UNITED STATES AIR FORCE

ACQUISITION

ANNUAL REPORT

FISCAL YEAR 2017

COST-EFFECTIVE MODERNIZATION

WWW.AF.MIL

> The Air Force will cost-effectively modernize in order to increase the lethality of the force. That means we have to get great value for every dollar we spend.

Heather Wilson
Secretary of the Air Force

MESSAGE FROM THE SECRETARY OF THE AIR FORCE

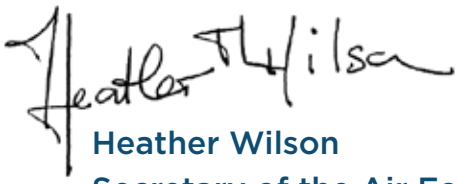
The Air Force develops, acquires and sustains everything from satellites and aircraft to information systems and spare parts. As a service, we must deliver high-quality capability to the warfighter faster and at reasonable cost, to prevail against rapidly-innovating adversaries.

Our acquisition enterprise supports every mission we ask our warfighters to accomplish. This report serves two purposes. First, it reports on how Air Force Acquisition managed programs in the past year. Second, it provides the status of our major programs and where they are heading in 2019.

Overall, the Air Force is improving on cost, schedule and performance. However, we still have a lot of work to do.

In 2017, we started to address areas ripe for improvement: streamlined decision-making authority, calculated risk-taking, prototyping and improved software acquisition. We are committed to meeting the challenges that remain.

Only excellence is good enough.



Heather Wilson
Secretary of the Air Force


STATES

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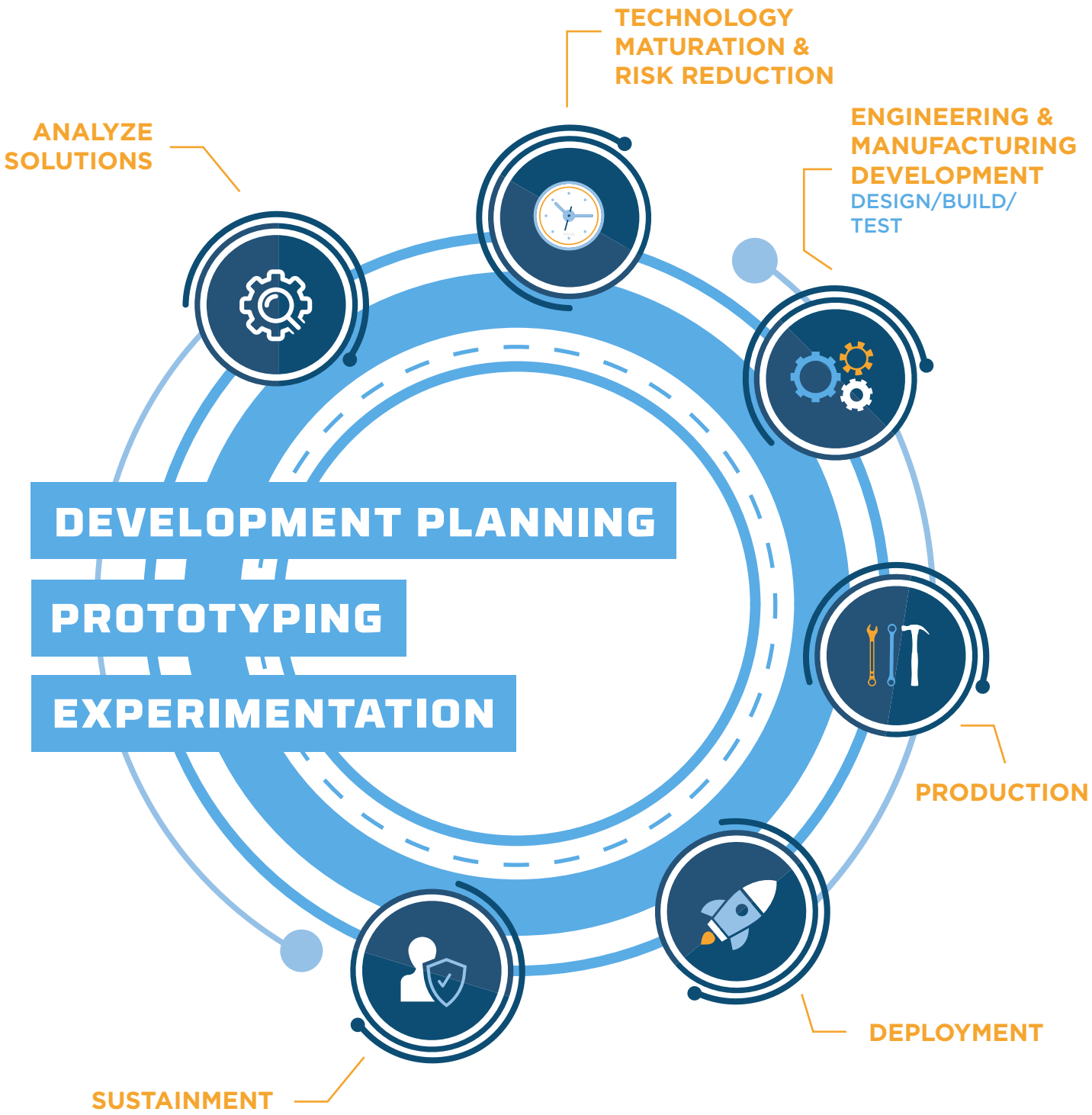
THE ACQUISITION LIFE CYCLE



AIR FORCE ACQUISITION

SEVEN CENTERS — LOCATIONS WORLDWIDE

ASSISTANT SECRETARY OF THE AIR FORCE ACQUISITION
THE PENTAGON

AIR FORCE MATERIEL COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

AIR FORCE SPACE COMMAND
PETERSON AFB, COLORADO

AIR FORCE RESEARCH LABORATORY
WRIGHT-PATTERSON AFB, OHIO

AIR FORCE LIFE CYCLE MANAGEMENT CENTER
WRIGHT-PATTERSON AFB, OHIO

AIR FORCE NUCLEAR WEAPONS CENTER
KIRTLAND AFB, NEW MEXICO

AIR FORCE TEST CENTER
EDWARDS AFB, CALIFORNIA

AIR FORCE SUSTAINMENT CENTER
TINKER AFB, OKLAHOMA

AIR FORCE INSTALLATION AND MISSION SUPPORT CENTER
JOINT BASE SAN ANTONIO-LACKLAND, TEXAS

AIR FORCE SPACE & MISSILE SYSTEMS CENTER
LOS ANGELES AFB, CALIFORNIA

DELIVERING CAPABILITIES TO THE WARFIGHTER.

From the lab bench to the flightline and from cradle to grave, the Air Force Acquisition community researches, develops, acquires and sustains everything from satellites and aircraft to information technology, spare parts and clothing.

Our adversaries have shown that they are willing to go to great lengths to match our capabilities; therefore, we must deliver this capability faster than ever to defeat our rapidly-innovating adversaries.

This report focuses on the strides we have made in improving management of our programs throughout their life cycle. We are using new techniques to innovate, including rapid prototyping and experimentation, and we are delegating decision-making to the lowest level appropriate. The improvements are measurable, but there is still a lot of work to do.

Sustainment, test and research are also very important activities in the acquisition life cycle. Our next report will address these elements in more depth.

AIR FORCE ACQUISITION IS RETURNING TO OUR LEGACY OF INNOVATION.

A PLACE FOR **INNOVATION**

Innovators. Beginning with the Wright Flyer, the people who acquire for the United States Air Force have built upon a legacy of innovation. Air Force acquirers are motivated, professional and eager to support the warfighter. Senior leaders are empowering them by pushing decision-making authority down to lower levels, encouraging them to take appropriate risks and allowing them to fail productively. In order to succeed, they must be given the tools they need to excel: adequate resources, modern management tools and processes, and professional development. As the Air Force sets the conditions for success, the acquisition workforce is returning to its roots of innovation.

> Empowering people, not processes, will make Air Force acquisition a powerhouse of innovation and agility.

William Roper
Assistant Secretary of the Air Force
(Acquisition, Technology & Logistics)
February 2018

MISSION

Cost-effectively modernize to deliver capability to the warfighter when needed.

VISION

Deliver enduring, world-class capabilities to assure air, space and cyberspace dominance for the nation and our allies.

PRIORITIES

01 Cost-effectively modernize, while keeping programs on track within cost, schedule and performance parameters

02 Tailor the acquisition process to provide capability to the warfighter when needed

03 Develop the acquisition workforce and delegate authority to the lowest appropriate level

04 Leverage innovation to modernize faster and secure our future

05 Strengthen our alliances to foster internal and external partnerships

WHO WE ARE

ACQUISITION: BY NUMBERS

MORE THAN 51,000 TOTAL FORCE PERSONNEL

- CIVILIAN 55%
- MILITARY 17%
- CONTRACTOR 28%

27% FEMALE

73% MALE

*Military/Civilian Only

WORKFORCE CAREER FIELDS

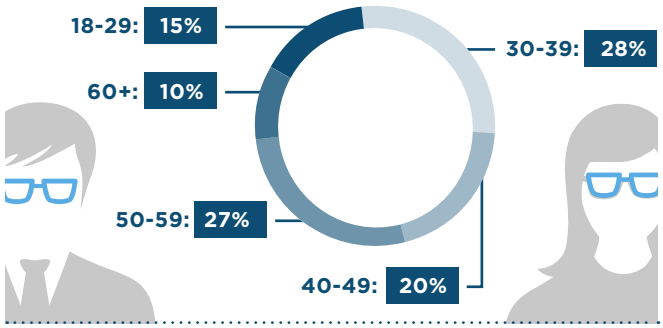
*Military/Civilian Only

- 25% Engineering
- 23% Contracting
- 15% Program Management
- 13% Other
- 9% Logistics
- 8% Test & Evaluation
- 7% Financial Management/Cost-Estimating

> "To remain the world's most dominant Air Force, it's important that we have the right Airmen with the right skill set and the right attitude, in the right place at the right time."
>
> *CMSAF Kaleth O. Wright*
> *Chief Master Sergeant of the Air Force*

*Military/Civilian Only

AGE OF EMPLOYEES



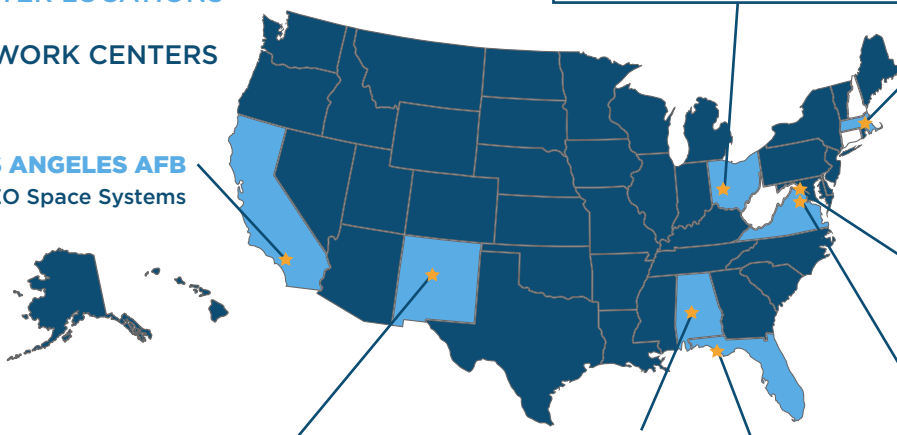
EDUCATION: HIGHEST DEGREE COMPLETED

*Military/Civilian Only

- 11% Associates/Professional/High School
- 34% Bachelor's
- 51% Master's
- 4% Doctorate

WHERE WE ARE:

- PROGRAM EXECUTIVE OFFICER and AQ WORK CENTER LOCATIONS
- AQ WORK CENTERS



WRIGHT-PATTERSON AFB
- PEO Fighter/Bomber
- PEO Mobility
- PEO ISR and SOF
- PEO Tankers
- PEO Agile Combat Support
- PEO Presidential Airlift Recapitalization
- Technology Executive Officer

HANSCOM AFB
- PEO Battle Management
- PEO Command, Control, Communications, Intelligence and Networks
- PEO Nuclear Command, Control and Communications

LOS ANGELES AFB
- PEO Space Systems

JOINT BASE ANACOSTIA-BOLLING
- PEO Combat and Mission Support
- PEO Rapid Capabilities

KIRTLAND AFB
- PEO Strategic Systems

GUNTER ANNEX
- PEO Business and Enterprise Systems

EGLIN AFB
- PEO Weapons

ARLINGTON, VA
- JPEO F-35

BUDGET $56.11B (FY19PB)

3 ACQUISITION CATEGORIES

Acquisition programs are organized into three categories - or ACATs:

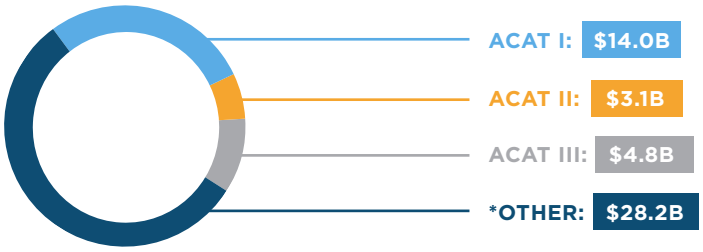
ACAT I — Eventual expenditure of more than **$480M** in RDT&E, or more than **$2.79B** in procurement, in FY 2014 dollars

ACAT II — Eventual expenditure of more than **$185M** in RDT&E or more than **$835M** in procurement in FY 2014 dollars

ACAT III — Does not meet the criteria of ACAT I or ACAT II

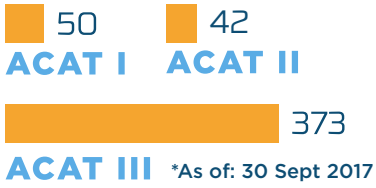
FY18 FUNDING BY ACAT RDT&E/PROCUREMENT

Unable to calculate FY19 ACAT breakouts until FY19 Presidential Budget flows to program management data systems.



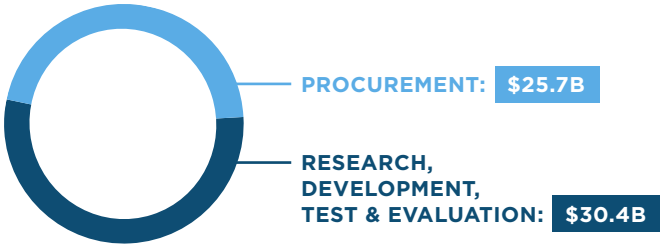
*Includes: F-35, classified programs (including B-21), science and technology efforts, pre-acquisition activities, acquisition workforce, etc.

ONE TEAM 465 PROGRAMS



*As of: 30 Sept 2017

FY19 FUNDING - APPROPRIATION



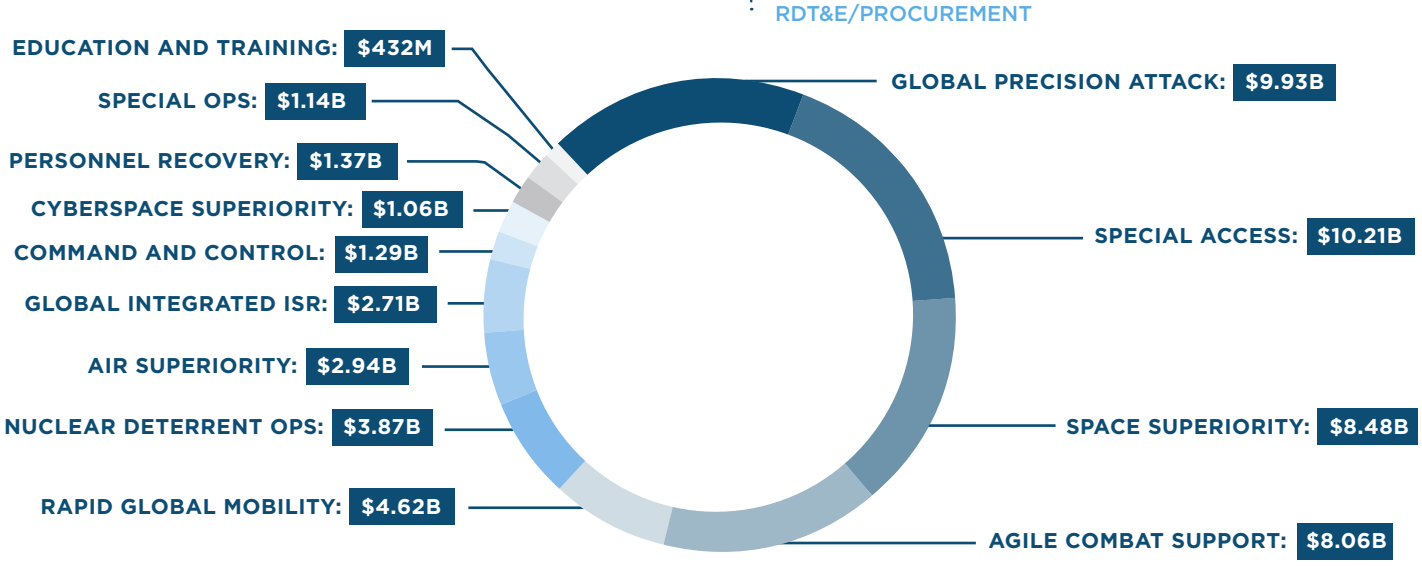
RDT&E: An appropriation intended for the development of a new system or to extend the performance of fielded systems.

PROCUREMENT: An appropriation intended to cover the necessary costs to deliver an item intended for operational use or inventory.

> "We need budget certainty in order to restore the readiness of the force and to defend the country."
>
> *Heather Wilson*
> *Secretary of the Air Force*

FY19 FUNDING - CAPABILITIES

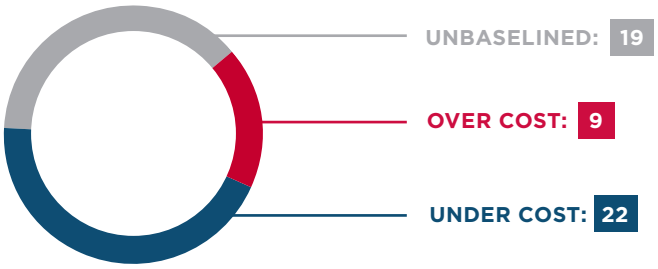
RDT&E/PROCUREMENT



COST + SCHEDULE + PERFORMANCE:

All original unit costs and current unit costs throughout this report have been normalized to FY2015 dollars.

ACAT I - COST PERFORMANCE
ORIGINAL BASELINE



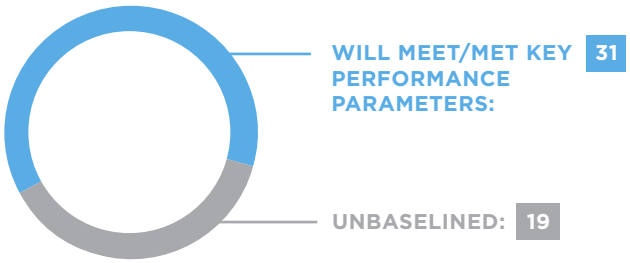
9 PROGRAMS OVER ORIGINAL COST BASELINE

Next-Generation Operational Control System	52%*
Joint Space Ops Center Mission System, Increment 2	46%
Defense Enterprise Accounting & Management System	32%**
Airborne Warning and Control System Upgrade	24%
Mission Planning System, Increment 5	14%
Air Operations Center Weapon System, Increment 10.2	13%
C-130J Super Hercules Variants	8%
MQ-9 Reaper	7%
Global Positioning System-III	6%

* Next-Generation Operational Control System will have a new original baseline post Nunn-McCurdy.

** Defense Enterprise Accounting & Management System growth will have a new original baseline post critical change.

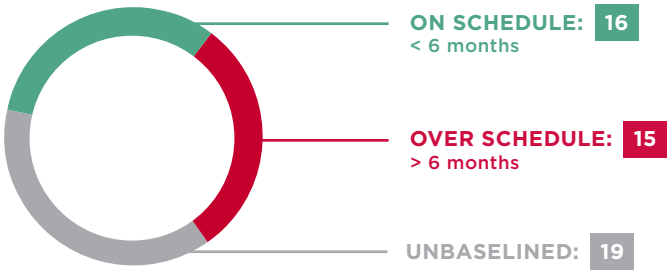
ACAT I - TECHNICAL PERFORMANCE
ORIGINAL and CURRENT BASELINE



> We are committed to improving cost, schedule and performance of acquisition programs to cost-effectively modernize the Air Force.

Darlene Costello
Air Force Service Acquisition Executive
2017

ACAT I - SCHEDULE PERFORMANCE
ORIGINAL BASELINE



15 PROGRAMS OVER ORIGINAL SCHEDULE BASELINE

Family of Advanced Beyond-Line-of-Sight Terminals	78 Months
Next-Generation Operational Control System	66 Months*
Defense Enterprise Accounting & Management System	62 Months**
Wideband Global Satellite Communication	49 Months
Global Broadcast System	48 Months
C-5M Reliability Enhancement & Re-engining	47 Months
Air Operations Center Weapon System, Increment 10.2	40 Months
Joint Space Ops Center Mission System, Increment 2	32 Months
Small Diameter Bomb II	28 Months
Global Positioning System-III	25 Months
Advanced Medium-Range Air-to-Air Missile	24 Months
KC-46A Pegasus	14 Months
Advanced Extremely High Frequency 5 & 6	13 Months
Space-Based Infrared System	12 Months
Joint Air-to-Surface Standoff Missile Extended Range	12 Months

ORIGINAL BASELINE

The **original baseline** reflects the cost, schedule and performance parameters as approved by the milestone decision authority in the program's first acquisition program baseline. Cost, schedule and performance parameters will only be revised in the case of recertification post critical Nunn-McCurdy breach or Critical Change.

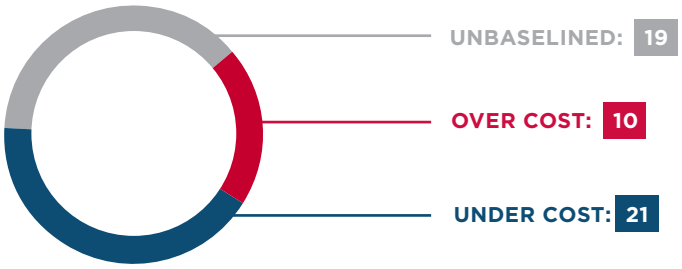
CURRENT BASELINE

The **current baseline** reflects the current cost, schedule and performance parameters as approved by the milestone decision authority in the current acquisition program baseline. The current baseline differs from the original baseline as a result of updates made at milestones or decision points, major program restructures or breaches.

BY NUMBERS

All cost and schedule data was pulled from the 4th QTR FY 2017 Defense Acquisition Executive Summary Report.

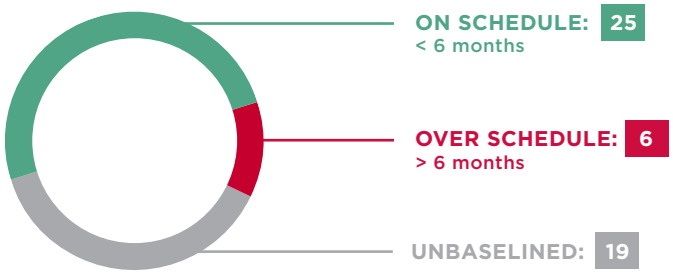
ACAT I - COST PERFORMANCE
CURRENT BASELINE



10 PROGRAMS OVER CURRENT COST BASELINE

Next-Generation Operational Control System	32%*
Defense Enterprise Accounting & Management System	32%**
Air Operations Center Weapon System, Increment 10.2	13%
MQ-9 Reaper	6%
Joint Air-to-Surface Standoff Missile Extended Range	6%
Mission Planning System, Increment 5	4%
Small Diameter Bomb II	3%
Family of Advanced Beyond-Line-of-Sight Terminals	3%
Airborne Warning and Control System Upgrade	2%
F-22, Increment 3.2B	1%

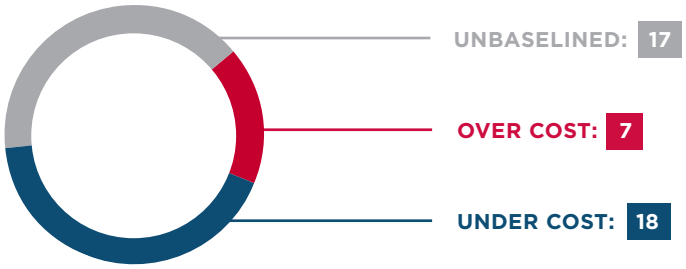
ACAT I - SCHEDULE PERFORMANCE
CURRENT BASELINE



6 PROGRAMS OVER CURRENT SCHEDULE BASELINE

Defense Enterprise Accounting & Management System	62 Months**
Air Operations Center Weapon System, Increment 10.2	40 Months
Next-Generation Operational Control System	33 Months*
Space-Based Infrared System	12 Months
Small Diameter Bomb II	10 Months
C-5M Reliability Enhancement & Re-engining	8 Months

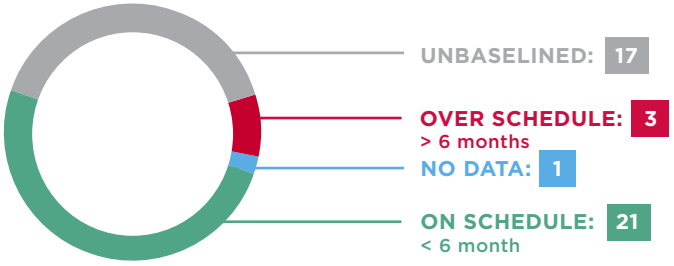
ACAT II - COST PERFORMANCE
CURRENT BASELINE***



7 PROGRAMS OVER CURRENT COST BASELINE

RQ-4 Ground Segment Modernization Program	12.5%
Miniature Air-Launched Decoy - Jammer	7.0%
B-1 Vertical Situation Display Upgrade	2.9%
F-16 Block 40/50 Mission Training Center	2.4%
E-3 Diminishing Manufacturing Sources Replacement of Avionics for Global Operations and Navigation	2.1%
B-1 Fully-Integrated Data Link	0.5%
LGM-30G ICBM Cryptography Upgrade III	0.3%

ACAT II - SCHEDULE PERFORMANCE
CURRENT BASELINE***



3 PROGRAMS OVER CURRENT SCHEDULE BASELINE

U.S. Nuclear Detonation Detection System 6	12 Months
Sniper Advanced Targeting Pod - Sensor Enhancement	10 Months
F-16 Block 40/50 Mission Training Center	8 Months

* Next-Generation Operational Control System will have a new original baseline post Nunn-McCurdy.

** Defense Enterprise Accounting & Management System growth will have a new original baseline post critical change.

*** Due to lack of historical data, ACAT II programs cannot be tracked to their original baselines.

Note: The ACAT II portfolio does not have sufficient KPP data to perform annual analyses.
The ACAT III programs do not have sufficient baselines or data to perform annual cost, schedule or performance analyses.

COST-EFFECTIVE **MODERNIZATION**

The Air Force must cost-effectively modernize in order to increase the lethality of the force. The average aircraft in our fleet is 28 years old, and a modernization bow-wave is coming across the board in the next 10 years. The Air Force must strike the right balance between budgeting for today's readiness and investing in tomorrow's modernization. Driven by innovation and a commitment to excellence, Air Force Acquisition provides aircraft, satellites, nuclear deterrence, weapons and cyber systems, from inception to operation and beyond. We are committed to reducing costs across program life cycles, and ongoing initiatives have avoided more than $13 billion in cost since 2011.

WHAT WE DO

GLOBAL POWER

Global power is the Air Force's ability to threaten or strike any target, anywhere in the world, to assert national sovereignty, safeguard joint freedom of action, and achieve swift, decisive, precise effects. From bombers, fighters and nuclear missiles, to conventional weapons and munitions, the global power acquisition team provides timely, accurate information to enable building and sustaining the most lethal Air Force in the world.

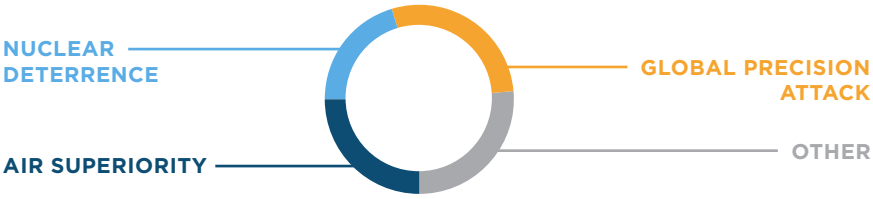
In 2017, the team ensured the timely award of contracts supporting the nation's nuclear weapons modernization efforts, coordinated key upgrades to fourth-generation aircraft, and created a strategic plan to ramp up munitions inventory in support of close-air-support missions against the Islamic State of Iraq and Syria, and.

In 2018, the team will continue to support efforts to implement more resilient GPS technology across Air Force combat platforms and weapons, facilitate the production ramp-up of F-35s and continue to sustain the Minuteman III ICBM force, while modernizing our nation's strategic capabilities through development of the Ground-Based Strategic Deterrent.

