NOT FOR PUBLICATION UNTIL RELEASED BY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

STATEMENT

OF

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Introduction

Good afternoon Mr. Chairman and distinguished Members of the Subcommittee. Thank you for this opportunity to testify before the Subcommittee today on information technology (IT) modernization and policy. I am Dr. John Zangardi, the Department of the Navy's (DON) acting Chief Information Officer (CIO) and the Deputy Assistant Secretary of the Navy for Command, Control, Computers, Communications, Intelligence, Information Operations and Space (DASN C4I & Space). I will address current DON enterprise (the Navy (USN)/Marine Corps (USMC) enterprise) efforts to achieve network command and control (C2), interoperability and agility in meeting current and future threats, as well as future efforts and their related challenges. As acting DON CIO, I strive to ensure continued technical superiority across the DON by working with all stakeholders, to include the Fleet, acquisition, and requirements communities to counter advancing threats. I never lose sight of the fact that our primary focus is how to best support the Warfighter.

It is important that the Department never lose sight of the money - from either the Warfighter or Taxpayer perspective. Under the Next Generation Enterprise Network (NGEN) contract, the DON leveraged the natural forces of competition to save more than $1.2B over the FYDP to operate the Navy Marine Corps Intranet (NMCI) network. We are working to maximize other cost savings across the DON enterprise via Data Center Consolidation (DCC) efforts. Executing system and application consolidations into Navy Enterprise Data Centers (NEDCs), Marine Corps Enterprise Information Technology Services (MCEITS), and other government and commercial data centers will standardize and reduce the DON Information Technology (IT) footprint, achieving financial efficiency and increasing overall cyber security posture.

To this end, the DON is fully supportive of the Department of Defense Joint Information Environment (JIE) initiative or Mission Partner Environment (MPE) initiative. A key MPE cornerstone is the Joint Regional Security Stacks, or JRSS. JRSS are regionally based, centrally managed rack of servers, switches, and other equipment that will help to ensure that the Department's facilities use the same security architecture in order to move toward MPE. The Navy is leveraging NMCI and the Marine Corps Enterprise Network (MCEN) for alignment to and development of the JRSS architecture, foundational to the DoD's Single Security Architecture (SSA) and continuing to inform development of / align to the MPE construct.

Speed to market is critical. Acquisition cycle time must be considered in program formulation to make informed tradeoffs with cost and requirements, enabling DON leadership to balance risks and tailor programs accordingly. I believe our business processes must be designed to drive effectiveness and efficiency in. I will add that some degree of acquisition reform focused on reducing bureaucracy is necessary to reduce time to warfighter for critical IT systems. It is critically important that an environment that cultivates innovation be fostered. With future defense budgets stagnant or declining, innovation will be the competitive edge for our Navy and Marine fighting forces.

How do we foster an environment of innovation? We do it by encouraging and listening to those closest to the challenge. The DON is developing an Innovation Cell, the objective of which will be to take these new ideas from industry and quickly evaluate them against our needs. We want to decrease the time it takes to get the very best ideas into production and in the hands of Sailors and Marines. An excellent example of this includes our mobility effort, which will eventually transfer approximately 25,000 enterprise Blackberry users to smart devices such as iPhones and Android phones. We were able to start from zero to delivery of first mobile phone units in less than 4 months, which, in our world, constitutes light speed.

I also believe we have a great deal to learn from our Industry Partners. They are out front on IT - this is a fundamental shift in "culture" if you will, from the past paradigm on tactical aircraft, ships and other weaponry. The DoD drove those Major Weapon System requirements; with regard to IT, that is simply not the case. Unfortunately, for IT procurements, our acquisition system and business processes still speak to the procurement of Major Weapon Systems. Industry tended to adopt the federal government's business construct, even if not necessarily the most efficient. What we have come to learn is that the Major Weapons Systems Acquisition Model does not "fit" with today's Industry's IT procurement model, which is predominantly driven by speed to market. Today's industry leaders in IT are not inclined to modify their business model to fit ours – the DoD is but a small percentage of their overall business base. This makes IT procurements all the more challenging. We realize there are some things that cannot be avoided in contracting with the Government, and we are working with Industry to identify those and strike a balance with respect to the best of breed business practices that can be employed to benefit of us both. Working together, DoD and the Services can also seek to leverage their

presence in market segments where they do have more leading edge experience, such as cybersecurity, mobile communications and IT service contracting.

