UTC Project Information	
Project Title	MPC-505 – An Intelligent Transportation Systems Approach to Railroad Infrastructure Performance Evaluation
University	North Dakota State University
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Agency ID or Contract Number	DTRT13-G-UTC38
Project Cost	$113,000
Start and End Dates	September 30, 2013 to September 30, 2018
Project Duration	September 30, 2013 to September 30, 2018
Brief Description of Research Project	The method developed in this research will not rely on adapting sensor configurations and will require only a data upload capability. The new sensors will compress and upload their geo-tagged inertial data periodically to a centralized processor. Remote algorithms will combine and process the data from multiple train traversals to identify fault symptoms, rank their severity, classify fault types, and localize their position. Fault classification will enable asset managers to allocate the appropriate specialists to scrutinize the fault location.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	In liew of the absence of low-cost and low-power commercial sensors, the research team developed a smartphone application that is capable of autonomously collecting and uploading data from hi-rail vehicles, geometry cars, locomotives, and end-of-train cars where power is available.
Impacts/Benefits of Implementation (actual, not anticipated)	Complete literature search to understand state-of-practice and state-of-art on sensor based rail track monitoring is critical to comprehend the body of knowledge. The review covers research background, types of surface abnormalities, their measurements, current railroad practice, and inertial sensor based systems. One journal review paper is published.

Web Links • Reports • Project Website	https://www.ugpti.org/resources/reports/details.php?id=954