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Experiment uses phones to track I-880 traffic

By Erik N. Nelson, STAFF WRITER
 Article Created: 02/09/2008 02:31:25 AM PST

UNION CITY — Bay Area residents are already spoiled by the ability to call 511.org and find out how many minutes it will take them to get from Hayward to Fremont, or San Rafael to San Jose for that matter. But what if you needed to gauge the traffic going to Fresno or Lake Tahoe?

Researchers from the University of California, Berkeley, teamed up with wireless hardware maker Nokia and the state transportation department, Caltrans, to submit 100 Berkeley students to the slings and arrows of Interstate 880 for most of Friday to develop a system that could generate real-time traffic data nearly anywhere.

The experiment is part of Nokia's effort to "move beyond the realm of phones," said Bob Iannucci, Nokia's chief technology officer, who flew in from the company's headquarters in Finland for the event.

Rather, the company is preparing customers to think of "phones as a sensor for the world that we live in."

The students drove 100 cars borrowed from Enterprise Rent-a-Car along the interstate between Hayward and Fremont while their Nokia N95 smart phones transmitted data from built-in global positioning system (GPS) devices.

The data traveled through the Internet to a tent on the Lowe's hardware parking lot in Union City where research assistants peered into laptops and took phone calls from drivers who needed help or instructions.

In a few years, researchers expect that just about all phones sold in the United States will have GPS technology

and motorists who carry them will be able to contribute data to a traffic information system much more extensive than anything currently operating in the nation. And the best part is that it won't require expensive sensor arrays, such as the \$100,000 coils of cable Caltrans embeds in freeways every half-mile or the FasTrak electronic toll tag readers the Metropolitan Transportation Commission's 5-1-1 system uses to currently monitor traffic in the Bay Area.

The existing systems "are expensive to deploy, they are expensive to maintain and they only cover a limited area of roadway," said Alexandre Bayen, the assistant professor of civil and environmental engineering who ran the experiment.

The new phone system, like the FasTrak transponder-based system now in use, raises serious issues of privacy, said Lauren Weinstein, founder of the Woodland Hills-based Privacy Forum.

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"I'm not saying you shouldn't do something like this, I'm saying people need to be informed about what's done with the data," Weinstein said, "You need to ask if its being collected and how long is it going to be archived."

Some motorists have been suspicious of how they might be tracked with FasTrak tags, suspicions that were confirmed last June when records requested by MediaNews showed that the Metropolitan Transportation Commission released electronic toll payers' bridge crossing records in civil court proceedings.

"This same technology," Weinstein warned, "with nothing but a policy decision, could be used in the same way as red light cameras."

Bayen agreed that privacy is paramount, saying that the new system would scramble the actual identification numbers of cell phones and once a vehicle's progress was recorded, that bit of information would be discarded.

"From a privacy standpoint, the less information given, the better," he said. "Cell phone users will have the option to turn off the service if they don't want to use it or they don't want their data sent."

Even so, Weinstein said users of the system need to be informed that a judge's order could well force the purveyors of the traffic information to alter those protections and start collecting more specific data on wireless users.

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