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Director, Missile Defense Agency
Missile Defense Program and Fiscal Year 2006 Budget
Spring 2005

Good morning, Mr. Chairman, Members of the Committee. It is an honor to be here today to present the Department of Defense's Fiscal Year (FY) 2006 Missile Defense Program and budget. The Missile Defense Agency mission remains one of developing and incrementally fielding a joint, integrated, and multilayered Ballistic Missile Defense system to defend the United States, our deployed forces, and our allies and friends against ballistic missiles of all ranges by engaging them in the boost, midcourse, and terminal phases of flight.

Our program, reflected in the FY 2006 budget submission, is structured to balance the early fielding elements of this system with its continued steady improvement through an evolutionary development and test approach. The budget also balances our capabilities across an evolving threat spectrum that includes rogue nations with increasing ballistic missile expertise.

We are requesting \$7.8 billion to support our program of work in fiscal year 2006, which is approximately \$1 billion less than the fiscal year 2005 request. About \$1.4 billion covers the continued fielding and sustainment of our block increments of long-range ground-based midcourse defense components; our short- to intermediate-range defense involving Aegis ships with their interceptors; as well as all of the supporting radars, command, control, battle management and communication capabilities. About \$6.4 billion

will be invested in the development foundation for continued testing and evolution of the system.

To provide the context for our budget submission, I would like to review what we have accomplished over the past year. And while I believe the Missile Defense Program is on the right track to deliver multilayered, integrated capabilities to counter current and emerging ballistic missile threats, I am planning to make some program adjustments in light of our two recent flight test failures.

I also will explain the rationale behind our testing and fielding activities and address the next steps in our evolutionary ballistic missile defense program.

The Evolving Security Environment

The threat we face from proliferating and evolving ballistic missile systems and associated technologies and expertise continues unabated. There were nearly 100 foreign ballistic missile launches around the world in 2004. This is nearly double the number conducted in 2003 and slightly greater than the number of launches in 2002. More than 60 launches last year involved short-range ballistic missiles, over ten involved medium-range missiles, and nearly twenty involved land- and sea-based long-range ballistic missiles.

Operations Desert Storm (1991) and Iraqi Freedom (2003) demonstrated that missile defenses must be integrated into our regional military responses if we are to provide adequate protection of coalition forces, friendly population centers, and military

assets. We must expect that troops deployed to regional hotspots will continue to encounter increasingly sophisticated ballistic missile threats.

Nuclear-capable North Korea and nuclear-emergent Iran have shown serious interest in longer-range missiles. They underscore the severity of the proliferation problem. Our current and near-term missile defense fielding activities are a direct response to these dangers. There are also other ballistic missile threats to the homeland that we must address in the years ahead, including the possibility of an off-shore launch.

We have had recent experience with tragic hostage situations involving individuals, and we have witnessed how the enemy has attempted to use hostages to coerce or blackmail us. Imagine now an entire city held hostage by a state or a terrorist organization. This is a grim prospect, and we must make every effort to prevent it from occurring. Any missile carrying a nuclear or biological payload could inflict catastrophic damage. I believe the ability to protect against threats of coercion and actively defend our forces, friends and allies, and homeland against ballistic missiles will play an increasingly critical role in our national security strategy.

Missile Defense Approach—Layered Defense

We believe that highly integrated layered defenses will improve the chances of engaging and destroying a ballistic missile and its payload. This approach to missile defense also makes deployment of countermeasures much more difficult. If the adversary has a successful countermeasure deployment or tactic in the boost phase, for example, he may play right into the defense we have set up in midcourse. Layered

defenses provide defense in depth and create an environment intended to frustrate an attacker. The elements of this system play to one another's strengths while covering one another's weaknesses.

With the initial fielding last year of the Ground-based Midcourse Defense and Aegis surveillance and track capabilities of this integrated system, we are establishing a limited defensive capability for the United States against a long-range North Korean missile threat. At the same time, we are building up our inventory of mobile interceptors to protect coalition forces, allies and friends against shorter-range threats. With the cooperation of our allies and friends, we plan to evolve this defensive capability to improve defenses against all ranges of threats in all phases of flight and expand it over time with additional interceptors, sensors, and defensive layers.

