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Missile Defense Program and Fiscal Year 2007 Budget
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Good afternoon, Chairman Everett, Congressman Reyes, Members of the Committee. It is an honor to be here today to present the Department of Defense's Fiscal Year (FY) 2007 Missile Defense program and budget. The Missile Defense Agency mission remains one of developing and progressively fielding a joint, integrated, and multilayered Ballistic Missile Defense (BMD) system to defend the United States, our deployed forces, and our allies and friends against ballistic missiles of all ranges by engaging them in all phases of flight. I believe we are on the right track to deliver the multilayered, integrated capabilities that are necessary to counter current and emerging threats.

As was the case last year, our program is structured to balance the initial fielding of system elements with steady improvements using evolutionary development and a test approach that continuously increases our confidence in the effectiveness of the BMD system. This budget balances our capabilities across an evolving threat spectrum that includes rogue nations with increasing ballistic missile expertise.

We are requesting $9.3 billion to support our program of work in Fiscal Year 2007. The $1.6 billion increase from 2006 reflects a return to the annual investment level targeted by the Department for ballistic missile defense and is indicative of the robust phase we are entering in the development and fielding of the integrated layered capability.

Approximately $1 billion of this increase will be applied to fielding and sustainment, and $600 million to continued development of the Ballistic Missile Defense System. $2.4 billion of the Fiscal Year 2007 request covers the continued incremental fielding and sustainment of long-range ground-based midcourse defense components; our short- to intermediate-range defense involving Aegis ships with their interceptors; and the supporting sensors, command, control, battle management and communication capabilities. This increase in funding for fielding and sustainment of nearly a billion dollars from last year reflects the success we have had across the program. About $6.9 billion will be invested in continued component improvements, system capability development, and testing.

I would like to review our accomplishments, as well as our shortfalls, over the past year, explain our testing and fielding strategies, and address the next steps in our evolutionary ballistic missile defense program.

The Evolving Security Environment

Proliferating and evolving ballistic missile systems and associated technologies continue to pose dangers to our national security. In 2005 there were nearly eighty foreign ballistic missile launches around the world. Nearly sixty launches last year involved short-range ballistic missiles, approximately ten involved medium- and intermediate-range missiles, and about ten involved long-range ballistic missiles.

North Korea and Iran have not relented in their pursuit of longer-range ballistic missiles. Our current and near-term missile defense fielding activities are a direct

response to these dangers. There are also other ballistic missile threats today for which we must be prepared, and there will be others in the mid- to far-term. We must be ready to operate the ballistic missile defense system against new and unexpected threats.

Our potential adversaries continue efforts to acquire ballistic missile systems and technology. Ballistic missiles were used against our forces, our allies and friends during the 1991 and 2003 Gulf Wars. When combined with weapons of mass destruction, they could offer our enemies an attractive counterbalance to the overwhelming conventional superiority exhibited by U.S. and coalition forces during those wars. We can expect that in the future our adversaries could use them to threaten our foreign policy objectives or pursue a policy of terrorism by holding our cities and other high value assets hostage. After all, those who support global terrorism can hide behind the threats posed by offensive missiles carrying highly destructive or lethal payloads. They will use them to try to deny our forces access to a theater of conflict or to coerce a withdrawal of our forces from that theater. Ballistic missiles provide a way for our adversaries to attempt to achieve some degree of strategic equality with us, especially at a time when ballistic missile defense is still striving to catch up with the progress made by ballistic missile offense over the past four decades.

Missile Defense Approach—Layered Defense

We believe that layered defenses integrated by a robust command and control system, will improve the chances of engaging and destroying a ballistic missile and its payload in-flight. This approach to missile defense also makes the effectiveness of

countermeasures much more difficult, since countermeasures designed to work in one phase of flight are not likely to work in another. It is much harder to overcome a complex, multilayered defense. Layered defenses, a time-honored U.S. approach to military operations, provide defense in depth and create synergistic effects designed to frustrate an attack.

