

Missile Defense Agency Update



DISTRIBUTION STATEMENT A.
Approved for public release;
distribution is unlimited.

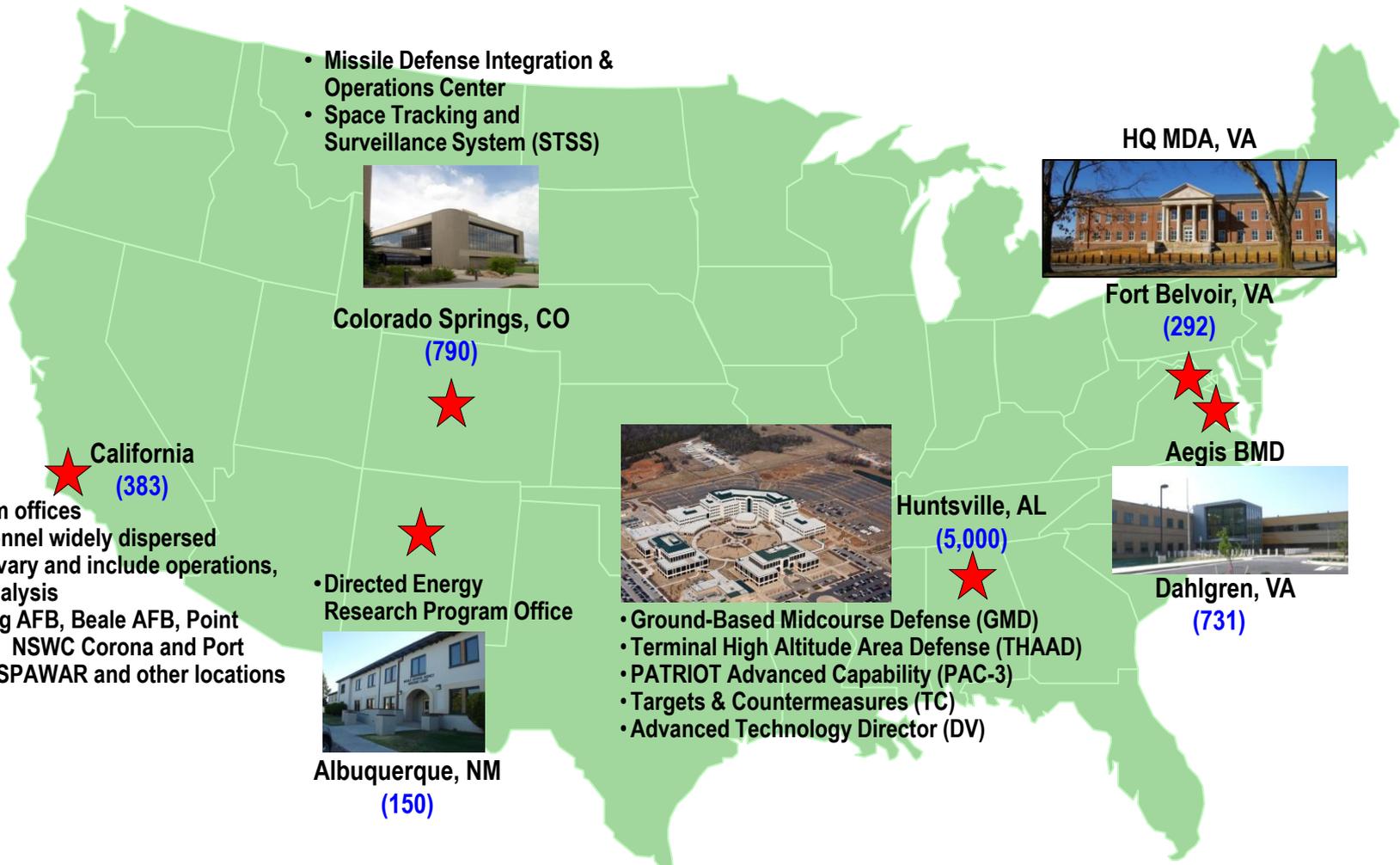
To: Missile Defense Small Business Programs Conference

