Ballistic Missile Defense Overview

To: 10th Annual Missile Defense Conference

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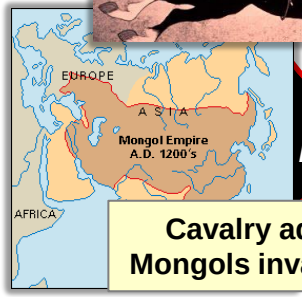
Missile Defense Agency
March 26, 2012

Military Technology Breakthroughs

Overwhelming Capabilities Without An Effective Counter

MOBILITY



Defeated by

Cavalry advantage
Mongols invade Europe

Mobile, long-range firepower

RANGE

Precision-engineering increased range/accuracy

Personal protection for close combat

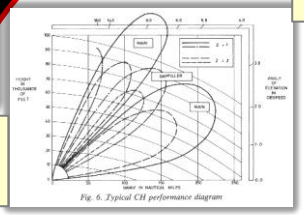
200 yard "kill shot"

AIR/SPACE BATTLE

Unbeatable "Wonder Weapon"?

Destruction from the air
40,000 British killed

Early detection
RAF has 2,698 kills



Can We Hit A Target Moving *15,000 m.p.h*?

Ballistic Missile Proliferation

Threat

- Growing
- Unpredictable
- Anti-ship ballistic missiles threaten flow of commerce
- Threatens regional stability

2010 Ballistic Missile Force Levels Not Including U.S., China, Russia or NATO

Missile Range	Quantity
300-1,000 km	5,000-5,500
2,000-3,000 km	500-700
3,000-5,500 km	<40
> 5,500 km	0-10
Totals	5,550-6,250

Sources: NASIC, Ballistic and Cruise Missile Threat, 2009; DIA, Iran's Military Power, Statement before the Senate Armed Services Committee, 14 APR 10; DIA, Annual Threat Assessment 2008; MSIC, e-mail, RE: Unclassified Force Level Numbers, 7 February 2011; DNI, Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Munitions, Covering 1 JAN to 31 DEC 29, FARS News Agency. Open Source Center (OSC), Iranian TV shows footage of "under ground launch silos" IAP20110627950192, 27 June 2011

North Korean Taepo Dong-2, April 2009

Iranian Salvo Launch, 28 June 2011

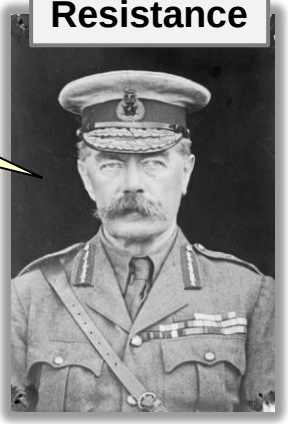
Iranian SRBM, 20 August 2010

Resistance to Revolutionary Technology

"A pretty mechanical toy"

1901

Resistance



Persistence

- Vision
- Accepting need for change

1916 - 30,000 dead, Somme, France

1916 - First tanks break down

Fix

1917- Moving, crushing armor Major Cambrai victory

Homeland Defense

– Last Year's Accomplishments –

Missile Field #2 Construction Completed

Missile Assembly Building For GBI Integration

2nd Fort Greely Fire Control Node

Thule Radar Integrated Into The BMDS

Clear Early Warning Radar

GBI Upgrades

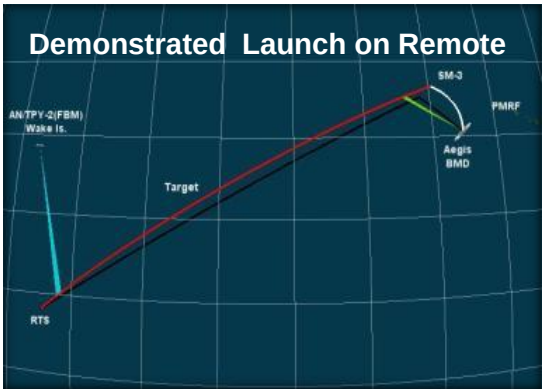
Regional Defense

– Last Year's Accomplishments –

Ballistic Missile Defense Testing

– Last Year's Accomplishments –

✓ FTM-15 April 2011



- Intercept of an IRBM with Aegis 3.6.1 and an SM-3 Block IA
- Forward-based AN/TPY-2 radar in fire control loop

