

# Public Quarterly Report

**Date of Report:** 2nd Quarterly Report- April 1, 2020

**Contract Number:** #693JK31910016POTA

**Prepared for:** DOT

**Project Title:** Develop Remote Sensing and Leak Detection Platform that can Deploy Multiple Sensor Types

**Prepared by:** American Aerospace Technologies, Inc.

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**For quarterly period ending:** March 31, 2020

## 1: Items Completed During this Quarterly Period:

Team Project Activities completed during this quarter.

<i>Item #</i>	<i>Task #</i>	<i>Activity/Deliverable</i>	<i>Title</i>
1	1	Project Kick-Off, Protocol	Program Protocols and Planning
2	3	Test Range Review	Test Range & Staging Protocols
3	4	Aviation Safety Case – Initial Release	Airspace Development
4	6	Data Analysis & Benchmarking Plan – initial release – Taxonomy Brief	Data Analysis & Benchmarking
6	2	Integration Report Draft – for 1 <sup>st</sup> Campaign	Data Curation & Analysis
10	7	2nd Quarterly Status Report	Submit 2nd quarterly report

## 2: Items Not-Completed During this Quarterly Period:

Team Project Activities not completed this quarter

<i>Item #</i>	<i>Task #</i>	<i>Activity/Deliverable</i>	<i>Title</i>
7	3	Test Range & Protocol Update	Test Range & Staging Protocols
8	4	Aviation Safety Case – update	Airspace Development
9	6	Data Analysis & Benchmarking Plan - update	Data Analysis and Benchmarking

## 3: Project Financial Tracking During this Quarterly Period: Confidential

Invoice#TBD: is currently being prepared for submittal from contractors to PRCI on April 1, 2020

## 4: Project Technical Status –

### Item #10 / Task 7 / 2<sup>nd</sup> Quarterly Report / Submit 2<sup>nd</sup> Quarterly Report

**Status:** this document presents the 2<sup>nd</sup> Quarterly Report

### Item #1 / Task 1 / Project Kick-Off, Protocol / Project Plan

**Description:** The Project Kick-Off meeting organized and coordinated the project team (PHMSA and PRCI), reviewed the project scope and schedule, introduced all stakeholders, established key points of contact, and methods and frequency of communication for the project. This meeting assessed alignment and coordination with other related PHMSA (and possibly external) projects. **ACTIONS:** the AATI project team will formalize the Project Plan in advance of a stakeholder meeting at which the plan and schedule will be approved.

**Status:** The Kick-Off Meeting was conducted; Meeting presentation has been delivered. Members accepted the program plan and recommended practices (RPs) as presented. Project Plan, Site Selection, and Aircraft readiness actions were assigned at the meeting.

### **Item #2 / Task 3 / Test Range Review / Test Range & Staging Protocols**

**Description:** Multiple PRCI members have offered to make their ROW corridors available for this program. Multiple factors have been considered in the selecting the location(s) for conducting these tests including, for example, population density, proximity to transportation corridors, towered airports, traffic patterns of ongoing aviation operations (helicopters, crop dusters, parachutists, balloonists and gliders, commercial & military aircraft, etc.). Site selection recommendations were made using a risk-based approach to identify the optimum location for the flight test program.

**Status:** At the Kick-Off Meeting, AATI presented the recommendation that the primary location for the conduct of the flight operations. Since the Kick-Off, AATI's primary focus has been on verifying commitments in light of the Novel Coronavirus (2019-nCoV / Covid-19) outbreak. We also continue to evaluate and develop airspace options in the event that the program can be expanded.

### **Item #3 / Task 4 / Aviation Safety Case – Initial Release / Airspace Development**

**Description:** The current state-of-the-art in BVLOS UAS operations requires the use of manned aircraft to follow the UAS to detect-and-avoid other air traffic – i.e., chase aircraft. Using chase plane operations as the approved baseline sense-and-avoid methodology, data sets will be developed to support the combined use of the FAA's Air Traffic Management (ATM) system, Unmanned Aircraft Traffic Management (UTM), Automatic Dependent Surveillance - Broadcast (ADS-B) surveillance technology, ground-based radar (GBR) surveillance technology and/or airborne radar for this purpose. This project plans to provide valuable data to advance the safety case for BVLOS UAS operations.

**Status:** Safety Case Development for elimination of chase aircraft has been developed and initially accepted by the FAA under an aligned program. A Concept of Operations Document (CONOPS) has been drafted as has an Operational Risk Assessment (ORA), which is being refined to further bolster AATI's operational case with the FAA. AATI is currently assessing alignment with this ORA for other programs that would benefit.

### **Item #4 / Task 6 / Data Analysis & Benchmarking Plan – initial release / Data Analysis & Benchmarking**

**Description:** The program calls for automatic threat detects to be compared to independently collected ground truth data and reports from aerial patrol pilots. Recommended Practices for Threat Taxonomy, Targets, Staging and Scoring were reviewed. The team approved the release of a Threat and Threat Level Taxonomy Poll to PRCI members.

**Status:** The process for establishing Recommended Practices has been approved.

### **Item #6 / Task 2 / Integration Report – for 1<sup>st</sup> Campaign / Data Curation & Analysis**

**Description:** The current ROW-3-1 ATDS payload is being designed to operate on conventional patrol aircraft only. Under this scope, Task 2 will focus on reducing the size, weight and power of the ATDS payload and integrating it into a Long Endurance High Performance (LEHP) UAS. The team will follow a similar system engineering approach as was used under the ROW-3 program that reduced the payload size from 165 pounds to less than 15 pounds for deployment on the LEHP UAS for equipment detection.

**Status:** Confidential

## **5: Project Schedule –**

Long lead items have been the top priority to date – including site selection, confirming member commitments, sensor integration and aircraft systems readiness. In light of the Covid-19 outbreak, and reduced oil price indicators, we continue to monitor impacts and delays to critical supply chains. The current public health notices of limiting social contact creates a higher than likely impact to personnel and materials being available over the next several months. We, however, are on track to performing the first flight test campaign in May. At this time, we do not see any specific regulatory impacts, but continue to monitor.

*Due to the global coronavirus pandemic, PRCI has begun to experience delays in our contract commitments from our research contractors and may be requesting a modification to the timeline pursuant to Section 4.03 of the Agreement. These delays are caused by closures of research facilities and international borders, and related challenges associated with remote working. The delays are not yet quantifiable and we reserve the right to submit for a contract time extension at a later date. At this time, there is no expected cost changes associated with such potential contract extensions.*