Naval Information Warfare Center Atlantic

AFCEA Quantico-Potomac Luncheon
22 August 2019

Mr. Peter C. Reddy, SSTM
NIWC Atlantic
Executive Director (A)
The mission of the Department of Defense is to provide a lethal Joint force to defend the security of our country and sustain American influence abroad.

The mission of the Navy is to maintain, train and equip combat-ready Naval forces capable of winning wars, deterring aggression and maintaining freedom of the seas.

The mission of Naval Information Warfare Center Atlantic is to serve our Nation by delivering information warfare solutions that protect national security.

Our Vision: WIN THE INFORMATION WAR
The National Defense Strategy acknowledges an increasingly complex global security environment, characterized by overt challenges to the free and open international order and the re-emergence of long-term, strategic competition between nations. These changes require a clear-eyed appraisal of the threats we face, acknowledgement of the changing character of warfare, and a transformation of how the Department conducts business.
National Defense Strategy

Build a More Lethal Force

- Prioritize preparedness for war
- Modernize key capabilities
  - Nuclear forces
  - Space & cyberspace as warfighting domains
  - C4ISR
  - Missile defense
- Evolve innovative concepts
- Develop a lethal, agile, and resilient force posture & employment
  - Dynamic Force Employment
  - Global Operating Model
- Cultivate workforce talent
  - Professional Military Education
  - Talent management
  - Civilian workforce expertise

NIWC Atlantic provides key personnel (KSAs), labs, processes for this work.

NIWC Atlantic forward deployed posture for 5th/6th Fleet & COCOMs.

NIWC Atlantic Guiding Principle to focus on the Mission & Warfighter; continue to develop deeper understanding within workforce of warfighter requirements and concepts.

NIWC Atlantic leads NAVWAR enterprise in CDM development & use.
National Defense Strategy

▼ Strengthen Alliances and Attract New Partners

- Uphold foundation of mutual respect, responsibility, priorities, and accountability
- Expand Regional consultative mechanisms and collaborative planning
- Deepen interoperability
- Indo-Pacific, NATO, Mid-East, Western Hemisphere, Africa

NIWC Atlantic employees support Joint, FMS & sec. coop. projects

▼ Reform the Department for Greater Performance and Affordability

- Deliver performance at the speed of relevancy
- Organize for innovation
- Drive budget discipline and affordability to achieve solvency
- Streamline rapid, iterative approaches from dev’t to fielding
- Harness and protect the National Security Innovation Base

NIWC Atlantic leading IWRP outreach to non-traditional industry; leads Technical Exchanges (TGA focus).

NIWC Atlantic roles in C2C24, DevOps, FETs, ANTXs.

Continually review CAO/IPT construct to empower performance.

Drive affordability into project work & POH.

NIWC Atlantic lead roles in C2C24, DevOps, FETs, ANTXs.
George Washington, best captured the value a Navy provides to the American people when he said

“It follows then as certain as that night succeeds the day, that without a decisive naval force we can do nothing definitive, and with it, everything honorable and glorious.”
Bigger — Better — Networked — Talented — Agile — Ready

Technologies

and Advancing

of Innovation

take advantage

move faster,

Urgency to

move faster,

take advantage

of Innovation

and Advancing

Technologies

38th Commandant’s Planning Guidance (CPG)

Five priority focus areas:

- Force design
- Warfighting
- Education and training
- Core values
- Command and leadership

“The Marine Corps will be trained and equipped as a naval expeditionary force-in-readiness and prepared to operate inside actively contested maritime spaces in support of fleet operations. In crisis prevention and crisis response, the Fleet Marine Force – acting as an extension of the Fleet – will be first on the scene, first to help, first to contain a brewing crisis, and first to fight if required to do so.”

Naval Operating Concepts

- “Our most challenging adversaries have initiated a new paradigm of warfare, based on the development and fielding of long-range precision weapons, as well as information-related capabilities.”
  - Littoral Operations in a Contested Environment (LOCE)/Expeditionary Advanced Base Operations (EABO)
  - NIWC Atlantic / Pacific working closely with MCWL on Advanced Naval Technology Exercises to advance technology and CONOPS

Composite Warfare

- “Marine Corps must be prepared to operate within Navy Composite Warfare Concept for decentralized command and control.”
- NIWC Atlantic / Pacific uniquely positioned to leverage Navy & Marine Corps C5ISR experience to contribute to development, enhancement, sustainment of Naval tactical Grid

