RECORD VERSION

STATEMENT BY

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AND
JOINT FUNCTIONAL COMPONENT COMMAND FOR
INTEGRATED MISSILE DEFENSE

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and
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Chairman Rogers, Ranking Member Cooper, and distinguished Members of the Subcommittee, thank you for your continued support of our Service Members, Civilians, and Families. In the same capacity as my previous appearance before this subcommittee, I appear before you today bringing both a Joint and Army perspective on effective missile defense capabilities. Let me again express my appreciation to this Subcommittee for its continued support of the Army, the U.S. Strategic Command, the Department of Defense, and the missile defense community. I am honored to testify before this Subcommittee along with these distinguished witnesses who provide missile defense capabilities to our Nation, forward deployed forces, partners, and allies.

As outlined during an appearance before this subcommittee last year, my responsibilities encompass three main areas. First, as the Commander of the U.S. Army Space and Missile Defense Command (USASMDC), I have Title 10 responsibilities to train, maintain, and equip space and global ballistic missile defense forces for the Army. Second, as the Commander, Army Forces Strategic Command (ARSTRAT), I am the Army Service Component Commander (ASCC) to the U.S. Strategic Command (USSTRATCOM). I am responsible for planning, integrating, and coordinating all Army space and missile defense forces and capabilities in support of USSTRATCOM missions. Third, as the Commander of USSTRATCOM's Joint Functional Component Command for Integrated Missile Defense (JFCC IMD), I am responsible for synchronizing missile defense planning, supporting ballistic missile defense operations, and advocating for missile defense capabilities on behalf of the Combatant Commanders.

In addition to the these three roles, the Chief of Staff of the Army recently designated USASMDC as the Army's Air and Missile Defense Enterprise Integrator with responsibility to synchronize the Army's air and missile defense (AMD) strategy in

coordination with other organizations involved in providing this critical capability. My task is to ensure the implementation of a holistic Army AMD strategy that includes force planning requirements, coordinated combat and materiel development, AMD acquisition and life cycle management, and strategic communications.

In accordance with these responsibilities, my intent today is to highlight the greatest missile defense asset—our great people; to briefly outline the strategic environment; to emphasize USASMDC/ARSTRAT's missile defense force provider responsibilities with respect to the Army and the Geographic Combatant Commanders (GCCs); to outline JFCC IMD's role as an operational integrator of Joint missile defense for USSTRATCOM; and finally to summarize a few of the key Army ballistic missile defense activities and developments in the context of a comprehensive approach to addressing an evolving ballistic missile threat.

The Workforce—Recognizing and Protecting Our Greatest Asset

The challenges that we face cannot be mitigated without the dedication of our greatest asset—our people. Just as I mentioned last year, I feel it important to highlight our workforce, my concern of sequestration on our workforce, and the Army's continued commitment to deter instances of sexual harassment and assault. At USASMDC/ARSTRAT and JFCC IMD, our people remain our most enduring strength. The Service Members, Civilians, and Contractors support the Army and Joint Warfighter each and every day, both those stationed in the homeland and those globally deployed. We remain committed to providing trained and ready Service Members and Civilians to operate and pursue enhanced capabilities for the Nation's ballistic missile defense system (BMDS).

As recently highlighted during Congressional testimony by the Service Chiefs, the potential return of sequestration causes great concern—especially with regards to its impact on the workforce and our overall readiness. Within my commands, sequestration will negatively impact the space and missile defense enablers our Soldiers and Civilians provide to the Combatant

"Sequestration is the single greatest barrier to the effectiveness of our Armed Forces"

-- CSA SASC Statement January 2015

Commanders. Specifically, readiness, training, and enhancements to space and missile defense capabilities will be degraded. Also, the return of sequestration will negatively impact the morale of our workforce. I believe that a more prudent course of action should be identified and implemented to ensure that we can continue to meet our current global responsibilities and those of tomorrow.

