RECORD VERSION

STATEMENT BY

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Introduction

Chairman Kelly, Ranking Member Ernst, distinguished Members of the Senate Armed Services Subcommittee on Emerging Threats and Capabilities, thank you for your continued support and enduring commitment to our Soldiers, our Civilians, and their Families. I appreciate the opportunity to testify alongside my Department of Defense Science and Technology (S&T) Partners, Dr. Tompkins, Brigadier General Pringle, and Rear Admiral Selby today.

The mission of the United States Army Combat Capabilities Development Command—known as DEVCOM—is to serve as the scientific and technological foundation of the Army modernization enterprise through world-leading research, development, lifecycle engineering, and analysis. DEVCOM provides comprehensive research, state-of-the-art technology development, analysis, and engineering services that produce capabilities to enable a modernized Army capable of conducting Multi-Domain Operations as a part of an integrated Joint Force.

DEVCOM is a part of the larger Army Futures Command (AFC) Team, under the command of GEN John M. Murray who leads the persistent modernization of the United States Army. The mission of the Army Futures Command is to make sure our Army continues to sustain overmatch against all potential adversaries, ensuring that we can fulfill our mandate to deter and, if necessary, to fight and win. Even though the COVID-19 pandemic changed the way we operate, the AFC continues to drive rapid modernization. This past year, we have seen shared challenges solved, incredible progress, and transformational change, with an unprecedented unity of effort across the Army and with our joint partners.

DEVCOM accomplishes our mission with a team of nearly 15,000 scientists, engineers, analysts, technicians and support staff at close to 90 locations across the U.S. and almost 20 locations overseas. We are a Team of Teams. Our main centers and laboratories are:

- The Army Research Laboratory (ARL), Adelphi, MD: As the Army's Corporate Laboratory for basic research, ARL provides disruptive

fundamental research that is shaped and informed by Army concepts and underpins Army modernization.

- DEVCOM's seven Research, Development, Engineering, and Analysis Centers deliver technologies across a wide-range of competencies in support of near, mid, and future Warfighting capabilities. Our Centers create, integrate and engineer solutions to deliver technology to Soldiers: The Armaments Center, Picatinny Arsenal, NJ; The Aviation & Missile Center, Redstone Arsenal, AL; The C5ISR Center, Aberdeen Proving Ground, MD; The Chemical Biological Center, Aberdeen Proving Ground, MD; The Data and Analysis Center, Aberdeen Proving Ground, MD; The Ground Vehicle Systems Center, Detroit Arsenal, MI; and The Soldier Center, Natick, MA.
- DEVCOM also has four established Regional Hubs that serve as an extension of our science and technology ecosystem. With locations in Boston, Chicago, Austin, and Los Angeles, DEVCOM is well postured to collaborate with academic and industry partners, encouraging groundbreaking advances in basic and applied research areas of relevance to the Army.

DEVCOM Priorities

DEVCOM priorities, directly aligned with Headquarters Department of the Army and AFC, focus and position the DEVCOM team to deliver Science & Technology solutions for Army Multi-Domain Transformation. We currently have three priorities:

1. Delivering Priority S&T Outputs, in support of the Army's Modernization Priorities and the Future Force;

2. Soldier Centered Design, in support of fully embracing experimentation and the Army's Project Convergence Campaign of Learning, and

3. Defining The Future of Work in alignment with our Talent Management Strategy and Diversity, Equity, and Inclusion goals.

Delivering Priority S&T Outputs

DEVCOM is delivering advanced capabilities for the Army's six Modernization Priorities and actively supports the Army's Cross Functional Teams and AFC. Technologies such as: The Extended Range Cannon Artillery in support of Long Range Precision Fires; Next Generation Squad Weapon in support of Soldier Lethality; Air Launched Effects in support of Future Vertical Lift; and Low Cost Extended Range Air-Defense and the Ballistic Low Altitude Drone Engagement in support of Air and Missile Defense technologies were developed by DEVCOM and represent significant advancements in Army operational capabilities. As we deliver capabilities, we are also expanding our scientific research to inform longer-term, future needs as well. We are enabling the Army's nine Research Priorities—published in the Army's 2019 Modernization Strategy:

1. Disruptive Energetics: Greater than 2x energetic energy over smaller footprints. 2. RF Electronic Materials: Taking advantage of optical and thermal properties of diamond materials for directed energy. 3. Quantum: Optimized information transfer, sensing, and communication with unparalleled security. 4. Hypersonic Flight: Aerodynamics, materials, and processes. 5. Artificial Intelligence: Increasing speed and agility in which we respond to emerging threats. 6. Autonomy: Maneuverability and off-road mobility of platforms. 7. Synthetic Biology: Reactive and responsive skins/spectrally selective materials/antimateriel properties. 8. Material by Design: Protection overmatch against future threats. 9. Science of Additive Manufacturing: For next generation munitions for increased range and lethality.

