

# Department of Defense

## Report to Congress on Resourcing the Arctic Strategy



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## **EXECUTIVE SUMMARY**

The Department of Defense (DoD) is making investments in research, military infrastructure, and capabilities to execute the 2013 Arctic Strategy and support the development of the Arctic as a secure and stable region where U.S. national interests are safeguarded, the U.S. homeland is protected, and nations work cooperatively to address challenges. Fiscal Year (FY) 2017 investments focus mainly on capabilities, followed by long-term investments in research and development of next-generation capabilities. The Department's challenge is balancing the risk of being late-to-need with the opportunity cost of making Arctic investments for potential future contingencies at the expense of resourcing other urgent military requirements.

This report provides costs for research, military infrastructure, and capabilities assessed by Geographic Combatant Commands and the Military Departments to be located in the Arctic, dedicated to Arctic missions, or likely to be employed in the Arctic in defense of North America or North Atlantic Treaty Organization (NATO) Allies. This report excluded some investments, e.g., submarines, the nuclear triad, and satellites in a polar orbit, due to the complexity of apportioning the proportion of these capabilities' life-cycle costs that could be assigned specifically to the Arctic Strategy rather than to other national tasks over the service life of the capability. For that reason, some assets that might be relevant to future Arctic operations are not included in this report. Rather, this report is an illustrative snapshot at one moment in time (FY 2017) of resources that support the strategy.

Data provided by the Combatant Commands and Military Departments from the FY 2017 budget identifies about \$6 billion of FY 2017 investments as detailed in the spreadsheet at TAB A.

## Purpose and Structure

This report is provided in response to the Senate Appropriations Committee on Defense (SAC-D) Report 114-63 on the Department of Defense Appropriations Bill, 2016, which directed that the Secretary of Defense submit a report on the amounts requested in FY 2017 to support implementation of the Department's 2013 Arctic Strategy, including, to the maximum extent practicable, identification of specific obligations that address gaps in research, military infrastructure, and capabilities in the Arctic region.

- *Section One* addresses research.
- *Section Two* addresses military infrastructure.
- *Section Three* addresses the capabilities needed to support the strategic objectives in the 2013 National Strategy and, where gaps are identified, describes mitigation approaches to address them.

As stated in the National Strategy for the Arctic Region (NSAR), the United States seeks an Arctic region that is stable and free of conflict, where nations act responsibly in a spirit of trust and cooperation, and where economic and energy resources are developed in a sustainable manner that respects the environment and advantageously positions the United States for economic growth. The Department of Defense 2013 Arctic Strategy lays out the strategic end-state for the Arctic as a *stable and secure region where U.S. national interests are safeguarded and the U.S. homeland is protected*.

The Department contributes to each of the three lines of effort in the NSAR: Advance U.S. Security Interests; Pursue Responsible Arctic Region Stewardship; and Strengthen International Cooperation. The DoD activities in support of each of these lines of effort are reflected in the expenditures documented at TAB A.

National Security Presidential Directive-66/Homeland Security Presidential Directive-25 (NSPD-66/HSPD-25) specifically identifies U.S. national security interests in the Arctic region. These interests include missile defense and early warning; deployment of sea and air systems for strategic sealift, strategic deterrence, and maritime presence, including maritime security operations; and ensuring freedom of navigation and overflight. Preserving the rights and duties relating to navigation and overflight in the Arctic region supports our ability to exercise these rights throughout the world. It characterizes U.S. national security interests in the Arctic as "broad and fundamental," and states that the United States is "prepared to operate either independently or in conjunction with other states to safeguard these interests." The Department's 2013 Arctic Strategy nests under these two overarching guidance documents, and lays out the ways and means whereby DoD will achieve its strategic end state.

The Department is working collaboratively in multilateral forums to promote a balanced approach to improving human and environmental security in the region and to deter potential aggression. The United States has a vital Arctic neighbor and partner in Canada, with its shared values and interests in the region. DoD works closely with the Canadian Department of National

Defence (DND) to ensure that common Arctic interests are addressed in a complementary manner. DoD will continue to address military security issues together with appropriate stakeholders through the existing network of relevant bilateral and multilateral relationships, including the the North American Aerospace Defense Command (NORAD) and the North Atlantic Treaty Organization (NATO).

The Department's strategic objectives applied to the Arctic are bound by policy guidance, the nature of the strategic and physical environment, and the capabilities and limitations of the instruments of power (military power, for the purposes of this report). The two objectives are:

- *To prevent and deter* conflict in the Arctic; and
- *To prepare to respond* to a wide range of challenges and contingencies—operating in conjunction with other states when possible, and independently if necessary.

### **Arctic Security Assessment**

The Arctic is attracting international attention due to its geopolitical and economic significance for both Allies and partners as well as for potential adversaries. Although there is still low probability of conflict in the near term over uniquely Arctic issues (e.g., boundary disputes, fisheries management), the region is vulnerable to strategic spillover in that disagreements among Arctic nations over issues in other regions may contribute to heightened tensions or even conflict in the Arctic. For example, as aggressive Russian actions in Europe have altered the security dynamics on the continent, DoD must consider and be prepared for the possibility of spillover to the Arctic. Differing perspectives and interests among Arctic nations and Arctic stakeholders may also contribute to strategic posturing, heightened tensions, or future conflict.

### **Section One: Research**

The Department is investing approximately \$461 million in research projects related to the implementation of the 2013 Arctic Strategy, mostly in research, development, test, and evaluation (RDT&E) funding to improve surveillance of the northern approaches to North America; enhance communications with military units that may be operating in the Arctic; and develop next-generation radar systems for the polar region. DoD is also investing in developing a framework of observations and modeling to support forecasting and prediction of sea ice, as required in the National Strategy for the Arctic Region. A summary of the requested RDT&E funding for FY 2017 at TAB A.

### **Section Two: Military Infrastructure**

The U.S. infrastructure capable of supporting current military operations is sparse in the Arctic, particularly in northern Alaska and the Aleutian Islands. However, in the eastern Arctic (Baffin Bay plus the Greenland, Norwegian, and Barents Seas), U.S. forces have access to Thule Air Base, Greenland, and can also rely on Allies for necessary basing and infrastructure support.