Sexual harassment and assault violate the Army's core values and harm the Soldiers, Civilians, and Family Members that make up our Army—it must be eliminated. In accordance with the Chief of Staff of the Army's guidance and direction, my leadership team fully embraces the importance and fundamental necessity of an effective Sexual Harassment/Assault Response and Prevention (SHARP) Program. The SHARP program effort has made noticeable strides in preventing assault and encouraging reporting of sexual harassment incidents. In line with Army requirements, our program provides Soldiers, Civilians, and Family Members with a SHARP program manager, sexual assault response coordinators, and victim advocates who are available 24/7/365 in order to safeguard our personnel and maintain their trust. I require my leadership to comprehensively investigate and report each claim of sexual harassment or assault. I demand nothing less than upmost prevention, accountability, and advocacy of our personnel—they deserve nothing less.

The Advancing Threat

Ballistic missile threats of our adversaries continue to grow, both quantitatively and qualitatively. Today, nine nations possess, or are suspected of possessing, nuclear weapons and 22 have ballistic missile capabilities that could carry nuclear weapons. Additionally, approximately 75 countries are developing unmanned aerial systems and several of these countries are exploiting land, sea, and air attack cruise missile capabilities. In the future, we expect to encounter more complex threats, to include advanced electronic

> ***"Maintaining the capability to deter and defeat attacks on the United States is the Department's first priority."***
>
> ***--Quadrennial Defense Review March 2014***

and cyber intrusions, multiple simultaneous attacks, and even directed energy or supersonic capabilities.

To meet the objectives of the current Quadrennial Defense Strategic Guidance, USSTRATCOM and the Army continue to provide and enhance homeland and regional missile defense. In accordance with the Department's strategy to rebalance to the Asia-Pacific region, we have worked with partners in U.S. Pacific Command (USPACOM), U.S. Northern Command (USNORTHCOM), and USSTRATCOM to review and improve our capabilities in the USPACOM area of responsibility. In addition to the deployment of a Terminal High Altitude Area Defense (THAAD) battery in Guam that enhanced our ability to protect U.S. interests in the region, we have deployed an additional forward-based sensor in Japan to bolster our defense capabilities.

The emplacement of 14 additional Ground-Based Interceptors at Fort Greely, Alaska, scheduled for completion in 2017, and an operational second missile defense sensor in Japan will provide improved capability and capacity to defend the Nation against a limited intercontinental ballistic missile (ICBM) attack. Toward this end, we continue to work with regional partners and allies to increase our information and data sharing and develop a global AMD force posture that leverages ever growing partner nations' capabilities. This will result in reduced strain on our force and enable more timely modernization of our AMD assets.

The Quadrennial Defense Review also establishes a priority to maintain a strong commitment to security and stability in Europe and the Middle East. We are continuing to maintain capability and capacity in these regions consistent with our regional security goals. In conjunction with our allies and partners, the DoD has deployed Patriot air and missile defense forces to Turkey and Jordan in order to enhance our current AMD posture while sending a strategic deterrence message to potential adversaries. It should be noted that these deployments add to the stress of an already highly deployed Patriot force. Without significant reduction in our worldwide deployments, it will be challenging for the Army to execute critical planned modernization of our AMD force over the next 5 years.

In summary, enemy air and missile threats continue to develop in complexity, quantity and capacity. The evolution of multiple sophisticated capabilities requires a

holistic approach that effectively integrates offensive and defensive, kinetic and non-kinetic, and alternative capabilities to defeat air and missile threats. The growing complexity of the strategic environment based on technological advances of the threat and fiscal realities requires cost efficient and effective methods of integrating current and future capabilities. We continue to prioritize integrated missile defense resources to optimize all our capabilities in support of the Warfighter, particularly in light of the expense associated with traditional approaches. We continue to partner with the Missile Defense Agency (MDA), Combatant Commands, and Services to ensure we pursue a fiscally responsible path to keep pace with evolving threats by identifying and prioritizing additional capabilities that provide the greatest operational value.