USS O'Kane

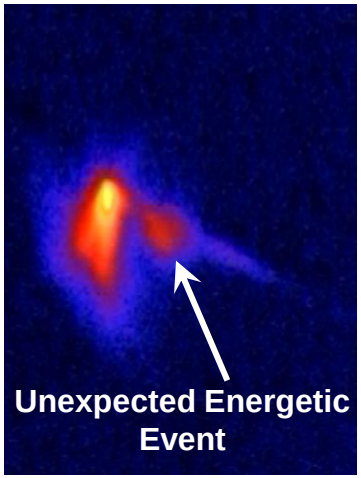
SM-3 IA Intercept

✓ FTX-17 July 2011

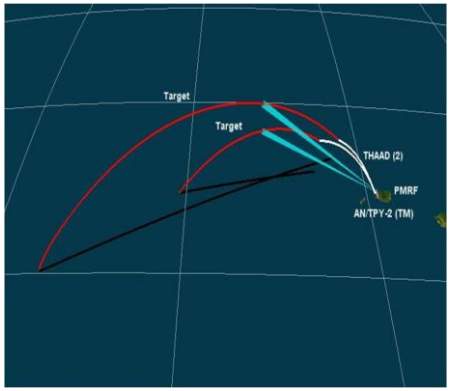
- Short Range Air Launched Target
- Tracked by multiple sensors including AN/TPY-2, Beale UEWR, STSS, ABIR and NFIRE

X FTM-16 Event 2 September 2011

- SM-3 IB and Aegis BMD 4.0.1 flight test



✓ FTT-12 October 2011



- Simultaneous engagement of SRBM and MRBM class targets

International Cooperation

– Last Year's Accomplishments –

U.S.-Poland BMD Agreement

U.S. Secretary of State Clinton
Polish Foreign Minister Sikorski

September 2011

U.S.-Turkey BMD Agreement

President Barack Obama
Turkish Prime Minister Erdogan

September 2011

Spain agrees to host U.S. Aegis BMD Ships

Spanish Prime Minister Zapatero
NATO Secretary General Rasmussen
U.S. Defense Secretary Panetta

October 2011

UAE THAAD Foreign Military Sales Case

December 2011

U.S.-Romania BMD Agreement

U.S. Secretary of State Clinton
Romanian Foreign Minister Baconschi

December 2011

Joint U.S.- Israel Arrow Weapon System Flight Tests

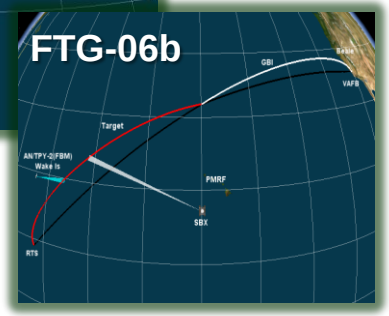
Arrow 3 – 2nd QTR FY12
Arrow Block 4 – 2nd QTR FY12