FISCAL YEAR 2019 BUDGET $17.1B

RESEARCH, DEVELOPMENT, TEST & EVALUATION — $5.3B

PROCUREMENT — $11.8B



IN SOURCE SELECTION

N/A

IN OPERATION/SUSTAINMENT

- A-10 Thunderbolt II
- B-2 Spirit
- B-52 Stratofortress
- E-4B National Airborne Operations Center
- F-15C/E Eagle/Strike Eagle
- F-16 Fighting Falcon
- F-22 Raptor
- Minuteman III

IN DEVELOPMENT/PRODUCTION

- Advanced Medium-Range Air-to-Air Missile
- AIM-9 Sidewinder
- B-61 Nuclear Bomb
- F-35A Lightning-II
- Ground-Based Strategic Deterrent
- Hellfire
- Joint Air-to-Surface Standoff Missile
- Joint Direct Attack Munition
- Long-Range Stand Off Missile
- Massive Ordnance Penetrator
- Minimum Essential Emergency Communications Network
- Small Diameter Bomb-II

PORTFOLIO

AIR SUPERIORITY

NUCLEAR DETERRENCE

GLOBAL PRECISION ATTACK

Advanced Medium-Range Air-to-Air Missile

AIM-120D

GLOBAL POWER

ORIGINAL UNIT COST
$1.41 Million

CURRENT UNIT COST
$1.39 Million
(1 percent decrease)

COST

2019 – 2023
President's Budget
$2.38 Billion

2019
$415.0 Million

SCHEDULE

Raytheon delivered the required AIM-120Ds to the warfighter in May 2012, which was two years behind the original date of May 2010.

CONTRACTING

Research, Development, Test & Evaluation
Cost-Plus-Incentive-Firm and Cost-Plus-Fixed-Fee

Production
Fixed-Price-Incentive-Firm

AMRAAM PRODUCTION

FY2015	557
FY2016	610
FY2017	735
FY2018	570
FY2019	570

RAYTHEON MISSILE SYSTEMS
Tucson, Arizona

The System Program Office is at Eglin Air Force Base, Florida.

The AIM-120D Advanced Medium-Range Air-to-Air Missile is an Air Force-led, joint Acquisition Category I program. The AIM-120D is the Air Force's and Navy's premier beyond-visual-range missile and the next evolution of AMRAAM, which has been in production since 1987.

This new version of the AMRAAM incorporates both software and hardware improvements, including GPS-aided navigation, an enhanced two-way data link, increased kinematic range, improved high-off-boresight capabilities and improved targeting accuracy. Two variants of the weapon are currently in production: the AIM-120D for the Air Force and Navy, and the AIM-120C7 for foreign military sales.

The Navy declared AIM-120D initial operational capability in January 2015, followed by the Air Force in July 2015. The AIM-120D's capability against emerging threats is continually upgraded using the system improvement program for the AIM-120D and the advanced electronic protection improvement program for the AIM-120C7.

The AMRAAM is integrated on the F-15, F-16, F-18, F-22 and F-35. The AIM-120D program is buying more than 3,000 AIM-120Ds in full-rate production for the next five years, as well as supporting sustainment and providing enhanced capabilities through software upgrades.

B-2 | Defensive Management System Modernization

The B-2 Defensive Management System is part of the avionics package on the B-2 Spirit stealth bomber, which allows the aircraft to penetrate dense threat environments and bring massive firepower to even the most heavily-defended targets, with either conventional or nuclear weapons.

The B-2 DMS Modernization program upgrades the threat warning systems on board the B-2 aircraft by replacing aging antennas, electronics and the display system. The updated system will allow the bomber to detect and avoid electronic threats, ensuring the B-2 can reach the intended targets in defense of our national security.

Additionally, the modernization effort provides an auto router, which automates the re-planning of aircraft missions while in flight and far from home.

ORIGINAL UNIT COST
$126.3 Million

CURRENT UNIT COST
$125.4 Million
(Nearly 1 percent decrease)

COST

2019 – 2023
President's Budget
$1.3 Billion

2019
$261.8 Million

CONTRACTING

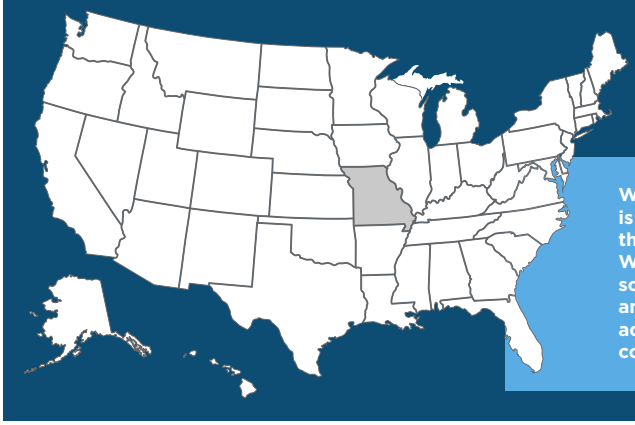
Engineering & Manufacturing Development
Cost-Plus-Incentive-Fee, with a Firm-Fixed-Price engineering change proposal to be definitized in early 2018

NORTHROP GRUMMAN CORPORATION
Palmdale, California

SCHEDULE

A revised acquisition strategy was approved in May 2017, and fielding begins in fiscal year 2021.

Delivery of the first eight modified aircraft is currently estimated to be in June 2022, which is six months behind the original estimate of December 2021.



IMPLEMENTATION STRATEGY

Whiteman Air Force Base, Missouri, is the only permanent base for the B-2 Spirit stealth bomber. Whiteman can launch B-2 combat sorties directly from Missouri to any part of the globe, to engage adversaries with nuclear or conventional weapon payloads.

Raider | B-21

GLOBAL POWER

COST

2019 – 2023
President's Budget
$16.6 Billion

2019
$2.3 Billion

The Air Force remains committed to the Secretary of Defense's mandated $550 million average unit cost requirement. (Base Year 2010)

SCHEDULE

Initial capability is planned for the mid-2020s.

CONTRACTING

Engineering & Manufacturing Development
Cost-Plus-Incentive-Fee

Production
Fixed-Price-Incentive-Firm

NORTHROP GRUMMAN CORPORATION
Falls Church, Virginia

The government offices are located at Joint Base Anacostia-Bolling, D.C., and Wright-Patterson Air Force Base, Ohio.

"The B-21 program will extend American air dominance against next-generation capabilities and advanced air defense environments. The B-21 is being designed with an open architecture, which will allow us to integrate new technology and respond to future threats for many years into the future.

General Robin Rand
Commander, Air Force Global Strike Command

Conventional and nuclear-capable bombers provide nuclear deterrence, global strike and, if called upon, nuclear strike capabilities. The B-21 will replace part of our aging bomber fleet as a long-range, highly-survivable bomber, capable of carrying mixed, conventional and nuclear payloads, to strike any target worldwide.

The B-21 will provide operational flexibility for joint commanders, and it will be relevant across the spectrum of conflict. From raid to campaign levels, the B-21 will be able to penetrate modern air defenses to accomplish national objectives.

The Air Force will procure a minimum of 100 B-21 Raiders and expects initial capability in the mid-2020s, as well as nuclear certification within two years of declaring initial operational capability. Agile acquisition processes have been built into the B-21 development and procurement efforts to ensure the Air Force delivers system capabilities at the best value for taxpayers.

The B-21 is currently in the engineering and manufacturing development phase. The program completed a preliminary design review in early 2017 and is now proceeding into detailed design work.

B61-12 | Tail Kit Assembly

Legacy B61s are nearing the end of their service life and require a life-extension program to address age-related issues. The B61-12 LEP consolidates four legacy B61 variants – mods 3, 4, 7 and 10 – into one variant, mod 12. The addition of an Air Force provided tail kit assembly with a digital interface enables consolidation of these four mods while maintaining military capabilities.

B61-12 LEP is a joint program between the Department of Defense and Department of Energy. The DoD is responsible for the B61-12 tail kit assembly development, weapon system integration and aircraft integration, while the DoE is responsible for the B61-12 bomb assembly. The joint program began government developmental testing on August 1, 2017, and successfully conducted 12 of 35 developmental flight test events. The program is on schedule to transition from the engineering and manufacturing development phase to the production phase in October 2018.

ORIGINAL UNIT COST
$1.5 Million

CURRENT UNIT COST
$1.3 Million
(14 percent decrease)

COST

2019 – 2023
President's Budget
$418.9 Million

2019
$253.9
Million

CONTRACTING

Engineering & Manufacturing Development
Cost-Plus-Incentive-Fee

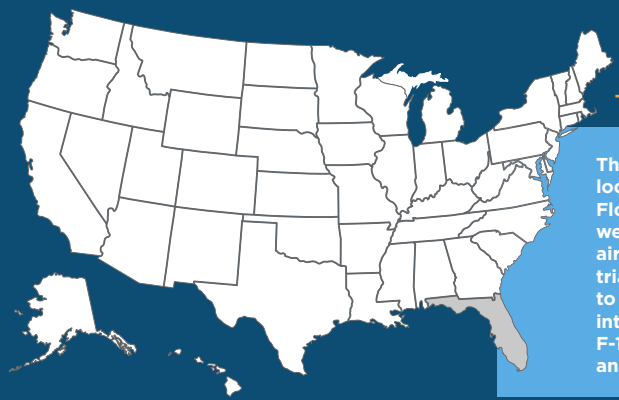
Production
(Scheduled to be awarded in the 1st quarter of fiscal year 2019)
Fixed-Price-Incentive
Firm Target Contract

BOEING
St. Louis, Missouri

SCHEDULE

The first asset delivery is currently estimated for August 2019, two months behind the original estimate of June 2019.

DEPLOYMENT STRATEGY



The System Program Office is located at Eglin Air Force Base, Florida. The B61-12 nuclear weapon will be part of the airborne leg of the U.S. nuclear triad and will provide support to NATO allies. The B61-12 will integrated on the B-2A, B-21, F-15E, F-16C/D, F-16 MLU, F-35 and PA-200.

Eagle Passive/ Active Warning and Survivability System | F-15

GLOBAL POWER

COST

2019 – 2023
President's Budget
$1.2 Billion

2019
$284 Million

ORIGINAL UNIT COST
$10.2 Million

CURRENT UNIT COST
$11.5 Million
(13.5 percent increase driven by a cut in units from 413 to 221)
includes four spares

SCHEDULE

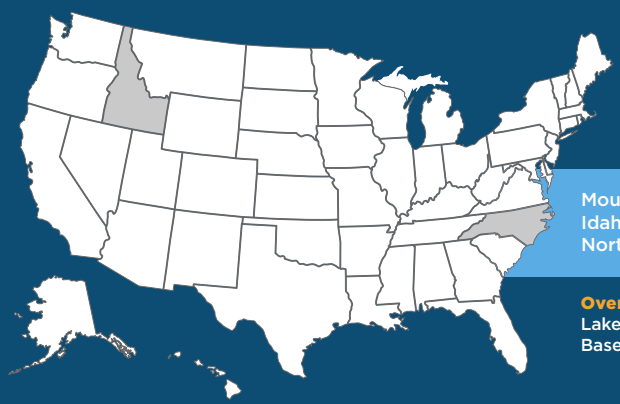
The Air Force is procuring the F-15 EPAWSS incrementally, in order to stay on schedule and maintain affordability.

CONTRACTING

Engineering & Manufacturing Development
Cost-Plus-Incentive-Fee
(F-15C and F-15E)

Production
Firm-Fixed-Price
(Electronic Warfare Kits F-15E)

BOEING
St. Louis, Missouri



IMPLEMENTATION STRATEGY

Mountain Home Air Force Base, Idaho, and Seymour Johnson AFB, North Carolina

Overseas Locations: Royal Air Force Lakenheath, England and Kadena Air Base, Japan.

The F-15 Eagle Passive/Active Warning Survivability System improves the F-15's ability to detect, identify, locate, deny, degrade, disrupt and defeat surface and airborne threats.

The system will replace the current on-board electronic warfare self-protection system for 217 F-15s. The current system was state-of-the-art 40 years ago. The program includes a new jammer, a new chaff-and-flare dispenser and a new radar warning receiver.

It is currently in development, and a production decision is planned for late 2019.

Procurement of hardware for the F-15C is not currently funded in the fiscal year 2018 budget, as our limited investment funds are prioritized to more critical needs, including F-15 service life extension.

The critical design review was conducted in February 2017, six weeks ahead of schedule.

F-15 EPAWSS PRODUCTION

FY2019	14
FY2020	12
FY2021	14
FY2022	27
FY2023	27
TOTAL	94
TO COMPLETE	123

F-22 Increment 3.2B Modernization Program

The F-22 Increment 3.2B upgrade program is designed to upgrade the F-22 with the latest air-to-air weaponry (AIM-9X and AIM-120D), add additional electronic protection techniques to guard against emerging threats and improve the network-centric warfare capabilities of the aircraft.

This upgrade dramatically increases the lethality and survivability of the F-22 Raptor.

The F-22 Increment 3.2B program is on track, awarding a low-rate initial production contract in 2017 for the first 71 of 143 hardware kits. The program successfully completed its development test program in 2017, and was certified to start the initial operational test and evaluation phase of the program in August 2017. A decision to acquire the final 72 kits will be made in 2018, pending completion of test reports.

ORIGINAL UNIT COST
$10.4 Million

CURRENT UNIT COST
$9.7 Million
(7 percent decrease)

COST

2019 – 2023
President's Budget
$39.5 Million

2019
$13.1 Million

CONTRACTING

Engineering & Manufacturing Development
Cost-Plus-Incentive-Fee

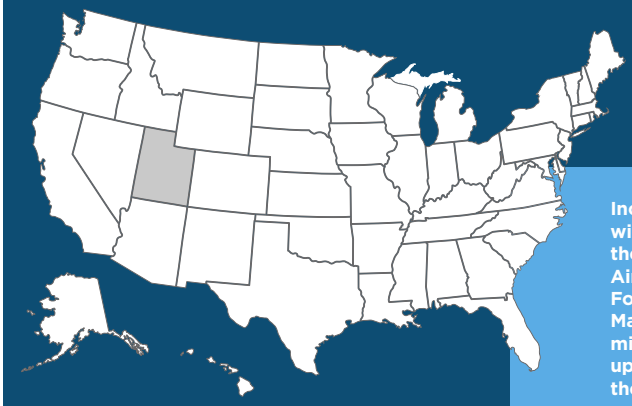
3.2B Kit Production
Firm Fixed Price

3.2B Kit Installs
Cost-Plus Fixed Fee

LOCKHEED MARTIN
Fort Worth, Texas

SCHEDULE

Low-rate initial production started in August 2016. Full-rate production is on track to start in August 2018. The first six aircraft modifications are scheduled for July 2019, which is four months behind the original objective of March 2019.



IMPLEMENTATION STRATEGY

Increment 3.2B hardware kits will be installed on 143 F-22s as they flow through the Ogden Air Logistics Center at Hill Air Force Base, Utah, beginning in May 2019. This strategy ensures minimal down time and returns the upgraded jets to the warfighter at the fastest rate possible.

Lightning II | F-35A

GLOBAL POWER

COST

2019 – 2023
President's Budget
$26.3 Billion

2019
$4.7 Billion

ORIGINAL UNIT COST *
(2012 - Program Recertification):
$140.1 Million

CURRENT UNIT COST *
$136.9 Million
(2.3 percent decrease)

*Combined F-35A/B/C Costs

CONTRACTING

F-35 contracting is accomplished through a mix of cost-plus and fixed-price-incentive-firm vehicles.

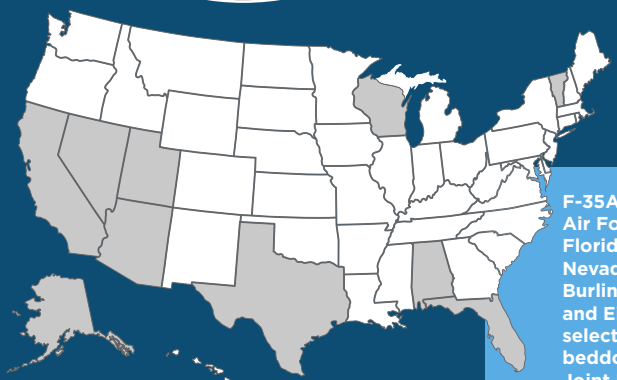
Development
Cost-Plus-Award-Fee

Low-Rate Initial Production
(Lot 4+ Production)
Fixed-Price-Incentive-Firm
(LRIP Lot 10 contract awarded on June 1, 2017)

LOCKHEED MARTIN
Fort Worth, Texas

SCHEDULE

The Air Force declared initial operational capability in August 2016, which was five years behind the original schedule of June 2011. The program is currently on track to start full-rate production in April 2019.



BASING STRATEGY

F-35As are currently based at Hill Air Force Base, Utah, Eglin AFB, Florida, Luke AFB, Arizona, Nellis AFB, Nevada, and Edwards AFB, California. Burlington Air Guard Station, Vermont, and Eielson AFB, Alaska, have been selected as future locations for the beddown of F-35As. Naval Air Station Joint Reserve Base, Fort Worth, Texas, Truax Field ANG Base, Wisconsin, and Dannelly Field ANG, Alabama, have been selected as potential locations.

Overseas Locations: Royal Air Force Lakenheath, England

The F-35 program is managed by a joint program office under the Office of the Secretary of Defense.

The F-35A is the centerpiece of our future fighter precision attack capability. Its primary missions will include air interdiction, offensive and defensive counter-air, close air support, strategic attack, and suppression of enemy air defenses. The F-35A will serve in both conventional and nuclear capacities for the U.S. and partner nations.

The program of record includes 2,456 U.S. production aircraft, 1,763 F-35A conventional take-off and landing aircraft for the Air Force, 693 F-35B short take-off and vertical landing aircraft, and F-35C carrier variant aircraft for the Navy and Marine Corps. Partners and foreign military sales countries expect to buy approximately 720 aircraft.

The Air Force is on track to field Block 3F capabilities in 2018.

The F-35's follow-on modernization effort centers on the Block 4 upgrade, geared toward meeting the 2025 threat and beyond.

F-35 PRODUCTION

FY2019	48
FY2020	48
FY2021	54
FY2022	54
FY2023	54

GBSD | Ground Based Strategic Deterrent

The Ground Based Strategic Deterrent will replace the current ICBM Minuteman III weapon system that is years beyond its design service life. The program will deliver a fully-integrated weapon system beginning in fiscal year 2029.

The GBSD will extend and improve the capabilities of the ground-based leg of the nuclear triad, providing a responsive deterrent capability against current and future adversaries through 2075.

The Minuteman III first became operational in the early 1970s. While certain components and subsystems have been upgraded over the years, most of the fundamental infrastructure in use today is the original equipment supporting more than 50 years of continuous operation.

COST

2019 – 2023
President's Budget
$8 Billion

2019
$345 Million

CONTRACTING

Technology Maturation & Risk Reduction
Cost-Plus-Fixed-Fee

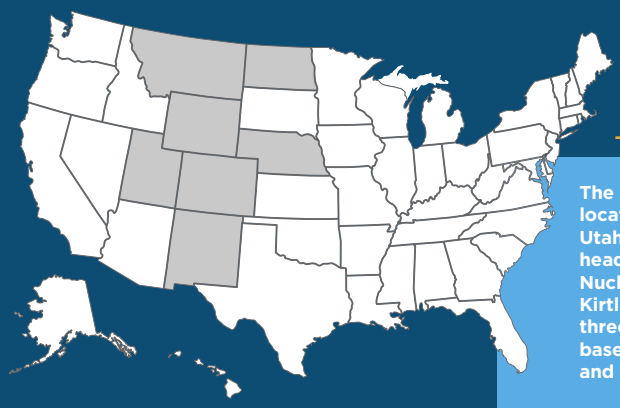
Engineering & Manufacturing Development
Cost-Plus-Incentive-Fee

BOEING
Huntsville, Alabama

NORTHROP GRUMMAN CORPORATION
Redondo Beach, California

SCHEDULE

Following the Technology Maturation and Risk Reduction phase, the Air Force plans to enter into the engineering and manufacturing development phase. A single engineering and manufacturing development contract with competitively-priced production options is expected to be awarded in late fiscal year 2020.



BASING STRATEGY

The GBSD program office is located at Hill Air Force Base, Utah. The program office's headquarters is the Air Force Nuclear Weapons Center at Kirtland AFB, New Mexico. The three Air Force missile wings are based in North Dakota, Wyoming and Montana.

Minuteman III ICBM silos are based in Colorado, Montana, Nebraska, North Dakota and Wyoming.

Intercontinental Ballistic Missile Fuze Modernization | ICBM FUZE

GLOBAL POWER

ORIGINAL UNIT COST
$2.4 Million

CURRENT UNIT COST
$2.3 Million
(1 percent decrease)

COST

2019 – 2023
President's Budget
$827.2 Million

2019
192.8
Million

SCHEDULE

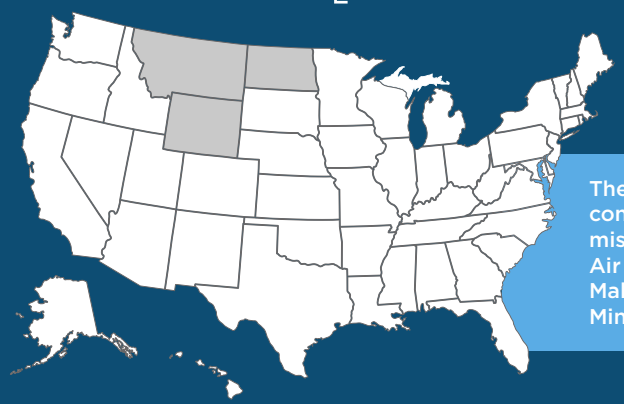
The first 10 fuze modifications are currently on track to be delivered at the original estimated date of July 2023.

CONTRACTING

System Development & Demonstration
Military Interdepartmental Purchase Request

Weapon System Integration
Cost-Plus-Fixed-Fee

SANDIA NATIONAL LABORATORIES
Albuquerque, New Mexico



IMPLEMENTATION STRATEGY

The current ICBM force consists of 400 Minuteman III missiles located at F.E. Warren Air Force Base, Wyoming, Malmstrom AFB, Montana, and Minot AFB, North Dakota.

The ICBM Fuze Modernization program is designing and developing a replacement for the legacy Mk21 fuze, which is well beyond its planned design life.

The program is a cooperative effort between the Air Force and the Navy that will share common-use technologies between the services and leverage the extensive fuze work performed by the Navy on the Mk5 Alt 370 fuze for the submarine-launched ballistic missile. The new fuze will incorporate modular and adaptable components that will improve design life, reduce development time and achieve cost savings.

The development effort is conducted through the Department of Energy's National Nuclear Security Administration. Sandia National Lab and the Kansas City National Security Campus are performing the design and development work. The Kansas City National Security Campus will produce the fuzes, and the Air Force will be the lead systems integrator.

JASSM | Joint Air-to-Surface Standoff Missile

The Joint Air-to-Surface Standoff Missile is an autonomous, conventional, long-range, highly-survivable, precision-guided missile.

The standoff capability enables the delivery platforms to avoid surface-to-air missile systems and limits exposure to integrated air defense system networks. This missile can strike high-value, highly-defended targets.

There are two variants of the JASSM: JASSM Baseline and JASSM Extended Range. JASSM-BL is integrated on the B-52, B-2, B-1, F-16, F-15E and F/A-18 foreign military sales. JASSM-ER is planned for integration on the B-2, F-16, and F-15E.

The B-1 and B-52 are now operationally capable with JASSM-ER, significantly improving B-52 conventional standoff strike capability.

The first JASSM-ER weapons have just been delivered to Barksdale Air Force Base, Louisiana, for use by 2nd Bomb Wing B-52 operators. This initial capability is an interim step until full capability is completed by 2019.

In order to maintain operational effectiveness in certain operational scenarios, major development efforts include wing replacement and software updates for mission planning.

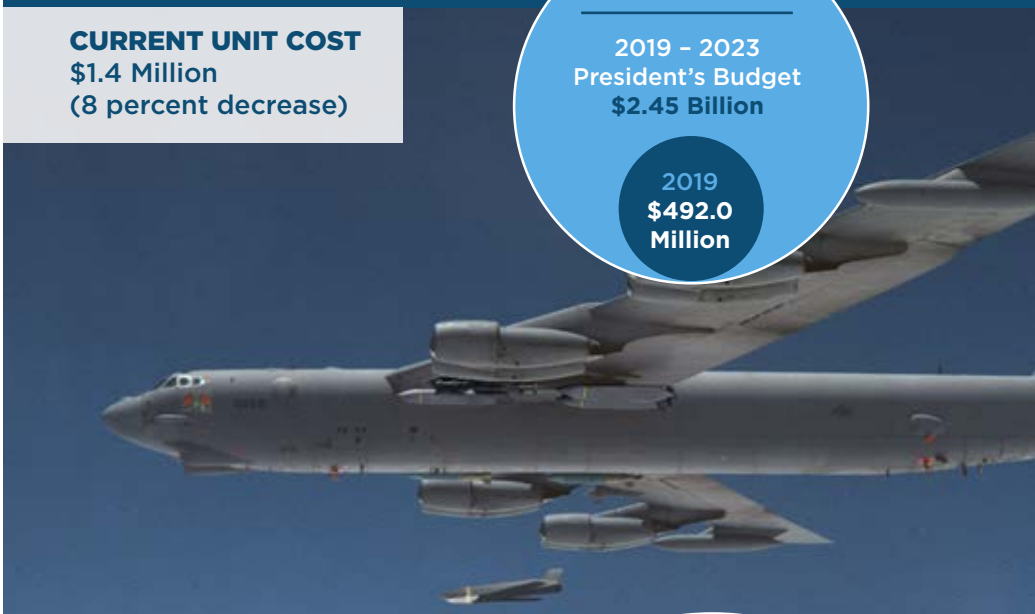
ORIGINAL UNIT COST
$1.5 Million

CURRENT UNIT COST
$1.4 Million
(8 percent decrease)

COST

2019 – 2023
President's Budget
$2.45 Billion

2019
$492.0 Million



CONTRACTING

Research, Development, Test & Evaluation
Cost-Plus

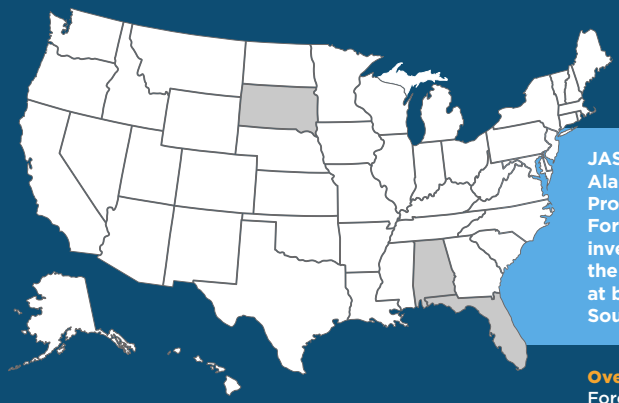
Production
Fixed-Price-Incentive-Firm

LOCKHEED MARTIN MISSILE SYSTEMS
Orlando, Florida

SCHEDULE

Began full-rate production in November 2014, which was nearly a year behind the original estimate of December 2013.

Lot 14 (FY16) was the last year for JASSM-BL production. The Air Force exercised Lot 15 for 360 JASSM-ER in June 2017 and plans to award Lot 16 for 360 JASSM-ER in March 2018.



DEPLOYMENT STRATEGY

JASSM is produced in Troy, Alabama, with the System Program Office at Eglin Air Force Base, Florida. The JASSM inventory is distributed across the globe, to include beddown at bases like Ellsworth AFB, South Dakota.

Overseas Locations: Andersen Air Force Base, Guam, Kunsan Air Base, Korea, and Ramstein AB Germany

Joint Direct Attack Munition | JDAM

GLOBAL POWER

COST

2019 – 2023
President's Budget
$2.19 Billion

2019
$972.6 Million

ORIGINAL UNIT COST
$43,000

CURRENT UNIT COST
$28,000
(35 percent decrease)

SCHEDULE

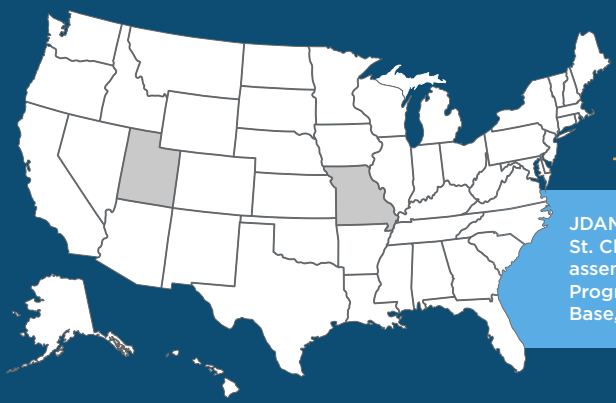
Achieved full deployment on time in March 1999.

CONTRACTING

Tail Kit Production
Fixed-Price-Incentive-Firm

Weapon System Integration
Cost-Plus-Award-Fee

BOEING
St. Charles, Missouri



DEPLOYMENT STRATEGY

JDAM tail kit manufacturing in St. Charles, Missouri, is a lean final assembly operation. The System Program Office is at Hill Air Force Base, Utah.

The Joint Direct Attack Munition program produces low-cost GPS guidance tail kits that provide accurate, all-weather capability for 500, 1,000 and 2,000 pound general purpose bombs. The Laser JDAM variant provides capability against moving targets with laser seeker add-on parts for the 500 pound bomb.

