



California Partners for Advance Transit and Highways

California PATH Research and SafeTrip-21: Implementing a Research Testbed and Enabling a Deployment

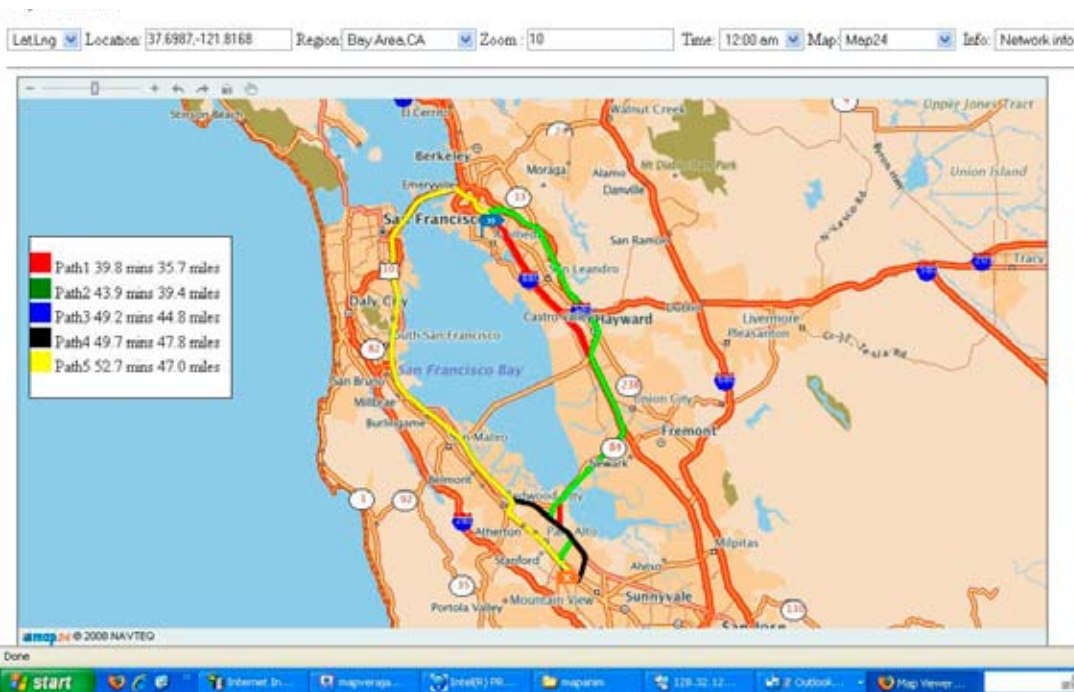
Group Enabled Mobility and Safety (GEMS)

SafeTrip-21 is the catalyst to our transportation future, enabling a 'connected traveler' with information before a trip and during a trip such that this trip may be taken efficiently and safely. Imagine being truly connected through your cell phone or other consumer handheld device, such as an aftermarket navigation unit. Imagine it "telling" you about your trip or the road, to allow you mode (such as by car or by transit) or route choices. Imagine it "telling" you and others, "Watch out for me!" to allow you safer travel.

We at California PATH have imagined this and under SafeTrip-21 are transforming these ideas into research and, in the San Francisco Bay Area, implementation. Our work leverages our existing testbed, the Bay Area roadway infrastructure, and Silicon Valley's myriad creative ways of communicating with the traveler. By surfing the ongoing revolution in wireless and personal computing we are creating an environment and applications – tell me about my trip, tell me about my road, watch out for me – which we will implement and evaluate in the next year or so in the San Francisco Bay Area. We call this "Group-Enabled Mobility and Safety" or GEMS.

Our premise is straightforward: the multi-band, multi-applications environment that underpins SafeTrip-21 will give consumers the desire and the United States the market penetration to use SafeTrip-21 devices.

SafeTrip-21 will put safety and mobility on the map, thanks to a partnership that has as stakeholders, the US DOT, Caltrans, private industry (and primarily Nokia, NAVTEQ and Nissan) and academia, the University of California Berkeley, California Center for Innovative Transportation (CCIT) and California PATH – and the American driver. We at California PATH are conducting research to take the revolution of wireless communication on the road and into the car to you, the traveler, in a manner that will in the very near term give you more mode and route options and make it indeed a safe trip.



In one GEMS application the UC Berkeley, California PATH and University of Utah research teams are working with NAVTEQ to develop an Internet-based dynamic routing system delivered on a consumer handheld device, such as a cell phone. The system aims to provide travelers with alternative routes that can avoid traffic jams and reduce commuting delays. Based on the Map24 interactive map platform provided by NAVTEQ, the screen shot shows a web page with five alternative routes from downtown Mountain View to the Oakland International Airport, the best of which will be in large part dependent on real-time traffic information.

Map: University of Utah and Navteq

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Traffic Data Center

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One aim of GEMS is to provide a gateway device that enables the future: a cell phone with web browser that can bring multiple communications frequencies to match with the 'correct' application, be it safety or mobility.



GEMS supports the connected traveler by providing mobility and safety information. Our research will determine what information to provide and by what means by providing enabling hardware, applications in a system for drivers.