

NOT FOR PUBLICATION UNTIL RELEASED BY THE
HOUSE ARMED SERVICES COMMITTEE
INTELLIGENCE AND EMERGING THREATS
AND CAPABILITIES SUBCOMMITTEE

STATEMENT OF

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ASSISTANT SECRETARY OF THE NAVY
(RESEARCH, DEVELOPMENT AND ACQUISITION)

BEFORE THE

INTELLIGENCE, EMERGING THREATS AND CAPABILITIES SUBCOMMITTEE

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

THE DEPARTMENT OF THE NAVY FISCAL YEAR 2021 BUDGET REQUEST FOR
SCIENCE AND TECHNOLOGY PROGRAMS

MARCH 11, 2020

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Chairman Langevin, Ranking Member Stefanik and distinguished members of the Subcommittee, thank you for the opportunity to appear before you today to update you on the Department of the Navy (DON) Science and Technology (S&T) efforts. S&T is a critical building block in the National Defense Strategy and ensures the DON maintains and expands its technological advantage against our adversaries for the future Fleet and Force.

A dominant naval force and a strong maritime strategy are the primary engines of our National Defense Strategy. Since this nation's founding, the United States has depended on naval power to defend its shores and protect free and open ocean commons. As our nation grew, naval power has been enabled by innovation, skilled seamanship, courage, careful planning, and maintaining a technological edge. Today, as we face rapid change in the global security environment—including increased access to technological knowledge, and attempts by potential adversaries to dominate emerging weapon technologies—the national security posture is adapting with a sense of urgency and innovation. The Department of the Navy (DON) continues to emphasize acceleration in everything we do to keep our technological advantage and to deliver at speed the capabilities required to compete and win.

Future Naval Power: Investing in People

To deliver future naval power, the Navy and Marine Corps invests in a diverse set of innovative thinkers—and doers. This includes the impressive technical workforce inside the Department of the Navy's Office of Naval Research (ONR) and the Naval Research Laboratory (NRL). NRL alone was responsible for 1153 publications, 120 patents and 43 external recognition awards in the past 12 months. Also included in the DON's technical workforce are warfare centers across the country—including the Naval Air Warfare Centers, Naval Surface Warfare Center, Naval Undersea Warfare Centers, and Naval Information Warfare Centers. Together, these organizations make up the Naval Research and Development Establishment (NR&DE), with over 2,400 PhD's, advanced degree scientists, engineers, and technicians dedicated to envisioning and providing new technologies for the fleet and force. These highly talented individuals work closely with industry, academia and across the government to ensure our Sailors and Marines have the most advanced capabilities, now and in the future.

Our unmatched organic technical workforce partners with U.S. and global universities to perform fundamental research on behalf of the Navy and Marine Corps. That includes the best

researchers at universities inside the U.S. and abroad, working with partners and allies to find the most talented team to work on naval problems. Currently in S&T, the ONR is sponsoring over 2,500 active grants to 436 performers, comprised of 341 universities and 95 non-profits.

One area of specific interest to the Navy is Ocean Sciences. Last year, with your help, the Department of the Navy began a new initiative, called Task Force Ocean to reinvigorate the Ocean Sciences here in the U.S., ensure competitive advantage and support naval operations in the ocean domain. With the initial funding, Task Force Ocean supports graduate and post-doctoral students and awarded 38 grants to 18 universities, four University Affiliated Research Centers and Federally Funded Research and Development Centers, four Navy labs and warfare centers, and three industry partners.



It is important to remember that this A+ team is not only about today's players. The Department is also looking to develop, recruit and employ the next generation of scientists and engineers that will be necessary to meet the scientific challenges of the future. The Navy has a strong investment in Naval Science, Technology, Engineering and Mathematics (STEM) programs that starts at the K-12 level and continues through workforce development. Inventive programs such as the United States Naval Academy Summer Heroes Youth Program send midshipmen to underserved and underrepresented schools to provide hands-on education sessions in mechanics, chemistry, robotics, encryption and coding, strategy and logic, bioengineering, and flight to close to 1000 6th-8th grade students. This program, and other similar STEM efforts, provide outreach to address the urgent national need for more students to pursue technical careers. With that same goal of finding and nurturing the best minds for the future, the Navy and Marine Corps are also sponsoring \$4.5 million in grants to 15 Historically Black Colleges and Universities and Minority Institutions this year, and will do so again in FY 2021.