The Air Force signed an indefinite-delivery/indefinite-quantity contract for lots 18-22 (fiscal year 2014 through fiscal year 2018) on May 31, 2016. Delivery orders are awarded annually in February with a 24-month period of performance. The Air Force exercised Lot 21 for 28,596 tail kits in February 2017. The Navy awarded the Laser JDAM Lot 6 contract in November 2017 for 4,131 tail kits. The JDAM program office is currently working production with Boeing to ramp from 36,500 to 45,000 per year in Lot 22 with plans to award in February 2018. The Air Force plans to buy 33,920 tail kits in Lot 22, with deliveries starting in fiscal year 2019.

JDAM is integrated on the A-10, B-1, B-2, B-52, F-15E, F-16, F-22, F/A-18 and AV-8B. Integration with the MQ-9 and F-35 is in progress.

JDAM is the stand-in weapon of choice for all of DoD, and more than 300,000 have been produced over the last two decades. Ramping up procurement is critical to replenishing stockpiles that are supporting ongoing warfighter missions, in which JDAM comprises the majority of combat expenditures.

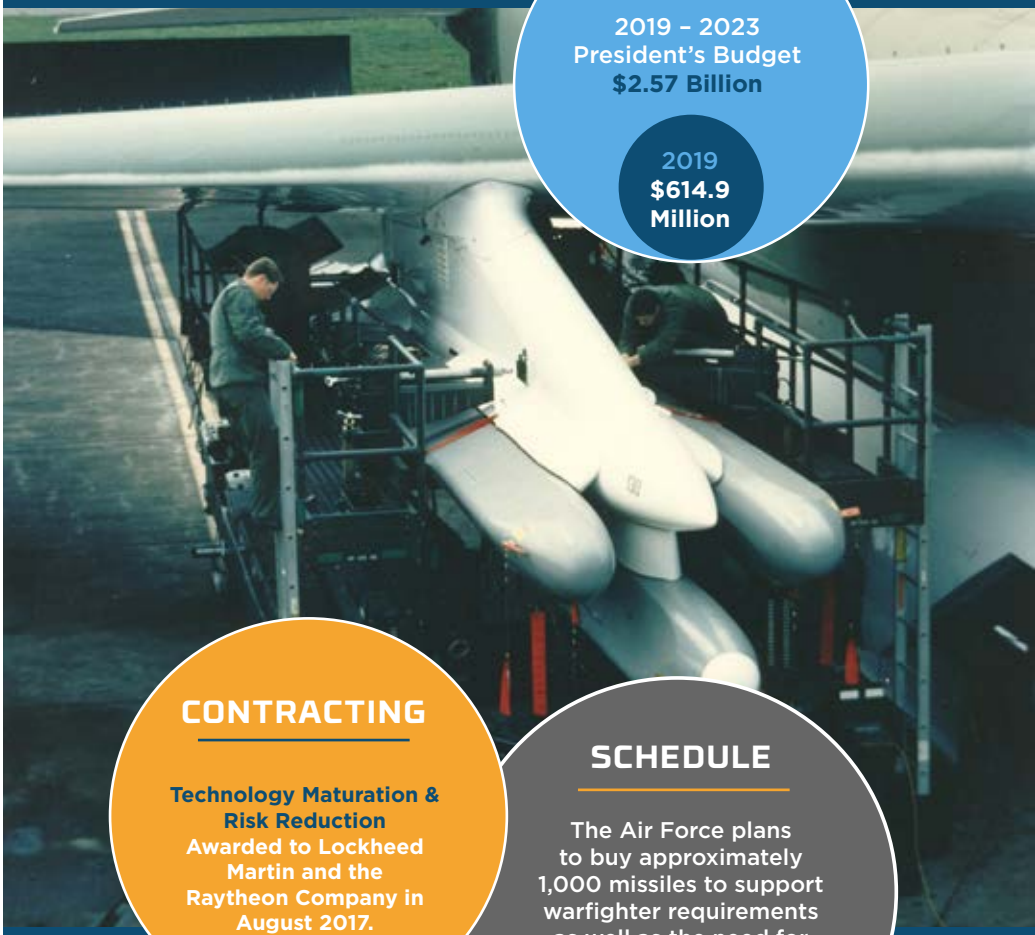
LRSO | Long-Range Stand-Off Cruise Missile

The Long-Range Stand-Off cruise missile will replace the air-launched cruise missile. The ALCM was designed in the 1970s and fielded in 1982 with a 10-year design life expectancy. ALCM's ability to survive is diminishing as it continues to age and as adversary air defenses improve. Combined with nuclear capable bombers, the LRSO weapon provides a visible and tailorable deterrent option to project power and target any location on the globe. Initial operational capability is planned for 2030.

The Air Force will use competition to mature the weapon design and manufacturing processes, as well as limit future cost growth. One contractor will be selected for both the development and production phases.

Development and procurement costs for LRSO are expected to be about $10 billion.

The LRSO cruise missile is planned to be compatible with the B-21 and B-52 bombers.



COST

2019 – 2023
President's Budget
$2.57 Billion

2019
$614.9 Million

CONTRACTING

Technology Maturation & Risk Reduction
Awarded to Lockheed Martin and the Raytheon Company in August 2017.

LOCKHEED MARTIN
Orlando, Florida

RAYTHEON COMPANY
Tucson, Arizona

SCHEDULE

The Air Force plans to buy approximately 1,000 missiles to support warfighter requirements as well as the need for logistical spares and Nuclear Weapon System Evaluation Program assets.

> "This weapon will modernize the air-based leg of the nuclear triad. Deterrence works if our adversaries know that we can hold at risk things they value. This weapon will enhance our ability to do so, and we must modernize it cost-effectively."
>
> *Heather Wilson*
> *Secretary of the Air Force*

Small Diameter Bomb, Increment II | SDB II

GLOBAL POWER

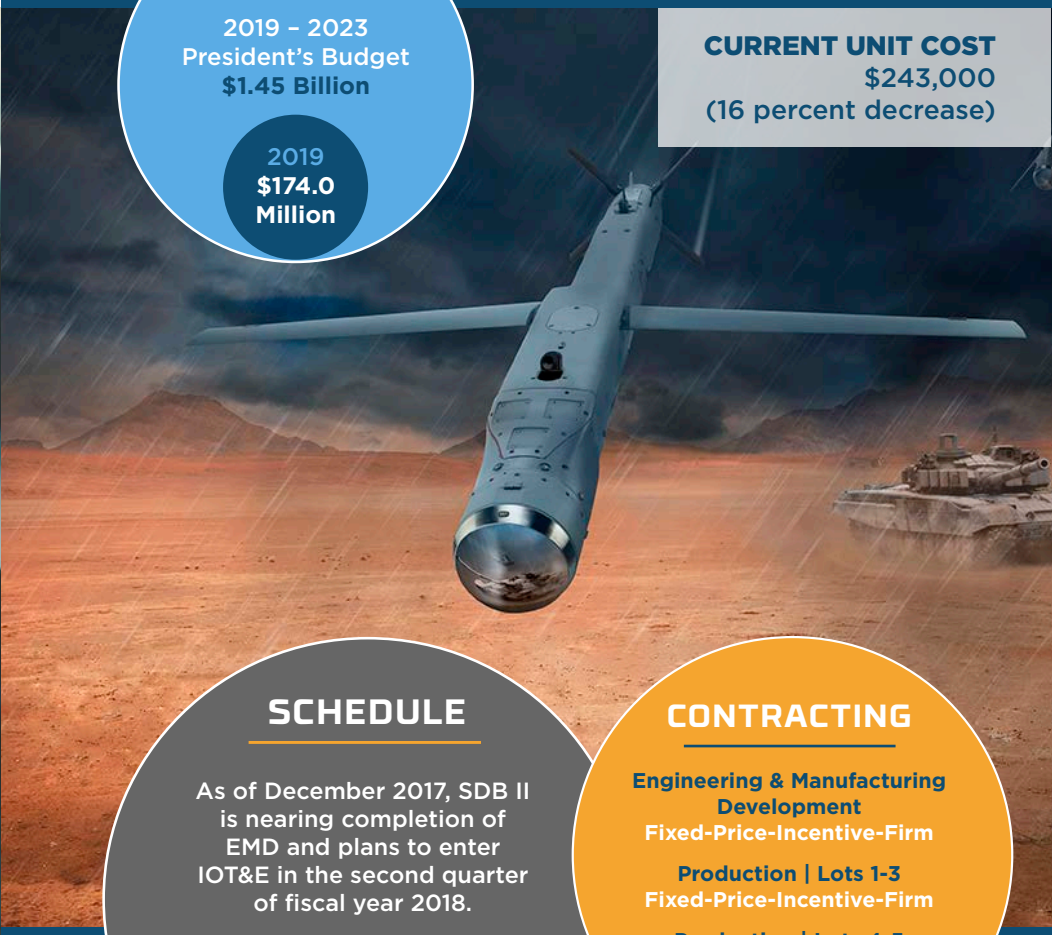
COST

2019 – 2023 President's Budget
$1.45 Billion

2019
$174.0 Million

ORIGINAL UNIT COST
$290,000

CURRENT UNIT COST
$243,000
(16 percent decrease)



SCHEDULE

As of December 2017, SDB II is nearing completion of EMD and plans to enter IOT&E in the second quarter of fiscal year 2018.

Delivery of the first assets to the F-15 is currently estimated to occur in November 2018, which is 28 months behind the original estimate of July 2016.

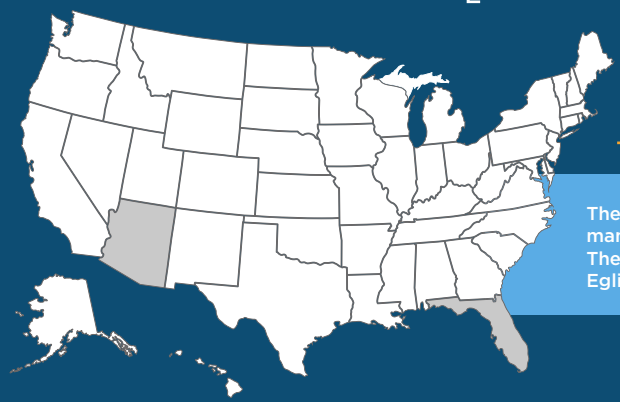
CONTRACTING

Engineering & Manufacturing Development
Fixed-Price-Incentive-Firm

Production | Lots 1-3
Fixed-Price-Incentive-Firm

Production | Lots 4-5
Fixed-Price Not-to-Exceed with Economic Price Adjustment

RAYTHEON MISSILE SYSTEMS
Tucson, Arizona



DEPLOYMENT STRATEGY

The SDB II program weapons are manufactured in Tucson, Arizona. The System Program Office is at Eglin Air Force Base, Florida.

Small Diameter Bomb, Increment II, is a joint Air Force and Navy program with the Air Force as the lead service. SDB II provides the warfighter with a standoff attack capability against fixed and mobile targets through adverse weather.

Raytheon Missile Systems is on contract with the Air Force to produce SDB II weapons. Raytheon successfully completed the production and delivery of 144 weapons for the low rate initial production Lot 1 contract in October 2017. The Air Force exercised the LRIP Lot 2 option in September 2016 for 250 weapons and the Lot 3 option in January 2017 for 312 weapons.

SDB II is nearing completion of developmental test, which includes the 28-shot Government Confidence Test program. The testing has achieved several "firsts," including a successful normal attack shot through adverse weather conditions and retargeting of the weapon using a joint terminal attack controller on the ground.

SDB II has experienced delays in software development and investigation of flight test anomalies.

B-52 | Radar Modernization

2019 PB:
$56.9 Million

The current B-52 radar is based on 1960s technology, last modified in the 1980s, with a 63 percent rate-of-failure during operations. This radar upgrade will maintain platform viability through 2050. The program began in fiscal year 2017. Production is planned to begin in fiscal year 2023, with the purchase of 76 radars from 2023 through 2029.

2019 PB:
$19.9 Million

MARK 21A | Re-entry Vehicle

The Mark 21A Re-entry Vehicle is a fiscal year 2019 new start program. The Mk21A Re-entry Vehicle program will design, develop, produce and deploy an integrated re-entry vehicle capable of delivering the Interoperable Warhead 1 nuclear warhead, when released from the Ground-Based Strategic Deterrent ICBM. Re-entry vehicle components include a high-velocity nosetip, high-impact transducer, fuze, aeroshell forward section, body section and rear cover, radio frequency subsystem with antennas, spin-up system, in-flight disconnect cable and other electrical cables.

SCHEDULE

The program successfully completed the materiel development decision briefing in September 2017 and expects to release a draft request for proposal in the fourth quarter of fiscal year 2018.

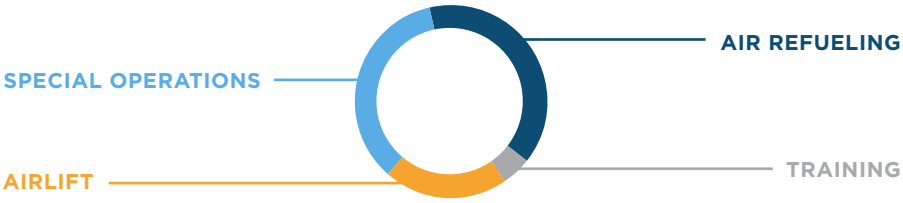
CONTRACTING

Contracting type is to be determined

FISCAL YEAR 2019 BUDGET $7.92B

RESEARCH, DEVELOPMENT, TEST & EVALUATION — $2.06B

PROCUREMENT — $5.86B



IN SOURCE SELECTION

- Advanced Pilot Trainer (T-X)
- UH-1N Replacement

IN DEVELOPMENT / PRODUCTION

- C-130J Super Hercules
- AC/HC/MC-130J Modifications
- KC-46A Pegasus
- VC-25B Presidential Aircraft Recapitalization

IN OPERATION / SUSTAINMENT

- C-5 Galaxy
- C-17 Globemaster III
- C-130H Hercules
- CV-22 Osprey
- HH-60G Pave Hawk
- KC-10 Extender
- KC-135 Stratotanker
- T-1 Jayhawk
- T-6 Texan
- T-38 Talon
- VC-25A Air Force One

PORTFOLIO

AIRLIFT

AIR REFUELING

SPECIAL OPERATIONS

TRAINING

GLOBAL REACH

Global reach is the Air Force's ability to project American airpower quickly, anywhere around the world.

The Air Force Acquisition team for global reach is responsible for the $5.6 billion airlift, air refueling, training and special operations programs portfolio.

They deliver the aircraft and systems necessary for Airmen to accomplish their missions, ranging from major combat to humanitarian relief operations around the world.

From airlift, delivering personnel and cargo when and where they're needed, to tankers, providing in-flight refueling for joint power projection, the acquisitions team for global reach puts critical capabilities into the hands of the warfighter.

C-130J Super Hercules Variants

The C-130J Super Hercules is replacing active duty, guard and reserve C-130H and EC-130E/WC-130H aircraft. The C-130J is a key component of tactical airlift modernization.

The HC/MC/AC-130J programs are recapitalizing the more than 40-year-old combat rescue and special operations tanker fleets with a new medium-transport aircraft. A common platform is used to replace all legacy HC-130, MC-130, and AC-130 aircraft.

The C-130J has a glass cockpit, more powerful and efficient engines, modern navigation systems, and will reduce the need for aircrew and maintenance personnel.

The C-130J multi-year procurement contract for fiscal year 2014 through fiscal year 2018 saves taxpayers more than $600 million while simultaneously accelerating deliveries. The Air Force also awarded Lockheed Martin a five-year ordering contract to continue aircraft and support equipment procurement through fiscal year 2022.

Ongoing modifications to the C-130J fleet will address all Federal Aviation Administration mandates for communications navigation surveillance and air traffic management. Partial recapitalization of the C-130J fleet was completed in 2017, resulting in a mixed fleet of 137 C-130Js and 163 C-130Hs.

C-130J: ORIGINAL UNIT COST
$91 Million

C-130J: CURRENT UNIT COST
$110.8 Million
(8 percent increase)

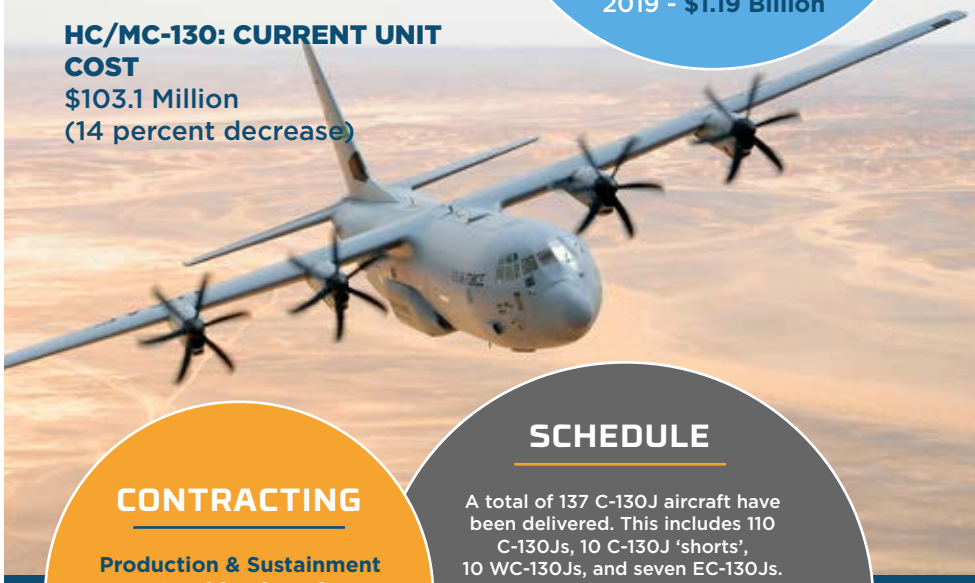
HC/MC-130: ORIGINAL UNIT COST
$119 Million

HC/MC-130: CURRENT UNIT COST
$103.1 Million
(14 percent decrease)

COST

C-130J
2019 – 2023
President's Budget
$962.1 Million
2019 - $194.1 Million

HC/MC/AC-130J
2019 – 2023
President's Budget
$2.1 Billion
2019 - $1.19 Billion



CONTRACTING

Production & Sustainment
Combination of Firm-Fixed-Price and Fixed-Price-Incentive-Firm

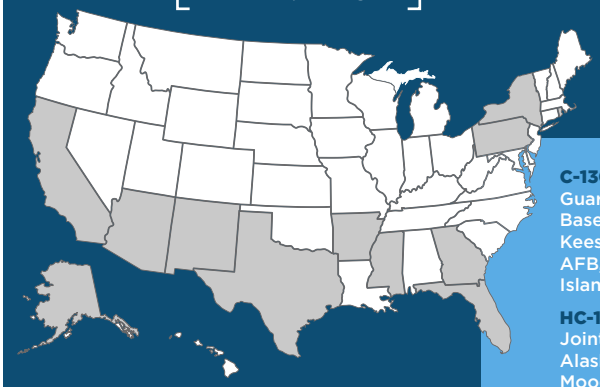
Development
Cost-Plus-Incentive-Fee

LOCKHEED MARTIN
Marietta, Georgia

SCHEDULE

A total of 137 C-130J aircraft have been delivered. This includes 110 C-130Js, 10 C-130J 'shorts', 10 WC-130Js, and seven EC-130Js. There are 17 C-130Js yet to be delivered.

A total of 68 Air Force HC/MC/AC-130Js have been delivered to date. This includes 34 MC-130Js, 23 HC-130Js and 11 AC-130Js. There are 23 MC-130Js, 14 HC-130Js and 26 AC-130Js yet to be delivered.



Overseas Locations: C-130Js: Ramstein Air Base, Germany, and Yokota AB, Japan
MC-130Js: Kadena AB, Japan, and Royal Air Force Mildenhall, England

BASING STRATEGY

C-130Js: Channel Islands Air National Guard Base, California, Dyess Air Force Base, Texas, Harrisburg, Pennsylvania, Keesler AFB, Mississippi, Little Rock AFB, Arkansas, Quonset Point, Rhode Island

HC-130Js: Davis Monthan AFB, Arizona, Joint Base Elmendorf-Richardson, Alaska, Kirtland AFB, New Mexico, and Moody AFB, Georgia; Future Basing: HC-130Js will also be based at Moffett Field, California, Gabreski ANGB, New York, Patrick AFB, Florida and Hurlburt Field, Florida

MC-130Js: Cannon AFB and Kirtland AFB, New Mexico

AC-130Js: Hurlburt Field; Future Basing: Cannon AFB, New Mexico

HH-60W COMBAT RESCUE HELICOPTER

GLOBAL REACH

COST

2019 – 2023
President's Budget
$5.1 Billion

2019
$1.14
Billion

ORIGINAL UNIT COST
$74.4 Million

CURRENT UNIT COST
$63.7 Million
(4 percent decrease)

SCHEDULE

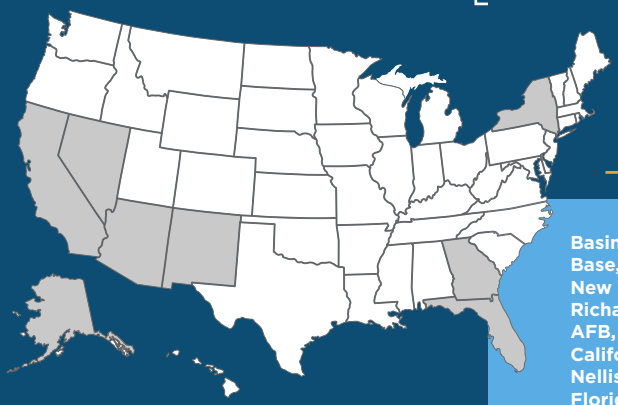
Sikorsky is assembling the first test aircraft, and its first flight is scheduled for fall 2018.

CONTRACTING

Engineering & Manufacturing Development
Fixed-Price-Incentive-Firm

Production
Firm-Fixed-Price

SIKORSKY
Stratford, Connecticut



BASING STRATEGY

Basing: Davis-Monthan Air Force Base, Arizona, Gabreski Field, New York, Joint Base Elmendorf-Richardson, Alaska, Kirtland AFB, New Mexico, Moffett Field, California, Moody AFB, Georgia, Nellis AFB, Nevada, Patrick AFB, Florida

Overseas Locations:
Kadena Air Base, Japan, Royal Air Force Lakenheath, England

The Combat Rescue Helicopter program will replace the HH-60G Pave Hawk with the HH-60W Pave Hawk II. The HH-60W will conduct day, night and marginal-weather combat search and rescue, in order to recover downed aircrew or other isolated personnel in hostile environments. The HH-60W will also be able to conduct noncombatant evacuation operations, defense support to civil authorities, civil search and rescue, international aid, emergency aeromedical evacuation, disaster/humanitarian relief, counter-drug activities, support for NASA flight operations, and insertion/extraction of combat forces.

Sikorsky is on contract with the Air Force to produce 112 HH-60Ws, the training system and support equipment. The Air Force awarded a contract for development and production of the first four aircraft in June 2014 and exercised a contract option for five test aircraft in January 2017.

The government's cost for program development continues to follow cost estimates and remain stable.

In November 2017, the program completed final design reviews. The first eight aircraft – four training and four operational – with associated training systems and support equipment, are expected to be delivered in 2020 and begin operations in 2021.

KC-46A | Pegasus

The KC-46A will primarily provide aerial refueling. The aircraft will also be equipped to carry cargo and passengers, as well as perform aeromedical evacuations.

Boeing is on contract with the Air Force to produce 179 KC-46A aircraft, associated engine spares and support equipment.

The Air Force exercised contract options for aircraft Lot 3, 15 aircraft, in January 2017. Each aircraft lot also includes two spare engines and five refueling pods. The Air Force plans to award Lot 4, for another 15 aircraft in 2018.

As of December 2017, Boeing had completed 72 percent of the planned flight tests, and they continue to make steady progress toward achieving both Federal Aviation Administration and military airworthiness certifications. Boeing received FAA Amended Type Certification in December 2017.

The Air Force anticipates its first aircraft delivery in 2018. This delivery will be an important step toward achieving initial operational capability.

ORIGINAL UNIT COST
$259.60 Million

CURRENT UNIT COST
$217.9 Million
(16 percent decrease)

COST

2019 – 2023
President's Budget
$16.9 Billion

2019
$3.02 Billion

CONTRACTING

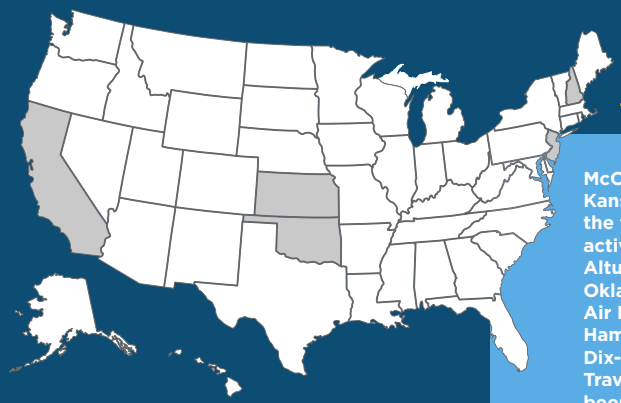
Engineering & Manufacturing Development
Fixed-Price-Incentive-Firm

Production
Firm-Fixed Price, Not-to-Exceed

BOEING
Seattle, Washington

SCHEDULE

Required assets available (defined as the first 18 aircraft), an important step toward achieving initial operational capability, has been delayed 14 months, from August 2017 to October 2018.



BASING STRATEGY

McConnell Air Force Base, Kansas, is ready for delivery of the first KC-46A, and beddown activities are on track at Altus AFB and Tinker AFB in Oklahoma, as well as Pease Air National Guard Base, New Hampshire. Joint Base McGuire-Dix-Lakehurst, New Jersey, and Travis AFB, California, have been identified as preferred alternatives.

Advanced Pilot Training System | T-X

COST

2019 – 2023
President's Budget
$2.7 Billion

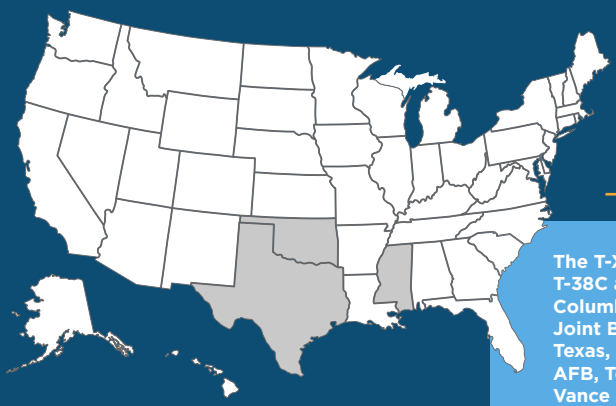
2019
$265.5 Million

SCHEDULE

Initial operational capability is projected for 2024.

CONTRACTING

The Air Force is in source selection and plans to award a fixed-price-incentive-firm contract in 2018 for the engineering, manufacturing and development, and delivery of five test aircraft and priced options for production.



BASING STRATEGY

The T-X is expected to replace the T-38C aircraft, currently based at Columbus Air Force Base, Mississippi, Joint Base San Antonio-Lackland, Texas, Laughlin AFB, Texas, Randolph AFB, Texas, Sheppard AFB, Texas, Vance AFB, Oklahoma.

The Advanced Pilot Training System, 'T-X', will replace Air Education and Training Command's fleet of 430 T-38C aircraft, currently based in Mississippi, Oklahoma, and Texas, with 350 T-X aircraft and associated simulators.

Frequent and open dialogue with industry enabled the Air Force to develop an acquisition strategy that balances risk, performance, and affordability. The Air Force released the final development and production request for proposal in December 2016.

Proposals were received in March 2017, and aircraft performance data was received in June 2017. The request for proposal was designed to allow offers from companies with both purpose-built and existing pilot training systems. The Air Force used the value adjusted total evaluated price technique to get the best value solution to the warfighter. It does this by helping industry understand the competitive effects of offering higher-performance and lower-risk solutions, and helps the Air Force evaluate offers containing existing and purpose built aircraft by quantifying the trade-offs.

VC-25B | Presidential Aircraft Recapitalization

VC-25B will replace the current Air Force One, to safely and securely transport the president and execute the president's duties as commander in chief.

The next Air Force One will be a modified Boeing 747-8. Boeing is the prime contractor for designing, modifying, testing, and fielding two VC-25B aircraft by 2024.

In 2017, the Air Force completed numerous risk-reduction activities, solidified the program's requirements, purchased and took delivery of two 747-8 commercial aircraft, and initiated the preliminary design effort to transform those aircraft into the next Air Force One.

The Air Force anticipates awarding the final contract to complete engineering and manufacturing development in the summer of 2018.

COST

2019 – 2023
President's Budget
$2.92 Billion

2019
$673
Million

SCHEDULE

Two presidential mission-ready VC-25Bs are projected to be delivered by 2024.

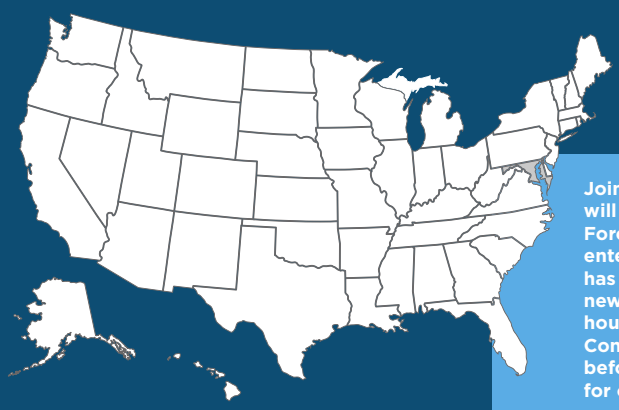
CONTRACTING

Risk Reduction
Cost-Plus-Fixed-Fee

Commercial Aircraft
Firm-Fixed-Price

Preliminary Design
Cost-Plus-Award-Fee

BOEING
Seattle, Washington



BASING STRATEGY

Joint Base Andrews, Maryland, will remain the home of Air Force One when the VC-25B enters service. The Air Force has begun the planning of a new presidential complex to house the next Air Force One. Construction will be completed before the new aircraft is ready for operational testing.

