FY 2017 NOAA Satellites Budget Comparison

Update 2

This document provides an overview of the **President's FY 2017 NOAA Budget request** and the **SAC Passed Commerce, Justice, Science Appropriations Bill** in comparison with **FY 2016 Consolidated Appropriations (P.L. 114-113).**

NOAA Satellites – FY 2016 Funding

Budget Authority, $ in million	Consolidated Approps, 2016 (P.L. 114-113)	President's FY 2017 NOAA Budget Request	Senate Approps Committee (SAC) Passed Commerce, Justice, Science Approps Bill
Satellites			
Geostationary Systems – R Series	871.791	752.784	752.784
Altimetry Mission - Jason-3	7.458	4.357	
Polar Orbiting Systems - Joint Polar Satellite System (JPSS)	808.966	787.246	787.246
Polar Follow-On	370.0	393.0	383.0
Cooperative Data and Rescue Services (CDARS)*	0.500	0.500	0.500
Deep Space Climate Observatory (DSCOVR)	3.200	3.745	3.745
Space Weather Follow-On	1.200	2.500	7.500
COSMIC-2/Global Navigation Satellite System Radio Occultation (GNSS RO)	10.100	16.200	8.100
Satellite Ground Services	54.000	59.025	54.000
Systems Architecture and Advanced Planning (SAAP)	3.929	4.929	3.929
Projects, Planning and Analysis	25.200	33.488	25.200

* Formerly Solar Irradiance, Data and Rescue (SIDAR)

Commercial Weather Data Pilot	3.000	5.000	3.000
Total	**2,159.344**	**2,062.774**	**2,031.232**

President's FY 2017 Budget Request for NOAA Satellites

The FY 2017 the President's budget request includes $2,062.774 million for NOAA satellite acquisition, $96.57 million less than the funds appropriated for NOAA satellites in FY 2016.

Geostationary Operational Environmental Satellite–R (GOES-R)

Budget Authority, $ in million	Consolidated Approps, 2016 (P.L. 114-113)	President's FY 2017 NOAA Budget Request	Senate Approps Committee (SAC) Passed Commerce, Justice, Science Approps Bill
GOES-R	871.791	752.784	752.784
Total	**871.791**	**752.784**	**752.784**

Mission

The Geostationary Operational Environmental Satellite –R (GOES-R) Series is a collaborative development and acquisition effort between NOAA and NASA to develop, deploy and operate the next-generation geostationary environmental satellite series that will provide timely and accurate weather forecasts, severe storm tracking, space weather monitoring, and meteorological research. The GOES-R series will incorporate new instruments with increased capability over the incumbent GOES-N series and will improve its ground system, which will provide better data products for National Weather Service (NWS) and other NOAA stakeholders.

President's FY 2017 NOAA Budget Request:

- The President requested $752.784 million for GOES-R, $119.007 million below its FY 2016 enacted budget, including an $85.107 million planned program reduction.
- The remaining funds are needed "to sustain the continuity of the GOES-R program geostationary observing platforms, including sustaining the instruments, satellite, and launch vehicle activities currently under contract to meet the GOES-S launch date. The funds will also be used to continue the development activities for GOES-T and GOES-U, including GOES-T launch vehicle activities necessary to maintain the GOES-T launch commitment date of 3rd Quarter FY 2019 and ground system check out."
- FY 2017 funding will support:
    - GOES-R launch service activities (e.g., launch vehicle integration and testing (I&T));
    - Launch of GOES-R;
    - Post GOES-R launch satellite check-out and calibration activities;
    - Initiation of the handover activities to NESDIS Office of Satellite and Product Operations (OSPO) for GOES-R;
    - Continuation of GOES-S satellite, ground system, and flight-to-ground I&T activities;
    - Continuation of launch service activities to support future launches; including launch vehicle I&T, and launch base activities;
    - Continuation of GOES-T spacecraft satellite-level I&T;
    - Component build and test of GOES-U; and

- Fabrication, assembly, and testing of GOES-T and GOES-U instruments and spacecraft hardware.