These efforts are foundational to our competitive advantage in this era of Great Power Competition. This winning formula of promoting intellectual diversity and investing in the right scientists to solve naval challenges has been in place since World War II, and remains one of our greatest strengths today.

Future Naval Power: Future Naval Capabilities

Carefully nurtured academic and industry partnerships are only half of the equation. The Department of the Navy relies on several key tools to transition from ideas to capabilities that can be delivered to the warfighter at the speed of relevance. The first of these critical tools is the Future Naval Capabilities (FNC) program. FNC projects are designed to provide a steady infusion of relevant technology into existing programs of record, improving and expanding the capabilities of platforms, weapons and sensors already in the hands of our Sailors and Marines. We have 27 FNCs that will be delivered in FY 2020, and another 15 projects starting in FY 2021. Of the 335 FNC products delivered through 2018, 38 percent have fielded, and 23 percent are in the acquisition pipeline preparing to field. Notable examples include the Advanced Reconnaissance Vehicle, the Long-Endurance Airborne Platform and the Deep Reliable Acoustic Path Exploitation System. The FNC process was recently restructured to accelerate both the selection and the S&T development timelines, and those revisions are working. Development cycles that once took five years now take three. We are on the front edge of that bow wave, improving the ability to get capability at scale into programs of record, through the FNC process. This is an impressive record, and it is unmatched inside the DOD.

As the Navy works to develop FNCs with our academic research partners, it is also critical to find the right industry partners, who help get technologies from the “lightbulb moment” to the user. So another area where we are moving critical research forward is the Small Business Innovation Research (SBIR) process. Just as we need the best minds in academia to achieve successful FNCs, we also need the power of innovative business productivity for prototypes and deliverables. Last year we reimagined the SBIR process to encourage wider participation, and increase relevance and speed. In a recent pilot for artificial intelligence, autonomous behaviors, and advanced technologies for training, the Department saw a ten-fold increase in the number of proposals received and a 40 percent increase in new entrants. At the same time, we were able to improve our “end to end” cycle times of Phase 1 awards from 128 days down to 28 days. Industry responds to demand signals. By making it easier for innovators to do business with the Navy, the DON is building new partnerships, increasing opportunities for success and clearing a fast lane from discovery to deployment that will allow the Department to harness the science and technology discoveries and maintain and grow our advantage.

Future Naval Power: Innovative Naval Prototypes

In addition to FNCs, the Department relies on Innovative Naval Prototypes (INPs) to introduce groundbreaking new technology out into the field. INPs are developed around anticipated naval needs rather than in response to established requirements and are meant to significantly alter the way our naval forces fight. The FY 2021 budget includes over \$400 million for these disruptive, revolutionary technologies in six major thrust areas: Directed Energy; Unmanned Advanced Autonomy/Swarm; Cyber; Advanced Long-Range Targeting; Hypersonics; and Full Spectrum Undersea Warfare. Within those thrust areas there are have 18 focused efforts including the next generation laser, future hypersonic boosters, artificial intelligence, and swarming.

The Office of Naval Research: Positioned for Success

The Department of the Navy's S&T calculus must be flexible to meet changing realities and ensure the Navy and Marine Corps are always at the forefront of scientific discovery. In a new era of Great Power Competition and new naval challenges and opportunities, the Office of Naval Research has undergone a significant reorganization, streamlining efforts and aligning, allocating and accelerating resources to sponsor the right scientists at the right time. Perhaps the most noteworthy part of this reorganization was the decision to go "all-in" on the idea of an integrated naval force—no longer separating the Navy and Marine Corps in research programs, but ensuring USMC priorities are incorporated throughout every department and at every level of ONR. This approach will be an enabler of the Commandant's call for increased naval integration.

