



U.S. Defense Space-Based and Related Systems Fiscal Year 2013 Budget Comparison

Update 7

President’s FY 2013 Department of Defense Budget Request; FY 2013 National Defense Authorization Act [NDAA] Conference Report (H. Rept. 112-705) accompanying H.R. 4310; and Consolidated and Further Continuing Appropriations, 2013.

This document provides an overview of unclassified space-based and related programs requested in the Department of Defense’s (DoD) FY 2013 Budget in comparison with the FY 2013 NDAA and the FY 2013 Defense Appropriations Act. The first section provides a comparison of funding levels for major satellites and launch service acquisitions, followed by a more detailed analysis of each program. The analysis then looks at space-related provisions in the NDAA. An appendix at the end of the document provides a chart of unclassified DoD space and space-related programs organized by the various funding proposals. Please note the FY 2013 appropriations levels outlined in the Consolidated and Further Continuing Appropriations Act, 2013, do not take into account cuts from sequestration.

Satellites and Launch Services – FY 2013 Funding*

Budget Authority, \$ in million	President’s FY 2013 DoD Budget Request	FY 2013 NDAA Conference Report (H.Rept. 112-705)	Consolidated and Further Continuing Appropriations Act, 2013
Satellites			
Mobile User Objective System (MUOS)	167.3	167.3	167.3
Advanced Extremely High Frequency (AEHF)	786.3	774.8	708.3
Global Positioning System (GPS)	1,263.7	1,262.2	1,232.2
Weather Satellite Follow-on	2.0	2.0	0.0
Space Based Infrared System (SBIRS)	949.9	947.9	972.9
Wideband Global SATCOM (WGS)	48.8	48.8	48.8
Precision Tracking Space System (PTSS)	297.3	242.3	242.3
Launch			
Evolved Expendable Launch Vehicle (EELV)	1,687.6	1,687.6	1,492.8

* Please note that the numbers used for this table reflect the numbers explicitly called out in the relevant document. In some cases, the sum of the budgets for each category does not match the total funding level given in the document.



Mobile User Objective System

Budget Authority, \$ in million	President's FY 2013 DoD Budget Request	FY 2013 NDAA Conference Report (H.Rept. 112-705)	Consolidated and Further Continuing Appropriations Act, 2013
RDT&E	145.923	145.923	145.923
Mobile User Objective System (MUOS)	145.923	145.923	145.923
Procurement	21.454	21.454	21.454
Fleet Satellite Comm Follow-On	21.454	21.454	21.454
Total	167.377	167.377	167.377

Mission

The [Mobile User Object System \(MUOS\)](#) is a narrowband military satellite communications (MILSATCOM) system that supports a worldwide, multi-service population of mobile and fixed-site terminal users with narrowband beyond-line-of-sight satellite communications (SATCOM) services. Capabilities will include a considerable increase to current narrowband SATCOM capacity as well as significant improvement in availability for small terminals. MUOS will augment and replace the eight [Ultra High Frequency Follow-On \(UFO\)](#) system satellites that currently provide narrowband tactical communications. On February 24, 2012 the first Mobile User Objective System satellite was successfully launched.

President's FY 2013 Department of Defense Budget Request

Research, Development, Test & Evaluation (RDT&E):

- Complete remaining testing and preparation efforts to support launch of satellite 2. The MUOS activities planned for the ground segment will include system software testing and fixes resulting from site testing; and ground security updates resulting from Information Assurance (IA) Vulnerability Alerts. Complete software installation, test, and certification of hardware/software at the Niscemi, Italy site. Complete site acceptance testing, for Build 3 software (B3), at Wahiawa, Hawaii; Geraldton, Australia; and Niscemi, Italy in preparation for launch of satellite 2. Complete acceptance testing of the MUOS follow-on waveform. Begin IA waveform assessment and remediation of findings.

Procurement:

- Continue production engineering, product improvement and quality assurance support.
- Continue ground systems tech refresh equipment for the ground sites.
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Congressional Action

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- The FY 2013 NDAA Conference Report (H. Rept. 112-750) would authorize \$167 million to fully fund the MUOS program at the President's FY 2013 request.

Consolidated and Further Continuing Appropriations Act, 2013:

- The Congress approved and the President signed into law an Act that appropriates \$167 million to fully fund the MUOS program at the President's FY 2013 request.

Advanced Extremely High Frequency

Budget Authority, \$ in million	President's FY 2013 DoD Budget Request	FY 2013 NDAA Conference Report (H.Rept. 112-705)	Consolidated and Further Continuing Appropriations Act, 2013
RDT&E	229.171	227.671	231.171
Advanced MILSATCOM	175.578	N/A	N/A
Evolved AEHF	53.593	N/A	N/A
Procurement	557.205	547.205	477.205
Advanced EHF	557.205	547.205	477.205
Total	786.376	774.876	708.376

Mission

The [Advanced Extremely High Frequency \(AEHF\)](#) system is a joint service satellite communications system that will provide survivable, anti-jam, worldwide secure communications for strategic and tactical users. AEHF is the follow on program to the existing extreme high frequency system [MILSTAR satellite](#), providing ten times the throughput and greater than five times the data rate of the current MILSAT II satellites. AEHF is also a cooperative program that includes International Partners: Canada, the United Kingdom, and the Netherlands. On May 4, 2012, the second Advanced EHF satellite was successfully launched.

President's FY 2013 Department of Defense Budget Request

Research, Development, Test & Evaluation (RDT&E):

- AEHF space vehicles (SVs) 1 and 2, Mission Control Segment (MCS): Continue SV-1 operations and SV-2 on-orbit test and operations. Conduct Interim Contractor Support for satellites and Mission Control Segment, continue program office support and related activities, and conduct studies and analyses, as required.
- AEHF Key Management Infrastructure (KMI) transition: Will fund preliminary design for transition of AEHF Crypto Key Management Architecture (KMA) from Electronic Key Management System to Key Management Infrastructure.
- AEHF Crypto & Parts Obsolescence: continue efforts such as parts obsolescence redesign to include SV-6 crypto redevelopment, and the redesign study to assess aspects that affect the longer term stability of the AEHF product line.
- AEHF Capabilities Insertion Program (CIP) 1a: Release sole source AEHF CIP 1a Request for Proposal and award contract in the fourth quarter of FY 2013.
- Protected Military Satellite Communications (MILSATCOM) "Design for Affordability": Options on selected contracts will be awarded to further continue efforts from FY 2012 that will increase fidelity of architecture design, demonstrate critical components, and lower the risk on next generation protected MILSATCOM systems.
- MILSATCOM Architecture and support: Continues funding efforts such as refining the ongoing MILSATCOM architectures including affordable Information Assurance approaches, supportive terminal payload concepts, and commercial product contributions. Funds program office support and Federally Funded Research and Development Center (FFRDC) support for above efforts.

Procurement:

- Funding supports efforts such as the SV 5-6 production block buy, continuation of technical support to include obsolescence/Diminishing Manufacturing Sources (DMS) studies and SV-3 launch preparation/operations, SV-4 launch support option, systems engineering and integration (SE&I), and continuation of program office and related support. Also, funds the Command and Control System – Consolidated (CCS-C) database development to support the launch of AEHF 4-6 satellites.

Congressional Action

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- The FY 2013 NDAA Conference Report (H. Rept. 112-750) would authorize \$774 million for AEHF in FY 2013, \$11.5 million below the President's request. The Conference Report cites two areas where it reduced the President's FY 2013 AEHF request:
 - First, the Conference Report cites a \$1.5 million "project decrease" within AEHF RDT&E funds.
 - Second, the Conference Report cites "schedule delay due to late AP award" for a \$10 million reduction within AEHF Procurement funds.

Consolidated and Further Continuing Appropriations Act, 2013:

- The Congress approved and the President signed into law an Act that appropriates \$708 million for the AEHF program, \$78 million below the President's FY 2013 request.
- The Act cites several areas where the Act increased and decreased the President's FY 2013 AEHF RDT&E request:
 - First, the Act removes \$3 million from the AEHF RDT&E account due to "program management services excess to need."
 - Second, the Act removes \$20 million from the AEHF RDT&E account due to "satellite and MCS interim contractor support excess to need."
 - Third, the Act provides a "program increase" of \$25 million to the AEHF RDT&E account for "space modernization initiatives." In addition, the Act "reiterates the direction as detailed in Senate Report 112-196 for the Secretary of the Air Force to provide the congressional defense committees a report detailing how the additional SMI funds will be used not less than 30 days prior to the obligation of such funds." Further, the "conferees support the evolution of current space systems but are concerned that the Department of Defense and the Air Force have yet to define the architectural and system specific goals being pursued with these funds." Therefore, the "conferees direct the Secretary of the Air Force, in coordination with the Under Secretary of Defense (Acquisition, Technology, and Logistics), to provide to the congressional defense committees, not later than 90 days after the enactment of this Act, a report describing the overall SMI strategy and goals, a specific accounting of the studies and technologies to be pursued, the current and follow-on costs for those efforts, schedules for delivery of such efforts, and a roadmap of how these efforts correlate or support the future acquisition plans for SBIRS, AEHF, and Global Positioning System satellite and ground segments."
- The Act cites several areas where the Act decreased the President's FY 2013 AEHF Procurement request:
 - First, the Act removes \$5 million from the AEHF Procurement account due to "program management unjustified request."
 - Second, the Act removes \$75 million from the AEHF Procurement account due to "Schedule delay due to late AP award."

