RECORD VERSION

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INTRODUCTION

Chair Duckworth, Ranking Member Cotton, distinguished Members of the Senate Armed Services Subcommittee on Airland, thank you for your continued support and enduring commitment to our soldiers, our civilians, and their families. On behalf of the Secretary of the Army, the Honorable Christine Wormuth, and the Army Chief of Staff, General James C. McConville, we thank you for the invitation to appear before you today.

Our shared mission is to make sure that the Army continues to achieve overmatch against all potential adversaries, ensuring that our Army can fulfill its mandate to compete successfully, deter, and, if necessary, fight and win our Nation's wars as part of the Joint Force.

The Army's fiscal year (FY) 2023 budget request both maintains the readiness of the Army and establishes a sustainable path to transform into the Army of 2030. This transformation will require a strategic pivot from two decades of focus on counterterrorism, toward adaptation to meet our top pacing challenge in China and the acute threat of Russian aggression. The Army is boldly transforming to provide the Joint Force with the speed, range, and convergence of the cutting-edge technologies that will be needed to provide future decision dominance and overmatch for great-power competition.

THE STRATEGIC ENVIRONMENT

The new classified 2022 National Defense Strategy highlights the People's Republic of China as our most consequential strategic competitor and the pacing challenge for the Department of Defense (DoD). It also recognizes the acute threat posed by Russia, as illustrated by its brutal and unprovoked further invasion of Ukraine. Both states are applying all instruments of national power, including military modernization, as they compete aggressively with the United States.

China continues to progress in artificial intelligence (AI), robotics, and cyber research and development. Advancements in hypersonic technology add to its strategic reach, endangering some of our traditional force projection assets. Both China and Russia have committed to an increased pace and scope of military exercises, honing their joint warfighting capabilities. In its further invasion of Ukraine, Russia has brought a level of brutality and destruction to the continent of Europe at a scale not seen in a long time. The Army's modernization efforts take these new realities into account as we define capability requirements and develop new concepts.

HOW WE FIGHT

Our Multi-Domain Operations (MDO) concept describes how we fight—by continuously converging effects across all domains to create and exploit relative advantages over the adversary. The Army is currently codifying MDO into doctrine to ensure the Army is capable and ready to support Joint Force operations. At the same time, we are developing a new future operating concept—how we will fight beyond MDO—based on future threat assessments, emerging Science and Technology and experimentation.

WHAT WE FIGHT WITH

The FY 2023 budget request puts the Army on a strategic path to modernize our organizations and equipment and build the Army of 2030. Front and center in this effort is our commitment to our six modernization priorities: Long Range Precision Fires, Next Generation Combat Vehicle, Future Vertical Lift, Network, Air and Missile Defense (AMD), and Soldier Lethality. The Army will continue to focus on building a multi-domain force by putting 24 new systems into the hands of soldiers by FY 2023, in the form of either prototypes for soldier feedback or the initial equipping of units.

We are grateful to Congress for the stable funding provided to support our modernization efforts. The FY 2023 budget request builds on the progress we have

made across all modernization priorities. Within each area, we highlight our partnership, recent progress, and the way forward with continued, steady funding.

- Long Range Fires Programs:
    - The Army demonstrated the Precision Strike Missile's (PrSM) capability to achieve ranges well beyond legacy Army Tactical Missile System.
    - We successfully tested the Land Based Anti-Ship Missile seeker and Extended Range Propulsion ramjet, setting conditions for subsequent increments of the PrSM program.
    - We have demonstrated that the Extended Range Cannon Artillery (ERCA) can now shoot in the 70-kilometer range with accuracy and are on track to field the first ERCA battalion in FY 2023 to support an Operational Assessment in FY 2024.
    - The Army's Rapid Capabilities and Critical Technologies Office, in a partnership with the Navy, plans to deliver the first hypersonics battery in FY 2023.
    - We also anticipate delivering the Army's Mid-Range Capability (MRC) initial hardware to the unit in 1QFY23. The MRC prototype effort leverages existing Service missiles, launchers, software, and hardware to fill a critical capability gap identified by the U.S. Indo-Pacific Command.

- Next Generation Combat Vehicle Programs:
    - The Army remains fully committed to the Optionally Manned Fighting Vehicle program, executing a multi-phased acquisition approach to maximize competition.
    - The Robotic Combat Vehicle (RCV) program continues to make progress, informed by extensive experimentation with the RCV-Light Full-System Prototype effort.
    - We are on track to field the first Armored Multi-Purpose Vehicles in 2QFY23, to replace the 1960s-era M113 Family of Vehicles.

