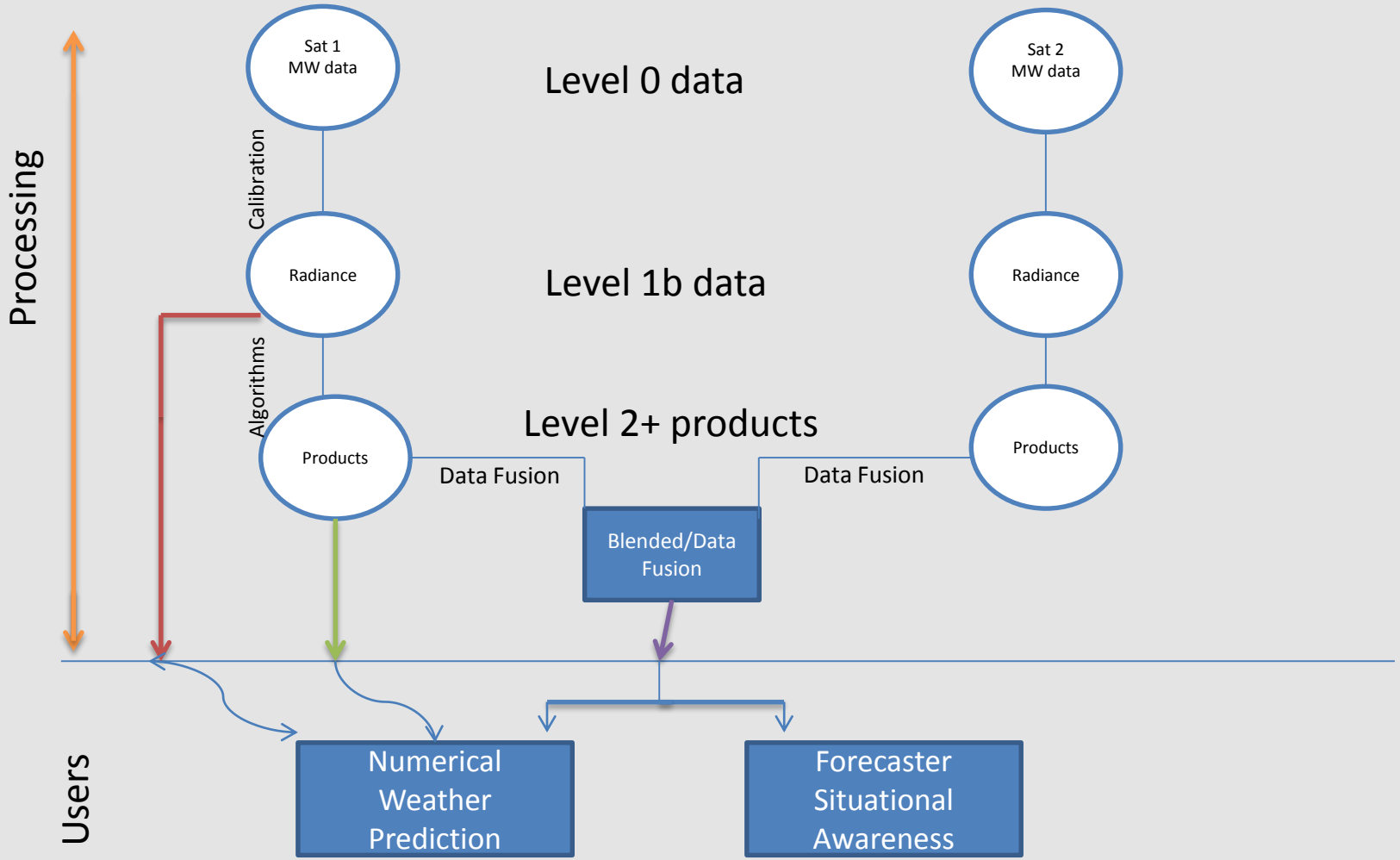
Demonstration Project: Pre-Launch

- Ground system framework development
- Pre-launch data acquisition to begin early calibration and assimilation work
- Numerical Weather Prediction Models prep:
  - Algorithm development and testing
  - Data formatting
  - Data delivery requirements
- Forecaster situation awareness prep:
  - Operations proving ground testing
  - End to end operational testing
  - Forecaster training

Demonstration Project: Post-Launch

- Ingest data into NOAA ground systems
- Distribute data to users (e.g., National Weather Service)
- For Numerical Weather Prediction Models:
  - Perform on-orbit calibration and validation
  - Monitor data quality
  - Test impact of data on models
- For Forecaster situation awareness:
  - End-to-end operational testing, integration, evaluation
  - Accelerated forecaster training

Demonstration Project Example: Microwave Soundings



From Demonstration to Operational

- Assumes a promising commercial dataset is identified through demonstration project
- One or more RFPs to purchase on-orbit data
- Contract for acquisition, ingest, processing, delivery, exploitation and assimilation of on-orbit data
- Transition of algorithms and demo hardware to operational systems
- Distribution of operational data to end users
- Ongoing maintenance, archival and monitoring of data and/or product outputs

Thank you!

Questions?