

NDIA Quarterly Luncheon

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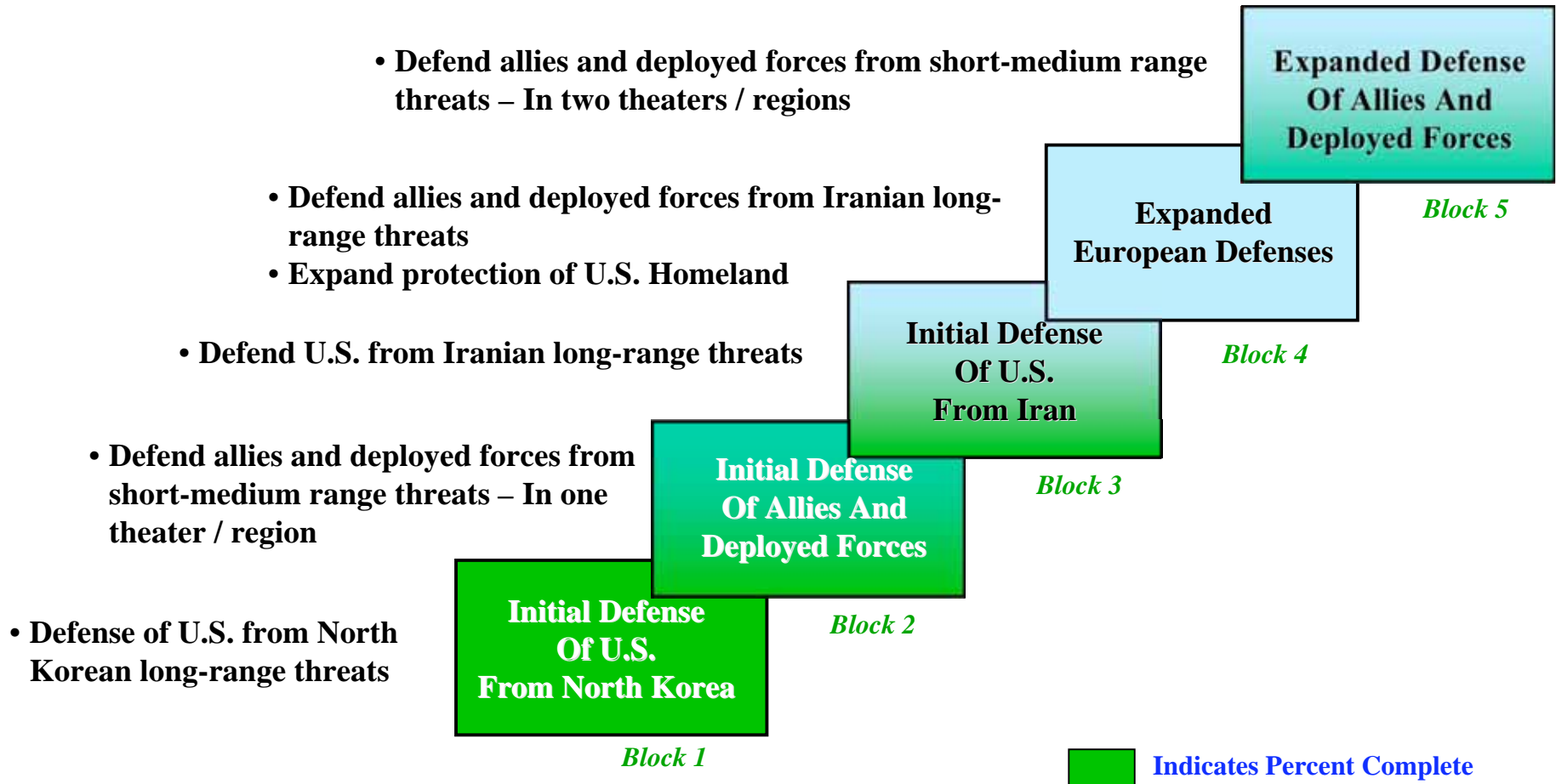


18 NOV 08

**Lt Gen Trey Obering, USAF
Director
Missile Defense Agency**



Accomplished Since 2004...