Providing and Enhancing Missile Defense Capabilities

USASMDC/ARSTRAT, a force provider of missile defense capabilities, is a split-based command with dispersed locations that are manned by multi-component Soldiers, Civilians, and Contractors. Commands around the world, including USSTRATCOM, USNORTHCOM, and the GCCs, leverage our capabilities. Our Title 10 responsibilities include operations, planning, integration, control, and coordination of Army forces and capabilities in support of USSTRATCOM's missile defense mission. USASMDC/ARSTRAT also serves as the Army's global operational integrator for missile defense, the Army's proponent for global missile defense force modernization, and the Army's technical center lead to conduct air and missile defense related research and development in support of Army Title 10 responsibilities.

"I believe that effective missile defense is an essential element of the U.S. commitment to strengthen strategic and regional deterrence against states of concern—continued investments in this area are essential to national defense."

-- USSTRATCOM Posture Statement February 2014

Our operational function is to provide trained and ready missile defense forces and capabilities to the GCCs and the Warfighter—in other words, to address the

requirements of today. For example, USASMDC/ARSTRAT Soldiers serving in the homeland and in remote and austere forward deployed locations operate the Ground-based Midcourse Defense (GMD) system and the Army-Navy/Transportable Radar Surveillance Forward-Based Mode (AN/TPY-2 FBM) radars. Highlights of the ongoing missile defense capabilities provided by our missile defense professionals include:

Support to Global Ballistic Missile Defense (BMD): Soldiers from the 100th Missile Defense Brigade, headquartered in Colorado Springs, Colorado, and the 49th Missile Defense Battalion, headquartered at Fort Greely, Alaska, remain ready, 24/7/365, to defend our Nation and its territories from a limited intercontinental ballistic missile attack. Under the operational control of USNORTHCOM, Army National Guard and active component Soldiers operate the Ground-based Midcourse Defense Fire Control Systems located at the Fire Direction Center in Alaska, the Missile Defense Element in Colorado, and the GMD Command Launch Element at Vandenberg Air Force Base, California. These Soldiers, in conjunction with USNORTHCOM, also oversee the maintenance of GMD interceptors and ground system components. At the Missile Defense Complex at the Fort Greely site, 49th Missile Defense Battalion military police secure the interceptors and communications capabilities at the Missile Defense Complex from physical threats. This brigade will also soon be responsible for security at the Fort Drum, New York, In-Flight Interceptor Communication System Data Terminal. The GMD system remains our Nation's only defense against an ICBM attack.

> ***"…will remain ready to deter and defeat threats to the homeland…"***
>
> ***-- National Security Strategy February 2015***

GMD System Test and Development: In addition, Soldiers from the 100th Missile Defense Brigade actively participate in GMD test activities and continue to work with MDA developers on future improvements to the GMD system.

Support to Regional Capabilities: The 100th Missile Defense Brigade also provides GCCs with trained and certified AN/TPY-2 FBM radar detachments. These operational capabilities are present today at strategic locations around the globe.

Ballistic Missile Early Warning: In support of the Joint Force Commander's theater force protection, USASMDC/ARSTRAT continues to provide ballistic missile early warning within various theaters of operations. The 1st Space Brigade's Joint Tactical Ground Station (JTAGS) Detachments, under the tactical control of USSTRATCOM's Joint Functional Component Command for Space, but operated by USASMDC/ARSTRAT space-professional Soldiers, monitor launch activity and other infrared events. They provide essential information to members of the air, missile defense, and operational communities. Our JTAGS Detachments are forward deployed around the globe, providing 24/7/365, dedicated, assured missile warning to USSTRATCOM and GCCs in support of deployed and forward-based forces.

Our second major task is to build and mature future missile defense forces—our capability development function. These are the missile defense capabilities we will provide tomorrow. A major component of our capability development function is to provide relevant and updated training on our global missile defense systems. During the past year, USASMDC/ARSTRAT trained over 350 Soldiers and was recertified as an Army Learning Institution of Excellence for missile defense training.

The Army uses established and emerging processes to document its missile defense needs and pursue Joint and Army validation of its requirements. As a recognized Army Center for Analysis, USASMDC/ARSTRAT conducts studies to determine how to best meet the Army's assigned missile defense responsibilities. With these insights, we develop the Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF) domains to address evolving threats and potential vulnerabilities to the GMD and AN/TPY-2 FBM missile defense systems. This disciplined approach helps to ensure limited resources are applied where Warfighter operational utility can be most effectively served.

