

THE FUTURE OF AEGIS BALLISTIC MISSILE DEFENSE

J D Williams (10/15/04)

ISSUE: The Navy's contribution to the country's Ballistic Missile Defense has typically been marginalized by inadequate development funding and service concerns of paying for production out of existing TOA. As agreed to in a 1992 MOU with SDIO, Navy agreed to participate in fielding a Ballistic Missile Defense capability on the condition that MDA would pay all costs associated with BMD. Since 2002, MDA has only appropriated RDT&E funds, which it is allowed to use for both development, and procurement of R&D assets that can also be used for operational use as directed.

BACKGROUND:

Sea Based Missile Defense has the potential to become a major contributing player in Global Missile Defense within the next few years.

Prior to MDA assuming control of the Aegis BMD Program, the Navy had plans for a Spiral Development Program that included a 21-inch SM-3 missile with more capable front-end sensors and more capable SPY radars. The initial Standard Missile had a Velocity Burnout (Vbo) objective of 4.5 km/sec, but industry was unable to achieve this speed because of budget constraints in the demonstration program. The Navy Theater Wide program then planned for an SM-3 Blk I with a Vbo of 3.2, followed by an SM-3 Blk II (21 inch) missile, in conjunction with Japan with a Vbo of 4.5

Rather than developing Aegis BMD following the original Navy vision that allowed Aegis ships to perform missile defense while carrying out most of their other multi-mission requirements, MDA chose to pursue a common missile strategy with a new KEI (Kinetic Energy Interceptor) Program costing billions of dollars. These plans have limited the Navy to Radar Picket duty with Aegis ships possessing the Spiral One Theater Defense capability but with no planned interceptors having the capability to defend the country from forward based areas until 2012.

The idea of a 21-inch SM-3 missile has been a topic of discussion with Japan since 1999. Joint systems engineering studies looked at potential improvements to meet certain threat sets and the 21-inch SM-3 possessed the required velocity and range. The 21-inch SM-3 also allows additional coverage and could be used against longer-range missiles. There is an exponential relationship between the Velocity Burnout (Vbo) of the interceptor and defended area/ship operating area/denied area, e.g., the U. S. and Japan can defend the required areas with fewer Aegis ships.

Other improvements should also be incorporated in both the Blk I and 21-inch SM-3: a larger 2-color seeker and a DACS with increased divert to provide enhanced performance beyond simply longer range and greater coverage, including the ability to counter more complex threats.

A 21-inch SM-3 would fit into the existing inventory of US Navy and allied VLS systems with little or no ship integration impact- it is not a missile just for the U.S. and Japan.

The SM3 Blk IA missile has the capability to intercept the current long range North Korean missile threat if paired with an existing off-board sensor and the planned “Engage On Remote” engineering is completed; however, this capability is not planned until 2008.

MDA is leaning towards stopping all spiral development programs for GBI and SM-3, the only missile interceptors the U. S. has, so it can pursue the KEI missile as a “common missile”. Since a sea-based version is not likely to be available until around 2012-2015, improvements to the SM-3 System are needed to pace the increasing threat between now and 2015 for both the U. S. and Japan. An improved 21-inch SM-3 missile and Sea-Based KEI are complementary and could make a major contribution to Global Missile Defense if included in the MDA Roadmap.

Since Japan and our other allies are not likely to buy the KEI missile for their Navies because of cost, weight, and schedule, the SM-3 has the potential to become the Sea Based BMD Interceptor of choice for our allies. Both the U. S. and our allies would benefit from a faster and more capable SM-3 missile. U. S. and Allied Navies loaded with SM3 missiles and supported by planned BMD Sensors would become a major contributor to Global Missile Defense.

MDA is participating in a joint study with Japan that looks at potential cooperative efforts, including the 21-inch SM-3 (building on the 21-inch missile research pursued by Japan as part of the US/Japan Cooperative Research effort initiated in 1999); however MDA has been cool on the idea of pursuing this solution, regardless of the outcome of the study. Japan has indicated a willingness to fund its portion of a cooperative 21-inch missile development.

Since OSD cancelled the Navy Area Program in December 2001, the Aegis BMD System has no capability that will defend against shorter-range missiles such as SCUD B. This deficiency is a serious shortfall in defense of our coasts from missile equipped merchant ships and in defending our forward deployed forces and allies.