NIWC Atlantic poised to support Future Force Development

- Diversified amphibious fleet (smaller, more specialized ships as complement to current large multipurpose ships)
- Integrated operational architecture to enable information environment operations.
  - Preserving C2 in contested information network environment is paramount.
- Prioritized R&D:
  - artificial intelligence, robotics, quantum computing, nanotechnology.
  - Unmanned and autonomous systems applications for hydrographic survey, reconnaissance, mine warfare, logistics support, deception and warfighting.
  - Swarming and mini-aerial attack systems.
  - C2 in degraded environment: maintain information advantage across all seven warfighting functions.
  - Artificial Intelligence, Data Science, Emerging Technology

Naval Leadership and Priorities

Core attributes:
- Integrity
- Accountability
- Initiative
- Toughness

Lines of effort:
Strengthen Naval power at and from the sea
Achieve high velocity outcomes.
Strengthen our Navy team for the future
Expand and strengthen our network of partners

Focus areas:
- Force Design
- Warfighting
- Education and Training
- Core Values
- Command and Leadership

Vision is for Marine Corps to be manned, trained and equipped as the world’s premier naval expeditionary force-in-readiness
Forward postured with fleets to deter conflict and respond to crisis
Globally recognized as an elite Corps of Marines of exceptional talent and virtue.

Ready:
We will be prepared to serve and protect the American people and our national interests.

Relevant:
We will be a professional and agile armed force, law enforcer, regulator, and maritime first responder on which our partners confidently rely to address the Nation’s increasingly complex maritime challenges.

Responsive:
We will employ our bias for action to excel in mission execution as we protect and defend the homeland.
SPAWAR Changes name to
Naval Information Warfare Systems Command (NAVWARSYSCOM)
June 3, 2019

Aligns Identity with Mission “This new name more accurately describes the full totality of the mission, supporting naval warfare -- from seabed to space.” – ADM Richardson

“In this era of great power competition, information is a fundamental element of warfare, an essential concept of the Navy’s strategy, and a warfare area that transcends the traditional domains of air, sea, land and space. This name change underscores the importance of information warfare in providing our fleet with an unfair advantage in today’s complex and increasingly competitive security environment.” – RADM Becker
Key Technical Capabilities

- Surface Ship and Submarine C4I test and integration facilities
- NAVWAR National Security Operations Center/Cyber Forensics, Vulnerability Assessment Team
- Cyber Forensics Criminal Investigations Laboratory
- Cyber Computer Network Defense Laboratory
- DoD Component Enterprise Data Center
- Commercial and DoD Satellite Comms production and installation
- Vehicle C4I systems integration, testing and production
- Electromagnetic Interference and Electromagnetic Compatibility testing
- Global Distance Support Help Desk
- Air Traffic Control systems development and installation
- Marine Corps Installations Command Electronic Security Systems

Serving our Nation by delivering information warfare solutions that protect national security.
Includes: comms systems (radios), networking systems (routers/switches), cyber operations (red team/forensics/ network defense), intelligence, surveillance, reconnaissance (sensors/decision support applications), data science & analytics, business systems (benefits/personnel) and information security.

FY 2018
- Primarily a Navy Working Capital Fund (NWCF) Organization
- $2.93B Total Obligation Authority (FY18)
- $1.6B Total Obligations
  - 41% Small Business
  - 400+ Small Businesses
  - 91% Competition
- New Orders
  - 67% Naval
  - 23% Joint
  - 10% Non DoD
- Workforce (FTEs)
  - 73% Naval
  - 24% Joint
  - 3% Non-DoD
- 5 Departments
- 120 IPTs
- 436 Projects

EOM June 2019
- Top Sponsors
  - NAVWAR & PEOs
  - MARCORSYSCOM
  - NAVSEA & PEOs
  - Defense Health
  - NAVAIR & PEOs
- 4,753 Gov’t, 117 Mil.
- 248 New Professionals
- 85 Student Interns
- 13 SSTMs
- Advanced Degrees
  - 58 PhDs
  - 1,258 Masters
  - 2,062 Bachelors
- Top Occupational Series
  - IT Specialist (20%)
  - Electronics Engineer (13%)
  - Computer Scientist (12%)
  - Electronics Tech (9%)
  - Mgmt & Prog Analyst (8%)
Organized Around Teams

Integrated Product Team (IPT) competencies cooperatively functioning together to produce goods and services

Departments (cost, schedule and performance)

1.0 Fleet C4I and Readiness
   Charlie Adams

2.0 Expeditionary Warfare
   Kevin Charlow

3.0 Enterprise Systems
   Patrick Fitzgerald

4.0 Shore C2ISR and Integration
   Bruce Carter

5.0 Science and Technology Department
   Dr. Suzanne Huerth

5 Depts — 120 IPTs — 436 Projs

Top Occupational Series
   IT Specialist (20%)
   Electronics Engineer (13%)
   Computer Scientist (12%)
   Electronics Tech (9%)
   Mgmt & Prog Analyst (8%)

Competencies (people, processes and tools)

DoD and the Navy has a clear strategy for what is needed now and for the future.