Global Positioning System

Budget Authority, \$ in million	President's FY 2013 DoD Budget Request	FY 2013 NDAA Conference Report (H.Rept. 112-705)	Consolidated and Further Continuing Appropriations Act, 2013
RDT&E	704.922	703.422	683.422
GPS Block II Operational Control System (OCS)	14.335	14.335	14.335
GPS III Space Segment	318.992	318.992	318.992
GPS III - New Generation Operational Control Segment	371.595	370.095	350.095
Procurement	558.798	558.798	548.798
GPS IIIA Space Segment	410.294	410.294	410.294
GPS III Space Segment Advance Procurement	82.616	82.616	82.616
GPS IIF and launch support	58.147	58.147	48.147
OCS COTS Upgrade	7.353	7.353	7.353
Spares and Repair Parts, NAVSTAR GPS	0.388	0.388	0.388
Total	1,263.72	1,262.22	1,232.22

Mission

The [Navstar Global Positioning System \(GPS\)](#) provides for worldwide, accurate, common grid three-dimensional positioning/navigation for military aircraft, ships and ground personnel. The system also has applications for civil, scientific and commercial functions.

President's FY 2013 Department of Defense Budget Request

Research, Development, Test & Evaluation (RDT&E):

- Operational Control Segment (OCS): Complete ground segment upgrades, System Engineering & Integration (SE&I) and Program Support.
- Search and Rescue (SAR) GPS: Design and development of SAR/GPS antennas, associated hardware and cabling, and space vehicle software; system engineering associated with integrating SAR payload onto the GPS III SVs; system engineering and program management (SE/PM), Enterprise-level contractor SEIT/PM. Costs do not include development and production of Canadian payload box.
- GPS III: GPS III space vehicle development, SE&I, technical and program support.
- Capability Insertion Program (CIP): Address affordability/obsolescence issues and initial system designs of future capabilities, capability maturation and risk reduction efforts.
- Next Generation GPS Operational Control System (OCX): Continue OCX Block 1-2 Integrated System Design, Systems Engineering & Integration (SE&I) and technical and program support.
- GPS Enterprise Integrator: Accomplish system definition and system integration across the GPS Enterprise, including Generation II and III (space, control, and user segments). Conduct OCX-GPS III Risk Reduction demos for interface and functionality validation; evolve specifications and interface control documents (ICDs) in support of GPS III Capability Insertion Program and Military GPS User Equipment (MGUE) Critical Design Review (CDR) and GPS III Milestone-B.

Procurement:

- Funding procures two GPS III Space Vehicles (SVs) and associated support.
- Funding procures long lead parts for GPS III satellites.
- Funding is required for Global Positioning System (GPS) Block IIF satellite launch and on-orbit support, including satellite transportation from the factory to the launch site, launch processing and booster integration, launch operations, and on-orbit checkout and operations.

- Funding procures GPS OCS commercial equipment that has become obsolete/unsupportable or requires upgrades. Funding will procure equipment for the OCS ground sites including the Master Control Station (MCS), Alternate Master Control System (AMCS), four ground antennas, six monitor stations, contractor lab facility and Telecommunications Simulator Test Set. Modifications include required procurement, nonrecurring engineering, installation, testing, configuration management, security, quality assurance and technical documentation. If not funded, down time and maintenance cost associated with repair of failed equipment will increase, lowering system operational availability.

Congressional Action

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- The FY 2013 NDAA Conference Report (H. Rept. 112-750) would authorize \$1,262 million for GPS in FY 2013, \$1.5 million below the President's request.

Consolidated and Further Continuing Appropriations Act, 2013:

- The Congress approved and the President signed into law an Act that appropriates \$1,232 million for the GPS program, \$31.5 million below the President's FY 2013 request.
- The Act cites several areas where the Act increased and decreased the President's FY 2013 GPS III RDT&E request:
 - First, the Act shifts \$50 million within the GPS III Operational Control Segment RDT&E account from the "Phase B, OCX, Block 1 and 2 development" because it is "ahead of need," and appropriates that \$50 million for "GPS launch control system acceleration."
 - Second, the Act removes \$8 million from the GPS III Operational Control Segment RDT&E account due to "GPS/OCX FFRDC excess to need."
 - Third, the Act removes \$5 million from the GPS III Operational Control Segment RDT&E account due to "enterprise integrator FFRDC excess to need."
 - Fourth, the Act removes \$8.5 million from the GPS III Operational Control Segment RDT&E account due to "enterprise integrator excess to need."
- The Act also decreased funds from the President's FY 2013 GPS Procurement request:
 - The Act removes \$10 million from the GPS Procurement account due to "GPS space and control technical support excess to need."

Weather Satellite Follow-On/Defense Weather Satellite System

Budget Authority, \$ in million	President's FY 2013 DoD Budget Request	FY 2013 NDAA Conference Report (H.Rept. 112-705)	Consolidated and Further Continuing Appropriations Act, 2013
RDT&E	2.000	2.000	0.000
Weather Satellite Follow-On	2.000	2.000	0.000
Total	2.000	2.000	0.000

Mission

The FY 2012 request reflected the February 2010 Executive Office of the President (EOP) [decision](#) to restructure the National Polar-orbiting Operational Environmental Satellite System (NPOESS) program. The EOP restructure directed that the DoD is responsible for the early morning orbit, and the Department of Commerce (DOC), with NASA as their acquisition agent, is responsible for the afternoon orbit. In June 2010, Office of the Secretary of Defense (OSD) designated the DoD portion of the NPOESS program as the Defense Weather Satellite System (DWSS).

The DWSS is a joint service satellite weather system. The DWSS system will produce environmental data records for regional and global meteorological, oceanographic, environmental, and climatic data, and will provide space environmental remote sensing information. DWSS will enable the anticipation and exploitation of atmospheric and space environment conditions for military operations planning. DWSS is the follow-on program to the [Defense Meteorological Satellite Program \(DMSP\)](#).

In December 2011, the President signed into law the FY 2012 National Defense Authorization Act, which authorized funds to terminate the DWSS program in FY 2012. In parallel, the President also signed the FY 2012 Department of Defense Appropriations Act, which appropriated \$43 million for "termination liability" in FY 2012. However, the Defense Appropriations Act did appropriate \$125 million for "weather satellite follow-on activities" in FY 2012.

President's FY 2013 Department of Defense Budget Request

Research, Development, Test & Evaluation (RDT&E):

- WSF: Continue FY 2012 activities and finalize the Analysis of Alternatives (AoA). The AoA results will inform subsequent DoD programming decisions for the weather satellite follow-on.

Congressional Action

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- The FY 2013 NDAA Conference Report (H. Rept. 112-750) would authorize \$2 million for WSF in FY 2013 to fully authorize funds for the President's request.

Consolidated and Further Continuing Appropriations Act, 2013:

- The Congress approved and the President signed into law an Act that appropriates \$0 million for the GPS program, \$2 million below the President's FY 2013 request.
- The Act cites "carryover of fiscal year 2012 funds" as the rationale for the reduction.

Space Based Infrared System

Budget Authority, \$ in million	President's FY 2013 DoD Budget Request	FY 2013 NDAA Conference Report (H.Rept. 112-705)	Consolidated and Further Continuing Appropriations Act, 2013
RDT&E	448.594	446.594	531.594
SBIRS High Element EMD	365.406	N/A	N/A
Space Modernization Initiative (SMI)	83.188	N/A	N/A
Procurement	501.386	501.386	441.386
SBIRS High	454.251	454.251	394.251
SBIRS High	47.135	47.135	47.135
Total	949.98	947.98	972.98

Mission

The [Space Based Infrared Systems \(SBIRS\)](#) program will provide early warning for the United States and its allies in four mission areas: missile warning, missile defense, technical intelligence and battle-space awareness. SBIRS will augment and then replace the [Defense Support Program \(DSP\)](#) constellation. SBIRS will provide shorter revisit times and greater sensitivity than the current DSP constellation. SBIRS provides increased detection and tracking performance in order to meet requirements in U.S. Space Command's Capstone Requirements Document and Operational Requirements Document (ORD).

President's FY 2013 Department of Defense Budget Request

Research, Development, Test & Evaluation (RDT&E):

- SBIRS Engineering and Manufacturing Development (EMD): Complete GEO-1 operational user evaluation and certification. Store GEO-2 and then conduct launch and on-orbit testing. Continue Ground System Development (Block 10), System Engineering and Program Management, Highly Elliptical Orbit (HEO) host program office support, Technical Intelligence activities, Data Processing/Exploitation/ground integration activities, Combined Task Force (CTF) support activities, and continuation of systems integration and test studies. Continue Program Office and related support activities (to include SETA), technical analysis and independent verification and validation of contractor. Continue SE&I.
- Overhead Persistent Infrared (OPIR) Space Modernization Initiative (SMI): Improve Transmission Security and assess promising new components and systems to confirm their suitability for the OPIR mission (affordable, responsive, and resilient). Pursue evolutionary or alternative OPIR technologies and concepts to reduce obsolescence risks and improve affordability, to include focal plane evolution, simplified pointing control, hosted payload concept studies, and test bed development to demonstrate proof of concept for future program alternatives. Pursue early exploitation of the SBIRS staring sensor data. Investigate methods to fuse staring sensor data with existing operational and experimental assets. Develop data standards to incorporate Joint OPIR Ground (JOG) recommendations. Create a data archive on the classified network along with application tools to enable better exploitation of collected OPIR data. Team with a hosted payload office (HPO) to identify relevant commercial opportunities for proof of concept to develop/integrate system concepts. Conduct System Engineering and Program Management to include Program Office support such as Federally Funded Research and Development Center (FFRDC) analyses, System Engineering Technical Assistance (SETA) and Systems Engineering and Integration (SE&I).

Procurement:

- Funding provides for procurement of the GEO-5 and 6 satellites, and launch and checkout activities for GEO 3 and 4 satellites and HEO 3 and 4 payloads; continues Program Office and related support activities (to include SETA), technical analysis and independent verification and validation of contractor performance; continues System Engineering and Integration (SE&I).