Future Naval Power Starts Here

The Department's Fiscal Year (FY) 2021 S&T investments aggressively pursue increased lethality and modernization with the greatest potential to deliver non-linear warfighting advantages. Priority for this budget is support to the National Defense Strategy and its Research and Engineering modernization areas: directed energy and electric weapons; hypersonic capabilities; artificial intelligence (AI) and machine learning (ML); intelligent autonomous systems; cyber security; networked sensors and weapons; advanced manufacturing; high performance materials and energetics; biotechnology and quantum science and computing.

The overall naval research and development budget request for FY 2021 is \$21.5 billion. This amount represents a five percent increase over the FY 2020 funded level, with the S&T budget request at \$2.3 billion, equivalent to the FY 2020 requested level. This increase in overall R&D funding will lead to additional S&T transition opportunities and balances readiness recovery and key down payments on lethality to deliver a more lethal, resilient, and rapidly innovative force.

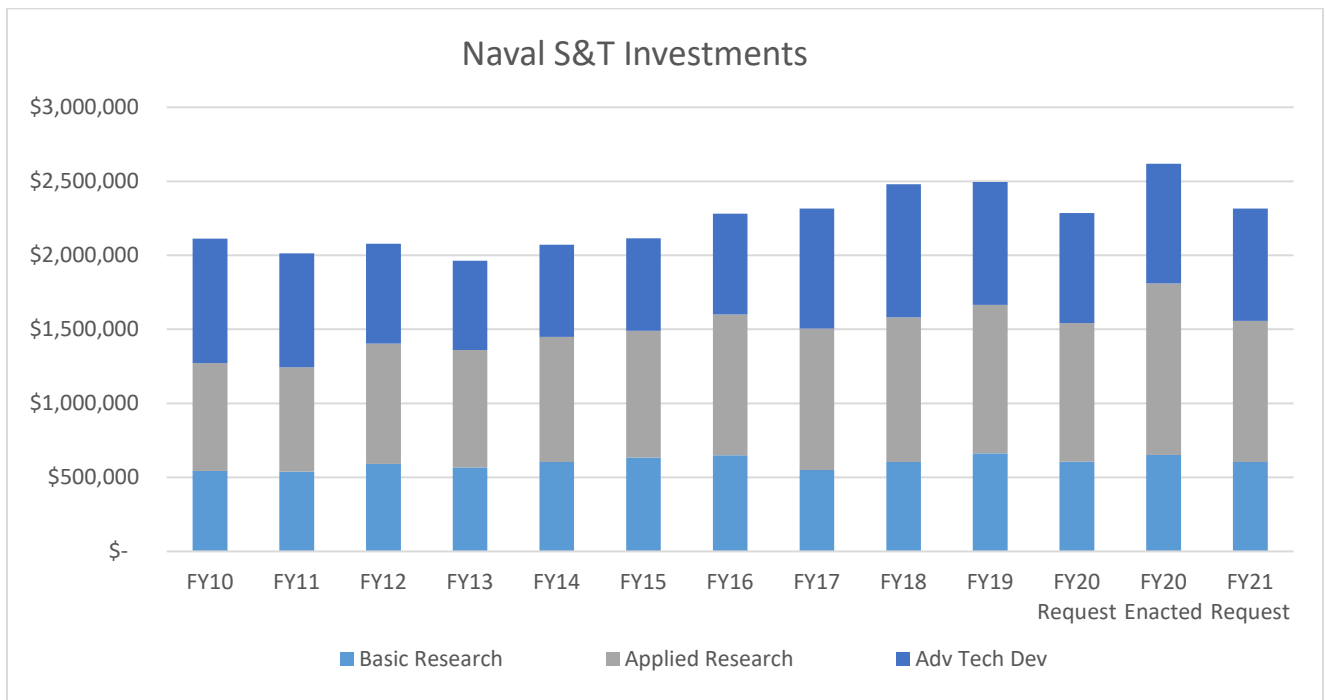


Figure 1. Naval S&T Investment History

The Naval S&T portfolio utilizes a broad investment approach that leverages long-term, naval relevant fundamental research and applied research to give scientists and engineers in the naval research enterprise the flexibility to pursue new discoveries and promising ideas to support development of new capabilities for the warfighter. Highlights include:

Directed Energy

Directed Energy (DE) weapons will be essential to countering urgent threats from our nation’s adversaries. Sustained investment in basic research has allowed the U.S. to remain at the forefront of DE weapons development. The products resulting from basic research - conducted

by the NR&DE, commercial firms, and academia - form the foundation of present-day directed energy systems and will enable the next-generation of systems. The Department's investment in DE began in the 1990s in exploring high energy laser technologies and architectures as well as the related issues of high power optics, atmospheric propagation, and effects of lasers on targets. Although it takes years for science to transition to a deployable system, without that fundamental research we are assured that the U.S. would have lost its global technological edge.

The Department is rapidly advancing laser capabilities from near-term goals of countering unmanned aerial systems (UAS) and ISR to the ultimate goal of providing ship self-defense against anti-ship missiles. Laser weapons are critical to the future fight, allowing the fleet to extend their defensive capacity and preserve vital magazine space for offensive weapons.



In October 2019, the Navy installed Solid State Laser-Technology Maturation (SSL-TM) laser weapon system on USS *Portland* (LPD 27). SSL-TM is the most powerful laser weapon system installed on any Department of Defense platform. Currently undergoing certification testing, it will deploy with the *Portland* in 2021.



The Department's Optical Dazzling Interdictor, Navy (ODIN) provides naval vessels the capability to counter UAS ISR threats with low power lasers. The first ODIN system was recently installed on the USS *Dewey* (DDG 105), going from an approved idea to installation in two and a half years. This will be the first operational employment of the stand-alone system that functions as a dazzler, and will allow the Navy to rapidly deploy an important, new capability to the Navy's surface force in combating UAS threats.

In FY 2021 we will field High Energy Laser with Integrated Optical dazzler and Surveillance (HELIOS), and Layered Laser Defense (LLD). The combination of these fielded systems represent an important milestone in leveraging directed energy for national security. They enhance naval platforms to project power and provide integrated defenses through directed energy weapons S&T advances. The deep magazine, precision engagement, and tracking agility

of laser weapons could make critical contributions to layered defense of Navy ships from high rate cruise missile attacks in the future fight.

Hypersonics



The DON has made significant advancements in hypersonic design that will introduce an entirely new generation of capabilities, rapidly changing the way we fight as an integrated naval force. Working with the Strategic Capabilities Office the Navy has developed a Hypervelocity Projectile (HVP) with the objective of providing a low-cost, deep magazine round for Anti-Air Warfare against various missile threats. In recent tests, the Navy successfully fired unguided HVP from the MK45 MOD 4 gun on the USS *Dewey* (DDG 105). Flight Experiment 2 is scheduled for the second quarter of FY 2020, and will demonstrate the Navy- designed Hypersonic Glide Body. Additional work for guidance and control as well as warhead design will yield a new capability that provides Anti-Air Warfare capability including cruise missile defense in support of ships self-defense as well as Anti-Surface Warfare.

The Department is using Section 804 Middle Tier Acquisition (MTA) for rapid prototyping authority to design an Intermediate Range Conventional Prompt Strike (CPS) common hypersonic glide body. CPS will deliver a conventional offensive strike capability through a depressed boost-glide trajectory to prosecute deep-inland, time-critical targets in contested environments. CPS capabilities are sufficiently mature to allow rapid prototyping to provide a residual operational capability within five years of program start. As weapon system design matures, the Department anticipates being able to rapid field the capability with later configurations.

