NESDIS Update

Committee on Earth Science and Applications from Space September 25, 2015

NOAA Satellite and Information Service



FY 2016 Budget Highlights

- Continued support for GOES-R series
- Continued support for JPSS program and request for Polar Follow-On (PFO)
 - Investment in PFO will allow NOAA to acquire JPSS-3 and JPSS-4 to provide continuity and build a robust constellation
 - Includes Earth Observing Nanosat Microwave (EON-MW) to provide partial gap mitigation should it be required
- Request for COSMIC-2/Global Navigation Satellite System Radio
 Occultation (GNSS/RO)
 - Allows for procurement of the second set of six COSMIC-2 RO sensors to be launched in 2019 in polar orbit
- Request to analyze options for space weather follow-on

DSCOVR Update

- Reached final L1 orbit in June
- NASA returned first image from the Earth Polychromatic Imaging Camera (EPIC) in July
- DSCOVR operational handover from NASA to NOAA planned for October



Upcoming Launches

• Jason-3

- New launch date TBD pending review of SpaceX Falcon-9 anomaly
- GOES-R
 - Due to identified schedule risks, launch date moving from March 2016 to fall 2016

COSMIC-2 (GNSS/RO)

- Launch of first set of six sensors scheduled for Q3 FY2016 on SpaceX Falcon Heavy
- Launch status pending SpaceX anomaly impacts on Falcon Heavy
- JPSS-1
 - Launch on schedule for Q2 FY2017

GOES Flyout Chart



GOES-R Improvements

Capability	Current GOES	GOES-R
Full Disk Image	30 minutes	5 minutes
Imager Bands	5	16
Resolution	~1 km	0.5-1 km
Lightning Mapper	No	Yes
Command and Control	1 day autonomy	7 days autonomy
Data Compression	None	Lossless

Polar Flyout Chart



JPSS Improvements

Capability	Current POES	JPSS
Data Latency	85% < 180 minutes	95% < 96 minutes
Imager Resolution	1-4 km	0.375-1 km
Multi-spectral Capability	6 channels	22 channels
Day/Night Band	No	Yes
Consistent Resolution Across Scan	No	Yes
Ocean Color	No	Yes
Microwave Sounding Spectral Channels	20	22
Microwave Sounding Swath Width	2200 km	2600 km
Spatial Resolution	16-48 km	16-32 km
Infrared Sounding Vertical Resolution	3-6 km	1-2 km

NESDIS plan for polar continuity



*Notionally Fuel limited life times

What Comes Beyond GOES-R and JPSS?

"Develop a space-based observing enterprise that is flexible, responsive to evolving technologies, and economically sustainable"

-FY15 NOAA Annual Guidance

- JPSS-4 proposed launch in 2031; GOES-S expected End of Life in 2028
 - Next Generation needs to be ready at those times for assured mission
- Space Weather follow on to DSCOVR needed ASAP
- Historical development cycles of 15+ years tells us we need to start Next Gen architecture design work NOW
- Opportunity to start with a clean slate: Enterprise Ground, New Technologies, Improved efficiencies in acquisition and operations
- Plan: Re-Architect Space and Ground
 - Create Enterprise Ground: NESDIS Office of Satellite Ground Services (OSGS)
 - Initiate space segment future architecture design activity: NESDIS Office of System Architecture and Advanced Planning (OSAAP)

Space Architecture Study

- Target Epoch 2030
- Examine user community needs for that time frame
 - Establish Space Platform Requirements Working Group (SPRWG)
- Examine remote sensing instruments that can be operational in that time frame
- Utilize architecture design tools to create architecture options
 - Identify Performance and Cost envelopes
- This activity is planned for FY15-16 It is ongoing
- Pre-Formulation targeted for FY17 start (Subject to appropriations)

Notional Next Gen Space Plan



Satellite Ground Services 5 Year Plan

	FY15 FY16							FY	´18			FY	′19		FY20						
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Create

NOAA's Ongoing Commercial Discussions

- Held NESDIS Workshop on April 28
 - Starting point for continued dialog with commercial sector and interested stakeholders
- NOAA Commercial Space Policy currently out for public comment
 - Policy to guide the use of space-based commercial data and services to meet NOAA requirements
 - Comment period closes October 1
- NESDIS Commercial Space Activities Assessment Process
 - Defines NESDIS process for engaging with the commercial sector to leverage commercial solutions for space-based earth observation requirements
 - Will be released for public comment following NOAA Policy comment period
 - NESDIS planning a second public workshop as Process is developed

Questions?