SAC Passed Commerce, Justice, Science Appropriations Bill (H.R. 2837):

- The SAC-passed version includes $752.784 million to fully fund the GOES–R program at the President's FY17 request and directs NOAA to "prioritize satellite programs directly related to weather forecasting and that result in the greatest reduction of risk to lives and property."
- This version also states that "keeping JPSS and GOES–R programs on budget and on schedule is critical, as is maintaining their respective cost controls, particularly when NOAA's satellite missions continue to dominate the agency's annual budget requirements. The Committee reiterates its previous direction to NOAA to find savings from operating expenses and to reduce duplicative Government overhead shared with the National Aeronautics and Space Administration."

Jason-3

Budget Authority, $ in million	Consolidated Approps, 2016 (P.L. 114-113)	President's FY 2017 NOAA Budget Request	Senate Approps Committee (SAC) Passed Commerce, Justice, Science Approps Bill
JASON-3	7.548	4.357	
Total	**7.548**	**4.357**	

Mission

The Jason-3 satellite is planned as a follow-on for Jason-2. Jason-3 is a joint satellite altimetry mission between NOAA, the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), and the Centre National d'Etudes Spatiales (CNES), the French Space Agency. Jason-3 will provide continuity of precise measurement of sea surface heights for applications in ocean climatology and ocean weather. NOAA is providing a microwave radiometer, precision orbit determination components [e.g., GPS, Laser Retroreflector Array (LRA)], launch services, ground system and operations, and associated engineering services for Jason-3. EUMETSAT and CNES are providing the spacecraft, altimeter, additional precision orbit components, ground system and operations.

President's FY 2017 NOAA Budget Request:

- The President requested $4.357 million for JASON-3, a planned decrease of $170 million.
- After a successful launch from Vandenberg Air Force Base on January 17, 2016, JASON-3 funds in the FY16 President's Budget Request "will provide post-launch support and sustainment of the Jason-3 satellite."
- FY 2017 funding will support:
  - Continued support and sustainment of the Jason-3 mission

SAC Passed Commerce, Justice, Science Appropriations Bill (H.R. 2837):

- The report states, "The Committee strongly supports the Jason–3 mission, which after months of delay successfully launched in January 2016. The Jason–3 mission will support national and international users of sea surface height measurements, and allow the NWS to more accurately forecast the strength of tropical cyclones that threaten U.S. coastal communities. Now that Jason–3 has launched, the Committee expects any associated analysis and processing to be accounted for within NESDIS ORF."

Joint Polar Satellite System (JPSS)

Budget Authority, $ in million	Consolidated Approps, 2016 (P.L. 114-113)	President's FY 2017 NOAA Budget Request	Senate Approps Committee (SAC) Passed Commerce, Justice, Science Approps Bill
JPSS	808.966	787.246	787.246
Total	**808.966**	**787.246**	**787.246**

Mission

The Joint Polar Satellite System (JPSS) is the United States' next generation polar-orbiting operational environmental satellite system. JPSS is a collaborative program between the National Oceanic and Atmospheric Administration (NOAA) and its acquisition agent—National Aeronautics and Space Administration (NASA). This interagency effort is the latest generation of U.S. polar-orbiting, non-geosynchronous environmental satellites. Established in February 2010 in the President's Fiscal Year 2011 budget request as the civilian successor to the restructured National Polar-orbiting Operational Environmental Satellite System (NPOESS), JPSS will provide continuity of critical, global Earth observations—including oceans, clouds, ozone, snow, ice, vegetation and atmosphere through 2028. The global environmental data from JPSS will be fed into Numerical Weather Prediction (NWP) models for forecasts and used for climate monitoring.

President's FY 2017 Budget Request:

- The President requested $787.246 million for JPSS, $21.72 million below its FY 2016 enacted budget.
- "NOAA remains committed to building a robust polar orbiting weather satellite program as rapidly as practicable. As such, during FY 2017 NOAA will continue to prioritize meeting the JPSS-1 launch commitment date of no later than Q2 FY 2017 and maintain the accelerated JPSS-2 launch readiness date of Q4 FY 2021"
- FY 2017 funding will support the following actions:
    - Operate and sustain the S-NPP satellite, which launched on October 28, 2011;
    - Continue operations, maintenance and sustainment of the JPSS ground system for JPSS missions;
    - Complete launch site integration and testing (I&T) for JPSS-1 launch;
    - Launch JPSS-1 by no later than Q2 FY 2017;
    - Continue the development and build of JPSS-7 spacecraft and ATMS, CrIS, VIIRS and OMPS instruments, targeting a LRD of Q4 FY2021; and
    - Complete Critical Design Review for the JPSS-2 mission.

