Department of the Navy SBIR/STTR Transition Program

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MCSC-PRR-2466

WHO

SYSCOM: MARCOR

Sponsoring Program: PIM Ground Combat Element Systems (GCES), Program Manager Fires (PM Fires), Ground Counter Fire Sensor (GCFS) Program

Transition Target: Ground Counter Fire Sensor (GCFS)

TPOC: sbir.admin@usmc.mil

Other transition opportunities:

Notes: The system has been successfully demonstrated at the Yuma Proving Grounds.

WHEN

Contract Number: M67854-17-C-6500

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Risk Level</th>
<th>Measure of Success</th>
<th>Ending TRL</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Geo-location algorithm</td>
<td>Low</td>
<td>POO/POI determined w/i +/- 2.5 meters</td>
<td>3</td>
<td>2nd QTR FY17</td>
</tr>
<tr>
<td>Complete Listening Post Hardware/Software</td>
<td>High</td>
<td>Integration of Hardware/Software successful</td>
<td>5</td>
<td>3rd QTR FY18</td>
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<tr>
<td>Complete Graphical User Interface (GUI) for the Command Post (CP)</td>
<td>Med</td>
<td>GUI successfully integrated into CP architecture</td>
<td>5</td>
<td>3rd QTR FY18</td>
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<tr>
<td>Demonstrate integrated system at Yuma Proving Ground (YPG) during live fire exercise</td>
<td>Med</td>
<td>System successfully meets all requirements identified in SOW</td>
<td>6</td>
<td>4th QTR FY18</td>
</tr>
<tr>
<td>Conduct Limited User Test</td>
<td>Med</td>
<td>System passes all required test and is accepted by USMC</td>
<td>7</td>
<td>3rd QTR FY19</td>
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WHAT

Operational Need and Improvement: The USMC is interested in replacing the existing Ground Counter Fire Sensor (GCFS) with a more flexible system that reduces operational burdens on the user and offers significant SWaP-C improvements. Objectively, the system will also permit the attachment of acoustic sensors directly to maneuver platforms.

- Develop improved, advanced-processing algorithms, to be utilized in the Command Post of the GCFS system to enable the gathering and processing of sensor data from either static or dynamically placed listening posts.

Specifications Required:
- Detect and localize IDF points of origin and impact using passive acoustic sensors
- Detect POO/POI with 99% probability
- Determine POO and POI location to an accuracy of 2% of range between closet listening post
- Display information on a map overlay and digitally export for use by other systems

Technology Developed:

Hyperion has developed a replacement for the USMC GCFS System
- Greatly reduced SWaP-C over current system
- Easier to emplace, reducing employment time
- Reduced expertise required of Warfighters deploying system
- Reduced false alarm rate

Warfighter Value:
- Improved SWaP-C saves O&M money
- Saves fuel costs, reducing logistics tail
- Improved signal processing reduces false alarms & increases Operational Availability
- Reduced burden on user, faster to emplace system, reduced embark footprint

HOW

Projected Business Model: Hyperion Technology can begin production for the Marine Corps’ Ground Counter Fire Sensor Program immediately after all specifications are met. If several other military or commercial applications for this technology present themselves and high-volume production becomes necessary, Hyperion Technology will partner with a manufacturing firm in order to meet demand.

Company Objectives:

Hyperion Technology is a nine year-old, growing company that focuses on designing specialized technology solutions for both military and commercial applications. Because highly specialized technology is contract-based and often does not require large volume production, limited focus has been placed on manufacturing up to now. However, if this technology provides a solution for other applications, and high-volume orders are required; then Hyperion will begin scaling up to manufacture this system.

Potential Commercial Applications:
- National Weather Service
- Tornado Chasers

Due to the integration of low frequency acoustic sensors, this technology has the capability of pinpointing tornadoes at long ranges.

Contact: Chad Williams, Systems Engineer
cwilliams@hyperiontg.com (662)316-4866