- The Mobile Protected Firepower (MPF) program will begin low-rate production this year, with first fielding of MPF vehicles planned for FY 2025.
- We are supporting the Army's climate strategy and the administration's greenhouse gas policies with the Bradley Hybrid Electric Vehicle, High Mobility Multi-Purpose Hybrid Wheeled Vehicle, and Joint Light Tactical Vehicle Hybrid Electric Vehicle projects.

- Future Vertical Lift Programs:
  - The Army is committed to ensuring both the Future Attack Reconnaissance Aircraft (FARA) and the Future Long Range Assault Aircraft (FLRAA) achieve First Unit Equipped in FY 2030.
  - FARA will close the gap left by retirement of the Kiowa with transformational battlefield reach, lethality, and survivability.
  - FLRAA will provide more lethal and effective Assault and MEDEVAC capabilities with increased speed, range, payload, and endurance.
  - The Future Tactical Unmanned Aerial System is leveraging a year-long Soldier Touchpoint "Buy, Try, Inform" effort to replace the RQ-7 Shadow with a runway independent, CH-47F transportable, and weather hardened system with advanced acoustics.
  - The Army is also developing Air Launched Effects, a critical component of the FARA ecosystem, providing a low-cost asymmetrical advantage that will transform the battlefield geometry against our near-peer adversaries.

- Network Programs:
  - The Army is currently fielding Capability Set 21 to Infantry Brigade Combat Teams (BCTs) and a modernized tactical network transport tool suite to Expeditionary Signal Battalions-Enhanced.
  - We have also fielded modernized network technology, such as upgraded mission command and fires applications, mobile mission command

upgrades, resilient satellite communications equipment and modernized cryptographic systems.

- Air and Missile Defense (AMD) Programs:
  - The Army is leveraging the Integrated Air and Missile Defense Battle Command System (IBCS) to integrate the full suite of Air and Missile Defense capabilities, including both theater and short-range air defense.
  - The Army is improving the Maneuver-Short Range Air Defense capability with requirements to add future kinetic effectors.
  - The Army continues to make progress on its Directed Energy Maneuver-Short Range Air Defense effort, a 50 kilowatt-class laser on a Stryker.
  - We are advancing directed energy efforts for Indirect Fire Protection Capability (IFPC) by pairing high-energy lasers with high-power microwaves for a layered defense of fixed and semi-fixed sites against an array of threats.
  - The Army Integrated Air and Missile Defense initial operating capability is planned for 1QFY23, with fielding on track for one battalion.
  - We have produced two Lower Tier Air and Missile Defense Sensor (LTAMDS) prototypes, with fielding scheduled to begin in FY 2022 and initial operating capability anticipated in FY 2024.
  - We have accepted delivery of two batteries of Iron Dome Defense System-Army from the Israeli government and have learned from the deployment of that demonstration system.
  - The Army will receive 16 prototype launchers and associated missiles for the Enduring IFPC Inc 2 program in 4QFY23.

- Soldier Lethality Programs:
  - The Army is working with Microsoft Corporation to refine Integrated Visual Augmentation System (IVAS) sensors and display functionality before conducting Operational Testing in 3QFY22, and we are on track for delivery to the first Unit by 4QFY22.

- We have equipped five brigades with the Enhanced Night Vision Goggle–Binocular (ENVG-B). ENVG-Bs are currently in production, which will continue through FY 2024.
- Production of the Next Generation Squad Weapon (NGSW) Rifle, Automatic Rifle, General Purpose Ammo and improved sight system will begin in FY 2022, with First Unit Equipped expected in 4QFY23.

- Synthetic Training Environment (STE) Programs:
  - The Army will validate its foundational simulation capability for the STE Information System (STE-IS) and Reconfigurable Virtual Collective Trainers (RVCT) at the company level at Fort Hood, Texas in FY 2022.
  - We continue fielding of One World Terrain, a key component of STE-IS, which is already in the hands of soldiers and units.
  - We continue progress on developing the Squad immersive Virtual Trainer which, when paired with IVAS, will allow our soldiers to simulate any location on the planet right from their combat goggles.
  - The Army is working to accelerate the delivery of the next generation of live training systems prior to FY 2026 to ensure they will converge onto the STE-IS foundational system.

- Assured Positioning Timing and Navigation (PNT) and Space Programs:
  - The Army will begin transition to M-Code Global Positioning System and alternative PNT beginning in FY 2024, following the first fielding of Mounted Assured PNT System GEN II.
  - We are currently fielding the directed requirement for our Dismounted Assured PNT System.
  - The Army continues to invest in the ground segments of space-based technologies that close operational gaps in deep sensing and targeting activities.

