



## Missile Defense Agency Advanced Research Overview

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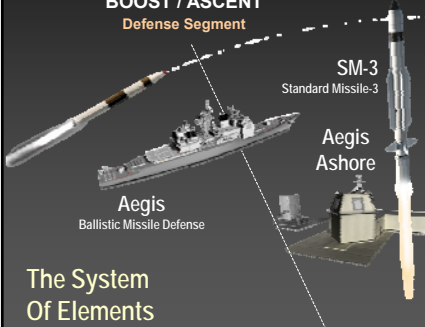


## Today's Ballistic Missile Defense System

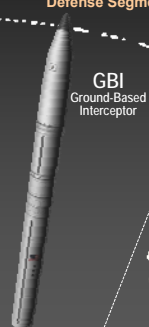
### Sensors



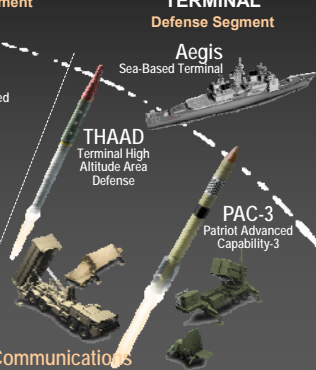
### BOOST / ASCENT Defense Segment



### MIDCOURSE Defense Segment



### TERMINAL Defense Segment



### The System Of Elements

C2BMC Command Control, Battle Management and Communications

NMCC

USSTRATCOM

USNORTHCOM

USPACOM

USEUCOM

USCENTCOM

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## MDA Advanced Research

- Pursue a broad range of high-risk technologies
  - Capitalize on the innovation and creativity of the Nation's small businesses and universities
  - Develop and transform cutting edge technologies into actual applications for insertion into the BMDS
- Technology insertion into the BMDS is critical
- Advanced Research utilizes the following research vehicles:
  - Small Business Innovation Research / Small Business Technology Transfer (SBIR/STTR) program
    - 4<sup>th</sup> largest SBIR/STTR program in the Department of Defense
  - Rapid Innovation Funding (RIF)
  - Broad Agency Announcements (BAA)
    - Missile Defense Science & Technology Advanced Research (MSTAR)
    - Advanced Technology Innovation (ATI)

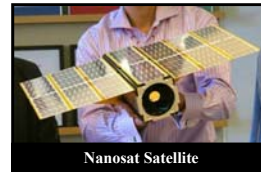
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## Recent SBIR / RIF / BAA Sponsored Research Accomplishments

- Inaugurated a nanosat testbed program to demonstrate notional Kill Vehicle communication architecture
- Executed structural test series to validate SBIR developed lightweight unitary nosecone
- Conducted nosecone deployment tests of the unitary nosecone
- Completed radiation testing on hardened mirrors
- Demonstrated a Long Wave strained layer superlattice FPA



Nanosat Satellite



Rad-hardened Mirror Technology



Unitary Nosecone



High Performance SLS DFPA



Deployment Test

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## For More Information

[www.mda.mil](http://www.mda.mil)

- Missile Defense News, Images, Videos, Fact Sheets
- BMDS Overview, BMD Basics
- MDA Business Opportunities  
([https://www.mda.mil/business/advanced\\_research.html](https://www.mda.mil/business/advanced_research.html))
- DoD SBIR/STTR website: <https://sbir.defensebusiness.org>
- SBA SBIR/STTR website: <https://www.sbir.gov>

### To Contact MDA

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- University / BAA      256-450-3800 [Advanced Research@mda.mil](mailto:AdvancedResearch@mda.mil)
- Commercialization      256-450-5343 [SBIR-PhaseIII@mda.mil](mailto:SBIR-PhaseIII@mda.mil)

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