

Survey of Minnesota Vehicle Infrastructure Integration (VII) Related Testbed Activities

	Research/Project Title & Description	Sponsoring Organization/ Researchers	Point of Contact	Key Applications	Communications Media	Time Frame	Status (current/ planned)	VII Arch. & Stds. Compliance	Assessment: Relevance to VII Program
23	<p>Simulation Study of a Bus Signal Priority Strategy Based on GPS/AVL and Wireless Communications:</p> <p>The vision of the VII (Vehicle Infrastructure Integration), is to deploy a nationwide network that enables communications between vehicles and roadside infrastructure for various transportation operations and applications. Signal priority requests for transit or emergency vehicles can potentially be sent to the signal controller through the vehicle-to-infrastructure communication architecture described in VII. Communication with the roadside unit (e.g., traffic controller) for signal priority may be established using the existing 802.11x WLAN on the bus or the DSRC (Dedicated Short Range Communication) 802.11p protocol currently under development for wireless access to and from the vehicular environment. Work in next phase will concentrate first on the more readily available protocols. However the system will be designed so that it can be ported to the new 802.11p protocol when it becomes more readily available.</p> <p>- Twin Cities Metro Area</p>	Center for Transportation Studies and the Intelligent Transportation Systems Institute University of Minnesota	Chen-Fu Liao, Center for Transportation Studies and the Intelligent Transportation Systems Institute University of Minnesota Ph: 612-626-1697 Gary A. Davis, Department of Civil Engineering University of Minnesota Ph: 612-625-2598	ITS Applications: Transit Management Day 1 Applications:	802.11x WLAN GPS/AVL proposed expansion to DSRC		Proposed Phase II work	VII Architecture & stds. based	VII focus Proposed Phase II work may be similar to work in Arizona

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37	Minnesota in-Vehicle Signing Project: Minnesota is planning a test of an interim in-vehicle signing application that will use OBE and RSE only. The test will determine if real-time safety information can be transmitted from a stand-alone roadside device to a driver via an after market product within vehicle. The test will also evaluate the effectiveness of in-vehicle signing for work, school and speed zones, in addition to curve and intersection collision warnings.	Minnesota DOT	Ray Starr 651-234-7006 Matt Gjersvik 651-234-7064	ITS Applications: Traveler Information Day 1 applications: -In Vehicle Signing	Most likely DSRC radio with a localized secure data network.	Present - through 9/30/09	Draft phase I federal work order submitted. RFPs for phase I project management and evaluation in progress	VII Architecture & stds. Based, however only the vehicle to roadside element is being tested. There will be no connection to the VII national network or vehicle to vehicle communication.	Will eventually test if In-Vehicle Signing is an effective day one application. Deployment may be fitted to eventually tie into the proposed VII national network
38	Simulation Study of a Bus Signal Priority Strategy Based on GPS/AVL and Wireless Communications: The vision of the VII (Vehicle Infrastructure Integration, is to deploy a nationwide network that enables communications between vehicles and roadside infrastructure for various transportation operations and applications. Signal priority requests for transit or emergency vehicles can potentially be sent to the signal controller through the vehicle-to-infrastructure communication architecture described in VII. Communication with the roadside unit (e.g., traffic controller) for signal priority may be established using the existing 802.11x WLAN on the bus or the DSRC (Dedicated Short Range Communication) 802.11p protocol currently under development for wireless access to and from the vehicular environment. Work in next phase will concentrate first on the more readily available protocols. However the system will be designed so that it can be ported to the new 802.11p protocol when it becomes more readily available. - Twin Cities Metro Area	Center for Transportation Studies and the Intelligent Transportation Systems Institute University of Minnesota	Chen-Fu Liao, Center for Transportation Studies and the Intelligent Transportation Systems Institute University of Minnesota Ph: 612-626-1697 Gary A. Davis, Department of Civil Engineering University of Minnesota Ph: 612-625-2598	ITS Applications: Transit Management Day 1 Applications:	802.11x WLAN GPS/AVL proposed expansion to DSRC		Proposed Phase II work	VII Architecture & stds. based	VII focus Proposed Phase II work may be similar to work in Arizona

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39	We have an in-progress contract with Ford for a "Vehicles as Sensors" project. It is retrieving data from some fleet vehicles using cellular communications and integrating the resulting data into the CARS database which feeds Minnesota's 511 system. Future work may include adding additional communication approaches and providing a means to provide the traveler information back into the vehicles.		Ray Starr [Ray.Starr@dot.state.mn.us]						