



Office of the Deputy Director, Engineering *2020 Priorities*

Mr. Tom Simms

Acting Director, Engineering Policy & Systems

OUSD Research & Engineering (AC)

NDIA SE Division Meeting

Lockheed Martin Global Vision Center

February 12, 2020

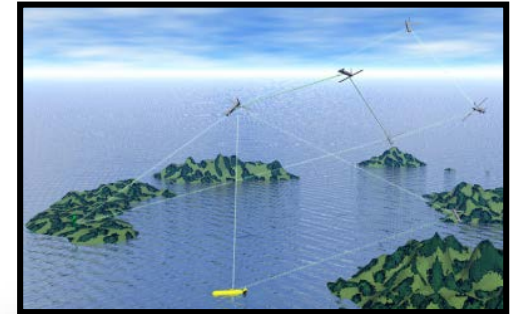


USD(R&E) Mission



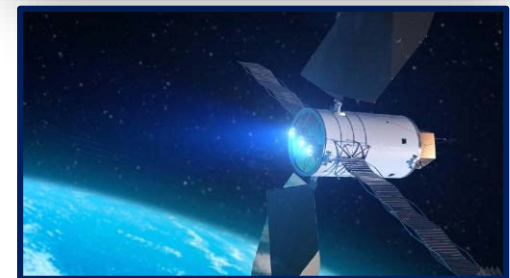
■ Ensure Technological Superiority for the U.S. Military

- Set the technical direction for the Department of Defense (DoD)
- Champion and pursue new capabilities, concepts, and prototyping activities throughout the DoD research and development enterprise



■ Bolster Modernization

- Pilot new acquisition pathways and concepts of operation
- Accelerate capabilities to the Warfighter



“Our mission is to ensure that we, if necessary, reestablish and then maintain our technical advantage.”

– Under Secretary Griffin, April 2018



Modernization Priorities

“We cannot expect success fighting tomorrow’s conflicts with yesterday’s weapons or equipment.”

– National Defense Strategy

- 5G
- Autonomy
- Biotechnology
- Cyber
- Directed Energy
- Fully Networked Command, Control, and Communications
- Hypersonics
- Machine Learning / Artificial Intelligence
- Microelectronics
- Quantum Science
- Space

For each modernization priority, a Portfolio Manager (Assistant Director) is responsible for establishing the DoD-wide, mission-focused strategy and execution plan.



USD(R&E) "Corporate" at a Glance...

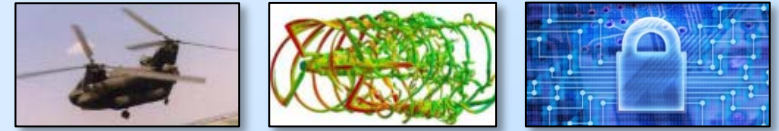
Research, Technology & Labs

- Provides affordable options for new concepts and capabilities from basic science to advanced tech.
- Oversees FFRDCs/UARCs and 63 DoD Service labs/centers
- Leads strategic outreach (Intl, SBIR, Cross-Agency)



Strategic Technology Protection & Exploitation

- Assesses and mitigates risk of loss of critical techs
- Leads Manufacturing Technology Development and the National Manufacturing Institutes
- Established Resilient-by-Design Methodologies



USD(R&E) provides leadership from concept to capability to meet the challenges of an uncertain future through advances in science, technology and innovative engineering, informed by developmental test & evaluation

Engineering

- Assesses feasibility and risk for major programs
- Establishes Mission Engineering capability for R&E
- Advances the Systems Engineering competency

Test Resource Management Center

- Provides adequate testing in support of development, acquisition, fielding and sustainment of defense systems; and maintains awareness of test and evaluation (T&E) facilities and resources, within and outside DoD

Developmental Test, Evaluation & Prototyping

- Advances developmental test standards and policy, assists major programs in developing test plans, and provides oversight for the developmental test community
- Identifies, develops, and demos multidomain concepts and technologies to satisfy DoD, Joint, interagency, and Combatant Command priorities
- Works within operational mission threads and obtains Warfighter feedback

Strategic Intelligence and Analysis Cell (SIAC)

Defense Technical Information Center (DTIC)

Defense Microelectronics Activity (DMEA)



Engineering – FY2020 Plans



- **Balancing Priorities**

- Independent Technical Risk Assessments (ITRAs)
- Mission Engineering Support
- ACAT ID Program Engagement

- **Engineering Policy and Implementation**

- DoDI 5000.02 Engineering Policy rewrite
- Collaborate with A&S and Services to share technical innovations and best practices across programs

- **Engineering Focus Areas:**

- Digital Engineering
- Mission Engineering
- Modular Open Systems Approach (MOSA)
- Intellectual Property (IP)

- **Increase working-level exchanges between industry and government**

- Establish Engineering Technical Fellows program



Engineering -- FY2020 Activities



- **National Defense Authorization Act (NDAA) for Fiscal Year 2020**
 - **Section 230: Policy on the talent management of digital expertise and software professionals.**
 - **promote and maintain digital expertise and software development as core competencies of civilian and military workforces of the Department**
 - **recruitment, development, and incentivization of retention in and to the civilian and military workforce of the Department of individuals with aptitude, experience, proficient expertise, or a combination thereof in digital expertise and software development**
 - **development and maintenance of civilian and military career tracks related to digital expertise, and related digital competencies**
 - **DIGITAL ENGINEERING DEFINED—For this part of the law, “digital engineering” is defined as the means the discipline and set of skills involved in the creation, processing, transmission, integration, and storage of digital data, including data science, machine learning, software engineering, software product management, and artificial intelligence product management**



Engineering -- FY2020 Activities



- **National Defense Authorization Act (NDAA) for Fiscal Year 2020**
 - **Section 231: Digital engineering capability to automate software testing and evaluation**
 - **Establish a digital engineering capability to support the development and deployment of systems. The digital engineering capability will include a test infrastructure and software to support automated software testing**
 - **Additional elements of this task include: establishing a steering committee, selected program assessment as demonstrations for comparative analysis, intellectual property strategy assessment, and workforce and infrastructure plan for new policies and guidance to support digital engineering implementation; engagement with DIB and DSB for an independent assessment of progress in implementing the elements of the statute.**



DoD Research and Engineering Enterprise



Creating the Technologies of the Future Fight



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