Small Business Programs Conference
Ground Sensors Directorate Overview

To: MDA Small Business Program Conference

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Deputy Director for Acquisition, Ground Sensors
Missile Defense Agency
Date: May 11-13, 2021)
Ground Sensor Directorate
Mission and Contributions to The Missile Defense System (MDS)

• Mission: Develop, Test, Acquire, Deploy, and Sustain MDS Ground Sensors

• Ground Sensors Contributions to Operational MDS
  – Provide Track, Discrimination, and Intercept Assessment Data
  – Global Ground Sensor Coverage (16 time zones, 3 continents)
  – Additional Ground Sensors Planned
  – Address Evolving Missile Threats

• Ground Sensors Contribution to MDS Testing
  – Integrated & Distributed Ground Tests
  – Flight Tests (Aegis, Terminal High Altitude Area Defense (THAAD), mid-course defense)
  – Operationally Representative Models & Simulations (M&S) Validation & Accreditation

• Supporting International Cooperation with THAAD Foreign Military Sales (FMS) Cases

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Ground Sensors Around the World
Contribution to the MDS

As of: 1 Feb 2021

COBRA DANE

AN/TPY-2 #2
Shariki, Japan

FY04

AN/TPY-2 #1
Kyogamisaki, Japan

FY15

AN/TPY-2 #7 ROK
THAAD Battery #D-2

FY17

AN/TPY-2 #5 Guam
THAAD Battery #E-3

Sea-Based
X-Band Radar

FY06

FY13

LRDR

Clear UEWR

Beale UEWR

Thule UEWR

Cape Cod UEWR

Fylingdales UEWR

Fichtenhoferd

AN/TPY-2 #6 Site K

FY08

AN/TPY-2 #4
CENTCOM AOR

FY12

AN/TPY-2 #3 Site 512

FY20

AN/TPY-2 (x7) for KSA

AN/TPY-2 (x2) for UAE

HDR-H

Program Status Pending

AN/TPY-2 #8**,
#9, #11
THAAD Batteries
B-2, A-2, A-4
(Ft. Bliss, TX)

AN/TPY-2 #10, #12
THAAD Batteries
B-62, E-62
(Ft. Hood, TX)

UEWR & CD

X-Band

FMS X-Band

PDRs

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Top Management Focus Areas

• **Build Warfighter confidence through focus on readiness and sustainment**
  – Sustain Deployed Army Navy/Transportable Radar Surveillance and Control Model-2 (AN/TPY-2) Radars, Sea-Based X-Band Radar (SBX), Upgraded Early Warning Radars (UEWRs), and COBRA DANE
  – Support Robust BMDS Flight and Ground Testing
    • Complete FTX-26: Flight test with the Long Range Discrimination Radar (LRDR) and SBX
    • Complete Ground Test (GT)-20 Sprints and GTI-08a (N/I) evaluating both theater/regional and homeland defense capabilities
  – Improve Sensor Reliability
    • Add robustness to AN/TPY-2 and COBRA DANE radars: additional spares, hardware/software improvements, float components
    • Upgrade SBX radar cooling system and thrusters
  – Improve Cybersecurity Posture

• **Increase engagement capability and capacity to outpace emerging threats**
  – Address Sensor Coverage Gaps
    • Deploy LRDR to Clear, Air Force Station (AFS), AK
    • Improve Sensor Discrimination, Debris Mitigation, and BMDS System Track
    • AN/TPY-2 and SBX Software Upgrades to maintain and improve performance against an evolving threat
    • Field SBX processor upgrades and deploy AN/TPY-2 x86 upgraded Processors
  – Completing Clear/Cape Cod Early Warning Radars Upgrade
    • Continue Air Force (AF)-funded Fylingdales and Thule processing equipment upgrades
    • Complete Fylingdales and Thule Operational testing and Ops Acceptance by United States Space Force (USSF)

• **Increase speed of delivery of new capability to address the evolving threat**
  – Develop AN/TPY-2 and LRDR Electronic Protection capabilities

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## Potential Sub-Contracting Opportunities