Delivering Ballistic Missile Defense Capabilities By Block



Fielding In The Last 4 Years



- **Interceptors**

- **25 long-range GBIs in Alaska and California**
- **33 SM-3s on 18 Aegis ships (search, track, intercept)**
- **29 SM-2s for near-term sea-based terminal capability**



Fielding In The Last 4 Years



- **Sensors**

- **Cobra Dane, Beale, Fylingdales EWRs upgraded, certified, and integrated into the system**
- **X-band deployed to Japan, now operational**
- **Sea-Based X-band tested and connected**
- **Thule early warning radar upgrade started for 2009 capability**

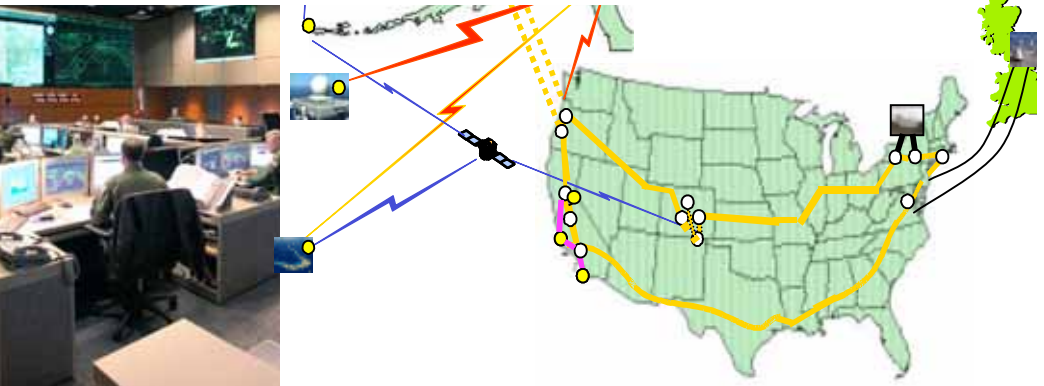


Fielding In The Last 4 Years

- An operational system manned by Air Force, Army, and Navy units under integrated control of combatant commanders
- Command, control, battle management, communications
 - Integrated elements across Asia, North America, and Europe
 - Command, control, battle management, communications planning and situational awareness suites at White House, National Military Command Center, Combatant Commands
 - Implemented concurrent test, training, and operations