**By: LTG Patrick J. O'Reilly, USA
Director
Missile Defense Agency
July 21, 2011**



Missile Defense Agency

– Post-BRAC –



* Includes all OGA personnel funded by MDA



MDA Small Business Marketplace

Four Major MDA Marketplaces For Small Businesses

- **Subcontracting opportunities with our large system prime contractors**
- **Advisory and assistance services**
- **Infrastructure support**
- **Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) programs**

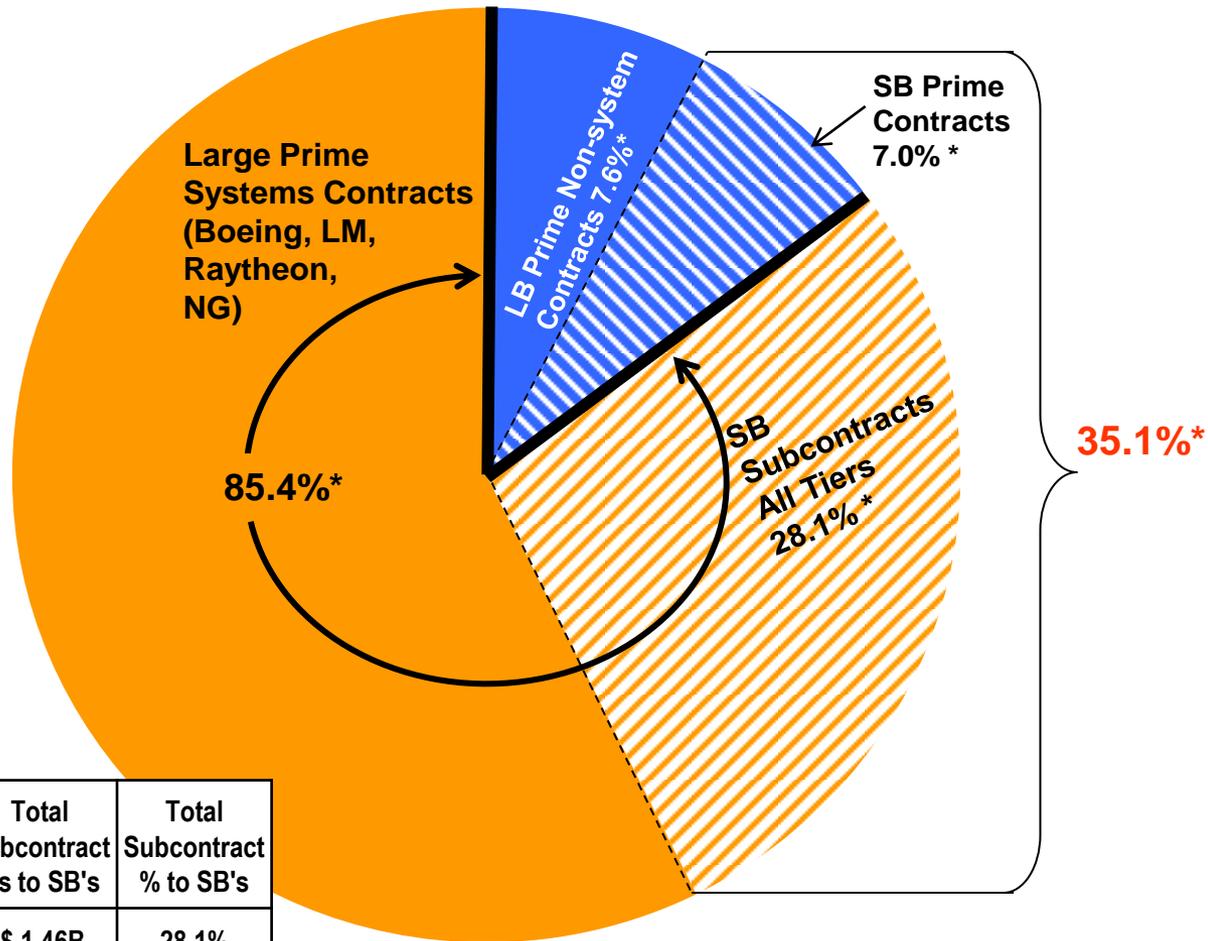


Small Business Utilization In MDA

FY10

- 35.1%* of MDA acquisition dollars flow to small businesses
 - 7.0%* (\$340M) of MDA acquisition dollars are awarded as prime contracts to small businesses
 - Represents an increase of 0.2% awarded to SB's as prime contracts from FY09
 - 28.1%* (\$1.46B) of MDA acquisition dollars are awarded to small businesses as subcontractors through all tiers
 - Represents an increase of 4.7% awarded to SB's as subcontractors from FY09