<table>
<thead>
<tr>
<th>Contract</th>
<th>Description</th>
<th>Prime(s)</th>
<th>Current PoP End</th>
</tr>
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<tbody>
<tr>
<td>SBX Mission Integration</td>
<td>SBX vessel integration and coordination of services (tech, ops, supply, etc) through various sources</td>
<td>Gryphon Technologies</td>
<td>June 2024</td>
</tr>
</tbody>
</table>
| Radar Development Contract (RDC) | Program Management  
Hardware & Software Development and Sustainment for AN/TPY-2 Radars and SBX  
Engineering Services | Raytheon Technologies | October 2023 |
| Contractor Logistics Support (CLS) | Operations and Sustainment activities for all AN/TPY-2 Radars and SBX  
Deployment and Site Support  
Depot transition support | Raytheon Technologies | October 2024 |
| Radar Test Contract (RTC) | Flight and ground test support to Upgraded Early Warning Radars (UEWRs) and COBRA DANE (CD) and X-Band Radars  
Models and Simulations | Raytheon Technologies | January 2024 |
| AN/TPY-2 FMS – United Arab Emirates (UAE) | Operations and Sustainment of 2 AN/TPY-2 Radars in-country  
Spares, Sustainment, Maintenance, and Training | Raytheon Technologies | September 2025 |
| AN/TPY-2 FMS – Kingdom of Saudi Arabia (KSA) | Production and initial CLS of 7 AN/TPY-2 Radars in-country  
Spares, Sustainment, Maintenance, and Training | Raytheon Technologies | August 2027 |
## Potential Sub-Contracting Opportunities (cont.)

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<th>Description</th>
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<td>AN/TPY-2 US Radar Production</td>
<td>Radar Production</td>
<td>Raytheon Technologies</td>
<td>September 2021</td>
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<td></td>
<td>Spares Production</td>
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<td>Major components</td>
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<td>Long Range Discrimination Radar (LRDR)</td>
<td>Radar Development and Production</td>
<td>Lockheed Martin</td>
<td>January 2024</td>
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<td>Site construction</td>
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<td></td>
<td>Deploy</td>
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<td>Sustainment</td>
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<td>Homeland Defense Radar (HDR)</td>
<td>Multi-Award Indefinite Delivery / Indefinite Quantity (MAIDIQ)</td>
<td>Lockheed Martin</td>
<td>July 2025</td>
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<td>Logistics</td>
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<tr>
<td>Upgraded Early Warning Radar (UEWR) Sustainment and Modification of Optical and Radar Sensors (SMORS) [USSF]</td>
<td>Upgrade of Early Warning Radars at Clear, Cape Cod, and Beale AFB, RAF Fylingdales, and Thule AB</td>
<td>Raytheon Technologies</td>
<td>June 2023</td>
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<tr>
<td>COBRA DANE (CD) Re-compete [USSF]</td>
<td>Upgrade of CD to extend service life beyond 2030; parts obsolescence, DMSMS</td>
<td>Raytheon Information &amp; Intelligence Systems (IIS)</td>
<td>March 2023 (Re-Compete PoP ends March 2025)</td>
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**NOTE:** MDA UEWR contracts are rapidly approaching completion without any planned follow-on activities. The USSF continues UEWR and CD sustainment under their contracts and will perform any future hardware and/or software upgrades.
How Can Small Businesses Help?

• Support Ground Sensors Top Management Focus Areas
  – Offer flexible technical/operational/sustainment expertise to support multiple Radars deployed worldwide
  – Offer affordable acquisition and sustainment costs through open, non-proprietary, modular software architecture
  – Leverage existing hardware/software reuse and economy of scale benefits
  – Offer innovative solutions to parts obsolescence and Diminishing Manufacturing Sources and Material Shortages (DMSMS) challenges

• Develop partnerships with Current Prime Contractors and other mission area partners

• Communicate with the Government
  – Attend Industry Days when scheduled
  – Provide feedback on various Request for Information (RFI) and Draft Request for Proposal (RFP)
  – Monitor beta.sam.gov for subcontracting opportunities

AN/TPY-2  SBX  HDR  UEWR  COBRA DANE  LRDR