Providing Future Warfighters with Innovative Missile Defense Capabilities

In our third major missile defense task, USASMDC/ARSTRAT provides critical technologies to address future needs that will enhance Warfighter effectiveness—our materiel development function. In USASMDC/ARSTRAT, our technology development

function is primarily focused on the space and high altitude domains. However, while MDA is the principal materiel developer for ballistic missile defense capabilities, USASMDC/ARSTRAT has a number of supporting missile defense related materiel development efforts, to include supporting research and development of an OSD-sponsored conventional prompt global strike capability to address ballistic missile threats. Following is a brief summary of two of our research and development efforts, as well as an overview of the capabilities of an essential Army testing range.

High Energy Laser Mobile Demonstrator: The technology objective of the High Energy Laser Mobile Demonstrator (HEL MD) is to demonstrate a solid-state laser weapon system to complement kinetic energy capabilities in countering rockets, artillery, and mortar (RAM) projectiles. This directed energy weapon system will also have a significant capability against unmanned aerial vehicles (UAVs). Considerable technology developments were realized over the past year for the HEL MD. Successful demonstrations were conducted for a pathfinder 10 kilowatt-class laser at White Sands Missile Range, New Mexico, and Eglin Air Force Base, Florida. These demonstrations served as a risk reduction for future subsystem development and integration while advancing this technology effort to a 50 kilowatt demonstration in 2017. The 50 kilowatt HEL MD will consist of a ruggedized and supportable high energy laser installed on a tactical military vehicle to enhance the safety of deployed forces. Another major component of the HEL MD is the beam director which will provide full sky coverage and engage below-the-horizon targets. As technology matures, higher power lasers will integrate with improved pointing and tracking capabilities to extend range and increase system effectiveness. The continued positive technology advances and testing results were recognized by the Army's senior leadership as HEL MD was recently selected by the Army Science and Technology Working Group as one of only three Army Capability Enabler programs to be further evaluated. The synergy of both directed and kinetic energy systems has the potential to significantly enhance both regional and homeland defense capabilities, particularly against cruise missile and indirect fire threats.

Low-Cost Target Development: The Army continues to pursue a technology effort to develop a suite of low-cost targets for the Patriot testing program. The intent is to design threat-representative targets at a substantially reduced cost for short-range

ballistic missile testing. Over the past year, we completed preliminary designs for three new short range ballistic missile targets based on existing excess solid rocket motors. The Army will realize significant savings conducting operational test events using these new targets beginning in Fiscal Year 2017. In addition, the Missile Defense Agency will use our targets in its test program later this year. We will continue to leverage existing missile inventory and technology advancements to develop less expensive targets that are representative of real world threats.

Missile Defense Testing: USASMDC/ARSTRAT operates the Ronald Reagan Ballistic Missile Test Site (RTS). RTS, located on the U.S. Army Garrison—Kwajalein Atoll in the Republic of the Marshall Islands, is critical to both offensive and defensive missile testing requirements, such as the GMD system and the U.S. Air Force strategic ballistic missile systems. In addition to their testing mission, personnel at the Reagan Test Site conduct continuous deep space surveillance and object identification missions. Just this past month, the U.S. Air Force began construction of their most advanced surveillance system—the Space Fence. In a few years, this improved surveillance capability will enable proactive space situational awareness while complementing existing systems at Reagan Test Site.

Joint Functional Component Command for Integrated Missile Defense—Synchronizing Global Missile Defense Planning, Force Management, and Operations Support

The Joint Functional Component Command for Integrated Missile Defense, or JFCC IMD, is USSTRATCOM's missile defense integrating element. This past January, we held a ceremony to honor the 10 year anniversary of the JFCC IMD. Like the other Joint Functional Component Commands, JFCC IMD was formed to operationalize USSTRATCOM missions and allow the headquarters to focus on integration and advocacy. Headquartered at Schriever Air Force Base in Colorado Springs, Colorado, the JFCC IMD is manned by professional Army, Navy, Air Force, Marine Corps, Civilian, and Contractor personnel.