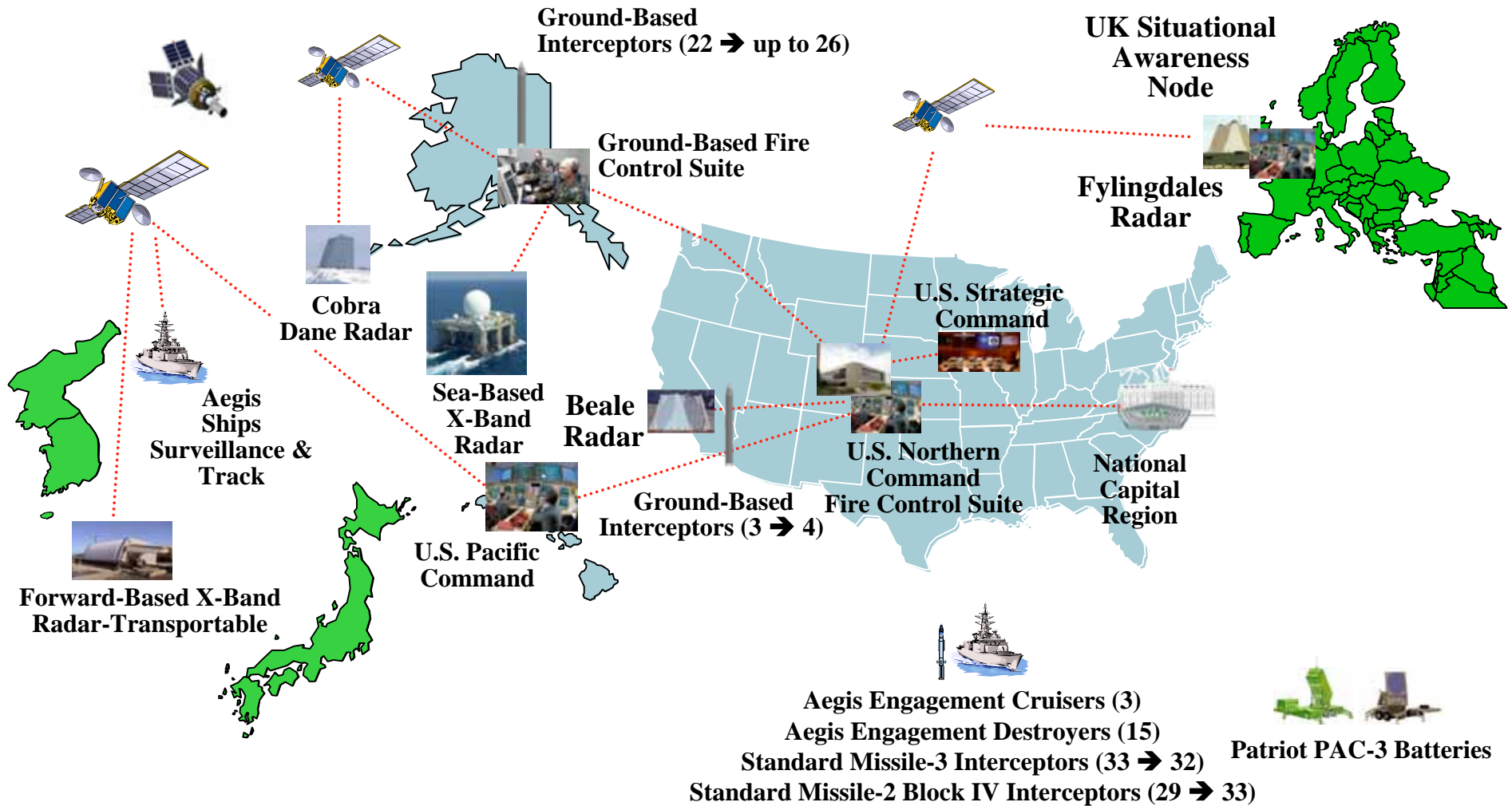


Approved for Public Release
08-MDA-3972 (17 NOV 08)





System Configuration November 2008 → December 2008



None Of This BMD Capability Existed In June 2004



Flight Tests Record

36 Of 45 Terminal And Midcourse Hit-To-Kill Intercepts In The Atmosphere And Space Since 2001, And 19 Of 23 Since July 2004

Hit-To-Kill Since 2001

Since July 2004

**Terminal High Altitude Area Defense
(5 of 5)**



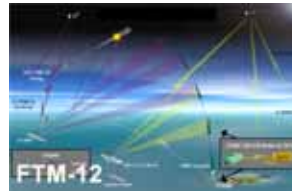
- ✓
- ✓
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July 12, 2006
January 26, 2007
April 5, 2007
October 27, 2007
June 25, 2008

(5 of 5)

VM313

**Aegis Ballistic Missile Defense
(14 of 17)**



- ✓
- ✓
- X
- ✓
- ✓
- ✓
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- X

February 24, 2005
November 11, 2005
December 7, 2006
June 22, 2006
April 26, 2007
June 22, 2007
August 31, 2007
November 6, 2007
December 17, 2007
November 1, 2008

(10 of 12)

VM339C

**Ground-based Midcourse Defense
(6 of 9)**



- X
- X
- ✓
- ✓

December 15, 2004
February 14, 2005

Led to shake-up of test program and increased focus on mission readiness

September 1, 2006
September 28, 2007

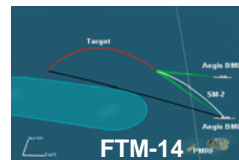
(2 of 4)

VM348C

Note: Patriot PAC-3 (11 of 14)

Blast Fragmentation

**Aegis Sea-Based Terminal
(2 of 2)**



- ✓
- ✓

May 24, 2006
June 5, 2008

(2 of 2)



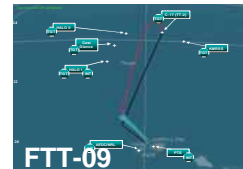
Missile Defense Test Firsts Last Two Years

- **First ground-based midcourse defense intercept of long-range target in operationally realistic conditions**



September 28, 2007 VM348C

- **First intercept of separating warhead by THAAD**



June 25, 2008

FTT09 QL

- **First Aegis destroyer (USS Decatur) to launch interceptor**



June 22, 2007

VM339C

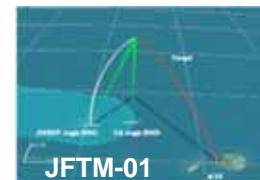
- **First simultaneous destruction of two short-range ballistic missiles at sea**



November 6, 2007

VM-355B

- **First sea-based intercept by an ally**



December 17, 2007

VM359A



Real World Missions

The Ballistic Missile Defense System And MDA's Ability To Field Militarily Useful Emergency Capabilities Provide The President Active Defense Options In An Uncertain World Capabilities To The Warfighter, Much Faster And On A Greater Scale Than Traditional Processes