Fiscal Year (FY) 2016 budget request for information technology programs

The FY 2016 IT program budget places priority on emerging capabilities in the cyber and electronic warfare efforts and supports a more seamless environment while accounting for the unique differences of the afloat and expeditionary environments. Afloat, the Consolidated Afloat Networks and Enterprise Services (CANES) program continues the transition from legacy IT21 networks to consolidated afloat networks and enterprise services. Ashore, the NMCI and the MCEN form the foundation for DON's vision and strategy for network consolidation, that will be interoperable with and capable of leveraging other Department of Defense provided Net-Centric Enterprise Services. While often arduous, our existing efforts have resulted in a more consolidated and secure IT environment.

Our planned efforts will build upon that success to increase cybersecurity, "right size" our enterprise and position the Department to implement new technologies as appropriate. Efforts such as the inclusion of the Navy's Outside the Continental United States (OCONUS) network, ONE-NET into NMCI, Navy DCC and MCEITS will accelerate the consolidation of our environment. This will enable us to more expeditiously and completely implement initiatives in data strategy, cloud and mobile computing and position the Department to align with the DoD's MPE initiative.

Afloat Networks

The Consolidated Afloat Networks and Enterprise Services (CANES) program replaces existing afloat networks and provides the necessary infrastructure for applications, systems, and services required for the Navy to dominate the cyber warfare tactical domain. CANES achieved its Initial Operational Capability (IOC) in USS MCCAMPBELL (DDG 85) in October 2013. It is currently installed in seventeen ships; including one aircraft carrier, one large deck amphibious ship and fifteen destroyers. Installations are ongoing on eleven other ships. Fully integrating Marine Corps warfighting and IT requirements into CANES is also a priority. Rigorous interoperability testing of Marine Corps applications with CANES enables Marine Corps Expeditionary forces to seamlessly embark in Navy Amphibious Ready Strike Groups, enabling successful global execution of integrated Navy/Marine Corps mission areas.

The FY 2016 budget places priority on emerging capabilities in the cyber and electronic warfare efforts so that we can continue to recruit and train top talent to form 40 cyber mission teams by the end of 2016. We also include funding for Operation Rolling Tide (ORT), which invests in enhancements to our existing legacy networks prior to their replacement with CANES. ORT provides cyber defense-in-depth including defensive solutions for ships, security improvements for our command and control networks, and the expansion of some of our defense initiatives to tactical IT systems.

The Navy is developing capabilities to deliver cyber effects from land and sea-based platforms. Additionally, the Navy has established Task Force Cyber Awakening (TFCA) with the intent of gaining a holistic view of cyber security risk across the Navy and aligning cyber efforts across our platforms and systems. TFCA is tasked to deliver fundamental change to Navy's organization, resourcing, acquisition and readiness by extending our cybersecurity apparatus beyond traditional IT to our combat systems, combat support and other information systems while aligning and strengthening authority and accountability. TFCA has formed four Task Groups (TG), each with representation from across the Navy and Marine Corps:

- TG Capabilities will look at major actions and assessments already underway or recently completed and will prioritize investments to ensure that we are taking the right steps in the near-term.
- TG CYBERSAFE will construct a program that is patterned after the SUBSAFE program. CYBERSAFE will apply to a hardened, very limited subset of components and processes and will include rigorous technical standards, certification and auditing.
- TG Navy Cyber Security will evaluate current authorities, methods and resources to identify enhancements required to ensure the application of rigorous technical standards, certifications and assessments across the Navy.
- TG Technical will support the other TGs and will be comprised of senior engineers from the systems commands to ensure that robust, common technical standards and authorities are in place to drive cyber programs and systems.

Ashore Networks

On June 27, 2013 the DON awarded the NGEN Enterprise Services and Transport Services contract after extensive acquisition planning and source selection evaluation. Simply

put, NGEN is a success story. The NGEN contract demonstrates continued innovation and exemplary acquisition practices. NGEN provides increased contract flexibility, Government oversight, plus Command and Control (C2), security and competition at a lower cost through a tailored acquisition approach. NGEN, the follow-on to the NMCI contract, provides network services to more than 800,000 DON users utilizing 400,000 workstations at over 2,500 locations across the continental United States, Hawaii and Japan. The NGEN contract manages the NMCI network, the largest and most secure Information Technology (IT) network within the DoD with an annual operating budget in excess of $1.3 Billion.

