

**STATEMENT OF
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BEFORE THE
SENATE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON STRATEGIC FORCES
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Thank you, Chairman Nelson, Senator Sessions, and distinguished members of the subcommittee. I appreciate the opportunity to testify. It is an honor and pleasure to join Dr. Roberts, LTG O'Reilly, and Ms. Chaplain to discuss ballistic missile defense and inform you how the Joint Staff and the Joint Integrated Air and Missile Defense Organization (JIAMDO) contributes to this important mission area.

JIAMDO as a Part of the Joint Staff

As a reminder, JIAMDO supports the Chairman of the Joint Chiefs of Staff, the Joint Staff, and the Combatant Commanders. Our mission is to identify and coordinate joint requirements to support efforts developing air defense, cruise missile defense, and ballistic missile defense solutions for the warfighter.

We are a Chairman's Controlled Activity tailored to provide current operational expertise in air and missile defense and our members are drawn from across the Services. The background and experience of these military experts allows them to relate at an operational level with the warfighter and enables them to translate operational needs into requirements documents, analysis and study activities, and demonstrations.

JIAMDO's Key Contributions to Ballistic Missile Defense (BMD)

In support of the Chairman and the Joint Staff, JIAMDO provides expertise, analysis, planning, and coordination across the Combatant Commanders and the Services in a number of vital efforts relative to ballistic missile defense. These include participating in, and following up on the results of, the Ballistic Missile Defense Review (BMDR) that concluded last year; support for BMD weapon system fielding processes; support to US Strategic Command as the Air and Missile Defense Integrating Authority; support for and interaction with other elements of the Joint Staff for Global Force Management of High Demand / Low Density BMD assets and systems; representing the US to NATO for matters of air and missile defense policy and planning; and Integrated Air and Missile Defense Assessments and Analysis. I'll address each of these briefly, but first I'd like to discuss JIAMDO and the Combatant Commands (COCOMs).

A key part of our contribution is advocacy for the COCOMs. JIAMDO is focused on ensuring the Department is delivering capabilities that support COCOM operational plans and address their air and missile defense gaps. We assist the COCOMs in the Department's annual Capability Gap Assessment process that addresses their critical warfighting capability gaps in their Integrated Priority Lists that identify risk in accomplishing their specific Unified Command Plan missions. In addition to JIAMDO's role in the Joint Staff capabilities processes, we have liaison personnel at CENTCOM, EUCOM, STRATCOM, JFCOM, PACOM, NORTHCOM, NORAD, and USFJ. The liaison provides a direct link between JIAMDO and the COCOMs as they work air and missile defense issues day-to-day for both the hosting command and JIAMDO.

Ballistic Missile Defense Review (BMDR). JIAMDO had four key roles in the BMDR. As the Director of JIAMDO, I was one of the three directors of the review; other JIAMDO personnel served as co-chair of the Programmatic Process and Execution Working Group; led the Requirements Issue Team; and served in the Directorate of Activities. In short, JIAMDO played

a central role in the development of the BMDR. Subsequent to the completion of the Review, we have continued to work with the offices of the Under Secretary of Defense for Policy, the Under Secretary of Defense for Acquisition, Technology and Logistics, the Missile Defense Agency, the Joint Staff, and members of the Interagency as we develop and advance the principles and policies for ballistic missile defense, such as the Phased Adaptive Approach, that were enumerated in the BMDR report.

Ballistic Missile Defense Elements System Fielding. The fielding plan for new missile defense systems developed by the Missile Defense Agency (MDA) identified a need for the department to develop a process to transition and transfer those systems from MDA to the Services. JIAMDO worked closely with Service staffs and MDA to develop business rules and processes to handle this, and was the lead to take the new process to the Joint Requirements Oversight Council (JROC) for approval.

Support to the Air and Missile Defense Integrating Authority. US Strategic Command is designated the Air and Missile Defense Integrating Authority (AMD IA) and serves as the COCOMs' representative for air and missile defense. JIAMDO is formally tasked to provide operational expertise and analytic support to the AMD IA as it documents ballistic missile defense requirements to MDA. Currently, we are assisting in developing the expanded Prioritized Capability List that will provide transparency and insight for Service developers and MDA for missile defense, and a common requirements view for senior decision makers.