SAC Passed Commerce, Justice, Science Appropriations Bill (H.R. 2837):

- The SAC-passed version includes $787.246 million to fully fund the JPSS program at the President's FY17 request.
- The committee report also says that "NOAA is directed to prioritize satellite programs directly related to weather forecasting and that result in the greatest reduction of risk to lives and property." It further states that keeping JPSS on-budget and on-schedule is "critical."

Polar Follow-On

Budget Authority, $ in million	Consolidated Approps, 2016 (P.L. 114-113)	President's FY 2017 NOAA Budget Request	Senate Approps Committee (SAC) Passed Commerce, Justice, Science Approps Bill

Space Weather Follow-on	370.0	383.0	383.0
EON-MW	0	10.0	0
Total	**370.0**	**393.0**	**383.0**

Mission

Polar orbiting satellites provide the primary input (up to 85%) of the data needed for NOAA's Numerical Weather Prediction models, the underpinnings of high impact weather forecasts. These data are increasingly important to emergency managers in the public and private sectors and are key inputs to critical decisions related to protection of life and property, such as evacuations and the staging of resources.

Polar Follow-ON (PFO) is critical to continuing NOAA's polar weather satellite observations after JPSS-2. PFO will achieve robustness in the polar weather constellation as early as FY 2023 and minimize the potential for gaps in polar weather data. The PFO implements a strategic procurement and management plan that will allow NOAA to move the polar satellite mission toward robustness as expeditiously as possible while realizing significant efficiencies and cost savings. The PFO consists of two primary missions: JPSS-3 and JPSS-4.

President's FY 2017 NOAA Budget Request:

- The President's budget requests $383 million "to continue development activities in support of the PFO/JPSS-3 and PFO/JPSS-4 missions," which "will continue the parts procurement, build, and development of the instruments and complete the detailed design for the PFO/JPSS-3 and PFO/JPSS-4 missions." This is $13 million more than appropriated in FY16.
- An additional $10 million is requested for "investment in an Earth Observing Nanosatellite-Microwave (EON-MW), a risk reduction mission aimed at mitigating the impact of a potential loss of the most critical microwave sounding observations in the event of a launch or instrument failure on JPSS-1. PFO will extend operations of the NOAA polar satellite system through FY 2038, ensuring that NOAA continues to provide accurate and timely weather forecasts and warnings beyond JPSS- 2."
- This request funds the following activities in FY 2017:
    - Continue to build the instruments for PFO/JPSS-3 and 4; including continued parts procurements, sub-assembly build up, and lower level testing and integration
    - Complete detailed design for PFO/JPSS-3 and JPSS-4 missions
    - Conduct multi-mission critical design review for the PFO/JPSS-3 and -4 missions
    - Prepare to exercise JPSS-3 spacecraft option on the JPSS-2 spacecraft contract
    - Conduct Ground Segment delta Critical Design Review (CDR) to include adaptations for PFO/JPSS-3 and JPSS-4 missions
    - Initiate EON-MW design, build EDU, begin development of EON-MW flight and ground software, and initiate EON-MW risk reduction technology procurements
    - Implement actions to mitigate potential gaps in JPSS observation deliverables should SNPP or JPSS-1 experience a premature failure

SAC Passed Commerce, Justice, Science Appropriations Bill (H.R. 2837):

- The SAC recommendation includes $383 million for the polar follow-on program, $10 million below the President's FY17 request.

Cooperative Data and Rescue Services (CDARS)[†]

Budget Authority, $ in million	Consolidated Approps, 2016 (P.L. 114-113)	President's FY 2017 NOAA Budget Request	Senate Approps Committee (SAC) Passed Commerce, Justice, Science Approps Bill
Solar Irradiance, Data and Rescue (SIDAR)	0.500	0.500	0.500
Total	**0.500**	**0.500**	**0.500**

Mission

According to the President's Budget Request for FY17, "the CDARS program supports the space-based components of both the Argos and Search and Rescue systems. It is critical to launch these instruments no later than 2021 to ensure continuity of the services these satellites provide.… The Argos system provides worldwide coverage that gives the satellite the unique ability to geographically locate a data source from anywhere on earth. Argos Advanced Data Collection System (A-DCS), part of Argos, collects, processes, and disseminates environmental data from fixed and mobile platforms worldwide.