With the initial fielding in 2004 of the Ground-based Midcourse Defense components, the Aegis long range surveillance and track ships, and the first integrated command, control, battle management and communications (C2BMC) suites, we made history by establishing a limited defensive capability for the United States against a possible long-range ballistic missile attack from North Korea and the Middle East. With the cooperation of our allies and friends, we plan to evolve this defensive capability to make it more effective against all ranges of threats in all phases of flight and expand the system over time with additional interceptors, sensors, and 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 redundancy and sensitivity, interceptor capability and mobility, and increasingly robust C2BMC capabilities. In line with our multilayer approach, we will expand terminal defense protection and place increasing emphasis on boost phase defenses.

We are effectively employing an evolutionary acquisition strategy to field multiple system capabilities while maintaining an aggressive test and development program. The Missile Defense Agency continues to evolve and refine desired capabilities, based on warfighter need and technology maturity, through sound risk management. Our goal continues to be one of fielding the best capabilities possible, on schedule, on time, and within cost, in order to address current and emerging threats.

Completing the Fielding of Block 2004

Since I last appeared before this committee, we have made a number of significant accomplishments to complete initial fielding of the Block 2004 capability. We have also fallen short in some areas. When we rolled this program out in 2002, we set out to deploy 10 Ground Based Interceptors in 2004 and another 10 in 2005. A booster motor plant explosion in 2003, which had a major impact across the missile defense program, and the need to step back and undertake a mission readiness review of the Ground-based Midcourse Defense program following two test failures caused us to miss our fielding mark. I delayed the Ground-Based Interceptor deployment in 2005 and made changes based on the recommendations of the mission readiness review. I believe we are now back on track, but I will pause again if necessary. We recently emplaced three more Ground-Based Interceptors in silos at Fort Greely, Alaska, for a total of nine, and two at Vandenberg Air Force Base in California. This progress is critical because we expect the Ground-based Midcourse Defense element to be the backbone of our national missile defense capability for years to come. Today we continue with interceptor fielding and

plan to emplace additional Ground-Based Interceptors, for a total of sixteen by December of this year.

This past year we also added a second Aegis engagement cruiser and delivered additional Standard Missile-3 interceptors to our evolving sea-based architecture to address short- and medium-range threats in the midcourse phase of flight. We did not advance as rapidly as we hoped. We needed to resolve technical issues associated with the third stage rocket motor and the solid divert and attitude control system to take full advantage of interceptor performance designed to pace the threat. However, we are close to the 10 to 20 sea-based interceptors we projected for delivery in our initial program. Right now, I am comfortable with where we stand in our sea-based interceptor deployment plans. We will continue to grow our inventory of Standard Missile-3 interceptors for deployment aboard Aegis ships and, by the end of 2006, outfit three Aegis destroyers and one additional cruiser with this engagement capability. So, in addition to providing surveillance and tracking support to the integrated ballistic missile defense system, Aegis provides a flexible sea-mobile capability to defeat short- to intermediate-range ballistic missiles in the midcourse phase.

In our sensors program, we upgraded the Beale Early Warning Radar in California. The Beale radar complements and works synergistically with the surveillance and tracking capabilities of the fully operational Cobra Dane radar in Alaska, and together they will help us defend against the longer-range threats coming out of East Asia. The Beale radar will play an instrumental role in tests this year to demonstrate the

system's ability to intercept intercontinental-range missiles using operationally configured assets.

This past year we added six more Aegis Long-Range Surveillance and Track destroyers to our force, for a total of eleven. These ships provide much sought-after flexibility in our architecture, giving us more time to engage enemy missiles and improving the performance of the entire system.

