

Kinetic Energy Interceptor Program

More than a Concept



**KEI Fire Control and Communications
Trailer Pathfinder**



Mobile Launcher



Wind Tunnel Testing



**Stage 2 Proof of Concept
Motor Static Test**



Booster Igniter Testing

FY06 Activities

- 1st and 2nd stage Proof of Concept motor static fire tests
- Hypersonic wind tunnel test series
- Booster flight Preliminary Design Review and start of procurement of long-lead hardware for fiscal year 2008 flight test
- Robust fusion of overhead infrared and forward radar sensor data in the KEI Fire Control and Communications prototype
- Multi-use concept design and requirements in collaboration with Missile Defense Agency

FY07 Activities

- Stage 1 and stage 2 static firings
- Ground testing of booster flight avionics, software, thrust-vector control actuators, and stage separation hardware
- Booster flight Critical Design Review
- Multi-use engagement sequences in field tests with KEI Fire Control and Communications prototype and Ballistic Missile Defense System X-Lab (space and radar sensors)
- Element System Design Review for Block 14 objective capability
- Start development of element test and integration facilities

KEI Key Contributions to the BMDS

- Provides kinetic boost phase intercept layer
 - Compliments directed energy Airborne Laser
- Enables early ascent/midcourse engagements of complex threats
 - Intercepts most credible objects and passes observation data to next layer (thins the threat and enhances next shot effectiveness)
 - Attacks midcourse threat cluster when it is small and most vulnerable (baseline Kill Vehicle, Multiple Kill Vehicle, and discrimination augmentation payload options)
 - Enhances forward sensor effectiveness by limiting threat response options and adding Kill Vehicle sensor as observer
- Provides wide-area asymmetric defense for United States and Allies
 - Single KEI battery defends very large regions against any exoatmospheric threat (short-to-long range)
- Offers warfighter strategic flexibility to respond to changing adversary conditions (countries, countermeasures, tactics)
 - Forward or rear-deployed in days to selectively fill layered defense gaps
 - Engage on space sensors (Overhead Non-Imaging Infrared and Space Tracking and Surveillance System)
 - Mitigates adversary capability to exploit fixed site defenses

KEI Baseline



Common Land/Sea Interceptor

- High Vbo, High Acceleration Booster
- Multi- Use (Boost, Ascent, Midcourse) Seeker
- High Delta V, High Acceleration Kill Vehicle



Mobile Launcher

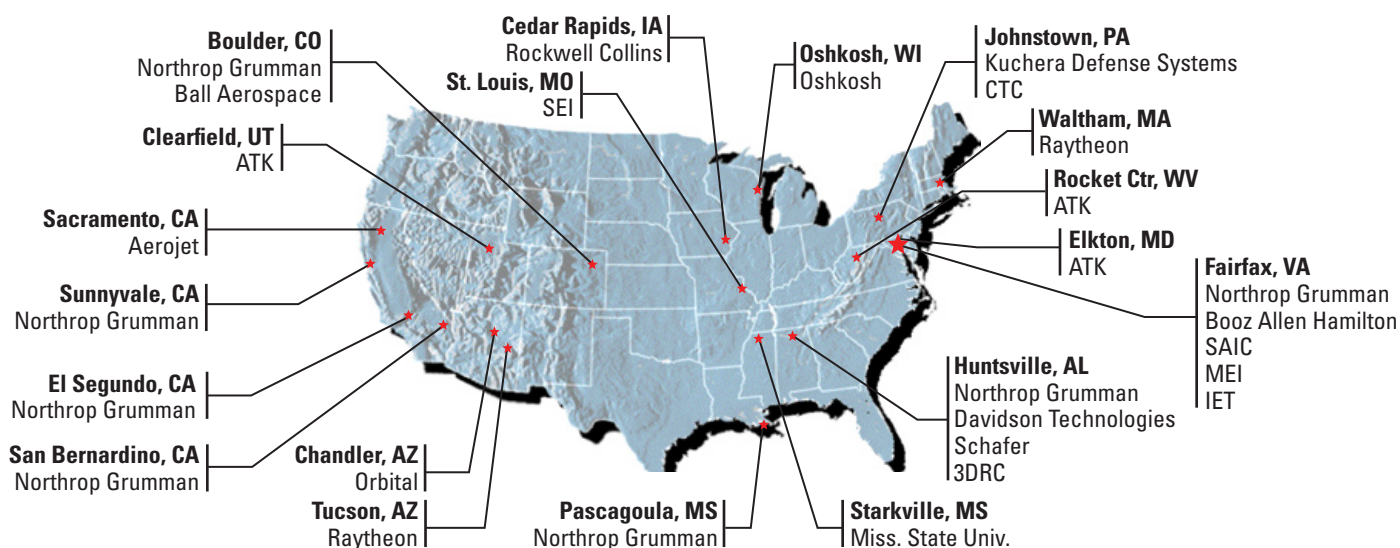
- 2 Interceptors Per Launcher
- Oshkosh M1070 HET Tractor
- 4 axle Trailer
- C-17 Transportable
- Continental United States and North Atlantic Treaty Organization Road Mobility



KEI Fire Control/Communications (KFC/C)

- ONIR Direct Downlink
- Flexible Ballistic Missile Defense System Sensor Interfaces
- C-Band, Shout Back Data Link

Nation-wide Effort



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