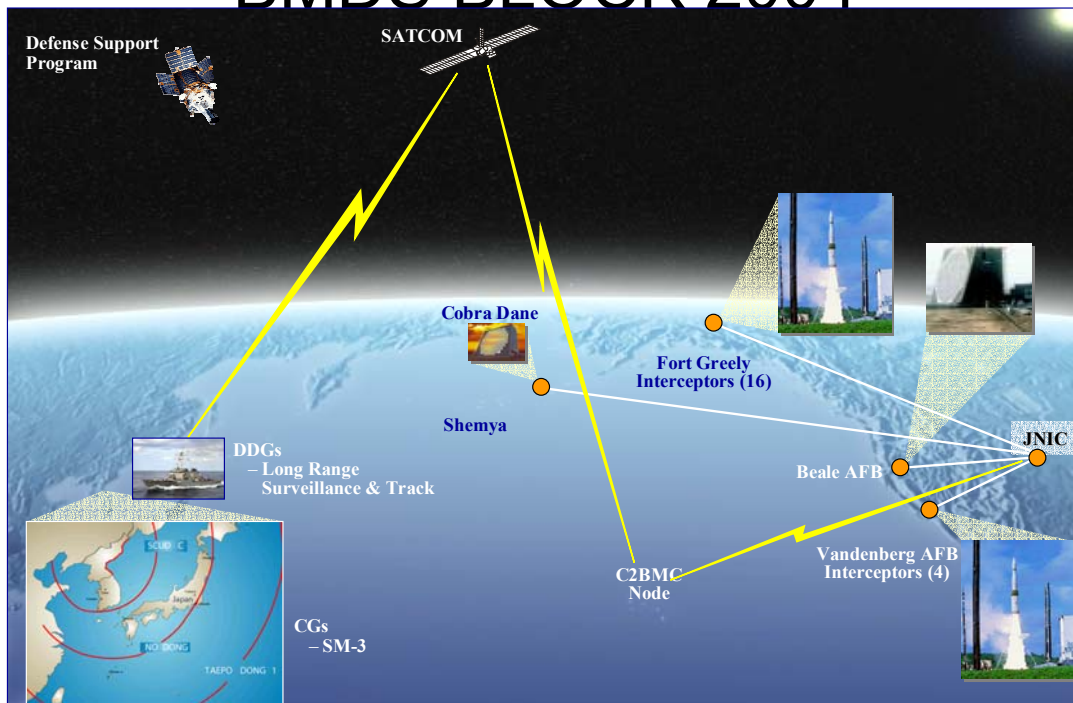
In summary, MDA’s Aegis BMD Program is on the brink of ending at a precipice with little support or funding for the envisioned potential to contribute to the defense of the U. S, our deployed troops, allies and friends. There are two choices: A Spiral Development Program or a Death Spiral.

RECOMMENDATIONS:

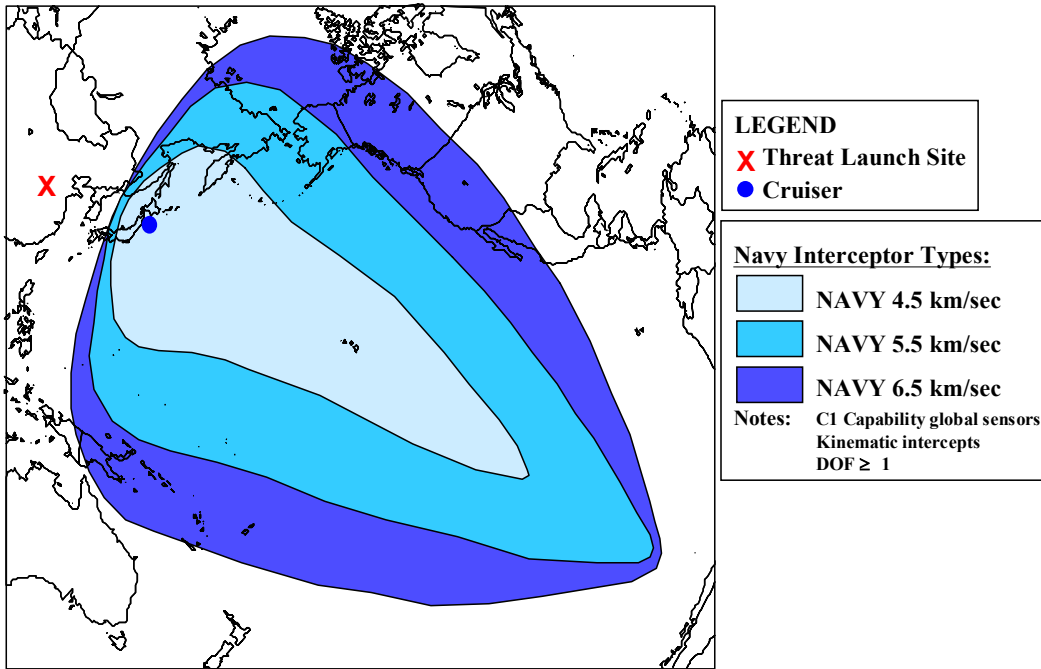
1. During this Window of Opportunity, the NAVY, MDA, OSD, and Congress plan and fund programs to deploy and make AEGIS BMD capability “All It Can B”.
2. Accelerate Aegis BMD “Engage On Remote” capability. This will provide maximum effectiveness for the country’s BMD sensors and missile assets.
3. Include Aegis BMD/SM3 inherent ICBM capability in the MDA Block 04 Plan as a complement to the Ground Based Interceptor.

4. MDA, OSD, and Congress plan for and fund an Aegis BMD Spiral Development Program.
 - a. Support Japan's request for cooperative development of a 21-inch SM-3 missile. The U. S. and our allies also need an improved SM-3 missile.
5. International interest in Aegis BMD provides opportunity to leverage investment for development and Force Structure for Deployment
 - a. Explore the potential for allied participation, cooperation, and assistance for improved SM-3 missiles and SPY Radars
6. MDA and Navy participate in a Joint Study to explore the best options for basing the KEI on future Navy ships such as the CGX. This study should explore the complementary capabilities of KEI and improved SM-3 missiles.
7. MDA fund the development for the best TBM capability for inclusion in SM-6.

BMDS BLOCK 2004



NAVY NMD DEFENDED AREA
(Illustrative Threat; North Japan Cruiser)



2/18/99