

STELLAR TEAM

NOBLE MISSION



Aegis Ballistic Missile Defense

2021 MDA University Innovation Summit

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Today's Ballistic Missile Defense System

- Aegis BMD Contributions -

C2BMC Command and Control, Battle Management and Communications

NMCC

USSTRATCOM

USNORTHCOM

USINDOPACOM

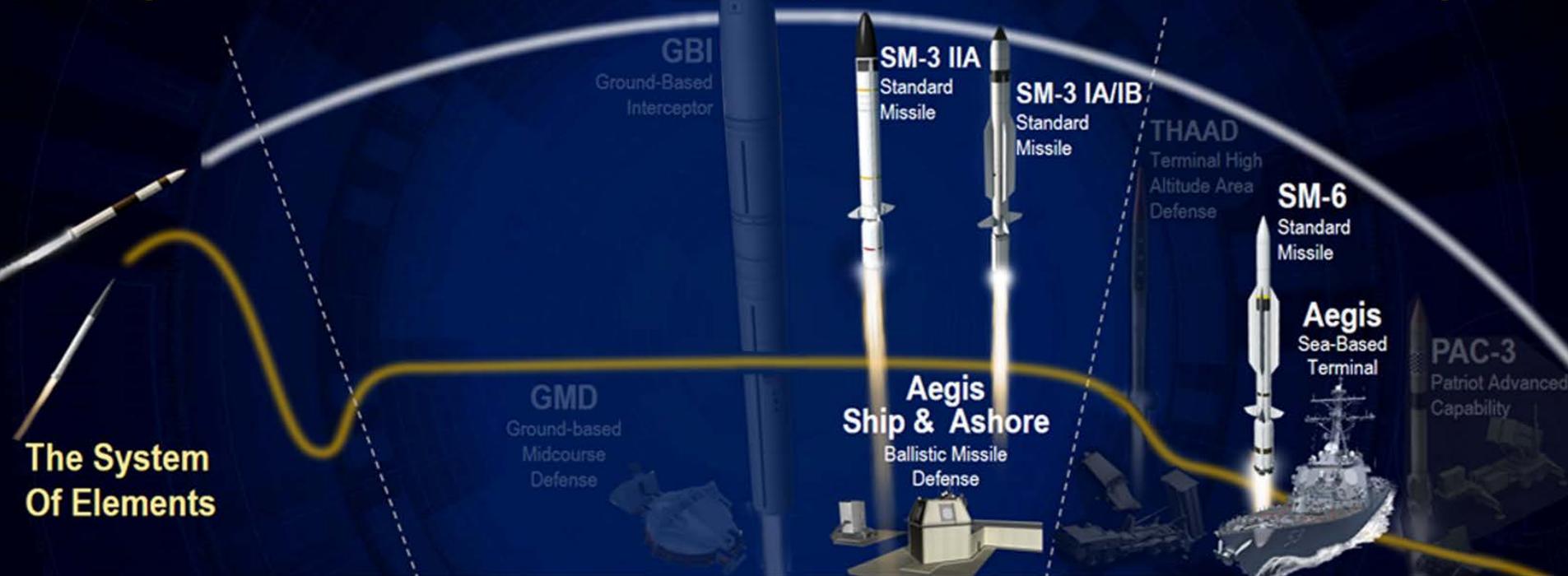
USEUCOM

USCENTCOM

BOOST Defense Segment

ASCENT/MIDCOURSE Defense Segment

TERMINAL Defense Segment



The System Of Elements

Sensors

Satellite Surveillance
BMDS OPIR Architecture

Upgraded Early
Warning Radars

Forward-Based
Radars

AEGIS BMD
SPY Radars

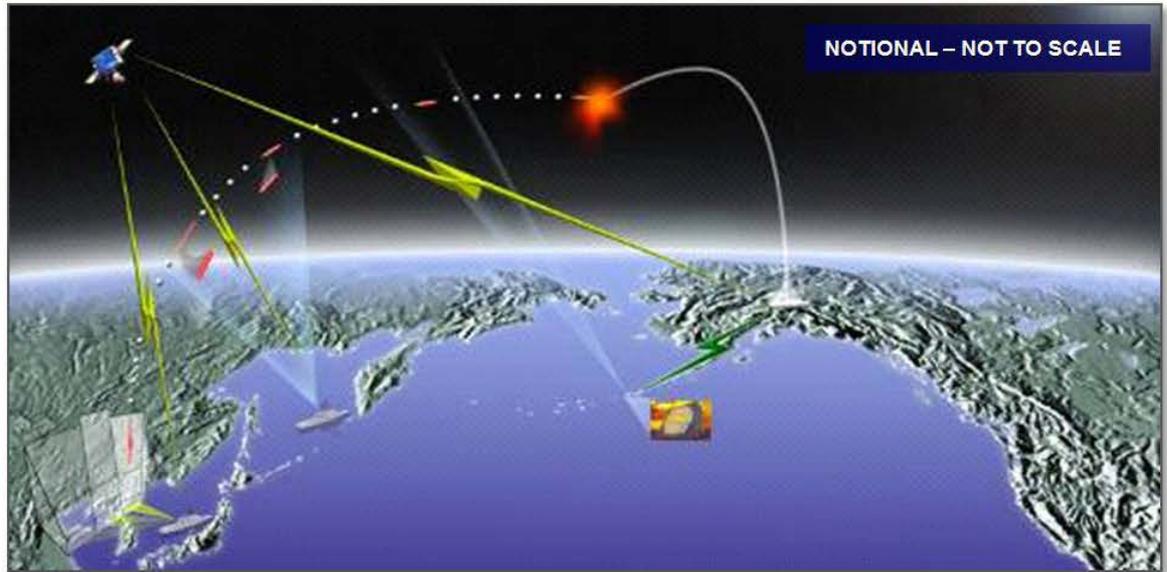
Discriminating
Radars



Aegis BMD's Role in the BMDS

Homeland and Regional Defense

- Long Range Surveillance & Track Function Detects and Tracks in Early Ascent Phase Providing Forward Based BMDS Sensor Support



Regional Defense

- Ascent and Midcourse Engagement Capability Defeats Short, Medium & Intermediate Range Ballistic Missiles
- Terminal Defense Capability Defeats Shorter Range Missiles



Defending Against Homeland and Regional Threats in all Phases of Flight



Sea-Based Weapon Systems Program

- Autonomous (2004) ✓
- Launch on Remote (Ship to Ship) (2006) ✓
- Launch on Remote (BMD Sensors) (2008/2011/2013) ✓
- Launch on Remote (STSS-D) (2013) ✓
- Launch from Ashore (2014) ✓
- Launch in Integrated Air and Missile Defense (IAMD) Priority Mode (2014) ✓
- Engage on Remote (2018) ✓
- U.S. DDG Flight III with Baseline 10 and SPY-6 Air and Missile Defense Radar (AMDR) (2024)

Aegis Ashore

- Hawaii Test Site (2014) ✓
- Romania (2015) ✓
- Poland (2022)



Vertical Launching System Mark 41

Radar System AN/SPY-1 D(V)