This Year's Focus

– Reliability And Testing –

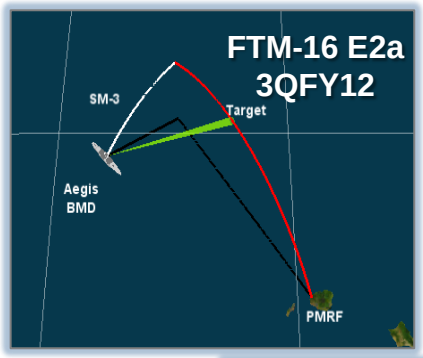
Ground-based Midcourse Defense

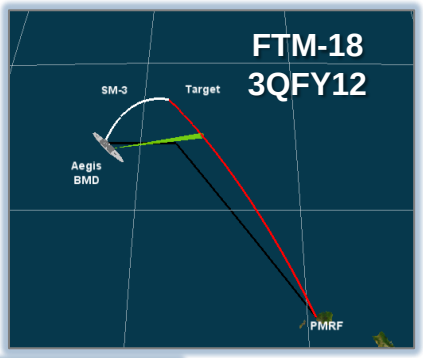
Reliability

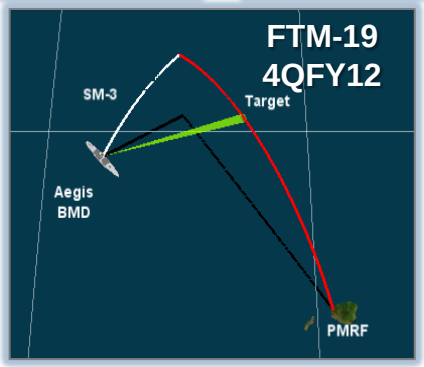


Testing

Aegis Ballistic Missile Defense







SM-3 IB

Flight Test Integrated (FTI-01)

Demonstrate regional BMDS ability to defend against a raid of up to five simultaneous threats in an operationally relevant CENTCOM scenario

BMD Target 1 E-LRALT MRBM

OPIR Participation
STSS Stereo Collect

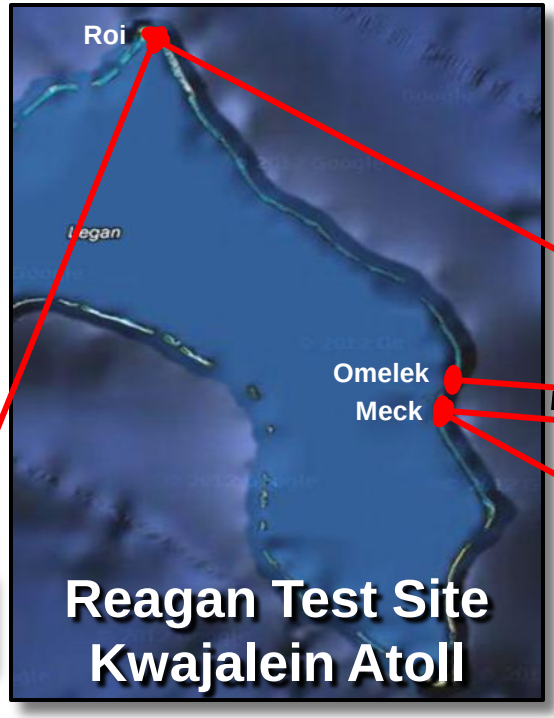
Hickam
UTCO / ADAFCO
(Upper/Lower Tier Coord)

BMD Target 2:
ARAV-B
SRBM

AEGIS 3.6.1
Engages SRBM (ARAV-B)
and Air Breather (BQM-74)

AN/TPY-2
Forward
Based Mode
(Cueing Sensor)