C-5M | Super Galaxy

GLOBAL REACH

The C-5 Reliability Enhancement and Re-engining Program is a comprehensive modernization effort to improve C-5 reliability, maintainability and availability. The C-5M Super Galaxy, when compared to the legacy C-5 Galaxy, has increased range, payload, takeoff thrust, climb performance, and fuel efficiency, as well as an extended service life through at least 2040. The C-5M has met the 75 percent mission-capable rate requirement for wartime and surge conditions. All 52 aircraft were inducted into the program by January 2017, with the final four aircraft currently undergoing modification and scheduled for completion by spring 2018.

BASING STRATEGY

Final basing is planned for Dover Air Force Base, Delaware, Travis AFB, California, Joint-Base San Antonio-Lackland, Texas, and Westover Air Reserve Base, Massachusetts.

CONTRACTING

Prime Contractor: Lockheed Martin Aero, Marietta, Georgia
Contract: Firm-Fixed-Price for Modifications, Cost-Plus-Fixed-Fee for Over and Above
Contract Value: $4.6 Billion

UH-1N | Huey Replacement

The UH-1N Huey is a Vietnam-era helicopter, that supports airlift of emergency security forces, security and surveillance of off-base nuclear weapons convoy, aircrew training, testing, continuity of government operations, and distinguished visitor airlift. The UH-1N replacement will provide the necessary speed, range, endurance and carrying capacity needed to meet the requirements of five Air Force major commands. The program is in source selection with contract award expected in 2018.

2019 PB:
$288 Million

INFORMATION DOMINANCE

Information dominance is achieved through command, control, communications, computers, intelligence, surveillance and reconnaissance, or C4ISR, systems and architectures. Air Force information dominance programs are comprised of reconnaissance and surveillance aircraft, remotely piloted aircraft, command and control, combat support systems, enterprise resource planning programs, evolving C4ISR infrastructure, expeditionary reach-back, and information warfare.

In 2017, the Air Force awarded an engineering and manufacturing development contract for the Three-Dimensional Expeditionary Long-Range Radar, or 3DELRR, which detects, identifies, tracks and reports aerial targets. The MQ-9 Reaper completed successful combat operations with new updates to both the aircraft and ground control station, which enhanced the long-endurance capabilities for strike, coordination, and reconnaissance.

Moving forward to evolve information dominance, the Air Force is pursuing a Pathfinder approach for the air operations center. This new approach will leverage commercial software best practices through an agile development operations process to iteratively and rapidly deliver capability to the warfighter.

FISCAL YEAR 2019 BUDGET $5.08B

RESEARCH, DEVELOPMENT, TEST & EVALUATION	$2.23B
PROCUREMENT	$2.84B

IN SOURCE SELECTION

- Air Force Integrated Personnel and Pay System
- Maintenance Repair and Overhaul Initiative

IN OPERATION / SUSTAINMENT

- Base Information Transport Infrastructure
- EC-130H Compass Call
- Mission Planning System

IN DEVELOPMENT / PRODUCTION

- 3DELRR
- AOC Pathfinder
- Defense Enterprise Accounting and Management System
- MQ-9 Reaper
- Distributed Common Ground System
- EC-37B Compass Call Re-host
- Integrated Strategic Planning and Analysis Network Increment 4 & 5

PORTFOLIO

AIRBORNE RECONNAISSANCE

BUSINESS & ENTERPRISE SYSTEMS

COMMAND & CONTROL

CYBER

Air and Space Operations Center, Increment 10.2

AOC 10.2

INFORMATION DOMINANCE

ORIGINAL PROGRAM COST
$469.8 Million

COST

Due to program cancellation, there is no funding allocated for AOC 10.2.

CURRENT PROGRAM COST
$519.4 Million
(13 percent increase)

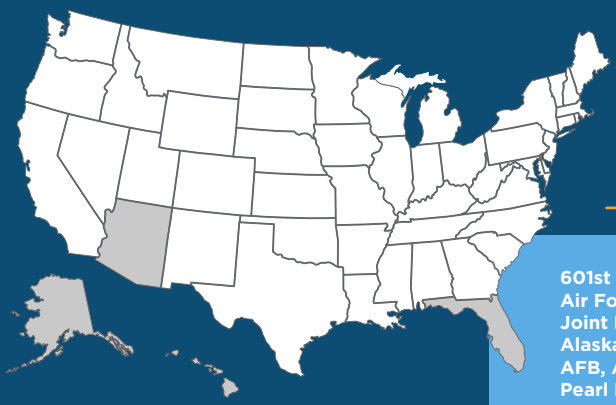
NOTE
Air Force terminated the contract with Northrop Grumman Mission Systems on July 13, 2017

SCHEDULE

The full deployment decision was delayed by at least 40 months and was last estimated to be in December 2019 instead of the original plan of July 2016.

CONTRACTING

Engineering & Manufacturing Development
Cost-Plus-Incentive-Fee



DEPLOYMENT STRATEGY

601st Air Operations Center, Tyndall Air Force Base, Florida, 611th AOC, Joint Base Elmendorf-Richardson, Alaska, 612th AOC, Davis-Monthan AFB, Arizona, 613th AOC, Joint Base Pearl Harbor-Hickam, Hawaii

Overseas Locations:
607th Air Operations Center, Osan Air Base, Korea, 609th AOC, Al Udeid AB, Qatar, 603rd AOC, Ramstein AB, Germany

The Air Operations Center system is the foundation for multi-domain command and control, where all intelligence and operations are centralized.

AOC 10.2 was intended to replace the aging AOC 10.1 system, which is experiencing integration and security issues. Because the program didn't meet key performance parameters within one year of the original estimate of July 2015, the Air Force put AOC 10.2 development on hold, terminated the contract with Northrop Grumman in July 2017, and canceled the program in January 2018.

When the decision to terminate was reached, the 2016 Critical Change estimate for Research, Development, Testing and Evaluation was $724 million, 88 percent higher than the original RDT&E estimate of $386 million.

The Air Force re-assessed AOC modernization and is now using agile development operations to upgrade and iteratively deliver capability to the warfighter via an AOC Pathfinder – much like software updates are pushed to a smartphone. The Air Force submitted a request for $28.2 million to Congress in November 2017 to fund AOC Pathfinder.

The AOC Pathfinder will rapidly deliver a subset of the AOC 10.2 requirements using industry software development best practices. If successful, AOC Pathfinder's acquisition strategy could be a template for the development of future software-intensive systems.

AWACS

Airborne Warning and Control System Block 40/45 Upgrade

The Airborne Warning and Control System provides a highly-mobile, flexible, survivable theater battle management, wide-area surveillance, and command-and-control capability.

AWACS Block 40/45 is the most significant modernization in the fleet's history and is the foundation piece for all future E-3 modifications.

As of January 2018, 17 low-rate initial production and production aircraft block 40/45 upgrades have been delivered to the Air Force.

The Air Force anticipates a continued delivery schedule for the remaining seven deliveries through fiscal year 2020, and the declaration of full operational capability by the middle of fiscal year 2020, for a fleet total of 24 aircraft.

ORIGINAL UNIT COST
$94.8 Million

CURRENT UNIT COST
$117.3 Million
(24 percent increase)

Due to a cut in aircraft, from 31 to 24, unit cost was re-baselined in 2015 to $115.5 Million

COST

2019 – 2023
President's Budget
$2 Billion

2019
$327.8 Million

CONTRACTING

Production Kits & Production Support to Depot Modification Activities
Cost-Plus-Incentive-Fee

SCHEDULE

Initial operational capability was achieved three months ahead of schedule, in January 2014, with the delivery of six aircraft.

BOEING
Oklahoma City, Oklahoma

IMPLEMENTATION STRATEGY

Tinker Air Force Base, Oklahoma, is the home to 27 AWACS aircraft, while Kadena Air Base, Japan, and Joint Base Elmendorf-Richardson, Alaska, each have two AWACS - for a fleet total of 31 aircraft.

Only 24 of the 31 aircraft are part of the Block 40/45 upgrade.

Defense Enterprise Accounting & Management System | DEAMS

INFORMATION DOMINANCE

COST

2019 – 2023
President's Budget
$286.1 Million

2019
$80.2
Million

ORIGINAL PROGRAM COST
$889.2 Million

CURRENT PROGRAM COST
$1.17 Billion
(32 percent increase)

Since re-baselining in November 2017, the Air Force is on cost and on schedule

SCHEDULE

The full deployment decision was delayed more than five years - from February 2015 to the current estimate of June 2020.

CONTRACTING

The Air Force awarded two firm-fixed-price contracts to support restructured Increment 1 requirements.

The DEAMS Technical Upgrade and Sustainment contract is with DSD Laboratories. The DEAMS Increment 1 requirements continuation contract is with Accenture Federal Services.

DEPLOYMENT STRATEGY

DEAMS Increment 1 is deployed to 13,800 of the expected 16,600 users at 145 Active Duty, Reserve, Air National Guard, and DFAS installations. All Air Force major commands have users processing financial actions on DEAMS.

The Air Force successfully deployed DEAMS to Pacific Air Forces in October 2017 and is preparing to deploy to 800 users in U.S. Air Forces in Europe in June 2018.

The Defense Enterprise Accounting & Management System, or DEAMS, is an ORACLE-based automated information system supporting the warfighter with timely, accurate, reliable and auditable financial information to enable efficient and effective decision-making. In January 2017, DEAMS submitted a critical change report to Congress because the program experienced schedule delays more than 12 months beyond the original schedule.

The Air Force, after a thorough evaluation, decided to restructure the program by modifying the scope, schedule and performance parameters, to increase the likelihood of successful DEAMS Increment 1 program execution. The new program continues to deliver existing capability to users and will implement mandatory hardware and software upgrades. Other requirements have been deferred to future increments. To prevent future program deviations, the Air Force implemented and is maturing the DEAMS enterprise management governance structure to better control requirements and baseline changes.

Hardware and software upgrades are underway with the award of two contracts to improve system performance, supportability and security. The ORACLE SuperCluster hardware upgrade went live in December 2017. The ORACLE R12 software upgrade is on track to go live in October 2018. Existing capability delivered to users is being maintained and updated while hardware and software upgrades come online.

MQ-9 Reaper

The MQ-9 Reaper is an armed, multi-mission, medium-altitude, long-endurance remotely piloted aircraft, or RPA. The Reaper is primarily a hunter-killer, but it's also an intelligence-collection asset. Given its significant loiter time, wide-range sensors, multi-mode communications suite, and precision weapons, the Reaper can perform strike, coordination and reconnaissance against high-value, fleeting and time-sensitive targets. The Block 5 MQ-9 and Block 30 ground control station combination was first successfully used in combat in June 2017.

The Air Force is negotiating with General Atomics for 24 MQ-9 Block 5 aircraft from the fiscal year 2017 president's budget. The MQ-9 upgrade program is a follow-on effort that develops new and enhanced combat capabilities, and modernizes hardware and software.

The MQ-9 enterprise is moving to a common software configuration – the operational flight program – which will cut development and sustainment costs while maintaining timely capability improvements for Air Combat Command and Air Force Special Operations Command. This transition ensures the MQ-9 enterprise continues to deliver capabilities for our warfighters each and every day.

ORIGINAL UNIT COST
$31.6 Million

CURRENT UNIT COST
$33.7 Million
(7 percent increase)

Increase coincides with capability upgrades

COST

2019 – 2023
President's Budget
$5.2 Billion

2019
$1.15 Billion

CONTRACTING

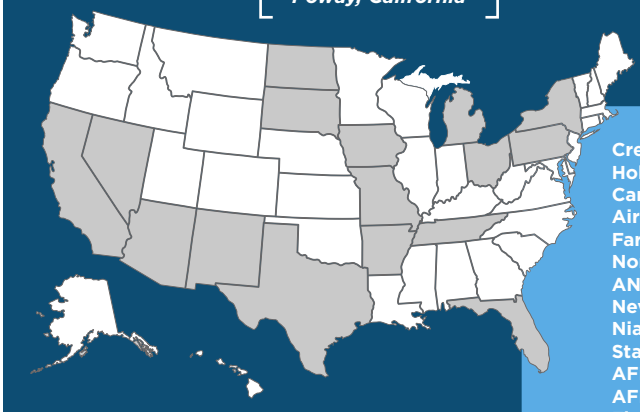
Research, Development, Test & Evaluation, Software Releases & Sustainment
Cost-Plus-Fixed-Fee

Production
Fixed-Price-Incentive-Fee and Firm-Fixed-Price

GENERAL ATOMICS
Poway, California

SCHEDULE

Initial operational capability was achieved in June 2012, with the delivery of two aircraft. IOC was six months behind the original estimate of December 2011.



BASING STRATEGY

Creech Air Force Base, Nevada, Holloman AFB, New Mexico, Cannon AFB, New Mexico, March Air Reserve Base, California, Fargo Air National Guard Base, North Dakota, Hancock Field ANGB, New York, Nellis AFB, Nevada, Kellogg ANGB, Michigan, Niagara Falls Air Reserve Station, New York, Ellsworth AFB, South Dakota, Whiteman AFB, Missouri, Hurlburt Field, Florida, Springfield ANGB, Ohio, Air Station State College in Pennsylvania, Berryfield ANGB, Tennessee, Ellington Field JRB, Texas, Davis-Monthan AFB, Arizona, Des Moines ANGB, Iowa, and Fort Smith Air National Guard Station, Arkansas.

Three-Dimensional Expeditionary Long-Range Radar | 3DELRR

INFORMATION DOMINANCE

COST

2019 – 2023
President's Budget
$372.4 Million

2019
$40.3
Million

SCHEDULE

The Air Force anticipates initial operational capability by the end of 2023. The program held its critical design review in early 2018 and plans to start system-level testing in 2019.

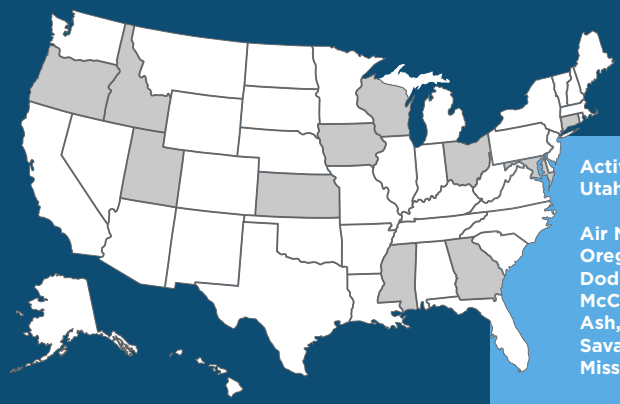
CONTRACTING

Engineering & Manufacturing Development
Fixed-Price-Incentive-Firm

Low-Rate Initial Production Option
Fixed-Price-Incentive-Firm

Production Lot Options
Firm-Fixed-Price
Not-to-Exceed

RAYTHEON COMPANY
Tewksbury, Massachusetts



BASING STRATEGY

Active Duty: Hill Air Force Base, Utah, Mountain Home AFB, Idaho

Air National Guard: Astoria, Oregon, Salt Lake City, Utah, Fort Dodge, Iowa, Volk Field, Wisconsin, McConnell AFB, Kansas, Blue Ash, Ohio, Orange, Connecticut Savannah, Georgia, Gulfport, Mississippi

Total Quantity: 35 3DELRR Systems

The Three-Dimensional Expeditionary Long-Range Radar, or 3DELRR, will provide detection of aerial threats to ground troops and Airmen operating in deployed locations. The radar can give commanders the ability to orchestrate major friendly operations and detect a wide range of airborne targets. Additionally, the 3DELRR program is an Air Force pilot program for the Defense Exportability Features initiative.

The contract was originally awarded in October 2014, but the program re-entered source selection due to protests and appeals. The solicitation was amended in 2016, to include full-rate production options, in order to maximize the benefits of a competitive environment and set the stage for faster fielding of capability after government testing. Ultimately, the 3DELRR engineering and manufacturing development contract was awarded to the Raytheon Company for $53.6 million.

The fixed-price development contract was awarded at approximately 20 percent of the original program office estimate. The contract also included options for full production. Competition, in conjunction with a vigorous export market, resulted in much lower prices for both the development and production options.

EC-37B | Compass Call Re-Host

Compass Call is a tactical airborne electronic attack weapon system that disrupts enemy communication and radar systems.

Compass Call currently supports U.S. and coalition tactical air, surface and special operations forces in contingency operations worldwide. However, growing threats in multiple theaters and rising sustainment costs on the legacy EC-130H platform have driven the Air Force to re-host the Compass Call capability to a modern, more cost-effective, commercial derivative aircraft.

The Air Force awarded a non-developmental contract to L3 Technologies, the program's prime integrator for more than 15 years, to integrate government- furnished mission equipment onto a commercial, off-the-shelf aircraft. This acquisition strategy has a history of success and pays homage to Compass Call's roots in the late 1970s: hosting existing equipment on a repurposed aircraft.

In all, the Air Force plans to procure 10 re-hosted EC-37B aircraft while simultaneously retiring the EC-130H fleet in a phased approach.

COST

2019 – 2023
President's Budget
$931 Million

2019
$182.5 Million

CONTRACTING

Aircraft System Integration
Cost-Plus-Fixed-Fee

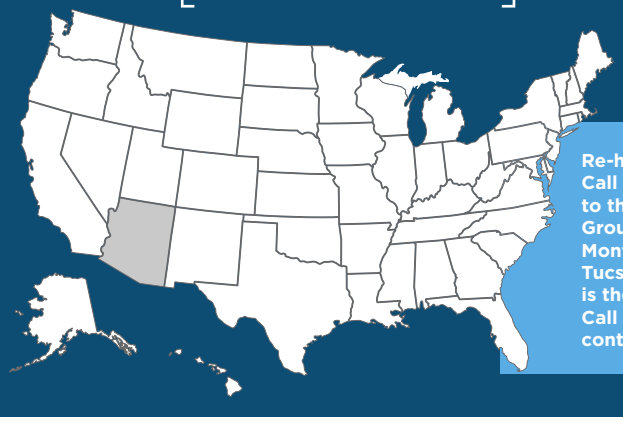
Commercial Aircraft Procurement
Firm-Fixed-Price

SCHEDULE

The Air Force currently plans to deliver the first EC-37B Compass Call for test in calendar year 2021 with delivery to the warfighter by the end of calendar year 2022.

L3 TECHNOLOGIES
(Aircraft integration)
Greenville, Texas

BAE SYSTEMS
(Mission systems)
Nashua, New Hampshire



BASING STRATEGY

Re-hosted EC-37B Compass Call aircraft will be delivered to the 55th Electronic Combat Group, located at Davis-Monthan Air Force Base in Tucson, Arizona. The 55th ECG is the sole operator of Compass Call aircraft in worldwide contingency operations.

Integrated Strategic Planning and Analysis Network | ISPAN

INFORMATION DOMINANCE

COST

2019 – 2023
President's Budget
$123.7 Million

2019
$23 Million

ORIGINAL PROGRAM COST
$156.2 Million

CURRENT PROGRAM COST
$151.2 Million
(3 percent decrease)

CONTRACTING

ISPAN development contracts are negotiated and awarded in a competitive environment.

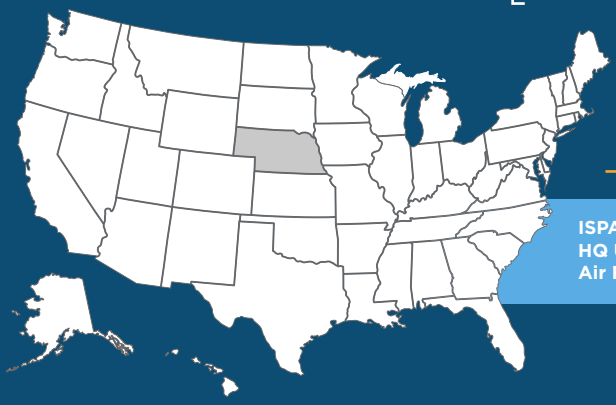
Program Development
Indefinite-Delivery/ Indefinite-Quantity

Program Management Administration
Fixed-Price

BAE SYSTEMS
Bellevue, Nebraska

SCHEDULE

The full deployment decision is currently estimated in June 2018, which is two months earlier than the original estimate.



DEPLOYMENT STRATEGY

ISPAN is housed and operated at HQ USSTRATCOM facilities, Offutt Air Force Base, Omaha, Nebraska.

The Integrated Strategic Planning and Analysis Network, formerly known as the Strategic War Planning System, is a U.S. Strategic Command system. Its primary function is to provide strategic contingency planning.

ISPAN is a software tool for web-enabled, collaborative, adaptive, and crisis-action planning. It supports development of Joint Staff Level I through Level IV nuclear and conventional attack options.

The planning system will continue to evolve as weapon systems mature, new systems are developed, and the threat changes, particularly in the area of worldwide proliferation of weapons of mass destruction.

ISPAN Increment 4 reduces crisis-action planning and time-sensitive planning timelines, integrates nuclear and conventional kinetic weapon capabilities with non-kinetic effects, provides the capability to integrate the planning and analysis capabilities of future global strike weapons, updates the mission planning and analysis system to provide the ability to train users in significantly less time, and leverages new technologies to lower sustainment costs.

ISPAN Increment 5 will continue to modernize components and focus on refining system/subsystem design descriptions, software reuse analysis, and evaluate user interface and data integration prototypes.

BITI | Base Information Transport Infrastructure Wired

The Base Information Transport Infrastructure delivers the Air Force cyberspace network and integrated infrastructure for more than 175 fixed active duty, reserve and Air National Guard bases.

The initiative upgrades base cyber infrastructure for conducting, supporting and advancing coalition, joint, Air Force and interagency operations, and standardizes the Air Force enterprise. This facilitates follow-on network operations and support.

The system provides redundant, high-speed and reliable wired and wireless cyber network capabilities. The program improves the cybersecurity posture and mission assurance of Air Force base cyber network backbone infrastructure through systematic recapitalization of obsolescent, commercial-off-the-shelf equipment.

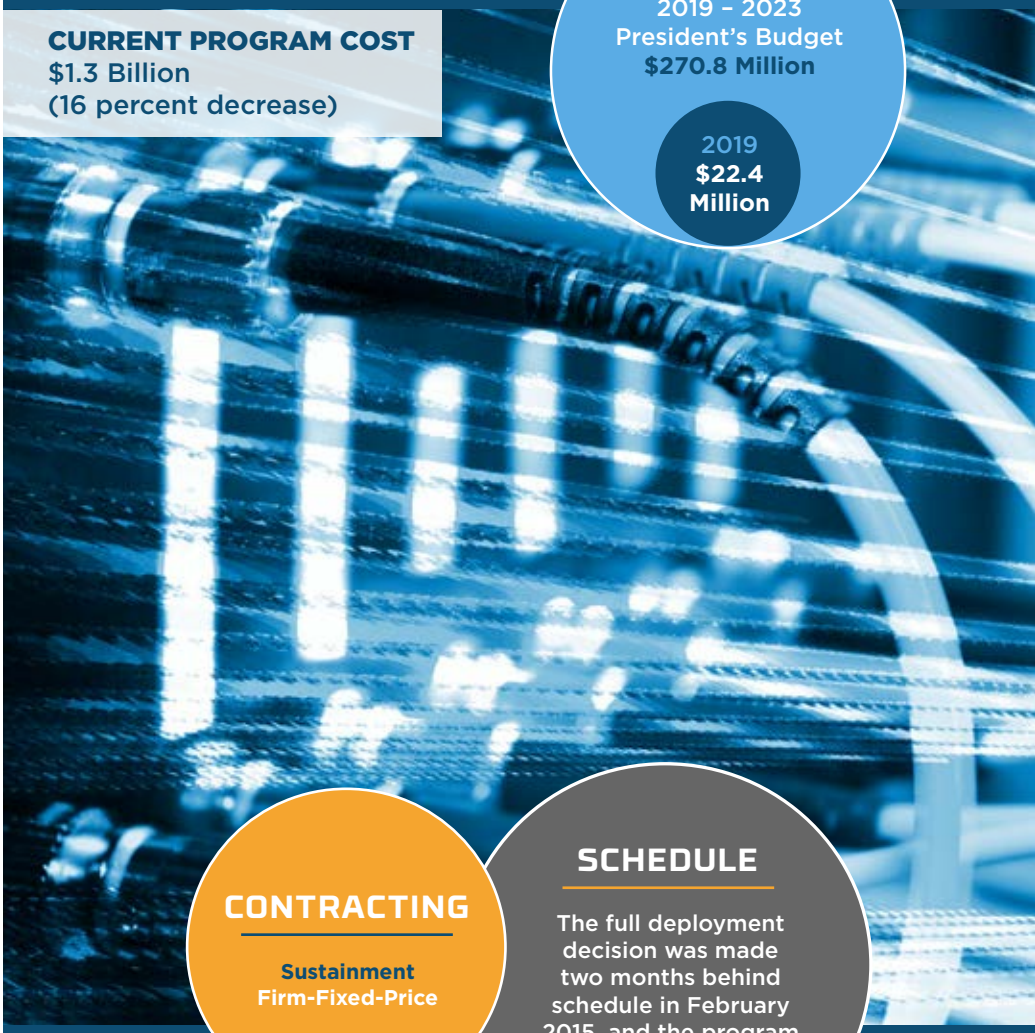
ORIGINAL PROGRAM COST
$1.5 Billion

CURRENT PROGRAM COST
$1.3 Billion
(16 percent decrease)

COST

2019 – 2023
President's Budget
$270.8 Million

2019
$22.4 Million



CONTRACTING

Sustainment
Firm-Fixed-Price

SCHEDULE

The full deployment decision was made two months behind schedule in February 2015, and the program was fully deployed in September 2017.

THREE WIRE SYSTEMS, LLC
Falls Church, Virginia

DEPLOYMENT STRATEGY

BITI delivers the Air Force cyberspace network and integrated infrastructure to more than 170 active duty, reserve, guard and geographically-separated units at approved locations worldwide.

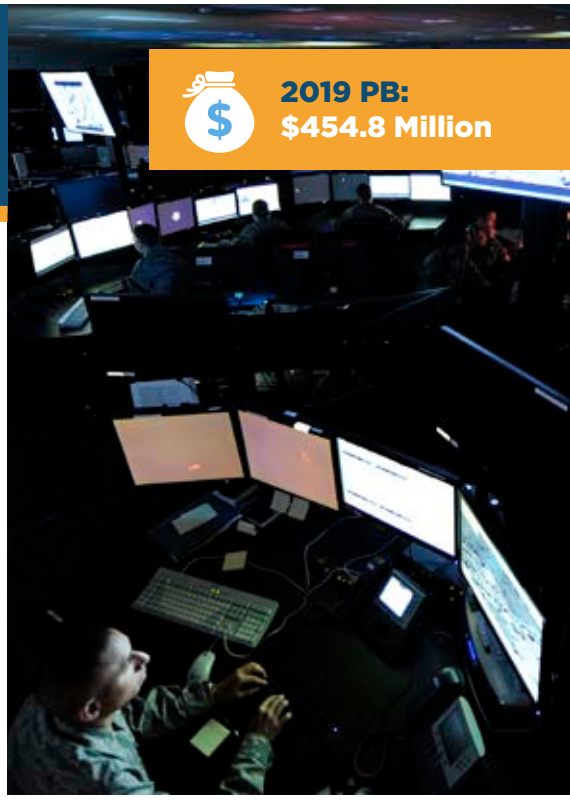
Air Force Integrated Personnel and Pay System | AFIPPS

The Air Force Integrated Personnel and Pay System will be a web-enabled, commercial, off-the-shelf enterprise resource-planning solution that integrates existing military personnel and pay processes into a single, self-service system for the Total Force—active duty, reserve and guard. AFIPPS is currently in source selection, and the Air Force plans to award a cost-plus-incentive-fee contract for development in the third quarter of fiscal year 2018.

2019 PB:
$47.3 Million

Distributed Common Ground System | DCGS

The Air Force Distributed Common Ground System is a regionally-aligned, globally-networked intelligence, surveillance and reconnaissance enterprise, delivering tailored intelligence for immediate warfighter operations. It is a distributed weapon system capable of tasking ISR sensors and processing, exploiting and disseminating intelligence from airborne, national and commercial sensors, primarily the MQ-1, MQ-9, RQ-4 and U-2. The system is currently under migration through an agile development process to an open architecture, with three of four mission capability pilots complete and enterprise deployment to the 27 worldwide sites beginning in fiscal year 2018.



2019 PB:
$454.8 Million

MROi | Maintenance, Repair and Overhaul Initiative

2019 PB:
$63.1 Million

The Maintenance, Repair and Overhaul Initiative is currently in source selection. MROi is a commercial, off-the-shelf, Oracle-based software implementation effort that will standardize depot maintenance and repair business processes into a single system. Essentially, MROi eliminates the requirement for several existing IT systems. The Air Force plans to award a cost-plus-incentive-fee contract for development in the second quarter of 2018, after milestone approval.