There are three FY 2017 military construction initiatives, totaling about \$362 million, that are particularly relevant to implementation of the Strategy. The first initiative would provide about \$296 million for seven projects in support of future use of F-35A aircraft at Eielson Air Force Base (AFB), Alaska. This weapon system could support homeland defense operations or operations on NATO's northern flanks (e.g., the Greenland-Iceland-United Kingdom gap or Scandinavia). The second would provide \$47 million for construction of an unmanned aerial system (UAS) hangar at Fort Wainwright in Alaska. The final is about \$20 million for two projects to modify an existing hangar and build an aircraft rinse rack at Keflavik, Iceland, to support short-duration P-8A aircraft deployments in support of either U.S. Northern Command (USNORTHCOM) or U.S. European Command (USEUCOM).

Given long lead-times for the construction of military infrastructure in the Arctic, the Department remains committed to re-evaluating its posture requirements periodically as the Combatant Commanders update their regional plans in light of the evolving security environment.

### **Section Three: Capabilities**

Military Department programs for FY 2017 resource the requirements of the Combatant Commanders, which include defending U.S. national security interests in the Arctic and countering threats to the homeland that may transit the Arctic region. The Department plans to spend about \$5.2 billion on capabilities that could be deployed to the Arctic or employed in the region, including:

- Joint Base Elmendorf-Richardson (JBER), with a combined military population of more than 12,000. It serves as home to a U.S. Air Force fighter wing, a C-17-equipped air transport unit, a C-130 squadron, and Army units. Army units include Alaska Command (ALCOM) Headquarters (designated a Sub-Unified Command aligned under USNORTHCOM; Alaska District, U.S. Army Corps of Engineers Headquarters; U.S. Army Alaska (USARAK) Headquarters (a 2-Star Army Forces (ARFOR) Table of Distribution and Allowance (TDA) organization); 4/25<sup>th</sup> Infantry Brigade Combat Team (Airborne); 59<sup>th</sup> Signal Battalion (with an attached Expeditionary Signal Company); numerous Echelon Above Brigade (EAB) units (including Transportation, Maintenance, Combat Support, Emergency Ordnance Disposal, Quartermaster-Rigger, and Military Police units); and a TDA Non-Commissioned Officers Academy. The Headquarters of the Alaska Army National Guard with numerous down-trace units (including 1-207<sup>th</sup> Aviation Regiment – UH-60 equipped); a U.S. Coast Guard Coordination Center; a U.S. Marine Corps Reserve Center; a U.S. Army Reserve Headquarters; U.S. Navy Supervisor of Salvage (SUPSALV) assets; and the State of Alaska Emergency Operations Center (EOC) are also located on JBER. Army forces stationed at JBER are trained, equipped, and maintain a high readiness posture to conduct a wide range of Defense Support of Civil Authorities (DSCA) and Homeland Defense (HD) mission sets throughout the USNORTHCOM-defined Alaska Joint Operations Area (JOA). Army forces stationed at JBER are assigned to U.S. Army Pacific (USARPAC) and are documented as the preferred sourcing solution to conduct missions under USNORTHCOM Mission Command authority throughout the Alaska JOA.

- The JBER also provides significant capacity, such as runways, ramp space, air space command and control, and fuel infrastructure to support throughput for aircraft; mid-air refueling operations; aerial command and control; Intelligence, Surveillance, and Reconnaissance (ISR) operations; and weather forecasting. The relocation of the 176<sup>th</sup> Wing (Alaska Air National Guard), with its C-130 aircraft and helicopters, from Kulis Air National Guard Base in 2011 added significant search and rescue capabilities as well. The resident Air Force and Army support units provide extensive capabilities in communications, logistics, engineering, ground transportation, and medical support, including a 60-bed hospital.
- The Air Force maintains an Arctic aviation capability based at two Air National Guard (ANG) facilities.
  - The first is JBER. This facility operates HC-130 and HH-60 aircraft (144th and 249th Airlift Squadrons, 210th/211th/212th Rescue Squadrons, 176th Air Control Squadron, and the 11th Rescue Coordination Center), which are capable of operating in Arctic conditions. These aircraft maintain a 24-hour alert and participate in Arctic search and rescue operations as well as search and rescue exercises (SAREX) with joint and foreign partners.
  - The second facility under the ANG is Stratton ANG Base, Scotia, New York. This facility is the home of the 109th Airlift Wing, which has the unique polar airlift mission. The 109th Air Wing operates LC-130 Hercules (ski-equipped) aircraft, which are which are capable of operations and forward-deploying forces directly onto open snow and ice with little to no infrastructure or support. The 109<sup>th</sup> Airlift Wing has a peacetime role of supporting the National Science Foundation's objectives in Antarctica and Greenland. Prior to the end of the Cold War, the 109<sup>th</sup> Airlift Wing supported the Distant Early Warning (DEW) line surrounding the Arctic Circle in support of Operation Volant DEW.
- Eielson AFB serves as home to a fighter wing and an Air National Guard air refueling wing. Future F-35 operations are also planned. The base provides significant aerial throughput capacity and can support Synthetic Aperture Radar (SAR) missions that extend north of the Alaska Range.
- Fort Wainwright provides significant resources to enable operations throughout the Arctic, including: Installation Management Command Garrison Fort Wainwright Headquarters; Ladd Army Airfield (strategic-capable runway); a 32-bed, Role III Bassett Army Community Hospital (BACH); USARAK Aviation Command and Control Element (UACCE); 1/25<sup>th</sup> Stryker Brigade Combat Team; 1-25<sup>th</sup> Attack Reconnaissance Battalion (AH-64); 1-52<sup>nd</sup> General Support Aviation Battalion (UH-60 and CH-47); a Gray Eagle UAS Company; numerous EAB units (including Transportation, Finance, Band, Combat Support, Emergency Ordnance Disposal, Signal, and Military Police units); and the U.S. Army Northern Warfare Training Center (NWTC) Headquarters with its associated primary extreme cold weather, mountain, and glacier training site at Black

Rapids Training Site (35 miles south of Fort Greely). The Bureau of Land Management also operates from facilities on Fort Wainwright, primarily focused on management of wildland fires throughout central Alaska. Army forces stationed at Fort Wainwright are trained and equipped and maintain a high readiness posture to conduct a wide range of DSCA and HD mission sets throughout the USNORTHCOM-defined Alaska Joint Operations Area. Army forces stationed at Fort Wainwright are assigned to USARPAC, and they are documented as the preferred sourcing solution to conduct missions under USNORTHCOM Mission Command authority throughout the Alaska JOA.

