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THE HOUSE ARMED SERVICES COMMITTEE

STATEMENT

OF

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BEFORE THE

THE HOUSE ARMED SERVICES COMMITTEE

ON

ACQUISITION REFORM: EXPERIMENTATION AND AGILITY

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Chairman Thornberry, Ranking Member Smith, and distinguished members of the Armed Services Committee, thank you for the opportunity to appear before you today to address the Department of the Navy's (DON) acquisition reform experimentation and agility initiatives.

The DON has a rich history of pushing the boundaries of science and technology to ensure our Navy and Marine Corps are equipped with the capabilities that they require to perform the full range of military operations assigned to our naval forces, in every theater, against every known threat. Our ability to maintain our maritime dominance has become increasingly difficult, however, as the complexity, risk, cost, and time to develop our weapon systems has steadily increased with each new generation of technology.

This Committee, alongside the Senate Armed Services Committee, dedicated great effort throughout the Fiscal Year 2016 budget review cycle to understand the issues and to enact the measures necessary to improve the performance of the acquisition system. As we now go about the business of implementing the provisions of the 2016 National Defense Authorization Act, the Department is committed to coordinating closely with the Congress to ensure we meet our collective, intended objectives. Likewise, we look forward to continuing our close work together as we enter the Fiscal Year 2017 budget review cycle, to identify those further measures that will improve upon the cost and time required to develop and deliver the leading edge weapon systems required by the warfighter.

To consider what improvements could be made in acquisition today, it is important to understand the environment in which it operates. Decades of well-intended legislation, regulations, and policies designed to reverse negative trends have added layers of prescriptive process and organization. These resultant prescriptive processes for acquisition programs tend to thwart rapid or even timely delivery when, in fact, the very nature of weapon systems development is risky, and the very pace of technology and of the threat demand a faster, appropriate response. Given this environment, which is not prone to agility, there is great need for experienced, knowledgeable acquisition professionals who know how to work in the unique defense marketplace, who understand the technical dimensions of extraordinarily complex systems, and who can navigate the process and organizations to produce excellent outcomes. The Department of Defense's Better Buying Power and innovation initiatives are focused on and

are making important inroads in addressing these concerns. Similarly, within the Department of the Navy, we are implementing processes to retire risk before major investment decisions need to be made, while also learning about the technologies to ensure a smooth transition into a development program.

Fundamental to the Department's efforts toward improving our acquisition outcomes is the increased use of rapid prototype development and experimentation early in a program's formulation. Early prototyping efforts jump start the capability development process and inform the development of material solutions. These prototyping and experimentation efforts are essential elements in our ability to get the requirements right; to inform critical decisions on the operational utility, technical feasibility, producibility, and programmatic risks early; and to expedite fielding of needed capability to our operational forces.

Our Sailors and Marines are equipped with the most technologically advanced systems in the world, fully capable of meeting our Nation's needs and expectations in the air, overland, and on and under the sea. The technological superiority that we enjoy today can be largely attributed to our ability to innovate, to develop and mature science and technology and transition these discoveries to advanced warfighting capabilities.

Today, the speed of innovation at the global level is increasing at an unprecedented rate. This increase is occurring both commercially and militarily due to significant worldwide advancements in science, technology and manufacturing innovations. While the DON has been at the forefront of breakthrough, innovative solutions for over 240 years, we must continue to be leaders not only in innovation, but in the speed of innovation and application of new and technologically advanced warfighting capabilities for our Sailors and Marines. We cannot be satisfied with simply maintaining technological superiority against our adversaries, but must extend our advantage to offset our adversary's growing capabilities. Prototyping and experimentation are vital mechanisms in achieving the rapid introduction of advanced, game changing technologies for our naval forces.