Artificial Intelligence (AI) and Machine Learning (ML)

The science of AI is the next great fundamental research challenge for the Navy and the nation. Advances in this area will improve decision quality, decision speed, threat evaluation and weapon assignment across all naval warfighting domains. The DON has been active in AI

since inception of the discipline in the 1950s and is a leader in AI S&T, largely through the efforts at NRL. The Department is currently making a concerted and dedicated effort to identify near-term AI and ML application opportunities in warfare areas and mission planning as well as longer term steps that must be taken to improve the Service's ability to man, train and equip for effective AI application and deployment.

In FY 2020 the Department fielded AI systems in support of Naval Special Warfare that were battle proven in Afghanistan and Iraq. In Undersea Warfare we deployed Project Harbinger, prototype technology that expanded AI/ML acoustic discrimination efforts and transitioned algorithms developed by University Affiliated Research Centers and private industry to classified cloud infrastructure. The Department deployed AI/ML mission-planning tools to Maritime Operations Centers for operational assessment and demonstrated ELEKTRA (EMW) algorithms performed better than humans in providing real-time force-level engagement recommendations utilizing modeling and simulation and force-level engagement scheduling.

The FY 2021 budget sustains and builds upon the progress of FY 2020 through efforts to build a data engineering pipeline for AI development and delivery, and support to AI applications that enhance the speed and quality of decision-making in intelligent autonomous systems and in business operations. These investments will enable a more networked and lethal fleet.

Intelligent Autonomous Systems

The Navy's Intelligent Autonomous Systems (IAS) S&T program continues its focus on the seamless integration of IAS into our Naval Force Structure to make it more lethal, survivable, and ready while increasing capacity and operational tempo. Efforts in IAS address all domains, solving unique naval needs while leveraging advances in the commercial sector to increase machine intelligence, and improve human-machine teaming while building trust and producing autonomy that can adapt in the presence of dynamic operating environments and overwhelming data. The Navy continues to engage in multiple at-sea experiments and demonstrations including swarming of unmanned vehicles. The FY 2021 budget request includes funds to research cross-domain unmanned systems, arctic mobile observation systems, encapsulated undersea effectors, and long endurance airborne platform decoys. Project focus areas include swarm system adaptability, USV operations in higher sea states, UUV operations in non-permissive dynamic

environments, and developing techniques and approaches for affordable manufacturing-at-scale for forward/afloat generation of swarm capability.

Cybersecurity

The DON is developing innovative cyber technologies to enhance the resilience, safety, and effectiveness of cyber systems for both legacy and modern naval warfighting platforms. While legacy systems were designed before cybersecurity was a concern, these systems must remain operational for survivability and mission success. Current efforts are focused on cyber resilience of mission-critical systems and methods to lessen or mitigate the impact of cyber attacks.

Communications protocols are vectors for enemy exploitation. The DON is developing automated methods to detect and eliminate vulnerabilities to prevent entry into naval systems, such as removing unnecessary code to reduce vulnerabilities and lower software maintenance costs. For example, DON efforts are mitigating vulnerabilities and implants on Field Programmable Gate Array (FPGA) chips, a key real-time processing hardware inherent in naval systems which are now a target for cyber threats. DON's cyber efforts will keep Navy's systems effective and lethal to support the fight of the future.

Cross Platform Naval Tactical Grid

Today, naval research and development is making great strides in developing a routable, message agnostic and resilient network to enable CNO's vision for Distributed Maritime Operations. An example is the Cross Platform Electromagnetic Warfare Technology Accelerator developed, fielded and successfully tested on the USS *William P Lawrence* (DDG 110). This system has an ability to move C2 and ISR data products seamlessly across a routable network comprised of different physical radio links from an airborne platform at significant range. This foundation allows development of distributed combat system applications to control soft-kill and hard-kill across the Naval force in near real time. Building upon the team's early success, the DON intends to expand the testing to a second DDG in FY 2020.

