

SMD

SPACE AND MISSILE DEFENSE SYMPOSIUM



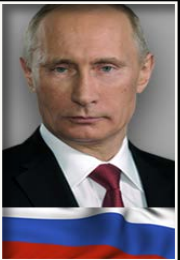
Raytheon

INTEGRATED AIR, SPACE AND MISSILE DEFENSE IN 2025 AND BEYOND

This presentation contains no technical data as defined under ITAR 120.10



Future Complex & Sophisticated Adversaries



Vladimir Putin
Russia



Kim Jong Un
North Korea



Xi Jinping
China



Hassan Rouhani
Iran



Abu Bakr al-Baghdadi
ISIS



Abdul-Malik al-Houthi
Houthis



“Hypersonic Weapons Race Gathers Speed”

-National Defense Magazine, Aug. 2015

“Russia’s Secret Hypersonic Nuclear Missile Yu-71 Can Breach Existing Missile Defense Systems”

-International Business Times, June 2015

U.S. Challenges

- Robust & Complex BM Threat
- Robust & Stressing CM threat
- Multi-Domain Precision Strike
- Electronic Attack
- Agile & Innovative Development

“China continues to develop a variety of capabilities designed to limit or prevent the use of space-based assets by adversaries...”

-Defense One, June 2015

“New Russian directed-energy weapon could complicate U.S. military strategic planning”

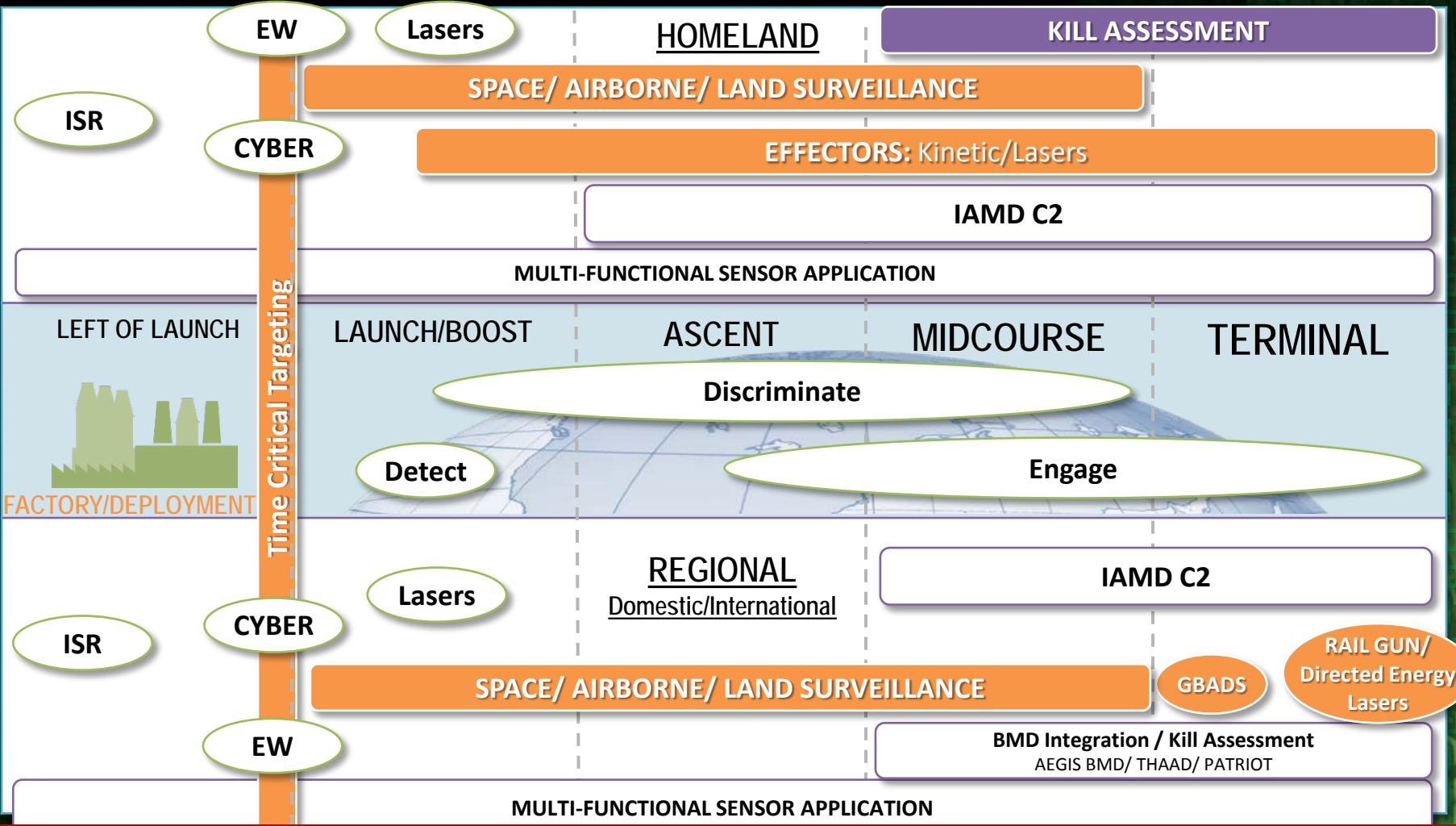
-Military and Aerospace, July 2015

Future IAMD Threat Environment

Highly Synchronized, Robust, and Complex BMD/CMD Attack



Future IAMD Environment



Strategic Endstate
 Warfighter enabled to minimize threat engagements, shot doctrines, and efficient cost to kill ratios

The logo for the SMD Symposium, featuring a globe with a satellite and the text 'SMD SYMPOSIUM'.