Since we cannot be certain which specific ballistic missile threats we will face in the future, or from where those threats will originate, our long-term strategy is to strengthen and maximize the flexibility of our missile defense capabilities. As we proceed with this program into the next decade, we will move towards a missile defense force structure that features greater sensor and interceptor mobility. In line with our multilayer approach, we will expand terminal defense protection and place increasing emphasis on boost phase defenses, which today are still early in development.

Initial Fielding of Block 2004

Since my predecessor last appeared before this committee, we have made tremendous progress and have had a number of accomplishments. We also came up short of our expectations in a few areas.

We stated last year that, by the end of 2004, we would begin fielding the initial elements of our integrated ballistic missile defense system. We have met nearly all of our objectives. We have installed six ground-based interceptors in silos at Fort Greely, Alaska and two at Vandenberg Air Force Base in California. We completed the upgrade of the Cobra Dane radar in Alaska and the modification of seven Aegis ships for long-range surveillance and tracking support. These elements have been fully connected to the fire control system and are supported by an extensive command, control, battle management and communications infrastructure. In addition, we have put in place the required logistics support infrastructure and support centers.

Since October 2004, we have been in a “shakedown” or check-out period similar to that used as part of the commissioning of a U.S. Navy ship before it enters the operational fleet. We work closely with U.S. Strategic Command and the Combatant Commanders to certify missile defense crews at all echelons to ensure that they can operate the ballistic missile defense system if called upon to do so. We have exercised the command, fire control, battle management and communication capabilities critical to

the operation of the system. The Aegis ships have been periodically put on station in the Sea of Japan to provide long-range surveillance and tracking data to our battle management system. We have fully integrated the Cobra Dane radar into the system, and it is ready for operational use even as it continues to play an active role in our test program by providing data on targets of opportunity. Finally, we have executed a series of exercises with the system that involves temporarily putting the system in a launch-ready state. This has enabled us to learn a great deal about the system's operability. It also allows us to demonstrate our ability to transition from development to operational support and back. This is very important since we will continue to improve the capabilities of the system over time, even as we remain ready to take advantage of its inherent defensive capability should the need arise.

Completing Block 2004

Today we remain basically on track with interceptor fielding for the Test Bed. We have recovered from the 2003 propellant accident, which last year affected the long-range ground-based interceptors as well as the Aegis Standard Missile-3 (SM-3) and Terminal High Altitude Area Defense, or THAAD, booster production. We should have ten more interceptors emplaced in Alaska by December of this year. In October, we received the first Standard Missile-3 for deployment aboard an Aegis ship. To date, we have five of these interceptors with a total of eight scheduled to be delivered by the end of the year. By then, we will also have outfitted two Aegis cruisers with this engagement capability. So, in addition to providing surveillance and tracking support to the integrated ballistic

missile defense system, Aegis will soon provide a flexible sea-mobile capability to defeat short- to medium-range ballistic missiles in their midcourse phase.

Our sensor program is also on track. The Beale radar in California is receiving final software upgrades this spring and will be fully integrated into the system. We are now testing a transportable X-band radar, which can be forward-deployed this year to enhance our surveillance and tracking capabilities. Our most powerful sensor capability, the Sea-Based X-band Radar (SBX) will be traversing the Atlantic and Pacific Oceans this year, on its way to Adak, Alaska, where it will be ported. This radar is so capable that, if it were sitting in Chesapeake Bay, it could detect a baseball-sized object in space over San Francisco. This sea-mobile midcourse radar will allow us to increase the complexity of our tests by enabling different intercept geometries. And when we deploy it in the Pacific Ocean, it also will have an inherent operational capability against threats from Asia. Finally, the RAF Fylingdales early warning radar in the United Kingdom will be fully integrated for missile defense purposes by early 2006 and will provide the initial sensor coverage needed against Middle East threats.