We are making good progress in integrating the Sea-Based X-band radar into the system. It is the most powerful radar of its kind in the world and will provide the system a highly advanced detection and discrimination capability. This past January the radar completed its long journey from Texas, where it underwent extensive sea trials and high-power radiation testing in the Gulf of Mexico, to Hawaii. This spring its voyage continues to Adak, Alaska, where it will be home-ported and put on station.

This past year the Forward-Based Radar, our transportable X-band radar, successfully acquired and tracked intercontinental ballistic missiles in tests conducted at Vandenberg Air Force Base. We are now preparing to deploy the radar to provide precision track and discrimination capabilities, which will improve regional and homeland missile defense capabilities.

We also completed subsystem checkout of the Fylingdales radar in the United Kingdom and achieved high-power radiation. We conducted the necessary operator training at that site and are now in the middle of completing an important series of ground tests that are necessary to verify this system's capability, tests that had been deferred on

the recommendations of the Mission Readiness Task Force. We expect to complete testing at Fylingdales later this year.

We have an extensive command, control, battle management and communications infrastructure to support all these elements, and we are ready to provide complete operations and maintenance support to the warfighter. We have taken the first step in integrating the BMD system, which is necessary to establish an affordable and effective global, layered defense. We have installed hardware and software at the United States Northern Command (NORTHCOM), United States Strategic Command (USSTRATCOM), and United States Pacific Command (PACOM). C2BMC capabilities include basic deliberative crisis planning and common situational awareness at these Combatant Commands. In addition, we now provide common situational awareness directly to the President of the United States and the Secretary of Defense to aid in decision-making. In addition to fielding these suites, we also completed five major software release upgrades this past year, each improving the capability of the command, control, battle management and communications system.

It is this global connective capability that allows us to combine different sensors with different weapons. For example, we are developing the Aegis BMD system so that it can support a ground-based interceptor launch by sending tracking information to the fire control system. A forward-deployed radar can cue and pass tracking information on to, for example, a Patriot Advanced Capability-3 unit, or a regionally deployed Terminal High Altitude Area Defense battery, or a Ground-based Midcourse Defense or Aegis BMD engagement ships. In other words, we want to be able to mix and match sensor and

interceptor resources to give the system more capability by expanding the detection and engagement zones. Our ability to integrate all of the weapons and sensors into a single package that will use interceptors in the best location to make the kill gives us a critical multiplier effect.

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. We have exercised the command, fire control, battle management and communication capabilities critical to the operation of the system.

We also are continuing to exercise the system to learn how best to operate it, and we have demonstrated our ability to transition smoothly from test to operations and back. In our exercises and tests, we have worked through a number of operational capability demonstrations in order to increase operational realism and complexity, certify crews and safety procedures, and demonstrate the operational viability of the system. The Missile Defense Agency will continue to coordinate with the warfighter to implement developmental upgrades and improvements in the system to maximize system capability. This is very important since we will continue to improve the capabilities of the system over time, even as we remain ready in the near-term to take advantage of its inherent defensive capability should the need arise.

Building Confidence through Spiral Testing

We have consistently pursued a comprehensive and integrated approach to missile defense testing and are gradually making our tests more complex. 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 testing approach that cycles results into our spiral development activities. This approach also means fielding test assets in operational configurations. This dramatically reduces time from development to operations in a mission area where, until now, this nation has been defenseless.

Last year, following the two launch aborts of the interceptor for the Ground-based Midcourse Defense element, I explained that we had several concerns with quality control and reliability; but we did not view the failures as major technical setbacks. In response to those failures, I chartered an independent team to review our test processes, procedures and management. The team concluded that the Ground-based Midcourse Defense program met the challenge of providing an initial defensive capability but found deficiencies in systems engineering, ground qualification testing, flight test readiness certification, contractor process control and program scheduling. The independent review team recommended that the Missile Defense Agency reorient the missile defense program to strengthen its emphasis on mission assurance.