- **North Korea, July 2006 missile launches**
 - **The missile defense system was ready to respond to a successful launch of the TD-2 and gave the President an option other than preemption**
- **Satellite shutdown, February 2008**
 - **The missile defense system provided a capability other than consequence management**
- **MDA transportable radar to Israel, September-October 2008**
 - **MDA successfully enhanced Israel's defensive capability**



VM361D





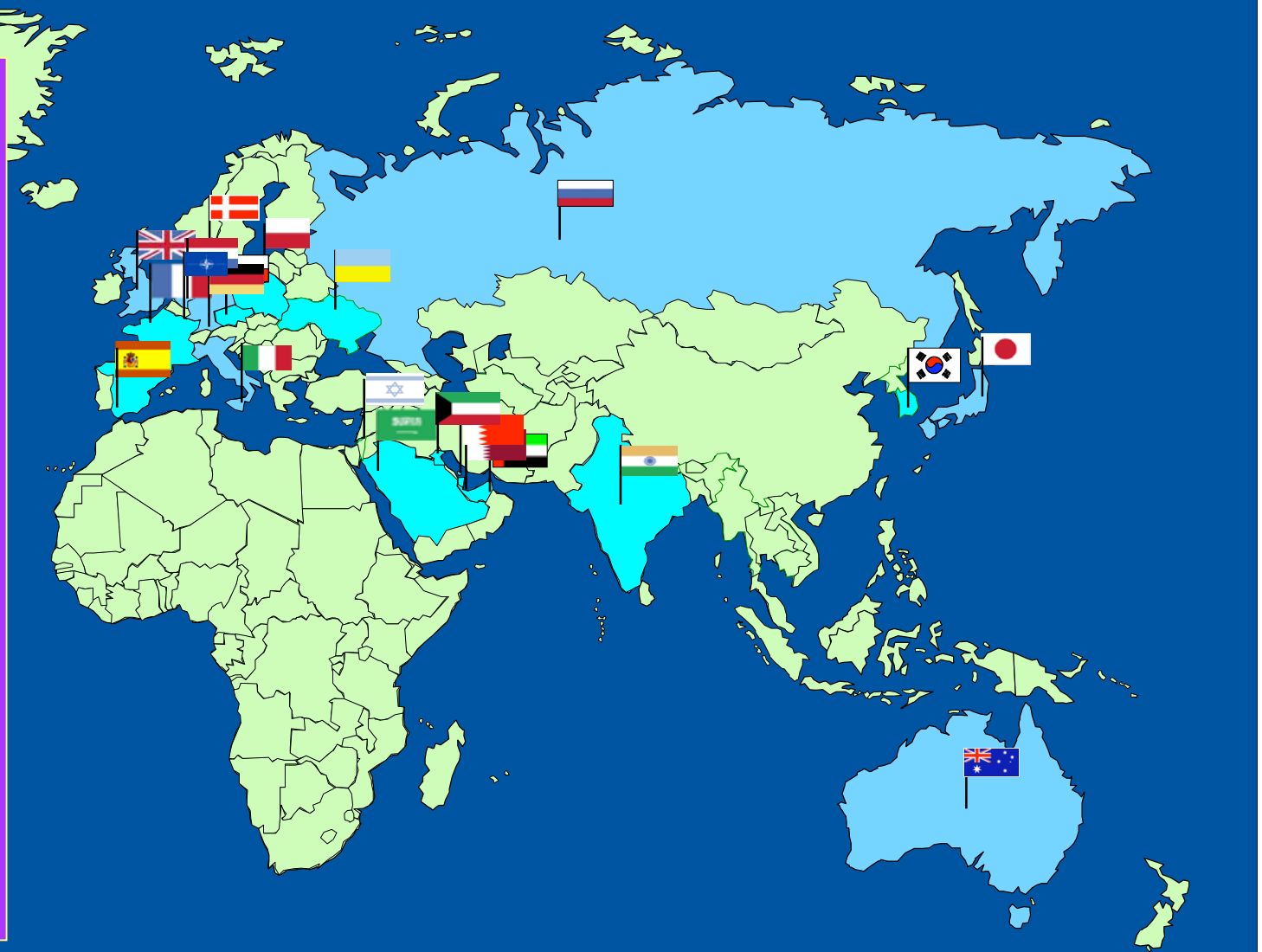
We Have More Than Doubled Our International Partners Since July 2004

Before 2004:

Japan
United Kingdom
Denmark
The Netherlands
Italy
Israel
Australia
Germany
NATO
Russia