NOAA relies on the Argos system to collect worldwide ocean data (e.g., on temperatures, winds, air pressure, currents, and salinity) from moored and drifting buoys and submerged floats. In addition, Argos transmitters are deployed on a large number of marine mammals and sea turtles to track their migrations. The Argos system is administered under a joint agreement between NOAA and the French Space Agency, CNES. The Argos system operates in parallel with commercial data relay systems, with each serving different user communities. The NOAA provided A-DCS system covers transmitters not supported by commercial suppliers, who focus on the larger, more powerful transponders.

The Search and Rescue Satellite Aided Tracking (SARSAT) System is employed to detect and locate mariners, aviators, and recreational enthusiasts in distress almost anywhere in the world at any time and in almost any condition…. Over 40 countries in addition to the United States currently rely on the SARSAT system for their search and rescue needs. The launch of SARSAT will support the National Search and Rescue Plan5 and ensure U.S. Coast Guard, DOD, and NOAA maintain a space-based capability to detect, locate, and relay distress alerts from emergency beacons for the purpose of search and rescue (SAR) services. The SARSAT system will be replaced by a U.S. Air Force-supported GPS-based system beginning around 2023."

<u>President's FY 2017 Budget Request:</u>

- The President requested $.500 million for CDARS, the same amount appropriated in FY16.
- NOAA hopes to "prepare request for proposal for Hosted Payload Solutions (HoPS) contract" in FY17.

<u>SAC Passed Commerce, Justice, Science Appropriations Bill (H.R. 2837):</u>

- The SAC-passed version includes $0.500 million to fully fund the CDARS program at the President's FY17 request.

Deep Space Climate Observatory (DSCOVR)

[†] Formerly Solar Irradiance, Data and Rescue (SIDAR)

Budget Authority, $ in million	Consolidated Approps, 2016 (P.L. 114-113)	President's FY 2017 NOAA Budget Request	Senate Approps Committee (SAC) Passed Commerce, Justice, Science Approps Bill
DSCOVR	3.200	3.745	3.745
Total	**3.200**	**3.745**	**3.745**

Mission

The maintenance and operations of NASA's Deep Space Climate Observatory (DSCOVR) satellite allows continuity of solar wind data used for geomagnetic storm warnings. NOAA operates and manages the DSCOVR mission as the front line sentinel to give notice of approaching geomagnetic storms with potentially calamitous consequences for terrestrial electrical grids, communications, GPS navigation, air travel, satellite operations, and human spaceflight. This program was developed in partnership NASA, which refurbished the satellite and developed the ground system, and with the U.S. Air Force (USAF), which provided the launch services for the mission.

DSCOVR is positioned between Earth and the sun, observing and providing advanced warning of particles and magnetic fields emitted by the sun, known as solar wind. Like terrestrial weather in Earth's atmosphere, space weather refers to conditions, like solar wind, in near-Earth space. From its post at the Lagrange point 1 (or L1), approximately one million miles from Earth, DSCOVR is positioned to provide early warning when the solar wind displays characteristics that cause a geomagnetic storm. Solar wind observations are the only data source to support 15 to 45 minute lead time for geomagnetic storm warnings.

DSCOVR also carries two Earth remote sensing instruments provided by NASA. The Earth Polychromatic Camera (EPIC) takes continuous full disk images of Earth and the NIST Advanced Radiometer (NISTAR) takes continuous full disk measurements of the earth's radiation balance. NOAA provides the level 0 data stream to NASA, and NASA provides data processing and all higher level data products.