2019 PB:
$77.9 Million

MPS | Mission Planning System, Increment 5

ORIGINAL COST: $105.8 Million
CURRENT COST: $120.8 Million (14 percent increase)

Mission Planning System, Increment 5, will complete migration of Air Force platforms to the next generation software planning system for aircraft and precision-guided weapons. This increment focuses on the initial migration of mobility air forces and combat search and rescue platforms from the legacy portable flight planning system and the development of mobility air force's automated flight planning service for the Tanker Airlift Control Center. In fiscal year 2017, the Air Force completed global mobility developmental testing for the C-130, C-5, KC-10, and KC-135 mission planning environment.

DEPLOYMENT STRATEGY

MPS Increment 5 software is used by the following weapon system platforms: C-5, C-17, C-130, HC/MC-130, HH-60G, KC-10, and KC-135, at their assigned locations.

CONTRACTING

Software Development:
Indefinite-Delivery/Indefinite-Quantity

SCHEDULE

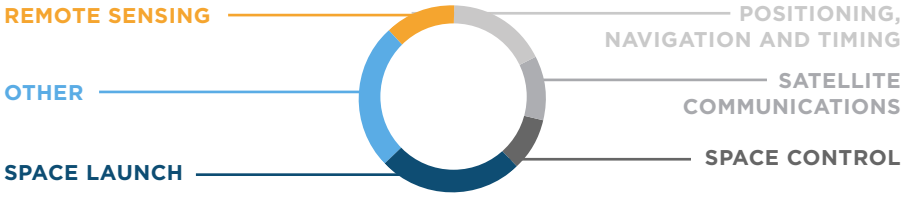
The full deployment decision was made in December 2017, three months later than the original estimate of September 2017.

SPACE

FISCAL YEAR 2019 BUDGET $8.5B

RESEARCH, DEVELOPMENT, TEST & EVALUATION — $5.9B

PROCUREMENT — $2.6B



IN SOURCE SELECTION

- Evolved Expendable Launch Vehicles

IN OPERATION / SUSTAINMENT

- Enhanced Polar System SATCOM
- Global Broadcast System
- Global Positioning System IIF
- Wideband Global SATCOM System

IN DEVELOPMENT / PRODUCTION

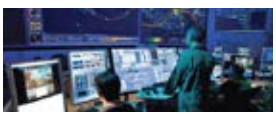
- Advanced Extremely High Frequency System SATCOM
- Enhanced Polar System-Recapitalization SATCOM
- Enterprise Space Battle Management Command and Control
- Family of Advanced Beyond Line-of-Sight Terminals
- Global Positioning System III and IIIF
- Joint Space Operations Center Mission System
- Military Global Positioning System User Equipment
- Next Generation Operational Control System
- Space-Based Infrared System Follow-on
- Space-Based Infrared System High
- Space Fence
- Weather System Follow-on Microwave

PORTFOLIO

SATELLITE COMMUNICATIONS

POSITIONING, NAVIGATION AND TIMING

SPACE LAUNCH



SPACE CONTROL

REMOTE SENSING

Space capabilities are a force multiplier when integrated into military operations. Historically, the U.S. has enjoyed unimpeded freedom of action in the space domain. The current U.S. space enterprise was not designed or optimized to fight through and deliver key warfighting effects in, from and through today's contested space domain. The Air Force must provide a more resilient architecture to prevail if conflict extends into space.

In 2017, the Air Force began addressing resiliency by implementing a strategy of innovation across five broad areas: (1) How the Air Force thinks about the challenges in space and how the Air Force addresses them; (2) How the Air Force trains and operates in space; (3) What the Air Force operates in space; (4) How the Air Force plans for the future in space; and (5) How the Air Force partners with other agencies, allies and industry in space.

In 2018, the Air Force will continue to implement this strategy and will prudently modernize and enhance its space capabilities to become more survivable and resilient in a contested environment, to remain the world's preeminent space power. The Air Force will also continue to normalize space as a warfighting domain and focus its efforts to outpace and defeat advanced, demonstrated, and evolving threats.

AEHF

Advanced Extremely High Frequency System (Satellite Communications)

The Advanced Extremely High Frequency system is a joint service effort that provides worldwide, survivable, secure, protected and jam-resistant communications for high-priority military ground, sea and air assets.

The system enables presidential and senior leadership conferencing, as well as command and control of strategic forces across the full spectrum of conflict, including nuclear threat environments. It also provides protected communications between combatant commanders and globally-deployed tactical users.

The system augments and will replace the 1990s-era Milstar satellites, providing 10 times the capacity of the previous system.

Three satellites are operational and provide capability to the warfighter in concert with the remaining Milstar satellites.

The final three satellites have encountered production issues, causing launch delays for the contractor to replace hardware and resolve the issues.

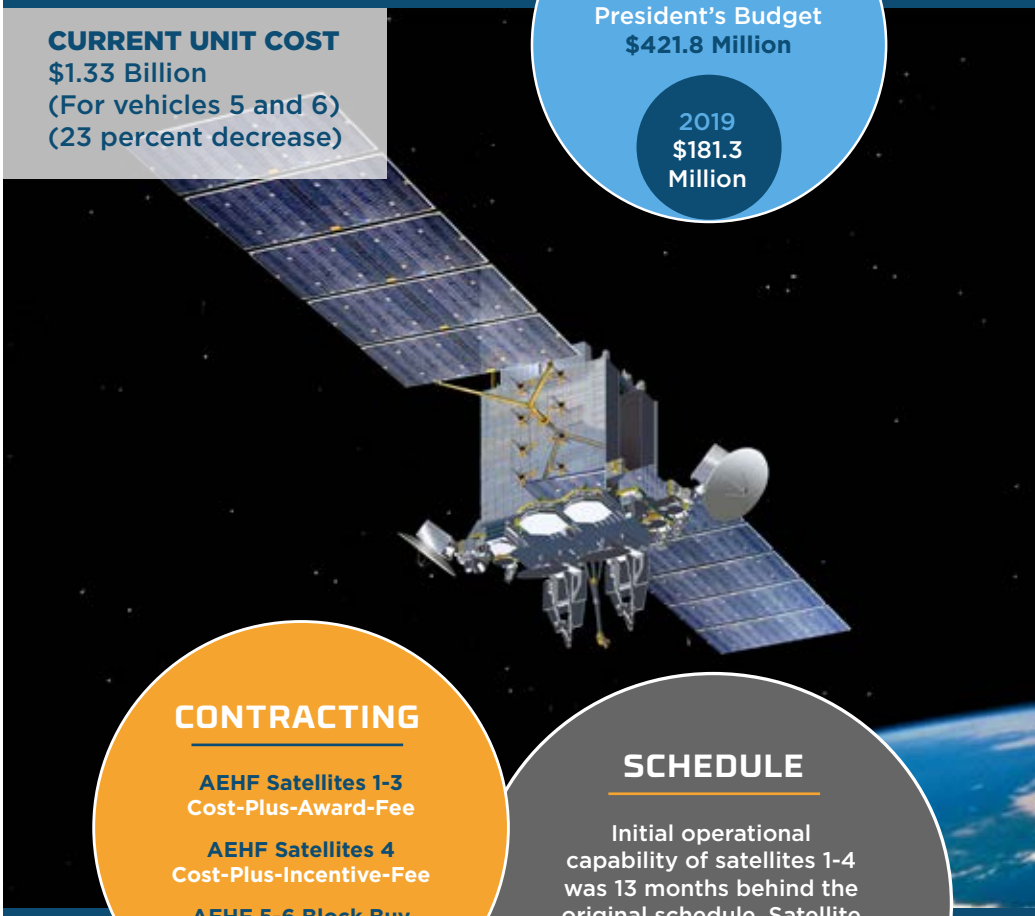
ORIGINAL UNIT COST
$1.73 Billion
(For vehicles 5 and 6)

CURRENT UNIT COST
$1.33 Billion
(For vehicles 5 and 6)
(23 percent decrease)

COST

2019 – 2023
President's Budget
$421.8 Million

2019
$181.3
Million



CONTRACTING

AEHF Satellites 1-3
Cost-Plus-Award-Fee

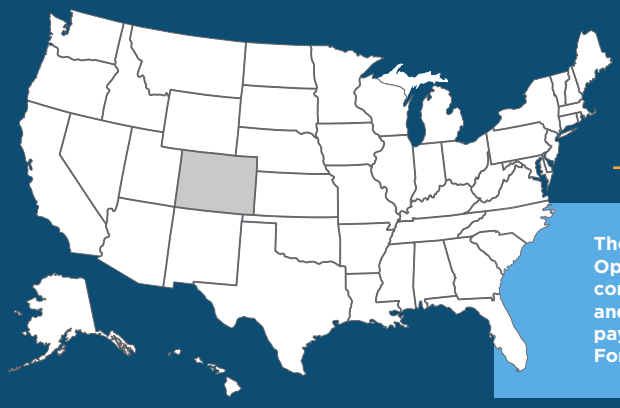
AEHF Satellites 4
Cost-Plus-Incentive-Fee

AEHF 5-6 Block Buy
Fixed-Price-Incentive-Firm

LOCKHEED MARTIN
Sunnyvale, California

SCHEDULE

Initial operational capability of satellites 1-4 was 13 months behind the original schedule. Satellite vehicle 5 is estimated to be available for launch in January 2019, which is seven months behind the original schedule.



BASING/ DEPLOYMENT STRATEGY

The Air Force 4th Space Operations Squadron controls the AEHF satellites and communications payloads from Schriever Air Force Base, Colorado.

Evolved Expendable Launch Vehicle | EELV

SPACE SUPERIORITY

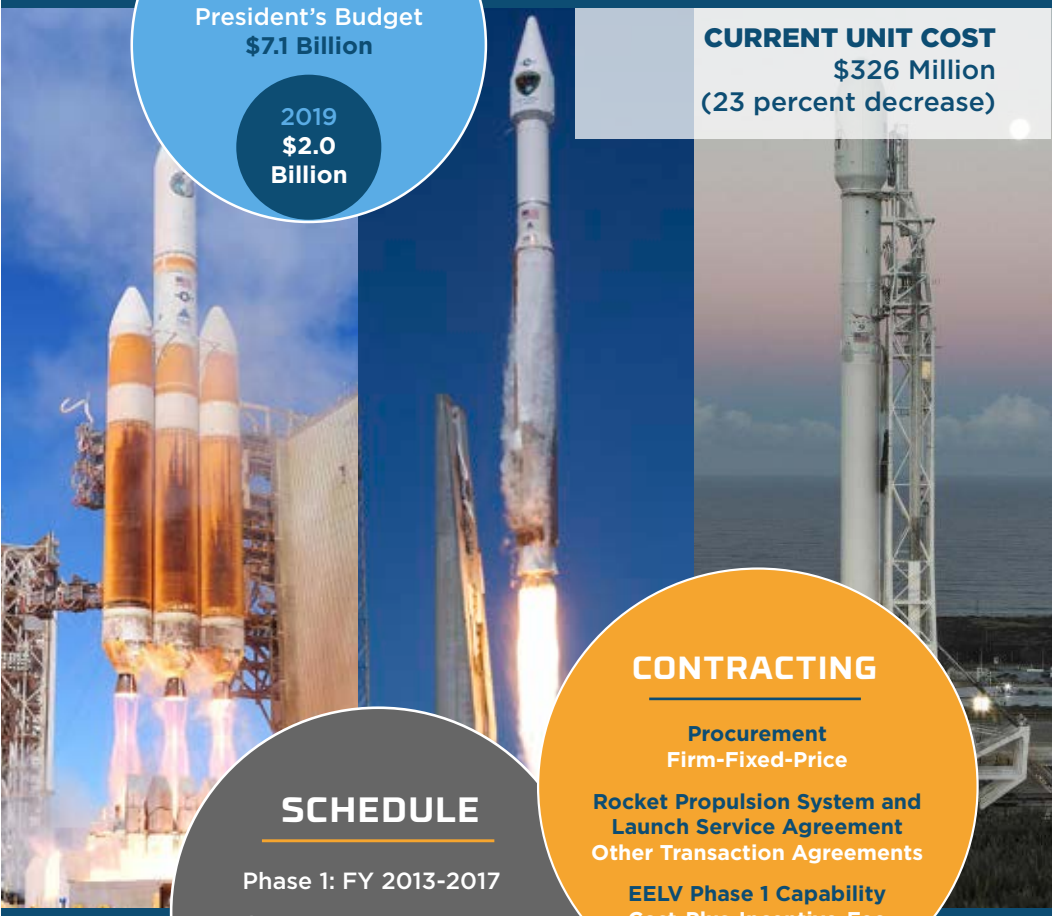
COST

2019 – 2023
President's Budget
$7.1 Billion

2019
$2.0
Billion

ORIGINAL UNIT COST
(2013 - Program Recertification):
$421 Million

CURRENT UNIT COST
$326 Million
(23 percent decrease)



SCHEDULE

Phase 1: FY 2013-2017

Phase 1A: FY 2015-2019

Phase 2: FY 2020 – TBD

(Acquisition strategy not yet approved)

CONTRACTING

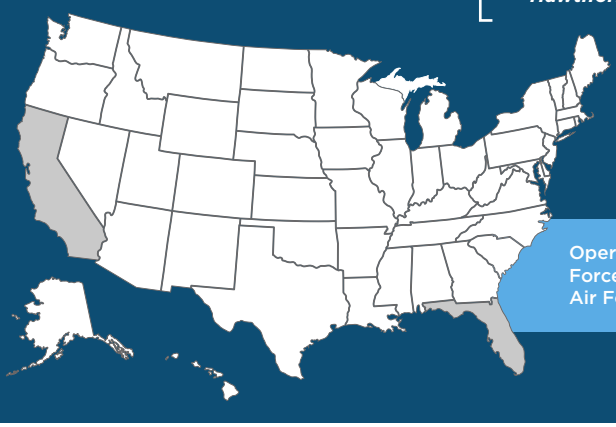
Procurement
Firm-Fixed-Price

Rocket Propulsion System and Launch Service Agreement
Other Transaction Agreements

EELV Phase 1 Capability
Cost-Plus-Incentive-Fee

UNITED LAUNCH ALLIANCE
Denver, Colorado

SPACEX
Hawthorne, California



BASING/ DEPLOYMENT STRATEGY

Operated out of Cape Canaveral Air Force Station, Florida, and Vandenberg Air Force Base, California.

The Evolved Expendable Launch Vehicle program provides space launch services for medium and heavy National Security Space satellites. All 71 NSS launches since 2003 have been successful.

The program's acquisition strategy was amended in November 2016 and is being executed in two parts. The initial strategy established a "Block Buy" requirements-like construct with United Launch Alliance, which provided level unit pricing, resulting in cost savings of $3.6 billion and stabilization of the industrial base. The second phase reintroduced competition into the program. The Air Force continues to transition from a sole-source environment to a competitive environment with two or more launch providers, while maintaining assured access to space.

The Air Force was required to transition off the use of the Russian RD-180 engine. To accomplish that, the Air Force is investing in the development of new launch systems through public-private partnerships, taking advantage of industry's commercial developments and still meeting government standards and requirements. The Air Force awarded cost-sharing agreements to SpaceX, Orbital ATK, Aerojet Rocketdyne and ULA to develop rocket propulsion systems that can be used for future launch systems. The Air Force will fund three providers to develop full launch systems through launch service agreements and ultimately select two providers for next generation of launch service procurements in 2019.

EPS | Enhanced Polar System (Satellite Communications)

Enhanced Polar System payloads provide continuous secure, protected, jam-resistant communications over the northern polar region, north of 65°N latitude. The EPS payloads provide improved capability and more than 26-times the capacity of the legacy polar communications satellites.

The program consists of two on-orbit communications payloads on classified host satellites in highly-elliptical orbits. The two payloads provide 24-hour-a-day coverage over the North Pole. EPS communications capability is scheduled to become operational in fiscal year 2019.

ORIGINAL UNIT COST
$702.2 Million

CURRENT UNIT COST
$694.2 Million
(1 percent decrease)

COST

2019 – 2023
President's Budget
$27.3 Million

2019
$27.3 Million

CONTRACTING

Two Payloads - Classified Host
Cost-Plus-Award-Fee

Control and Planning Segment
Cost-Plus-Incentive-Fee

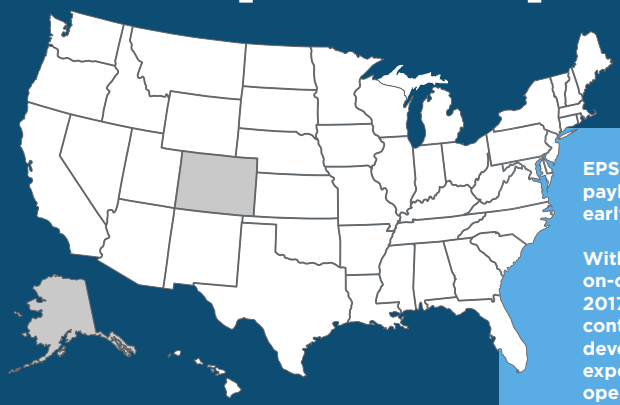
The Gateway
Developed by Navy with Air Force funding

SCHEDULE

Both payloads will be available on time for operational use in June 2018.

NORTHROP GRUMMAN
Redondo Beach, California

BASING/ DEPLOYMENT STRATEGY



EPS will replace the current two-payload Interim Polar System in early fiscal year 2019.

With the conclusion of payload on-orbit testing in December 2017 and the completion of the control and planning segment development, the EPS program is expected to initiate multi-service operational test and evaluation in mid-fiscal year 2018. The program includes the Gateway, a fixed installation at Clear Air Force Station, Alaska, and the control and planning segment, a fixed installation at Schriever Air Force Base, Colorado.

Family of Advanced Beyond Line-of-Sight Terminals

FAB-T

SPACE SUPERIORITY

ORIGINAL UNIT COST
$17.3 Million - CPT
$16.9 Million - FET

CURRENT UNIT COST
$16.4 Million - CPT
$16.7 Million - FET
(5 percent decrease - CPT)
(1 percent decrease - FET)

COST

2019 – 2023
President's Budget
$761.4 Million

2019
$84.4
Million

SCHEDULE

The last estimated date of initial operational capability was December 2019, which is a delay of 6.5 years from the original objective date of June 2013.

CONTRACTING

Development & Production
Firm-Fixed-Price

RAYTHEON
(Development)
Marlborough, Massachusetts

(Production)
Largo, Florida

BASING/ DEPLOYMENT STRATEGY

FAB-T has 84 terminals in airborne, ground-mobile, and ground-fixed configurations. Airborne terminals will be installed on E-4 and E-6 aircraft. Ground-mobile terminals will be installed at geographically-separated locations. Ground-fixed configurations will be deployed to 38 locations worldwide.

The Family of Advanced Beyond Line-of-Sight Terminals program is developing satellite communication terminals designed to survive and operate through a nuclear event, and are essential to maintaining the strategic deterrent of a nuclear weapons system. FAB-T systems are capable of communicating with legacy communications satellites and the new Advanced Extremely High Frequency satellites, using a jam-resistant protected signal that will function after a nuclear detonation. FAB-T systems are interoperable with other Air Force, Army and Navy terminals that also communicate over those satellites.

The FAB-T Command Post Terminals will enable the presidential and national voice conferencing function, provide the command and control link for communications satellites, provide nuclear-survivable communications to strategic users, and relay information for missile warning. The FAB-T CPT will be deployed to fixed sites and mobile command locations worldwide, as well as on E-4 and E-6 aircraft.

The FAB-T Force Element Terminals will provide nuclear-survivable communications for the B-52 and select RC-135 aircraft.

GPS | Global Positioning System III and Follow-On

Global Positioning System III is the next-generation series of satellites of the GPS constellation that provide positioning, navigation and timing capabilities to an unlimited number of military and civilian users across the globe. The GPS III program has been encumbered by multiple technical challenges in satellite development and production. All known issues have been overcome at this point, and GPS III Space Vehicle 1 was declared available-for-launch on Sept. 22, 2017. Expected launch is in 2018.

For the GPS III Follow-On, the Air Force is conducting a full and open competition program. That program will include 22 additional satellites and deliver all of the GPS III baseline capabilities plus higher accuracy with an enhanced anti-jam protection for military users, a redesigned nuclear detonation detection system, a new system to aid search-and-rescue missions and upgraded equipment for commanding and tracking the satellite.

***ORIGINAL UNIT COST**
$519.2 Million

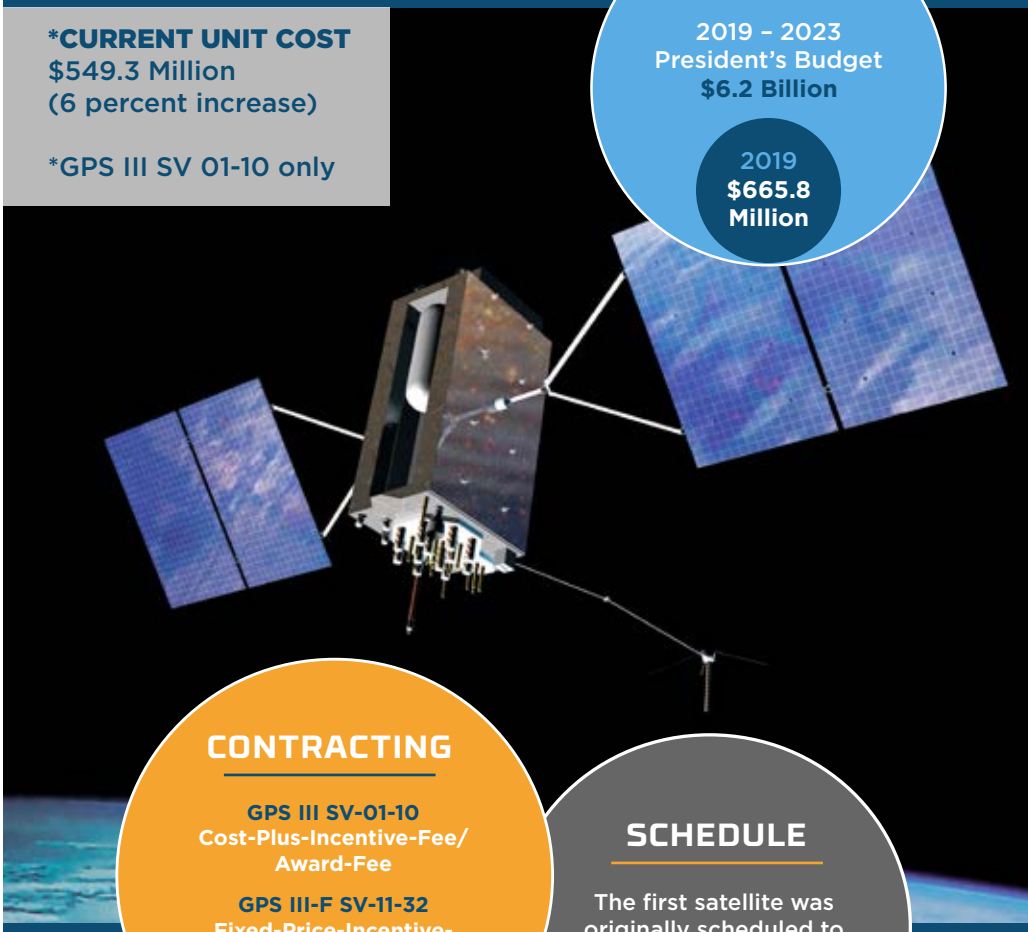
***CURRENT UNIT COST**
$549.3 Million
(6 percent increase)

*GPS III SV 01-10 only

COST

2019 – 2023
President's Budget
$6.2 Billion

2019
$665.8 Million



CONTRACTING

GPS III SV-01-10
Cost-Plus-Incentive-Fee/ Award-Fee

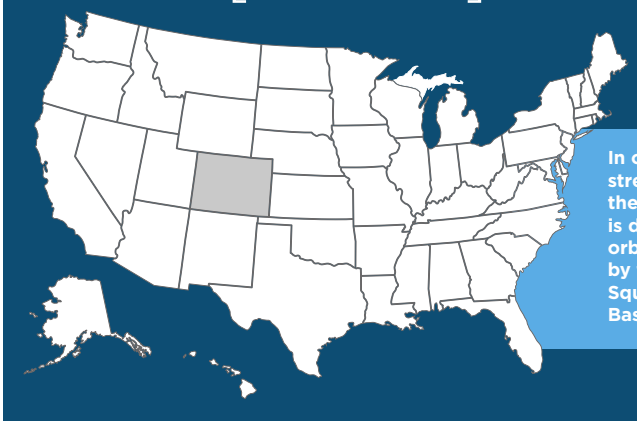
GPS III-F SV-11-32
Fixed-Price-Incentive-Firm-Target
(To be awarded via full and open competition)

LOCKHEED MARTIN
(GPS III SV-01-10)
Denver, Colorado

SCHEDULE

The first satellite was originally scheduled to be available for launch in April 2014, but was delayed 41 months to September 2017.

BASING/ DEPLOYMENT STRATEGY



In order to optimize signal strength and coverage area, the GPS satellite constellation is deployed in a medium-earth orbit. GPS satellites are operated by the 2nd Space Operations Squadron at Schriever Air Force Base, Colorado.

Joint Space Operations Center Mission System | JMS

SPACE SUPERIORITY

COST

2019 – 2023 President's Budget
$94.9 Million

2019
$44.0 Million

ORIGINAL PROGRAM COST
$310.6 Million

CURRENT PROGRAM COST
$454.7 Million
(46 percent increase)

Due to critical change in 2016, program cost was re-baselined in 2017 to $456.1 Million

CONTRACTING

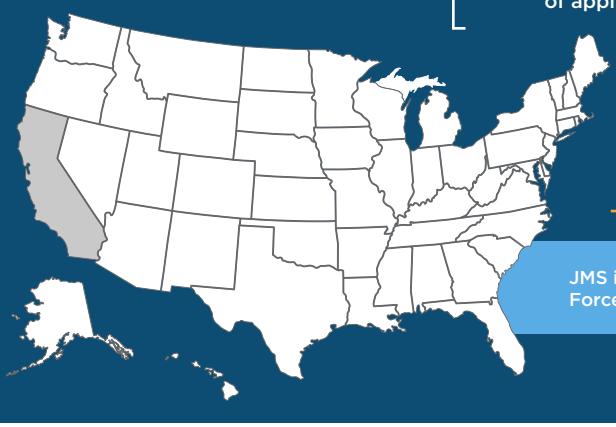
Commercial Software Licenses
AGI Solutions
Firm-Fixed-Price

Engineering Support Hours
a.i. solutions
Firm-Fixed-Price
Level-of-Effort

SCHEDULE

The full deployment decision is currently estimated to be in February 2019, 32 months later than the original estimate of June 2016.

The government is serving as the prime developer and lead integrator of the system of applications.



BASING/ DEPLOYMENT STRATEGY

JMS is located at Vandenberg Air Force Base, California.

The Joint Space Operations Center Mission System is a modernized hardware and software system that will provide real-time integrated space situational awareness. It enables informed, rapid decision-making by the Joint Force Space Component Commander, enhancing the ability to plan, direct, coordinate and control space operations. The JSpOC Mission System adds new capability to the operations center, including a high-accuracy satellite position database with greater capacity, the ability to integrate with non-DoD sensors and data sources, and automated satellite collision avoidance assessment tools.

The Air Force Space and Missile Systems Center is serving as the lead for contract management, and the Navy Space and Naval Warfare Systems Command is serving as the lead systems engineering integrator.

Two companies, AGI and a.i. solutions, are currently on contract to provide commercial software licenses and engineering support. JSpOC Mission System Increment 2 declared a critical change in September 2016 after delays of more than 12 months. As a result of the critical change, one of the planned capability deliveries was canceled and remaining planned capabilities were divided up between the JSpOC Mission System program and the new Enterprise Service Battle Management Command and Control program.

OCX | Next-Generation Operational Control System

The Next Generation Operational Control System replaces the legacy control segment and provides command, control and mission support for all GPS satellites. The OCX system provides greater cybersecurity, critical to the U.S. Armed Forces, the American economy and billions of civilians. The OCX program will enable effective use of the latest military and civil GPS signals, enabling navigation warfare capabilities for the warfighter, and ensuring the Air Force can combat the latest threats.

The OCX program has been troubled since early in the program due to poorly understood cybersecurity requirements, poor contractor systems engineering and incorrect schedule assumptions. In 2016, OCX breached Nunn-McCurdy thresholds for overruns against the current and original baselines. The OCX program was recertified with a 24-month schedule extension; however, in 2017, the Air Force generated an updated estimate, which added nine months to the schedule to reduce risk and address hardware and software obsolescence issues.

The Air Force is investing in modernizing Raytheon software development practices to mitigate the mission impact of the delayed delivery of the OCX capability. The Air Force accepted OCX Block 0 in October 2017, which provides the Air Force a cyber-hardened ground system capable of launching the GPS III satellites and performing initial on-orbit testing.

ORIGINAL UNIT COST
$3.5 Billion

CURRENT UNIT COST
$5.3 Billion
(52 percent increase)

*Program recertified in 2016. We are awaiting approval of re-baseline.