BMD Target 3: FMA
Sea Launch
SRBM



Launchers
Radar and associated Equipment

Target 4:BQM-74
Air Launch

Target 5: MQM-107
Launch from Roi

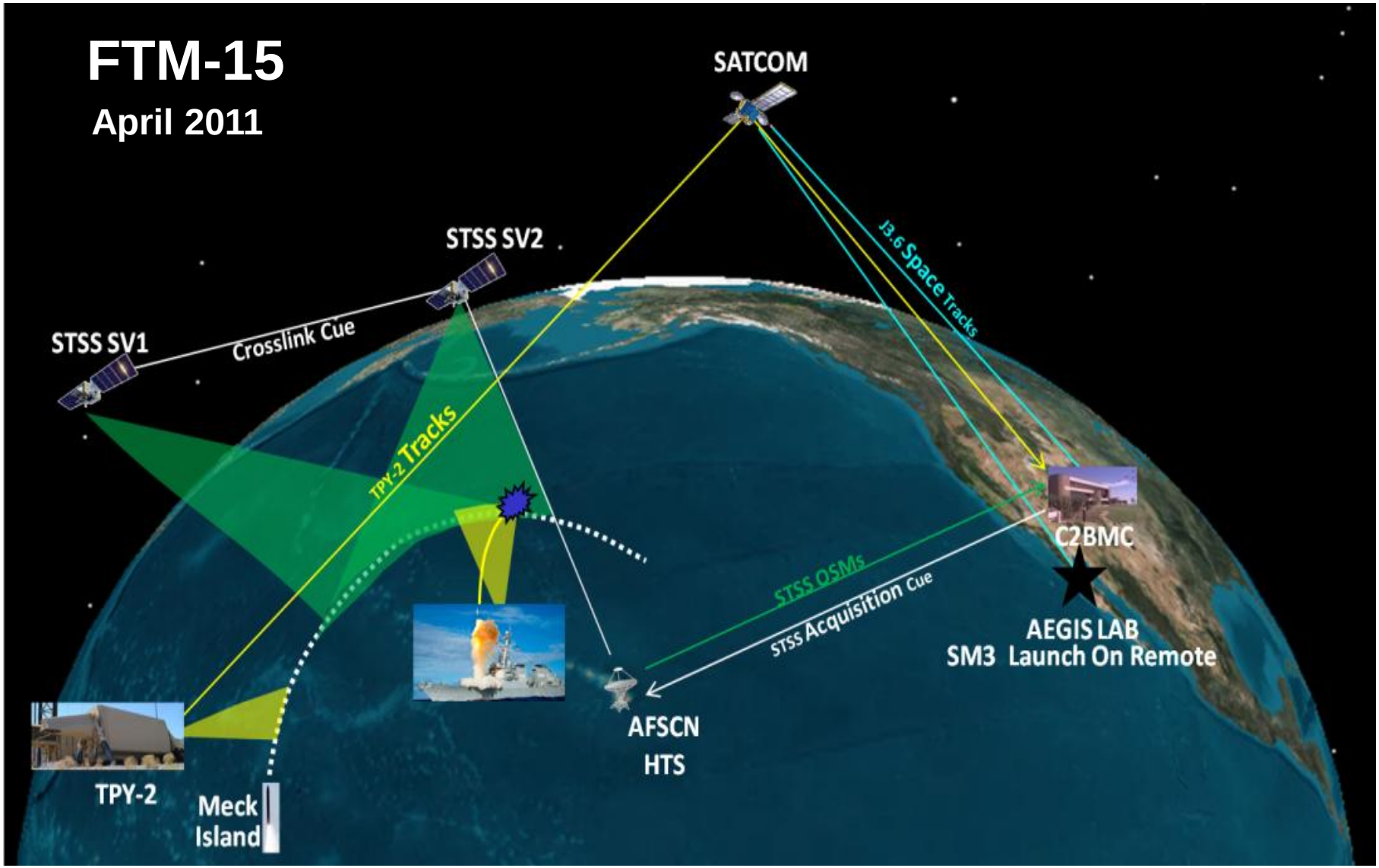
THAAD: Engage
MRBM (E-LRALT)
or SRBM (FMA)

Patriot: Engage
SRBM (FMA) and/or
Air Breather (MQM-107)

