“The U.S. will now adjust its posture to also defend against any missile strikes, including cruise and hypersonic missiles.”

President Donald J. Trump, January 17, 2019
I am pleased to present the Missile Defense Agency Director’s Vision and Intent – 2019. This document provides an update on our new mission statement, outlines current lines of effort, and lays out the overall Agency direction.


The MDA team is focused on designing, developing, delivering, and sustaining an advanced, fully integrated and layered Missile Defense System. This system must be ready to operate on the cross-domain battlefield in concert with the Joint Force and in cooperation with international partners. Today we deploy Ground Based Interceptors for homeland defense, and for regional defense, hundreds of interceptors on Aegis destroyers at sea and at Aegis Ashore in Romania, and in Terminal High Altitude Area Defense and Patriot batteries deployed worldwide. The entire system is integrated through a global Command and Control, Battle Management, and Communication system.

As the threat evolves and includes new offensive systems such as hypersonic glide vehicles, the Nation will need to increase investments in cutting-edge missile defense technologies, to include a persistent overhead sensor capability. If we are to support the Warfighter in a highly uncertain strategic environment, we must meet technology maturation, systems development, and manufacturing challenges head-on and continue to demonstrate missile defense capabilities through robust, operationally realistic live-fire testing. The stakes are high and the price of failure is beyond measure.

Stellar Team, Noble Mission!

JON A. HILL
Vice Admiral, USN
Director
August 2019
Potential adversaries continue to invest substantially in offensive missiles, increasing the capabilities of existing missile systems, adding new missile types to their arsenals, and integrating them into their coercive threats, military exercises, and war planning.

Adversaries are developing missile technology to attack the United States in conventional and novel ways and challenge U.S. and partner missile defenses. Some weapon systems have characteristics of both ballistic and cruise missiles. For example, ballistic missile-launched hypersonic glide vehicles are unpowered and maneuverable, capable of delivering various payloads that travel at hypersonic speed (greater than Mach 5) and spend most of their flight at much lower altitudes than a typical ballistic missile. Russia and China are developing advanced cruise missiles and hypersonic missile capabilities that can take unpredictable flight paths that challenge existing defenses.

Since the Soviet era, Moscow and Russia-based entities have provided offensive missile strike expertise and technology to China, North Korea, Iran, and Syria. Chinese entities have assisted Iran, North Korea, and others in developing their missile programs. North Korea has been the source of ballistic missile-associated sales to numerous countries and presents a significant proliferation threat. Iran, like North Korea, also is proliferating its offensive missile technology, presenting additional threats to the United States, its forces, allies, and partners.
While the United States relies on nuclear deterrence to defend against large and technically sophisticated Russian and Chinese intercontinental ballistic missile threats to the U.S. homeland, active missile defenses are designed to protect the homeland, deployed forces, and international partners and allies against existing missile threats from rogue states. The United States must outpace existing and potential rogue state and rogue actor offensive missile capabilities. To do so, the country will continue to sustain, modernize and expand the Missile Defense System and pursue the rapid, yet measured, development of advanced missile defense concepts and technologies for homeland and regional defense.

There are critically important attributes that are unique to defense that cannot be realized with offense. In the case of rogue states and non-state actors, missile defense provides both an effective means of defeating limited attacks while also providing our Nation’s leaders – as well as the leaders of other nations – the time necessary to assess events and avoid conflict escalation. When deterrence fails, the Nation will need active defenses to protect leadership, defend critical infrastructure, and safeguard strike assets we will need to execute a counter-strike. As part of a comprehensive deterrence strategy, effective defenses play a major role in deterring attack by making the attack seem futile. Defense can also be de-escalatory, potentially preventing smaller engagements from growing into larger-scale conflicts. In the regional missile defense context, effective missile defense systems are critical to enabling all Joint Force operations, which are otherwise at risk of short-, medium-, and intermediate-range missile attack.
The mission of the Missile Defense Agency is to develop and deploy a layered Missile Defense System to defend the United States, its deployed forces, allies, and friends from hypersonic and ballistic missile attacks of all ranges and in all phases of flight.