With this objective in mind, the DON is increasing our focus on research and development initiatives directed at rapid prototype development to address operational gaps and needs identified by Navy and Marine Corps operational forces. We are improving our alignment

across the Fleet and Marine Corps forces, and Requirements, Budgeting, and Research & Development organizations to provide a single department-wide approach, prioritize initiatives, dedicate the required resources, and to streamline the management and execution of rapid prototyping and experimentation under empowered Navy and Marine Corps leadership. Our objective is to improve the speed at which we develop and field warfare systems by leveraging increased experimentation and prototyping with Navy and Marine Corps operational forces in response to Fleet needs. We want to ‘learn fast’ through prototyping – completing projects as rapidly as possible and certainly within twenty-four months of project selection – to improve follow-on system acquisition decisions before incurring significant costs. There are four key enablers to achieving this objective.

The first enabler is leveraging the breadth and depth of technical talent and facilities from across the Naval Research & Development Establishment (NR&DE). Our Navy and Marine Corps are fortunate to have warfare centers, systems centers and laboratories which comprise the NR&DE that are equipped with world class scientists and engineers uniquely qualified to introduce solutions to complex naval warfighting problems. The NR&DE, which includes the Office of Naval Research, is positioned to leverage established relationships of the Naval S&T community, Federally Funded Research and Development Centers (FFRDCs), academia, small businesses, and the broader defense industry to execute our rapid prototype efforts. Over the last several years this combined government-industry R&D community has developed and demonstrated advanced warfighting capabilities such as the Laser Weapon System Quick Reaction Capability on USS PONCE, submarine launched unmanned aerial systems and decoys, the anti-torpedo torpedo, long range surface-to-surface engagement capabilities using existing technologies available to the Fleet, and many more. Many of these prototypes will provide substantial cost reductions in addition to capability improvements, as is the case with the High Performance Magnetic Heading Sensor for Towed Arrays where we project increased reliability and a two thirds cost reduction compared to existing sensors. The NR&DE also capitalizes on the Naval Innovative Science and Engineering (NISE) Section 219 investments that Congress has authorized to foster innovation outside traditional program lines.

The second key enabler is active and continuous engagement by our NR&DE with Fleet forces including the Warfighting Development Centers. The collective wisdom of our

operational forces and the new ideas of our young Sailors and Marines, combined with our NR&DE's understanding of complex science, technology and engineering challenges facing naval warfare, provide an incredible opportunity to change the calculus of future naval warfare. Naval Science Advisors assigned to the Fleet and Force, alongside Fleet Engagement Teams consisting of subject matter experts from across the NR&DE engaged with Fleet Commands, the Navy Warfare Development Command, Warfighting Development Centers, and the Marine Corps Combat Development Command provide a direct path connecting operational challenges, emerging warfighting concepts, and technical solutions. The Fleet Engagement Teams are able to present operational planners and fleet leadership with maturing military and commercial technologies and engineering concepts and to solicit their thoughts and views to help shape these potential innovations into future warfighting capabilities. Direct and continuous interactions between our scientists and engineers and the Sailors and Marines they support will drive innovation and, more importantly, align technical ideas with operational needs at the earliest stages in prototype development and experimentation.

The third key enabler is designing our major weapon systems for rapid technology insertion. Our ability to rapidly advance the capability of our naval forces ultimately relies upon two paths; procurement of new platforms and weapon systems, and upgrades to existing platforms and weapon systems. The more immediate effect must come through upgrades to existing platforms and weapon systems, and modular open systems designs are the key to accomplishing these upgrades in a timely and affordable manner. The success of the Navy submarine force's Acoustic Rapid COTS Insertion (ARCI) program, which provided a common, open system design for submarine combat systems and enabled the near-continuous upgrade to the systems paced by available technology and in response to advanced threats, has spurred a 'sea change' in naval systems design. In the course of the past decade, the Navy and Marine Corps have instituted modular open system design standards in the development of virtually all of our future platform and major weapon systems' designs, providing the ability to upgrade these newer systems on a timeline more responsive to emerging threats and more aligned with emerging technologies.