As the Secretary of Defense and various Combatant Commanders have previously testified, the Warfighter remains confident in our ability to protect the Nation

against a limited intercontinental ballistic missile attack, even in the face of the changing fiscal environment. Over the past year, we have deployed a new forward-based sensor in Japan to bolster regional and homeland defense capability and, following the June 2014 successful ground-based interceptor (GBI) test, we are in the process of integrating enhanced interceptors at Fort Greely. Additionally, MDA is on schedule to complete construction of the new Aegis Ashore site in Romania to meet our commitment to our allies in Phase 2 of the European Phased Adaptive Approach (PAA) and we continue to collaborate with MDA to initiate the procurement of the Long Range Discrimination Radar (LRDR) and the redesign of the GBI kill vehicle. These developments and deployment efforts are in line with warfighter priorities, which consist of sensor improvements, improved GBI reliability and performance, and increased regional capability and capacity.

On behalf of USSTRATCOM, JFCC IMD is working across our DoD enterprise to improve the integration of existing capabilities in order to maximize our efficiency and effectiveness to protect the homeland, deployed forces, partners, and allies. The key force multiplier is "integration," which is a critically important mission area for JFCC IMD and directly supports USSTRATCOM's assigned Unified Command Plan (UCP) responsibilities for missile defense.

As an operational and functional component command of USSTRATCOM, JFCC IMD has derived five key mission tasks from the USSTRATCOM UCP responsibilities:

- Synchronize operational missile defense planning, security cooperation activities, and the global force management process for missile defense capabilities.
- Conduct global ballistic missile defense operations support, above element joint ballistic missile defense training, asset management, and alternative execution support.
- Integrate, synchronize, and conduct training, exercises, and test activities. As the Warfighter interface, lead the planning and development of operational input for execution of the Integrated Master Test Plan (IMTP).

Defense of the Homeland Priority Requires Execution of a Holistic Global Missile Defense Plan

- Advocate and coordinate for global missile defense capabilities, conduct analysis and assessments of current and future capabilities, and recommend operational acceptance.
- Protect information systems and provide network support for ballistic missile defense operations.

To accomplish each of these five tasks, we maintain close collaborative relationships with the GCCs, MDA, the Services, the Office of the Secretary of Defense (OSD), the Joint Staff, and our allies. Through collaborative processes, we continually enhance our deployed capabilities while gaining operational experience and confidence in our collective ability to defend the Nation, deployed forces, partners, and allies. Furthermore, I will highlight some of our collaborative efforts to enhance missile defense planning and capabilities for both the homeland and regional architectures.

We will maintain "a robust missile defense capability to defend the homeland against a limited ballistic missile attack."

--Quadrennial Defense Review March 2014

Expansion and Integration of the Missile Defense Architecture: In response to the evolving strategic environment, we continue to bolster homeland and regional missile defense capabilities. In addition to the deployed AN/TPY-2 FBM radars and deployment of the THAAD battery to Guam, we are expanding our missile defense collaboration with allies. We continue to mature the European PAA with the forward deployment of Aegis BMD ships in Rota, Spain, developing the Aegis Ashore site in Romania, and continuing the production of the SM-3 IB interceptors used for ballistic missile defense. Given many of the challenges associated with implementation of these architectures, JFCC IMD, supporting USSTRATCOM as the global synchronizer for missile defense, is collaborating with the GCCs to assess and address the cross-regional gaps in the areas of planning, policy, capabilities, and operations.

Global Planning and Assessment: Regional and global missile threats continue to increase in numbers and complexity. This year, JFCC IMD led the missile defense community in the development of the Global Missile Defense Concept of Operations

which better articulates systemic risk with the likely simultaneous execution of GCC operational plans across multiple areas of operations. This fundamentally changes the way the missile defense enterprise analyzes and assesses the operational environment. The output of this analysis directly informs the Global Integrated Air and Missile Defense Assessment (GIAMDA). The GIAMDA serves to shape recommendations for global force management and advocacy efforts for future capability investments. We have completed the 2014 GIAMDA and are currently conducting the 2015 assessment. For the 2014 assessment, we continued to expand the assessment to look at integrating cyber, electronic warfare, and global strike in order to provide a more holistic set of military capabilities to counter an evolving adversary threat.