BMD elements will remain part of the system Test Bed even after we field them for initial capability. However, the Missile Defense Agency does not operate the BMD system. Our job is to provide a militarily useful capability to the warfighter. Because the BMD system is integrated and involves different Services, the MDA will continue to manage system configuration to ensure adequate integration of new components and elements and the continued smooth operation of the system.

For these reasons, Congress mandated the Agency to maintain configuration control over PAC-3 and the Medium Extended Air Defense System (MEADS) following their transfer to the Army. Regarding the transition of the system elements, we use several models. Each transition, to include time and method of transfer, will be unique. In some cases, it may not be appropriate to transfer a BMD system element to a Service. The Sea-Based X-band Radar, for example, will likely remain a Missile Defense Agency Test Bed asset and be made available for operational use as appropriate. In other words, the Services and the Missile Defense Agency will have shared responsibilities and will continue to work with the Secretary of Defense, the Services, and the Component Commanders to arrange appropriate element transfer on a case by case basis.

Building Confidence through Spiral Testing

The development and fielding of Block 2004 was initiated based on the confidence we built in our test program between 2000 and 2002. We successfully conducted four out of five intercept tests using prototypes of the ground-based interceptors we have in place today against long-range ballistic missile targets. In addition, in 2002 and 2003, we successfully conducted three intercept tests against shorter-range targets using an earlier version of the sea-based Aegis SM-3 interceptors we are deploying today. These tests demonstrated the basic viability and effectiveness of a system that relies primarily on hit-to-kill technologies to defeat in-flight missiles. In fact, we had learned as much as we could with the prototypes and decided it was time to restructure the program to accelerate the testing of the initial operational configurations of the system elements.

In 2003 and 2004, we had three successful flight tests of the operational long-range booster now emplaced in the silos in Alaska and California. The booster performed exactly as predicted by our models and simulations. In addition, between 2002 and 2004, we successfully executed 58 flight tests, 67 ground tests, simulations, and exercises, all of which have continued to bolster our confidence in the basic ballistic missile defense capabilities. In the past year, however, we had several concerns with quality control and, as a result, executed only two long-range flight tests since last spring.

The interceptor launch aborts in Integrated Flight Test (IFT)-13C last December and IFT-14 this past February were disappointments, but they were not, by any measure, serious setbacks. The anomaly that occurred in IFT-13C, in fact, is a very rare occurrence. As the interceptor prepares to launch, its on-board computer does a health and status check of various components. In that built-in test, interceptor operations were automatically terminated because an overly stringent parameter measuring the communications rate between the flight computer and its guidance components was not met. The launch control system actually worked as it was designed when it shut the interceptor down. A simple software update to relax that parameter corrected the problem. The fix was verified during subsequent ground tests and the next launch attempt. We did enjoy some success in the test. We successfully tracked the target and fed that information into the fire control system, a process that allowed us to successfully build a weapons task plan that we then loaded and, which was accepted, into the interceptor's computer.

In February we used the same interceptor to attempt another flight test. Again, the target successfully launched. The interceptor successfully powered up and worked through built-in test procedures and was fully prepared to launch. Again, the system successfully tracked the target and fed the information to the fire control system, which generated a weapons task plan accepted by the interceptor's computer. This time, however, a piece of ground support equipment did not properly clear, and the launch control system did not issue a launch enable command.

Mr Chairman, I can assure you that while these test aborts were major disappointments, they were not major technical setbacks. We maintain our confidence in the system's basic design, its hit-to-kill effectiveness, and its inherent operational capability. Because of our recent test launch aborts, I chartered an independent team to review our test processes, procedures and management. They reported their findings to me last month. They indicated that we had successfully demonstrated the hit-to-kill technology and achieved a major national accomplishment in fielding initial defensive capabilities. The team described the rapid development and initial deployment of the system as comparable to other major military efforts, such as the initial deployment of the Minuteman and Polaris ballistic missiles.