I established a Mission Readiness Task Force under Admiral Kate Paige to implement the corrective actions needed to ensure a return to a successful flight test program. The task force identified steps to strengthen our systems engineering and quality assurance processes and provide the reliability and repeatability necessary for operational success. As a result, we undertook a comprehensive review of these system

processes at each step along the way. We are also undertaking the necessary ground and flight qualification tests to retire the risks uncovered by the independent review team and the Mission Readiness Task Force. To strengthen our test program, I diverted four long-range interceptors slated for operational use into testing, with the intent to replace them in 2007 if our test program was successful. Last year, I asked the committee for "tactical patience" knowing that the system's basic functionality was not at risk. As a result of our aggressive actions, I believe that mission assurance and system reliability are now on track.

We finished the year strongly with a string of test successes across the board. These successes continue to build confidence in our spiral development approach. In a major step forward, in September 2005, we flew a threat representative target across the operational Cobra Dane radar and generated an intercept solution using the long-range fire control system. We then flew the operational configuration of the long-range interceptor in December 2005 and put the kill vehicle through its paces. We not only achieved all of the test objectives for that flight, but we also accomplished many of those objectives we identified for the next flight test scheduled for this spring. Just last month, we exercised an engagement sequence that used the Upgraded Early Warning Radar at Beale Air Force Base in California to provide tracking information to a simulated long-range interceptor from an operational site at Vandenberg. Based on the many tests we have conducted to date, including three successful flight tests of the operational long-range booster now emplaced in Alaska and California, we maintain our confidence in the system's basic design, its hit-to-kill effectiveness, and its inherent operational capability. We will continue to test this system to ensure it will remain mission ready.

We continue to work closely with the Director, Operational Test & Evaluation, Operational Test Agencies, and Combatant Commanders to characterize the effectiveness and readiness of the system at every stage in its development and fielding. This year the fielded BMD system will undergo ever more challenging and operationally realistic testing.

We will begin the important next step of testing our long-range ground-based defense with more operationally robust flight tests as a part of the integrated ballistic missile defense system With the next tests involving the Ground-Based Interceptor, we will step up testing complexity and involve operational crews, operational interceptor launch sites, and operational sensors. These tests will involve an operationally configured interceptor launched from Vandenberg that will attempt to acquire and intercept a target missile launched out of the Kodiak Launch Complex in Alaska. With the last two tests in this series, we will demonstrate the ability of the system to perform more refined acquisition and discrimination functions and the ability of the exo-atmospheric kill vehicle to divert toward the target and intercept it. We also plan to use tracking data from the Sea-Based X-band radar when it is available to feed its data into system tests and operations. In 2007, as we return our focus to fielding long-range interceptors, we plan one system intercept test and two flight tests, all three of which will further demonstrate the operationally configured interceptor.

In our sea-based midcourse defense element, we have continued to ratchet up the degree of realism and reduce testing limitations. This past November, for the first time, we successfully used a U.S. Navy Aegis cruiser to engage a separating target carried on a

threat-representative medium-range ballistic missile. A separating target is more challenging to engage because it can fly faster and farther than the boosting missile. In order to increase operational realism, we did not notify the operational ship's crew of the target launch time, and they were forced to react to a dynamic situation. We are planning three more Aegis interceptor flight tests in 2006. A cooperative test with Japan involves a simulated target and will test the engagement performance of a modified SM-3 nosecone developed by the Japanese in the U.S./Japan Joint Cooperative Research project. One of the upcoming U.S. Aegis intercept tests will again involve a separating warhead. In 2007 we plan to conduct two tests of the sea-based interceptor against short and medium-range targets.

Flight-testing involving the redesigned interceptor for the Terminal High Altitude Area Defense (THAAD) began last November when we successfully demonstrated the separation and operation of the production booster and kill vehicle. This year we will conduct four more tests to characterize performance of the new missile and the ability to integrate it into the BMD system. Later this year we will also conduct the first intercept test high in the atmosphere. In 2007 we plan to conduct four intercept tests as part of our THAAD flight test program.