President's FY 2017 NOAA Budget Request:

- The President requested $3.745 million for DSCOVR in FY 2017, $545 million above its FY 2016 enacted budget.
- The DSCOVR satellite was launched on February 11, 2015. It has experienced several anomalies since July 2015. Both the frequency and nature of these occurrences require additional engineering and anomaly support by the instrument and spacecraft vendors to identify and resolve the anomalies. This requirement surpasses those expected or budgeted for during program development and ensures the satellite can be returned to operations in a timely manner following anomalies. This funding request will allow NOAA to better manage DSCOVR and ensure the satellite can continue to provide SWPC with solar wind data, the sole input for short term warnings of geomagnetic storms.
- FY 2017 funds will be used for the following activities:
    - Tech refresh of the NASA-built ground system
    - Spacecraft and instrument anomaly support to continue returning the satellite to operations when the frequent anomalies occur
    - IT Security to ensure the latest IT standards are met and the safe delivery of the DSCOVR data to users

SAC Passed Commerce, Justice, Science Appropriations Bill (H.R. 2837):

- The SAC-passed version includes $3.745 million to fully fund the DSCOVR program at the President's FY17 request.

Space Weather Follow-On

Budget Authority, $ in million	Consolidated Approps, 2016 (P.L. 114-113)	President's FY 2017 NOAA Budget Request	Senate Approps Committee (SAC) Passed Commerce, Justice, Science Approps Bill
Space Weather Follow-on	1.200	2.500	7.500
Total	**1.200**	**2.500**	**7.500**

Mission

The mission design life for the DSCOVR spacecraft ends in FY 2019. The Space Weather Follow On program at NOAA will consist of two satellites, two launch vehicles and two sets of sensors: solar wind (PLAS/MAG/ION) instruments and compact coronagraphs (CCOR) for CME imaging to meet the Nation's demand for space weather information. NOAA is planning to avoid a near-term gap in space weather observations by implementing satellites and sensors acquisition on a five-year schedule based on planned design life. NOAA is strategically planning the Space Weather Follow On program to ensure data continuity and to build a healthy constellation through procurement efficiencies

President's FY 2017 NOAA Budget Request:

- The President's budget requests $2.500 million, in FY 2017, $1.300 million above its FY 2016 enacted budget.
- "Based on the results of the FY 2016 Analysis of Alternatives (AoA) for critical space weather observations, FY 2017 funding will be used to select and initiate development of the selected options for solar wind data and the Coronal Mass Ejection (CME) imagery. This includes developing preliminary versions of Level 1 Requirements, Concept of Operations, and the program schedule, leading up to the program's Key Decision Point-A, when the official program, program manager, and requirements are established. After this point, the program would transition into concept and technology development."

SAC Passed Commerce, Justice, Science Appropriations Bill (H.R. 2837):

- The SAC-passed version includes $7.500 million to fully fund the JPSS program, $5.000 million more than the President's FY17 request.
- The report also states, "The Committee recognizes that expanding data collection through enhanced space weather observations and models can significantly improve warning times for severe space weather events. Therefore, NOAA shall maintain the multi-year funding profile and schedule that was presented with the 2017 budget request in its fiscal year 2018 budget submission."

COSMIC-2

Budget Authority, $ in million	Consolidated Approps, 2016 (P.L. 114-113)	President's FY 2017 NOAA Budget Request	Senate Approps Committee (SAC) Passed Commerce, Justice, Science Approps Bill
Ground System (GNSS RO)	10.100	8.100	8.100
Polar Orbiting RO Data Set	0.00	8.100	0.00
Total	**10.100**	**16.200**	**8.100**

Mission

The Constellation Observing System for Meteorology, Ionosphere, and Climate (COSMIC) activity is a six satellite constellation that was launched in 2006 in a joint collaboration between Taiwan, National Science Foundation, NASA, USAF, and University Corporation for Atmospheric Research (UCAR) as a research effort to explore a new, inexpensive atmospheric sounding technique using the U.S. Global Positioning System (GPS) as a sounding signal source. The results were so positive that NOAA started using this data operationally. COSMIC design life was reached in April 2011. One satellite has failed and 2 satellites are in degraded operation, leaving four of the original six satellites in operation.

COSMIC-2 is a continuation of the partnership between the United States (NOAA and USAF) and Taiwan to produce an operational constellation of 12 identical GNSS RO satellites. The COSMIC-2 constellation is expected to provide 10 times the number of daily soundings that COSMIC currently provides, which would increase the benefits to weather forecasting.

