Center for Advanced Multimodal Mobility Solutions and Education

UTC Project Information – CAMMSE @ UNC Charlotte	
Project Title	Stochastic Multimodal Network Modeling
University	The University of Connecticut
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Funding Sources and Amount Provided (by each agency or organization)	The University of North Carolina at Charlotte: $95,000
Total Project Cost	$95,000
Agency ID or Contract Number	
Start and End Dates	01/20/2017 – 09/30/2018
Brief Description of Research Project	A broad range of transit data are available that can be mined beyond performance analysis for the current state of the system. Such data will enhance the current models of transit and multimodal systems, and make possible the application of innovative models in long-term planning of regional networks and in real-time operations management. We are proposing a data-intensive approach to model transit and multimodal systems using existing and new ITS data. It includes stochastic transit network representation, user behavior modeling under uncertainty, reliability-based routing, assignment, and network design, and lastly, application of the models towards long-term planning and operational management.

	Powerful map-matching algorithms for processing the network data will be the first step taken toward more realistic and detailed modeling of transit and multimodal networks. Moreover, statistical modeling tools will be developed to process historical APC and AVL data and to develop a stochastic transit network. This underlying stochastic network will facilitate system modeling and decision making for the varying levels of reliability over the course of a day, week or year, as opposed to modeling a typical day. Moreover, the impact of external conditions such as weather or incidents on transit performance can be built into the methodological framework, improving existing models and positioning for future applications.
Describe Implementation of Research Outcomes (or why not implemented) *Place Any Photos Here*	
Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links • *Reports* • *Project website*	https://cammse.uncc.edu/sites/cammse.uncc.edu/files/media/CAMMSE-UNCC-2017-UTC-Project-Information-05-Konduri.pdf https://cammse.uncc.edu/sites/cammse.uncc.edu/files/media/CAMMSE-UNCC-2017-UTC-Project-Report-05-Konduri-Final.pdf