Global Force Management: The increasing demand of BMD assets is managed by the Joint Staff and the Services. USSTRATCOM, as the designated Joint Functional Manager for missile defense, relies upon JFCC IMD to evaluate and recommend sourcing of BMD requirements based on assessed risk. Due to the high demand, low-density nature of missile defense assets, all sourcing decisions have a direct and significant impact to other Combatant Commanders' campaign and contingency plans. The Global Force Management process enables senior leaders to make more informed BMD sourcing decisions based on global risk.

Multi-Regional BMD Asset Management: JFCC IMD, in coordination with USSTRATCOM and the GCCs, manages the availability of missile defense assets to balance operational readiness postures, scheduled and unscheduled maintenance activities, and the MDA and Services' test requirements. This important process allows us to continually assess our readiness to defend against a ballistic missile attack and to recommend adjustments to optimize the overall BMD architecture.

Allied Ballistic Missile Defense Integration: JFCC IMD continues to focus on the integration of allies into regional missile defense architectures, enhanced security cooperation between missile defense capable nations, and shared regional deterrence and defense responsibilities across partner nations. One tool employed to promote cooperation is the Nimble Titan campaign, a biennial series of multi-national missile defense experiments designed to explore policy and operational concepts required for coalition missile defense. The Nimble Titan campaign provides a unique venue to

advance U.S. missile defense policies and combatant command regional security objectives. The Nimble Titan community of interest consists of 23 nations and 2 international organizations. The campaign goals for Nimble Titan are four fold:

- Examine national and multinational BMD decision making processes and their effects on planning, design, and execution.
- Explore the effects of policy guidance on defense design.
- Develop a common understanding of integrated air and missile defense.
- Examine and identify opportunities to support planning and execution of integrated air and missile defense operations.

> ***"Building partnerships and establishing multilateral agreements will be an important part of future regional and global security architectures in missile defense"***
>
> ***--Joint Integrated Air and Missile Defense Vision 2020***
> ***December 2013***

In April 2014, we concluded our fourth biennial series—Nimble Titan 14. Nimble Titan 14 included Ministry of Foreign Affairs and Ministry of Defense representatives from 21 nations and 2 international organizations, along with Department of State, OSD, Joint Staff, MDA, and combatant command representatives. In addition, 40 senior leaders from the United States and 13 other nations participated in a concurrent senior leader program. For the first time, Nimble Titan 14 included participants from the Middle East and non-NATO aligned European nations. Through Nimble Titan, we continue to focus on cross-regional coordination, sensor integration, and multinational MD planning solutions.

Nimble Titan is critical to developing a common understanding of policy hurdles associated with combined missile defense architectures and to influence future U.S., ally, and partner missile defense policy development and cooperation. Additionally, this exercise provides participating nations with critical experience in information-sharing as well as command and control procedures that enhance synchronized missile defense capabilities. Conclusions derived from this exercise continue to inform policy decisions

and multinational BMD planning. Planning has already begun for the next iteration of this war game—Nimble Titan 16.

Joint BMD Training: DoD designated USSTRATCOM as the lead for integrating and synchronizing Joint BMD training. In coordination with USSTRATCOM, the Joint Staff, Combatant Commands, and the Services, we have developed a comprehensive and innovative training program to close gaps between Service, Joint, and regional BMD training and education. New and updated courseware has been developed and fielded to enhance combatant command and warfighter training needs. Blended learning courseware and a Joint BMD Training Community of Practice are under development to improve efficiency in delivery and reduce costs. Over the past year, JFCC IMD provided 140 courses to over 2,300 students around the world via the Joint BMD Training and Education Center. Additionally, in keeping with Joint Vision 2020, JFCC IMD provided several training courses to ally and partner nations.

