



# *Aegis Ballistic Missile Defense*

*Brief for*

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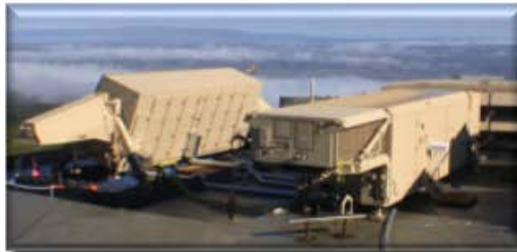


# Missile Defense Agency

Aegis BMD

## Missile Defense Agency Mission

To develop and deploy a layered Ballistic Missile Defense System to defend the United States, its deployed forces, allies, and friends from ballistic missile attacks of all ranges and in all phases of flight



**Missile Defense Capability  
Globally Deployed**



# Missile Defense Agency Priorities

## - In Support Of The National Defense Strategy -

*Aegis BMD*

- Continue focus on increasing system reliability to build warfighter confidence



- Increase engagement capability and capacity



- Rapidly address the Advanced Threat



**BMDS Meets Today's Threat but Requires Additional Capacity and Advanced Capability to Stay Ahead of the Evolving Threat**



# Today's Ballistic Missile Defense System

Aegis BMD

**C2BMC** Command Control, Battle Management and Communications

NMCC USSTRATCOM USNORTHCOM USINDOPACOM USEUCOM USCENTCOM

**BOOST / ASCENT**  
Defense Segment

**MIDCOURSE**  
Defense Segment

**TERMINAL**  
Defense Segment

**Aegis**  
Ballistic Missile Defense

**GBI**  
Ground-Based  
Interceptor

**Aegis**  
Sea-Based Terminal

**SM-3**  
Standard Missile-3

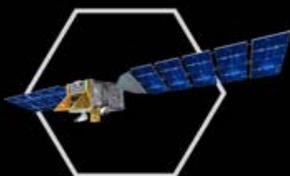
**THAAD**  
Terminal High  
Altitude Area Defense

**The System  
Of Elements**

**Aegis Ashore**

**PAC-3**  
Patriot  
Advanced  
Capability-3

**Sensors**



Satellite Surveillance



Forward-Based Radar



Upgraded Early  
Warning Radar



AEGIS BMD  
SPY-I Radar



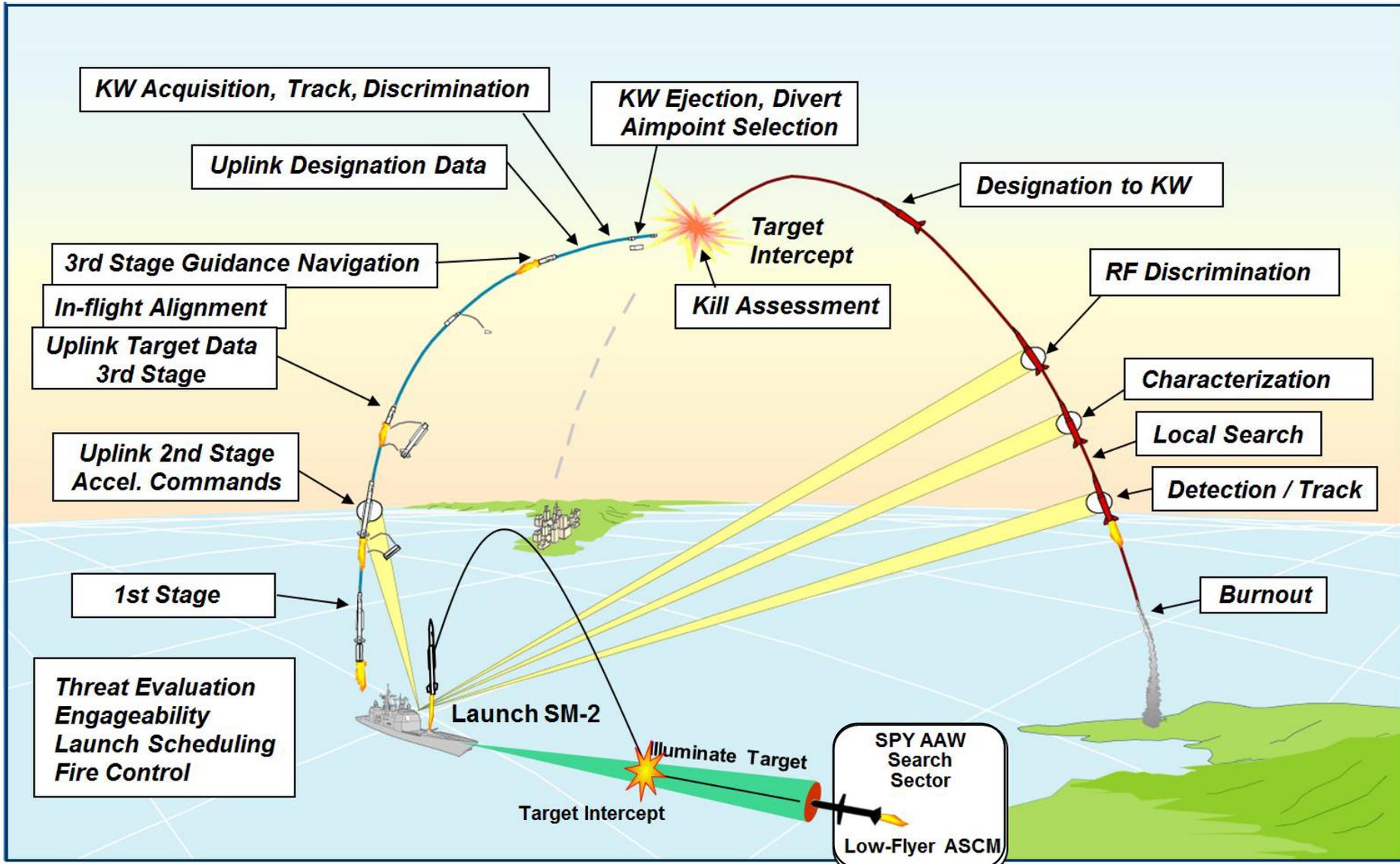
Sea-Based  
X-Band Radar

HQ-G-0371-18



# Aegis BMD How it Works

Aegis BMD





# Aegis BMD Program

## Aegis BMD

- 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 (2020)



Vertical Launching System Mark 41



Radar System AN/SPY-1 DV



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

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



Open Architecture (2014) ✓

### Standard Missile (SM)-3



Blk I / IA / IB (2004/2006/2014) ✓  
Blk IIA (2019) ✓

### Sea-Based Terminal



SM-2 BIK IV (2008) Near Term ✓

SM-6 BMD (2016) ✓



# Aegis BMD SM-3 Evolution

## Spiral Development with Incremental Capability Improvements

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



# Aegis BMD Technology Interests

*Aegis BMD*

- **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**

# Aegis BMD . . . We Deliver



**Aegis BMD -- On Land, At Sea, On Watch**