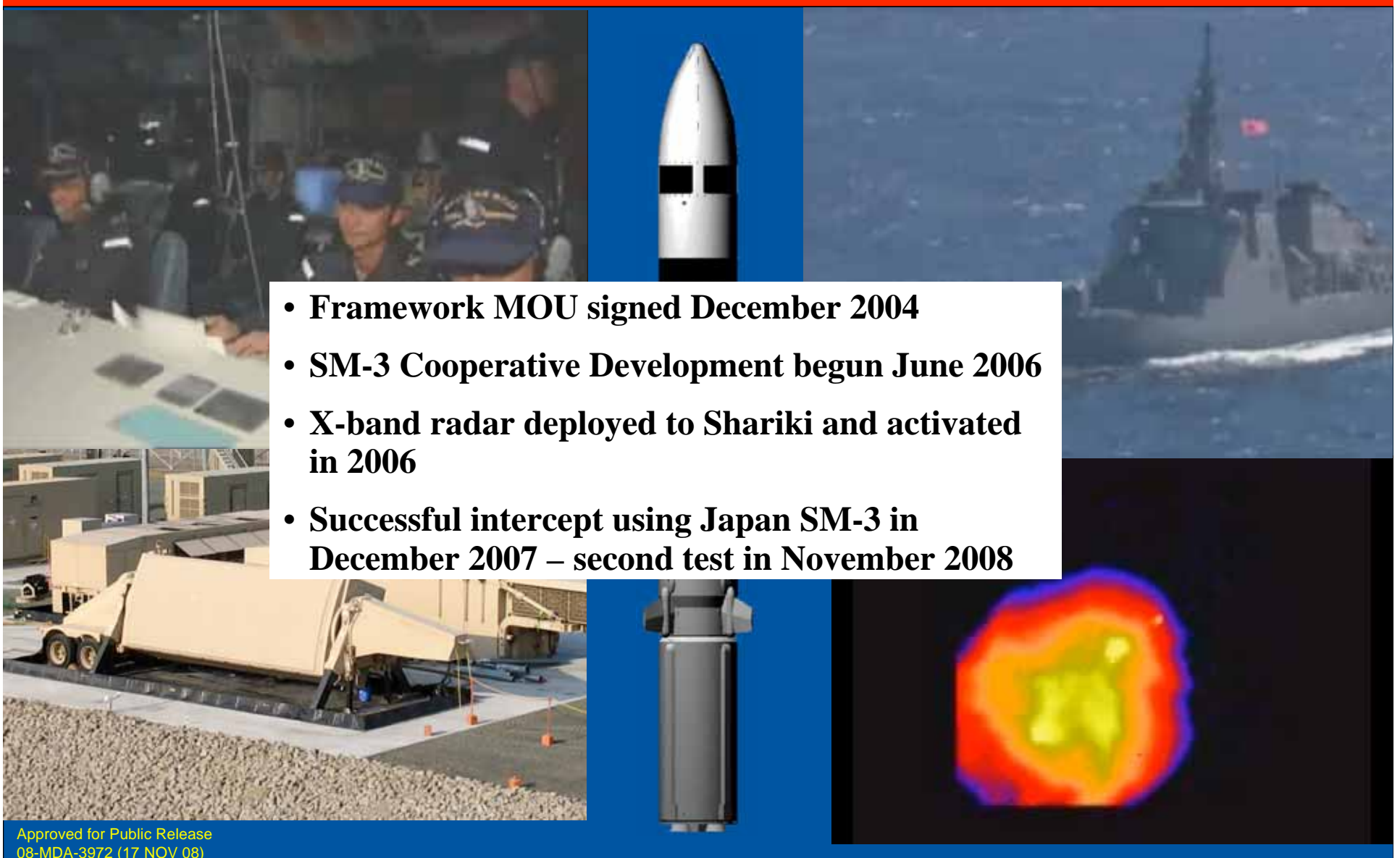
Added since 2004

Czech Republic
Poland
France
Spain
Ukraine
United Arab Emirates
Bahrain
Qatar
Saudi Arabia
Kuwait
India
Republic of Korea





U.S.-Japan Missile Defense Cooperation



- **Framework MOU signed December 2004**
- **SM-3 Cooperative Development begun June 2006**
- **X-band radar deployed to Shariki and activated in 2006**
- **Successful intercept using Japan SM-3 in December 2007 – second test in November 2008**



U.S.-Israel Missile Defense Cooperation

- **Continued development and testing of Arrow Weapon System**
- **New partnership initiatives**
 - **Forward-based X-band radar to expand the battle space**
 - **David's Sling to defeat very short-range ballistic missile and rocket threats**
 - **Upper Tier to defeat more challenging, longer-range threats**