MDA Total Acquisition Dollars*



*Based on FY10 FPDS-NG and eSRS reporting

	Total \$'s Awarded	Total \$'s Awarded to SB's	Total % to SB's	Total Prime Contract \$'s to SB's	Total % to SB's	Total Subcontract \$'s to SB's	Total Subcontract % to SB's
FY10	\$ 5,17B	\$ 1,94B	35.1%	\$ 339M	7.0%	\$ 1,46B	28.1%
FY09	\$ 5,55B	\$ 1,69B	30.4%	\$ 375M	6.8%	\$ 1,30B	23.4%



Standard Missile-3 Block IIB

– Concept Development And Program Planning Phase –

Concept Definition and Program Planning



Prime Contractors

The Boeing Company (Huntsville, AL)
Lockheed Martin (Sunnyvale, CA)
Raytheon Missile Systems (Tucson, AZ)

Huntsville Partners

Dynetics, Davidson Technologies,
Victory Solutions, ARES Corporation,
nLogic, Penta Research, Willbrook Solutions

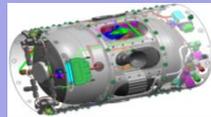
Technology Risk Reduction

Seeker and Avionics



BAE Systems (Nashua, NH)
DRS Infrared Technologies (Dallas, TX)
Raytheon Vision Systems (Goleta, CA)
Kearfott Corporation (Little Falls, NJ)

Liquid Divert and Attitude Control System



AMPAC In Space Propulsion (Buffalo, NY)
Pratt & Whitney/Rocketdyne (Canoga Park, CA)
Aerojet (Sacramento, CA)

Advanced Third Stage



ATK (Elkton, MD)
Aerojet (Sacramento, CA)

University and Small Business

Innovative Propulsion



University Consortium led by
University of Alabama Huntsville

Structures, Optics, Batteries, Staging



Small Business Innovative Research



Missile Defense Agency Engineering And Support Services (MiDAESS)

Current as of 18 July 2011

- Work is aligned for better BMDS integration and sharing of expertise across the Agency
- Administer 36 contracts and \approx 50 associated task orders versus \approx 400 contracts/tasks
- Compete requirements by “task order” and not specify level-of-effort
- 32% of MiDAESS Task Orders awarded to small businesses as of 18 Jul 11 (\$184M)

Functional Capability Groups		Small Business Set-Aside	Task Value
<u>Group 1</u>	Quality, Safety and Mission Assurance Support	✓ COMPLETE 3 Tasks Awarded	\$33.8M
<u>Group 2</u>	Acquisition Support	✓ COMPLETE 6 Tasks Awarded	\$81.1
<u>Group 3</u>	Engineering Support	Evaluations In-Progress ➤ 1 Task Awarded	Available After Awards \$8.4
<u>Group 4</u>	Infrastructure and Deployment Support	None	N/A
<u>Group 5</u>	Agency Operations Support	✓ COMPLETE 7 Tasks Awarded	\$60.9
<u>Group 6</u>	Security and Intelligence Support	None	N/A
<u>Group 7</u>	Advisory Assistance	None	N/A

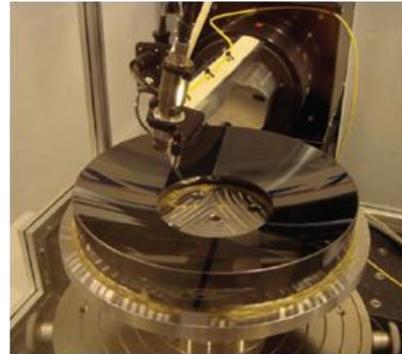


Small Business Innovation Research (SBIR) Small Business Technology Transfer (STTR) Programs

