THE U.S. GMD SYSTEM IS THE UNITED STATES’ LAST LINE OF DEFENSE

against a limited ballistic missile attack against U.S. territory. To continue to stay ahead of the rogue state ICBM missile threat, the system requires continued modernization, including investments in a redesigned kill vehicle, the installation of the Long Range Discrimination Radar, and enhanced tracking and discrimination capabilities and system integration.

GMD is the United States’ homeland missile defense system. It is comprised of 30 Ground Based Interceptors (GBI) at Ft. Greely, AK and Vandenberg Air Force Base, CA, with an additional 14 planned to be in place by 2017.

GMD operates by launching a GBI that homes in and destroys an incoming missile in space during the middle, or “midcourse” of its flight path. The GBIs do not use explosive warheads, but destroy the incoming warhead with kinetic energy by physically colliding with it.

For GMD to maintain viability, it requires continual modernization to keep pace with the threat.

System Needs:

- Redesigned Kill Vehicle (RKV) for enhanced reliability.
- Long Range Discrimination Radar (LRDR) for better discrimination of warheads from debris and decoys.
- Reliability Assessment and Enhancement to existing interceptor fleet, and move to an robust annual testing cadence.
- Better Integration between the multiple tracking, discrimination, and command and control elements of the system.
GMD integrates GBIs with multiple sensor platforms and command and control elements.

GMD is much more than interceptors. Sensor and command and control elements are equally vital to **track**, **discriminate**, and **destroy** an incoming missile before it can hit U.S. soil.

**Tracking**

Tracking is the capability to know where an enemy missile is at all times. Having robust tracking is vital in order to guide the interceptor to a position where it can destroy the missile. Multiple systems play a role in tracking including overhead satellites, sea and ground based radars and the sensors onboard the Exoatmospheric Kill Vehicle (EKV).

**Discrimination**

When an enemy warhead separates from a missile booster in space, it creates a “cloud” of debris, which can include decoys designed to fool defense systems. **Discrimination is the ability for the interceptor to determine which objects in the cloud are lethal, and which are not.**

The ability to track and discriminate is determined by the sophistication and completeness of radar coverage and the sophistication of the seeker onboard the Kill Vehicle. A Redesigned Kill Vehicle (RKV) and Long Range Discrimination Radar (LRDR) would greatly enhance GMD’s tracking and discrimination capability.

The Need For Regular Testing

Testing is a necessary part of any engineering program. GMD is no different. As we incorporate new technologies into GMD in the coming years, these new elements must be tested in both intercept and non-intercept tests. Successful tests are always the goal, but system engineers and operators often learn more from test failures, paving the way to make fixes that make the system more reliable. Testing for GMD has been infrequent in recent years. **To maximize reliability, GMD should return to an annual testing cadence.**
A Strategic Necessity in Today’s World

- The GMD system provides a bulwark against attempts by rogue states to exert influence over U.S. foreign policy and freedom of action by threatening the U.S. homeland with long-range ballistic missiles.
- Protecting the U.S. homeland from ballistic missiles increases the credibility of U.S. security guarantees to its allies, enhancing strategic stability in otherwise volatile regions, and helps to prevent nuclear proliferation among U.S. allies and partners.
- GMD counteracts the strategic benefits of long-range missile acquisition by U.S. adversaries, deterring them from spending resources to develop long-range missile technology.
- GMD provides protection for U.S. citizens in the event deterrence fails, or against non-deterrible threats such unauthorized or accidental missile launches.

Keeping Ahead of the Threat

Building offensive missiles is technologically easier, faster, and cheaper than building defenses to counter them. This is why it is crucial for policymakers and strategists to anticipate rogue state ballistic missile threats on the horizon, and make adequate investments to counter them before they can be fully realized.

Fielding a system that is one or two steps ahead of the threat is more cost effective and provides greater deterrence and protection than playing catch-up to a threat that has already fully materialized.

Want to know more about GMD?

Visit MDAA’s website at www.missiledefenseadvocacy.org or contact us at info@missiledefenseadvocacy.org.

THE THREAT

North Korea’s Taepo Dong II is believed to have a range of over 5500 km, capable of reaching U.S. territory.

North Korea’s road mobile KN-08, also ranged at 5,500+ km, is currently in development.

Iran’s space launch program has demonstrated technical competency that could easily be applied to an ICBM breakout program.

Ground Based Interceptor Deployments

4 GBIs + system test-bed, Vandenberg AFB, CO

Proposed Third Sites*:
- Camp Ravenna, OH
- Fort Drum, NY
- Ft. Custer, MI
- SERES Training Center, ME

*MDA is currently conducting evaluations of these four sites.