IAMD Enabling Imperatives for 2025+

- Upgrade Existing capabilities
 - Maximize
 - Open Architecture
 - End-to-End Solutions
 - Information Assurance
- Creative Use of Existing Capabilities
- Development of Next Generation IAMD Capability
 - Speed and Agility
 - LRRDP / Defense Innovation Initiative
 - Evolutionary vs. Revolutionary
 - Third Offset
- Pursue Full Spectrum Integrated Fire Control
 - Left-of-Launch / Post-Launch
 - Kinetic / Non-Kinetic
 - Peace / Conflict
- Leveraging International Cooperation
 - Build Integrated Partnership Capacity
 - International programs benefit to DoD (BBP 2.0)
- Policy
 - Speed and Agility
 - Releaseability
 - Near Peer Recognition

Strategic Endstate

Warfighter enabled to minimize threat engagements,
shot doctrines, and efficient cost to kill ratios



Raytheon's Integrated Air, Space, Missile Defense Footprint

Interceptors

- Patriot in 12 countries
 - USA
 - Germany
 - Greece
 - Israel
 - Japan
 - Korea
 - Kuwait
 - Netherlands
 - Saudi Arabia
 - Spain
 - Taiwan
 - UAE
- Patriot deployed to Jordan and Turkey
- Standard Missile 3
 - Blk IA and IIA (US & Japan)
 - Blk IB (US)
- Standard Missile 6
- EKV/RKV on GBI
- ESSM
- Stunner

Sensors

- AMDR
- Airborne Sensors
- AN/TPY-2
 - THAAD
 - Forward Deployed (Japan (2), Turkey, Israel, Middle East)
- Early Warning Radars
 - USA
 - UK/ Greenland/ Taiwan SRP
- SBX
- SPY-1 on 26 US BMD Ships
- STSS Satellites
- JLENS

BMC3 & Critical Support

- C2BMC National Team B
- Aegis Weapons System
- IBCS
- NATO ACCS
- CCLS
- Modeling & Simulation
- Maintenance and sustainment of Patriot, AN/TPY-2, SBX, UEWR, GBR-P
- Air Defense Operation Center (ADOC)

Cyber

ISR

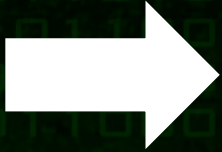




Footprint 2025+

Raytheon's Integrated Air, Space, Missile Defense Footprint

<p><u>Interceptors</u></p> <ul style="list-style-type: none"> ▪ Patriot in 12 countries <ul style="list-style-type: none"> - USA - Germany - Greece - Israel - Japan - Korea - Kuwait - Netherlands - Saudi Arabia - Spain - Taiwan - UAE ▪ Patriot deployed to Jordan and Turkey ▪ Standard Missile 3 <ul style="list-style-type: none"> - Blk IA and IIA (US & Japan) - Blk IB (US) ▪ Standard Missile 6 ▪ EKV/RKV on GBI ▪ ESSM ▪ Stunner 	<p><u>Sensors</u></p> <ul style="list-style-type: none"> ▪ AMDR ▪ Airborne Sensors ▪ AN/TPY-2 <ul style="list-style-type: none"> - THAAD - Forward Deployed (Japan (2), Turkey, Israel, Middle East) ▪ Early Warning Radars <ul style="list-style-type: none"> - USA - UK/ Greenland/ Taiwan SRP ▪ SBX ▪ SPY-1 on 26 US BMD Ships ▪ STSS Satellites ▪ JLENS 	<p><u>BMC3 & Critical Support</u></p> <ul style="list-style-type: none"> ▪ C2BMC National Team B ▪ Aegis Weapons System ▪ IBCS ▪ NATO ACCS ▪ CCLIS ▪ Modeling & Simulation ▪ Maintenance and sustainment of Patriot, AN/TPY-2, SBX, UEW, GBR-P ▪ Air Defense Operation Center (ADOC) <p><u>Cyber</u></p> <p><u>ISR</u></p>
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2025+ Focus

- Left of Launch
- Time Critical Targeting
- Innovative Solutions
- Joint Integrated Fire Control
- Building Integrated Partnership Capacity
- End-to-End Solutions
- Cyber
- ISR

Strategic Endstate
Warfighter enabled to minimize threat engagements, shot doctrines, and efficient cost to kill ratios



Annual Space & Missile Defense Symposium

Future Complex & Sophisticated Adversaries

U.S. Challenges

- Robust & Complex BM Threat
- Robust & Stressing CM threat
- Multi-Domain Precision Strike
- Electronic Attack
- Agile & Innovative Development

Future IAMD Threat Environment
Highly Synchronized, Robust, and Complex BMD/CMD Attack

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Future IAMD Opportunity Environment

Strategic Endstate
Warfighter enabled to minimize threat engagements, shot doctrines, and efficient cost to kill ratios

Enabling Integrated Air, Space, & Missile Defense in 2025+

IAMD Enabling Imperatives for 2025+

- Upgrade Existing capabilities
 - Microtech
 - Open Architectures
 - End-to-End Solutions
 - Informational Advantages
- Creative Use of Existing Capabilities
- Development of Next Generation IAMD Capability
 - Speed and Agility
 - LRIRDP / Defense Innovation Initiative
 - Evolutionary vs. Revolutionary
 - Third Offset
- Pursue Full Spectrum Integrated Fire Control
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