JIAMDO and Global Force Management. JIAMDO is also assisting the Joint Staff J-3 to formalize the inclusion of Missile Defense in the Global Force Management Process to address the force sourcing and mitigation options for BMD assets. This would assure that, like

other High Demand / Low Density assets, Missile Defense is included in the Assignment, Allocation, and Apportionment process to adjudicate competing COCOM requirements.

JIAMDO and the North Atlantic Treaty Organization (NATO). Closely associated with COCOM relationships are the NATO responsibilities of JIAMDO. The Director, JIAMDO is the US Representative to the NATO Air Defense Committee (NADC), responsible for addressing air and missile defense related issues in NATO. The Director's unique position allows insight into policy and military issues from both a US and Alliance point of view, and enables the US to understand and address tactical level integration of allies and partners in analysis and studies, and during the development of employment concepts. In this regard I have had the privilege of working with the NATO staff and appearing before the North Atlantic Council to discuss the application of the Phased Adaptive Approach in Europe and the potential for regional missile defense capability in a NATO context. Most recently, the NATO Air Defense Committee led the senior policy and technical committees from NATO Headquarters on tours and demonstrations on the Aegis BMD ship USS MONTEREY (CG 61).

Integrated Air and Missile Defense Assessments and Analysis. A concurrent responsibility for JIAMDO is assessing and validating operational concepts and architectures, and helping COCOMs and Services define and refine air and missile defense requirements. This is performed primarily through studies and analyses, modeling and simulation, and the conduct of wargames. Study activities vary from inventory analysis to examinations of surveillance coverage and options for various mixes of surveillance sensors. JIAMDO recently completed the third of a series of quantitative performance analyses, the Joint Capability Mix III (JCM III) Study, to determine the warfighter requirements for elements of the BMD System required for ballistic missile defense; I will discuss this in some more detail later in my testimony.

A centerpiece of JIAMDO's analysis is the NIMBLE FIRE modeling and simulation activity. NIMBLE FIRE is a classified operator-in-the-loop simulation where Air Force, Navy, Marine Corps, and Army operational personnel come together to simulate the execution of joint air and missile defense missions. The events are structured to allow operational personnel to employ their systems and forces as they deem appropriate and the data we obtain is used to define and refine capability gaps, requirements, concepts, and in some instances employment techniques. It is a fully functional joint architecture capable of executing current and future concepts with operationally representative positions for Aegis, Patriot, AWACS, E-2, F/A-18, F-15, F-22, and JLENS among others. The simulation can conduct distributed operations to US and overseas military locations and annually executes a combined air, cruise missile, and ballistic missile defense event in conjunction with MDA's Missile Defense Integrated Operations Center simulation at Colorado Springs. Analysis events are based on COCOM war plans and routinely have participants from the commands in the operational positions. Results are out-briefed to the COCOMs as well as the Services and agencies. NIMBLE FIRE is a one-of-a-kind capability that has proven to be invaluable in analyzing concepts and requirements.

JIAMDO also provides analytical support and coordinates COCOM participation and input into two of the premier ballistic missile defense wargames, NIMBLE TITAN and the Ballistic Missile Defense System (BMDS) Wargame. NIMBLE TITAN is sponsored by US Strategic Command and led by the Joint Force Component Command, Integrated Missile Defense (JFCC IMD). It is a policy and military wargame designed to assess and evaluate coalition and allied participation in missile defense. US and international missile defense experts from both ministries of foreign affairs and ministries of defense take part in the events. Eight nations currently participate, with more countries to be added in 2012. Insights from these

wargames allow the US and its partners to identify potential policy and military issues such as command and control, information sharing, and coalition decision making. The BMDS Wargame, sponsored by MDA, is a US-only classified tactical level simulation that brings together warfighters and developers to collaboratively examine the optimal employment of the future ballistic missile defense system. This wargame explores areas such as shot doctrine, sensor control, interceptor inventory management, and force employment. JIAMDO leverages findings from these events to support other analyses, and used the shot doctrine developed during the BMDS wargame in the models for the JCM studies.

The Department has recognized that air and missile defense is a complex mission area and has committed to joint warfighting. JIAMDO is part of that commitment and we are working hard to ensure that warfighter needs are met. I would next like to discuss the Phased Adaptive Approach for ballistic missile defense as mentioned earlier.