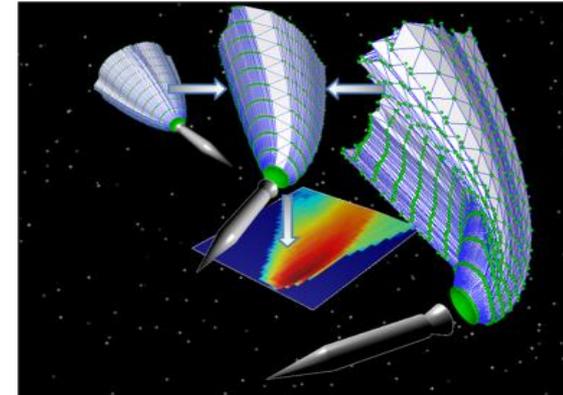
- \$113M program sponsoring research with over 340 small businesses

- FY11 technology focus areas

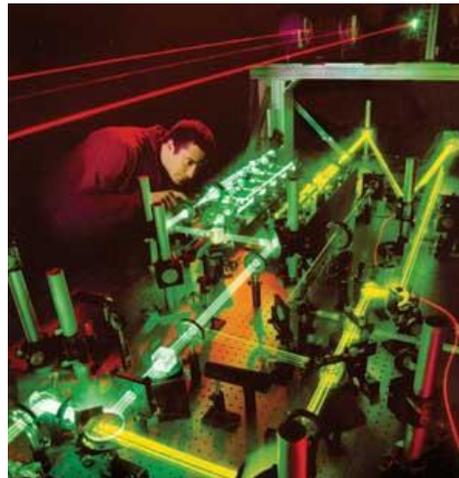
- Modeling and Simulation
- Directed Energy
- Missile Propulsion
- Structures
- Radar and Infrared Sensors and Phenomenology
- Test Support



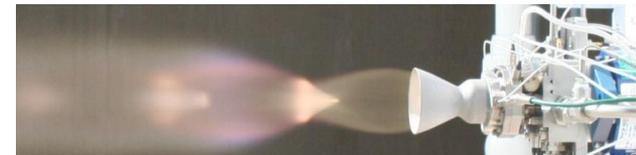
Polishing a Silicon Carbide Mirror
(SM3, STSS, THAAD – Potential Product Improvement)



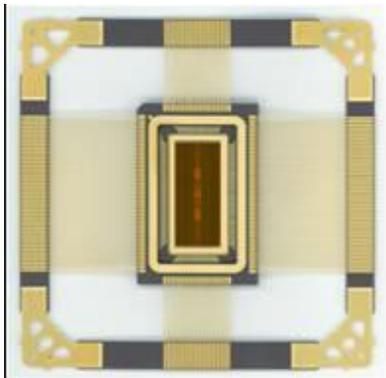
Technique for merging plume models for more accurate scene generation in seeker testing
(Modeling and Simulation)



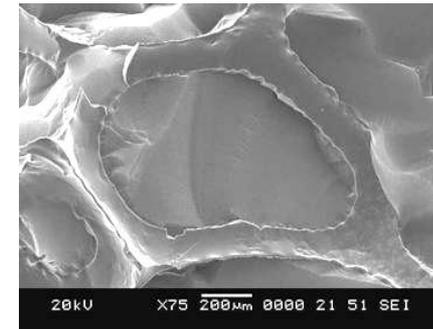
Testing a multiple laser system



Test of integrated valve/injector for bi-propellant thrusters
(THAAD – Potential Product Improvement)



Radiation-hardened memory chip
(Potentially for STSS, GMD, THAAD)



Light-weight insulator material imbedded in metal foam
(SM3 IIA Structural Insulator)



MDA's Improved SBIR/STTR Process

- Element-focused research areas replace old technology-focused areas
- MDA elements and stakeholders create topics based on specific technology insertion opportunities

SBIR Schedule

- Phase I
 - May: MDA provides research topics and opens solicitation
 - June: Industry submits proposals
 - July–Sep: MDA evaluates proposals (≈500 received)
 - Sep–Oct: MDA approves proposals, approximately 15-20%
 - MDA notifies all participants of selection/nonselection
 - Oct–Dec: Contract negotiation for selected proposals
- Phase II – six months after Phase I concludes, approximately 40-50% of those selected in Phase I are invited to submit a Phase II proposal

STTR Schedule

- Solicitations occur in February and August
- Approximately 90 days after submittal, MDA announces results (15-20% selected)