> ***"A steady-testing schedule and continued investment are needed to increase reliability and resilience across the missile defense enterprise."***
>
> ***-- USNORTHCOM Posture Statement March 2014***

Warfighter Acceptance and Integrated Master Test Plan: As the missile defense architectures mature, Warfighters require a credible, comprehensive assessment of new capabilities to inform operational acceptance. In 2014, we tested our new AN/TPY-2 FBM in Japan, conducted a successful intercept flight test of the GMD system, and flight tested a triple engagement of both cruise and ballistic missiles with our Aegis BMD system. The focus of this year's operational tests is to demonstrate the integrated capability of Phase 2 of the European PAA architecture, which will include Aegis BMD ships and Aegis Ashore. Additionally, JFCC IMD continues to work closely with the MDA, the Office of the Director, Operational Test and Evaluation, and USNORTHCOM to address issues future improvements of both the Capability Enhancement (CE)-I and CE-II variants.

In summary, JFCC IMD serves an integrating role for missile defense across multiple regions as we operationalize new capabilities, enhance command relationships,

and reinforce our missile defense partnerships with allies. In view of worldwide events and current fiscal challenges, JFCC IMD remains focused on our key mission task to collaborate with the GCCs and MDA to meet current and future ballistic missile threats. While work remains to be done, we have made significant progress in evolving our global missile defense capabilities, thereby strengthening the defense of the homeland and advancing our partnerships with allies in this pressing endeavor.

Army Contributions to the Nation's Missile Defense Capabilities

The Army works closely with MDA and continually supports its materiel development efforts to develop and field systems that are integral to our Nation's air and missile defense capabilities. A summary of the Army's major air and missile defense programs follows.

Army Integrated Air and Missile Defense (IAMD): As we transition from an Army at war to one of deterrence, air and missile defense (AMD) units have become a key strategic enabler. AMD is an enduring Army core function and an essential component of the Army mission to provide wide area security. In addition to defense against ballistic missiles, the current AMD strategy seeks to develop a more comprehensive portfolio of IAMD capabilities to provide protection against cruise missiles, unmanned aerial systems, and long-range precision rocket, artillery, and mortar attacks.

The IAMD Battle Management Command System (IBCS) remains an Army priority effort and serves as the foundation for Army AMD modernization. Modernization is critical in our quest to stay ahead of the advancement of the threat. The program will field a common mission command system to all echelons of Army AMD forces in order to defend against cruise missiles, manned and unmanned aircraft, air-to-ground missiles, tactical ballistic missiles, and rocket, artillery, and mortar attacks. IBCS will provide a common and flexible AMD mission command network capable of coordinating air surveillance and fire control across Services and with coalition partners. When fielded, IBCS will componentize the AMD force, breaking the current system-centric paradigm, which will facilitate open industry competition in support of the AMD community. Additional efforts are underway to integrate IBCS and Command and

Control, Battle Management, and Communications (C2BMC) to support the BMD mission.

As the lead integrator for the AMD enterprise, one area of concern is the ever increasing operational demand and how this demand will impact planned modernization. Starting next fiscal year, the AMD enterprise will begin its most comprehensive modernization effort ever undertaken as IBCS is fielded to the AMD force. IBCS will interact with every AMD weapon component—shooters, sensors, and C2BMC. The AMD convergence between the existing demand and upcoming modernization effort will be a major undertaking for the AMD enterprise and the Army.

Patriot/Patriot Advanced Capability-3 (PAC-3): The Patriot air and missile defense system remains the cornerstone of our BMD forces deployed in support of GCCs. It remains the Army's premier weapon system against air and tactical ballistic missile threats. The Patriot system is now over 35 years old and, not surprisingly, the effort and costs associated with maintaining operational reliability rise steadily each year. Fortunately, several years ago, the Army embarked on a comprehensive modernization strategy that will completely replace Patriot's command and control hardware and upgrade the radar, launcher, and interceptor components through competitive development and procurement. The aim is to increase reliability, drive down operational and sustainment costs, and remain viable well into the future. Each facet of this strategy, development of IBCS, radar and launcher modernization and the Missile Segment Enhancement (MSE) are critical to our Nation's ability to provide our Combatant Commanders with more innovation and capabilities in the face of an ever evolving threat. With nearly half of all Patriot units currently deployed, operational tempo and stress remain high.