The Phased Adaptive Approach (PAA) Concept

The concept of a Phased Adaptive Approach to missile defense, or PAA, was an outgrowth of the BMDR, which took a holistic look at the different aspects of our missile defense strategy and its programs. These ranged from trends in threat development, US missile defense technology development, operational fielding needs and opportunities, and capability requirements from COCOM war plans. The particular focus of PAA is the regional missile threat coming from short-, medium-, and intermediate-range ballistic missiles and is responsive to both Congressional direction, and the warfighters' needs, to place more emphasis on these types of threats. In short, it is a more effective and efficient approach to missile defense. I think it is important to emphasize here that the PAA is not an acquisition program, or a single plan to be applied unchanged across all areas of the globe. It is a conceptual approach to providing

ballistic missile defense capability for our deployed forces, allies and partners, and additional capability for homeland defense, in different regions, circumstances and times.

As you know, the recently completed NATO Summit of Heads of State and Governments at Lisbon adopted the new Strategic Concept for NATO, which explicitly affirms that, in the face of "...the proliferation of ballistic missiles, which pose a real and growing threat to the Euro-Atlantic area," the Alliance will "develop the capability to defend our populations and territories against ballistic missile attack as a core element of our collective defence, which contributes to the indivisible security of the Alliance." We view this as a ringing affirmation of the priority to develop missile defense for our European NATO Allies and our deployed forces.

I would like to point out that although there has been significant focus and discussion on Europe, the PAA is much more than just the defense of Europe. The PAA concept provides the United States with an enhanced capability to respond to regional threats worldwide, no matter where they emerge, and to strengthen defense of the Homeland. It also provides us with the flexibility to tailor the type and size of that response by being able to adapt to the threats, partners' capabilities, and geography of each region. The PAA is "phased" to advances in our own technical and operational capabilities for ballistic missile defense, and it is "adaptive" to trends and advances in potential adversary threats. The European version of the PAA has four phases based upon projected advances of our technical capabilities; however, in other COCOM's areas of responsibility (AOR) the number and timing of individual phases will vary based upon their unique circumstances. The geographic COCOMs are developing plans for phases for each AOR, with the European PAA currently being the most advanced.

The PAA has not resulted in a wholesale change in what the Department had previously planned to develop, but it does adjust the timing and quantity of some of the systems. A key

enabler for this flexibility is the structured and disciplined approach to development and fielding of the BMDS. The Missile Defense Agency is providing the Department with an impressive array of very capable systems that give us the freedom to maneuver and adapt to different and changing environments and threats. To fully capitalize on this range of capabilities, the Joint Capability Mix studies help guide decisions on maximizing COCOM capabilities and provide senior leaders with a risk-relevant assessment based on operational plans. This is a critical effort, particularly in light of the need to maximize every dollar spent. I would now like to address the operational benefits of the PAA.

Operational Benefits of PAA

As has been noted before, Congress and our warfighters have said the most pressing threat for our deployed forces today is the increasing number of Short Range Ballistic Missiles (SRBMs) and Medium Range Ballistic Missiles (MRBMs). Without going into classified details, suffice it to say that the sheer number and types of these threats grows daily and the nation needs to find a way to deal with them. The PAA addresses these issues head on. The US cannot afford to build the number of launchers, interceptors, and sensors it would take for each COCOM to have his own dedicated BMDS capability that can address all the potential strikes that could be launched. What the PAA provides instead, is a balanced investment that has the capacity to engage the range of threats; can be tailored to the geography, political circumstances, capabilities of regional partners; and has the flexibility to rapidly deploy more assets where and when they are needed.

European PAA Phase I (2011) Initial SRBM and MRBM Capability in Europe

European PAA Phase I is focused on the near term essentials to go against the SRBM and MRBM threats. We are already giving the overseas Combatant Commanders more of what we

already have by increasing the number of Patriot interceptors to complement the existing inventory of Patriot and Aegis with Standard Missile 3 (SM-3). The European PAA Phase I will also add SM-3 Block IA. This is a simple and direct operational counter. As the threat grows, we increase the number of our defensive interceptors. While this is workable to a point, it rapidly becomes unaffordable as the threats continue to grow in numbers over time.