- Funds for Mobile and Fixed Site Communications/Electronic Upgrades will update the current interface through architectural change to continue to provide critical GEO/Defense Support Program (DSP) mission data. The current communications host is changing their interface and SBIRS must upgrade to match. This will keep mission critical data flowing.
- Funds for SBIRS Survivable Endurable Evolution (S2E2) are used for the following items: Non-recurring hardware and software deliveries and the purchase, integration and test of the 1st of 5 upgraded Mobile Ground Terminals (MGTs). The MGT is the only source of survivable missile warning data used in Nuclear Command and Control System (NCCS). Also provides delivery of the Integration Maintenance Facility used for crew training and limited system testing with 1st S2E2 upgraded MGT.
- Funds for ARC-210 Radios are used for the following: Non-recurring hardware and software deliveries and integration/test for upgraded radios and crypto systems. Crypto modernization activities have been directed to meet critical need dates.

Congressional Action

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- The FY 2013 NDAA Conference Report (H. Rept. 112-750) would authorize \$947 million for SBIRS in FY 2013, \$2 million below the President’s request. The Conference Report (H. Rept. 112-705) cites “excess funding” as the rationale for the \$2 million reduction from the SBIRS RDT&E account.
- Section 152 would authorize the Secretary of the Air Force to “procure two space-based infrared system satellites by entering into a fixed-price contract,” with the option to use “incremental funding” for a period “not to exceed six fiscal years.” The contract may include “cost-reduction initiatives” and procurement of “material and equipment in economic order quantities when cost savings are achievable.” With that said, “any obligation of the United States to make a payment under the contract is subject to the availability of appropriations for that purpose” and “the total liability of the Government for the termination of any contract entered into shall be limited to the total amount of funding obligated at the time of termination.”
- In addition, Section 152 would establish a limitation of \$3.9 billion to be spent for the procurement of the two SBIRS satellites. However, it also provides for exclusions and authorized situations where an increased adjustment to the cap would be appropriate. Items excluded from the cap include: plans; technical data packages; post delivery and program support costs; and technical support for obsolescence studies. Also, the Secretary of the Air Force may increase the \$3.9 billion limitation “if the Secretary submits to the congressional defense committees and the Permanent Select Committee on Intelligence of the House of Representatives written notification” based on an increase in costs that is attributable to:
 - “Economic inflation after September, 30, 2012.”
 - “Compliance with changes in Federal, State, or local laws enacted after September 30, 2012.”
 - The “insertion of a new technology into a space-based infrared system, as compared to the technology built into such a system procured prior to fiscal year 2013, if the Secretary determines, and certifies to the congressional defense committees, that insertion of the new technology is: expected to decrease the life-cycle cost of the system; or required to meet an emerging threat that poses grave harm to national security.”
- Further, Sec. 152 would authorize the Secretary of the Air Force to “obligate and expend amounts” for “the advanced procurement of long-lead parts and the replacement of obsolete parts for space-based infrared system satellite space vehicle numbers 5 and 6.”
- Sec. 152 also outlined several reporting requirements:
 - First, not later than 30 days after the date on which the Secretary of the Air Force enters into a fixed-price contract, “the Secretary shall submit to the congressional defense committees and Permanent Select Committee on Intelligence of the House of Representatives a report” on the contract that includes:
 - “The total cost savings resulting from the authority provided” in Sec. 152;

- “The type and duration of the contract awarded;”
- “The total contract value;”
- “The funding profile by year;”
- “The terms of the contract regarding the treatment of changes by the Federal Government to the requirements of the contract, including how any such changes may affect the success of the contract.”
- A plan for using the cost savings “to improve the capability of overhead persistent infrared,” which shall include: “The available funds, by year, resulting from such cost savings”; “the specific activities or subprograms to be funded by such cost savings and the funds, by year, allocated to each such activity or subprogram”; “the objectives for each such activity or subprogram and the criteria used by the Secretary to determine which such activity or subprogram to fund”; “the method in which such activities or subprograms will be awarded, including whether it will be on a competitive basis”; and “the process for determining how and when such activities and subprograms would transition to an existing program or be established as a new program of record.”
- Finally, it is the “Sense of Congress” that the Secretary of the Air Force “should not enter into a fixed-price contract” for the “procurement two space-based infrared system satellites unless the Secretary determines that entering into such a contract will save the Air Force substantial savings, as required under section 2306b of title 10, United States Code, over the cost of procuring two such satellites separately.”

Consolidated and Further Continuing Appropriations Act, 2013:

- The Congress approved and the President signed into law an Act that appropriates \$972 million for the SBIRS program, \$23 million above the President’s FY 2013 request.
- The Act cites several areas where the Act increased and decreased the President’s FY 2013 SBIRS RDT&E request:
 - First, the Act decreases the SBIRS RDT&E account for “SBIRS SMI, architecture studies” by \$5 million.
 - Second, the Act decreases the SBIRS RDT&E account for “SBIRS evolution” by \$10 million.
 - Third, the Act increases the SBIRS RDT&E account for “SBIRS ground expansion for HEO C2” by \$40 million.
 - Fourth, the Act increases the SBIRS RDT&E account for “SBIRS ground starrer/scanner integration acceleration” by \$40 million.
 - Fifth, the Act increases the SBIRS RDT&E account for “space modernization initiatives” by \$18 million. In addition, the Act “reiterates the direction as detailed in Senate Report 112-196 for the Secretary of the Air Force to provide the congressional defense committees a report detailing how the additional SMI funds will be used not less than 30 days prior to the obligation of such funds.” Further, the “conferees support the evolution of current space systems but are concerned that the Department of Defense and the Air Force have yet to define the architectural and system specific goals being pursued with these funds.” Therefore, the “conferees direct the Secretary of the Air Force, in coordination with the Under Secretary of Defense (Acquisition, Technology, and Logistics), to provide to the congressional defense committees, not later than 90 days after the enactment of this Act, a report describing the overall SMI strategy and goals, a specific accounting of the studies and technologies to be pursued, the current and follow-on costs for those efforts, schedules for delivery of such efforts, and a roadmap of how these efforts correlate or support the future acquisition plans for SBIRS, AEHF, and Global Positioning System satellite and ground segments.”
- The Act also decreased funds from the President’s FY 2013 SBIRS Procurement request:
 - The Act removes \$60 million from the SBIRS Procurement account as a result of a “schedule delay due to late AP award.”

Wideband Global SATCOM System

Budget Authority, \$ in million	President's FY 2013 DoD Budget Request	FY 2013 NDAA Conference Report (H.Rept. 112-705)	Consolidated and Further Continuing Appropriations Act, 2013
RDT&E	12.027	12.027	12.027
WGS (SPACE)	12.027	12.027	12.027
Procurement	36.835	36.835	36.835
WGS 8 Space	36.835	36.835	36.835
Total	48.862	48.862	48.862

Mission

The [Wideband Global SATCOM \(WGS\)](#) satellites an international and joint service satellite communications system that will provide high-capacity communications. The WGS system allows the DoD robust and flexible execution of command and control, communications computers, intelligence, surveillance, and reconnaissance (C4ISR), as well as battle management and combat support information functions. The WGS system is the follow-on to the [Defense Satellite Communications Systems \(DSCS\)](#). Each WGS satellite will deliver the equivalent capacity of the entire existing DSCS constellation.

President's FY 2013 Department of Defense Budget Request

Research, Development, Test & Evaluation (RDT&E):

- Command and Control System – Consolidated (CCS-C) development: Complete development to support launch of WGS SV-5. Conduct launch and early orbit operations for AEHF SV-3.

Procurement:

- Funding includes: Mission assurance, Federally Funded Research and Development Center (FFRDC) technical analysis, test support (to include Camp Parks), program office and other related support activities. Also funds the Command and Control System – Consolidated (CCS-C) database development for the WGS Block II Follow-on satellites.

Congressional Action

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- The FY 2013 NDAA Conference Report (H. Rept. 112-750) would authorize \$48 million for WGS in FY 2013 to fully authorize funds for the President's request.

Consolidated and Further Continuing Appropriations Act, 2013:

- The Congress approved and the President signed into law an Act that appropriates \$48 million to fully fund the WGS program at the President's FY 2013 request.

Precision Tracking Space System

Budget Authority, \$ in million	President's FY 2013 DoD Budget Request	FY 2013 NDAA Conference Report (H.Rept. 112-705)	Consolidated and Further Continuing Appropriations Act, 2013
RDT&E	297.375	242.375	242.375
Precision Tracking Space System	282.283	N/A	N/A
Program-Wide Support	15.092	N/A	N/A
Total	297.375	242.375	242.375

Mission

The [Precision Tracking Space System \(PTSS\)](#) is a future space-borne sensor of the Ballistic Missile Defense System (BMDS), designed to track ballistic missiles shortly after launch and throughout their midcourse flight. PTSS will provide sensor data to the BMDS battle manager which will, in turn, send tracking data to deployed Aegis cruisers/destroyers and their on-board interceptor missiles. PTSS enables the early intercept of enemy ballistic missiles and increases the missile raid handling capacity of the BMDS. The PTSS also has inherent capability for other missions such as Space Situational Awareness. The Missile Defense Agency (MDA) expects that capability to be exploited by the joint warfighter when the PTSS is not engaged in a missile defense mission.

President's FY 2013 Department of Defense Budget Request

Research, Development, Test & Evaluation (RDT&E):

- Precision Tracking Space System:
 - Characterize and obtain measurements from the breadboard models of the optical tracking and communications payload subassemblies.
 - Complete preliminary design for subsystems in the satellite bus, optical payload and communications payload.
 - Develop initial test beds for system components including command and data handler, communication payload data handler, optical payload data processing unit and communications crosslinks.
 - Complete first-pass of focal plane array (FPA) read-out integrated circuits and detectors; deliver the FPA prototype.
 - Breadboard optical payload sensor cold-box subsystem.
 - Complete primary manufacturing and production readiness studies with the Integrated Systems Engineering Team (ISET).
 - Complete final Ballistic Missile Defense system test plan for flight and ground elements.
 - Complete PTSS to Command, Control, Battle Management, and Communications (C2BMC) Initial Capabilities Document (ICD) functional and physical interface definitions (signed ICD).
 - Complete system preliminary design review.
 - Complete architecture and engineering of PTSS Ground Entry Point (GEP).
- Civilian Salaries and Support.