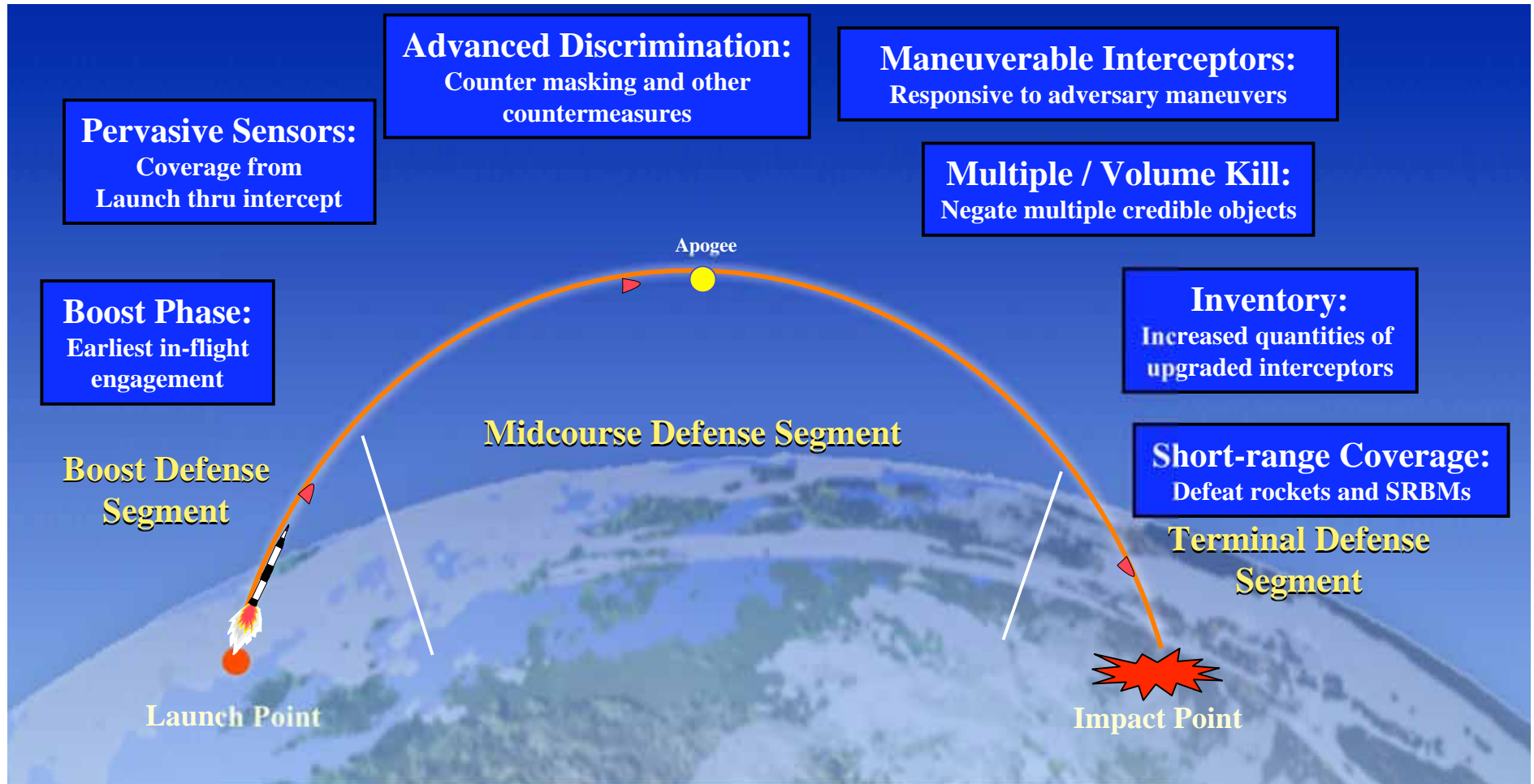
European Site Initiative The Czech Republic And Poland



- More than 4 years of extensive technical and policy analyses and 2 years of bilateral and multilateral discussions about how to counter the growing Middle East threat
- 26 NATO nations endorse U.S. long-range missile defense plans for Europe, rolled out January 2007
- BMD Agreements signed with the Czech Republic (July 2008) and Poland (August 2008)
- NATO looking at ways to integrate command and control and examine architectures to extend coverage to all Allied nations