Also planned in 2007 are two Arrow system flight tests and one Patriot combined developmental and operational test. The command, control, battle management, and communications infrastructure will be exercised in all of our system level tests.

Ground tests, wargames and modeling and simulation help demonstrate interoperability, assess performance and specification compliance, and develop doctrine,

tactics, techniques and procedures. In 2007 we will continue with our successful ground-testing, which involves warfighter personnel and test hardware and software in the integrated system configuration to demonstrate system connectivity and interoperability. Upcoming tests will verify integration of the sea-based, forward-based, and Fylingdales radars. The funds we are requesting also will support additional capability demonstrations and readiness demonstrations led by the warfighting community.

Completing the Next Increment—Block 2006

To keep ahead of rogue nation threats, we continue to hold to the fielding commitments we made to the President for Block 2006, which include investment in the necessary logistics support and command, control, battle management and communications infrastructure. In 2006 and 2007, we will build on the successes we had in 2005 to improve protection against a North Korean threat, provide protection against a threat from the Middle East, expand coverage to allies and friends, increase countermeasure resistance, and improve protection against short-range ballistic missiles. We are also planning to field more mobile, flexible interceptors and associated sensors to meet threats from unanticipated launch locations.

For midcourse capability against the long-range threat, the Ground-based Midcourse Defense (GMD) element budget request for FY 2007 of $2.7 billion will cover continued development, ground and flight testing, fielding and support. This is about $125 million more than we budgeted for FY 2007 in last year's submission. The risk-reduction work prescribed by the Mission Readiness Task Force has caused us to reduce

the number of interceptors fielded in 2007. This request includes up to 4 additional ground-based interceptors, for a total of 20 interceptors in Alaska by the end of 2007, their silos and associated support equipment and facilities as well as the long-lead items for the next increment. The increase in FY 2007 funding from last year to this year is attributed, in part, to increased sustainment, logistics and force protection requirements, as well as to other needs associated with preparing the system for operations. This budget submission also continues the upgrade of the Thule early warning radar in Greenland and its integration into the system.

The Royal Air Force Fylingdales early warning radar in the United Kingdom will be fully integrated for missile defense purposes by fall 2006. It will provide sensor coverage against Middle East threats.

As part of our effort to make the system more robust, improve defense of our allies, and address threat uncertainties, we are continuing discussions with our allies in Europe regarding the deployment of radars and a third site for Ground-Based Interceptors. Later this year we will be able to give greater definition to this important evolutionary effort.

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 terminal defense capability. System tests will involve further demonstrations of the sea-based interceptor, and we will continue enhancing the system's discrimination capability. We will continue Standard Missile-3 improvements. We added approximately $49 million to the FY 2007

request for Aegis BMD from last year to this year to address the Divert and Attitude Control System and other aspects of the system, including the development of a more capable 2-color seeker for the SM-3 kill vehicle. 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 will have three Aegis engagement cruisers, seven engagement destroyers, and seven Long Range Surveillance and Track destroyers. These sea-based sensors and weapons will improve our ability to defend the homeland and our deployed troops and our friends and allies. In FY 2007 we will initiate work with Japan for follow-on SM-3 development in order to increase its range and lethality. We also will continue the THAAD development effort that will lead to fielding the first 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 set in different phases of flight. In 2007, we will prepare a second forward-based X-band radar for operations. We also are working towards a 2007 launch of two Space Tracking and Surveillance System (STSS) test bed satellites. These demonstration satellites will perform target acquisition and handover and explore approaches for closing the fire control loop globally for the entire BMD system. In FY 2007 we will undertake initial satellite check-out and prepare for tests involving live targets. We are requesting approximately $380 million in FY 2007 to execute this STSS activity, and $402 million for the Forward-Based Radar work.