With the basic functionality demonstrated, the independent review team believed that we should now enter a "Performance and Reliability Verification Phase," in which mission assurance becomes the number one objective. They noted that our system reliability is based on multiple intercept attempts per engagement, whereas our system testing focuses on the performance of a single interceptor. They also observed that our

flight testing has a strategic significance well beyond that normally associated with military systems' development.

The team recommended specific improvements in five areas. First, increase rigor in the flight test certification process, to include the addition of a concurrent and accountable independent assessment of test readiness. Second, strengthen system engineering by tightening contractor configuration management, enforcing process and workmanship standards, and ensuring proper specification flow down. Third, add ground test units and expand ground qualification testing. Fourth, hold prime contractor functional organizations (such as engineering, quality and mission assurance experts) accountable for supporting the program. And finally, ensure program executability by stabilizing baselines and establishing event-driven schedules.

I also named the current Aegis BMD program director, Rear Admiral Kate Paige, as the Agency's Director of Mission Readiness with full authority to implement the corrections needed to ensure return to a successful flight test program. We have pursued a comprehensive and integrated approach to missile defense testing under the current program and are gradually making our tests more complex. Prior to the establishment of the Mission Readiness Task Force, we had planned a very aggressive test program for the next two years. That test plan involved flying the ground-based interceptor to gain confidence in our corrections and conducting two more long-range interceptor tests this calendar year. These flight tests included: an engagement sequence using an operationally configured Aegis ship to provide tracking information to a long-range interceptor and an engagement sequence using an interceptor launched from an operational site, Vandenberg;

tracking information provided by an operational radar at Beale; and a target launched out of the Kodiak Launch Complex in Alaska. We also planned to fly targets across the face of the Cobra Dane radar in the Aleutians and Beale in California. However, all follow-on GMD flight tests are on hold pending the implementation of the Independent Review Team recommendations and a return to flight recommendation by the Mission Readiness Task Force.

Missile defense testing has evolved, and will continue to evolve, based on results. We are not in a traditional development, test, and production mode where we test a system, then produce hundreds of units without further testing. We will always be testing and improving this system, using a spiral testing approach that cycles results into our spiral development activities. That is the very nature of spiral development. This approach also means fielding test assets in operational configurations. This dramatically reduces time from development to operations, which is critical in a mission area where this nation has been defenseless. Nevertheless, neither you, the American public nor our enemies will believe in our ground-based ICBM defense until we demonstrate its effectiveness by successfully conducting additional operationally realistic flight tests.

In FY 2006, we are adding new test objectives and using more complex scenarios. Also, war fighter participation will grow. We plan to execute four flight tests using the long-range interceptor under a variety of flight conditions and, for the first time, use tracking data from the sea-based X-band radar.

In terms of our sea-based midcourse defense element, this past February, we successfully used a U.S. Navy Aegis cruiser to engage a short-range target ballistic

missile. This test marked the first use of an operationally configured Aegis SM-3 interceptor. In the last three Aegis ballistic missile defense intercept flight tests, we incrementally ratcheted up the degree of realism and reduced testing limitations to the point where we did not notify the operational ship's crew of the target launch time and they were forced to react to a dynamic situation. This year, we will conduct two more tests using Aegis as the primary engagement platform. In FY 2006, Aegis ballistic missile defense will use upgraded software and an advanced version of the SM-3 interceptor to engage a variety of short- and medium-range targets, including targets with separating warheads. We also plan to work with Japan to test the engagement performance of the SM-3 nosecone developed in the U.S./Japan Cooperative Research project.

Four Missile Defense Integration Exercises involving warfighter personnel will test hardware and software in the integrated system configuration to demonstrate system interoperability. War games also are an integral part of concept of operations development and validation. Four integrated missile defense wargames in FY 2006 will collect data to support characterization, verification, and assessment of the ballistic missile defense system with respect to operator-in-the-loop planning and the exchange of information in the system required for successful development and system operation.