To break out of the spiral of trying to match the threat missile-for-missile, the European PAA Phase I also begins the introduction of operational leverage by placing a forward-based AN/TPY-2 radar in Southern Europe. The addition of this AN/TPY-2 radar will allow the Combatant Commander to use Aegis to launch interceptors against ballistic missiles tracked by either the ship itself or the AN/TPY-2 radar. This significantly increases the size of the area that can be defended, and we will examine this architecture in a live intercept test mission in the near future. Phase I also includes the Command, Control, Battle Management and Communications (C2BMC) upgrade to the air operations center at Ramstein Air Base, Germany. C2BMC controls the AN/TPY-2 and also ties it and any Aegis ships into our command and control structure in Europe. C2BMC is a major operational leverage point for PAA because it provides the pathway for data exchange throughout a theater and from a theater to the Homeland.

The first BMDS element deployment in support of Phase I EPAA capability occurred on March 7, of this year when the USS MONTEREY (CG 61) deployed to Europe. MONTEREY will spend this spring and summer helping to develop, test and verify the command and control processes, data pathways, tactics, techniques and procedures necessary for the Phase I capability to become operational later this year.

This phase is also concurrent with efforts to enhance our capability for Homeland defense with early warning radar upgrades, adding more ground based interceptors (GBIs) in Alaska, and

developing improved GBIs. In the instance of the European PAA the radar tracks from the AN/TPY-2 in Southern Europe will be provided to NATO for defense of the territory and populations of the European members of the Alliance, and will be used by the US to provide early tracking information to enhance our Homeland defense assets. This linkage enables very efficient management of radar data and missile engagements. C2BMC will ensure threats are detected, tracked, and efficiently engaged. It will both prevent inadvertent “overengagement” where too many shots are taken at an incoming threat; and the worse alternative, “underengagement” where no shots are taken, because each shooter is operating independently. The operational bottom line on Phase I is that it gets us greater ability to engage the SRBM and MRBM threats, and just as important, it begins fielding a netted sensor and weapons infrastructure.

European PAA Phase II (~2015) Enhanced MRBM Defense in Europe

Phase II of the European PAA further embodies operational innovation. From a developmental point of view, the introduction of Aegis with SM-3 IB interceptors and AN/TPY-2 radars gives us expanded capability against MRBMs. We also significantly increase the size of area that can be defended. The true operational innovation in this phase comes from the increasing use of integrated and networked systems and the concept of placing SM-3 on land in Romania as a part of Aegis Ashore.

Aegis Ashore is a shift away from forward based GBIs in fixed launch sites, to a relocatable land-based Aegis radar with land-based SM-3 IB interceptors. This approach provides all the engagement range and capability of an Aegis ship but without the requirement to keep a ship in a fixed location for extended periods of time, nor the cost of maintaining the rest of the multi-mission capability of an Aegis warship. Operationally this allows a Combatant

Commander to provide long-term coverage for his assets or allies, establish a presence, and have a visible deterrent in theater. Similarly, a land-based SM-3 system can be augmented with Aegis warships and other BMDS assets to provide a very robust defense if the situation warrants. This is a very operationally responsive concept for the Combatant Commanders.

A more significant development beyond deployment of a new weapon system is the operational leverage gained from the improvements in the SM-3 Block IB interceptor. The SM-3 IB seeker's discrimination capability improves its performance during intercepts. The SM-3 IB will be deployed with Aegis Ashore and Aegis ships at sea. Because the missile seeker has been improved, both Aegis at sea and on land will be able to launch on remote sensor data (for example, using data from one of the land based radars). The operational impact of this concept is not obvious until you understand that the SM-3 missile has a fly-out range that goes well beyond where the Aegis radar can detect. The establishment of networks combined with the ability to use remote sensor data enables a Combatant Commander to take full advantage of the SM-3 range and reach out to extremely long ranges to engage targets. Operationally, this equates to a much larger defended area and a greater number of defended assets with the same force structure. The ability to use multiple weapons systems, and particularly systems that are not in the immediate area, does several things. First, it prevents an enemy from being able to tell which assets are being defended. Second, it makes it impossible to determine ahead of time which defensive systems have a shot at an incoming missile. Lastly, it prevents an adversary from being able to take down our defenses by targeting a single node. I would summarize Phase II as the transition phase where we move from classic concepts of single asset employment to a modern networked concept.

