The Boeing Company
Strategic Missile & Defense Systems

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Boeing Business Units

How SM&DS “Fits” Organizationally

Boeing

- Boeing Defense, Space & Security
- Commercial Airplanes

BDS

- Global Services & Support
- Boeing Military Aircraft
- Network & Space Systems

Network & Space Systems

- Intelligence & Security Systems
- Network & Tactical Systems
- Space & Intelligence Systems
- Space Exploration

Strategic Missile & Defense Systems
SM&DS Geographical Locations

Alabama
- Huntsville
- SM&DS Headquarters
- National Team Headquarters
- SM-3 IIB

Madison
- GMD Headquarters
- Engineering
- Arrow Programs

Washington
- ABL
- Headquarters
- Engineering

Utah
- Clearfield
- Hill AFB
- Layton
- Ogden
- ICBM Headquarters

Colorado
- NT
- DES
- GMD

New Mexico
- Directed Energy Systems

Alaska
- Ft. Greely
- GMD Missile Fields

Hawaii
- Directed Energy Systems

Ohio
- Heath
- SMS

WDC/Virginia
- SM&DS Business Development and Communications

Utah
- Directed Energy Systems

California
- Edwards AFB
  - ABL Systems Integration Lab
  - ABL Aircraft Modification
- Vandenberg AFB
  - GMD Missile Field
- Anaheim
  - GMD GBI
- Huntington Beach
  - SMS

New Mexico
- Directed Energy Systems

Colorado
- NT
- DES
- GMD

Utah
- Directed Energy Systems

Arizona
- GMD Interceptors

Alabama
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  - National Team Headquarters
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- Madison
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  - Arrow Programs

Hawaii
- Directed Energy Systems

Ohio
- Heath
- SMS

WDC/Virginia
- SM&DS Business Development and Communications
Strategic Missile & Defense Systems

Ground-based Midcourse Defense (GMD)
- Sensors
- Interceptors
- Fire Control
- Sensors
- Integration Labs
- Control Ctrs
- Ground-based Midcourse Defense (GMD)

MDA Systems Engineering National Teams (MDNT)
- Missiles
- Controls
- Navigation
- MDA Systems Engineering National Teams (MDNT)

Advanced Missile Defense Systems (AMDS)
- Precision Tracking Space System
- Standard Missile-3 Block IIB (SM-3 IIB)

Directed Energy Systems (DES)
- HEL TD
- Free Electron Laser (FEL)
- Relays

Strategic Missile Systems (SMS)
- ICBM
- Conventional Prompt Global Strike (CPGS)
- High-Altitude Ballistic Missile

Regional Missile Defense (RMD)
- Arrow 2 International
- Arrow 3
- Navy and Integrated Air & Missile Defense
- Battle Manager

Proud to host MILCOM 2011
Ground-based Midcourse Defense (GMD)

- Nation’s only defense against long-range ballistic missiles
- Boeing integrates all component systems into the GMD weapon system
  - Interceptors, radars, control and communications
- Land and sea-based radars target missile launches from hostile nations
- “Hit-to-kill” technology
- Interceptors fielded at Ft. Greely, Alaska and Vandenberg AFB, California.
- Two-stage booster test
  - Successful first flight of two-stage interceptor – 6 June 2010
Boeing is leading today’s efforts in the field of directed energy applications.

Directed energy solutions provide unparalleled capabilities and advantage to the war fighter.

Directed energy systems augment existing kinetic strike weapons, and offer warfighters revolutionary, ultra-precise, lethal or non-lethal effects.