The Army's budget request also continues procurement and modernization of our enduring equipment for our operational Aviation platforms, Ground Combat Systems, Intelligence programs, Logistics and Ammunition. We carefully balanced the overall Research, Development and Acquisition portfolio, including fine-tuning between Research, Development, Test and Evaluation funding and Procurement funding, as we transition from enduring systems to our new modernized systems.

Our Aviation portfolio continues to modernize and upgrade the Apache, Black Hawk and CH-47 helicopters, munitions, and aircraft survivability. Apache modernization and upgrade efforts include Improved Turbine Engine integration, crypto-modernization, and Modular Open Systems Architecture. The Army remains on track to complete full divestment of Black Hawk UH-60As by FY 2022 for the Army National Guard and FY 2024 for the active component. We are continuing to procure the MH-47G Block II Chinooks for our Special Operations units. The Army is ramping up Joint Air-to-Ground Missile production to replace the aging Hellfire missile and investing in Aircraft Survivability Equipment, a suite of systems that protect Army aircraft from threat infrared missiles, radar guided missiles, and LASERs through detection and defeat systems.

Armored Brigade Combat Team (ABCT) Modernization and combat vehicle protection remain a priority. With this budget, the Army will procure 44 Abrams M1A2SEPv3s Tanks, equaling one half of an ABCT; 102 Strykers, or approximately one third of a Stryker Brigade Combat Team; 36 Bradley A4s; completing the procurement of the fourth ABCT set; 27 Self-Propelled Howitzer Paladin Integrated Management (PIM) vehicle sets; and 6 Joint Assault Bridges, or one and a half ABCTs. We are also continuing to pursue improved Vehicle Protection Systems for the Abrams and Bradley.

Our Intelligence portfolio is focused on closing capability gaps in deep sensing with programs like the Tactical Intelligence Targeting Access Node for deep sensing, analysis, and early warning; the Terrestrial Layer System at the Brigade and echelon above Brigade levels for signals intelligence and electronic warfare; the Multi-Domain Sensing System; and the Multi-Function Electronic Warfare-Air Large that will be

mounted on multiple platforms to gather intelligence or conduct electronic warfare operations.

The Air and Missile Defense portfolio continues to invest in Counter small Unmanned Aircraft Systems (C-sUAS) in addition to those programs detailed in the Air and Missile Cross-Functional Team (CFT) portfolio above. During FY 2022, we will procure C-sUAS for two Divisions and 29 fixed sites, and FY 2023 would procure one Division and 17 fixed sites to cover globally prioritized critical sites.

Our Command and Control portfolio is procuring Manpack and Leader Radios and related equipment to support five BCT type formations; a Low Cost Tactical radio that will replace legacy Single Channel Ground and Airborne Radio System and meet National Security Agency cryptographic modernization requirements; a Unified Network Operations prototype to enable common planning, configuration, monitoring, provisioning, management, and defense of the Network; and continues to procure and develop improvements for the Joint Battle Command-Platform.

Finally, the Logistics portfolio continues the procurement of Joint Light Tactical Vehicles, High Mobility Multipurpose Wheeled Vehicles (HMMWVs) and HMMWV antilock braking system/electronic stability control kits to improve our tactical wheeled vehicle fleet and address vehicle rollover and safety concerns; invests in Army Watercraft, a significant combat multiplier in support of Army operational concepts and the Geographical Combatant Commander in Large Scale Combat Operations; and realigns funding to support critical ammunition program lines and Army Training Strategies to ensure contractual requirements are met to maintain Industrial Base Minimum Sustainment Rate capacities.

HOW WE ORGANIZE

We are developing new organizations as we transition from modernization concepts to tangible sources of strategic readiness. The Multi-Domain Task Force (MDTF) is one

example, providing long-range precision fires in conflict and long-range precision effects in competition. The MDTF participated in Project Convergence 21 to experiment on its ability to synchronize long-range fires and effects with the Joint Force and will continue to participate in 2022 with joint and coalition forces to provide lessons for future employment of this capability.

The Army uses Army 2030 and Army 2040 to describe what our force will look like in the near and distant future. We are refining those descriptions through experimentation and analysis of the impact emerging technology will have on the character of war. The investments are included in the FY 2023 budget request and will inform the changes we need to provide a combat credible force of the future.