COST

2019 – 2023
President's Budget
$2.0 Billion

2019
$513.2
Million

CONTRACTING

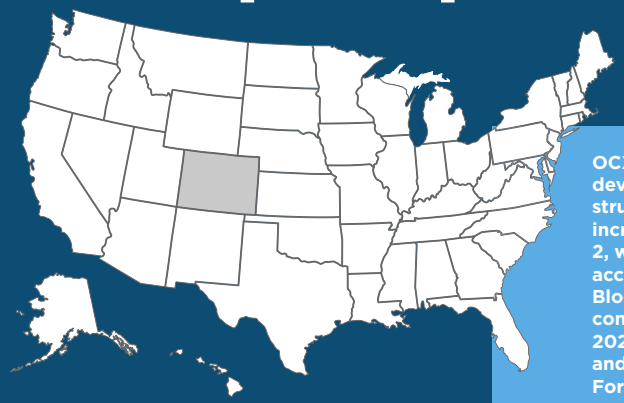
Cost-Plus-Award-Fee/
Incentive-Fee

RAYTHEON
Aurora, Colorado

SCHEDULE

The start of production has been delayed by more than five and a half years, from October 2015 to April 2021, according to the latest estimate.

BASING/ DEPLOYMENT STRATEGY



OCX is a software-intensive development program structured to deliver capability incrementally in Blocks 0, 1 and 2, with two deliveries (Block 0 accepted in October 2017 and Blocks 1 & 2 will be delivered concurrently in Fiscal Year 2022). OCX will be delivered and installed at Schriever Air Force Base, Colorado.

Space-Based Infrared System | SBIRS

SPACE SUPERIORITY

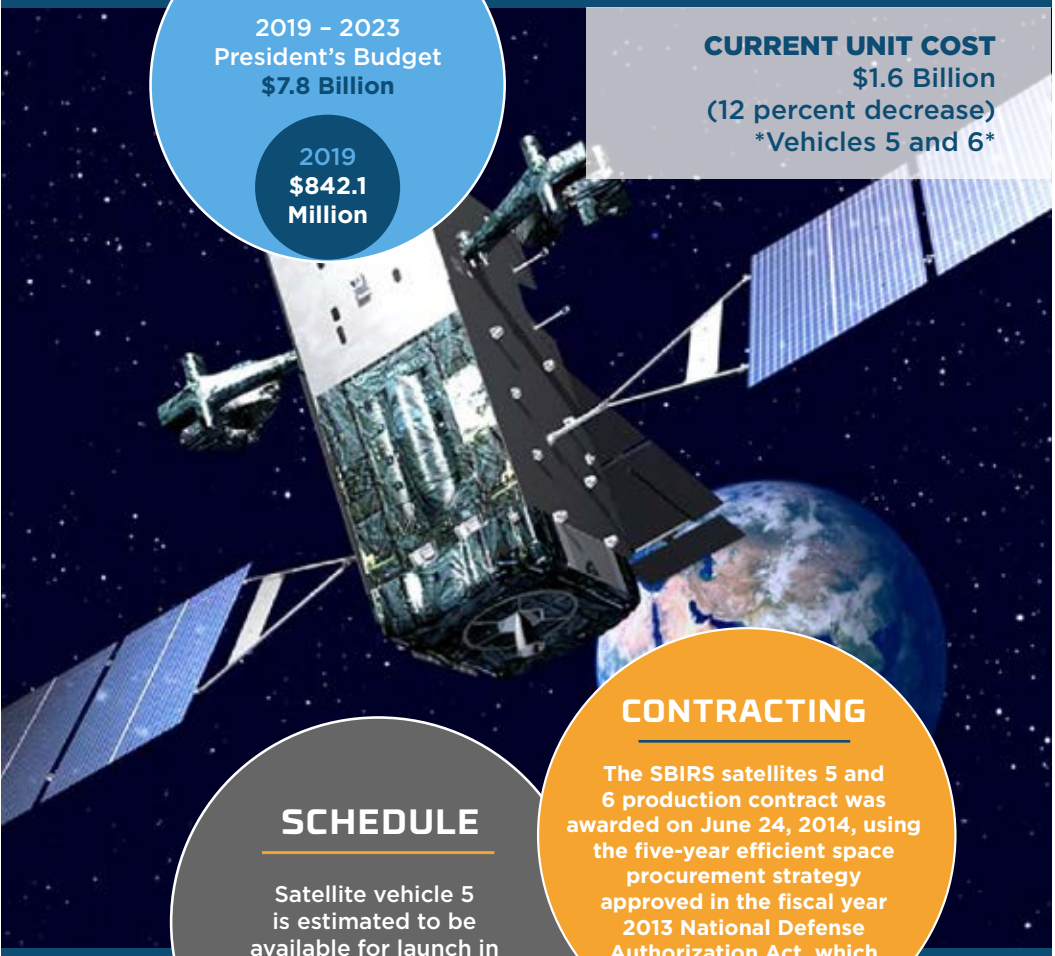
COST

2019 – 2023
President's Budget
$7.8 Billion

2019
$842.1 Million

ORIGINAL UNIT COST
$1.9 Billion

CURRENT UNIT COST
$1.6 Billion
(12 percent decrease)
Vehicles 5 and 6



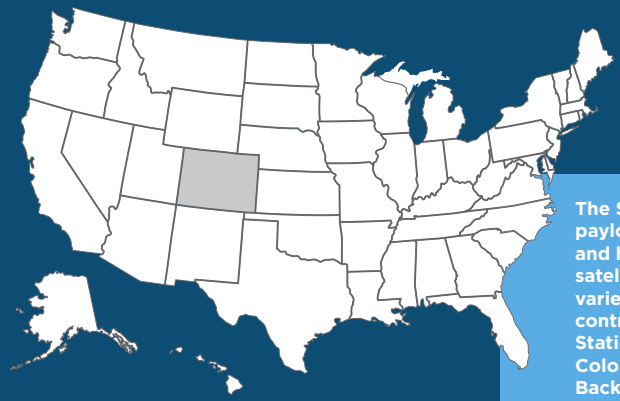
CONTRACTING

The SBIRS satellites 5 and 6 production contract was awarded on June 24, 2014, using the five-year efficient space procurement strategy approved in the fiscal year 2013 National Defense Authorization Act, which saved $521 million.

SCHEDULE

Satellite vehicle 5 is estimated to be available for launch in September 2020, which is one year behind the original schedule of September 2019.

LOCKHEED MARTIN
Sunnyvale, California



BASING/ DEPLOYMENT STRATEGY

The SBIRS constellation includes payloads in both geosynchronous and highly-elliptical orbits. The satellite bus and payloads use a variety of locations for command and control, including: Mission Control Station, Buckley Air Force Base, Colorado; Mission Control Station Backup, Schriever AFB, Colorado; Mobile Ground Stations, Greeley Air National Guard Base, Colorado.

Overseas Locations:
Relay Ground Stations in Australia & United Kingdom

Space-Based Infrared System remains the unblinking eye for ballistic missile warning and defense, battlespace awareness and technical intelligence for the U.S. and its allies. SBIRS satellites and ground systems provide a substantial increase in capability to the warfighters over the legacy missile warning system.

The Air Force is currently updating the SBIRS ground system—the SBIRS Survivable Endurable Evolution system, to utilize the latest on-orbit capabilities to provide endurable missile warning capabilities during a nuclear conflict.

SBIRS Follow-on is the Next-Generation Overhead Persistent Infrared System. Next-Generation OPIR will provide improved strategic missile warning coverage and increased resiliency in a strategically-survivable constellation of geosynchronous satellites and highly-elliptical orbit satellites for polar coverage, using a highly resilient bus with new payloads.

The Next Generation OPIR acquisition strategy is underway to expedite development and fielding. The strategy will make use of rapid authorities to expedite decision-making while mitigating risk on an accelerated timeline.

SPACE FENCE

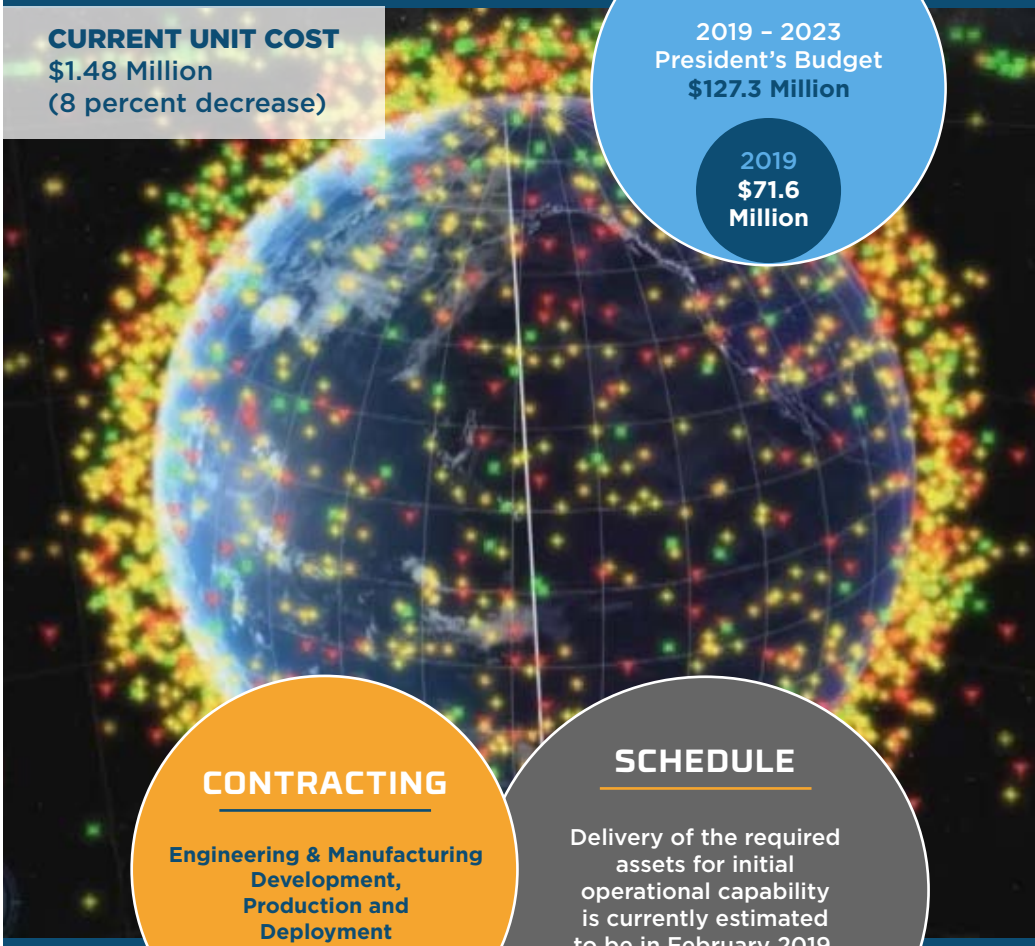
Space Fence is a ground-based radar system that tracks satellites and space debris in Earth's orbit. It provides space flight safety, early detection of potential threats to satellites and situational awareness for manned space flight operators. It is designed to provide assured coverage of low-earth orbit for objects as small as 10 centimeters, and provide a search capability for objects above LEO. Data from Space Fence will continuously feed into the Air Force's tracking database.

Space Fence is a second-generation space surveillance system and will be the most accurate high-capacity radar in the Space Surveillance Network. The increased sensitivity, coupled with the added computing capabilities of the Joint Space Operations Center Mission System, will yield a greater understanding of the space operating environment and associated threats.

Contracts were issued for development and construction in 2014, and Space Fence is expected to be operational in 2019.

ORIGINAL UNIT COST
$1.58 Million

CURRENT UNIT COST
$1.48 Million
(8 percent decrease)



COST

2019 – 2023
President's Budget
$127.3 Million

2019
$71.6 Million

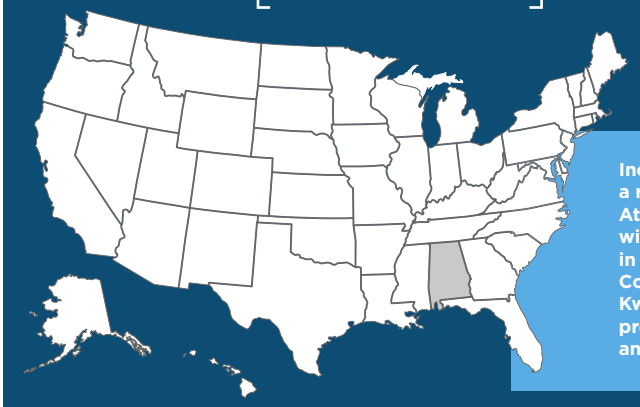
CONTRACTING

Engineering & Manufacturing Development, Production and Deployment Fixed-Price-Incentive-Firm

LOCKHEED MARTIN
Moorestown, New Jersey

SCHEDULE

Delivery of the required assets for initial operational capability is currently estimated to be in February 2019, five months ahead of the originally scheduled date of July 2019.



BASING/ DEPLOYMENT STRATEGY

Increment 1 funding delivers a radar site at Kwajalein Atoll, Marshall Islands, with an operations center in Huntsville, Alabama. Construction commenced on Kwajalein Atoll in 2014, and production of radar hardware and software is underway.

Wideband Global Satellite Communications System | WGS

SPACE SUPERIORITY

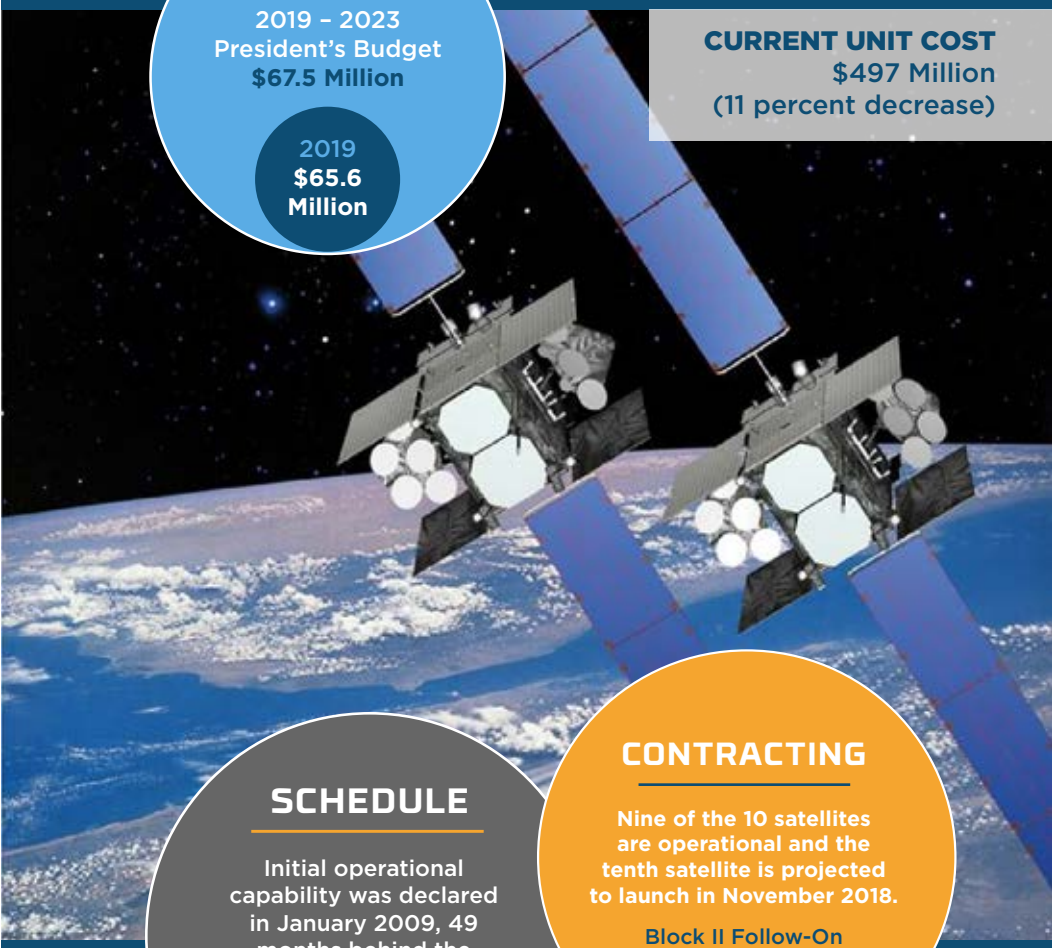
COST

2019 – 2023 President's Budget
$67.5 Million

2019
$65.6 Million

ORIGINAL UNIT COST
$557.8 Million

CURRENT UNIT COST
$497 Million
(11 percent decrease)



SCHEDULE

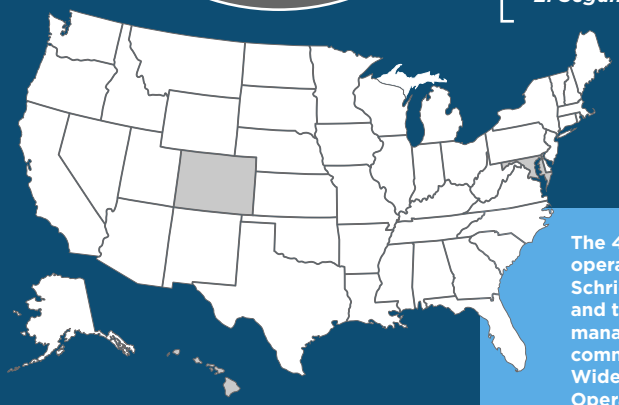
Initial operational capability was declared in January 2009, 49 months behind the originally scheduled date of December 2004. Full operational capability was declared in May 2014.

CONTRACTING

Nine of the 10 satellites are operational and the tenth satellite is projected to launch in November 2018.

Block II Follow-On
(WGS-7 through WGS-10)
Firm-Fixed-Price

BOEING SPACE SYSTEMS
El Segundo, California



BASING/ DEPLOYMENT STRATEGY

The 4th Space Operations Squadron operates the WGS satellites from Schriever Air Force Base, Colorado, and the U.S. Army operates and manages funding for the WGS communications payloads at five Wideband Satellite Communications Operations Centers around the world: Fort Detrick and Fort Meade, Maryland; and Wahiawa, Hawaii.

Overseas Locations:
Landstuhl, Germany, and Okinawa, Japan

Wideband Global Satellite Communications is a system of the highest-capacity communication satellites owned and operated by the DoD. It replaced the Defense Satellite Communications System as the DoD's primary high-data-rate satellite communications system. The deployment of the WGS system exponentially increases the DoD's communication capacity provided by the previous Defense Satellite Communications System. The DoD also uses WGS to deliver the Global Broadcast Service, distributing messages to users across all military services, federal agencies and international partners.

Originally planned as a three-satellite gap-filler system, WGS is now a 10-satellite system and is the backbone of DoD's high-data-rate satellite communication.

Multiple international partners use the WGS system, including Australia, Canada, Denmark, Luxembourg, the Netherlands and New Zealand. Since the launch of WGS-9 in March 2017, Norway and the Czech Republic have also joined the WGS partnership.

EPS-R | Enhanced Polar System Recapitalization

2019 PB:
$383.1 Million

To prevent a military satellite communications gap in the northern polar region, this program will recapitalize the EPS payloads and ground segment. The Air Force is pursuing hosting EPS-R payloads on Space Norway spacecraft, to be launched in late 2022. A sole-source request for proposal for two EPS functional-equivalent payloads was released to Northrop Grumman Aerospace Systems on Nov. 6, 2017. This international partnership has the potential to save the U.S. government $900 million in space vehicles and launch vehicles/services.

ESBMC2 | Enterprise Space Battle Management Command and Control Program

2019 PB:
$48.6 Million

The Enterprise Space Battle Management Command and Control Program will allow the Air Force to command and control space forces by integrating data for operational commanders. It will be an integral tool to help commanders develop courses of action to address threats to critical space assets. ESBMC2 will be entering the Material Development Decision phase in fiscal year 2018, and Milestone A in fiscal year 2019.

GSSAP | Geosynchronous Space Situational Awareness Program

Funding is classified

The Geosynchronous Space Situational Awareness Program currently has four operational satellites on orbit that have been formally accepted by Air Force Space Command. The vehicles are tasked by the National Space Defense Center to characterize resident space objects in geosynchronous earth orbit. All four satellites have the capability to conduct rendezvous proximity operations to fully characterize their targets. This capability is used to collect data to contribute to anomaly and threat analysis as well as satellite catalog maintenance. Vehicles 5 and 6 are on contract and are projected for launch in late fiscal year 2020.

Military Global Positioning System User Equipment Increment 1 | MGUE

Military Global Positioning System User Equipment Increment 1 program is executing three contracts to develop GPS receivers that will use the modernized military code signal broadcast from the GPS satellites. These modernized receivers will deliver significantly-improved capability to counter current and emerging position, navigation and timing threats and enable military operations in GPS-denied and navigation warfare environments where current legacy receiver performance would be compromised. The MGUE Increment 1 program is performing integration and operational testing for the service-nominated lead platforms: the Army Stryker, the Marine Corps Joint Light Tactical Vehicle, the Navy Arleigh Burke Class Destroyer, and the Air Force B-2 Spirit. The Services are then responsible for production and sustainment of the modernized receivers for their individual weapons systems.

2019 PB:
$193.7 Million

Military Global Positioning System User Equipment Increment 2 | MGUE

The MGUE Increment 2 program is progressing through requirements development with the Joint Requirements Oversight Council. MGUE Increment 2 will continue to employ military code receiver technology into additional applications (space receiver, precision-guided munitions and handheld receiver) to meet service requirements. This effort leverages the MGUE Increment 1 technology to the maximum extent while addressing producibility of military code integrated circuits far into the future.

2019 PB:
$93.0 Million

SpRCO | Space Rapid Capabilities Office

2019 PB:
$366.0 Million

In accordance with the fiscal year 2018 National Defense Authorization Act, the Operationally Responsive Space Office is now the Space Rapid Capabilities Office. Its mission is being broadened to expedite developing and fielding operationally focused activities for immediate and near-term needs. Key operating principles include a short and narrow chain of command, overarching programmatic insight and early and prominent warfighter involvement with small integrated operating teams within a single office. The highest priorities of the Space RCO are the development and launch of:

- ORS-5, a U.S. Strategic Command-validated urgent need for space situational awareness (Launched Aug. 26, 2017)
- ORS-6, a Compact Ocean Wind Vector Radiometer technology demonstration (Summer 2018 launch)
- ORS-7, a low-cost automated manufacturing initiative (Summer 2018 launch)
- ORS-8, a USSTRATCOM-validated urgent need for an interim capability addressing weather imagery (Fiscal year 2021 launch)

SPACE-BASED SPACE SURVEILLANCE FOLLOW-ON

The Space-Based Space Surveillance Follow-On program is partnering with the National Reconnaissance Office to satisfy common DoD and intelligence community requirements. Known as Silent Barker, the program will include both the space elements and the telemetry, tracking and command elements. Silent Barker will provide space situational awareness and indications and warning to detect geosynchronous orbit threats. The Silent Barker initial contract was awarded in the first quarter of fiscal year 2018.

2019 PB:
$134.5 Million

Weather System Follow-On | WSF

Weather System Follow-On is a space-based solution to satisfy weather gaps in monitoring ocean surface vector winds and tropical cyclone intensity. It addresses a unique military mission not supported by civil or commercial capabilities. Additionally, an energetic charged particle sensor will be installed to characterize low earth orbit energetic charged particles to aid in the attribution of satellite anomalies. The WSF Microwave objective system contract was awarded to Ball Aerospace in November 2017. The WSF Microwave satellite is estimated to be available for launch in fiscal year 2023.

2019 PB:
$138.1 Million

EVOLVING ACQUISITION

It's no secret that the acquisition process is complicated and, at times, challenging. The Air Force believes opportunities lie within those challenges, which is why the acquisition enterprise is working with Congress to drive business practices into the modern age. The Air Force is using new congressional authorities to delegate decision-making, expand prototyping and experimentation, and use other transaction authorities to streamline processes. Additionally, as a service, the Air Force is concentrating its efforts to speed up the acquisition process with initiatives to shorten the amount of time it takes to award a contract, revolutionize services contracts and reinvent our processes for the development of software-intensive systems. Finally, the acquisition community can't evolve without a highly-skilled and competent workforce. Leaders across the acquisition community are leaning forward to ensure their teams have the right resources, education, training, skills and experience to effectively manage 465 Air Force acquisition programs. This segment of the report focuses on the Air Force's most expensive programs.

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FISCAL YEAR 2017 ACQUISITION ENTERPRISE PERFORMANCE SUMMARY

In fiscal year 2017, the Air Force managed 50 programs in the ACAT I portfolio, of which 31 were in development or production and actively reporting program data against an official baseline. These 31 programs were analyzed for cost and schedule performance throughout the year at an aggregate, or "enterprise," level. The remaining 19 programs were not analyzed because they do not have an official baseline. Of the 42 programs in the ACAT II portfolio, there were 25 that met the same criteria and were analyzed as well. The ACAT III and other programs either did not have sufficient data to perform a yearly analysis, or are not Air Force-led programs (e.g., F-35).

Fiscal year 2017 enterprise results are reported below with comparisons to the trends from recent fiscal years.

Cost data for all programs used in this report has been converted to 2015 dollars to allow for direct comparison of program cost data that was originally reported.

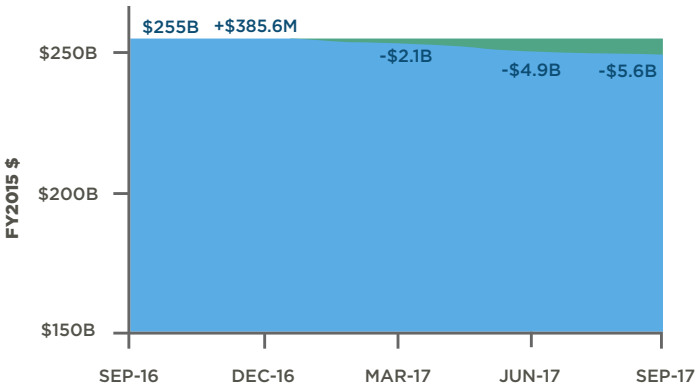
ACAT I | COST PERFORMANCE SUMMARY

Cost performance of the ACAT I enterprise was assessed using two primary measures: an aggregated cost estimate performance and a measure of individual program unit cost performance. Each of these measures indicates information that can be independent of the other measure, as described below:

» **COST ESTIMATE PERFORMANCE:** Changes to program acquisition cost estimates over the year were measured, with all 31 program estimates aggregated together each quarter to measure the increase or decrease of the enterprise-estimated total cost, regardless of changes to any program's baseline.

The aggregate acquisition life cycle cost estimate decreased by $5.6 billion, from $255.6 billion to $250 billion, which represents a 2.2 percent decrease in ACAT I cost growth over fiscal year 2017. The previous five fiscal years have averaged a 1 percent decrease per year in cost estimate growth, therefore, the fiscal year 2017 cost performance maintains a positive trend.

Eighteen of the 31 Air Force programs lowered their estimates, though 12 increased their estimates during fiscal year 2017. The average change to a program's estimate was a reduction of $182 million.

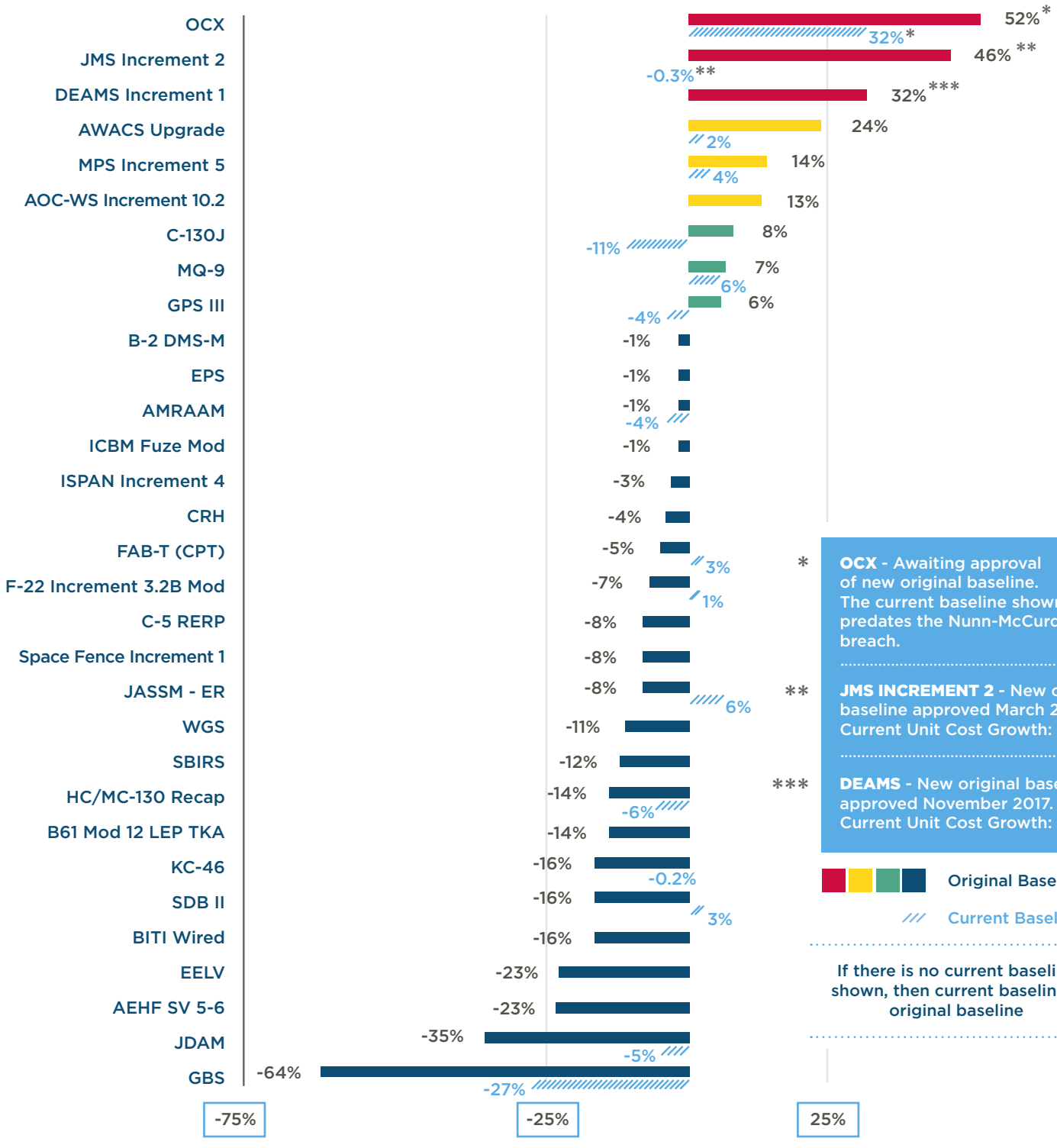


» **UNIT COST PERFORMANCE:** Comparisons were made to the unit cost estimates of a program versus its original and current unit cost baselines. This measure is used in laws like the Nunn-McCurdy Act to monitor program cost growth. Unit costs can be reported in two types: Program Acquisition Unit Cost (includes all development and production costs) and Average Procurement Unit Cost (covers only production dollars/units.) Unit cost numbers in this report will be Program

Acquisition Unit Cost unless otherwise noted. Programs that are automated information systems do not have unit costs, and cost growth was measured at the program level.