Delivering at the Speed of Relevance

The Department is urgently pursuing the agility we need to assure relevancy in the modern era of technology and competition. The NR&DE is increasing pivot speed to deliver new capabilities to Sailors and Marines by reducing the distance between the technical developer, the buyer and the end user of emerging technologies and innovations. In 2019 the Department sponsored a series of four major Advanced Naval Technology Exercises (ANTX) designed to



identify technologies that can be transitioned to the warfighter within 12 to 18 months. Through the collaboration of industry, academia, and government R&D organizations, ANTXs provide an environment for the warfighter to assess the operational utility of technical innovations as well as a forum for informational exchanges and risk reductions for larger Fleet/USMC exercises. Most importantly, ANTX allows innovative and non-traditional industry partners to demonstrate their technologies and concepts in near-operational environments and get direct feedback from naval scientists, engineers, Sailors and Marines. Over 2,700 individuals from industry, academia, and warfare centers participated in the four ANTX events, representing over 140 organizations. Over 300 technologies were evaluated and will be further demonstrated at larger naval exercises or have been directly incorporated into programs of record. The Department plans to sponsor another three ANTX exercises in 2020, one in Newport, RI, focused on developing ocean sciences, and two smaller events in Patuxent River, MD focused on risk reduction for the upcoming Large Scale Exercise 2020 and on long range surface warfare technologies.

Scaling innovation toolsets is key to enhancing the impact of R&D. The NavalX office, established in 2019, consolidates the lessons learned from activities such as ANTX and centrally facilitates rapid adoption of proven agility-enhancing methods across the DON. NavalX guides, empowers, and connects our workforce to achieve pivot speed at an enterprise scale by building workforce capability and hosting workshops, prize challenges, industry events and pitch days to share methods to scale and develop skills. By coalescing talent in networks of collaboration and breaking down silos, NavalX helps accelerate the pace of discovery, learning and experimentation between collaborative partners and the Navy.

Through the creation of regional Tech Bridges across the country, NavalX is building the connections between the DON and the private sector to create vibrant regional innovation ecosystems and reduce barriers between Navy and non-traditional partners, such as start-ups, small businesses, academia, non-profits, and private capital. These regional ecosystems accelerate the delivery of warfighting capability to the DON with the innovation driven by commercial industry. This year, NavalX stood up six locations - in California, Florida, Indiana, Rhode Island, South Carolina, and Washington State - to facilitate rapid adoption of proven agility-enhancing methods across the Department. Additional sites will be announced soon.

A pilot innovation effort, the Naval Innovation Process Adoption (NIPA) was established in early 2018 to implement a common, effective agility process and language across Naval Warfare Centers, laboratories and partnering organizations. The NIPA pilot implements both technology and business best practices, and provides funding under Challenge awards to develop and demonstrate early prototypes, and facilitate follow-on acquisition and production of technologies. Since its inception in 2018, NIPA has attracted over 1,500 naval and private sector participants to training and Challenge workshops at over 20 locations across the U.S., with 12 NIPA Challenge prototypes currently under development.

The DON is leveraging many industry advancements in advanced/additive manufacturing (AM) that enable emerging technology to drive speed and innovation. Through a collaboration with America Makes, a national accelerator for AM and 3D printing supported by the Secretary of Defense's Manufacturing Technology (MANTECH) program, the Navy is developing AM methods, capabilities, qualification standards, and workforce development requirements. The Navy and Marine Corps have established, or are in the process of finalizing, 16 AM related cooperative research and development agreements with industry and academic partners. The Department has expanded polymer and metal AM capabilities at its depot and intermediate level maintenance activities, and has deployed polymer AM capability to eight ships, two expeditionary fabrication facilities and 21 Marine Expeditionary Units. Future efforts with industry include leveraging commodity polymer, industrial polymer and industrial metal printers.

In the past year, the Department also established a Digital Integration Support Cell (DISC) to lead and facilitate digital transformation, integrate capability development, and better enable Distributed Maritime Operations. The DISC is developing the reference architecture and implementation standards for the Digital Warfighting Platform (DWP), a computer environment

and warfighting application ecosystem. The DWP will revolutionize Naval warfare systems by eliminating stove piped architectures and one-off point-solution integration projects, leverage micro services, Application Programming Interfaces, and Software Development Kits to prioritize integration, interoperability, scalability, and modularity in all software design efforts.