Aegis Ballistic Missile Defense Signal Processor (BSP) Upgrade (2012) ✓



Aegis Multi-Mission Signal Processor (MMSP) Upgrade (2014) ✓

Open Architecture (2014) ✓

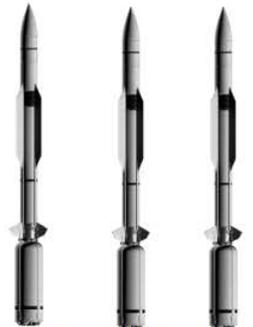


Standard Missile (SM)-3



BIK I / IA / IB (2004/2006/2014) ✓
BIK IIA (2020) ✓

Sea-Based Terminal Standard Missile (SM)-6



Dual I (2016) ✓
Dual II (2020) ✓
IAU (2024)



Aegis BMD SM-3 Evolution

Spiral Development with Incremental Capability Improvements

	SM-3 Bk I/IA	SM-3 Bk IB/IB TU	SM-3 Bk IIA
	Kinetic Warhead (KW) <ul style="list-style-type: none"> – 1-Color Seeker – Pulsed Solid Divert / Attitude Control System (SDACS) 	KW <ul style="list-style-type: none"> – 2-Color Seeker – Throttleable Divert / Attitude Control System (TDACS) 	Large Diameter KW <ul style="list-style-type: none"> – 21" Clamshell Nosecone – 2 Color Seeker – High Divert DACS – Increased Operating Time 
2nd and 3rd Stage	13.5" Propulsion	13.5" Propulsion	21" Propulsion
			
	MK 72 Booster	MK 72 Booster	MK 72 Booster
1st Stage	MK 41 Vertical Launching System (VLS)	MK 41 VLS	MK 41 VLS
	Deployed Since 2004	SM-3 Bk IB Deployed Since 2012 SM-3 Bk IB TU First Intercept 2015	First Intercept 2017



Aegis BMD Technology Interests

- **What types of technologies are we exploring now?**
 - **Advanced Electronics**
 - **Artificial Intelligence**
 - **Command, Control, Communications, Computers, and Intelligence (C4I)**
 - **Cyber**
 - **Electronic Warfare**
 - **Energy and Power**
 - **Materials and Manufacturing Processes**
 - **Sensors**
 - **Space**
 - **Weapons Technology**
 - **Quantum Science**

Applied Technologies Improves our System's Performance

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