Congressional Action

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- The FY 2013 NDAA Conference Report (H. Rept. 112-750) would authorize \$242 million for PTSS in FY 2013, \$55 million below the President's request. The Conference Report cites "project decrease to support technology development."
- However, Section 224 states that "not more than 75 percent" of the funds authorized to be appropriated for PTSS in FY 2013 would be authorized to be obligated or expended until the Director of Cost Assessment and Program Evaluation (CAPE) completes an evaluation of alternatives and the approved terms of reference for the evaluation are submitted to the congressional defense committees.

- First, the Director of Cost Assessment and Program Evaluation shall perform: “an independent cost estimate for the precision tracking space systems;” and “a comprehensive assessment evaluation of alternatives for such a system.” Further, the evaluation “shall be based on a clear articulation by the Director of the Missile Defense Agency” of:
 - “The space-based and ground-based sensors that will be required to be maintained to aid the precision tracking space system constellation;”
 - “The number of satellites to be procured for a first constellation, including the projected lifetime of such satellites in the first constellation, and the number projected to be procured for a first and, if applicable, second replenishment;”
 - “The technological and acquisition risks of such system, including systems engineering and ground system development;”
 - “An evaluation of the technological capability differences between the precision tracking space system tracking sensor and the space tracking surveillance system tracking sensor;”
 - “The cost differences, as confirmed by the Director of Cost Assessment and Program Evaluation, between such systems, including costs relating to launch services;” and
 - “Any other matters the Director believes useful that do not unduly delay completion of the evaluation.”
- Second, in conducting the evaluation the Director of Cost Assessment and Program Evaluation shall:
 - “Evaluate whether the precision tracking space system, as planned by the Director of the Missile Defense Agency” in the FY 2013 Budget request, “is the most cost effective and best value sensor option with respect to land-, air-, or space-based sensors, or a combination thereof, to improve the regional missile defense and homeland missile defense of the United States, including by adding precision tracking and discrimination capability to the ground-based midcourse defense system;”
 - “Examine the overhead persistent infrared satellite data or other data that are available as of the date of the evaluation that are not being used for ballistic missile tracking;”
 - “Determine whether and how using the data,” described above, “could improve sensor coverage for the homeland missile defense of the United States and regional missile defense capabilities;”
 - “Study the plans of the Director of the Missile Defense Agency to integrate the precision tracking space system concept into the ballistic missile defense system and evaluate the concept of operations and missile defense engagement scenarios of such use;”
 - “Consider the agreement entered into” by the Director of the Missile Defense Agency and the Commander of the Air Force Space Command; and
 - “Consider any other matters the Director believes useful that do not unduly delay completion of the evaluation.”
- Third, “in conducting the independent cost estimate” the Director of Cost Assessment and Program Evaluation “shall take into account acquisition costs and operation and sustainment costs during the initial 10-year and 20-year periods.”
- Fourth, the “Director of the Missile Defense Agency shall provide to the Director of Cost Assessment and Program Evaluation the information necessary to conduct the independent cost estimate and the evaluation of alternatives of” PTSS.
- The “independent cost estimate and evaluation” shall be submitted to the congressional defense committees “not later than April 30, 2013.”
- In addition, the “Director of the Missile Defense Agency shall enter into a memorandum of agreement with the Commander of the Air Force Space Command with respect to the space situational awareness capabilities, requirements, design, and cost sharing of the precision tracking space system.” The Director of the Missile Defense Agency “shall submit to the congressional defense committees the agreement.”

- Sec. 224 states that the terms of reference for the evaluation must be: “approved by the Missile Defense Executive Board, in coordination with the Defense Space Council;” and “submitted to the congressional defense committees.”
- In addition, Sec. 224 directs the Comptroller General of the United States to provide to the congressional defense committees:
 - “By no later than 30 days after the date on which the terms of reference for the evaluation” are provided to such committees “a briefing on the views of the Comptroller General with respect to such terms of reference and their conformance with the best practices for analyses of alternatives established by the Comptroller General;” and
 - “A final report on such terms as soon as practicable following the date of the briefing.”
- Further, the Comptroller General shall provide the congressional defense committees:
 - “By no later than 60 days after the date on which the evaluation is submitted” a “briefing on the views of the Comptroller General with respect to such evaluation;” and
 - “A final report on such evaluation as soon as practicable following the date of the briefing.”

Consolidated and Further Continuing Appropriations Act, 2013:

- The Congress approved and the President signed into law an Act that appropriates \$242 million for the PTSS program, \$55 million below the President’s FY 2013 request.

Evolved Expendable Launch Vehicle

Budget Authority, \$ in million	President's FY 2013 DoD Budget Request	FY 2013 NDAA Conference Report (H.Rept. 112-705)	Consolidated and Further Continuing Appropriations Act, 2013
RDT&E	7.980	7.980	32.980
Evolved Expendable Launch Vehicle	7.980	7.980	32.980
Procurement	1,679.856	1,679.856	1,459.856
Evolved Expendable Launch Vehicle	1,679.856	1,679.856	805.250
Evolved Expendable Launch Vehicle Infrastructure	-	-	654.606
Total	1,687.836	1,687.836	1,492.836

Mission

The [Evolved Expendable Launch Vehicle \(EELV\)](#) program was designed to improve the United States' access to space by making space launch vehicles more affordable and reliable. The program satisfies the government's National Launch Forecast (NLF) requirements.

President's FY 2013 Department of Defense Budget Request

Research, Development, Test & Evaluation (RDT&E):

- EELV RDT&E: Continue Pre-Planned Product Improvements (P3I) efforts on upgraded secure launch flight termination system (SLFTS), common upper stage engine, and conduct special studies. FFRDC support of new entrant certification analysis as required. Complete development of secondary payload standard service and GPS metric tracking.

Procurement:

- Funds are required for annual launch capability tasks to include systems engineering, program management, infrastructure, systems integration and tests, launch site and launch operations activities, post mission analysis, and other related activities to support mission requirements, to include mission assurance for previously procured AF missions working toward launch and to mitigate effects of diminishing manufacturing sources. Funds are also required to procure four launch services within the medium and intermediate classes, as well as secondary payload standard service, to be completed as early as FY 2015; evaluate and certify potential new entrants for potential awards; and support international partner launch services. Current launch services procurements will no longer be based on a mission-assigned tail concept. The Air Force will then assign missions on priority need or first availability.

Congressional Action

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- The FY 2013 NDAA Conference Report (H. Rept. 112-750) would authorize \$1,687 million for EELV in FY 2013 to fully authorize funds for the President's request.
- In addition, Section 153 would limit 10 percent of the funds authorized to be appropriated or otherwise made available for fiscal year 2013 for the Air Force for the evolved expendable launch vehicle program until the Secretary of the Air Force submits a report "describing the acquisition strategy" and "written certification that such a strategy: maintains assured access to space; achieves substantial cost savings; and provides opportunities for competition." In addition the report shall include:
 - "The anticipated savings to be realized under the acquisition strategy for the evolved expendable launch vehicle program;"
 - "The number of launch vehicle booster cores covered by the planned contract for such program;"
 - "The number of years covered by such contract;"
 - "An assessment of when new entrants that have submitted a statement of intent will be certified to compete for evolved expendable launch vehicle-class launches;"

- “The projected launch manifest, including possible opportunities for certified new entrants to compete for evolved expendable launch vehicle-class launches;”
- “Any other relevant analysis used to inform the acquisition strategy for such program;”
- Finally, Sec. 153 directs the Comptroller General of the United States to review the above-mentioned report. In addition, not later than 30 days after the date on which the above mentioned report is submitted to appropriate congressional committees, the Comptroller General of the United States is directed to:
 - “Submit to such committees a report on the review;” or
 - “Provide to such committees a briefing on such review;”

Consolidated and Further Continuing Appropriations Act, 2013:

- The Congress approved and the President signed into law an Act that appropriates \$1,492 million for the EELV program, \$195 million below the President’s FY 2013 request.
- The Act cites several areas where the Act increased and decreased the President’s FY 2013 EELV request:
 - First, the Act increased the EELV RDT&E request by \$25 million to fund the “RL-10 conversions.”
 - Second, the Act decreased the EELV procurement request by \$220 million due to “EELV launch capability contract savings.”
- In addition, the Act notes that the conferees allocated funds “in separate procurement lines to increase the budget visibility of each program.” Further, the conferees “direct that none of the recommended reduction to the EELV Launch Capabilities program be applied against mission assurance activities.” And lastly, the conferees “direct the Secretary of the Air Force to provide clarification and definition of mission assurance activities that can be correlated to the EELV program and contract to the congressional defense committees not later than 90 days after the enactment of this Act.”