Technologies include: high-energy lasers; relay systems; beam control and fire control; high-resolution sensors; acquisition, pointing and tracking technologies; real-time processing; and space surveillance.
Arrow Weapon System

- The world’s first operational missile defense system

- Boeing is partnered with Israeli Aerospace Industries to co-develop and co-produce the Arrow interceptors

  - Lower-Tier Arrow 2—Endo-atmospheric interceptor with a blast-fragmenting warhead
    - Co-production ran from 2002 through early 2010
    - Completed four successful flight tests
    - Operational system protecting Israel today

  - Upper-Tier Arrow 3—Exo-atmospheric, “Hit-to-Kill” interceptor
    - Co-development began in 2008
    - Bringing ‘game changing’ technology to missile defense
Regional Missile Defense Systems

– **Standard Missile-3 Block IIB**
  – SM-3 IIB is a key component of the Department of Defense’s Phased Adaptive Approach for missile defense in Europe.
  – Currently in the concept definition and planning phase.
  – Will provide advanced capability against emerging longer-range ballistic missile threats.

– **Integrated Air and Missile Defense**
  – Battle Manager provides state-of-the-art capabilities to meet evolving threats to national and regional defense.
  – High-fidelity Modeling and Simulation systems offer national infrastructure integration solutions.
  – Applying expertise in acquisition, tracking and pointing of EO/IR sensors to missile defense via unmanned airborne platforms.
Strategic Missile Systems

– Member of the U.S. Air Force's ICBM Prime Integration team

– Provides sustaining engineering, modifications, and upgrades for the United States ICBM force

– Delivers ICBM guidance, flight controls, trainers, secure codes, ground subsystems, and weapon systems testing

– Offers an affordable and low risk concept that can enable prompt global strike solution
What We Do

Huntsville Regional Overview

• Strategic Missile & Defense Systems
• Space Exploration
• Weapon Systems
• Integrated Logistics
• Commercial Airplanes
• Modeling & Simulation
• Huntsville Design Center
Key Huntsville Products

- Rotorcraft Support
- Avenger
- Space Launch System
- National Team
- Ground-based Midcourse Defense
- Space Station
- Aegis SM-3 Block IIB
- Aegis SM-3
- Arrow
- Chinook
- Commercial Airplanes
- KC-46A
- Arrow
- Brigade Combat Team Modernization
- Integrated Battle Command System
- Aegis SM-3

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Potential Small Business Technical Requirements

- **Strategic Missile Defense System Interceptor Technologies**
  - Reduced size, weight, and power (SWaP) avionics, electronics, etc.
  - Infrared sensor/focal plane array technologies
  - Propulsion system and propellant technologies
  - IMU technologies
  - Anti-tamper technologies
  - In-flight and ground communication technologies
  - Manufacturing/producibility technologies
  - Natural and induced environment mitigation and adaptation technologies

- **Directed Energy Technologies**
  - Directed Energy Weapon Systems Solutions
  - Compact, Efficient Power and Thermal Systems
  - High Power, Single Mode Laser Sources
  - Adaptive Optics Components
  - Precision and Lightweight Optics
  - High Performance, Large Format EO Cameras
  - High Bandwidth Steering Mirrors and Stabilization
  - Pointing and Tracking Components
Additional Opportunities

- Engineering Services
- Logistics
- Modeling and Simulation
- Test and Evaluation
- Risk Management
- Configuration Management
- Property Management Support
- Scheduling
- Looking for Emerging Technologies
Getting Started with Boeing

- Visit the “Doing Business with Boeing” Website
  http://www.boeing.com/companyoffices/doingbiz
- Register on Boeing’s “Supplier Gateway”
  http://app.suppliergateway.com/boeing/Login.aspx

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Summary

- Boeing has a wide range of capabilities in Missile Defense, Strategic Missile and Directed Energy systems and technologies

- Accelerate the maturity of aerospace/defense technological base

- We bring the best of Boeing to deliver solutions that meet our customers’ toughest defense challenges

- New growth & emerging opportunities for hi-tech/innovative driven small & diverse businesses

- We’re focused on our Vision:
  - To be the preferred provider of defensive and strategic systems that protect our homeland, deployed forces, and those of our friends and allies

Leadership | Experience | Innovation
Yesterday, Today, Tomorrow