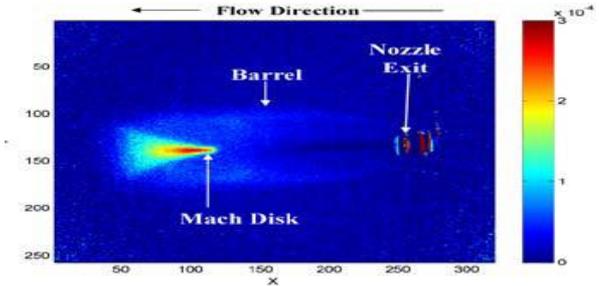


Recent MDA SBIR Accomplishments

Problem: Deficiencies in modeling of low thrust DACS/ACM plume signatures

Solution: Spectral Sciences and Physical Science, Inc. developed a Low-thrust plume signature model for Aegis, THAAD, and GMD

Chemistry packages incorporated into MDA's high altitude plume flowfield code

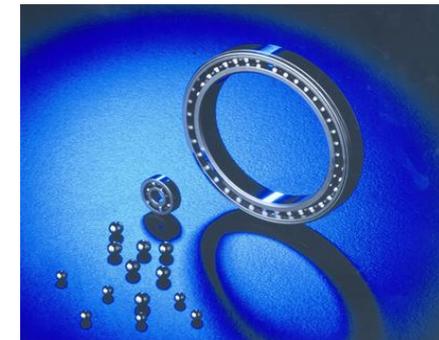


Problem: Improve ball bearing smoothness for BMD Seekers and Sensors

Solution: Brycoat successfully qualified a Swiss process for coating ball bearings with titanium carbide which provides:

- Precise positioning
- Smooth performance
- High reliability

Used in High Performance BMD Seekers



Problem: BMDs sensor assignment is a complex challenge

Solution: Charles River Analytics developed software that:

- Optimizes networked sensors
- Determines threat levels
- Produces tasking plans for radars

Used in EC2BMC development plans





MDA Small Business Goals

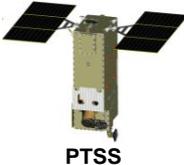
- **Grow the small business industrial base supporting the BMDS and Agency**
- **Increase qualified small business vendors at all tiers of subcontracting**
- **Improve the quality of the products and services through competition**
- **Increase technology transfers from the SBIR/STTR programs into BMDS**



BACKUP



Phased Adaptive Approach To Developing And Deploying Missile Defense

Phase I: Deploying Today's Capability (By Dec 2011)	Phase II: Enhancing Medium Range Missile Defense (By 2015)	Phase III: Enhancing Intermediate Range Missile Defense (By 2018)	Phase IV: Early Intercept of MRBMs, IRBMs, ICBMs (By 2020)
 <p>Aegis BMD 3.6.1 with SM-3 IA</p>  <p>AN/TPY-2 (FBM)</p>  <p>C2BMC AOC Ramstein</p> <p>ALTBMD Interim Capability</p>	 <p>Aegis BMD 4.0.1/5.0 with SM-3 IB</p>  <p>Aegis Ashore 5.0 with SM-3 IB (one site)</p>  <p>AN/TPY-2 (FBM)</p>  <p>C2BMC Updates</p> <p>ALTBMD Lower Tier</p> <p>Potential EPAA Enhancements</p>  <p>THAAD</p>	 <p>Aegis BMD 5.1 with SM-3 IIA</p>  <p>Aegis Ashore 5.1 with SM-3 IB/IIA (two sites)</p>  <p>AN/TPY-2 (FBM)</p>  <p>C2BMC Updates</p> <p>ALTBMD Upper Tier</p> <p>Potential EPAA Enhancements</p>  <p>PTSS</p>  <p>THAAD</p>  <p>ABIR</p>	 <p>Aegis BMD 5.1 with SM-3 IIA</p>  <p>Aegis Ashore 5.1 with SM-3 IIB (two sites)</p>  <p>AN/TPY-2 (FBM)</p>  <p>Enhanced C2BMC</p> <p>Potential EPAA Enhancements</p>  <p>THAAD</p>  <p>PTSS</p>  <p>ABIR</p>
<p>Ground-based Midcourse Defense</p>			
 <p>East Coast IDT</p>		 <p>Clear, AK UEWR</p>  <p>Cape Cod UEWR</p>	