Quarterly Report 1– Public Page

Date of Report: Dec 31, 2019

Contract Number: 693JK31910017POTA

Prepared for: U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (DOT/PHMSA)

Project Title: Improving Subsurface Non-metallic Utility Locating Using Self-Aligning Robotic Ground Penetrating Radar

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For quarterly period ending: Dec 31, 2019

Project Goals:
The goal of the project is to develop a semi-autonomous robotic platform that uses conventional GPR but non-conventional scanning methods to enhance the probability of detection, enhance data quality, and automate the classification of detected targets. At the end of the project, a pre-commercial system will be demonstrated, and performance improvements will be determined.

Work Performed:
Numerical modeling software was evaluated for underground wave propagation simulation. Initial models were developed, and a simulation software was chosen. Commercially available GPR systems were evaluated and one was chosen. Draft robot system requirements were generated, and initial planning was performed for robot collision avoidance and locating. A manual cart was designed for early testing of GPR, collision avoidance and locating.

Results and Conclusions:
There are no results or conclusions at this time.

Plans for Future Activity:
- Build manual cart and perform early testing activities
- Complete numerical simulations
- Begin selection and design of robotic platform