The MDA mission is evolving to address other missile threats, including hypersonic glide vehicles. The missile defense architecture must evolve to give the Warfighter the ability to counter these threats. In the FY 2017 National Defense Authorization Act, the Missile Defense Agency was assigned the responsibility of Executive Agent for the development of capabilities to counter Hypersonic Glide Vehicles and conventional prompt strikes.
VISION

Our vision is to leverage our innovative, highly skilled professional workforce and defense industrial partners, international partners, and the confidence of the Nation to design, develop and deliver effective, affordable and technologically advanced missile defenses that can operate in and across all domains – land, sea, air, space and cyberspace – to give the Joint Force an overwhelming deterrence and warfighting advantage against adversaries who would use missiles to coerce U.S. leaders and attack the U.S. homeland, deployed forces, allies and partners.
PURPOSE AND LINES OF EFFORT

MDA designs, develops and delivers sensors, command and control, and engagement systems, integrated into a single system that enables all Joint Force counter-missile operations.

Our overriding program lines of effort are to:

1. Build **Warfighter confidence** through focus on **readiness and sustainment**
2. Increase missile defense engagement **capability and capacity** to outpace emerging threats
3. Increase **speed of delivery** of new capability to address **evolving threats**

A CULTURE OF EXCELLENCE

The Missile Defense Agency is a high-performing, talented, integrated civilian, military, and contractor workforce spread across the Nation and overseas with a culture of excellence in the pursuit of effective and reliable defenses against proliferating missiles. We are focused on mission success through disciplined systems engineering and program planning processes that involve close collaboration with acquisition and requirements decision authorities. Our science and technology efforts to integrate new and ground-breaking capabilities into the system to counter the future threat are nested with USD (Research & Engineering) priorities. We have an integrated, comprehensive, increasingly complex and operationally realistic test program to fully verify and validate the systems we are developing before handing them over to the Joint Force. We also help train the Warfighter to support operation and sustainment of delivered capabilities.
SPEED AND INNOVATION IN MISSILE DEFENSE ACQUISITION

The Missile Defense Agency is built for decision-speed. We aggressively identify paths that take speed into account without compromising quality and safety while structuring the organization to deliver. MDA understands the importance of innovating, designing, developing, and delivering new missile defense capabilities quickly, accelerating where possible missile defense acquisition timelines while adhering to sound acquisition principles to deliver capabilities faster, learn from failures to make rapid adjustments, and swiftly adapt our systems even after they are fielded.

The layered Missile Defense System can defeat the current ballistic missile capabilities of U.S. adversaries, but we require additional capacity and advanced capabilities to stay ahead of the evolving threat. Potential adversaries are investing substantially in their missile capabilities. They are expanding missile capabilities in three different directions simultaneously: increasing the capabilities of existing missile systems; adding new and unprecedented types of missile capabilities into their arsenal; and integrating offensive missiles ever more thoroughly into their coercive threats, military exercises, and war planning. It is critical we continue to develop innovative and breakthrough technologies and adjust our acquisition processes to outpace these threats.
PRECONDITIONS FOR MISSION SUCCESS

The Missile Defense Agency is a stellar team focused on a noble mission. We are committed to making sure we have the personnel and resources to accomplish our mission. MDA remains focused on finding and retaining the right people with the right knowledge, skills, and abilities and continually increasing their individual competencies. We have initiatives to sustain and improve the continuity of workforce operations across the geographically dispersed missile defense enterprise; develop and implement initiatives to support competency-based development efforts fostering a diverse, mission-ready workforce; promote a results-oriented performance culture; and recruit the best qualified staff to fill critical vacancies.