Key Development Areas





Addressing Emerging And More Complex Threats

Boost Phase Intercept

- Airborne Laser
 - First light and first flight in 2004 and 2005
 - Full duration lase in 2006
 - In-flight atmospheric compensation and tracking tests in 2007
 - On track for lethal shutdown in 2009
- Kinetic Energy Interceptor
 - Successful first and second stage firings of new high acceleration boosters 2006-2008
 - Booster flight test in 2009



VM373

VM343





Addressing Emerging And More Complex Threats

Pervasive Sensors and Advanced Discrimination

- **Space Tracking and Surveillance System**
 - Launch of two demo satellites in early 2009
- **Forward-based X-band Radars**
 - Provides critical cue, track, and discrimination data to system
- **Sea-Based X-band Radar**
 - Successful sea trials in 2006, 2007
 - Successful participation in system tests
- **Near Field InfraRed Experiment Satellite**
 - Launch in 2007
 - First on-orbit demonstration in 2007





Addressing Emerging And More Complex Threats

More Capable Interceptors



- **Multiple Kill Vehicle (land- and sea-based midcourse)**
 - **Static fire test in 2007**
 - **Flight test planned for 2015**
- **Midcourse**
 - **SM-3 Block IB**
 - **SM-3 Block IIA**
- **Terminal**
 - **THAAD successfully reconfigured and moved from development to acquisition and test**
 - **Far-term sea-based terminal effort underway**
- **Maneuverable**
 - **Improvements in booster performance in SM-3 Block IB, Block IIA**
 - **Advanced Technology Kill Vehicle**





Thoughts On A Changing Environment

- **President Obama's Administration**
- **Larger Democrat Majority in New Congress**
- **Economic Recovery Adjustments**



What Is Not Changing

- **Ballistic missiles are increasingly becoming the “Air Force of choice” and their proliferation continues**
- **Iran and North Korea continue their significant investment in ballistic missiles of increasing range**
- **Combatant commanders continue to place a high priority on missile defense capabilities and work closely with MDA**
- **International cooperation in ballistic missile defense is expanding dramatically in the Middle East, Europe and Asia**



Considerations For The Next Administration

President Obama will

- **Face the challenges posed by the proliferation of ballistic missiles**
- **Find BMDS testing has provided Warfighters with confidence in the capabilities of the system and strong support for our efforts to meet emerging threats**
- **Find strong bipartisan support for missile defense**
- **Find robust and growing support for missile defense among the international community: “. . .a foundational element for the future of the NATO alliance” – Secretary General, October 2008**
- **Have the fundamental duty of protecting the United States, our allies and forward deployed forces from missile attack**



Considerations For The Next Congress

- **Congress appropriated 98% of 2008 budget request and 97% in 2009**
- **Funding in 2009 completes purchase of baseline GMD system (44 GBIs)**
- **POM contains strong support for THAAD and AEGIS components**
- **Independent study verified MDA's European BMD proposals were the most cost and operationally effective solutions to address the threat**
- **Independent study validated need for MDA with special authorities and recommended the continuation of this model by the Department**
- **Emerging threats will dramatically demonstrate the need for future missile defense capabilities including space-based assets**



Economic Recovery Implications

- **We have received strong funding support for 2008/2009 which will carry over to 2010/2011 respectively**
- **Missile defense funding represents < 2% of Defense budget and represents a unique mission area, unmatched in the Department**
- **We spend nearly 75% of our budget on near term development, testing, fielding, and sustainment**
- **Validated computer models show that spending on defense programs has a economic impact multiplication factor of 2x to 5x**



Advantages Of Missile Defense

- **Can be a major non-proliferation tool that could devalue missiles as instruments of coercion and blackmail**
- **Bolster deterrence by decreasing the effectiveness of rogue state missile strikes**
- **Influence nations not to develop their own nuclear weapons**
- **Provide options in addition to preemption or retaliation**
- **Can stabilize events in a crisis and could buy time for a potential diplomatic resolution**
- **Augment offensive capabilities available for the protection of population centers and critical assets in event of hostilities**



Linked Charts

FTT-07

Terminal High Altitude Area Defense

THAAD FTT-07

None Shall Pass

5 April 2007

THAAD

Pacific Missile Range Facility (PMRF)
Kauai, Hawaii

FTT-07

Pacific Missile Range Facility - PMRF
Kauai, Hawaii

FTM-12 22 JUN 07



FTG-03a

Ballistic Missile Defense System

Ground-based Midcourse Defense

Flight Test - 03a

September 28, 2007

FTM-14 5 JUN 08

Aegis Sea-Based Terminal

FTM-14

5 JUN 08

FTG-03a

Ballistic Missile Defense System
Ground-based Midcourse Defense
Flight Test - 03a
September 28, 2007