For the ballistic missile defense system to work effectively, all of its separate elements must be integrated by 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 Command areas of responsibility. C2BMC allows us to pass critical information from sensors to provide input for critical engagement decisions. Combatant Commanders can use the C2BMC infrastructure to enhance planning and help synchronize globally dispersed missile defense assets. These capabilities also can provide our senior government leadership situational awareness of ballistic missile launches and defense activities.

This C2BMC capability allows us to mix and match sensors, weapons and command centers to dramatically expand our detection and engagement capabilities over what can be achieved by the system's elements operating individually. We cannot execute our basic mission without this foundation.

With this year's budget request for $264 million for the C2BMC activity, we will continue to use spiral development to incrementally develop, test, and field hardware and software improvements. We will press on with the development of the initial global integrated fire control to integrate Aegis BMD, the forward-based radar, and Ground-based Midcourse Defense assets. We plan to install additional planning and situational awareness capabilities to facilitate executive decision-making among the Combatant Commanders.

The Missile Defense Agency is committed to delivering the best capabilities to the warfighter in a timely manner, and warfighter participation and input is a critical part in the engineering process. Today, the Army National Guard's 100th Missile Defense Brigade, Air Force's Space Warfare Center, and Navy ships in the Pacific Fleet are on

station and operating the system. Our FY 2007 request continues to fund critical sustainment and fielding activities and ensure that system developers have financial resources to support fielded components. We will continue to work collaboratively with the Combatant Commanders and the Military Services as the system evolves to define and prioritize requirements. Exercises, wargames, and seminars continue to be important collaboration venues. We will also continue to support training activities to ensure operational readiness, combat effectiveness, and high-level system performance.

Moving Toward the Future—Block 2008 and Beyond

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

In executing our program we continue to follow a strategy of retaining alternative development paths until capability is proven—a knowledge-based funding approach. That means we are setting specific targets, or knowledge points, that the development efforts have to reach within certain periods of time. Knowledge points are not reviews, but discrete activities in a development activity that produce data on the most salient risks. 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. This is fundamental to how

we execute the development program, because it enables us to make decisions as to what we will and will not fund based upon the proven success of each program element.

For example, 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 $984 million for these activities in FY 2007. This past year the revolutionary Airborne Laser (ABL) reached its knowledge points when it achieved a full duration lase at operational power and completed initial flight tests involving its beam control/fire control system. The program's knowledge points for 2006 include flight testing of the lasers used for target tracking and atmospheric compensation. This testing, which will test the entire engagement sequence up through the point where we fire the laser, will require use of a low-power laser surrogate for the high-power laser. Once we have completed modification of the aircraft which has begun in Wichita, Kansas, we will start installation of the high-power laser modules in 2007. This will provide us with the first ABL weapon system test bed and allow us to conduct a campaign of flight tests with the full system. In addition to installation of the high-power lasers, we will continue integration, ground, and flight test activities in FY 2007 to support ABL's low-power beam control/fire control and battle management systems. We will be working towards a lethal demonstration of the weapon system against a boosting ballistic missile in 2008.

We still have many technical challenges with the Airborne Laser. Yet the series of major achievements beginning in 2004, when we achieved first light and first flight of the aircraft with its beam control/fire control system, gives me reason to be optimistic that we

can produce an effective directed energy capability. An operational Airborne Laser could provide a valuable boost-phase defense capability against missiles of all ranges.

The Kinetic Energy Interceptor (KEI) is a 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. Last year we focused near-term efforts in our kinetic energy interceptor activity to demonstrate key capabilities and reduce risks inherent in the development of a land-based, mobile, very 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 upgrade for our midcourse or even terminal interceptors. A successful KEI mobile missile defense capability would improve significantly our ability to protect our allies and friends.

This past year we demonstrated important command, control, battle management, and communications functions required for a boost intercept mission, including the use of national sensor data for intercept operations in the field. The key knowledge point for this program is the demonstration of a very high acceleration booster. We began a series of static firing tests of the first and second stages of the booster and had a successful firing this past January. We plan a flight test to verify the new booster in 2008.