We are also looking at Technology, Infrastructure, and Talent Management implications within each to ensure we are postured to deliver in the future. These longer-term investments enable the shift to having science inform concepts and technology inform requirements just as emerging concepts inform further S&T work so that the Army's future is based on understanding the art of the possible.

Experimentation and Soldier-Centered Design

A critical component of our work is taking potential S&T solutions from the lab "into the dirt" for experimentation alongside Soldiers to ensure Soldier Centered Design.

Soldier Centered Design means getting prototypes into the hands of Soldiers from the operational force early so that we can learn from their feedback. In 2021 alone, we will conduct more than 200 experiments, or what we call “Soldier touch points.” Our scientists, engineers, and analysts leverage feedback from those touch points to accelerate promising ideas and cut the time it takes to deliver a tangible Soldier capability.

The best exemplar of large-scale Soldier Centered Design is our support to Project Convergence (PC), the Army’s multi-year Campaign of Learning, where we experiment with emerging technologies and existing programs of record, both from industry partners and our fellow Services, to integrate capabilities that empower the joint force to conduct the Multi-Domain Operations fight on future battlefields.

During PC20, our first annual capstone event for PC, the AFC team went from theory to experimentation and demonstration in under eight months and included 750 Soldiers, scientists, engineers, analysts and technicians at three installations spread out over 1,000 miles. More than 100 DEVCOM teammates participated at Yuma Proving Ground, enabling 20-plus potential technology solutions that decreased sensor-to-shooter processing and execution from tens of minutes to tens of seconds. That speed, together with range and convergence, give the Army the decision dominance we need to ensure overmatch as part of the Joint Force.

PC21 planning is currently underway at AFC. DEVCOM will introduce even more technology solutions at PC21 this year, enabled by the launch of the DEVCOM Joint Systems Integration Laboratory or JSIL. The JSIL serves as our primary Systems of Systems lab-based risk reduction, integration, and collaboration environment. It lets us rehearse in the lab, saving money and time, and maximizing our time “in the dirt.”

Future of Work

Throughout 2020, Army leadership affirmed “people as the #1 priority” in our rapidly changing operational environment. DEVCOM has invested significant energy in the development of the DEVCOM Talent Management Strategy and has made acquiring, employing, and engaging our talent a top priority to ensure we can retain the world-class talent we have and attract the new talent we need.

The Future of Work serves as the natural progression of our Competency-Based Talent Management Strategy. In implementing our concept, we will enable our workforce to work where and when they are most productive, to virtually collaborate across organizational and competency boundaries to spur innovation at the speed required to meet tomorrow's challenges in all domains, and connect us to new sources of talent while being fully inclusive and diverse. We are aligning our Future of Work plan with the Army's Facility Investment Strategy and space utilization targets. Our Ground Vehicle Systems Center in Detroit and Aviation and Missile Center in Huntsville have already taken steps to pursue innovation in this space, including the reconfiguration of thousands of square feet for "hoteling," departing leased spaces to increase cost avoidance, and repurposing administrative space to laboratories and high bays to more efficiently support current and future efforts.

DEVCOM Enabling Authorities

AFC and DEVCOM are excited to announce that DEVCOM is now officially a Sec. 216 (formerly Sec. 233) Pilot Organization. This valuable authority, granted by the FY2021 National Defense Authorization Act, has been instrumental in helping DEVCOM attract and retain talent.

DEVCOM uses a number of strategies and programs afforded to Science, Technology, Reinvention Laboratories or STRLs to find and retain talent, to include Direct-Hire Authority (DHA) used for engineer and scientist hires. From October 1, 2019 to March 5, 2021 DEVCOM hired approximately 300 personnel using this authority.

Additionally, by 2019 all seven DEVCOM STRLs began investing in Section 2363 in Title 10 of the U.S. Code, a specific provision that establishes mechanisms to provide funds for defense laboratories for research and development of technologies for military missions, and have steadily increased each year, with an objective to maximize investment at 4% in FY22. In FY21 DEVCOM planned approximately 200 projects leveraging these funds in support of personnel, infrastructure, and technology transfer.

Conclusion

AFC and DEVCOM thank our congressional partners for your continued support and enduring commitment in the form of much required and appreciated STRL authorities and congressional funding that enable and enhance our ability to lead world-class talent, pursue laboratory revitalization, and modernize and acquire information technology required to perform and execute our mission. DEVCOM supports the execution of the Army Multi-Domain Transformation by conducting relevant, transformative research rooted in the tenets of discovery, innovation, and transition to deliver Science and Technology solutions through focused investments in basic and applied research. DEVCOM will continue to keep Congress informed on its exercise of authorities, as well as additional areas in which we require support to deliver the critical research, technology, engineering, and analysis that enable the Army's Multi-Domain Transformation.