In a continuing effort to improve the impact of R&D, the Department has recognized the need to synchronize RDT&E strategies with the essential engineering necessary to expedite technological solutions to the warfighter, to include prototyping and experimentation efforts. A realigned responsibility now falls under the Deputy Assistant Secretary for RDT&E whose core role is to ensure DON RDT&E is not only aligned to naval and DoD priorities but also continues to stress agility in providing technological innovation to the warfighter. In this refocused approach, the University Affiliated Research Centers and Naval Post Graduate School will be included into the collective R&D establishment to maximize the compounding effect of all Department of the DON R&D.

Improving Business Processes

The Navy is leveraging and taking full advantage of authorities granted by Congress to streamline our business processes, increase agility, and drive efficiencies. These authorities are making a significant difference in how the Department both recapitalizes our capital assets and strengthens the workforce.

Other Transaction Agreements (OTAs)

OTAs aid the Navy's agility by accelerating prototyping and bringing in non-traditional companies into the R&D enterprise, allowing the Navy to become a more agile, responsive organization that can adapt to new ideas and emerging challenges, often at a more competitively priced solution. In 2019, the Navy obligated \$101 million via OTAs. For 2020, the Navy is developing a streamlined approval process for non-delegable determinations in support of OTAs in the \$100-\$500 million range, and is executing a pilot to allow non-contracting officers to serve as agreement officers with the authority to enter into, administer, or terminate OTAs. This pilot will inform future policy that may delegate responsibility more broadly thereby increasing agility and allowing for greater scaling.

For example, the Strategic and Spectrum Missions Advanced Resilient Trusted Systems (S²MARTS) OTA at Naval Surface Warfare Center, Crane, IN has awarded seven projects with total obligations of approximately \$44 million and has another four projects in the pipeline. The use of this acquisition toolset is allowing the DON to move faster, reach a broader set of non-traditional partners, and is making a difference for the Navy and the Nation in solving trusted supply chain issues on microelectronics.

Title 10 USC 2363 (formerly Section 219 of Public Law No. 110-417)

The authority provided in 10 U.S.C. 2363 continues to pay dividends to the Department, providing the NR&DE with another mechanism to enhance technology transitions, advance the technical workforce, expand technical knowledge, and improve infrastructure. Examples of innovation that have reached the warfighter include 3-D printed custom earplugs, ocean harvest (multi-band, ultra-wide band synthetic aperture radar), and de-bond detection for *Virginia* class special hull treatment. These research initiatives resulted in 33 patents for new inventions in 2019, and publication of 781 peer-reviewed articles to expand the nation's technical expertise.

Using this authority, the USS *Monterey* Digital Pilot Ship project transitioned valuable technology to the fleet, introducing a shipboard modern cloud architecture for hosting combat system applications, build-to-spec touch screen consoles, and an LED video wall with configurable display functions. The infrastructure hardware/software suite on the *Monterey* will enable unified management of a cyber-secure, expandable, compute/network/storage solution and allows for hardware configuration and application deployment to be scripted, making installation, operation, and maintenance of the shipboard system less complicated and faster for our Sailors. The project provides a digital twin of the system for initial training of the ship's crew and support during deployment and used OTA contracts as a means to rapidly and iteratively prototype combat systems components.

Section 233 of the FY2017 NDAA

Section 233 of the FY2017 NDAA granted DoD the ability to pilot changes in methods for more effective development of technology and management functions at eligible centers. The DON has used this authority to increase flexibilities in many areas including contracting, purchasing, information technology, personnel, facilities management, construction, repair, and

lab revitalization. Over fiscal years 2018 and 2019, the DON has implemented 18 management initiatives which have led to greater effectiveness and efficiencies, decreasing processing time days for procurement, contracts, infrastructure and IT actions by a remarkable half a million days (340,000 processing days in FY 2019).