Export Control Modernization

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- There are several sections within the FY 2013 NDAA that would impact export control modernization:
 - Section 1261 authorizes the repeal of portions of Section 1513 of the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999, which had originally moved “all satellites and related items that are on the Commerce Control List of dual-use items in the Export Administration Regulations” to “the United States Munitions List and controlled under section 38 of the Arms Export Control Act.”
 - Further, separately accompanying “the submission to Congress of the first notification after the date of the enactment of this Act under section 38(f) of the Arms Export Control Act relating to the removal of satellites and related items from the United States Munitions List, the President shall also submit to Congress”:
 - First, “a determination by the President that the removal of such satellites and items from the United States Munitions List is in the national security interests of the United States;” and
 - Second, “ a report identifying and analyzing any differences between”:
 - “The recommendations and draft regulations for controlling the export, re-export, and transfer of such satellites and related items that were submitted in the report to Congress required by section 1248 of the National Defense Authorization Act for Fiscal Year 2010;” and
 - “The final regulations under which the export, re-export and transfer of such satellites and related items would continue to be controlled.”
 - Sec. 1261 also states that no satellites or related items that are made subject to the Export Administration Regulations as a result of the above mentioned repeal, whether or not enumerated on the Commerce Control List:
 - “May be exported, re-exported, or transferred, directly or indirectly, to”:
 - “The People’s Republic of China;”
 - “North Korea;”
 - “Any other country that is a state sponsor of terrorism;”
 - “Any entity or person in or acting for or on behalf of such government, entity, or person;”
 - “May be launched in a country” described above, “or as part of a launch vehicle owned, operated, or manufactured by the government of such country or any entity or person in or acting for or on behalf of such government, entity, or person.”
 - However, the “President may waive the prohibitions” mentioned above “on a case-by-case basis if not later than 30 days before doing so the President”:
 - “Determines that it is in the national interest of the United States to do so;” and
 - “Notifies the appropriate congressional committees of such determination.”
 - With that said, “any license or other authorization to export satellites and related items to a country with respect to which the United States maintains a comprehensive arms embargo shall be subject to a presumption of denial.”
 - Finally, “not later than one year after the date of the enactment of this Act, and annually thereafter, the Director of National Intelligence, in consultation with the Secretary of State, shall submit to the appropriate congressional committees a report on efforts of state sponsors of terrorism, other foreign countries, or entities to illicitly acquire satellites and related items.” This report “shall be submitted in unclassified form, but may contain a classified annex.”
 - Section 1262 directs that “not later than 60 days after the end of each calendar year through 2020, the President shall submit” a report “summarizing all licenses and other authorizations to

export satellites and related items that are subject to the Export Administration Regulations as a result” of Sec. 1261. The report should be submitted to several congressional committees including:

- The Committee on Foreign Relations, the Committee on Banking, Housing, and Urban Affairs, and the Select Committee on Intelligence of the Senate; and the Committee on Foreign Affairs and the Permanent Select Committee on Intelligence of the House of Representatives.
- Section 1263 directs that “not later than 120 days after the date of the enactment of this Act, the Secretary of Commerce, in consultation with the Attorney General, the Secretary of Homeland Security, and the heads of other Federal departments and agencies as appropriate, shall submit to the appropriate congressional committees a report that contains an assessment of the extent to which the terms and conditions of exemptions for foreign countries to the licensing requirements and other authorizations to export satellites and related items that are subject to the Export Administration Regulations” does “contain strong safeguards.” The report should include:
 - “A description of the extent to which the terms and conditions of exemptions described” above and “other relevant laws, regulations, and practices, support law enforcement efforts to detect, prevent, and prosecute criminal, administrative, and other violations of any provision of the Export Administration Regulations, including efforts on the part of state sponsors of terrorism, organizations determined by the Secretary of State to have provided support for international terrorism, or other foreign countries, to acquire illicitly satellites and related items from the United States.”
- Section 1264 states that “in order to ensure accountability with respect to the export of satellites and related items that become subject to the Export Administration Regulations,” the President “shall provide for the end-use monitoring of such satellites and related items.” Therefore, “not later than 120 days after the date of the enactment of this Act, the Secretary of Commerce, in consultation with the heads of other Federal departments and agencies as appropriate, shall submit to Congress a report describing the actions taken to implement this section, including identification of resource shortfalls or other constraints on effective end-use monitoring of satellites and related items.”
- Section 1265 states that “subject to section 38(f) of the Arms Export Control Act the President shall ensure that the Secretary of State, the Secretary of Defense, the Secretary of Commerce and, as appropriate, the Director of National Intelligence and the heads of other appropriate Federal departments and agencies, will review any removal or addition of an item to Category XV of the United States Munitions List (relating to spacecraft systems and associated equipment).”
- Section 1266 relates to rules of construction.

Consolidated and Further Continuing Appropriations Act, 2013:

- No similar language.

Joint Space Operations Center Mission System (JMS)

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- The FY 2013 NDAA Conference Report (H. Rept. 112-750) would authorize \$54 million for the Joint Space Operations Center Mission System (JMS) in FY 2013 to fully authorize funds for the President’s request.

Consolidated and Further Continuing Appropriations Act, 2013:

- The Congress approved and the President signed into law an Act that appropriates \$53 million for the JSPOC Mission System program, \$1.6 million below the President’s FY 2013 request. The Act cites “historical excess from general reductions” as the rationale for the decrease. In addition, the Act rescinded \$10 million from FY 2012 appropriations for the JSPOC modernization system.

Operationally Responsive Space

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- The FY 2013 NDAA Conference Report (H. Rept. 112-750) would authorize \$45 million for the Operationally Responsive Space (ORS) program in FY 2013, \$35 million above the President’s request.
- In addition, Section 914 would amend section 2273a of title 10, United States Code—Operationally Responsive Space Office. Proposed amendments are as follows:
- First, Sec. 914 would strike “spacelift” from the ORS mission and replace it with “launch”.
- Second, Sec. 914 would make the Head of the ORS Office “the designee of the Department of Defense Executive Agent for Space,” and the “head of the [ORS] Office” would “report to the Commander of the Air Force Space and Missile Systems Center.”
- Third, Sec. 914 would make the “Program Executive Officer (PEO) for Space” the “Acquisition Executive of the [ORS] Office and shall provide streamlined acquisition authorities for projects of the Office.”
- Fourth, Sec. 914 would require the Secretary of Defense to “establish for the [ORS] Office an Executive Committee (to be known as the ‘Operationally Responsive Space Executive Committee’) to provide coordination, oversight, and approval of projects of the [ORS] Office.” The Committee would consist of:
 - “The Department of Defense Executive Agent for Space, who shall serve as Chair of the Executive Committee and provide oversight, prioritization, coordination, and resources for the [ORS] Office.”
 - “The Under Secretary of Defense for Acquisition, Technology, and Logistics, who shall provide coordination and oversight of the [ORS] Office and recommend funding sources for programs of the Office that exceed the approved program baseline.”
 - “The Commander of the United States Strategic Command, who shall validate requirements for systems to be acquired by the Office and participate in approval of any acquisition program initiated by the [ORS] Office.”
 - “The Commander of the Air Force Space Command, the Commander of the Army Space and Missile Defense Command, and the Commander of the Space and Naval Warfare Systems Command, who shall jointly organize, train, and equip forces to support the acquisition programs of the [ORS] Office.”
 - “Such other offices (and their duties) as the Secretary of Defense considers appropriate.”
- Finally, the conferees “instruct the Commander of the Air Force Space and Missile Systems Center to which the Office now reports, to provide a plan to the congressional defense committees, not later than 90 days after the date of enactment of this Act, that discusses how the existing and future technologies and operational systems developed in the ORS program are to be integrated into service acquisition programs to meet combatant command requirements.”

Consolidated and Further Continuing Appropriations Act, 2013:

- The Congress approved and the President signed into law an Act that appropriates \$105 million for the Operationally Responsive Space program, \$105 million above the President’s FY 2013 request. In addition, \$5 million of the funds appropriated for Operationally Responsive Space were transferred from other accounts: the Act transferred \$2 million from the Space Control Technology account and \$3 million from the Tech Transition Program account to the Operationally Responsive Space account.

Space Situational Awareness Fence Program

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- The FY 2013 NDAA Conference Report (H. Rept. 112-750) would authorize \$247 million for the Space Situational Awareness Fence program, \$20 million below the President’s FY 2013 request. The Conference Report cites “excess funding” as the rationale for the reduction.
- In addition, the FY 2013 NDAA authorizes \$3 million to “initiate a new program for the relocation and research and development activities to enhance space situational awareness capabilities through the repurposing of the C-band radar at Antigua, the relocation of that radar to the H.E. Holt Station in

Western Australia, and upgrades of the hardware and software of that radar to meet space situational awareness mission needs, operational testing of that radar, and transfer of jurisdiction of that radar to the Air Force Space Command for operations and sustainment by September 30, 2016.”

Consolidated and Further Continuing Appropriations Act, 2013:

- The Congress approved and the President signed into law an Act that appropriates \$230 million for the Space Situation Awareness Systems program, \$37 million below the President’s FY 2013 request. The Act cites “space fence delay of award” as the rationale for the decrease. In addition, the Act shifts \$11.2 million within the account through an “internal realignment” to fund the “U.S.-Australia C-band radar project.”

Space Test Program

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- The FY 2013 NDAA Conference Report (H. Rept. 112-750) would authorize \$45 million to “restore Space Test Program” in FY 2013, \$34 million above the President’s request.

Consolidated and Further Continuing Appropriations Act, 2013:

- The Congress approved and the President signed into law an Act that appropriates \$45 million for the Space Test Program, \$35 million above the President’s FY 2013 request. The funds restore the program, which was singled out for cancellation in the President’s FY 2013 budget request.

Commercial Satellite Imagery

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- Section 924 outlines several reporting requirements regarding Department of Defense electro-optical needs:
- First, “Not later than April 1, 2013, the Chairman of the Joint Requirements Oversight Council shall submit to the Director of the Congressional Budget Office a report setting forth a comprehensive description of Department of Defense peacetime and wartime requirements for electro-optical satellite imagery.” The scope of requirements shall:
 - “Be expressed in such terms as are necessary, which include daily regional and global area coverage and number of point targets, resolution, revisit rates, mean-time to access, latency, redundancy, survivability, and diversity;” and
 - “Take into consideration all types of imagery and collection means available.”
- Second, “Not later than September 15, 2013, the Director of Congressional Budget Office shall submit to the appropriate committees of Congress a report setting forth an assessment by the Director” of the April 1, 2013 requirements report. The assessment report shall include:
 - “The extent to which the requirements of the Department for electro-optical imagery from space can be satisfied by commercial companies using either: (1) current designs; or (2) enhanced designs that could be developed at low risk.”
 - “The estimated cost and schedule of satisfying such requirements using commercial companies.”
 - In preparing this assessment the Director of the Congressional Budget Office shall:
 - “Consult widely with officials of the Government, private industry, and academia;” and
 - “Make maximum use of existing studies and modeling and simulations.”
 - Further, Sec. 924 would direct the Secretary of Defense the “appropriately cleared staff of the Director of the Congressional Budget Office with such access to information and programs applicable to the assessment” that the “Director of the Congressional Budget Office shall require for the preparation of the assessment.”