- Fort Greely is the site of the 49<sup>th</sup> Missile Defense Battalion (ARNG), which operates the Ballistic Missile Defense System (BMDS) ground-based interceptors at both Fort Greely and Vandenberg Air Force Base, California. Fort Greely houses the support for the contractor logistics that sustains the missile system. Fort Greely also serves as the location for the U.S. Army Cold Regions Test Center (CRTC), with facilities located at nearby Bolio Lakes.
- The Cold Regions Research and Engineering Laboratory (CRREL), located in Fairbanks, Alaska, solves interdisciplinary, strategically important problems of the U.S. Army Corps of Engineers (USACE) and the Nation by advancing and applying science and engineering to complex environments, materials, and processes in all seasons and climates. CRREL maintains unique expertise related to the Earth's cold regions. CRREL is part of the U.S. Army Engineer Research and Development Center (ERDC), which has received the award as the Army's top research and development laboratory for five of the last eight years and for the last three consecutive years – a feat unmatched by any Army laboratory. CRREL provides innovative products and solutions in support of the warfighter, homeland security, environment, infrastructure, and civil works water resource management. CRREL is a national resource ready to focus its unique capabilities to solve specific customer-driven problems and conduct innovative, state-of-the-art research.
- ALCOM-University of Alaska (UA) Arctic Partnership Program. The goal of the ALCOM-UA Arctic Partnership Program is to maximize information exchange between Arctic experts in the UA system and ALCOM.
  - ALCOM is the USNORTHCOM operational headquarters for the State of Alaska and is responsible for supporting USNORTHCOM's role as Arctic capability advocate for DoD. ALCOM engages with relevant stakeholders and interagency partners in order to develop greater Arctic situational understanding, ensures stakeholder equities are integrated into DoD activities in Alaska, and advises higher headquarters with regard to Arctic policy and decision-making.
  - ALCOM supports academic efforts on a non-financial basis, including assisting in researching DoD Arctic issues, concerns, equities and strategy, conference and workgroup participation, research reviews, and input on a not-to-interfere basis with ALCOM's primary researchers where appropriate and within security guidelines. UA leverages its multi-disciplinary team of scholars to support

ALCOM efforts to develop a greater understanding of scientific underpinnings of Arctic and sub-Arctic processes in order to inform U.S. policy and higher headquarters decision-making. When possible, UA attends ALCOM-sponsored events for which it advocates for selected UA research programs when UA applies for grants or other funding. ALCOM links DoD science and technology (S&T) initiatives to known UA programs that may integrate well into the S&T initiatives. ALCOM makes every reasonable effort to find funding for UA programs that support DoD requirements.

- Thule Air Base, Greenland, is home to a Ballistic Missile Early Warning System (BMEWS) radar and Air Force satellite control network ground site. The base provides significant basing capacity such as a deep-water port, a 10,000-foot runway, ramp space, radar approach control, and 20-million gallon fuel infrastructure to support throughput for aircraft, mid-air refueling operations, aerial command and control, search and rescue operations, and weather forecasting. The resident Air Force support units provide capabilities in communications, logistics, engineering, ground transportation, and medical support, including an 8-bed hospital. Thule Air Base supports missions in the eastern Arctic.
- Clear Air Force Station, located near Anderson, Alaska, provides the Western U.S. counterpart to Thule Air Base. Capabilities at Clear include a BMEWS similar to the one at Thule.
- The Joint Pacific Alaska Range Complex (JPARC), home to Red Flag Alaska, constitutes the world's largest instrumented range airspace. When the Gulf of Alaska is included, the airspace is measured at 127,000 square miles.
- The Arctic Submarine Laboratory in San Diego, California, develops and maintains expertise in Arctic-specific skills, knowledge, equipment, and procedures to enable the U.S. submarine force to operate safely and effectively in the harsh Arctic Ocean environment.
- The National/Navy Ice Center, Suitland, Maryland, operated by the U.S. Navy, the National Oceanic and Atmospheric Administration, and the U.S. Coast Guard, provides ice and snow products, ice forecasting, and related environmental intelligence services for the U.S. Government.
- The Marine Corps Prepositioning Program in Norway is designed to help defend the northern flank of the NATO Alliance, which could include operations in the Arctic, by prepositioning selected equipment and 30 days of supplies and ammunition in Norway.

Other capabilities likely to be employed by the Combatant Commanders to defend the homeland or Allies include the U.S. Air Force Satellite Control Network, the Joint Regional Security Stack, protected satellite communications, Ballistic Missile Warning Radar Systems, and selected forces stationed in Europe that could be deployed to NATO's northern flank or to the North Atlantic if required, as summarized at TAB A.



**Conclusion:** Significant uncertainty remains about the rate of climate change in the Arctic and the pace at which human activity will increase, as demonstrated by the reduced enthusiasm for oil and gas developments in the Arctic following the recent decline in the price of oil. The Department's challenge is to balance the risk of being late-to-need with the opportunity cost of making premature investments. Not only does early investment take resources from other pressing needs, but the capabilities would be later in their lifecycle when finally employed. Given the many competing demands on DoD's resources to support operations in the Middle East, the Asia-Pacific region, and elsewhere, the Department is making the prudent investments necessary to support the 2013 Arctic Strategy and to support evolving Combatant Commander requirements in FY 2017.

