

Report on the Presentation on California PATH Program on the ITS topic of Vehicle-Infrastructure Integration (VII) plus a briefing on Transport Canada's plans for VII initiatives in Canada.

ITS/VII Workshop - March 4, 2008.
RA Centre, 2451 Riverside Drive, Courtside B Room, East Block
Ottawa

(PATH stands for Partnership for Advanced Transit and Highways)
By Michael Kostiuk

The following URL will give you full details of the event, the speakers and the presentations:

<http://members.allstream.net/~max-com/ottawa.vts.html>

First Presenter:

19:00 - Steven Shladover, PATH - VII - The Vehicle of the Future

Steve Shladover's talk was the most interesting and most of the report is about his presentation. As the title suggests, The PATH program is a system that "manages" Intelligent Vehicular Highway Systems or "IVHS".

Provides opportunities for Traffic Management such as "Real Time Data Acquisition and Analysis".

The premise of PATH is to bring roads and highways up to the same control and signalling standards as wait for it: Railways!

For this to work requires that ALL vehicles are equipped with transponders to supply data. The Data then becomes INFORMATION and through "Assisted Driving Technology" the vehicles are controlled in terms of SPEED, Driving Distance, MERGING, EXITING and Collision AVOIDANCE.

Therefore, ALL vehicles must have these transponders in order for the system to work.

The goal is to create "Intelligent Traffic Systems".

Adaptive Cruise Control and Automatic Speed Control are used in Vehicles to Control Traffic Flow. Along with features such as RADAR, GPS etc vehicles can be spaced VERY close together on Highways. For trucks this means a SIGNICANT reduction in DRAG. And therefore, significant FUEL SAVINGS. So Peak Oil is delayed...

A video was shown of two transport trucks running extremely Close Together in a Test track. They idea is to have them spaced close together “like Trains” in special dedicated lanes. There are several levels of redundancy and safety measures built into the system to handle various road hazards.

The closer driving distance also means that vehicle CAPACITY can be drastically increased (doubled) for roads. This means less road construction (but probably increased re-surfacing schedules). For this to work also requires that all vehicles have the ability to communicate with each other as well as the Central Highway Control System.

A Question from the Audience asked: “Why should we be increasing traffic density? Shouldn’t we be promoting people to use Rapid Transit? Shladover replied that for states like California urban and suburban density is too low for rapid transit. Therefore, the solution is to increase the use of existing Road ways to move people in their own vehicles. Transport Canada is interested in this technology as well.

A video was shown of buses using this technology. The buses are guided along roadways with the aid of magnets placed in the roadbed. The video showed the driver getting out of the seat and the PATH system drove the bus to a platform. The bus also stopped within one half inch of the raised platform. This is helpful for people in wheel chairs to access such buses.

A video was also shown of a large Snow Blower that is used to clear mountain passes in California. Magnets in the roadbed allow the Plows and Snow Blowers to drive right along the edge of guardrails without hitting them. Before this system was installed the cost to repair the damage to guards rails and Plows was US\$100,000 per mile.

Other Presenters were:

19:45 - James Misener, PATH - Spanning the Spectrum: Addressing a VII Plan for Now and the Future

20:30 - Barry Pekilis, Transport Canada - Planned VII Initiatives for Canada

Vehicle-Infrastructure Integration - VII is the use of wireless communications to link moving vehicles with each other and with roadside readers to enable safety-related information, traveller navigation-related advice, and location-related information to be freely available in real-time to road users. VII holds the promise to increase safety reduce congestion and fuel consumption, and advance traveller convenience. At California PATH, VII and the future of transportation is a key area of research and development.

Some links of interest:

- <http://www.path.berkeley.edu/>
- <http://viicalifornia.org/>
- <http://www.its.dot.gov/vii/>

Bios of the Speakers:

Steve Shladover, ScD - Research Engineer California PATH (Partners for Advanced Transit & Highways) University of California, Berkeley

Steve has been researching issues related to intelligent transportation systems for 35 years, since his time as a student at MIT. After eleven years of work in private industry, he joined the University of California PATH program as Technical Director and subsequently served as Deputy Director and Acting Director. He has led PATH's research on transportation automation, and is currently active in a wide range of projects related to vehicle-infrastructure co-operation. He was the first chair of the ITS America Committee on Advanced Vehicle Control and Safety Systems and currently chairs the TRB ITS Committee. He leads the U.S. delegation to the ISO/TC204 Working group on vehicle-roadway warning and control systems.

Jim Misener - Program Leader - Transportation Safety Research, California PATH (Partners for Advanced Transit & Highways), University of California, Berkeley

Jim is leading the safety-related projects for California PATH, including the intersection collision avoidance project. He is also the California PATH lead for Vehicle-Infrastructure Integration through the Vehicle-Infrastructure Technology Applications Laboratory (VITAL) at PATH. His research sponsors include US DOT, Caltrans and several car companies. He is Chair of ITS California and an active member of SAE J2735 (DSRC Technical Committee), where he leads the Digital Map Subcommittee. He has been a member of IEEE for 13 years.

Barry Pekilis - Senior Research Co-ordination Officer, Intelligent Transportation Systems, Transportation Technology & Innovation, Transport Canada, Ottawa

Barry is responsible for managing the VII file at Transport Canada. He has a Ph.D. in Software Reliability Engineering from the University of Waterloo and extensive experience in ITS, systems integration, and software development. Barry provides the ITS Policy Branch with technical advice and expertise on a diverse range of ITS-related research projects, contracts and contribution agreements that are funded by the department.
