| **UTC Project Information** | |
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| Project Title | Technology to Ensure Equitable Access to Automated Vehicles for Rural Areas |
| University | Texas A & M University (TAMU) |
| Principal Investigator | Dr. S. Rathinam |
| PI Contact Information | srathinam@tamu.edu |
| Funding Source(s) and Amounts Provided (by each agency or organization) | $200,371 (TAMU)<br>$40,000 (Matching from TAMU) |
| Total Project Cost | $240,371 |
| Agency ID or Contract Number | Grant No: 69A3551747115<br>Project: 06-004 |
| Start and End Dates | Sept 1, 2021 – May 31, 2023 (21 months) |
| Brief Description of Research Project | The objective of this project is to develop an efficient sensing and navigation system for rural communities that use crowd sourced topological maps such as the Open Street Map (OSM) that provides high level road network information in concert with onboard sensing systems that include LIDAR and cameras to localize and navigate an autonomous vehicle. The system will be tested and validated on a large number of rural roads in the SRCs around College Station, TX. |
| Describe Implementation of Research Outcomes (or why not implemented)<br><br>Place Any Photos Here | The following are the main tasks in the project.<br><br>1. Literature review<br>2. Conduct data acquisition experiments<br>3. Develop and implement sensing algorithms for LIDAR and Camera<br>4. Develop and implement localization algorithms<br>5. System characterization<br>6. Real time validation and testing |
| Impacts/Benefits of Implementation (actual, not anticipated) | Currently, the only software that we are aware of that was developed for rural roads in MapLite which primarily relies on LIDAR data. While LIDAR is good for depth estimation, object detection is better handled by cameras and definitely the fused information from both the sensors is expected to provide better sensing and navigation technology for rural roads. We expect the results from this project will instigate further collaborations with the companies. |

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| | We do anticipate generation of new software programs on sensing from this project. |
| Web Links<br>• Reports<br>• Project website | https://safed.vtti.vt.edu/projects/technology-to-ensure-equitable-access-to-automated-vehicles-for-rural-areas/ |