

# Pipeline Damage Prevention Radar (PDPR) 4<sup>th</sup> Quarterly Report

September 30, 2016

**Agreement/Contract Number:** *DTPH5615T00017*

**Prepared for:** *DOT, PHMSA*

**Project Title:** *Pipeline Damage Prevention Radar (PDPR)*

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**For quarterly period ending:** *September 30, 2016*

## 1. Technical Status

In the third quarter of 2016, the Pipeline Damage Prevention Radar (PDPR) project focused on processing flight data taken at ImSAR in Springville Utah (Task 4), developing the test report, and determining improvements to the system that are required for commercialization of the system. Based on the flight testing, several enhancements to Ball's data processing chain were recommended and have commenced. As detailed in the test report, the testing uncovered a number of technical issues when testing near populated and tree-lined areas. Ball is working with ImSAR to resolve these issues. Further testing has been postponed awaiting resolution; upon which, Ball will recommend further testing.

### 1.1 Processing of Flight Data in Springville, UT (Task 4)

During the flight testing in Springville, UT, we exercised the radar over a range of different conditions, including urban, semi-urban, and rural environments. During the test, we placed a variety of targets including backhoes, large vehicles, small vehicles, and hand digging equipment under foliage and outside of foliage. From the data processing, we found that the radar system works very well in detecting targets larger than an ATV in the open. For larger targets such as backhoes, the system could detect the targets through foliage some of the time. False alarm rejection still has to be more fully assessed in future testing once several data issues are resolved. The testing and data issues are detailed in the test report. Based on the testing, we have identified several improvements to the system prior to the next flight test campaign.

## 2. Business Status

The ImSAR Flight Testing Report was completed; however, the second flight test (Task 5) originally planned for this quarter was postponed by nine months to allow resolution of data processing issues and provide adequate testing conditions during the spring/summer months when leaves are on the trees. Accordingly, the project expenditures associated with this task will not be realized until the second and third quarters of Year 2.

### 3. Payable Milestones

As described in Sections 1 and 2 above, the Project Deliverable and Payment Milestones were completed as summarized in Table 1.

Table 1. Status of the Payment Milestones for Quarter 3, 2016 of the PDPR project.			
Item	Milestone	Status	Comments
10	Task 6, Quarterly status report	Completed	This document
8	Task 4, ImSAR Flight Testing and Report	Completed	Test Report attached