Development of the Multiple Kill Vehicle (MKV) system will offer a generational upgrade to ground-based midcourse interceptors by increasing their effectiveness in the presence of multiple warheads and countermeasures. We are exploiting miniaturization

technology to develop a platform with many small kill vehicles to engage more than one object in space. This effort will supplement other innovative discrimination techniques we are developing for use in the midcourse phase by destroying multiple threat objects in a single engagement. In 2005 we made progress in the development of the MKV seeker, but resource constraints and technical shortfalls have caused a delay in this development effort. We are now planning to conduct the hover test in 2009. Our first intercept attempt using MKV is now scheduled for 2012. We are requesting $162 million in FY 2007 to continue the MKV development effort.

International Participation

The global nature of the threat requires that we work closely with our allies and friends to develop, field, and operate missile defenses. We have made significant progress in fostering international support for the development and operation of a ballistic missile defense system capable of intercepting ballistic missiles of all ranges in all phases of flight. We have been working closely with a number of allies and friends of the United States to forge international partnerships. I would like to highlight a few of our cooperative efforts.

The Government of Japan continues to make significant investments toward the acquisition of a multilayered BMD system, with capability upgrades to its Aegis destroyers and acquisition of the Standard Missile-3 interceptor. We have worked closely with Japan since 1999 to design and develop advanced interceptor components. This project will culminate in a 2006 flight test that will end this phase of our joint

cooperative research. Additionally, the Missile Defense Agency and Japan have agreed to co–develop a Block IIA version of the SM-3 missile, which will significantly improve the kinematics and warhead capability. We also have agreed to deploy an X-band radar to Japan, which will enhance regional and homeland missile defense capabilities. In addition, Japan and other allied nations continue upgrading their Patriot fire units with Patriot Advanced Capability-3 missiles and improved ground support equipment.

In addition to the Fylingdales radar development and integration activities, we are undertaking a series of cooperative technical development efforts with the United Kingdom. Newly installed situational awareness displays in the United Kingdom also are indicative of our close collaboration with our British allies in the missile defense area.

Last year we signed an agreement with Denmark to upgrade the radar at Thule and integrate it into the system. This radar will play an important role in the system by providing additional track on hostile missiles launched out of the Middle East.

We will continue to expand cooperative development work on sensors and build on our long-standing defense relationship with the government of Australia. In April 2005 we concluded a Research, Development, Test and Evaluation agreement 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 are continuing work with Israel to implement the Arrow System Improvement Program and enhance its capability to defeat longer-range ballistic missile threats emerging in the Middle East. This past December Israel conducted a successful launch

and intercept of a maneuvering target using the Arrow missile. The United States and Israel are co-producing 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 also have been in discussions with several allies located in or near regions where the threat of ballistic missile use is high for the forward placement of sensors, and we continue to support our North Atlantic Treaty Organization (NATO) partners in conducting a feasibility study to examine potential architecture options for defending European NATO population centers against longer-range missile threats. This work builds upon ongoing work to define and develop a NATO capability for protection of deployed forces. We have other international interoperability and technical cooperation projects underway 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. When I appeared before you last year, we faced numerous challenges. Over the past year, the dedicated men and women of the Missile Defense Agency and our industrial partners met these challenges head-on and overcame the difficulties we experienced in 2004 and early in 2005. The result was that in 2005 we made significant progress. We had a series of successful tests that are unparalleled in our development efforts to date. In 2006 and 2007 I am confident that we will continue this

success. I am proud to serve with these men and women, and the country should be grateful for their unflagging efforts.

There have been many lessons learned, and I believe the processes are in place to implement them as we field follow-on increments of the system. I also believe that our program priorities foster long-term growth in multilayered and integrated capabilities to address future threats. 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.

Thank you and I look forward to your questions.