European PAA Phase III (~2018) Enhanced IRBM Defense in Europe and Phase IV (~2020) Early Intercept Defense in Europe

European PAA Phases III and IV add significant operational capability and continue to leverage and build on the netted infrastructure of the earlier phases. The key capability in Phase III is the addition of the SM-3 IIA, to be deployed in Poland, which will expand the defended area against MRBMs and Intermediate Range Ballistic Missiles (IRBMs). SM-3 IIA will be fielded with both Aegis ships and land-based SM-3 systems. Phase IV adds SM-3 IIB to our Aegis Ashore sites which will be capable of engaging potential future ICBMs from today's regional ballistic missile threats. This is the first capability beyond GBIs to defend against ICBMs, and provides enhanced defense of the Homeland. The SM-3 IIB also adds the ability to intercept MRBMs and IRBMs earlier in their flights which allows the warfighter to thin out large raid sizes, and suppress the use of countermeasures by engaging a missile before they are deployed. Phases III and IV will both continue the use of netted employment and its inherent advantages.

At the completion of Phase IV, Commander European Command will have multiple defensive capabilities across the entire ballistic missile threat regime from SRBMs to ICBMs. It's worthwhile at this point to contrast the European PAA with the previous approach for defense of Europe to further illustrate the operational impact. Under the previous GBI approach we could defend portions of Europe, but the primary benefit was defense of the US Homeland. Under EPAA we defend increasing areas of Europe, enhance defense of the Homeland, and develop capabilities that can be deployed worldwide. So operationally, PAA does much more than support a specific Combatant Commander, it provides capabilities that can be employed by

every Combatant Commander. This is major step forward in protection for the US and its allies and partners.

Before I leave the operational discussion of the EPAA Phases, I wanted to reinforce the point that ballistic missile defense, such as we embody in the EPAA, is not an isolated mission but part of a larger campaign against an adversary. Fundamentally, the BMDS is not, and cannot be, the sole method by which we defend ourselves against the threat or use of aggressor ballistic missiles. Many potential aggressors already have larger threat missile inventories than we have, or expect to have, numbers of interceptor missiles. Ballistic missile defenses can prevent an adversary from winning the fight with the first wave of the attack, limit damage to friendly forces and civilians, and provide time for our other elements of national and military power to be brought to bear to end the conflict. Further, the possession of a capable ballistic missile defense such as provided by the EPAA, assists in deterring potential aggressors from the use of ballistic missiles, as they have to contemplate that they will not be successful in achieving their aims from the use of these weapons.

Analysis Supporting PAA Development

The analytic efforts that JIAMDO leads are used to support operational planning by the warfighters, and support the resources and acquisition communities in research and development, production, budget, and programming decisions on missile defense. We have recently completed the base case of the JCM III to examine the implications and opportunities of the Phased Adaptive Approach as an element of our overall capability for ballistic missile defense. The study has been reviewed by the Department; we are in the process of briefing the results to appropriate parties including this Committee; and, we are continuing the analytic efforts of JCM III to examine a number of excursions and alternatives that we have developed. The study

results cannot be discussed in this open forum, but I will discuss the process used at this point. I am prepared to discuss the classified results in a closed session following our time this afternoon, or at another time at the Committee's convenience or that of some of the Members.

Building a ballistic missile defense capability is a blend of determining what the right technology is, how many of each system is acquired, and how are the elements to be applied in different contexts of threat, geography, and international political and military environments of allies and partners. In operational terms this gets shortened to "how much PAA do we need, and where?" A simple phrase, but a very complex problem.

We previously conducted JCM I in 2005-2006 and JCM II in 2007-2008. These focused on the number of interceptors that might be required under different scenarios against specific threats.