We also must ensure safe work places for MDA personnel and ensure that all MDA-developed systems are reliable, ready, and secure. We aggressively identify unsafe conditions, equipment, behaviors and procedures and will continuously seek solutions to optimize workplace safety. We also implement processes and procedures to ensure that the system is of the highest quality. When an interceptor or another part of the system or enterprise does not work, the Warfighter cannot do the mission.

The Missile Defense System must be secure and uncompromised. We have initiatives to detect and mitigate threats without impeding operations in order to ensure the Nation’s missile defenses will be able to operate in a highly contested cyber environment.
BUILDING TRUST AND CONFIDENCE

We are working towards creating a system of effective and ready homeland and regional missile defense capabilities that is proven, adaptable, survivable, affordable, and responsive to future threats. By doing so, we maintain the trust of the Nation and the confidence of the Warfighter. We must keep the needs of the Joint Force and the Warfighter at the forefront of everything we do. This demands we maintain a trusted partnership with the Services and Combatant Commands. The basis of trust and confidence is delivering capabilities that are fully demonstrated in a robust and comprehensive test program that involves the ultimate customer, the Warfighter, as well as independent evaluators. We are transparent in our activities in order to build confidence in what we do among the American people, our leaders, and the Warfighters, who ultimately own what we deliver.

A STRONG INDUSTRIAL BASE

The American defense industry is renowned for its ingenuity and ability to deliver cutting-edge military capabilities to the Joint Force by exploiting, among other things, advances in material sciences, additive manufacturing, artificial intelligence and machine learning, space design, and software engineering. Industry propels America’s technological future. MDA is heavily engaged in maintaining a strong missile defense industrial base. We also explore with companies, small and large, U.S. and foreign, new opportunities for value-added work on the Missile Defense System. We continually communicate with our industrial partners, who need to know where the Agency is heading, so they can keep investment resources focused on providing products and services that the Agency needs to execute its mission.

Raytheon Robot for Standard Missile-6
DIRECTOR’S VISION AND INTENT

MISSILE DEFENSE AGENCY

2019

INTERNATIONAL COOPERATION

The involvement of international partners in the missile defense program is vital to our mission success and the national security of the United States. In collaboration with allied and friendly nations, we develop and deliver regional missile defense capabilities in order to protect U.S. forces, reassure allies and partners, and build cooperative regional security architectures. MDA leverages the foreign industrial base and expands work with our international partners. This includes joint analyses to support missile defense acquisition decisions, cooperative research and development projects, deployments, Foreign Military Sales, and co-production. We build relationships to achieve our goals, communicate the importance of missile defense, promote missile defense capability, integration, and interoperability with U.S. systems, and identify and evaluate technology to improve the system.

MISSILE DEFENSE AND NATIONAL SECURITY

The evolving missile threat means that missile defense remains a high priority investment within our National Defense Strategy. Proven and integrated homeland and regional missile defenses play a key role in supporting the basic peacetime objectives of deterrence and provide a valuable component of the U.S. strategic posture. In wartime, missile defenses help protect U.S. leadership, population centers, critical infrastructure, and military forces as part of the Joint Force. MDA intends to strengthen its posture as we continue to make progress in the design, development and delivery of a system to defend the homeland, our deployed forces, and our allies and partners against hypersonic and ballistic missile attack, and to support the critical need to pursue new concepts and technologies to address the challenging missile threat of tomorrow.
10 Steps to Missile Intercept

1. Detect
2. Cue
3. Track
4. Classify and Discriminate
5. Fire Control Solution
6. Interceptor Launch
7. Update Interceptor
8. Kill Vehicle Tracking and Maneuver
9. Intercept
10. Verify hit

Overhead Sensors
Booster Burnout
Threat missile launch
Space
Atmosphere
~100 km
DIRECTOR’S VISION AND INTENT

MISSILE DEFENSE AGENCY

2019

Aegis Ashore Missile Defense Test Complex, Hawaii

Terminal High Altitude Area Defense