The first launch of six satellites in 2016, known as COSMIC-2A, is planned for an equatorial low earth orbit (24 degree inclination) and is currently in production. The United States Air Force (USAF) is purchasing the first set of RO sensors to be flown on spacecraft procured and operated by Taiwan. NOAA will downlink all RO data from these satellites, process the data and integrate the observations into NOAA's Numerical Weather Prediction forecasts. With this request, NOAA will continue to explore options to acquire GNSS RO data from the polar orbit. This include will include evaluating a purchase of commercially available data as well as investigating launch vehicle options and sustaining the international partnership with Taiwan to support a NOAA-built second set of sensors. Both the GNSS RO data derived from the polar orbit and the COSMIC-2A sensors in the equatorial orbit are necessary to meet the NOAA-signed Level 1 Requirements for GNSS RO data. The primary requirements are: 45 minute average for data latency and over 8,000 soundings from the system per day. Additionally, the second set of higher inclination sensors will help to mitigate the impacts of a potential gap in polar satellite data on NWS forecasts, products and services

<u>President's FY 2017 NOAA Budget Request:</u>

- The President's FY17 budget request includes a planned decrease of $2 million for ground reception and processing of GNSS RO satellite data. The President's FY17 budget request also includes an increase of $8.1 million for the acquisition of additional RO data.
- FY 2017 funding will support:
    - Completion of all IT security testing and verification in preparation of the Constellation Observing System for Meteorology, Ionosphere, and Climate (COSMIC-2) launches.
    - Testing and certification of all University Corporation for Atmospheric Research (UCAR) processing functions by National Centers for Environmental Prediction (NCEP).
    - Complete operational testing and validation of the Numerical Weather Prediction (NWP) models for COSMIC-2.
    - Reception of equatorial low earth orbit satellite RO data from COSMIC-2A mission and completion of RO observations from first six satellites launched by USAF
    - Initiation of antenna refresh at Fairbanks ground station
    - Initiation of an evaluation for the purchase of commercially viable GNSS RO data and/or procurement of a second set of COSMIC-2 RO sensors

<u>SAC Passed Commerce, Justice, Science Appropriations Bill (H.R. 2837):</u>

- The SAC recommendation includes $8.100 million for the COSMIC-2 program, $8.100 million below the President's FY17 request.
- The Committee states that "no funding is provided for the procurement of a second set of radio occultation [RO] sensors that NOAA proposes to launch into polar orbit in 2019. The Committee notes that the U.S. Air Force—NOAA's partner on COSMIC– 2—has not committed to providing launch services for a polar constellation of RO sensors."
- The report also states that "the Committee encourages NOAA to utilize funding provided for NESDIS's Commercial Weather Data Pilot program to potentially meet identified needs in polar orbiting RO data."

Satellite Ground Services (SGS)

Budget Authority, $ in million	Consolidated Approps, 2016 (P.L. 114-113)	President's FY 2017 NOAA Budget Request	Senate Approps Committee (SAC) Passed Commerce, Justice, Science Approps Bill
Satellite Ground Services	54.000	59.025	54.000
Total	**54.000**	**59.025**	**54.000**

Mission

The goal of NOAA's Satellite Ground Services (SGS) program is to serve as the single organization for planning and execution of all common ground services for NOAA's satellites. NOAA provides satellite operations, data collection, data processing, distribution, and archiving for multiple satellites and will be adding new satellites (e.g., JPSS, GOES-R) in the future. Many of the existing ground systems (GS), or ground system components, were developed and are operated specifically for each mission or mission set. The GS variations are usually driven by the latest technology available at the time of the GS development rather than differences in mission requirements. As a result of GS technology differences, the staffing for operations and maintenance of each mission is unique, allowing for only very limited cross-staffing and hardware redundancy. To improve efficiency, the SGS is developing a common design and architecture that will be implemented across NOAA and will allow for future cost savings.