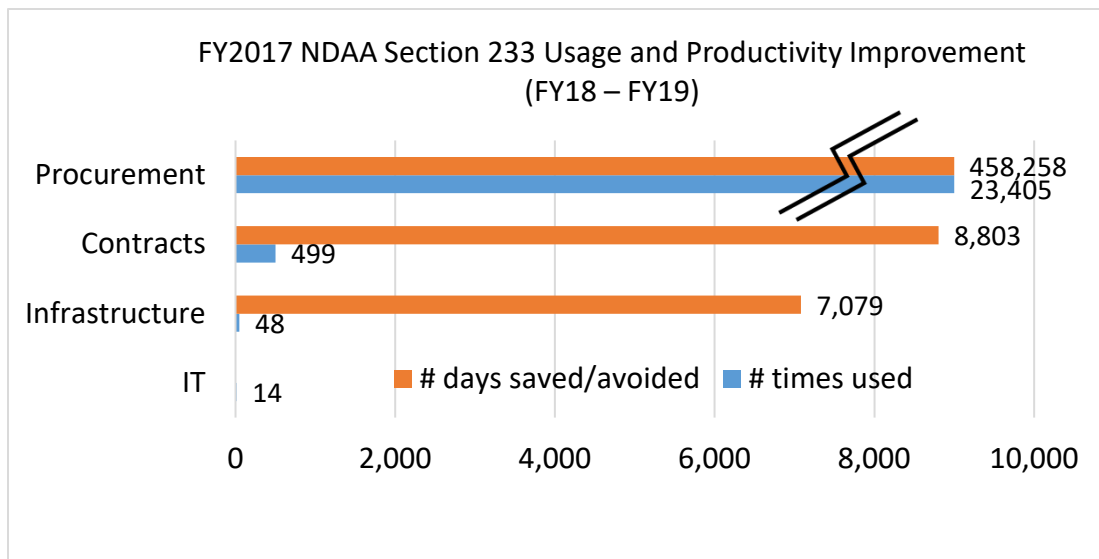


Figure 2. FY2017 NDAA Section 233 Naval Activity

The focus for the coming year will be improving the R&D infrastructure. The Department looks forward to continued collaboration with this Committee to ensure the continued vitality and effectiveness of the NR&DE.

Improving Technology Security

Historically, the Navy and Marine Corps enjoy an overwhelming military capability advantage over adversaries. That advantage is based on the development and delivery of effective systems to the operational Navy. We collaborate with, and depend upon, our defense industrial base to protect and deliver sensitive, classified programs. These mature, sensitive programs are rooted in fundamental research, facilitated by a dynamic, collaborative, fast-paced “open” research environment, exploring principles of basic and fundamental science. While this open approach is an advantage, it also creates a vulnerability. Our international competitors have recognized the exploitability of the open environment and have systematically facilitated a large-scale transfer of knowledge, expertise, and research capital through various extralegal means.

Simultaneously, attempts to steal sensitive Navy technologies using traditional illegal means continue.

To better protect our investment across the entirety of the naval enterprise, the Department is working to understand where capability advantage is created. By instituting policies and tools designed to formally assess our research investments, the DON will evaluate vulnerability, sensitivity, and criticality to focus protection efforts on our capability advantages. While we continue to apply standard security protocols such as OPSEC and classification when warranted, the Navy is also mandating the application of enhanced security and counterintelligence measures where appropriate. We will continue to closely partner with counterintelligence and law enforcement, making timely referrals focused on relevant critical technology areas, to facilitate proactive investigations and operations.

Conclusion

The Department of the Navy continues to search for new technology around the world, to seek out new ways to partner with non-traditional innovators, and emphasize high-velocity experimentation in everything we do in order to deliver at the speed of relevance. With your continued support, the DON and the men and women who work tirelessly and brilliantly on the cutting edge of scientific advancement, will continue to provide our warfighters with the next great technologies, expand the frontiers of knowledge, and work to ensure the nation remains safe, and the ocean commons and open skies remain free.