Data Use: How Does NOAA Use Satellite Data to Fulfill its Mission?

Presented to: NOAA/NESDIS Workshop
Consideration of Commercial Data to Address Our Priority Data Needs

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How are NOAA’s data used?

• Near-term mission
  – Hurricane intensity, Aviation forecasts, etc.

• Long-term mission
  – Drought, El Niño, Climate Data Records, etc.
Data Flow Process

Ingest Of Data
- NOAA Satellites
- Intergovernmental/International satellites & partnerships
- Other external sources

Distribution Of Data And Products
- Key stakeholders:
  - Numerical Weather Prediction models
  - Field forecaster applications

Processing/Manipulation/Reformatting Of Data
- Data quality assurance and calibration/validation
- Creation of products

Data/Product Archive And Stewardship
Quality Assurance: Basic Standards

- Are the data reliable, valuable, accurate, timely and sustainable in the long term?
- Are the data available for early testing?
- Have IT security concerns been mitigated?
- Can NOAA easily reach back to data provider for support?
- Is the process cost-effective?
Case Study: JPSS-1 ATMS

• S-NPP data examined as proxy in advance of JPSS-1 launch
• Data received into ground system post-launch and after instruments turned on
  – Photons converted to vertical atmospheric soundings
• Calibration/validation of sounding data to determine its quality and reliability
• Generation and distribution to NCEP/Environmental Modeling Center
  – Evaluation and testing of soundings
  – If acceptable, assimilation into EMC Numerical Weather Prediction models
• Data archived at NCEI for future exploitation
Notional Timeline Example: Data Stream Testing

- Normally prior to launch: NESDIS STAR works with provisional or simulated data
- T+0: NOAA receives test data stream
- +3 to 12 months: Development and testing phase of data stream and/or derived products complete
- +3 to 12 months: Pre-operational testing phase of data stream and/or derived products complete

From T+0: 6 to 24 months — Data/Products Operational
Wide time range depending on type, uniqueness, quality of data, and how early NOAA can test it
Questions and Discussion