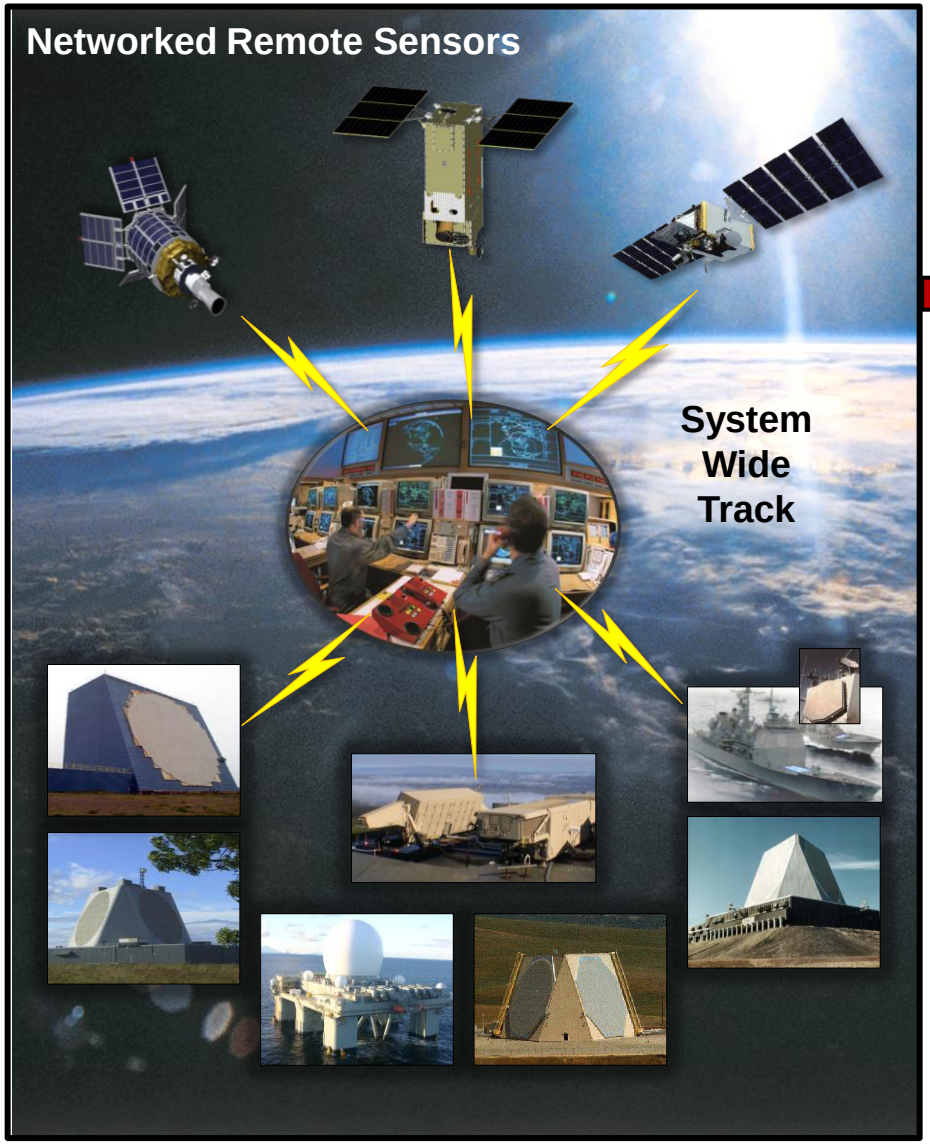
FTI-01 Largest Integrated Live Fire Missile Defense Test in History

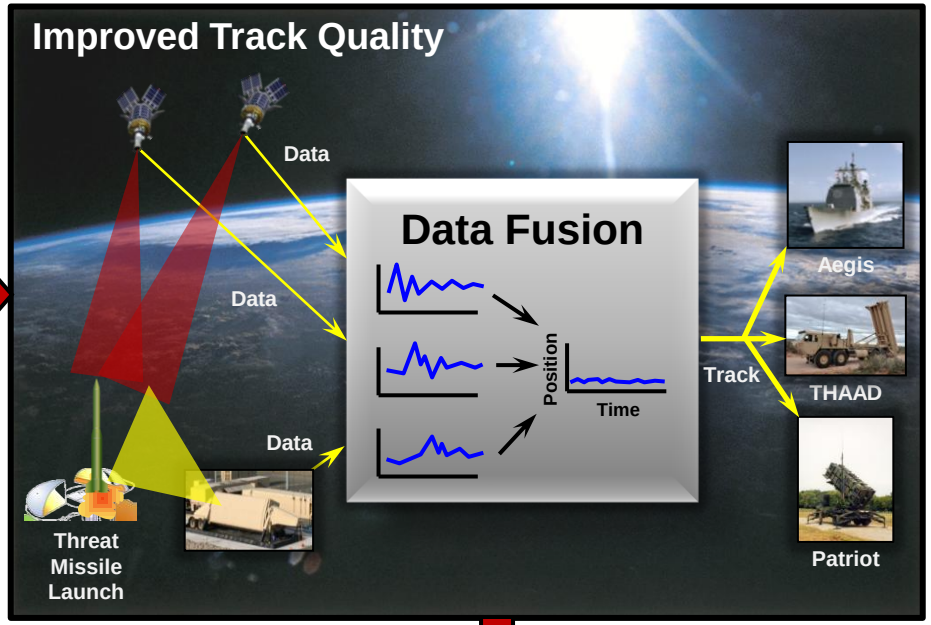
Flight Test Maritime (FTM-15)