Consolidated and Further Continuing Appropriations Act, 2013:

- No similar language.

Space System Synchronization Report

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- Section 911 would require the Under Secretary of Defense for Acquisition, Technology, and Logistics to submit to the congressional defense committees a report on each major satellite acquisition program that assesses: “the integration of the schedules for the acquisition and the delivery of the capabilities of the segments for the program”; and “funding for the program.”
 - The report requirements would include:
 - “The amount of funding approved for the program and for each segment of the program that is necessary for the full operational capability of the program.”
 - “The dates by which the program and each segment of the program is anticipated to reach initial and full operational capability.”
 - “A description of the intended primary capabilities and key performance parameters of the program.”
 - “An assessment of the extent to which the schedules for the acquisition and the delivery of the capabilities of the segments for the program or any related program” is integrated.
 - If the Under Secretary determines pursuant to the assessment “that the program is a non-integrated program, an identification of”:
 - “The impact on the mission of the program of having the delivery of the segment capabilities of the program more than one year apart;”
 - “The measures the Under Secretary is taking or is planning to take to improve the integration of the acquisition and delivery schedules of the segment capabilities”; and
 - “The risks and challenges that impede the ability of the Department of Defense to fully integrate those schedules.”
- Sec. 911 states that the Milestone Decision Authority “shall include the report required” in Sec. 911 “with respect to a major satellite acquisition program as part of the documentation used to approve the acquisition of the program.”
- Sec. 911 reports on “a major satellite acquisition program initiated before the date of the enactment of the National Defense Authorization Act for Fiscal Year 2013,” the Under Secretary shall submitted “not later than one year after such date of enactment.” Reports on “a major satellite acquisition program initiated on or after the date of the enactment of the National Defense Authorization Act for Fiscal Year 2013,” is required to be submitted “with respect to the program at the time of the Milestone B approval of the program.”
- In addition, Sec. 911 stipulates that “If, after submitting the report” on a major satellite acquisition program required in Sec. 911, “the Under Secretary determines that the program is a non-integrated program, the Under Secretary shall, not later than 30 days after making that determination, submit to the congressional defense committees a report”:
 - First, “notifying the committees of that determination”; and
 - Second, “identifying”:
 - “The impact on the mission of the program of having the delivery of the segment capabilities of the program more than one year apart;”
 - “The measures the Under Secretary is taking or is planning to take to improve the integration of the acquisition and delivery schedules of the segment capabilities;” and
 - “The risk and challenges that impede the ability of the Department of Defense to fully integrate those schedules.”
- Finally, “for each major satellite acquisition program that the Under Secretary has determined” is a “non-integrated program, the Under Secretary shall annually submit to Congress, at the same time the budget of the President for a fiscal year is submitted” an update to the first report required in Sec. 911. The “requirement to submit an annual report update” for a non-integrated program “shall terminate on

the date on which the Under Secretary submits to the congressional defense committees notice that the Under Secretary has determined that such program is no longer a non-integrated program, or on the date that is five years after the date on which the initial report update” was required, or whichever is earlier. Further, “if at the time of the termination of the requirement annually update a report” for a non-integrated program “the Under Secretary has not provided notice to the congressional defense committees that the Under Secretary has determined that the program is no longer a non-integrated program, the Comptroller General shall conduct a review of such program and submit the results of such review to the congressional defense committees.”

Consolidated and Further Continuing Appropriations Act, 2013:

- No similar language.

Report on Overhead Persistent Infrared Technology

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- Section 915 directs that “not later than 180 days after the date of the enactment of this Act, the Secretary of Defense, in consultation with the Director of National Intelligence, shall submit to the congressional defense committees, the Permanent Select Committee on Intelligence of the House of Representatives, and the Select Committee on Intelligence of the Senate a report on overhead persistent infrared technology.” The report shall include:
 - First, “an identification of the comprehensive overhead persistent infrared technology requirements of the Department of Defense and the intelligence community;”
 - Second, provide a “description of the strategy, plan, and budget for the space layer, with supporting ground architecture, including key decision points for the current and next generation overhead persistent infrared technology with respect to missile warning, missile defense, battlespace awareness, and technical intelligence.”
 - Third, “an assessment of whether there are further opportunities for the Department of Defense and the intelligence community to capitalize on increased data sharing, fusion, interoperability, and exploitation;”
 - Fourth, any “recommendations on how to better coordinate the efforts by the Department and the intelligence community to exploit overhead persistent infrared sensor data;” and
 - Fifth, “any other relevant information that the Secretary considers necessary.”
- Finally, Sec. 915 directs that “not later than 90 days after the date on which the Secretary of Defense submits” the above mentioned report, “the Comptroller General of the United States shall submit to the congressional defense committees an assessment of the report” to include:
 - “An assessment of whether such report is comprehensive, fully supported, and sufficiently detailed;” and
 - “An identification of any shortcomings, limitations, or other reportable matters that affect the quality or findings of the report.”

Consolidated and Further Continuing Appropriations Act, 2013:

- No similar language.

Limitations on Space Code of Conduct Negotiations

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- Section 913 states that “If the United States becomes a signatory to a non-legally binding international agreement concerning an International Code of Conduct for Outer Space Activities or any similar agreement, at the same time as the United States becomes such a signatory” that:
 - “The President shall submit to the congressional defense committees, the Permanent Select Committee on Intelligence of the House of Representatives, and the Select Committee on Intelligence for the Senate a certification that such agreement has no legally-binding effect or basis for limiting the activities of the United States in outer space;” and

- “The Secretary of Defense, the Chairman of the Joint Chiefs of Staff, and the Director of National Intelligence shall jointly submit to the congressional defense committees a certification that such agreement will be equitable, enhance national security, and have no militarily significant impact on the ability of the United States to conduct military or intelligence activities in space.”
- Second, “no action shall be taken that would obligate the United States to reduce or limit the Armed Forces or armaments of the United States in outer space in a militarily significant manner, except pursuant to the treaty-making power of the President set forth in Article II, Section 2, Clause II of the Constitution or unless authorized by the enactment of further affirmative legislation by the Congress of the United States.”
- Third, “the Secretary of Defense, the Secretary of State, and the Director of National Intelligence shall jointly provide to the covered congressional committees regular, detailed updates on the negotiation of a non-legally binding international agreement concerning an International Code of Conduct for Outer Space Activities or any similar agreement.”
- Fourth, the “requirement to provide regular briefings” shall “terminate on the date on which the United States becomes a signatory to an agreement” mentioned above “or on the date on which the President certifies to Congress that the United States is no longer negotiating an agreement” referred to above, or whichever is earlier.
- Fifth, “if the United States becomes a signatory to a non-legally binding international agreement concerning an International code of Conduct for Outer Space Activities or any similar agreement, not less than 60 days prior to any action that will obligate the United States to reduce or limit the Armed Forces or armaments or activities of the United States in outer space, the head of each Department or agency of the Federal Government that is affected by such action shall submit to Congress notice of such action and the effect of such action on such Department or agency.”
- Sixth, “Not later than January 1 of each year, the Secretary of Defense and the Director of National Intelligence shall jointly submit to Congress a report on the counter-space programs of foreign countries.” This report is required to include:
 - “The explanation of whether any foreign country has a counter-space program that could be a threat to the national security or commercial space systems of the United States;” and
 - “The name of each country with a counter-space program.”

Consolidated and Further Continuing Appropriations Act, 2013:

- No similar language.

Assessment of Foreign Components and the Space Launch Capability of the United States

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- Section 916 directs the Under Secretary of Defense for Acquisition, Technology, and Logistics to “conduct an independent assessment of the national security implications of continuing to use foreign component and propulsion systems for the launch vehicles under the evolved expendable launch vehicle program.” Further, this report would be due “no later than 180 days after the date of enactment of this Act.”

Consolidated and Further Continuing Appropriations Act, 2013:

- No similar language.

Report on Counterspace Technology

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- Section 917 directs that “not later than one year after the date of enactment of this Act, and annually thereafter for two years, the Secretary of Defense shall submit to the congressional defense committees, the Committee on Foreign Affairs of the House of Representatives, and the Committee on Foreign Relations of the Senate a report based on all available information (including the Counter Space Technology List of the Department of State) describing key space technologies that could be used, or are

being sought, by a foreign country with a counter space or ballistic missiles program, and should be subject to export controls by the United States or an ally of the United States, as appropriate.”

Consolidated and Further Continuing Appropriations Act, 2013:

- No similar language.

Commercial Space Launch Cooperation

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- Section 916 would authorize the Secretary of Defense to “take actions as the Secretary considers to be in the best interest of the Federal Government to”:
 - “Maximize the use of the capacity of the space transportation infrastructure of the Department of Defense by the private sector in the United States;”
 - “Maximize the effectiveness and efficiency of the space transportation infrastructure of the Department of Defense;”
 - “Reduce the cost of services provided by the Department of Defense related to space transportation infrastructure at launch support facilities and space recovery support facilities;”
 - “Encourages commercial space activities by enabling investment by covered entities in the space transportation infrastructure of the Department of Defense;” and
 - “Foster cooperation between the Department of Defense and covered entities.”
- Sec. 912 would also authorize the Secretary of Defense to:
 - “Enter into a contract or other agreement with a covered entity to provide to the covered entity support and services related to the space transportation infrastructure of the Department of Defense;” and
 - “Upon the request of that covered entity, may include such support and services in the space launch and reentry range support requirements of the Department if”:
 - (1) “the Secretary determines that the inclusion of such support and services in such requirements is in the best interest of the Federal Government; does not interfere with the requirements of the Department; and does not compete with the commercial space activities of other covered entities, unless that competition is in the national security interests of the United States.”
 - (2) “Any of the commercial requirement included in that contract or other agreement has full non-Federal funding before the execution of the contract or other agreement.”
 - “Enter into contracts or other agreements with covered entities on a cooperative and voluntary basis to accept contributions of funds, services, and equipment to carry out” commercial space launch cooperative efforts.
 - Any funds, services, or equipment accepted by the Secretary of Defense for this purpose:
 - “May be used only for the objectives specified in” Sec. 912 “in accordance with terms of use set forth in the contract or other agreement entered into”; and
 - “Shall be managed by the Secretary in accordance with regulations of the Department of Defense.”
 - A contract or other agreement entered into under Sec. 912 with a covered entity:
 - “Shall address the terms of use, ownership, and disposition of the funds, services, or equipment contributed pursuant to the contract or other agreement”; and
 - “Shall include a provision that the covered entity will not recover the costs of its contribution through any other contract or agreement with the United States.”
 - Sec. 912 notes that there is “established on the books of the Treasury a special account to be known as the ‘Defense Cooperation Space Launch Account’,” and funds received by the Secretary of Defense for commercial space launch cooperation agreements “shall be credited to the Defense Cooperation Space Launch Account.” Amounts in the “Defense Cooperation Space

Launch Account shall be available, to the extent provided in appropriation Acts, for costs incurred by the Department.” Further, “funds in the Account shall remain available until expended.”