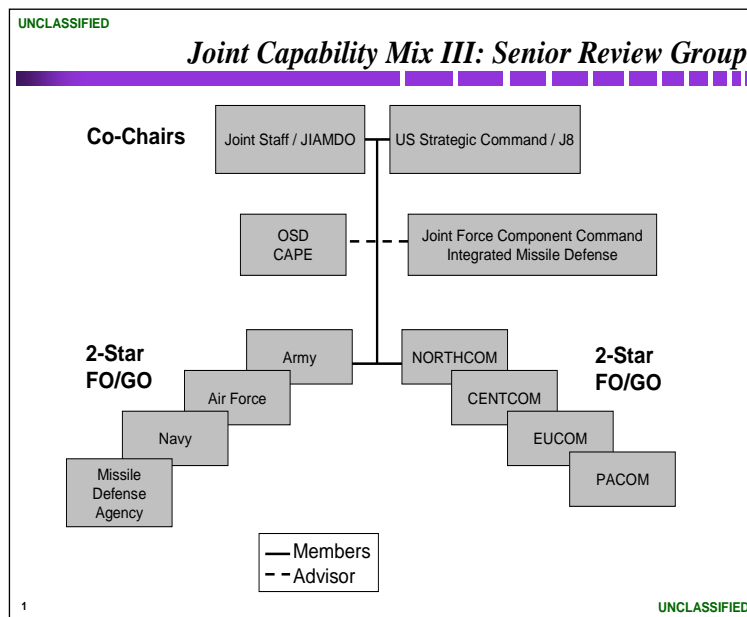
There are three main differences between these earlier studies and JCM III:

First, JCM III examined all the elements of the regional BMD system, including sensors systems, launcher systems, and interceptors, whereas the previous studies only looked at interceptors.

Second, JCM III examined performance against threat ballistic missiles that employed a range of countermeasures; we had not done this previously.

Third, JCM III has been a study of warfighting sufficiency rather than inventory acquisition objectives. We examined the ability of the application of PAA architectures in different AOR of the Combatant Commanders to determine how BMDS contributed to their overall plan to deter aggressors and, if necessary to end enemy ballistic missile attacks should they occur. We do not attempt to simply answer how much to buy; we give alternatives to the warfighter to best achieve his overall goals.

I would also like to spend a couple of minutes discussing the study methodology. In order to determine force needs at this level of granularity, we had to take into account how the COCOMs intend to employ them, what the threats are, and generally how the threat will be expected to be employed. COCOMs provided operational employment information, to include asset laydowns and shot doctrine. For system performance, we went to the experts at MDA. The analysis was executed by JIAMDO in conjunction with representatives from CENTCOM, EUCOM, PACOM, STRATCOM, NORTHCOM, MDA, the Services, and OSD Cost Assessment and Program Evaluation (CAPE). The significant level of warfighter and developer involvement in the process is why we have such a high level of confidence in the results. The results have been briefed to the JROC, the Missile Defense Executive Board, and finally to the Deputy Secretary of Defense’s Advisory Working Group. I have included a graphic on the Senior Review Group of the study to illustrate the inclusive approach we use for our analysis.



EPAA and NATO

As I mentioned earlier, NATO has just taken the decision that ballistic missile defense is “...a core element of our collective defence.” In both my role as the Director of JIAMDO, and

as the US head of delegation to the NADC, I have spent a significant amount of time discussing the EPAA with various Allies and friends throughout Europe. The US is not building a missile defense system in isolation. Our Allies are appreciative of our efforts to include them in our discussions and explain our missile defense concepts and approaches. The EPAA concept and implementation provides the opportunity for Allies and partners across the globe to participate with and alongside US systems. Not only is this the right thing to do, it is a very effective and efficient approach to missile defense that allows all participants to leverage the investment the other nations are making. The recent MDA demonstration of C2BMC with NATO's ALTBMD is a premier example of the right approach to follow.

Now that NATO has made the decision, the US BMDS capabilities of the European PAA will constitute our national contribution to this mission. We will work closely within the Alliance to craft the appropriate command and control structure to provide for the effective defense of ourselves and our partners from ballistic missile threats in the region.

Summary

The Department is investing a significant portion of its budget in missile defense and the PAA is providing the necessary framework to ensure it is invested effectively and wisely. The PAA is shaping the integration and networking of our systems across the COCOMs, Services, and allies which is the correct path to successful and effective missile defense. We have established a solid process and analytic approach to monitor and guide the implementation of the PAA and expect to develop and field the phases in the most operationally effective and cost efficient manner possible.

Thank you for the opportunity to testify. I look forward to answering your questions.