A number of significant Patriot/PAC-3 capability enhancements have been accomplished over the past year. Among the accomplishments were the completion of the Army's planned PAC-3 capability upgrades of all 15 Patriot battalions and continued successful operational flight tests of the next generation PAC-3 missile, the MSE. During recent successful testing, both tactical ballistic missiles and air breathing threats were simultaneously engaged. The Army remains on track for delivery of the MSE to the Warfighter by the fourth quarter of 2015. Additionally, the Patriot radar is receiving a

new radar digital processor. Coupled with recent software upgrades, the new processor increases performance of the radar against evolving threats while dramatically improving reliability, availability, and maintainability. To make maximum use of the MSE missile and the radar upgrades, the Army is also preparing to test the next version of the Patriot software, Post Deployment Build-8. Successful testing and fielding of this software will advance the Patriot system into the next generation of hardware capability.

Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS): Homeland air and missile defense is heavily reliant on early warning and over-the-horizon target acquisition in order to provide decision and battle space. In accordance with guidance from OSD and the Joint Staff, the Army has deployed the JLENS system to Aberdeen Proving Grounds, Maryland, for a three-year operational exercise. This exercise will demonstrate the capability to detect, track, and identify potential air threats to the greater Washington, D.C. area, and to integrate JLENS into the North American Aerospace Defense Command's (NORAD) air defense architecture. During the 3-year exercise window, JLENS capabilities will be fully explored in a real-world environment and evaluated for its operational utility in support of NORAD's homeland defense mission.

The JLENS system leverages proven aerostat technology to provide situational awareness and track airborne objects such as cruise missiles, manned and unmanned aircraft, and large caliber rockets. The JLENS consists of two unmanned aerostats with radar systems for surveillance and fire control. Each radar system employs a separate 74-meter tethered aerostat, a mobile mooring station, radar and communications payloads, a processing station, and associated ground support equipment.

Terminal High Altitude Area Defense System: THAAD, a key component of the BMDS architecture, is designed to defend deployed and allied forces, population centers, and critical infrastructure against short and medium-range ballistic missiles. THAAD is a high demand, low-density asset that is mobile and globally transportable. A fully operational THAAD battery consists of 95 Soldiers, an AN/TPY-2 radar, six launchers, a fire control and communications element, a battery support center, and a support element. THAAD has a unique intercept capability in both the endo- and exo-atmosphere using proven hit-to-kill technology. There are now four activated THAAD

batteries. Equipment training and fielding has been completed for three of the batteries. In April 2013, one of these batteries conducted the first-ever operational deployment of THAAD in response to the escalation of tensions in the Pacific region. The fourth THAAD battery is currently undergoing training and will be operationally available next year. A fifth battery is scheduled to become fully operational the following year. By 2019, the THAAD force is scheduled to consist of seven batteries. A new training facility, which enables virtual training for the Soldiers who will operate the THAAD system, recently opened at Fort Sill, Oklahoma. The addition of THAAD capabilities to the Army's air and missile defense portfolio brings an unprecedented level of protection against missile attacks to deployed U.S. forces, partners, and allies.

Conclusion

Mr. Chairman and Ranking Member Cooper, as a member of the Joint missile defense community, the Army continues to pursue enhancements to the Nation's missile defense system. As a Service, the Army has lead responsibility for GMD, AN/TPY-2 FBM, Patriot, JLENS, and THAAD. Our trained and ready Soldiers operating GMD elements in Colorado, Alaska, and California remain on point to defend the homeland against a limited intercontinental ballistic missile attack. As a force provider to the GCCs, our Soldiers provide essential regional sensor capabilities and ballistic missile early warning. Our regional forces continue to leverage ally collaboration and planning efforts in developing integrated and interoperable defenses against the various threat sets. USSTRATCOM, through the JFCC IMD, continues to integrate BMDS capabilities to counter global ballistic missile threats and to protect our Nation, deployed forces, partners, and allies.

While the operational, doctrine, and materiel development enhancements of the BMDS are essential, our most essential assets are the Soldiers, Sailors, Airmen, Marines, Civilians, and Contractors who develop, deploy, and operate our missile defense system. I appreciate having the opportunity to address missile defense matters and look forward to addressing your questions.