# Ballistic Missile Defense Review


**February 2, 2010**

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# BMDR Overview

- **The Ballistic Missile Defense Review (BMDR) is the first comprehensive review of U.S. ballistic missile defense (BMD)**
  - 1 of 4 DoD reviews on our defense policy and posture; Quadrennial Defense Review, BMDR, Nuclear Posture Review, and Space Posture Review
  - Addresses BMD policies, plans, programs and international engagements
- **Review conducted according to:**
  - Congressional requirements
  - Guidance from the President and Secretary of Defense
- **Objectives:**
  - Match strategies, policies and capabilities to the strategic environment
  - Align BMD investments with national security goals
  - Ensure effective acquisition and oversight processes

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# Outline

- The Ballistic Missile Threat
- The Strategy and Policy Framework
- Defending the Homeland
- Defending Against Regional Threats
- Strengthening International Cooperation
- Managing the Missile Defense Program
- Conclusion

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# The Ballistic Missile Threat

- **Threats are expected to grow quantitatively and qualitatively**
  - Adversary ballistic missiles systems are becoming more flexible, survivable, and accurate while attaining greater ranges
- **Long-range threats from regional states did not emerge last decade, but the potential threat remains**
  - North Korea continues to develop the Inter-Continental Ballistic Missile (ICBM)-class Taepo Dong II
  - Iran is also developing an ICBM/Satellite Launch Vehicle (SLV) capability
- **Shorter-range threats within key regions are growing rapidly**
  - Iran, Syria, and North Korea are examples of states deploying short- and medium-range missiles threatening to U.S. forces, allies, and partners
- **The threat is inherently unpredictable and requires that the U.S. be well hedged against future developments**
- **Implication: U.S. BMD investments must be balanced to enable effective defense of the Homeland and defense against regional threats in both the near- and long-term.**

***North Korean Taepo Dong II***

***Iranian Salvo Launch***

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# Strategy and Policy Framework

- **Administration priorities:**
  1. Defend the Homeland against limited ballistic missile attack
  2. Defend against regional threats to U.S. forces, allies, partners
  3. Deploy new systems only after their effectiveness and reliability has been determined through testing under realistic conditions
  4. Develop new capabilities that are fiscally sustainable over the long term
  5. Develop flexible capabilities that can adapt as threats change
  6. Expand international cooperation

- **BMD and U.S. defense strategy:**
  - BMD helps underwrite U.S. security guarantees, reassurance
  - BMD integral to stronger regional deterrence architectures
  - BMD not intended to affect the U.S. strategic balance with Russia and China

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# Defending the Homeland

- **Assessment: due to investments in the Ground-based Midcourse Defense (GMD) system, the U.S. is currently protected against limited ICBM attack**
- **Priority: invest to maintain this capability and to hedge against future uncertainty**
- **Enhance the existing GMD system**
  - Continue testing, improve reliability, upgrade Ground-Based Interceptors (GBI)

***Ground-Based Interceptor***

- **Invest for future supplemental capabilities**
  - Emplace additional GBI silos in Alaska in case additional deployments become necessary
  - Develop more capable sea- and land-based variants of the Standard Missile 3 (SM-3)
  - Develop and deploy new or improved land-, sea-, air- and space-based sensors
  - Continue research on directed energy systems
  - Develop the sensor and kinetic kill technologies for early intercept to help defeat countermeasures

***Airborne Infrared Sensor***

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# Defending Against Regional Threats

- **Assessment: significant new protection capabilities are emerging, but the threat is growing rapidly**
- **Current Capability**
  - Increasingly capable PATRIOT point defense against short-range ballistic missiles
  - New AN/TPY-2 X-band radar for detecting and tracking missiles
  - Soon-to-be-deployed THAAD batteries for defense against short- and medium-range ballistic missiles
  - Improving sea-based Aegis system for surveillance, tracking, and engagement
  - Increasing space-based sensors

***THAAD Launcher***

- **BMDR investment decisions:**
  - Increase procurement of proven systems
  - Invest in mobile and relocatable assets that are flexible and can adapt to changing threats
  - Continue technology development
    - Improved SM-3 variants, including land-based
    - Improved command, control, and battle management
    - Improved sensors, including Precision Tracking Space Sensor (PTSS)

***Aegis BMD***

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# Defending Against Regional Threats (cont'd)

## ❑ Concepts guiding the development of regional BMD:

- Missile defenses must be tailored to the unique features of each region (geography, threat, U.S. role)
- They must be integrated into existing regional deterrence architectures
  - Strengthening these architectures is a key Administration priority
- New protection capabilities should be deployed as technologies and threats mature
  - Key concept: **phased adaptive approach (PAA)**