- In addition, the Secretary of Defense would be required to submit a report by January 31 of each year to the congressional defense committees “on the funds, services, and equipment accepted and used by the Secretary” during the previous fiscal year.
- Finally, Sec. 912 would require the Secretary of Defense to “prescribe regulations to carry out” Sec. 912.

Consolidated and Further Continuing Appropriations Act, 2013:

- No similar language.

Science, Technology, Engineering, and Mathematics (STEM) Education

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- Sec. 1083 states that it is the sense of Congress that:
 - First, the DoD “should make every reasonable and practical effort to increase the number of United States citizens who pursue advanced degrees in science, technology, engineering, and mathematics.”
 - Second, “to strongly urge the Department of Defense to investigate innovative mechanisms (subject to all appropriate security requirements) to access to the pool of talent of non-United States citizens with advanced scientific and technical degrees from United States institutions of higher education, especially in those scientific and technical areas that are most vital to the national defense (such as those identified by the Assistant Secretary of Defense for Research and Engineering and the Armed Forces).”

Consolidated and Further Continuing Appropriations Act, 2013:

- No similar language.

Multiyear Procurement Authority for Arleigh Burke Class Destroyers and Associated Systems

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- Sec. 123 would authorize the Secretary of the Navy to “enter into one or more multiyear contracts, beginning with the fiscal year 2013 year, for the procurement of up to 10 Arleigh Burke class Flight IIA guided missile destroyers, as well as the AEGIS Weapon Systems, MK 41 Vertical Launching Systems, and Commercial Broadband Satellite Systems associated with those vessels.” In addition, the Secretary of the NAVY is authorized to “enter into one or more contracts, beginning in fiscal year 2013, for advance procurement associated with the vessels and systems” outlined in Sec. 125.

Consolidated and Further Continuing Appropriations Act, 2013:

- Sec. 8010 would allow the Secretary of the Navy to appropriate funds “for a multiyear procurement contract” for “up to 10 DDG-51 Arleigh Burke class Flight IIA guided missile destroyers, as well as the AEGIS Weapon Systems, MK 41 Vertical Launching Systems, and Commercial Broadband Satellite Systems associated with those vessels.”

Report on Planned Efficiency Initiatives at Space and Naval Warfare Systems Command

FY 2013 National Defense Authorization Act Conference Report (H. Rept. 112-750):

- Sec. 1067 would require “Not later than 90 days after the date of the enactment of this Act, the Secretary of the Navy” to “submit to the congressional defense committees a report on plans to implement efficiency initiatives to reduce overhead costs at the Space and Naval Warfare Systems Command (SPAWAR).” The report should include “a detailed description of the long-term impacts on current and planned future mission requirements.”

Consolidated and Further Continuing Appropriations Act, 2013:

- No similar. Language.

Appendix: Summary of Unclassified Space-related Programs requested in FY 2013 budget**

Budget Authority, \$ in million	President's FY 2013 DoD Budget Request	FY 2013 NDAA Conference Report (H.Rept. 112-705)	Consolidated and Further Continuing Appropriations Act, 2013
PROCUREMENT			
ARMY, Aircraft Procurement			
Communications, Navigation, and Surveillance	133.191	133.191	133.191
GATM Rotary Wing Aircraft (enhanced GPS capability)	32.455	32.455	32.455
ARMY, Other Procurement			
Defense Enterprise Wideband SATCOM Systems (DEWSS)	151.636	151.636	151.636
Transportable Tactical Command Communications	6.822	6.822	1.822
Super High Frequency (SHF) Terminal	9.108	9.108	9.108
Navstar Global Positioning System	27.353	27.353	8.453
Secure Mobile Anti-Jam Reliable Tactical Terminal (SMART-T)	98.656	98.656	14.040
Global Broadcast Service (GBS)	47.131	47.131	47.131
Mod of In-Svc Equipment (TAC SAT)	23.281	23.281	23.281
CSS-Communications, CSS SATCOM	10.139	10.139	10.139
Global Positioning System-Survey (GPS-S)	5.309	5.309	5.309
Joint Tactical Ground Stations (JTAGS)	2.680	2.680	2.680
Initial Spares – C&E, Defense SATCOM Sys Spares	5.559	5.559	5.559
NAVY, Aircraft Procurement			
Common Avionics Changes, Global Positioning System (GPS)	8.025	8.025	8.025 [†]
NAVY, Weapons Procurement			
Fleet Satellite communications Follow-on	21.454	21.454	21.454
NAVY, Other Procurement			
Navstar GPS Receivers (SPACE)	9.089	9.089	9.089
Satellite Communications Systems	49.294	51.294	49.294
Navy Multiband Terminal (NMT)	184.825	184.825	170.521
Marines CORPS, Procurement			
Radio Systems	36.482	36.482	36.482
AIR FORCE, Aircraft Procurement			
Other Production Charges, NAVSTAR Global Positioning System (GPS) User Equipment	1.000	1.000	1.000
MQ-9, Primary Predator Satellite Link (PSSL), Ka Migration	11.026	11.026 [‡]	11.026 [§]
B-2 Mods, EHF SATCOM and Computers	65.037	65.037	65.037
KC-10 Mods, UHF SATCOM Antenna	0.083	0.083	0.083 ^{**}
E-4 Mods, MILSTAR Ultra High Frequency (UHF) SATCOM System Replacement	4.806	4.806	4.806

[†] The Consolidated and Further Continuing Appropriations Act, 2013 reduces the President's request by \$3.6 million for Common Avionics Changes, but does not indicate whether this would impact funds requested for Global Positioning System cost in this account.

[‡] The Conference NDAA authorizes the Air Force to procure 12 additional MQ-9 aircraft above the President's request of 24, which would add an additional \$155 million to this account.

[§] The Consolidated and Further Continuing Appropriations Act, 2013 appropriations funds to purchase 12 additional MQ-9 aircraft above the President's request of 24, which would add an additional \$155 million to this account. However, it would also reduce the program by \$26 million due to "block 50 GCS program adjustment."

^{**} The Consolidated and Further Continuing Appropriations Act, 2013 reduces the President's request by \$36.9 million for KC-10 aircraft. The Committee Report does not indicate whether this would impact funds requested for KC-10 Mods, UHF SATCOM Antenna cost in this account.



Other Mods, EHF SATCOM	4.580	4.580	4.580
MQ-9 UAV Mods, Ka Migration	8.061	8.061	8.061 ⁺⁺
MQ-1 Mods, Differential GPS	7.978	7.978	7.978
AIR FORCE, Missile Procurement			
Advanced EHF	557.205	547.205	477.205
Wideband Gapfiller Satellites	36.835	36.835	36.835
GPS III Space Segment	410.294	410.294	410.294
GPS III Space Segment Advance Procurement	82.616	82.616	82.616
Spaceborne Equipment (COMSEC)	10.554	10.554	10.554
Global Positioning System (SPACE)	58.147	58.147	48.147
Defense Meteorological Satellite Program	89.022	89.022	89.022
Evolved Expendable Launch Vehicle	1,679.856	1,679.856	805.250
Evolved Expendable Launch Vehicle Infrastructure	-	-	654.606
Space Based Infrared System High	454.251	454.251	394.251
AIR FORCE, Other Procurement			
Space Based IR Sensor Program	47.135	47.135	47.135
Navstar GPS Space	2.031	2.031	2.031
NUDET Detection System Space	5.564	5.564	5.564
Air Force Satellite Control Network	44.219	44.219	44.219
Spacelift Range System Space	109.545	109.545	109.454
MILSATCOM Space	47.592	47.592	47.592
Space MODS Space	47.121	47.121	47.121
Counterspace System	20.961	20.961	20.961
Defense Space Reconnaissance Program	39.155	39.155	39.155
Spares and Repair Parts, NAVSTAR GPS	0.388	0.388	0.388
Spares and Repair Parts, Spacelift Range System	3.076	3.076	3.076
DEFENSE-WIDE, Procurement			
Teleport Program, Base	46.992	46.992	46.992
Teleport Program, OCO	5.260	5.260	5.260
RESEARCH, DEVELOPMENT, TEST, AND EVALUATION			
ARMY, RDT&E Advanced Technology Development			
Command, Control, Communications Advanced Technology, Space Application Technology	4.157	4.157	4.157
ARMY, RDT&E Advanced Component Development & Prototypes			
Army Space Systems Integration	9.876	9.876	9.876
ARMY, RDT&E Operational Systems Development			
Joint Tactical Ground System	31.738	31.738	31.738
SATCOM Ground Environment	15.756	15.756	15.756
ARMY, RDT&E Applied Research			
Sensors and Electronic Survivability, Tactical Space Research	4.303	4.303	4.303
Military Engineering Technology, Topographical, Image Intel & Space	15.486	15.486	15.486
Command, Control, Communications Technology, Communication Technology, Dynamic Spectrum and Network Technologies	3.118*	3.118	15.486
ARMY, RDT&E System Development & Demonstration			
TROJAN-RH12-MIP, Development of SATCOM dishes and receivers	0.500	0.500	0.500

⁺⁺ The Consolidated and Further Continuing Appropriations Act, 2013 reduces the President's request by \$46 million for MQ-9 aircraft Mods. The Committee Report does not indicate whether this would impact funds requested for MQ-9 UAV Mods, Ka Migration cost in this account.

