

UTC Project Information	
Project Title	Smartphone-Based Incentive Framework for Dynamic Network-Level Traffic Congestion Management (Project H3)
University	Georgia Institute of Technology
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Total Project Cost	\$145,000
Agency ID or Contract Number	69A3551747104
Start and End Dates	January 15, 2020 – January 14, 2021
Brief Description of Research Project	By leveraging advances in smartphone-based personalization, big data availability for traffic, and network-level integration through information-based connectivity, this study proposes to develop new types of tools to manage congestion in real-time in traffic networks, especially during peak period commutes and under debilitating incidents. The study seeks to develop a smartphone-based framework to develop real-time incentives (monetary, value-based, travel-related credits, etc.) to influence drivers' en route routing decisions to manage network-level system performance in congested dynamic traffic networks. In doing so, a key objective is to ensure that the proposed incentives are behavior-consistent, in that they are tailored based on travelers' smartphone responses. Another objective is to explore how public and private sector transportation entities can collaborate through the use of new forms of incentives that leverage the emerging transportation future, in addition to the currently-used ones. The methodology consists of a three-phase approach. Analytical models and algorithms will be developed in the first phase to identify and implement the specific incentives to be

	deployed in real-time, using techniques from game theory, optimization, and machine learning. Phase 2 will involve driving simulator-based experiments to analyze the responses of drivers/travelers to the real-time incentives. In the third phase, the insights from the second phase will be used to finetune the analytical models and develop the modules that would form the components of a smartphone-based app.
Describe Implementation of Research Outcomes (or why not implemented)  Place Any Photos Here	Not available. Research is in progress.
Impacts/Benefits of Implementation (actual, not anticipated)	Not available. Research is in progress.
Web Links <ul style="list-style-type: none"><li>• Reports</li><li>• Project website</li></ul>	<a href="https://stride.ce.ufl.edu/project-h3/">https://stride.ce.ufl.edu/project-h3/</a>