In addition to having laid out a very ambitious test plan, we are working hand-in-hand with the warfighter community and the independent testing community. We have more than one hundred people from the test community embedded in our program activities, and they are active in all phases of test planning, execution, and post-test

analysis. We meet with them at the senior level on a weekly basis, and they help us develop and approve our test plans. All data from testing is available to all parties through a Joint Analysis Team and are used to conduct independent assessments of the system.

The Missile Defense Agency and Director, Operational Test & Evaluation have completed and jointly approved an Integrated Master Test Plan, effective through 2007. The plan includes tests that combine developmental and operational testing to reduce costs and increase testing efficiency. Within our range safety constraints, we are committed to increasing the operational aspects as I stated earlier. This accumulated knowledge helps inform the assessment of operational readiness.

Building the Next Increment—Block 2006

In building the Ballistic Missile Defense program of work within the top line budget reductions I mentioned earlier, we followed several guiding principles. To keep ahead of the rogue nation threats, we recognized the need to continue holding to our fielding commitments to the President for Blocks 2004 and 2006, including investment in the necessary logistics support. We also knew that we must prepare for asymmetric (e.g., the threat from off-shore launches) and emerging threat possibilities as well in our fielding and development plans.

In executing our program we are following a strategy to retain alternative development paths until capability is proven—a knowledge-based funding approach. This is a key concept in how we are executing our development program. We have

structured the program to make decisions as to what we will and will not fund based upon the proven success of each program element. The approach involves tradeoffs to address sufficiency of defensive layers – boost, midcourse, terminal; diversity of basing modes – land, sea, air and space; and considerations of technical, schedule and cost performance.

The funding request for FY 2006 will develop and field the next increment of missile defense capability to improve protection of the United States from the Middle East, expand coverage to allies and friends, improve our capability against short-range threats, and increase the resistance of the integrated system to countermeasures. We are beginning to lay in more mobile, flexible interceptors and associated sensors to meet threats posed from unanticipated launch locations, including threats launched off our coasts.

For midcourse capability against the long-range threat, the Ground-based Midcourse Defense (GMD) element budget request is about \$2.3 billion for FY 2006 to cover continued development, ground and flight testing, fielding and support. This request includes up to ten additional ground-based interceptors, their silos and associated support equipment and facilities as well as the long-lead items for the next increment. It also continues the upgrade of the Thule radar station in Greenland.

To address the short- to intermediate-range threat, we are requesting approximately \$1.9 billion to continue development and testing of our sea-based midcourse capability, or Aegis BMD, and our land-based THAAD element. We will continue purchases of the SM-3 interceptor and the upgrading of Aegis ships to perform the BMD mission. By the end of 2007 we should have taken delivery of up to 28 SM-3 interceptors for use on three Aegis

cruisers and eight Aegis destroyers. This engagement capability will improve our ability to defend our deployed troops and our friends and allies. Six additional destroyers, for a total of 17 Aegis ships, will be capable of performing the surveillance and track mission.

THAAD flight testing begins this year with controlled flight tests as well as radar and seeker characterization tests and will continue into FY 2006, when we will conduct the first high endo-atmospheric intercept test. We are working toward fielding the first THAAD unit in the 2008-2009 timeframe with a second unit available in 2011.

We will continue to roll out sensors that we will net together to detect and track threat targets and improve discrimination of the target suite in different phases of flight. In 2007, we will deploy a second forward-based X-band radar. We are working towards a 2007 launch of two Space Tracking and Surveillance System (STSS) test bed satellites. These test bed satellites will demonstrate closing the fire control loop and the value of STSS tracking data. We are requesting approximately \$521 million in FY 2006 to execute this STSS and BMDS Radar work.

All of these system elements must be built on a solid command, control, battle management and communications foundation that spans thousands of miles, multiple time zones, hundreds of kilometers in space and several Combatant Commands. This foundation allows us to mix and match sensors, weapons and command centers to dramatically expand our detection and engagement capabilities over that achieved by the system's elements operating individually. In fact, without this foundation we cannot execute our basic mission. That is why the Command, Control, Battle Management and Communications program is so vital to the success of our integrated capability.