Unit cost performance showed improvement during fiscal year 2017. For the 31 reporting programs, the average unit cost at the end of fiscal year 2017 was 2.3 percent below original baselines and 2.1 percent below current baselines. Overall, there are 22 programs (71 percent) with unit/program costs below their original baseline and 25 (81 percent) below 10 percent growth. For current baselines there are 21 programs (68 percent) with costs below their current baseline and 26 (84 percent) below 5 percent growth.

ACAT I UNIT COST GROWTH (Percent) ORIGINAL and CURRENT BASELINE



OCX - Awaiting approval of new original baseline. The current baseline shown predates the Nunn-McCurdy breach.

JMS INCREMENT 2 - New original baseline approved March 2017. Current Unit Cost Growth: -0.3%

DEAMS - New original baseline approved November 2017. Current Unit Cost Growth: 0%

Original Baseline

Current Baseline

If there is no current baseline shown, then current baseline = original baseline

ACAT II | COST PERFORMANCE SUMMARY

The 25 programs analyzed in the ACAT II program portfolio have a current estimated acquisition life cycle cost of $21 billion. In fiscal year 2017 cost increased by $235 million, which represents 1.1 percent annual growth. Six of the 25 ACAT II programs increased their estimates in fiscal year 2017, and one program decreased its estimate. Currently 18 of 25 programs (72 percent) are executing at or below their current program baselines. The average ACAT II unit cost is currently reporting 2.7 percent below baselines, and 16 of 23 (70 percent) are at or below baselines and 21 of 23 (91 percent) are below 5 percent growth. Due to a lack of historical data, ACAT II programs cannot be tracked to their original baselines.

ACAT I | SCHEDULE PERFORMANCE SUMMARY

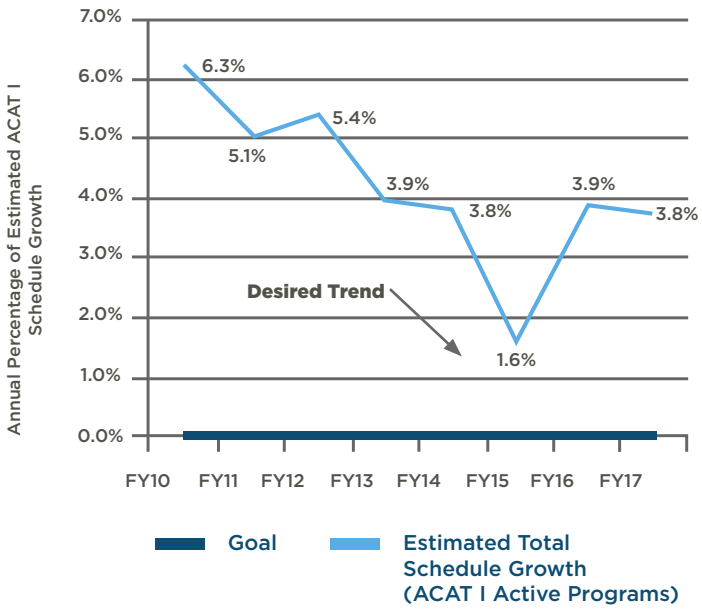
Schedule performance of the ACAT I enterprise was assessed using two primary indicators. schedule growth measures enterprise performance and initial operational capability timeline measures individual program performance, as described below:

» **SCHEDULE GROWTH:** Measures changes to the aggregate schedule of ACAT I programs based upon changes from the milestone start of the program to the final acquisition milestone estimated date. The changes to each program are aggregated to analyze the performance of the ACAT I enterprise.

The same 31 ACAT I programs assessed for cost were assessed for schedule.

The ACAT I enterprise added 93 months to the aggregate schedule in fiscal year 2017, resulting in schedule growth of 3.8 percent. In fiscal year 2016 the rate of growth was 3.9 percent, and the average rate of growth in the last five years is 3.4 percent. There is a general improvement trend since fiscal year 2010. In fiscal year 2017, four programs were able to shorten their overall schedule length. Six programs experienced schedule growth, with two of those growing by more than one year. This means growth in fiscal year 2017 was driven primarily by: Air and Space Operations Center-Weapon System Increment 10.2 and Defense Enterprise Accounting and Management System-Increment 1, which added 83 months combined.

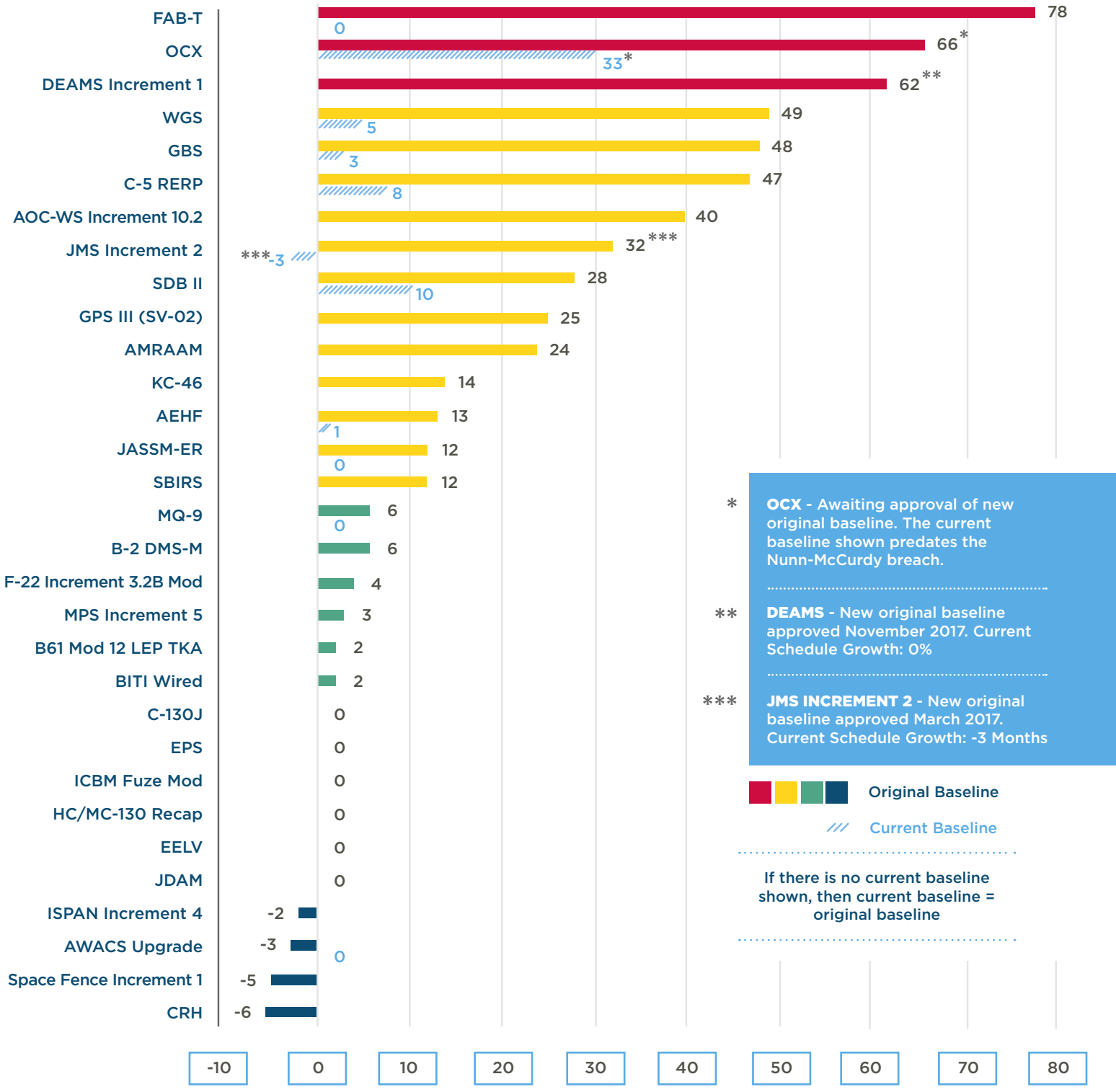
ANNUAL SCHEDULE GROWTH PERFORMANCE



» **INITIAL OPERATIONAL CAPABILITY TIMELINE:** Measures the length of time a program is currently estimating to meet its IOC from its Milestone B versus the length of time the program originally and currently baselined to meet its IOC.

The time it takes to achieve IOC averaged approximately one month of growth in fiscal year 2017. Much like the aggregate enterprise schedule growth, the growth was driven primarily by just a few programs. On average, it is taking all programs approximately one and a half years longer to achieve their IOC than what their originally planned schedules estimated – some finish on time while others can take much longer.

ACAT I IOC SCHEDULE GROWTH (Months) ORIGINAL and CURRENT BASELINE

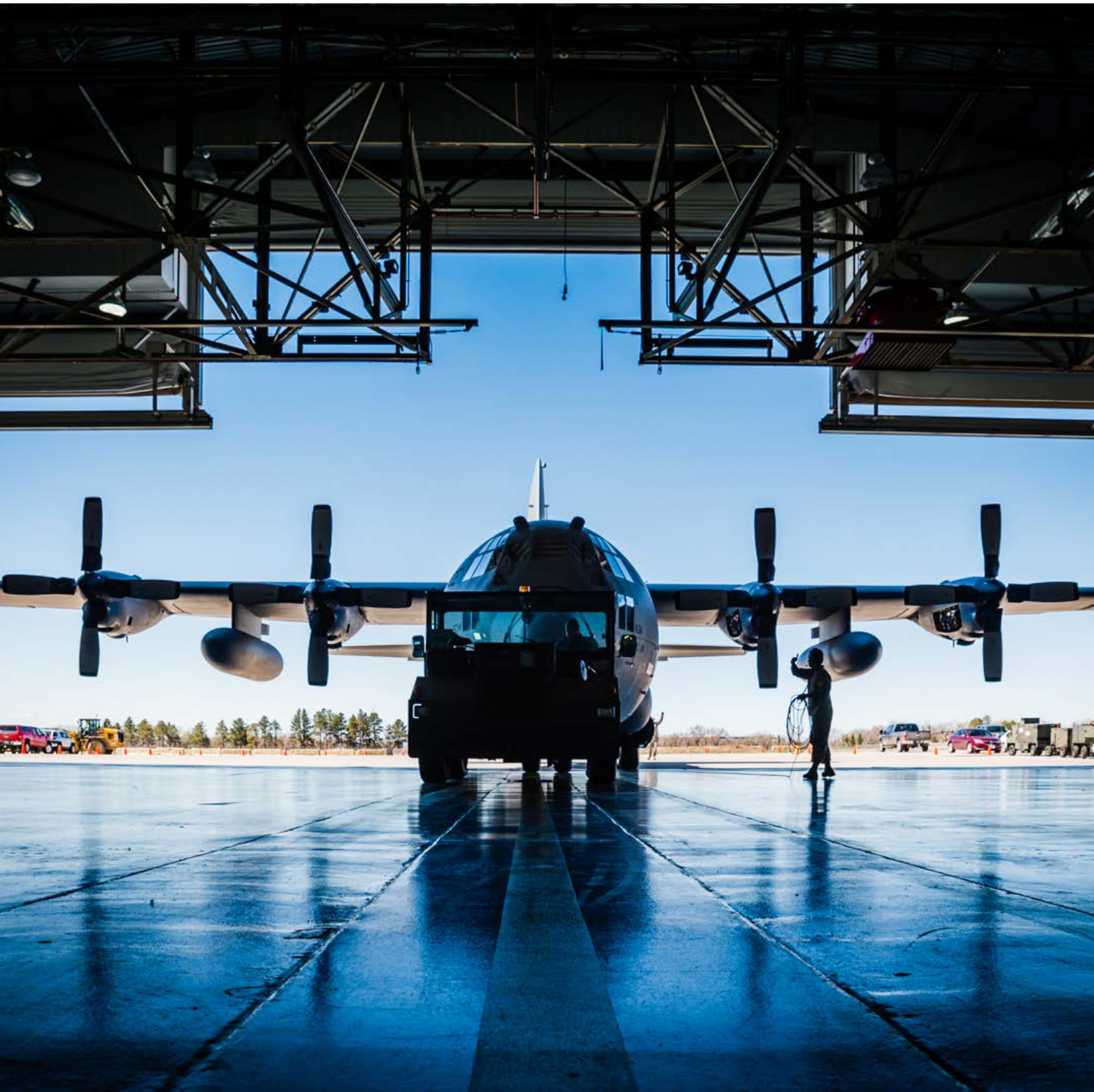


ACAT II | SCHEDULE PERFORMANCE SUMMARY

Overall, the ACAT II portfolio added 69 months of growth during fiscal year 2017, for a growth rate of 4.2 percent. Six programs experienced schedule growth, with two of these programs growing by more than one year. Four in five ACAT II programs (80 percent) are estimating to achieve their next milestone within six months of their baseline date.

ACAT I | TECHNICAL PERFORMANCE SUMMARY

Technical Performance trends remain stable. All ACAT I programs with future IOC milestones are projected to meet their unclassified key performance parameters. Additionally, during fiscal year 2017, no changes to KPP requirements were identified for any unclassified ACAT I programs approved at an electronic Air Force Requirement Oversight Council, a trend that has persisted since 2011. The ACAT II programs do not have sufficient performance parameter data to perform an analysis.



17 ACQUISITION HIGHLIGHTS 2017

1 **F-35 LOW-RATE INITIAL PRODUCTION LOT 10 CONTRACT AWARD** - This award continues to provide the warfighter with the most enhanced fifth generation aircraft to recapitalize our tactical aircraft fleet.

2 **DEFINITIZED SMALL DIAMETER BOMB I LOT 12 UNDEFINITIZED CONTRACT ACTION AND AWARDED LOT 13** - This award procures SDB I weapons to replenish the inventory of this high-demand asset.

3 **ADVANCED PILOT TRAINER (T-X)** - The Air Force received multiple proposals for the aircraft and ground-based training system, bringing us closer to closing training gaps between the T-38C and fourth/fifth generation fighter aircraft capabilities.

4 **PRESIDENTIAL AIRCRAFT RECAPITALIZATION (VC-25B) COMMERCIAL AIRCRAFT CONTRACT AWARD** - This award keeps us on track to modify and test the aircraft to become presidential mission-ready by 2024.

5 **UH-1N REPLACEMENT PROGRAM REQUEST FOR PROPOSAL RELEASED** - This acquisition will replace the fleet of Vietnam-era helicopters with an airframe that addresses current shortfalls.

6 **3-DIMENSIONAL EXPEDITIONARY LONG-RANGE RADAR CRITICAL DESIGN REVIEW** - Awarded an engineering and manufacturing development contract in May 2017 for three radars.

7 **DELEGATED MILESTONE DECISION AUTHORITY OF 10 MAJOR PROGRAMS FROM DOD TO THE AIR FORCE** - Enables a more efficient, rapid and agile acquisition process that will expedite capability delivery of warfighter.

8 **GEOSYNCHRONOUS SPACE SITUATIONAL AWARENESS PROGRAM 3 & 4 OPERATIONAL ACCEPTANCE** - Doubled the space situational awareness capacity in geosynchronous orbit to characterize space threats.

9 **EVOLVED EXPENDABLE LAUNCH VEHICLE LAUNCH SERVICE AGREEMENTS RFP** - Supports development of a future environment to competitively procure launch services from domestic, commercial launch service providers.

10 **9TH WIDEBAND GLOBAL SATCOM LAUNCH** - Successfully launched the ninth satellite under an international partnership. The system distributes weather, air tasking orders, airborne ISR, missile defense, search and rescue and disaster relief data.

11 **LAUNCH OF 4TH SPACE-BASED INFRARED SYSTEM GEOSYNCHRONOUS ORBIT SATELLITE** - Improves the DoD capacity for missile warning, missile defense, battlespace awareness and technical intelligence.

12 **SPACE ENTERPRISE CONSORTIUM OTHER TRANSACTION AGREEMENTS AWARD** - Provides rapid prototyping environment for new space projects, improves space enterprise agility and prepares for a conflict that extends into space.

13 **LIGHT ATTACK EXPERIMENT** - Evaluated military utility and technical/manufacturing feasibility of non-developmental light attack platform industry concepts.

14

GROUND BASED STRATEGIC DETERRENT PROGRAM AWARDED TWO TECHNOLOGY MATURATION AND RISK REDUCTION CONTRACTS - Ensures uninterrupted operational effectiveness to meet the challenges of the global security environment and provides efficient operations, maintenance and security by modernizing critically-aged infrastructure and lowering life cycle costs.

15

LONG RANGE STAND OFF CRUISE MISSILE PROGRAM AWARDED TWO TECHNOLOGY MATURATION & RISK REDUCTION CONTRACTS - Ensures the bomber force can continue to hold high-value targets at risk in an evolving threat environment, to include targets within an anti-access environment.

16

SHOULD-COST SAVINGS $1.8 BILLION - Should-Cost is the concept that program managers should strive to set cost targets below independent cost estimates or program office estimates, and manage with the intent to achieve them. All Air Force Acquisition programs are required to have at least one Should-Cost initiative, which is a discrete action and strategy to achieve reduced programmatic cost.

17

AWARDED KC-46 LOW-RATE INITIAL PRODUCTION LOT 3 CONTRACT TO PRODUCE 15 AIRCRAFT - The KC-46A is the first step in recapitalizing an aging tanker fleet.

I am focused on how you connect different capabilities in new ways. Because the reality of our Air Force of the future is, it's going to be both old and new.

General David Goldfein
Air Force Chief of Staff

EVOLVING ACQUISITION

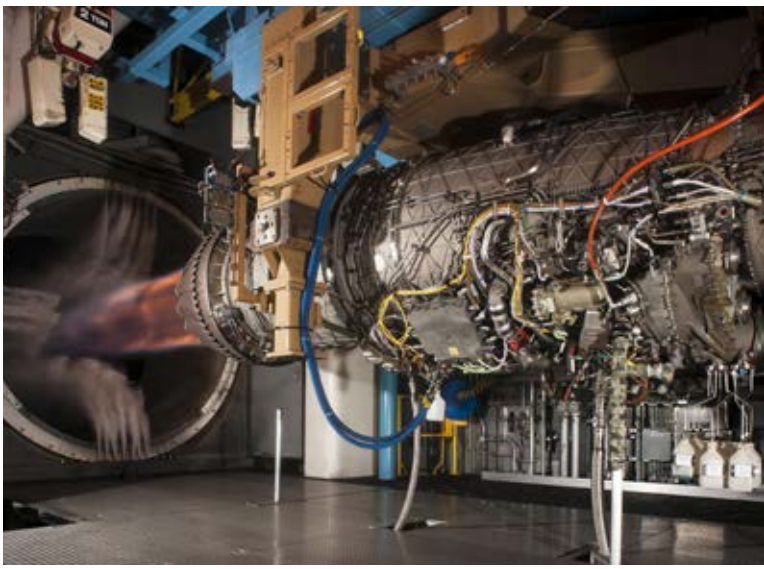
The acquisition enterprise is currently optimized for industrial-age procurement of large weapons systems with extensive requirement development, military specifications and long acquisition timelines. The rapid development of our adversaries is driving us to change the way we modernize the force. The Air Force is changing culture to focus on innovation, speed and risk acceptance while meeting cost, schedule and performance metrics. There is still much to do, but the following areas describe a snapshot of some of our ongoing initiatives.

AUTHORITIES

The Congressional authorities provided to date are producing results. The Air Force has more authority and accountability in the execution of major programs and is driving decision authorities to the lowest levels possible to shorten coordination and approval timelines. Expanded authorities for prototyping and experimentation have allowed the Air Force to quickly identify and develop capabilities that meet warfighter requirements, and provide program off-ramps to quickly incorporate technology breakthroughs or cancel efforts that don't work. The Air Force is using Other Transaction Authority agreements to expand the involvement of non-traditional contractors and encourage their ability to bring advanced technologies from the commercial market into the Air Force.

SPEEDING ACQUISITION

Over the past few years, the acquisition community has implemented more than 100 unique initiatives to speed up acquisitions. All aspects of the enterprise are being improved—contracting, training, technical skills, scheduling, cost accounting, technology, research, manufacturing and logistics. There have been significant improvements in shortening the timeline to award sole-source contracts valued from $50 million to $500 million, and the Air Force has reaped huge benefits in contracting for services. Development and deployment of software-intensive systems has been a major focus, and we are migrating our processes to align with modern industry practices and standards through the use of agile software development and open architecture.



ACQUISITION WORKFORCE

Our need for skilled and innovative acquisition professionals to execute these numerous initiatives has never been greater. To meet future challenges, we need to continue sizing the acquisition workforce based on program requirements and required technical competencies. A balance of military and civilian personnel, augmented by a cadre of support contractors, is needed to execute and oversee technology development, acquisition and sustainment programs. Through our continued refinement of the Acquisition and Sustainment Unit Manpower models and Strategic Resource Management work conducted within the Air Force Life Cycle Management Center, we will improve our efforts to provide an appropriately sized and skilled acquisition workforce.

DELEGATION OF AUTHORITIES

Over the past two years, Congress has directed that more programs be delegated to the Air Force service acquisition executive level. In the fiscal year 2016 National Defense Authorization Act, Section 825 made the SAE the milestone decision authority for major defense acquisition programs that reach Milestone A after Oct. 1, 2016, unless the Secretary of Defense designates another official as the milestone decision authority.

In October 2015, only 19 of 49 Air Force Acquisition Category I/IA programs had their milestone decision authority at the Air Force SAE level. Based on the recently approved requests for delegation from the defense acquisition executive and those programs given to the Air Force under Section 825, the Air Force SAE is now the milestone decision authority for 39 of 51 Acquisition Category I/IA programs.

> "In 2015, only 39 percent of the largest Air Force programs were managed by the Air Force. The rest required approval at the Office of the Secretary of Defense level. Thanks to action by Congress to speed up acquisition, that is changing. The Air Force now manages 76 percent of our largest programs.
>
> *Heather Wilson*
> *Secretary of the Air Force*

Additionally, the Air Force has made a push of milestone decision authority down to the program executive officers for Acquisition Category II programs and to the deputy program executive officers or program directors for Acquisition Category III programs. As of Nov. 30, 2017, all Acquisition Category II programs have been delegated to the program executive officers and 274 of 376 Acquisition Category III programs have been delegated to the deputy program executive officers or O-6/NH-IV level program directors.

This authority speeds up both the decision process and delivery of the capability to the warfighter.

PROGRAM DELEGATIONS BY YEAR

ACAT I	Oct 2015	Oct 2017	Nov 30, 2017
ACAT ID/IAM (DoD)	30	20	12
ACAT IC/IB/IAC (AF)	19	31	39
TOTAL	49	51	51

ACAT II	43 of 43 delegated from service acquisition executive to program executive officer
ACAT III	274 of 376 delegated from program executive officer to deputy program executive officer or O-6 level program directors

WEATHER SYSTEM FOLLOW-ON

Weather System Follow-on was among the first of the programs delegated to the Air Force under this authority. The program achieved a notable one-year path from strategy approval to contract award and it is now a benchmark for other delegated programs. The acquisition strategy was signed in October 2016, the RFP for the Microwave Satellite System was released in January 2017, and the contract was awarded in early November 2017.

GPS III FOLLOW-ON

The Air Force recently received authority for the **GPS III Follow-On** production program. Within a week of delegation authority, the service acquisition executive held the decision meeting for approval of the acquisition strategy and review of the request for proposal. Without this authority, the Air Force would have spent weeks preparing for an Office of the Secretary of Defense-level review before the decision would be made. This authority likely saved several months associated with this decision alone.

PROTOTYPING

The increased use of prototyping to demonstrate and expand the art-of-the-possible is fundamental to improving acquisition outcomes. The Air Force must learn fast, and prototyping jumpstarts the process, giving people a better idea of the art of the possible early on. In concert with experimentation, prototyping is an essential mechanism to accelerate the introduction of advanced, game-changing capabilities necessary to build the future Air Force.

Prototyping can mean relatively small and low-cost efforts to rapidly prove a concept or demonstrate feasibility. Prototyping can also involve longer and larger demonstrations,

perhaps of experimental aircraft or space vehicles. No matter where we are in the acquisition life cycle, prototyping is an essential tool to get the requirements right, inform critical decisions on operational utility, evaluate technical feasibility, and to expedite fielding of needed capabilities to the warfighter. One of the biggest advantages of prototyping is the ability to refine requirements for novel systems by testing the art of the possible and thinking about its cost and benefits before a lengthy requirements process. We believe this effort has the potential to save time and provide better assessments of cost and capability before a formal program starts.

It's important to keep in mind that the greater the risk, the greater the reward. Not all prototypes will prove feasible or demonstrate a useful military capability. If every prototype we develop is fielded, then we are not taking the risks necessary to provide game-changing capabilities to the joint warfighter. Prototyping is a learning opportunity to understand the operational utility and technical feasibility of a new concept or technology, while avoiding the pitfalls of entering a lengthy formal acquisition program without the requisite knowledge of performance trade-offs and technical and programmatic risks.

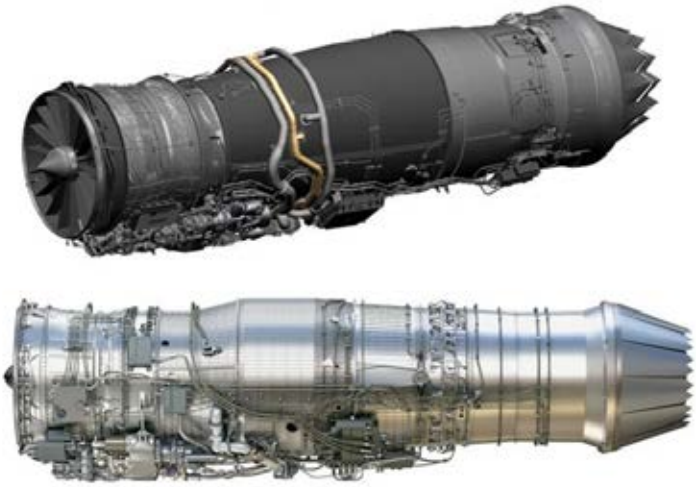
> Prototyping efforts in the short-term enable faster acquisition programs in the long-term

Going forward, the Air Force will seek to institutionalize prototyping as a common practice in Air Force procurement, increasing the number of programs that start as prototypes.

ADAPTIVE ENGINE TRANSITION PROGRAM

The **Adaptive Engine Transition Program** is an example of a large prototype effort. Adaptive engines will be the foundation for all future combat aircraft through a revolutionary new architecture and increased performance.

Benefits of AETP include a 25-percent increase in fuel efficiency and an increase in thrust across the entire flight regime, while also providing additional cooling for onboard electronics. Since the June 2016 contracts were awarded, both contractors are finalizing their detailed designs in preparation for fabricating multiple flight-ready engines in 2018.



F-15 COCKPIT PRESSURE MONITORING/ WARNING SYSTEM

Following a spike in F-15 physiological incidents, the Air Force put together a small cross-functional team to research the situation. One of their initial recommendations called for the development of a cockpit pressure-monitoring/warning system.

In close coordination with aircrew, the team built the system prototype, completed chamber testing and are now executing flight test. The system provides an audible warning for aircrew when the cockpit pressure is lower than the pressure required for aircrew safety, which will further increase pilot confidence in the aircraft.

This effort is on target to go from requirement to first fielding in 17 months. We estimate a fix two years earlier than if the Air Force had followed the traditional acquisition process. The novel way the Air Force accomplished this effort will get the capability in the cockpit much faster than the traditional acquisition process.

While this effort isn't a major acquisition program – less than $20 million – there are lessons to be applied to other efforts, large and small. The Air Force is sharing this success, and others like it, across the acquisition enterprise to identify similar opportunities.