– Enabled By Remote Sensing –

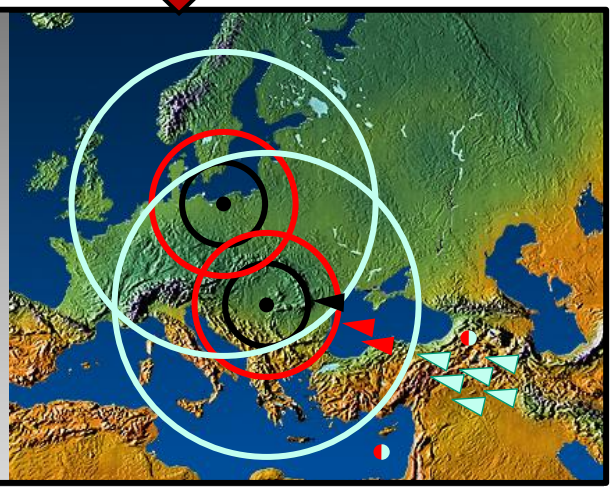


Networked Remote Sensing





- Expands Battle Space
  - Organic
  - Launch on Remote
  - Engage on Remote
- Increases Raid Size Capacity
  - 2-10 Times



Future Developments

– PTSS And SM-3 Block IIB –

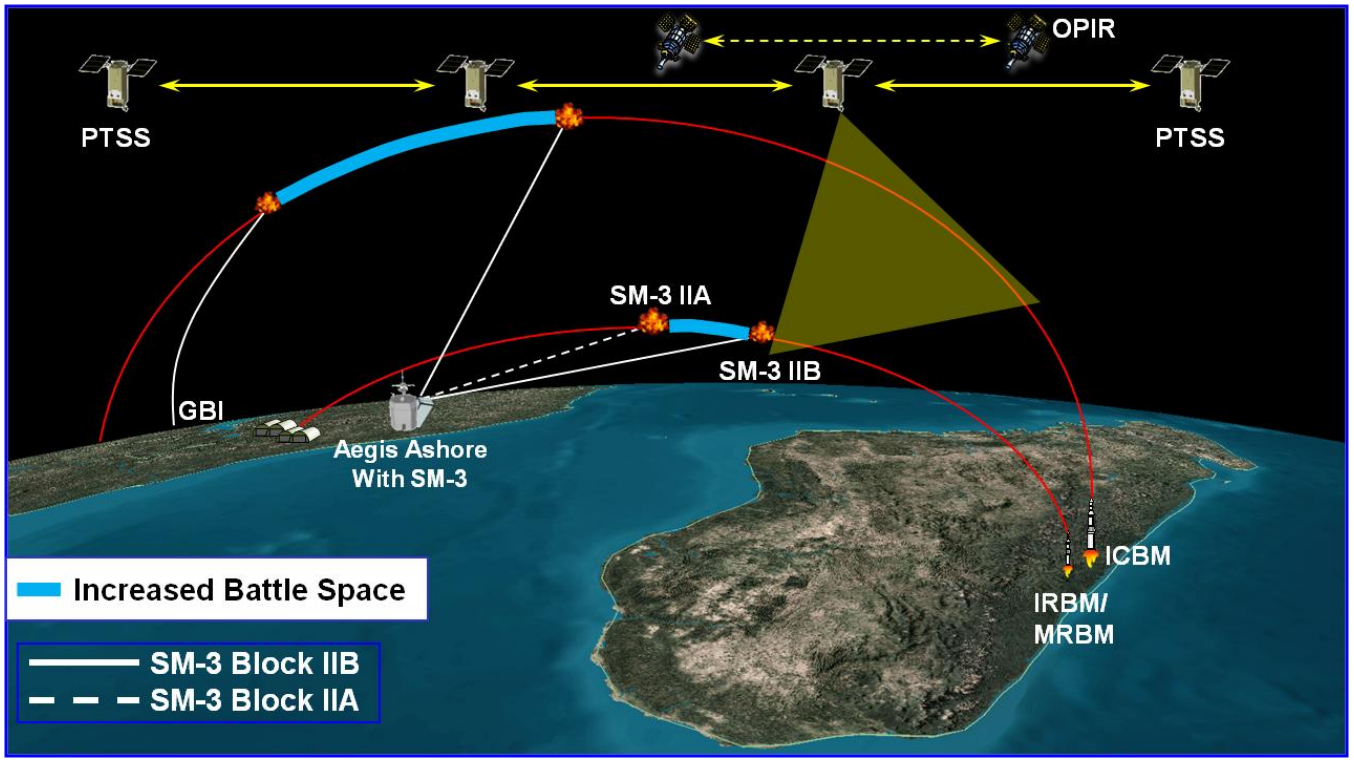
Precision Tracking Space System

- Persistent, precision missile tracking
- Any networked shooter for Homeland and Regional defense