FTT-09

Terminal High Altitude Area Defense
THAAD FTT-09
25 June 2008

Pacific Missile Range Facility - PMRF
Kauai, Hawaii

FTM-12 22 JUN 07

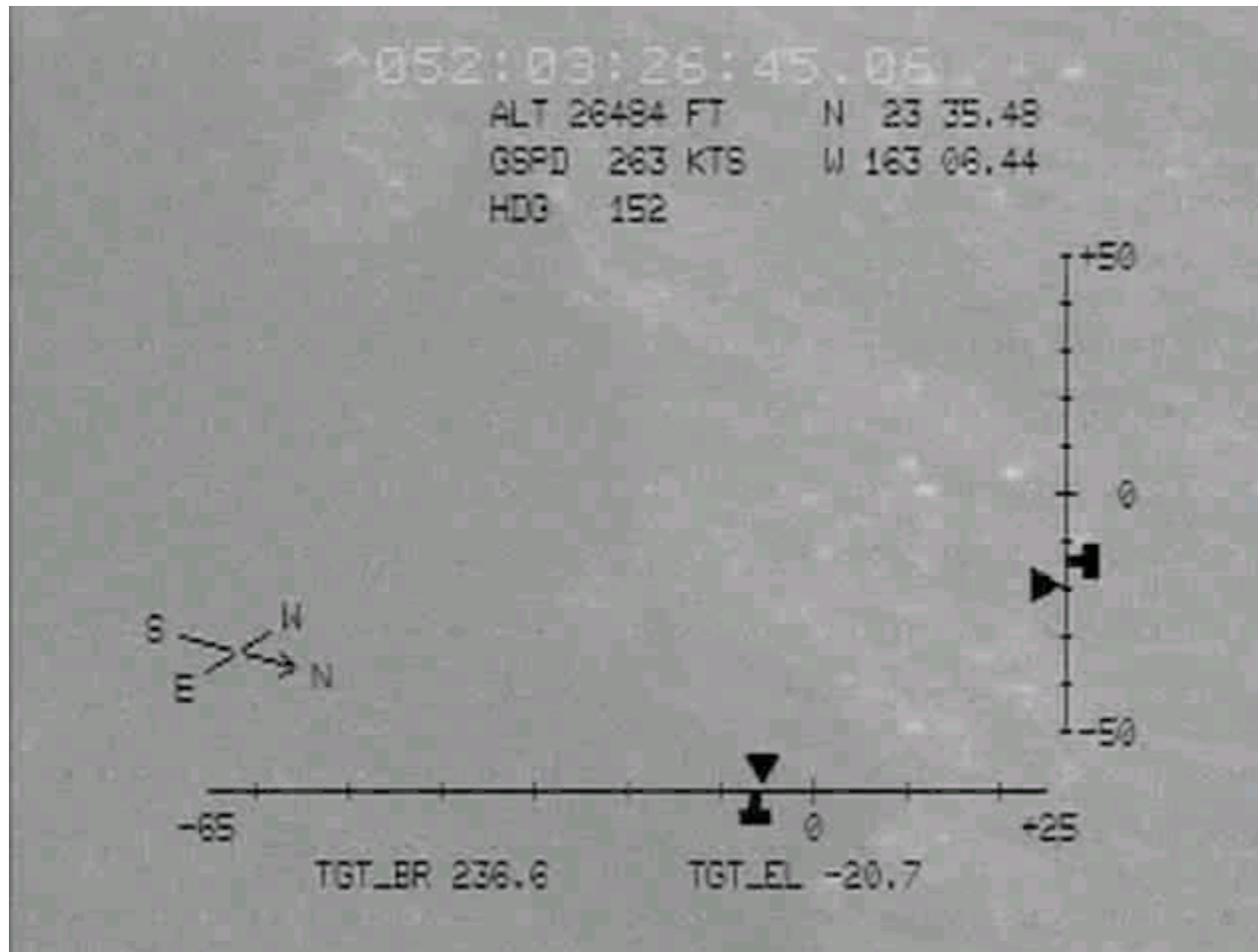




JFTM-01

JFTM-01
Live SM-3 Shot
From JDS Kongo
VS
Ballistic Missile Target
17 December 2007
Pacific Missile Range Facility

Satellite Intercept (U)



ABL



Kinetic Energy Static Firing