EXPERIMENTATION

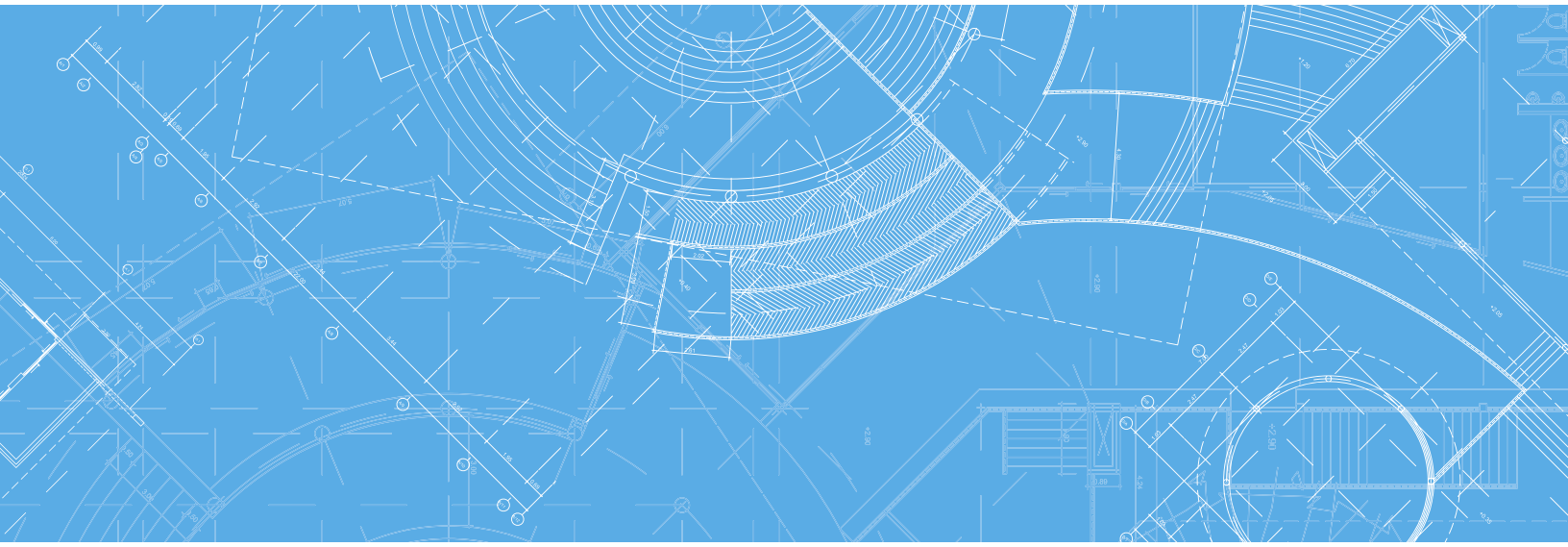
Experimentation is a means to stimulate innovation and new thinking about future ways of warfighting and alternative ways to succeed on the battlefield. It works hand-in-glove with prototyping. At its core, experimentation involves asking the right questions with regard to what capabilities are necessary to cause an increase in military effectiveness in future warfare and generating the credible empirical data to answer those questions.

Experimentation allows for the unfettered exploration of alternatives in future environments and engages operators, engineers, program managers and others, collaborating from beginning to end in a truly integrated fashion. It may involve using existing systems in new ways, through changes in tactics, techniques and procedures, or in new combinations with other systems and enabling technologies.

Experimentation is a cyclical activity in which the investigation of various capabilities and their operational utility is conducted in increasingly realistic and demanding environments until an appropriate level of confidence is achieved to take the necessary steps to field a deployable capability. It is a means to rapidly and efficiently explore uncertain futures whether emanating from the emergence of disruptive technology, new capabilities using existing systems and technologies in a new way, or the evolution of security threats from anywhere across the world.

In late 2016, the Air Force stood up its Strategic Development Planning and Experimentation office at Wright-Patterson Air Force Base, Ohio, to plan, manage and execute strategic development planning and warfighting experimentation campaigns and facilitate collaboration among operational warfighters and doctrine experts. In 2017, the Air Force SDPE office designed and managed four experimentation campaigns: Data to Decisions, Defeat of Agile Intelligent Targets, Light Attack Experimentation and Directed Energy Experimentation.

In 2018, the Air Force will review how it is managing experimentation to ensure that it is deployed widely and appropriately across all Air Force missions.



DIRECTED ENERGY EXPERIMENTATION

The Air Force is using experimentation to help move high-energy laser and high-power microwave technologies from the laboratory into operational capabilities for the warfighter.

Since directed energy weapons are significantly different from existing weapons, experimentation is helping the Air Force identify and address challenges in the areas of doctrine, organization, training, materiel, leadership and education, personnel, facilities and policy.

The Air Force's directed energy experimentation effort in 2016 highlighted the need for an enterprise-wide plan to chart the path to operationalized capabilities. Over the course of a year, a team of subject-matter experts from across the science and technology, acquisition, engineering, test, logistics and operational communities developed the Air Force Directed Energy Weapons Flight Plan, signed and released in May 2017.

The Air Force is now executing a **Directed Energy Experimentation** campaign guided by this flight plan to explore a range of directed energy-enabled concepts. The experimentation campaign is exploring the interplay of technologies, concepts of operation, and doctrine, in close collaboration with operators and technologists, which together will enable specific actions necessary to accelerate their maturation and fielding.

LIGHT ATTACK EXPERIMENT

The **Light Attack Experiment**, held at Holloman Air Force Base, New Mexico, in August 2017, was a return to a successful process last used in the Vietnam era.

A mere five months after receiving execution authority from the Air Force Chief of Staff, and using funds appropriated specifically for experimentation, the Air Force brought three major commands together with industry partners, to execute a month-long, live-fly experiment focused on light attack aircraft.

A one-page open invitation was issued to industry, with a four-page list of desired aircraft characteristics and an explanation of the nature of the experiment.

Several companies responded, and the Air Force selected four aircraft from three companies to participate.

Leaving room for opportunities not envisioned in the original invitation, the criteria were broadened to ensure that the Air Force did not reject credible candidates and thereby miss unanticipated learning opportunities.

OTHER TRANSACTION AUTHORITY

In the fiscal year 2016 National Defense Authorization Act, Congress gave the Air Force more flexibility to sign simpler contracts with industry so that the Air Force could benefit from technologies developed by companies who would otherwise be unlikely to work with the government.

We are implementing other transaction authority agreements across a broad range of research and prototype projects, in order to reduce barriers for industry wanting to do business with the government. This authority further streamlines transition from research and development to production.

SPACE ENTERPRISE CONSORTIUM

The Space and Missile Systems Center recently used an OTA to establish the **Space Enterprise Consortium.** The consortium has a $100 million ceiling to focus on space, ground, launch, propulsion and communication, and to develop prototypes to rapidly support warfighting in a contested space domain.

Other notable OTA agreements include the **Rapid Acquisition Launch Initiative**, the **Propulsion Consortium** and **Evolved Expendable Launch Vehicle Rocket Propulsion System** prototype development effort.

Going forward, the Air Force expects to expand the use of this tool to work with highly-innovative companies.

LIGHT ATTACK EXPERIMENT

The **Light Attack Experiment**, which assessed the capability of commercial aircraft for combat employment, was conducted via an OTA agreement.

OPEN SYSTEM ACQUISITION INITIATIVE CONSORTIUM

Air Force Research Laboratory established the **Open System Acquisition Initiative Consortium** with $99 million in funding to develop "plug-and-play" technologies and prototype tools for command, control, communications, and cyber intelligence surveillance and reconnaissance information systems.

SPEEDING UP ACQUISITION

To meet emerging threats, the Air Force has begun to change our policies, processes and culture to emphasize the importance of speed. Program decision authority has been delegated to the lowest appropriate levels, resulting in streamlined programmatic and contracting processes. The Air Force is tailoring acquisition processes to fit specific programs and systematically eliminating unneeded steps. Additionally, we have launched a Rapid Procurement Charter, which implements short chains of command, early and prominent warfighter involvement, combined developmental and operational testing, and streamlined documentation to expedite fielding.

SPEEDING SMALL ACQUISITIONS

On April 20, 2016, the commander of Air Force Materiel Command and the program executive officer for agile combat support, at the request of the Air Force Chief of Staff, suggested policy and legislative changes to speed acquisition on smaller programs using some of the techniques developed by Special Operations Command.

These suggestions cross multiple functional areas and were based on inputs from current and past program executive officers. In many cases, "small" programs with little risk were being treated as "big" programs with high risk, therefore they were having to go through the same processes. Of the 22 ideas, 17 have been closed through policy actions, delegation memos, elimination of redundant, unnecessary reviews, or without action after further consideration. The remaining five are still in work and expect to be resolved by 2020.

In Work | Complete | Closed (no action)

IDEA	STATUS
Business clearance authority back to program manager	2QCY18
Eliminate multi functional-review teams	2QCY17
Lower delegation of Acquisition Category III milestone decision authority	3QCY16
Raise low-cost modification threshold to $5M/year	3QCY18
Streamline should-cost status reporting	2QCY16
Reduce reviews	2QCY17
Refine definition of "data center"	4QCY16
Reduce unbounded zeal for small business	4QCY16
Modify statute to exclude special purpose processing nodes	2QCY17
Revise and streamline Air Force Instruction 63-101/20-101 *Integrated Life Cycle Management*	2QCY17
Understand 3rd-and 4th-order effects	2QCY16

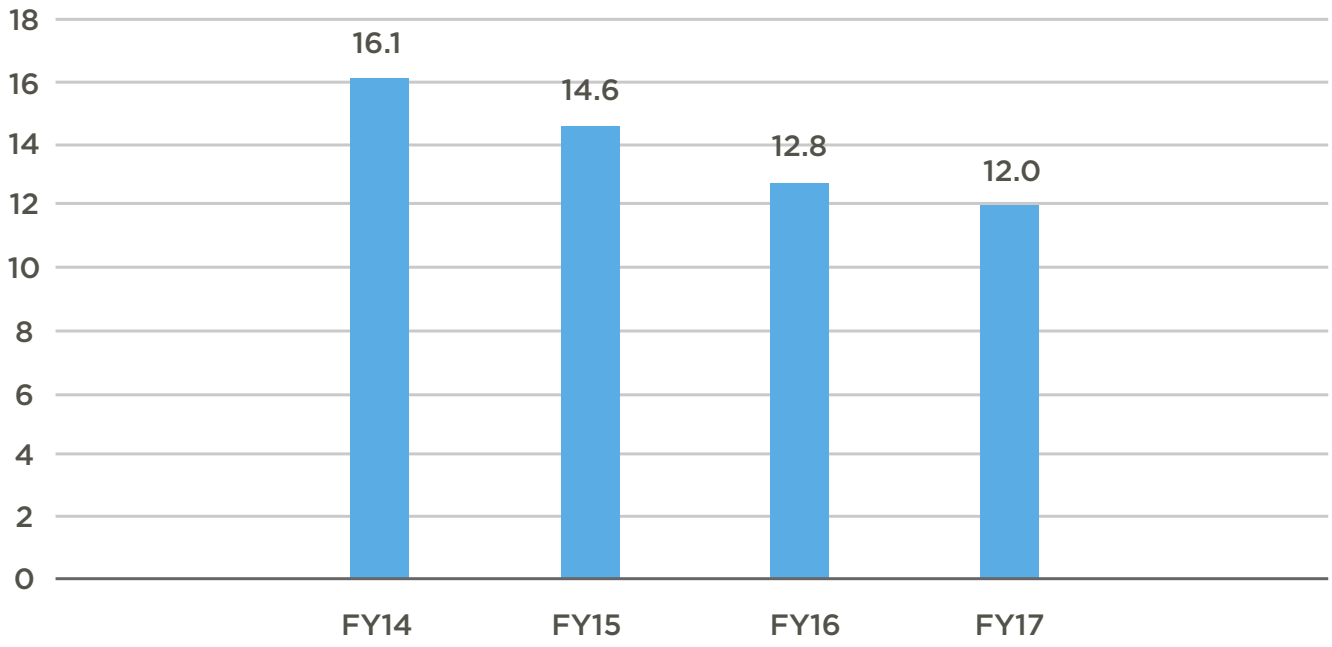
IDEA	STATUS
Strategically manage acquisition resources	4QCY18
Contracting officers/program managers cross-experience or dual-hat	4QCY20
Allow program executive officers to forecast small business goals	1QCY18
Legislation addressing contractors and protests	4QCY16
Change budget document structure/scope to allow more flexibility during year of execution	1QCY17
'Pool' program element and budget codes	4QCY17
Eliminate requirements approval document for embedded services	2QCY17
Incorporate 'combat evaluation'	2QCY16
Eliminate peer reviews	2QCY16
Adjust mandated small business goals; give credit for small business contracted under large business prime	2QCY16
Make acquisition performance baselines optional for Acquisition Category III programs	2QCY16

CONTRACTING TIMELINES

Since fiscal year 2014, Air Force Acquisition has tracked and analyzed award timelines, from release of requests for proposal to contract award, for sole-source contracts. Initial review of collected data found that, on average, two-thirds of the 'to award' acquisition schedule consisted of two factors: waiting to receive a qualifying proposal from industry and the government's technical evaluation. To help reduce this timeline, Air Force Acquisition implemented a select number of 'best practices' from program executive offices. These best practices included the use of a draft RFP to industry, coordination with the Defense Contract Management Agency and Defense Contract Audit Agency prior to RFP release, and technical evaluation training before receipt of proposal. Since implementing these few best practices, Air Force Acquisition has been successful in reducing the timeframe from RFP release to award for sole-source contracts, ranging from $50 million to $500 million, from an average of 16.1 months in fiscal year 2014 to an average of 12 months in fiscal year 2017. The Air Force continues to identify and implement best practices to reduce the overall time to award a contract.

REQUEST FOR PROPOSAL TO AWARD TIMELINE

Sole-Source Contracts, $50 Million - $500 Million
(Average time in months)



CONTRACTING FOR SERVICES

The Air Force has seen significant improvements in the governance, management, oversight and execution of the $27 billion spent annually on services acquisition. Since 2008, the program executive officer for combat and mission support has developed and used a services acquisition model centered on the mission/requirement owners, which involves four pillars: define the right requirements, involve people, develop processes, and ensure responsibility/accountability. As requirements are defined, services acquired and contracts executed, the Air Force has adopted a continuous feedback loop to build off the advances made, apply critical thinking and pick the right acquisition strategies and sources, while creating a learning environment to keep on improving the tradecraft of services acquisition. Key tenets include: (1) ensuring mission owners are deeply involved in the requirements, acquisition and execution phases, (2) providing transparency on individual acquisitions and organizational processes, (3) growing and educating the services acquisition workforce.

This year, the Air Force conducted its second annual enterprise review of services acquisitions. Aligned along their missions, each major command, each program executive officer, and Headquarters Air Force reviewed their programs and processes to improve effectiveness and find efficiencies. Savings achieved by these organizations are kept by them for use on unfunded mission essential activities. Due to positive feedback, the Air Force is beginning to address this in the intelligence and classified communities as well.

The program executive officer for combat and mission support revised the Air Force Instruction this year to capture the reviews and improve guidance to the workforce. The right authorities and delegations have been identified, and the Air Force has seen commitment from senior leaders to own their requirements and solutions. The Air Force is seeing improvements in acquisition strategies, including the use of enterprise contracts like the General Services Administration's One Acquisition Solution for Integrated Services, where the Air Force led the way and is the predominant user. The Air Force is developing several internal enterprise vehicles like Adversary Air, for aggressor training, and precision measurement equipment support.

After a five-year gap, the program executive officer for combat and mission support resurrected the services acquisition workshop, pulling together more than 350 personnel from the workforce to collaborate and share on how to improve our programs and processes. The participants, who ranged from squadron-level to headquarters staff, gained insight into headquarters and Congressional policies and objectives, evaluated various acquisition approaches for their requirements and examined training opportunities for their workforce.

AGILE DEVELOPMENT OPERATIONS

For years, the Air Force and Department of Defense software development process has relied on a sequential design process, or 'waterfall,' where we created and locked down a set of up-front requirements, crafted a design, built and tested that design, and then deployed a capability. Each step needed to be complete before you proceeded to the next phase, often with undesirable cost and schedule growth. That process is antiquated and based on 1970s software paradigms, but we have continued to use it even though requirements and responsiveness are more demanding today than ever.

The Air Force is beginning to use Agile DevOps to improve efficiency and timeliness to field software.

To reap these efficiencies, the Air Force is:

- Teaming with industry experts and partners who understand how to apply agile processes in rigid statutory and regulatory environments
- Realigning traditional design reviews for more repetitive and shorter reviews
- Encouraging parallel activities
- Adopting simplified requirements to assist collaborative development and give flexibility
- Embracing automation to better enforce governance, reduce human error and promote higher consistency
- Applying "rolling authority-to-operate" to align with modern security practices
- Adopting continuous monitoring and accreditation

While success has been seen, significant issues persist. Traditional DoD processes for requirements generation and approval, financial management, cost estimation, reporting and testing are not aligned with Agile DevOps and commercial software development practices.

> "Software is at the heart of what we do. We must field rapid software increments to improve weapon system sustainability and warfighter effectiveness through repeatable, cost-effective, agile processes.
>
> *General Ellen Pawlikowski*
> *Commander, Air Force Materiel Command*

AIR AND SPACE OPERATIONS CENTER PATHFINDER

The **Air and Space Operations Center Pathfinder** is working with Air Force Digital Services and Defense Innovation Unit Experimental, or DIUx, to embrace industry best practices to establish a software delivery pipeline and deliver dynamic targeting capability within one calendar year. In addition to delivering dynamic targeting, this effort aims to demonstrate a set of processes that allow for the continuous delivery of capabilities. The team is working with users to establish requirements, using test-to-drive development, and continuously delivering capability to the air operations center at Al Udeid Air Base, United Arab Emirates. As part of this Pathfinder effort, the team will document requisite changes to existing policies and/or regulations. The team has delivered two applications to U.S. Air Forces Central Command in the first three months, well ahead of initial projections.

DISTRIBUTED COMMON GROUND SYSTEM

The Air Force **Distributed Common Ground System** program, in collaboration with the Air Force Research Laboratory and industry partners, is developing an open architecture baseline that will begin fielding in fiscal year 2018. This open architecture implementation will feature agile software development practices, resulting in streamlined app-level test and evaluation, faster integration of new sensors or data types, and regular updates to processing/exploitation/dissemination capabilities, ultimately yielding a weapon system that is more responsive to urgent warfighter needs.

OPEN ARCHITECTURE

A modular open systems architecture approach yields systems with severable modules that can be competed. A system constructed in this way allows vendor-independent acquisition of interoperable, enterprise-wide, reusable components. Key enablers of open architecture are publishing key interface standards and writing clear requirements that are measurable and testable. The Air Force has developed standard language and checklists to help our program executive officers implement open architecture consistently and effectively.

ADVANTAGES

- Opens competition across the life of a program to a broader range of industry partners, including non-traditional contractors
- Leverages and fosters innovation
- Achieves long-term cost savings for future upgrades and increases maintainability
- Increases interoperability for systems leveraging the same interface standards

CHALLENGES

- Lack of stakeholder alignment
- Intellectual property and data rights that allow us to compete portions of systems while allowing vendors to maintain intellectual property and stay relevant and competitive

Many of our legacy programs are already beginning to incrementally implement MOSA as they perform upgrades to existing systems. Unfortunately, many of these programs are locked into sole-source contracts, have mature designs and a lack of data rights. We are still moving forward, and trying to implement open architecture in smaller, achievable chunks. The key has been to increment—rather than overhaul—our systems. MOSA is not an all-or-nothing concept, and the Air Force has been able to narrow in on specific subsystems on legacy programs that have proven to improve our ability to deliver capability.

THREE-DIMENSIONAL EXPEDITIONARY LONG-RANGE RADAR

The **Three-Dimensional Expeditionary Long-Range Radar** program used requirements in their technical requirements document to quantify the openness of a proposed system based on nine key attributes of a well-designed open system. The program's internal interface control documents also enable the program to compete key subsystems to third parties in the future.

DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENTS

The **Deliberate and Crisis Action Planning and Execution Segments** program has developed a risk-oriented test strategy to minimize test requirements for incremental development of new version releases. The level of testing required is based on the nature of upgraded capabilities and their anticipated breadth of impact across the system. Capabilities are grouped in iterations to optimize required testing.

ACQUISITION WORKFORCE

Attracting and Recruiting:

The direct and expedited hiring authorities and the Defense Acquisition Workforce Development Fund have significantly improved the Air Force's ability to recruit and train people. Additionally, the Air Force was able to support a robust talent acquisition cell and provide incentives for use in attracting top talent, executing more than 125 recruiting events and offering enhanced recruiting incentives and/or student loan repayments to more than 100 talented individuals.

HIRING AUTHORITY USE	EXPEDITED	DIRECT
2016	810	2
2017	1,530	66

Professional Development:

The development of the Air Force's workforce is based on the Acquisition Professional Development Program, which ensures workforce members have the training, education and experience to meet the Defense Acquisition Workforce Improvement Act requirements. The Air Force acquisition workforce finished the year with more than 96 percent of the workforce members meeting certification requirements, while 100 percent of ACAT 1 program managers are fully-qualified in accordance with mandated key leadership position requirements. Air Force- specific, enhanced training programs and courses are utilized to fully round out the development of the Air Force workforce beyond the department-wide certification requirements. The Air Force leverages programs like the Acquisition Leadership Challenge Program and courses taught by the Air Force Institute of Technology. The Air Force Institute of Technology school of Systems and Logistics provides online and resident acquisition training courses targeted at specific competency gaps and mission-enhancing skills for members of the Air Force acquisition workforce. In fiscal year 2017 there were more than 400 course offerings that enabled more than 13,000 individual graduations from Air Force-specific training courses covering multiple acquisition disciplines, ranging from acquisition fundamentals to engineering, contracting to cyber familiarization, as well as numerous logistics courses. An additional tool is the Defense Acquisition Workforce Development Fund. In 2017, the Air Force utilized $69.7 million to conduct training and other development activities across the entire human resources life cycle of the acquisition workforce.

Talent Management:

Flexible Civilian Personnel System: The ability to leverage the variety of experiences, specialized skills and exceptional potential residing in the Air Force workforce is critical to its future success. There are many functional forums and activities that share the goal of optimizing talent, such as the Civilian Force Development Panel, Military and Civilian Development Teams, and Functional Advisory Panels. These panels have slated 137 officers for acquisition program leadership roles, sent 676 officers and civilians to selective developmental training opportunities and provided career development feedback to more than 50 percent of the Air Force's workforce.

Career Development: The Air Force now has more than 16,000 civilian participants in the Department of Defense Acquisition Demonstration Project. This is a flexible civilian personnel system designed to enhance the ability of leaders to manage the talent present in the workforce through a comprehensive system that rewards contributions and drives feedback, while managing expectations between employee and supervisor. Through the Acquisition Demonstration Project personnel program, the Air Force is strengthening its force with the ability to reward individuals based on contributions to the mission. By rewarding our higher-performing employees, the Air Force expects to retain our top talent.

CONCLUSION

While the Air Force has begun to take advantage of new authorities to speed acquisition and innovation to the warfighter, much work remains to be done.

In 2018, the Air Force will focus on the following:

» Support the Joint Program Office efforts to significantly reduce the cost of the F-35 program

» Review and renew professional education for acquisition personnel so that they understand when and how to use new authorities

» Review feedback loops and monitor processes for delegated programs so that problems are identified and action is taken without slowing programs that are executing successfully with burdensome reviews

» Review and improve space acquisition processes to support space as a contested domain

» Aggressively use prototyping and experimentation to reduce risk and increase speed of procurement

We look forward to providing you our next update on these items, as well as our important efforts in sustainment, test and research.

> The United States now faces a more competitive and dangerous international security environment than we have seen in generations. The Air Force must build a more lethal and ready force.

Heather Wilson
Secretary of the Air Force

GLOSSARY

Acquisition Category (ACAT): Categories established to facilitate decentralized decision making and execution, as well as compliance with statutorily imposed requirements. The categories determine the level of review, decision authority and applicable procedures.

Automated Information System (AIS): A combination of computer hardware and computer software, data and/or telecommunications that collects, processes, stores, transmits and displays information.

Average Procurement Unit Cost (APUC): APUC is calculated by dividing total procurement cost by the number of articles to be procured. Total procurement cost includes flyaway cost (recurring and nonrecurring costs associated with production of the item, like hardware, software, systems engineering, engineering changes and warranties), plus the costs of procuring technical data, training, support equipment and initial spares.

Commercial Off-The-Shelf (COTS): A commercial item sold in substantial quantities in the commercial marketplace and offered to the government under a contractor subcontract at any tier, without modification, in the same form in which it was sold in the marketplace.

Engineering & Manufacturing Development (EMD): The purpose of the EMD phase is to develop, build and test a product to verify that all requirements have been met and to support production and deployment decisions.

Future Years Defense Program (FYDP): A DoD database and internal accounting system that summarizes forces and resources associated with programs approved by the Secretary of Defense. Its three parts are the organizations affected, appropriations accounts (research, development, test and evaluation; operation and maintenance, etc.) and the 11 major force programs (strategic forces, mobility forces, research and development, etc.).

Information Technology (IT): Any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the executive agency. IT includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services) and related resources, including National Security Systems.

Initial Operational Capability (IOC): In general, attained when some units and/or organizations in the force structure scheduled to receive a system have received it and have the ability to employ and maintain it. The specifics for any particular system IOC are defined in that system's capability development document and capability production document.

Major Defense Acquisition Program (MDAP): An acquisition program that is designated by the Under Secretary of Defense for Acquisition and Sustainment or estimated to expend a total of more than $365 million in RDT&E or more than $2.19 billion in procurement (in fiscal year 2000 constant dollars).

Milestone (MS): The point at which a recommendation is made and approval sought regarding starting or continuing an acquisition program (i.e. proceeding to the next phase).

Program Executive Officer (PEO): A military or civilian official who has responsibility for directing several major defense acquisition programs and for assigned major system and non-major system acquisition programs. A PEO normally reports to and receives guidance and direction from the DoD component acquisition executive.

Request for Proposal (RFP): A solicitation used in negotiated acquisition to communicate government requirements to prospective contractors and to solicit proposals.

System Program Office (SPO): The office of the program manager and the single point of contact with industry, government agencies and other activities participating in the system acquisition process.

Technology Maturation & Risk Reduction (TMRR): The purpose of the Technology Maturation & Risk Reduction Phase is to reduce technology risk, engineering integration, life cycle cost risk and to determine the appropriate set of technologies to be integrated into a full system. The TMRR phase conducts competitive prototyping of system elements, refines requirements, and develops the functional and allocated baselines of the end-item system configuration.

Value Adjusted Total Evaluated Price (VATEP): The VATEP technique monetizes different levels of performance corresponding to the traditional requirements process of defining both threshold (minimum) and objective (maximum) performance and capabilities. One of the benefits of this process is that offerors may be more likely to propose innovative solutions which provide higher performance/capability.

CONTRACTING DEFINITIONS

COST-PLUS-AWARD-FEE

A cost-reimbursement contract suitable for level-of-effort contracts where mission feasibility is established, but measurement of achievement must be by subjective evaluation rather than objective measurement. A CPAF contract provides for a fee consisting of both a base amount, which may be zero, fixed at inception of the contract, and an award amount, based upon a judgmental evaluation by the government, sufficient to provide motivation for excellence in contract performance. A CPAF contract may not be used to avoid establishing a cost-plus-fixed-fee contract when the criteria for CPFF contracts apply, or developing objective targets so a cost-plus-incentive-fee contract can be used.

COST-PLUS-FIXED-FEE

A cost-reimbursement-type contract that provides for the payment of a fixed-fee to the contractor. The fixed fee, once negotiated, does not vary with actual cost, but may be adjusted as a result of any subsequent changes in the scope of work or services to be performed under the contract.

COST-PLUS-INCENTIVE-FEE

A cost-reimbursement-type contract with provision for a fee, which is adjusted by formula in accordance with the relationship that the total allowable costs bear to target costs. The provision for increase or decrease in the fee, depending upon allowable costs of contract performance, is designed as an incentive to the contractor to increase the efficiency of performance.

FIRM-FIXED-PRICE

Provides for a price that is not subject to any adjustment on the basis of the contractor's cost experience in performing the contract. This type of contract places upon the contractor maximum risk and full responsibility for all costs and resulting profit or loss. Provides maximum incentive for the contractor to control costs and imposes a minimum administrative burden on the government.

FIXED-PRICE-INCENTIVE-FIRM

A fixed-price contract that provides for adjusting profit and establishing the final contract price by application of a formula based on the relationship of total final negotiated cost to total target cost. The final price is subject to a price ceiling, negotiated at the outset.

TIME-AND-MATERIALS

A contract that provides for acquiring supplies or services on the basis of 1) Direct labor hours at specified fixed hourly rates that include wages, overhead, general and administrative expenses, and profit; and 2) Actual cost for materials. A T&M contract may be used only when it is not possible at the time of placing the contract to estimate accurately the extent or duration of the work or to anticipate costs with any reasonable degree of confidence.

INDEFINITE-DELIVERY CONTRACT

There are three types of indefinite-delivery contracts: 1) Definite-quantity contracts, 2) Requirements contracts, and 3) Indefinite-quantity contracts. The appropriate type of indefinite-delivery contract may be used to acquire supplies and/or services when the exact times and/or exact quantities of future deliveries are not known at the time of contract award.