<u>President's FY 2017 NOAA Budget Request:</u>

- The President requested $59.025 million for Satellite Ground Services, $5.025 million above its FY 2016 enacted budget.
- This funding request "will sustain SGS program activities to plan and implement the future set of common ground services for NOAA's satellites. Specifically, funds will support the deployment of the Enterprise Configuration Management Tool (ECMT). This tool provides an inventory of NESDIS ground system equipment and allows SGS to identify similarities across systems that can be packaged together for bulk pricing discount when upgrades are necessary. The ECMT inventory also provides trend analysis of system and equipment failures to allow more informed decision making on future upgrades. Funds will also be used to establish a Common Ground Services Requirements tracking system to enable SGS to identify capability gaps and opportunities to improve performance across the Ground Enterprise. The applications of these improvements include stronger management controls and improved engineering consistency. This will lead to better control of the requirements baseline and improved economies of scale through increased hardware and software standardization. These activities and processes will

establish a critical foundation to maintain the satellite ground infrastructure more efficiently and will enable increased adaptation and integration of new requirements into the future."

- The other activities to be performed with FY 2017 funds include:
    - Continue to implement capabilities to process satellite observations into useful products that meet the requirements of NOAA's operational centers and other external users;
    - Sustain the current and legacy ground systems in use at NESDIS facilities, including GOES and POES capabilities;
    - Continue the development of the NPOESS Data Exploitation (NDE) capability, started in 2011, that produces products from the Suomi National Polar-orbiting Partnership (SNPP) satellite;
    - Establish the foundation for sustaining ground systems for upcoming satellite systems in NOAA;
    - Plan the transition of the next generation of polar and geostationary satellite programs into the common ground services; and
    - Prototype and transition common mission support services supporting legacy and future satellites.

SAC Passed Commerce, Justice, Science Appropriations Bill (H.R. 2837):

- The SAC recommendation includes $54 million for Satellite Ground Services, $5.025 million below the President's FY17 request.

Commercial Weather Data Pilot

Budget Authority, $ in million	Consolidated Approps, 2016 (P.L. 114-113)	President's FY 2017 NOAA Budget Request	Senate Approps Committee (SAC) Passed Commerce, Justice, Science Approps Bill
Commercial Weather Data Pilot	3.000	5.000	3.000
Total	**3.000**	**5.000**	**3.000**

President's FY 2017 NOAA Budget Request:

- The President requested $5.000 million for to assess the potential viability of using commercial data in NOAA's weather modeling and forecasting through pilot purchases of commercial data, $2.000 million above its FY 2016 enacted budget.
- FY 2017 funds will continue the efforts that began in FY 2016 to evaluate, calibrate, and purchase available commercial satellite data. Dependent upon the outcome of the contractual efforts started in FY 2016, NESDIS' preliminary assessment of the actions required in FY 2017 include the following:
    - Additional purchases of commercially-provided data sets;
    - Prepare the necessary ground systems and IT security interfaces for ingestion of the commercial data selected;
    - Develop the necessary algorithms and model and application updates to use the commercial operationally or to simulate operations within the National Weather Service Numerical Weather Prediction models;
    - Testing the data to assess the accuracy, value and impact of the commercial data, to the extent possible such testing will be conducted in parallel with established, validated observations on NOAA operational products and deliverables; and

- Deliver assessment report(s) on the viability of the pilot data set(s) to meet NOAA system requirements.

SAC Passed Commerce, Justice, Science Appropriations Bill (H.R. 2837):

- The SAC recommendation includes $3.000 million for the commercial weather data pilot program, $2.000 million below the President's FY17 request.

About the Space Foundation

Founded in 1983, the Space Foundation is the foremost advocate for all sectors of space, and is a global, nonprofit leader in space awareness activities, educational programs and major industry events, including the annual Space Symposium, in support of its mission "to advance space-related endeavors to inspire, enable and propel humanity." Space Foundation World Headquarters in Colorado Springs, Colo., USA, has a public Discovery Center, including El Pomar Space Gallery, Northrop Grumman Science Center featuring Science On a Sphere® and the Lockheed Martin Space Education Center. The Space Foundation has a field office in Houston and conducts government affairs from its Washington, D.C., office. It annually publishes *The Space Report: The Authoritative Guide to Global Space Activity*, and through its Space Certification™ and Space Technology Hall of Fame® programs, recognizes space-based innovations that have been adapted to improve life on Earth. Visit www.SpaceFoundation.org, follow us on Facebook, Instagram,LinkedIn, Pinterest, Twitter and YouTube, and read our e-newsletter *Space Watch*.