Promote Effective Competition. The NGEN competition saved $1.2B across the FYDP (FY15-FY19) as a Major Automated Information System (MAIS).

NGEN is the natural evolution of the DON Networking Environment. NMCI began as the aggregation of hundreds of disparate networks into a cohesive network with a common standard of service, common price and common security architecture. Under NMCI, the prime contractor was responsible for design, control and maintenance of the network. NGEN advances competition by ensuring government understanding of the network as a whole, as well as the underlying segments and services while allowing for the ability to adapt to changing environments. NGEN's flexibility will enable potential evolutions, such as the JIE, to be implemented without the burden of re-competing the entire contract. This increased competition will also drive future innovation and price reduction without sacrificing performance or security of the DON's network. Furthermore, in NGEN, the Government will serve as the design and technical authority, enhancing C2 functions and cost control.

Accomplished Seamless NGEN Transition Ahead of Schedule. As of October 1, 2014 the DON completed its transition of NMCI seats from the Continuity of Services Contract (CoSC) to the NGEN contract. The NGEN contract transition is a significant achievement in the evolution and delivery of the Navy and Marine Corps' enterprise network. I am pleased to report:

- The transition was completely transparent to our end-users and occurred with no disruption or loss of service.
- Through careful planning and solid teamwork between the Naval Enterprise Networks Program Office, Network Warfare Command and our prime contractor, the team successfully shaved 90 days off the transition timeline, which allowed the DON to start realizing a $20M a month savings three months ahead of schedule.

- The DON now has increased operational and cost insight that will inform network maneuver and guide investment decisions.
- Delivery of capability enhancements continued throughout the transition to include increased information assurance, eradication of Windows XP from the NMCI environment, and approval to introduce iPhone and Android options for mobile cellular users.

Improved Cyber Security. The NGEN contract incorporates Commercial Off-the-Shelf (COTS), Government Off-the-Shelf (GOTS) products and Non-Developmental Items (NDI) to the maximum extent possible. NGEN Increment 1 includes the full set of capabilities of NMCI, while increasing Government operational and design control of the networks and proactive enhancement of Information Assurance and Cyber Security (CS) services to meet evolving security requirements. This approach further ensures that the government understands the network as a whole as well as the underlying services, technologies and processes so that they may be enhanced to gain acquisition and operational flexibility. Where approved and funded, NGEN will continue to expand the network through the migration of legacy networks to the same capabilities, such as the Navy's Outside the Continental United States (OCONUS) network, ONE-NET.

ONE-NET

ONE-NET is the OCONUS Enterprise common computing environment that is preparing to improve network health and align with NGEN requirements for a single shore Navy Enterprise Network (NEN). ONE-NET will utilize program and architectural alignment through transition into NEN to maximize use of constrained resources and promote enhanced interoperability. ONE-NET will incorporate the functional requirements from the JIE while maintaining alignment with the Navy's planned transition into JIE.

Mission Partner Environment

The DON fully supports the DoD MPE. In our view, MPE will be instrumental to increasing network security through centralized software delivery and management. NMCI can provide lessons learned for MPE. The DON intends for NMCI and the MCEN to serve as our primary onramps into MPE, incorporating MPE technical standards through our network

technical refreshment processes as those standards are defined and made available. The DON plans to begin full participation and is intricately involved in understanding how MPE will be implemented in the U.S. Pacific Command Area of Responsibility (PACOM AOR). The DON plans to align with the JRSS version 2.0 beginning in FY 2018, which will match capabilities already implemented in the Navy and Marine Corps' existing enterprise networks. MPE or any future evolution of the network must account for the unique aspects of afloat and expeditionary forces.

Data/Mobility/Cloud Strategy

Last month, Secretary Mabus announced the establishment of the DON's Task Force Innovation to harness the creativity that our Sailors, Marines and civilian employees display every day in the execution of their duties for the benefit of the entire department. A central focus for the Task Force will be improving the way the DON makes use of its information. The large amount of data constantly being created by the Navy and Marine Corps – everything from acquisition program measurements to lessons learned from operations and deployments – has the potential to serve as the basis for the next great idea if it is available to the right minds at the right time, and the DON means to capitalize upon advances in computing power and analysis tools to gain greater advantage from the information it holds.