Research

Service/Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Research
Army	RDT&E, Army	Understand terrestrial ecosystem processes	889	Research includes the role of permafrost and impacts to operational mobility and military construction; biogeochemical monitoring of permafrost to understand past climates and human activities; and understanding rapid precipitation-drive upland thermokarst development.
Army	RDT&E, Army	Understand human health in the Arctic	1,977	Biogeochemical processes affecting military materials in Arctic/sub-arctic terrestrial environments.
<b>Army RDT&amp;E</b>			<b>2,866</b>	
Navy	RDT&E, Navy	Prepare for increased activity in the maritime domain	5,101	Develop anti-icing surfaces, research/test arctic propulsion systems, conduct ICEX exercise, modeling support for arctic operations
Navy	RDT&E, Navy	Arctic Warfare Development	4,616	Submarine Warfare Development Project develops advanced submarine concepts, with emphasis on operability in cold, ice-covered environments.
Navy	RDT&E, Navy	Develop a framework of observations and modeling to support forecasting and prediction of sea ice	12,400	Research includes efforts to improve ocean surface wave forecasts in the Arctic; and to understand the effects of changing Arctic ocean and ice conditions on low-frequency, deep-water propagation and on the low-frequency ambient noise field.

Service/Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Research
Navy	RDT&E, Navy	Prepare for increased activity in the maritime domain	675	Research includes efforts on Arctic hydrodynamics, and the development of computational infrastructure to predict ice accretion, furnish stochastic inversions of mass properties (as well as the modeling parameters describing accretion severity), and quantify uncertainty within all of the modeling parameters.
Navy	RDT&E, Navy	Enhance Arctic Domain Awareness	605	Research includes understanding radio wave propagation and the potential for modern OTHR signal processing in the Arctic ionosphere.
Navy	RDT&E, Navy	Support a circumpolar Arctic Observing System	1,200	Arctic Mobile Observing System research initiative
Navy	RDT&E, Navy	Integrate Arctic regional models	2,500	Focus is on Arctic region system modelling that includes the Arctic Ocean and adjacent sub-Arctic waters.
<b>Navy RDT&amp;E</b>			<b>27,097</b>	
Navy	O&M, Navy	Profiling Floats (10) - data collection in support of acoustic and oceanographic models required by EUCOM Oceanographic, Hydrographic, and Bathymetric survey requirements.	180	Address data deficiencies in support of ocean modeling requirements
Navy	O&M, Navy	Ecosystem research in the Beaufort and Chukchi seas	21	Develop integrated ecosystem research in the Beaufort and Chukchi seas to support development of Integrated Resource Management plans.
Navy	O&M, Navy	Support a circumpolar Arctic observing system	152	Naval Ice Center management of the US Arctic Buoy Program for Arctic data collection
Navy	O&M, Navy	Integrate arctic regional models	152	Naval Ice Center support to Navy modeling organizations

Research

Service/Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Research
Navy	O&M, Navy	Improve forecasting and prediction of sea ice	152	Integrate Arctic regional models
<b>Navy O&amp;M</b>			<b>657</b>	
Air Force	RDT&E, Air Force	Northern Approach Surveillance Analysis of Alternatives	5,000	Funds Analysis of Alternative in FY17 to determine capabilities required to provide persistent or surge long-range wide area surveillance in the northern approaches
Air Force	RDT&E, Air Force	Northern Warning System	5,000	Provides development funding for NWS Sites (West), NWS Sites (East), and NWS Sites (Main) to deliver surveillance and protection for the Arctic and northern approach regions.
Air Force	RDT&E, Air Force	NCMC Threat Warning Attack System (TWAS)	5,000	Provides research and development to support the space, ballistic missile, and atmospheric missions of the NORAD Cheyenne Mountain Complex (NCMC) role in the Integrated Tactical Warning/Attack Assessment (ITW/AA) system supporting the Arctic and northern approach regions
Air Force	RDT&E, Air Force	Protected SATCOM (Advanced EHF)	261,714	RDT&E to develop follow-on to Milstar system providing survivable, jam-resistant, worldwide, secure satellite communications for strategic and tactical warfighters including the Arctic Region and protecting northern approaches
Air Force	RDT&E, Air Force	AWACS	140,000	Provides undefined special program upgrade to Airborne Warning and Control System supporting airborne C2 for the COCOMs including the Arctic and northern approach affiliated regions

Research

Service/Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Research
Air Force	RDT&E, Air Force	Integrated Broadcast Services (IBS) Exec Agent	8,600	Funds the migration of stovepipe legacy intelligence dissemination systems to a single, standards-compliant near real time broadcast service supporting the COCOMs including the Arctic and northern approach affiliated regions
NORAD/NORTHCOM	RDT&E, Air Force	Rapid Innovation Fund Proposal-SILVERTIP-Mobile sensor system	2,800	Improve Maritime Domain Awareness in the Arctic Region
NORAD/NORTHCOM	RDT&E, Air Force	Rapid Innovation Fund Proposal-Wide band Free space Optical communications	2,600	Address gaps in Long Range/High Bandwidth Communications capabilities
<b>Air Force RDT&amp;E</b>			<b>430,714</b>	
<b>Total Research*</b>			<b>461,334</b>	

\* Total Research does not include SAP.

Infrastructure

COCOM	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps Military Infrastructure
USNORTHCOM	MILCON	UAV Hanger construction at Ft Wainwright.	47,000	Project will support the CAB and will provide a runway, taxiways, hanger, and related facilities
USNORTHCOM/ USEUCOM	MILCON (ERI)	Modifications at Keflavik, Iceland, to accommodate P-8As on short duration/expeditionary deployments.	19,600	Modify a hangar door to enable the P-8 to fit inside and construction an aircraft rinse facility
USNORTHCOM/ USEUCOM	MILCON	F-35	295,600	Supports F-35 operations including facilities development in the Arctic region enabling full F-35 offensive and defensive roles and missions to protect the Arctic western/pacific approaches
Total Infrastructure			362,200	

Capabilities.