## ❑ PAA implementation:

- In Europe: key decisions announced in September 2009
  - PAA accelerates deployment of proven technologies
  - PAA promises more effective long-term protection of Homeland
  - Increases opportunities for burden sharing
- Elsewhere:
  - Northeast Asia and Middle East

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# Benefits of Tailored Phased Adaptive Approaches

- **Addresses the existing threat –** PAA provides an initial capability against near-term threats while developing follow-on systems to address future threats
- **Defended Area –** Phases build on each other to expand and improve protection as technologies become available
- **Adaptable –** Mix of mobile and transportable systems allows architectures to adapt to a developing threat
- **Survivable –** Distributed and netted system of sensors and shooters; no single, large assets/sites to defend
- **Cost Effective –** leverages investments in proven, mobile, and flexible capabilities; unit cost of an SM-3 is much lower than a GBI, allowing for deployment of greater numbers to handle more missile threats
- **Cooperation with partners –** Greater opportunities for allies and partners to participate

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# Case Study: European PAA

- **Phase I (~2011) – Deploy existing missile defenses to defend against short- and medium-range ballistic missiles**
  - Focus on the protection of portions of Southern Europe by deploying Aegis ships, SM-3 Block IA interceptors, and THAAD batteries
  - Field a forward-based sensor (AN/TPY-2) in Southern Europe to contribute to the defense of Europe while also augmenting existing homeland defense capabilities
- **Phase II (~2015) – Field enhanced interceptors and additional sensors to defend against short- and medium-range ballistic missiles**
  - Field a land-based SM-3 site in Southern Europe and upgraded sea- and land-based interceptors (SM-3 Block IB)
  - Strengthen the network of sea-, land-, and air-based sensors
- **Phase III (~2018) – Improved coverage against medium- and intermediate-range ballistic missiles**
  - Field a second land-based SM-3 site in Northern Europe
  - Use more capable SM-3 Block IIA interceptors on land and at sea to cover all of Europe
- **Phase IV (~2020) – Capability against potential ICBM threat**
  - SM-3 Block IIB interceptor available for land-based sites

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# Strengthening International Cooperation

- **Objectives:**
  - Build closer defense cooperation ties and make U.S. partners less vulnerable to coercion and attack
  - Dissuade and deter the use of ballistic missiles by regional states
- **Cooperation focused on:**
  - Development and deployment of joint and/or complementary capabilities
  - Technological and industrial cooperation

***North Atlantic Council***

- **Initiatives:**
  - Europe: implement PAA in a NATO context
  - East Asia and Middle East: strengthen cooperative relationships in bilateral frameworks
  - Renew cooperation with Russia
  - Conduct a substantive and sustained dialogue with China

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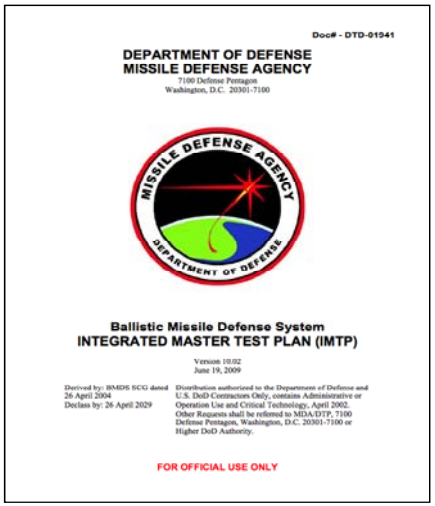
# Managing the Missile Defense Program

- **Since early 2000s, the missile defense program has been managed outside of traditional DoD acquisition processes**
- **Over the last few years, management practices have evolved**
  - Missile Defense Executive Board established to direct and oversee BMD program
  - New Life Cycle Management Process allows key stakeholders to participate in BMD program and resource plan development
  - Military Departments now responsible for system operations and support
  - New approach to testing uses critical factors approach to predicting BMD system performance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DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
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Ballistic Missile Defense System
INTEGRATED MASTER TEST PLAN (IMTP)

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- **BMDR findings:**
  - New approaches have improved effectiveness, affordability, oversight
  - DoD will continue processes by which stakeholders examine, discuss, contribute to and exercise oversight of missile defense plans and programs
  - Continued innovation is warranted

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# Conclusion

- **The BMDR is the first ever comprehensive review of U.S. missile defense policies, strategies, plans and programs**
- **Implementation of the BMDR will result in:**
  - Continued protection of the U.S. Homeland and a hedge against future threat developments
  - Regionally tailored defenses that will develop according to the phased adaptive concept that accelerates the deployment of existing capabilities and is hedged against future threats
  - Expanded international cooperation efforts on BMD
- **The Defense Department's FY 2011 missile defense budget request is aligned with BMDR findings and recommendations**