Some of the initiatives currently underway will significantly advance our effort. By placing our data where the right people can access it, and giving them better means to do so, we can unleash the creative power of our workforce. Our data center consolidation and application rationalization work, besides the security improvements and cost savings it will bring, is moving us toward our goal of a single integrated ashore infrastructure that will simplify access to authoritative data. The "anytime, anywhere" access we are trying to create requires more than an infrastructure, people need a means of gaining access. To that end, we are transitioning to the use of computers with native wireless capability and preparing to replace the portable devices our people currently use with industry standard smartphones and tablets that separate business from personal data to make our mobile workforce more effective. The young people entering the Services today have grown up with, and expect to use this technology. To continue to attract talent, we must be more technologically competitive. A very successful smartphone test begun last December is coming to completion, and we should have 25 thousand devices in use by the end of the Fiscal Year.

To realize the greatest benefit from our move to more capable devices, the DON also needs to take the fullest possible advantage of cloud computing technology. The DoD CIO released updated guidance on acquisition and use of cloud services last December, and we are working with DoD CIO, Defense Information Services Agency (DISA) and the other Services to develop concepts of operations, security strategies, and business processes for moving data into the appropriate mix of public and private clouds. One of the chief issues for us to resolve is the difference between the way services like cloud computing are procured by commercial entities, and the way we must do it, given Defense acquisition law and policy. We are anxious for the benefits promised by cloud computing, and are moving as quickly as possible. However, there are important contracting, as well as data and security considerations that must be worked through before we can accelerate the pace.

While there are challenges to overcome, these are changes we need to make to enable the innovation necessary to retain our advantage. We intend, as former Microsoft CEO Steve Ballmer once said, to use information technology to empower people to do what they want to do, to let them be creative and productive.

Data Center Consolidation

The principal aim of the DON's data center consolidation effort is to gain cost efficiencies while increasing Navy and Marine Corps efficiency and standardization and raising the department's overall security profile. This will be accomplished by decreasing overall data center facility footprint, increasing system virtualization, and maximizing use of commercial and government provided public and private cloud services, as appropriate, to host our data. While the Navy and Marine Corps will follow somewhat different paths, as dictated by Service requirements, we are working toward common outcomes. To date the department has closed over 50 Continental United States (CONUS) data center facilities and has targeted at least 79 more for closure, with several more facilities under review. The Navy intends to have no more than 28 CONUS Installation Processing Node (IPN)-sized data centers in operation and move as fast as practical to leverage commercial data centers by the end of 2019; the Marine Corps will continue to employ its private cloud.

Our data center consolidation targets are aggressive but we believe they are achievable, though we face significant challenges. One of the most difficult tasks will be completing the

rationalization of our systems and applications into an optimal portfolio. We've learned much on our data center consolidation journey; and just as importantly, we have identified what we don't know. The challenges are steep but so are the benefits. Finally, we must continue to mature DoD policy and contracting language for procurement of cloud services to fully realize the benefits cloud hosting can provide. DoD and the Services are working closely on these issues, and we are confident that they can be resolved.

Electromagnetic Spectrum

The recently concluded electromagnetic spectrum auction was far more successful than most predictions anticipated, garnering over $40 billion. Of that, the DON expects to receive $1.5 billion through the Spectrum Relocation Fund to cover the costs of migrating our systems out of the auctioned frequency bands. Spectrum-dependent systems are embedded in nearly every operational platform in our inventory, all contribute to our ability to maintain dominance across the range of operations, and they require access to spectrum to do so.

The loss of any spectrum impacts military programs and associated weapons systems, and the auction of 25 megahertz will affect systems ranging from ship-to-shore wideband transmission terminals to small-unmanned aerial systems. Displacing these systems into alternative spectrum modifies their performance because they must compete with systems already operating in a congested spectrum environment. The Services were permitted only a very compressed timeline to capture the full range of actions required to shift programs out of the auctioned frequencies. While we do not anticipate any loss of military capability at this time, we are concerned that the accelerated pre-auction timeline did not enable the deliberation required to fully understand potential engineering challenges or operational modifications associated with systems functioning in a different spectrum band. Any further loss of spectrum would be cause for great concern, and no additional relocations should be undertaken without deliberate, comprehensive study to ensure there will be no loss of military operational capacity and no impact to United States national security.