NIWC Atlantic
2019 Execution Plan
Clear strategy to execute the National and Navy strategy.

We can’t execute without support of the defense industry.

**Industry:**
- Match and deliver the Navy’s demand for new technologies and equipment.

**Product:**
- Develop and deliver capabilities that expand our information warfare advantage.

**People:**
- Recruit, develop and retain a credentialed workforce to meet technical requirements for today and tomorrow.

**Process:**
- Advance efficiency and enhance effectiveness of processes to accelerate capability delivery and improve employee experience.

Ensure the growth and health of technical knowledge and skills.

Improve planning and communication. Keep lines of communication open, deliver on time.

Technology Growth Areas (TGAs)

**On-Demand Manufacturing**: Produce products and/or components, when or as they are required at the point of use, using additive and/or traditional manufacturing methods. *(Steve Lariviere)*

**Model-Based Systems Engineering (MBSE)**: Technologies used to support the development, management and application of virtual constructs of varying fidelity across the spectrum of systems engineering. *(David Smoak)*

**DevSecOps**: Refers to replacing siloed Development, Security and Operations to create multidisciplinary teams that collaborate with shared and efficient practices and tools. *(Kathryn Murphy)*

**Enterprise Resource Tools**: Aims to improve enterprise's productivity and efficiency by providing business logic support functionality. *(Kathryn Murphy)*

**Assured Communications**: Addresses the demand for resilient, and sometimes covert, wired and wireless communications in degraded and/or denied environments. *(Ann Rideout)*

**Cloud Computing**: IT modernization and digital transformation for resilient infrastructure, platform and software services. *(Ann Rideout)*

**Mobility**: Provide Wireless Technology and enterprise access for the warfighter to engage with a mobile environment and applications, anytime, anywhere. *(Ann Rideout)*

**Data Science and Analytics**: Provide warfighters with disruptive analytics-driven, data-informed, and technology-empowered capabilities to drive decision advantages and optimal mission outcomes. *(Rob Keisler)*

**Internet of Things (IoT) and Embedded Systems**: Provide awareness to the warfighter at the edge by connecting devices embedded with state-of-the-art sensors, software, and electronics. *(Rob Keisler)*

**Cyber Warfare**: Ensures availability, integrity, authentication, confidentiality and nonrepudiation of data sources. *(Erick Fry)*

**Autonomy**: Enabling systems to adapt their actions to changes in their mission and operating environment without the intervention of a human operator. *(Dr. Suzanne Huerth)*

The TGAs represent technology areas, disciplines and associated culture changes we are targeting to become future command core competencies.
Information Warfare Research Project (IWRP)

Advancing Naval IW through rapid prototyping on a global scale
Focusing on underlying technologies that advance Naval IW capabilities through a consortium that can support research, development and prototyping

IWRP:
- Enables rapid research for IW
- Prototype projects in the area of IW
- Increases access to innovative commercial solutions for defense requirements
- Fosters innovation with non-traditional industry partners
- Allows Prototype consideration through Industry initiated Ideas

OTA:
- Greatly increase speed to award
- Reduce barriers to competition
- Increase access to innovative commercial solutions
- Leverage advanced commercial technologies

10 U.S.C. § 2371b authorizes DoD to carry out transactions for prototype projects other than a procurement contract, or cooperative agreement

Authorizes "Other Transaction for Prototype Projects"
Prototype projects directly relevant to enhancing the mission effectiveness of military personnel and the supporting platforms, systems, components, or materials proposed to be acquired or developed by the DoD, or for the improvement of platforms, systems, components, or materials in use by the armed forces

https://www.theiwrp.org

A prototype project is used to evaluate the technical or manufacturing feasibility or military utility of a particular technology, process, concept, end item, effect or other discrete feature.

**Can be**
- Proof of concept
- Pilot
- Novel application of commercial technology for defense purposes
- Creation, design, development, demonstration of technical, evaluation or operational utility
- *Or a combination of the above*

**May include**
- Systems
- Subsystems
- Components
- Materials
- Methodology
- Technology
- Processes
- Agile development activity

*The quantity should generally be limited to that needed to prove technical or manufacturing feasibility or evaluate military utility*
IWRP Execution Process

- IWRP uses a consortium based approach.