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Army	O&M, Army	USARAK	170,082	Funds training and operational readiness of Army forces assigned to U.S. Army, Alaska.
USEUCOM	O&M, Army	Develop an annex to the existing environmental toolbox for deploying forces for short term military operations in cold region - a multi-national approach.	40	Improve cold-weather operating capability and enhance international partnerships.
USEUCOM	O&M, Army	Sponsor the Arctic Security Forces Roundtable gathering of Arctic Nation security and military professionals (Flag level).	124	Support an international exchange of expertise and lessons learned on military operations in the changing operational environment to support safety, security, and defense.
USEUCOM	O&M, Army	Arctic Zephyr Table Top Exercise	10	Improve cold-weather operating capability and enhance international partnerships.
USEUCOM	O&M, Army	JOINT VIKING/TRIDENT JUNCTION exercise planning activities	37	Support development of Arctic operational capability and strengthen international security partnerships.
Army O&M			<b>170,293</b>	
Army	Military Personnel, Army	Army Units and Personnel assigned to Alaska	1,035,736	11,258 Active Component Army Soldiers stationed in the state of Alaska. This represents military capabilities that could be deployed to the Arctic or employed in the region to defend U.S. national security interests in the Arctic and counter threats to the homeland that may transit the Arctic region.
Army MILPERS			<b>1,035,736</b>	
Navy	O&M, Navy	Sustain and support evolving Arctic aviation requirements	406	Fleet Weather Center and Naval Ice Center support to operational forces

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Navy	O&M, Navy	Enhance Arctic domain awareness.	391	Naval Ice Center support to operational forces
Navy	O&M, Navy	Sustain Federal capacity to conduct maritime operations in ice-impacted waters.	459	Fleet Weather Center and Naval Ice Center support to ice-breaking and other interagency maritime operations
Navy	O&M, Navy	Promote international law and freedom of the seas.	848	Naval Ice Center and Arctic Submarine Laboratory support to deployed naval forces. Ship preparation for Arctic deployments.
Navy	O&M, Navy	Conserve arctic ecosystems.	177	Naval Ice Center conduct sea ice monitoring and thickness estimates
Navy	O&M, Navy	Improve hazardous material spill prevention, containment, and response.	177	Naval Ice Center data products are used on the Environmental Response Management Application
Navy	O&M, Navy	Use integrated arctic management to balance economic development, environmental protection, and cultural values.	61	Supports operations in the Arctic while mitigating environmental, economic, and cultural impacts
Navy	O&M, Navy	Develop a framework of observations and modeling to support forecasting and prediction of sea ice.	177	Naval Ice Center efforts to improve ice forecasting and increase temporal scales.
Navy	O&M, Navy	Understand atmospheric processes to improve climate predictions.	152	Further understanding of the environmental physics of the ocean, ice, and atmosphere is necessary to improve modeling of dynamic processes within various time and spatial scales. The Arctic is a very remote region lacking in long term data sets (both remote and in situ). This effort requires further research and more robust persistent observations (from remote sensing techniques to in situ sensors).



Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Navy	O&M, Navy	Chart the Arctic region.	152	Naval Ice Center provide operational support to vessels conducting hydrographic and bathymetric surveys of the Arctic.
Navy	O&M, Navy	Enhance Arctic search and rescue.	152	Naval Ice Center operational support to vessels conducting Search and Rescue operations in ice-covered waters.
Marine Corps	O&M, Marine Corps	Norway Geo-Prepositioning (Contracts, stevedoring, on/offload, maintenance, etc.).	1,066	Maintain enhanced Marine Corps response capability to threats to NATO's northern flanks through prepositioning military equipment in Norway.
Marine Corps	O&M, Marine Corps	Maritime Prepositioning Forces: ISO Norway Geo-Prepositioning (Contracts, stevedoring, on/offload, maintenance, etc.).	406	Maintain enhanced Marine Corps response capability to threats to NATO's northern flanks through prepositioning military equipment in Norway.
Marine Corps	O&M, Marine Corps	Norway Geo-Prepositioning (Contracts, stevedoring, on/offload, maintenance, etc.).	4,365	Maintain enhanced Marine Corps response capability to threats to NATO's northern flanks through prepositioning military equipment in Norway.
Marine Corps	O&M, Marine Corps	JOINT VIKING/TRIDENT JUNCTION exercise planning activities.	10	Support development of USMC Arctic operational capability and strengthen international security partnerships.
<b>Navy O&amp;M</b>			<b>8,999</b>	
Air Force	RD&E, Air Force	AFSCN (AF Satellite Control Network).	21,385	Common-user satellite tracking, telemetry, and commanding functions including remote tracking stations for DoD operational and RDT&E missions Control satellites in orbits supporting Arctic Region and northern approach operations.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	RDT&E, Air Force	EPS (Enhanced Polar System).	51,320	RDT&E to acquire MILSATCOM for northern latitude satellite communications and serve as an interoperable adjunct to the Milstar system supporting the operations in the Arctic region and northern approaches
Air Force	RDT&E, Air Force	Regional/Sector Operations Control Center.	11,500	Modernized ROCC/SOCC computer system to accommodate all present operational requirements with expansion capabilities to incorporate any new national missile defense, cruise missile defense, and space based sensors protecting the Arctic region and northern approaches.
Air Force	RDT&E, Air Force	AWACS.	140,000	Modernization supporting manned airborne warning and control capability for offensive or defensive air operations, including those in the Arctic region or any approach to U.S. and/or allied-aligned territories or resources.
<b>Air Force RDT&amp;E</b>			<b>224,205</b>	
Air Force	Other Procurement, Air Force	JIE-Joint Regional Security Stack.	130,010	Supports Cyber Security and Control System (CSCS) for Cyber defense of operations in the Arctic region.
Air Force	Other Procurement, Air Force	AFSCN (AF Satellite Control Network).	61,563	Common-user satellite tracking, telemetry, and commanding functions, including remote tracking stations for DoD operational and RDT&E missions Control satellites in orbits supporting Arctic region and northern approach operations.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	Other Procurement, Air Force	BMEWS (Ballistic Missile Early Warning System).	26,740	Supports BMEWS Sites, BMEWS Surveillance Wing, and Support Unit capability to provide defense against missile threats that may transit the Arctic region and northern approaches.
Air Force	Other Procurement, Air Force	Protected SATCOM (Advanced EHF).	650,718	Procures follow-on to Milstar system providing survivable, jam-resistant, worldwide, secure satellite communications for strategic and tactical warfighters, including in the Arctic region and protecting northern approaches.
Air Force	Other Procurement, Air Force	FAB-T (Family of Beyond Line of Sight Terminal) and PNVC.	166,489	Provides Extremely High Frequency (EHF) and Advanced EHF (AEHF) voice and data MILSATCOM for C2 of nuclear and conventional forces and airborne/ground command posts via Milstar, AEHF, and Enhanced Polar System (EPS) satellites for operations in the Arctic region and protection of northern approaches.
Air Force	Other Procurement, Air Force	SLBM Radar Warning Systems.	15,589	Invests in Sea-Launched Ballistic Missile Detection and Warning Radar (FSS-7), and the SLBM Phased Array Radar System (PAVE PAWS, FPS-85, and PARCS) development to deliver surveillance and warning capabilities for the Arctic and northern approach regions.
Air Force	Other Procurement, Air Force	611 AOC.	1,100	Procures unique and other support equipment and systems to operate the Air & Space Operations Center (AOC) Definition to deliver battlespace coordination to both fixed and deployable units supporting Arctic region and Northern approach missions.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	Other Procurement, Air Force	Regional/Sector Operations Control Center.	1,000	Procures current and modernization equipment for ROCC/SOCC to enable operational requirements any current or new national missile defense, cruise missile defense, and space based sensors protecting the Arctic region and northern approaches.
Air Force	Other Procurement, Air Force	NCMC Threat Warning Attack System. (TWAS).	21,700	Procures development of funding for space, ballistic missile, and atmospheric missions of the NORAD Cheyenne Mountain Complex (NCMC) role in the Integrated Tactical Warning/Attack Assessment (ITW/AA) system supporting the Arctic and northern approach regions
Air Force	Aircraft Procurement, Air Force	AWACS.	21,000	Procurement supporting manned airborne warning and control capability for offensive or defensive air operations, including those in the Arctic region or any approach to U.S. and/or allied-aligned territories or resources.
Air Force	Aircraft Procurement, Air Force	NATO AWACS.	10,000	Procurement in support of equipment, manpower and training of airborne warning and control capability provided to NATO operators of AWACS for offensive or defensive air operations protecting NATO territories resources.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	Other Procurement, Air Force	Integrated Broadcast Services (IBS) Exec Agent.	2,900	Procurement for development and fielding of a single, interoperable service that terminates independent legacy systems and migrates legacy intelligence dissemination systems to a single, near-real-time broadcast service supporting Arctic region and northern approach threat warning and intelligence-gathering efforts
<b>Air Force Procurement</b>			<b>1,108,809</b>	
Air Force	O&M, Air Force	JPARC.	23,526	Operate air-to-surface training ranges, for the conduct of combat readiness training including Joint Pacific-Alaska Range Complex.
Air Force	O&M, Air Force	F-16 AESA Radar for Homeland Defense.	57,000	Capability supports Homeland Defense in the northern approaches to North America.
Air Force	O&M, Air Force	LC-130 Mission Operations.	8,812	Specially Equipped C-130 aircraft for Arctic/Polar ski operations (landing on snow/ice).
Air Force	O&M, Air Force	Cyberspace Ops Forces and Force Support.	83,977	Cyber force support for military forces that may operate in the Arctic region.
Air Force	O&M, Air Force	JIE-Joint Regional Security Stack.	34,425	Supports Cyber Security and Control System (CSCS) for Cyber defense of operations in the Arctic region.
Air Force	O&M, Air Force	BMEWS (Ballistic Missile Early Warning System).	183,193	Supports BMEWS Sites, BMEWS Surveillance Wing, and Support Unit capability to provide defense against missile threats that may transit the Arctic region and northern approaches.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	EY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	O&M, Air Force	AFSCN (AF Satellite Control Network).	216,866	Common-user satellite tracking, telemetry, and commanding functions including remote tracking stations for DoD operational and RDT&E missions Control satellites in orbits supporting Arctic region and northern approach operations.
Air Force	O&M, Air Force	Protected SATCOM (Advanced EHF).	176,515	Supports military satellite (MILSATCOM) enabled communication with military units operating as required in the Arctic region and protecting northern approaches.
Air Force	O&M, Air Force	Protected SATCOM (Advanced EHF).	50,526	Supports military satellite (MILSATCOM) enabled communication with military units operating as required in the Arctic region and protecting northern approaches.
Air Force	O&M, Air Force	SLBM Radar Warning Systems.	96,907	Supports Sea-Launched Ballistic Missile Detection and Warning Radar (FSS-7), and the SLBM Phased Array Radar System (PAVE PAWS, FPS-85, and PARCS) operations to deliver surveillance and warning capabilities for the Arctic and northern approach regions.
Air Force	O&M, Air Force	Northern Warning System.	52,300	Provides operations funding for NWS Sites (West), NWS Sites (East), and NWS Sites (Main) to deliver surveillance and protection for the Arctic and northern approach regions.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	O&M, Air Force	416-J Comm.	18,500	Communications facilities integral to the SAGE/BUIC System including Continental Air Defense Integration Northward (CADIN) as well as rearward from the Distant Early Warning (DEW) Line supporting Arctic region and northern approach Air Defense requirements.
Air Force	O&M, Air Force	611 AOC.	600	Provides for operation of the Air & Space Operations Center (AOC). Includes manpower authorizations, training, peculiar and support equipment, necessary facilities and the associated costs specifically identified and measurable, including battlespace coordination for both fixed and deployable units supporting Arctic region and Northern approach missions.
Air Force	O&M, Air Force	Atmospheric Early Warning (ARS Only).	19,700	Supports operation of the Joint Surveillance System (JSS), North Warning System (NWS), and cold storage of the Over-the-Horizon Backscatter Radar System(OTH-B). JSS and NWS combined provide air surveillance/defense around the perimeter of CONUS and Alaska and tactical warning for the northern approaches. OTH-B provides far-looking East and West Radars that can be reactivated in 24 months.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	O&M, Air Force.	Regional/Sector Operations Control Center.	12,000	Funds operation of ROCC/SOCC and associated modernization initiative accommodating present operational requirements for national missile defense, cruise missile defense, and space based sensor ops protecting the Arctic region and northern approaches.
Air Force	O&M, Air Force	NCMC Threat Warning Attack System (TWAS).	102,000	Support the space, ballistic missile, and atmospheric missions of the NORAD Cheyenne Mountain Complex (NCMC) role in the Integrated Tactical Warning/Attack Assessment (ITW/AA) system supporting the Arctic and northern approach regions.
Air Force	O&M, Air Force	AWACS.	42,000	Manned airborne warning and control capability for offensive or defensive air operations including those in the Arctic Region or any approach to US and/or allied-aligned territories or resources.
Air Force	O&M, Air Force	NATO AWACS.	21,000	Provides funding for airborne warning and control enabling capability provided to NATO operators of AWACS for offensive or defensive air operations protecting NATO territories resources.
Air Force	O&M, Air Force	Integrated Broadcast Services (IBS) Exec Agent.	5,000	Development and fielding of a single, interoperable service that terminates independent legacy systems and migrates legacy intelligence dissemination systems to a single, near real time broadcast service supporting Arctic Region and northern approach threat warning and intelligence-gathering efforts.



Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	O&M, Air Force	RC-135 Cobra Ball ICBM Collection.	9,300	Specialized Reconnaissance Unit providing monitoring and collection of information for advance warning and protection of Arctic region and northern approaches.
Air Force	O&M, Air Force	477FG, JB Elmendorf-Richardson.	14,684	AF Reserve unit providing fighter/air defense operations in the Alaska sector of the Arctic region.
Air Force	O&M, Air Force	168ARW, Eielson AFB.	5,972	Air refueling unit providing in-flight refueling for airlift, reconnaissance, and fighter missions supporting Arctic and northern approach operations
Air Force	O&M, Air Force	109AW, Stratton ANGB.	34,885	Forward based ANG Airlift Unit providing specialized polar operations (ski) capability to the Arctic region.
Air Force	O&M, Air Force	144FW, Fresno.	36,062	Supports forward-based fighter operations in the Arctic region.
Air Force	O&M, Air Force	176WG, Anchorage, ANG, JBER - 144th Airlift Squadron (ALS), JBER - 249th Airlift Squadron (ALS), JBER - 210th Rescue Squadron (RS), JBER - 211th Rescue Squadron (RS), JBER - 212th Rescue Squadron (RS), JBER - 11RCS, JBER	41,062	Provides Alaskan NORAD Region air sovereignty and theater air control operations supporting Arctic and northern approaches including mobility and personnel recovery operations in the Arctic region. - Airlift Units providing support and sustainment to Arctic region operations; - Rescue and recovery units supporting Arctic region operations - Rescue Coordination Center enables 24-hour alert capability in coordination with rescue units specifically configured for Arctic region conditions.
Air Force	O&M, Air Force	178AWG, Eielson AFB.	11,334	Supports forward-based fighter operations in the Arctic region.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	O&M, Air Force	673ABW, JB Elmendorf-Richardson.	186,983	Provides base support for all assigned units on JBER including 11AF, Alaskan Command, Alaskan NORAD region, JTF Alaska, and all assigned operational missions in the Alaska sector of the Arctic region.
Air Force	O&M, Air Force	354FW, Eielson AFB.	90,092	Aggressor fighter operations and Alaska range control supporting Arctic region and northern approaches.
Air Force	O&M, Air Force	3 WG, JB Elmendorf-Richardson.	20,762	Supports PACAF active duty mobility, C2, and fighter/air defense operations in the Alaska sector of the Arctic region.
Air Force	O&M, Air Force	11 AF/PRSC.	118,020	Myriad facilities over geographically disperse area supporting Arctic infrastructure and equipment to enable defense and force projection for Arctic region.
Air Force	O&M, Air Force	100ARW, RAF Mildenhall.	65,000	Air refueling unit providing in-flight refueling for airift, reconnaissance, and fighter missions supporting operations protecting the eastern flanks of the northern approach operations.
Air Force	O&M, Air Force	95RS, RAF Mildenhall.	127,000	Specialized Reconnaissance Unit operating RC-135 providing monitoring and collection of information for advance warning and protection of eastern flanks and northern approaches.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	O&M, Air Force	488IS, RAF Mildenhall.	60	Provides intelligence support on the ground and aboard RC-135 aircraft to detect, identify, and locate signals throughout electromagnetic spectrum to assist C2 of friendly forces as well as aid in search and rescue operations protecting eastern flanks and northern approaches
Air Force	O&M, Air Force	21SWS, Thule AB.	156,813	Space Warning Squadron operates BMEWS to protect Arctic and northern approaches.
Air Force	O&M, Air Force	821ABG, Thule AB.	19,962	Supports infrastructure and equipment at Thule for conduct of airfield/seaport and Radar operations protecting the Arctic region and northern approaches.
Air Force	O&M, Air Force	Thule Runway upgrade, Thule AB.	22,600	Resurface 10K foot runway at Thule Air Base, Greenland, to support Arctic region operations. Project scheduled to complete mid- year CY16.
Air Force	O&M, Air Force	AFLCMC/FZA - Peterson, Thule AB.	44,722	Funding for life cycle management efforts at Thule AB supporting the Arctic region.
Air Force	O&M, Air Force	ESC/HSIF Peterson, Thule AB.	59,108	Funding for life-cycle management efforts at Thule AB supporting the Arctic region.
Air Force	O&M, Air Force.	13SWS, Clear AS.	11,850	Space Warning Squadron operates BMEWS to protect the Arctic and northern approaches.
NORAD/ NORTHCOM	O&M, Air Force	Arctic Zephyr Tabletop Exercise (IPL, MPL, FPL, and Execution).	19	NORTHCOM TDY funds to conduct tabletop exercise designed to improve cold-weather operating capability through international dialogue among experts.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
NORAD/ NORTHCOM	O&M, Air Force	Arctic Workshop.	7	NORTHCOM TDY funds to conduct workshop in Alaska to identify Arctic focused gaps, seams, and capabilities for the United States and international partners.
<b>Air Force O&amp;M</b>			<b>2,281,144</b>	
Air Force	Military Personnel, Air Force	JPARC.	1,690	Operate air-to-surface training ranges, for the conduct of combat readiness training, including the Joint Pacific-Alaska Range Complex.
Air Force	Military Personnel, Air Force	BMEWS (Ballistic Missile Early Warning System).	5,419	Supports BMEWS Sites, BMEWS Surveillance Wing, and Support Unit capability to provide defense against missile threats that may transit the Arctic region and northern approaches.
Air Force	Military Personnel, Air Force	AFSCN (AF Satellite Control Network).	43,359	Common-user satellite tracking, telemetry, and commanding functions including remote tracking stations for DoD operational and RDT&E missions Control satellites in orbits supporting the Arctic region and northern approach operations.
Air Force	Military Personnel, Air Force	SLBM Radar Warning Systems.	20,082	Provides manpower to support sea-Launched Ballistic Missile Detection and Warning Radar (FSS-7), and the SLBM Phased Array Radar System (PAVE PAWS, FPS-85, and PARCS) development to deliver surveillance and warning capabilities for the Arctic and northern approach regions.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	Military Personnel, Air Force	Northern Warning System.	420	Provides personnel for NWS Sites (West), NWS Sites (East), and NWS Sites (Main) to deliver surveillance and protection for the Arctic and northern approach regions.
Air Force	Military Personnel, Air Force	611 AOC.	1,000	Provides manpower for operation of the Air & Space Operations Center (AOC) to enable battlespace coordination to both fixed and deployable units supporting the Arctic region and northern approach missions.
Air Force	Military Personnel, Air Force	Atmospheric Early Warning (ARS Only).	2,200	Supports the Joint Surveillance System (JSS), North Warning System (NWS), and cold storage of Over-the-Horizon Backscatter Radar System(OTH-B). JSS and NWS combined provide air surveillance/defense around the perimeter of CONUS and Alaska and tactical warning for the northern approaches. OTH-B provides far-looking East and West Radars that can be reactivated in 24 months.
Air Force	Military Personnel, Air Force	Regional/Sector Operations Control Center.	20,000	Funds manpower for operation of ROCC/SOCC and associated modernization initiative accommodating present operational requirements for national missile defense, cruise missile defense, and space based sensor operations protecting the Arctic region and northern approaches.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	Military Personnel, Air Force	NCMC Threat Warning Attack System (TWAS).	25,900	Provides personnel to support the space, ballistic missile, and atmospheric missions of the NORAD Cheyenne Mountain Complex (NCMC) role in the integrated Tactical Warning/Attack Assessment (ITW/AA) system supporting the Arctic and northern approach regions
Air Force	Military Personnel, Air Force	AWACS.	238,000	Manpower for airborne warning and control capability for offensive or defensive air operations, including those in the Arctic region or any approach to U.S. and/or allied-aligned territories or resources.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
Air Force	Military Personnel, Air Force	NATO AWACS.	12,000	Manpower for training and support of airborne warning and control capability provided to NATO operators of AWACS for offensive or defensive air operations protecting NATO territories resources.
Air Force	Military Personnel, Air Force	RC-135 Cobra Ball ICBM Collection.	5,000	Specialized Reconnaissance Unit providing monitoring and collection of information for advance warning and protection of the Arctic region and northern approaches.
<b>Air Force MILPERS</b>			<b>375,070</b>	
OSD(P&R)	O&M, Defense-Wide	ARCTIC EDGE/NORTHERN EDGE Joint Exercises.	3700	Exercise USNORTHCOM and USPACOM operating capability with mission partners in northern latitudes.
USSOCOM	O&M, Defense-Wide	SOCNORTH participation at Arctic workshops (Arctic S&T related, NC Arctic Workshop).	16.9	Support the development and improvement of SOF expertise and capabilities in the Arctic region.
USSOCOM	O&M, Defense-Wide	SOCNORTH sponsored Arctic Workshop w/ USSOCOM service components and Arctic SOF.	83.2	Support a Joint SOF & International exchange of expertise.
USSOCOM	O&M, Defense-Wide	SOCNORTH KLE/SLE's Russia-focus.	14.6	Support USNC for USSOCOM.
USSOCOM	O&M, Defense-Wide	USNORTHCOM Vigilant Shield Main/Final Planning Conferences.	3.7	Support USNC for USSOCOM regarding Homeland Defense
USSOCOM	O&M, Defense-Wide	USNORTHCOM Arctic Edge 18 Initial/Final Planning Conferences.	10.1	Support USNC for USSOCOM regarding Homeland Defense
USSOCOM	O&M, Defense-Wide	Canadian SOF TTX planning conferences.	18.5	Support SOCNORTH-CANSOF TTX to support emerging C2 initiatives.