Better Buying Power and IT Acquisition Reform

Ability to Control Costs Through The Product Lifecycle. Unlike NMCI, which was awarded as a Commercial Acquisition, NGEN was awarded under negotiated contract

procedures allowing for future competition. This significant change gives the Government enhanced price insight when evaluating changes and price differentials for individual services, ensuring that decisions provide the most cost-effective support for operational conditions. The NGEN acquisition approach allows for evolutionary development and will iteratively analyze the needs, requirements and available resources for future NGEN increments using a spiral development and implementation process. Leveraging this in-depth knowledge of the network and a highly severable contract structure, the DON is now in a better position to re-compete portions of NGEN to access a much broader competitive landscape of products and companies including a contract requirement that 35% of the total value must be dedicated to small business concerns.

Incentivize Productivity and Innovation in Industry and Government. NGEN is leveraging an Award Fee (AF) structure and a shared savings approach to further reduce cost, ensure performance is maintained, and to smoothly transition NMCI services to NGEN. The AF pool is structured to incentivize exceptional performance in areas where it is difficult to objectively measure performance. The AF will be used to ensure seamless transition to the NGEN service delivery model, for effective dispute resolution between the government and contractor, to ensure adherence to the small business participation goals, and to ensure highly innovative technology refresh plans are implemented to continue to drive down government cost and increase network security without sacrificing performance. Modeled after a clause in the NASA ACES-II contract, the shared savings clause stimulates innovations and "good ideas" where the Government and the contractor share in the savings. Often this is a 50/50 share, but in NGEN this will be negotiated as part of each proposal.

IT Acquisition Workforce

The Navy is undertaking several initiatives to strengthen its IT Acquisition Workforce. Consisting of both military service members and members of our civilian workforce, the IT Acquisition Workforce is obtaining increased levels of certifications and training appropriate for both the changing Information Technology threat environment and the evolving acquisition guidance represented by the better buying power initiatives and changing DoD regulatory environment.

The Acquisition workforce itself is tracked at large scale against 5 specific goals: (1) certification of individuals to the appropriate level of qualifications for identified positions; (2) individual maintenance of expertise as represented by continuous learning requirements; (3) positional goals of filling what are identified as critical acquisition positions with qualified members (through membership in the Acquisition Corps); (4) completion of executive level Program Management training; and (5) support of identified programs with appropriately qualified experts through tracking of key leadership position fills. We have made steady progress against all five of these goals has been made over the last two years with each area trending upward.

Technical training continues to evolve, particularly in the area of Information Technology. The DoD Cybersecurity workforce is transitioning the inventory of required knowledge, skills and abilities (KSA's) to the National Incentive for Cybersecurity Education (NICE) Framework. Specific work is ongoing with the KSA's associated with the Cybersecurity Workforce, the IT Acquisition Workforce, and individual skill areas such as "Data Professional". In partnership with academic organizations (such as the UCSD San Diego Supercomputer Center), we are matching course work and workshops (such as "data analytics boot camps") with skills necessary for our government workforce.

Acquisition of new talent is also being pursued. The DON has the opportunity to promote our current and future programs; offer paid internships to college students; and most importantly, offer invaluable experience in the world's leading defense acquisition organization. The Navy is exploring various means to offer college juniors and seniors a start to a successful career in Navy Acquisition. In July 2014, the Navy began to define a strategy that would reinvigorate DON acquisition recruiting on college and university campuses. The foundation of this strategic pilot will be built upon the Pathways Internship Program (previously known as SCEP) that leverages the current HR system to hire rising college juniors at the GS-4 level to work at command headquarters during the summer and/or extended breaks. The program is being established for 24 months per Intern. After successful completion, Interns can be non-competitively converted to the Naval Acquisition Development Program at individual Systems' Commands within 120 days of graduation.

While we are exploring the aforementioned hiring innovations to reach the best and brightest in the IT market, Direct Hiring Authority and HR reforms are needed to compete with private industry employers.

Thank you for your time and attention to these matters.