- **Scope/IWRP Technology Areas**
  - Cyber Warfare
  - Data Science/Analytics Technologies
  - Assured Communications
  - Cloud Computing
  - Enterprise Resource Tools
  - Collaboration and Social Networking
  - Autonomy
  - Internet of Things (IoT) Embedded Systems
  - Mobility
  - Model-Based Systems Engineering (MBSE)
  - On-Demand Manufacturing
  - Technologies that would enable and improve:
    - Assured Command and Control (AC2)
    - Battlespace Awareness (BA)
    - Integrated Fires (IF)

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Schedule

Points of Contact
To become a member of the IWRP consortium go to https://www.theiwrp.org

NIWC Atlantic
- **Don Sallee** – Program Manager
  - donald.sallee@navy.mil
- **Lisa Rosenbaum** – Agreement Officer
  - lisa.rosenbaum@navy.mil

NIWC Pacific
- **Vince Squitieri** – IWRP IPT Lead
  - vincent.squitieri@navy.mil
- **Sharon Pritchard** – Agreement Officer
  - sharon.pritchard@navy.mil

Next event
https://www.theiwrp.org

**Start Execution**

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<th>Event</th>
<th>Location</th>
<th>Date</th>
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<tr>
<td>1st QID</td>
<td>Charleston, SC</td>
<td>8 November</td>
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<tr>
<td>2nd QID</td>
<td>San Diego, CA</td>
<td>26 February</td>
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<td>3rd QID</td>
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<td>14 May</td>
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<td>4th QID</td>
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<td>14 August</td>
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<td>2nd FY20 QID</td>
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<td>CDCA Annual Symposium</td>
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<td>Virtual Collaboration March 5/6/7</td>
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<td>Virtual Collaboration June 25-27</td>
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<td>FY19 Oct Dec Jan Feb Mar Apr May Jun Jul Aug Sep FY20 Oct Nov Dec Feb Mar</td>
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Where to Get Additional Information

Internal NAVWAR Enterprise Wiki Page (govt. access only)
https://wiki.spawar.navy.mil/confluence/x/7-N_Dw

Public Facing IWRP Website
https://theiwrp.org

FY19 Small Business Targets and Achievements

Dollars obligated

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<th>SB</th>
<th>SDB</th>
<th>WOSB</th>
<th>HUB Zone</th>
<th>SDVOSB</th>
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<td>Dollars obligated</td>
<td>$514,539,298</td>
<td>$259,582,300</td>
<td>$165,419,521</td>
<td>$20,120,582</td>
<td>$69,694,297</td>
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<td>Target</td>
<td>39.27%</td>
<td>17.7%</td>
<td>11.37%</td>
<td>1.55%</td>
<td>5.42%</td>
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<td>Achievement</td>
<td>39.89%</td>
<td>20.13%</td>
<td>12.83%</td>
<td>1.56%</td>
<td>5.40%</td>
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Engagements with Industry and Academia

▼ Formal Initiatives with Industry
- Contracts Industry Council: CHAS (bimonthly)
- Industry Days CHS/HR (As Required)
- Technology Exchanges CHS/HR (Qtr)
- Small Business Industry Outreach Initiatives (SBIOI): CHAS (Qtr)
- Women in Defense Speed Networking: CHAS (Qtr)
- NOLA SBIOI: NOLA (Annually)
- Tidewater Assoc. of Service Contractors SBIOI: HR (Annually)
- AFCEA WEST: SD (Annually)
- DoN Gold Coast: SD (Annually)
- Sea Air Space: DC (Annually)
- Salute to Small Business (SBA): Columbia, SC (Annually)
- ONR S&T: DC (Annually)
- C5ISR: CHAS (Annually)
- Society of Military Engineers (SAME) SB Conference CHAS (Annually)
- SC Research Authority (SCRA) SB Outreach: CHAS (As Requested)
- Small Business Dev. Center Training: CHS/NOLA (Qtr)
- Monthly Industry Luncheons (As Requested)

▼ Informal Initiatives with Industry
- Weekly one-on-one meetings (as requested) in conjunction with the Small Business Development Center: CHS/NOLA
- Daily emails/calls

Industry Resources

For the innovators
http://www.defenseinnovationmarketplace.mil/navy.html
Doing Business with NAVWAR
NAVWAR e-Commerce Central (E-CC)
https://e-commerce.sscno.nmci.navy.mil
NIWC Atlantic Public Page
http://www.public.navy.mil/navwar/Atlantic/Pages/ForIndustry.aspx

▼ Formal Initiatives with Academia
- Cooperative Research and Development Agreements (as required)
- Partnership Intermediary Agreements (as required)
- Patent License Agreements (as required)
- Commercial Service Agreements (As required)
- Educational Partnership Agreements

Engagements for innovative solutions and improvements in delivery and performance
Serve our Nation by delivering information warfare solutions that protect national security.

WIN THE INFORMATION WAR.