PROJECT OVERVIEW REPORT

1. UTC Identifying Number
   69A3551847102

2. Center Identifying Number
   CAIT-UTC-REG45

3. Project Title
   The Development of the Digital Twin Platform for Smart Mobility Systems with High-Resolution 3D Data

4. Principal Investigator & Contact Information
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7. Project Description
   The primary goal of this proposal is the development of a digital twin for urban mobility, the Mobi-Twin platform, focusing on enabling the microscopic accurate modeling and simulation of Urban Mobility System of Systems with the emerging self-driving grade high-resolution 3D data. The proposed platform will use data collected from the New Brunswick Innovation Hub Smart Mobility Testing Ground to support academic and industrial research. The proposed digital twin platform will reproduce high-fidelity reality for modeling smart mobility objects (vehicles, pedestrians, and others) with seamless object-level integration among different systems.

8. Implementation of Research Outcomes (or why not implemented)
   The proposed test bed will become an ideal test platform for integrated smart infrastructure based solutions that help monitor and maintain roadside infrastructure and support the transportation systems to accommodate not only

the existing human-driven vehicle but also the upcoming connected and automated mobility systems. The outcome will also include pilot applications that will showcase the capability of the proposed platform for application testing, 3D data visualization and sharing. Furthermore, plans and procedures will be developed towards scaling up the proposed simulation platform.

9. Impacts/Benefits of Implementation (actual, not anticipated)
   To Be Determined

10. Dates and Budget
    Start date: 12/1/2020
    End date: 11/30/2021
    UTC (CAIT) Dollars: $105,000
    Cost Sharing: $0.00
    Total Dollars: $105,000
11. Keywords
    Connected and Autonomous Vehicles, 3D Reconstruction

12. Web Links (Reports and Project Website)
    https://cait.rutgers.edu/research/the-development-of-the-digital-twin-platform-for-smart-mobility-systems-with-high-resolution-3d-data/