The fourth key enabler is funding expressly for rapid prototyping, experimentation, and demonstration. The cycle time of the budget process is arguably greater than the cycle time of

the technologies we need to leverage and, in certain cases, the cycle time of the threat we need to defeat. With a limited amount of funding expressly available for prototyping, we can respond immediately to Fleet identified gaps and/or innovative operational concepts they need to explore as opposed to submitting this request in the next budget cycle submission or, as we do in many cases, reprogramming funds from other programs. The mechanics of either programming new or reprogramming prior appropriated funds ultimately delay pursuing solutions to address Fleet needs in a timely fashion.

The current budget process is contrary to innovation and agility. In today's dynamic operational environment, other military powers and adversaries continue to introduce new capabilities that we must address. Concurrently, our scientists and engineers across the NR&DE are developing new technologies, engineering innovations and, in some circumstances, game changing capabilities that we want to introduce to the Fleet as fast as possible. We cannot afford to wait two years – our typical budget cycle time - to address our adversaries' new capabilities, nor should we wait two years to introduce our latest innovations. Prototype and experimentation funding in real time would mitigate this problem by permitting our team to act now, not two years from now.

As we move forward with this strategy, it is important to recognize that some prototypes will not demonstrate their intended capability, especially when we pursue high risk initiatives. Our view is the greater the risk, the greater the reward; yielding increases in the capability of our operational forces and widening the technological gap between our naval forces and others. In fact, it is likely that if every prototype we develop is fielded, then we are probably not taking the risks required to provide game changing technologies to our Sailors and Marines. We cannot view these occurrences as failures, but rather as learning opportunities to understand the operational utility and technical feasibility of a new concept or technology, and avoid the pitfalls and costs of entering into a formal acquisition program without full knowledge of the capability requirements and the technical and programmatic risks associated with this investment. In every case, rapid prototyping, experimentation and demonstration initiatives will directly inform Navy and Marine Corps leadership on matters related to capability needs, requirements development, and acquisition risks and strategies.

Within our abilities and in accordance with our priorities, we are pursuing rapid prototype and development initiatives today. We have and will continue to engage our sister services and other Department of Defense (DOD) agencies, where appropriate, to ensure that we are aware of and capitalizing on all DOD investments, including the Defense Innovation Initiative, DIU-X, and the Third Offset Strategy. We have already deployed Fleet Engagement Teams to discuss our approach and plans with the Fleet and to solicit their views on capability gaps and needs. We have also mobilized our NR&DE to support these efforts with their best scientists and engineers, as well as their ideas and technology and engineering innovations. We are incorporating open architecture and modular designs in our prototyping efforts, and will continue to require open architecture and modularity in our formal acquisition programs, to further enable rapid prototyping at the system and component levels and ensure technology advancements can be quickly prototyped, demonstrated and fielded. By designing our platforms and systems using open architectures, we are confident that rapid upgrades can occur that will achieve significant performance improvements at significantly less cost. Incremental enhancements through rapid prototyping can be conducted without major system integration efforts, achieving major capability improvements while minimizing technical and operational risks in the event prototypes do not achieve their projected outcome.

We are committed to fully exploiting and aggressively pursuing rapid prototyping efforts to accelerate fielding of critical warfighting capabilities and to inform, early on in the process, requirement developments and acquisition decisions. The current and future fiscal environment requires the Navy to continue to improve cost and schedule performance in acquisition programs. Rapid prototyping, experimentation and demonstration are key enablers for improving our acquisition outcomes and accelerating the affordable introduction and fielding of technologically superior weapon systems now and in the foreseeable future. We ask for support on these aspects of Acquisition Reform, for such efforts will enable the DON to drive to shorter acquisition timelines, intensify competition, and deliver the future capabilities that will ensure our dominance in projecting power, controlling the seas, deterring would-be adversaries and maintaining maritime security.

Thank you again for the opportunity to testify here today about a subject that is critical to our national security and defense. I look forward to working with the Committee in furtherance of these initiatives.