Building a single integrated system of layered defenses has forced us to transition our thinking to become more system-centric. We established the Missile Defense National Team to solve the demanding technical problems involved in this unprecedented undertaking. No single contractor or government office has all the expertise needed to design and engineer an integrated and properly configured BMD system. The National Team brings together the best, most experienced people from the military and civilian government work forces, industry, and the federal laboratories to work aggressively and collaboratively on one of the nation's top priorities. However, integrating the existing elements of the Ballistic Missile Defense System proved to be very challenging. Today, we have streamlined the team's activities and realigned their priorities to focus on providing the detailed systems engineering needed for a truly integrated capability. The team has now gained traction and is leading the way to building the system this nation will need for the future.

Moving Toward the Future—Block 2008 and Beyond

There is no silver bullet in missile defense, and strategic uncertainty could surprise us tomorrow with a more capable adversary. So it is important to continue our aggressive parallel paths approach as we build this integrated, multilayered defensive system. There are several important development efforts funded in this budget.

We are preserving decision flexibility with respect to our boost phase programs until we understand what engagement capabilities they can offer. We have requested approximately \$680 million for these activities in FY 2006.

In FY 2006 we are beginning the integration of the high-power laser component of the Airborne Laser (ABL) into the first ABL weapon system test bed and will initiate ground-testing. Following that we will integrate the high-power laser into the aircraft and conduct a campaign of flight tests, including lethal shoot-down of a series of targets. We still have many technical challenges with the Airborne Laser, but with the recent achievements of first light and first flight of the aircraft with its beam control/fire control system, I am pleased with where we are today. We have proven again that we can generate the power and photons necessary to have an effective directed energy capability. An operational Airborne Laser could provide a valuable boost phase defense capability against missiles of all ranges. The revolutionary potential of this technology is so significant, that it is worth both the investment and our patience.

We undertook the Kinetic Energy Interceptor boost-phase effort in response to a 2002 Defense Science Board Summer Study recommendation to develop a terrestrial-based boost phase interceptor as an alternative to the high-risk Airborne Laser development effort. We will not know for two or three years, however, whether either of these programs will be technically viable. With the recent successes we have had with ABL, we are now able to fine-tune our boost-phase development work to better align it with our longer-term missile defense strategy of building a layered defense capability that has greater flexibility and mobility.

We have established the Airborne Laser as the primary boost phase defense element. We are reducing our FY 2006 funding request for the KEI effort and have restructured that activity, building in a one-year delay, in order to focus near-term efforts

on demonstrating key capabilities and reduce development risks. We restructured the Kinetic Energy Interceptor activity as risk mitigation for the Airborne Laser and focused it on development of a land-based mobile, high-acceleration booster. It has always been our view that the KEI booster, which is envisioned as a flexible and high-performance booster capable of defending large areas, could be used as part of an affordable, competitive next-generation replacement for our midcourse or even terminal interceptors. Decisions on sea-based capability and international participation in this effort have been deferred until the basic KEI technologies have been demonstrated. The restructured Kinetic Energy Interceptor activity will emphasize critical technology demonstrations and development of a mobile, flexible, land-based ascent and midcourse engagement capability around 2011, with a potential sea-based capability by 2013. A successful KEI mobile missile defense capability also could improve protection of our allies and friends.

We are requesting \$82 million in FY 2006 to continue development of the Multiple Kill Vehicle (MKV). MKV is a generational upgrade to ground-based midcourse interceptors to increase their effectiveness in the presence of countermeasures. We look forward to the first intercept attempt using MKV sometime in 2008.