- Pre-positioning, indications & warning, and host nation agreements not needed

Standard Missile-3 Block IIB

- Engages ICBMs early in flight as first tier of layered defense Homeland defense
- Expands battle space against MRBMs and IRBMs
- Cost-effective shot firing doctrine

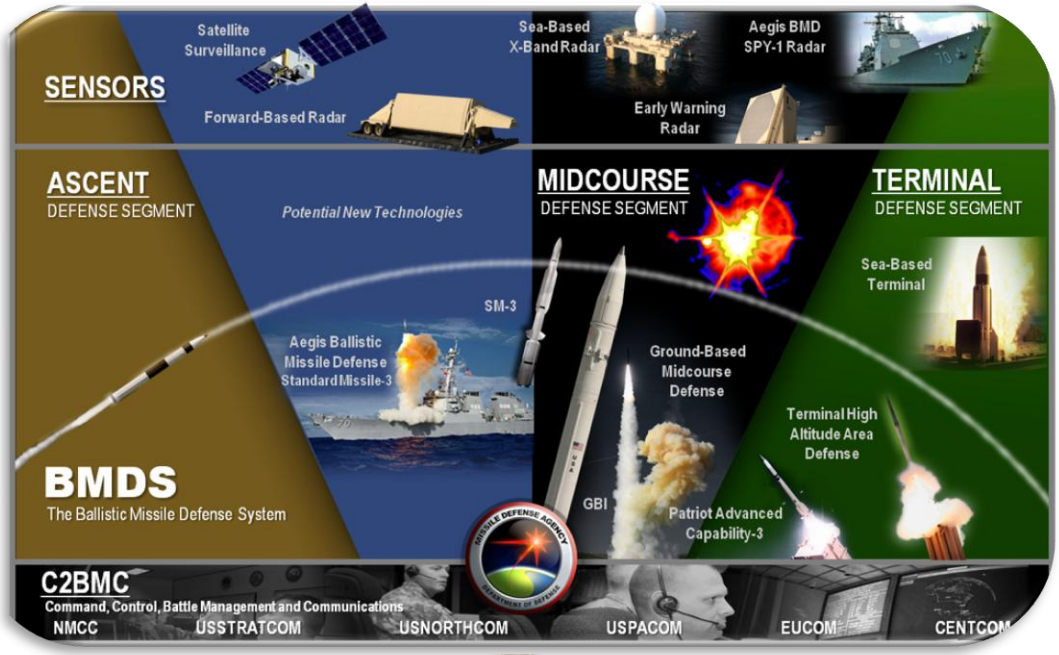
PTSS



SM-3 IIB

Integrated Nature Of Ballistic Missile Defense

Military Services



International Partners

Combatant Commands

Approved for Public Release
12-MDA-6631 (21 March 12)