

Quarterly Report 3– Public Page

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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: June 30, 2020

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:

A study was performed to evaluate the ability to detect and classify buried utilities using signal processing and migration. Improvements were made to the manual cart and tested. Collision avoidance sensor testing was performed. GPR programming was completed. A robot localization sensor was tested. The robotic platform requirements was generated and reviewed.

Results and Conclusions:

- The object detection and classification study showed that the information could be used to aid an operator in making better decisions about utility types and location.

Plans for Future Activity:

- Design and Fabricate the Robotic Platform
- Perform additional testing of GPR for enhanced data set