NAVY, RDT&E Basic Research			
In-House Lab Independent Res, Ocean/Space Sciences	3.590	3.590	3.590
Defense Research Sciences, Atmosphere and Space Sciences	25.783	25.783	25.783
NAVY, RDT&E Applied Research			
Common Picture Applied Research, Tactical Space Exploitation	4.377	4.377	4.377
Electromagnetic Systems Applied Research, Navigation Technology	2.883	2.883	2.883
Electromagnetic Systems Applied Technology, Global Positioning System (GPS) & Navigation Technology	4.311	4.311	4.311
NAVY, RDT&E Advanced Component Development & Prototypes			
Air/Ocean Tactical Applications, METOC Data Assimilation and Mod, Meteorological and Oceanic Space-Based Sensing Capabilities	3.264	3.264	3.264
Air/Ocean Tactical Applications, Precise Timing and Astronomy	3.043	3.043	3.043
Space and Electronic Warfare (SEW) Architecture/Engineering Support	31.549	31.549	28.949
NAVY, RDT&E System Development & Demonstration			
Air/Ocean Equipment Engineering, Fleet METOC Equipment, Environmental Satellite Receiver Processor (ESRP)	0.286	0.286	0.286
Navigation/Id System, NAVSTAR GPS Equipment	19.652	19.652	19.652 ^{##}
JT Tact Radio Sys (JTRS), JTRS Network Enterprise Domain (JNED), Mobile User Objective System (MUOS)	12.300	12.300	12.300 ^{##}
NAVY, RDT&E Management Support			
Navy Space & Electronic Warfare (SEW) Support, Base	4.579	4.579	4.579
Navy Space & Electronic Warfare (SEW) Support, OCO	5.200	5.200	5.200
Space & Electronic Warfare Surveillance/Reconnaissance Support	8.000	8.000	8.000
NAVY, RDT&E Operation Systems Development			
Satellite Communications	188.482	188.482	188.482
Navy Meteorological & Ocean Sensors-Space (METOC)	0.810	0.810	0.810
AIR FORCE, RDT&E Basic Research			
Defense Research Sciences, Physics and Electronics (Major Thrust 2)	14.615*	14.615	14.615
Defense Research Sciences, Aerospace, Chemical and Material Sciences (Major Thrust 3)	45.773*	45.773	45.773
AIR FORCE, RDT&E Applied Research			
Materials, Materials for Structures, Propulsion, and Subsystems (Major Thrust 4)	6.821*	6.821	6.821
Materials, Materials for Electronics, Optics, and Survivability (Major Thrust 2)	11.818*	11.818	11.818
Materials, Materials Technology for Sustainment (Major Thrust 2)	4.370*	4.370	4.370

^{##} The Consolidated and Further Continuing Appropriations Act, 2013 reduces the President's request by \$6 million for Navigation/ID System. The Committee Report does not indicate whether this would impact funds requested for NAVSTAR GPS Equipment cost in this account.

^{##} The Consolidated and Further Continuing Appropriations Act, 2013 reduces the Joint Tactical Radio System (JTRS) for the Navy by \$70 million below the President's request due to a "revised acquisition strategy." However, the Committee Report does not indicate how this reduction would impact the MUOS portion of the JTRS account reduction.

Aerospace Vehicle Technologies, Structures (Major Thrust 4)	12.078*	12.078	12.078
Aerospace Propulsion, Advanced Propulsion Technology	23.637*	23.637	23.637
Aerospace Propulsion, Rocket Propulsion Technology	55.293	55.293	55.293
Aerospace Sensors, EO Component Technology (Major Thrust 5)	5.569*	5.569	5.569
Aerospace Sensors, EO Sensors & Countermeasures Tech (Major Thrust 3)	2.758*	2.758	2.758
Aerospace Sensors, RF Sensors & Countermeasures Tech (Major Thrust 1)	5.524*	5.524	5.524
Aerospace Sensors, RF Sensors & Countermeasures Tech (Major Thrust 2)	11.282*	11.282	11.282
Aerospace Sensors, RF Sensors & Countermeasures Tech (Major Thrust 8)	2.800*	2.800	2.800
Space Technology	98.375	98.375	98.375
Directed Energy Technology, Lasers & Imaging Technology (Major Thrust 3)	29.914	29.914	29.914
Directed Energy Technology, Space Situational Awareness	-	-	9.000
AIR FORCE, RDT&E Advanced Technology Development			
Advanced Materials for Weapon Systems, Laser Hardened Materials (Major Thrust 1)	5.996*	5.996	5.996
Advanced Aerospace Sensors, Advanced Aerospace Sensors Technology (Major Thrust 1)	1.621*	1.621	1.621
Aerospace Technology Dev/Demo (Major Thrust 2)	59.004	59.004	59.004
Aerospace Technology Dev/Demo (Major Thrust 4)	1.139*	1.139	1.139
Aerospace Technology Dev/Demo (Major Thrust 4)	6.304*	6.304	6.304
Aerospace Propulsion & Power Technology, Space & Missile Rocket Propulsion	22.446	22.446	22.446
Advance Spacecraft Technology	64.557	64.557	64.557
Maui Space Surveillance System (MSSS)	29.256	29.256	29.256
Manufacturing Technologies, Manufacturing Technologies (Major Thrust 2)	24.247*	24.247	24.247
AIR FORCE, RDT&E Advanced Component Development & Prototypes			
Advanced EHF MILSATCOM	229.171	227.671	231.171
Polar MILSATCOM	120.676	120.676	120.676
Space Control Technology	25.144	23.144	23.144
International Space Cooperative R&D	0.652	0.652	0.652
Space Protection Program	10.429	10.429	10.429
Wideband MILSATCOM	12.027	12.027	12.027
Operationally Responsive Space	-	45.000	105.00
NAVSTAR Global Positioning System (User Equipment)	96.840	96.840	71.840
Weather Satellite Follow-On	2.000	2.000	0.00
AIR FORCE, RDT&E Systems Development & Demonstration			
Global Broadcast Service (GBS)	14.652	14.652	14.652
Counterspace Systems	28.797	28.797	27.979
Space Situation Awareness Systems	267.252	247.252	230.152
Spaced Based Infrared Systems High	448.594	446.594	531.594
Evolved Expendable Launch Vehicle Program	7.980	7.980	32.980
AIR FORCE, RDT&E Management Support			



Rocket Systems Launch Program	16.200	16.200	16.200
Space Test Program	10.051	45.051	45.051
AIR FORCE, RDT&E Operational Systems Development			
Global Positioning System III-Operational Control Segment	371.595	370.095	350.095
B-2 Squadrons, EHF SATCOM and Computer	6.336	6.336	6.336
Air & Space Operations Center	76.315	76.315	76.315
Space Superiority Intelligence	12.056	12.056	12.056
MILSATCOM Terminals	107.237	107.237	107.237
Satellite Control Network	33.773	33.773	33.773
Navstar Global Positioning System (User Equipment)	29.621	29.621	29.621
Navstar Global Positioning System (Space & Control)	14.335	14.335	14.335
Space & Missile Test & Evaluation Center	3.680	3.680	3.680
Space Innovation & Development Center (Space Warfare Center)	2.430	2.430	2.430
Spacelift Range System (SPACE)	8.760	8.760	8.360
GPS III Space Segment	318.992	318.992	318.992
JSPOC Mission System	54.645	54.645	53.045
NUDET Detection System (SPACE)	64.965	63.365	63.365
Space Situation Awareness Operations	19.586	19.586	19.586
DEFENSE-WIDE, RDT&E Advanced Technology Development			
DARPA, Space Programs & Technology	159.704	159.704	159.704
DEFENSE-Wide, RDT&E Advanced Component Development & Prototypes			
Space Tracking & Surveillance System	51.313	51.313	51.313
Ballistic Missile Defense System Space Programs	6.912	6.912	6.912
Precision Tracking Space Sensor	297.375	242.375	242.375
OPERATION & MAINTENANCE			
NAVY OPERATING FORCES, Operation & Maintenance			
Space Systems & Surveillance	174.437	174.437	174.437
NAVY OPERATING FORCES, Admin & SRVWD Activities			
Space and Electronic Warfare Systems	64.418	64.418	64.418
AIR FORCE OPERATING FORCES, Operation & Maintenance			
Launch Facilities	314.490	314.490	314.490
Space Control Systems	488.762	488.762	488.762
Military Construction			
Army Satellite Communications Facility (Okinawa, Japan)	78.000	78.000	78.000
Total	9,761.321	9,749.721	9,390.16

*An asterisk by funds requested in the above appendix chart indicates that the program provides significant benefits for BOTH space and aerospace programs.

Not included in this chart are funds for Commercial Satellite Services and Enhanced Mobile Satellite Services, which the Armed Services acquire through the Defense Information Systems Agency (DISA). The DoD Budget request projects that it will spend \$493.8 million on Commercial Satellite Services in the FY 2013. The DoD budget request projects that it will spend \$123.8 million on Enhanced Mobile Satellite Services in FY 2013. In totality, the DoD projects it will spend \$617.6 million on commercial satellite communications. *

*** United States Department of Defense. Defense Working Capital Fund. Defense-Wide Fiscal Year [FY] 2013 Budget Estimates Operating and Capital Budgets. (Date 02/13/12). Text from: Office of the Under Secretary of Defense (Comptroller) website. Available from: http://comptroller.defense.gov/defbudget/fy2013/budget_justification/pdfs/06_Defense_Working_Capital_Fund/PB_13_DWWCF_Operating_Budget.pdf



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