



# FACT SHEET



**MDA FACT SHEET**

## KINETIC ENERGY

### INTRODUCTION

A boost phase intercept capability would intercept ballistic missiles prior to termination of powered flight and could contribute to the robustness and flexibility of the overall BMD system for defense-in-depth. Effective boost defenses could provide global protection. The ability to execute this mission requires quick reaction times, continuous monitoring and vigilance, and high confidence in decision-making. Boost defense will be most effective when the enemy is deprived of safe havens, those regions beyond the reach of our missile defenses, for launching ballistic missiles. During the boost phase, the ballistic missile's rocket motor ignites and propels the missile to its intended target. This is the most desirable phase in which to engage a missile, since the missile cannot release its warhead(s) and other midcourse countermeasures until powered flight is complete.

We are developing technologies, operational concepts, critical experiments that would enable Boost Phase Intercept. MDA is mitigating risk by rigorous management of competing technologies and systems on parallel development tracks.

The effort will explore kinetic energy concepts directed primarily against ICBM-class threats using basing modes at sea and in space. The objective of the KE boost program is to achieve a demonstration of the technical feasibility by 2005.

### KINETIC ENERGY CONCEPTS

The kinetic energy boost program aggressively melds operational concepts with risk reduction to produce experiments and systems to deliver capability demonstrations by FY 2005. Kinetic boost phase intercept is a challenge because the threat missile must be detected and confirmed within seconds of launch. It then becomes a race between an accelerating ballistic missile and the interceptor. One technical challenge is designing a kill vehicle that can detect and track the target following missile-staging events and then collide with the missile in the presence of a bright exhaust plume.

The object of this work is to make product line decisions in the next two or three years that would deliver useful initial boost defense capability between 2006-2010, either from a mobile sea-based or a space-based platform. Our acquisition strategy involves extensive risk reduction to resolve critical technological risks associated with candidate boost system concepts and the development of a concept of operations. We will test, at sea, a kill vehicle against a threat representative target that could put us on the path to have ready an operational sea-based intercept capability as early as 2006.

This program will explore the commonality of technologies for both sea-based and space based KE concepts. The program will also define several concepts for space based systems and demonstrate space-based boost defense capability via an experiment by 2005.

### ADVANTAGES

Boost Phase Intercept is desirable because the missile's exhaust plume can be readily detected; although it is accelerating, it is traveling relatively slowly; there is one target; and intercept debris would likely fall short of its intended target.

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