Our flexible management structure allows us to adjust development activities based on demonstrated test results, improve decision cycle times, and make the most prudent use of the taxpayer's money. Using a knowledge-based funding approach in our decision making, we will conduct periodic continuation reviews of major development activities against cost, schedule, and performance expectations. We have flexibility in our funding to support key knowledge-based decision paths, which means that we can

reward successful demonstrations with reinvestment and redirect funds away from efforts that have not met our expectations. We have assigned a series of milestones to each of the major program activities. The milestones will provide one measure for decision-making and help determine whether a program stays on its course or is accelerated, slowed, or terminated. This approach gives us options within our trade space and helps us determine where we should place our resources, based on demonstrated progress. The alternative is to terminate important development activities without sufficient technical data to make smart decisions. We believe that this approach also acts as a disincentive to our contractors and program offices to over-promise on what they can deliver.

International Participation

Interest in missile defense among foreign governments and industry has continued to rise. We have been working closely with a number of allies to forge international partnerships that will make missile defense a key element of our security relationships around the world.

The Government of Japan is proceeding with the acquisition of a multilayered BMD system, basing its initial capability on upgrades of its Aegis destroyers and acquisition of the Aegis SM-3 missile. We have worked closely with Japan since 1999 to design and develop advanced components for the SM-3 missile. This project will culminate in flight tests in 2005 and 2006. In addition, Japan and other allied nations are upgrading their Patriot fire units with PAC-3 missiles and improved ground support

equipment. This past December we signed a BMD framework Memorandum of Understanding (MOU) with Japan to expand our cooperative missile defense activities.

We have signed three agreements over the past two years with the United Kingdom, a BMD framework MOU and two annexes. In addition to the Fylingdales radar development and integration activities this year, we also agreed to continue cooperation in technical areas of mutual interest.

This past summer we signed a BMD framework MOU with our Australian partners. This agreement will expand cooperative development work on sensors and build on our long-standing defense relationship with Australia. We also are negotiating a Research, Development, Test and Evaluation annex to the MOU to enable collaborative work on specific projects, including: high frequency over-the-horizon radar, track fusion and filtering, distributed aperture radar experiments, and modeling and simulation.

We have worked through negotiations with Denmark and the Greenland Home Rule Government to upgrade the radar at Thule, which will play an important role in the system by giving us an early track on hostile missiles. We also have been in sensor discussions with several allies located in or near regions where the threat of ballistic missile use is high.

Our North Atlantic Treaty Organization (NATO) partners have initiated a feasibility study for protection of NATO territory and population against ballistic missile attacks, which builds upon ongoing work to define and develop a NATO capability for protection of deployed forces.

We are continuing work with Israel to implement the Arrow System Improvement Program and enhance its missile defense capability to defeat the longer-range ballistic missile threats emerging in the Middle East. We also have established a capability in the United States to co-produce components of the Arrow interceptor missile, which will help Israel meet its defense requirements more quickly and maintain the U.S. industrial work share.

We are intent on continuing U.S.-Russian collaboration and are now working on the development of software that will be used to support the ongoing U.S.-Russian Theater Missile Defense exercise program. A proposal for target missiles and radar cooperation is being discussed within the U.S.-Russian Federation Missile Defense Working Group.

We have other international interoperability and technical cooperation projects underway as well and are working to establish formal agreements with other governments.

Closing

Mr. Chairman, I want to thank this committee for its continued support of the Missile Defense Program. As we work through the challenges in the coming months, we will conduct several important tests and assessments of the system's progress. We will continue our close collaboration with the independent testers and the warfighters to ensure that the capabilities we field are effective, reliable, and militarily useful. There certainly are risks involved in the development and fielding activities. However, I

believe we have adequately structured the program to manage and reduce those risks using a knowledge-based approach that requires each program element to prove that it is worthy of being fielded.

I believe we are on the right track to deliver multilayered, integrated capabilities to counter current and emerging ballistic missile threats. For the first time in its history, the United States today has a limited capability to defend our people against long-range ballistic missile attack. I believe that future generations will find these years to be the turning point in our effort to field an unprecedented and decisive military capability, one that closes off a major avenue of threat to our country.

Thank you and I look forward to your questions.