HOW WE DO BUSINESS

Soldier Centered Design drives the entire process. Taken from industry best practices, this concept allows the Army to get feedback from soldiers and commanders early in the development process. This is accomplished by getting prototype equipment into the hands of soldiers from the operational force early, through Soldier Touchpoints, in order to refine requirements before significant investments are made. The Army, through the efforts of our CFTs and Program Executive Offices (PEO), conducted 113 Soldier Touch Points in FY 2021, and we aim to continue that momentum in the coming years. We are also seeking additional opportunities to integrate lessons as our units and Army Service Component Commands conduct focused experimentation and wargames.

Instrumental to the Army's transformation is Project Convergence, the campaign of learning that brings everything together. Project Convergence is a Joint and increasingly combined series of experiments we conduct over the course of the year, culminating in a month-long field experiment. Working closely with our counterparts from the other Services, we identify Joint warfighting problems to solve. Experimentation objectives, operational scenarios, and data collection plan are managed by the Project Convergence Board of Directors, which includes representatives from all the Services,

the Joint Staff, and coalition Partners. We also leverage the Army's Joint Systems Integration Lab and experimentation events "in the dirt" to connect with our Joint Partners. Project Convergence 21 (PC21) incorporated Joint Partners to help inform Army 2030, the DoD Joint All-Domain Command and Control, and the Joint Warfighting Concept. PC21 made it clear that we must adapt to a system-of-systems approach that moves from "interoperable systems" to "integration of systems." Building off the lessons of PC21, PC22 will integrate Allies and Partners and aim to scale technologies previously tested.

The Army continues to implement the reform initiatives granted by Congress, which were designed to streamline and gain efficiencies in the acquisition process. These initiatives, which have reduced bureaucracy and helped the Army accelerate the delivery of capabilities to the field, include the granting of Middle Tier Acquisition (MTA) Authority, which allows for both rapid prototyping and rapid fielding efforts, and the expanded use of Other Transaction Authority (OTA), which now can be extended to include production. OTAs are simplified contractual mechanisms that lend themselves to working with small companies and non-traditional contractors, two known sources of technological innovation. The Army is using these authorities to accelerate select Army modernization priorities including ERCA, LTAMDS, PrSM, NGSW, IVAS, and MPF. The Army is using MTA rapid fielding authority to quickly field production quantities of new or upgraded systems with minimal development, potentially resulting in faster capability delivery and lower costs. In all, the MTA pathway enables a "try before we buy" framework that reduces risk, reduces cost, and accelerates capability development and deployment.

The Army effectively utilizes OTA to streamline the acquisition of basic and advanced research activities, prototype projects, and follow-on production efforts. In FY 2021, the Army awarded more than 1,700 OTA agreements valued at $10.9 billion. Two of the modernization priorities highlighted above, IVAS and NGSW, have moved into production awards based on the success of competitive prototyping efforts. In

November 2021, the Army updated its OTA Policy to promote consistency in practice and increase transparency.

The Army also benefits from two additional authorities provided by Congress. The Software Acquisition Pathway (SWP) is a new acquisition pathway being used to facilitate rapid and iterative delivery of custom software capabilities to users, recognizing that technology development cycles are more rapid in software systems. Programs using the SWP will demonstrate the viability and effectiveness of the capability within one year. Congress also made the authority for Commercial Solutions Opening (CSO) authority permanent. Since its establishment as a pilot program, the Army has leveraged the CSO authority to obtain innovative commercial products and solutions to fulfill requirements, close capability gaps, and provide technological advances. The streamlined nature of the CSO procedures also serves to lower barriers to entry and incentivize small and non-traditional vendors who have not previously worked with the Department. The Army used CSO authority extensively as part of its pandemic response efforts.

In addition, in the FY 2016 National Defense Authorization Act, Congress encouraged delegation of Milestone Decision Authority (MDA) for most acquisition programs from the Office of the Secretary of Defense to the Military Departments. The Army further delegated MDA for some of these programs to the PEO level and below, when appropriate. This delegation allows the Army to appropriately align program oversight with risk, resulting in reduced bureaucracy and increased efficiency.

All these initiatives, when used alone or in combination, allow for better and faster modernization decisions and faster requirements development.

CONCLUSION

The Army is nearly four years into the biggest transformational change since the early 1980s, modernizing and building a multi-domain-capable force that delivers speed,

range, and convergence of emerging technologies. To be clear, the Army will never be "done" modernizing. As we deliver Army 2030, Army 2040, and beyond, we are laying the foundation to persistently modernize in response to emerging technologies, evolving challenges, and our adversaries' actions.

Thank you again for this opportunity to discuss Army Modernization and for your strong support of our soldiers, civilians, and their families.