Capabilities

Service/ COCOM/ Agency	Appropriation	Description	FY 2017 Request (\$ in Thousands)	Description/Example of Specific Support regarding Gaps in Capabilities
<b>Defense-Wide O&amp;M</b>			<b>3,847</b>	
Classified	O&M	Intelligence Analysis and Strategy Supporting Commander, NORAD and USNORTHCOM.	544	Civilian Manpower.
<b>Classified O&amp;M</b>		<b>Total Capabilities</b>	<b>544</b>	
			<b>5,208,647</b>	



Supporting Data Summary

Service/Agency & Appropriation  
(\$ in Thousands)      FY 2017 Request

Research:

Army RDT&E	2,866
Navy RDT&E	27,097
Navy O&M	657
Air Force RDT&E	430,714
<b>Total Research</b>	<b>461,334</b>

Infrastructure:

Air Force (MILCON)	362,200
<b>Total Infrastructure</b>	<b>362,200</b>

Capabilities:

Army O&M	170,293
Army MILPERS	1,035,736
Navy and Marine Corps O&M	8,999
Air Force RDT&E	224,205
Air Force Procurement	1,108,809
Air Force MILPERS	375,070
Air Force O&M	2,281,144
Defense-Wide O&M	3,847
Classified O&M	544
<b>Total Capabilities</b>	<b>5,208,647</b>

**Total Research, Infrastructure, Capabilities**

**6,032,181**