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**ITS Maryland at the ITS America Annual Meeting**
ITS MD, Immediate Past President

This was the first ITS America Annual Meeting I attended, and it was very, very well done, and a good value. Several of our own local, ITS MD members presented at the Annual Meeting, representing our local State Chapter well. Richard Easley from E-Squared Engineering presented on Commercial Vehicle and Freight Mobility. Jeffrey Randall from Jacobs Engineering Group presented on the Reconfiguration of the SHA’s Statewide Operations Center. Joel Ticatch from Schneider Electric presented on Integrated Corridor Management in Maryland. I
The highlight of the meeting, in my opinion, was the opening session from Google’s Chris Urmson, Director of Self-Driving Cars. Take a look: https://www.youtube.com/watch?v=9m0xMeWONhs. The technology has advanced rapidly, and his presentation showed clips of the driverless car in normal, everyday, situations. One of most interesting illustrations of this was the clip of a “woman in an electric wheelchair chasing a duck in figures 8’s in a road.” This starts at 17:38 in the YouTube video. His point was that, “you can’t anticipate everything that is going to happen in the world and our cars need to understand what is normal and what is anomalous behavior.” It appears that they are doing a pretty good job of it already.

A Connected Vehicle Future...For Safety and Mobility
by Brian Reed, Parsons Brinckerhoff
ITS MD, Board Member

With summer in full swing, the Connected Vehicle (CV) market and the Industry are in a state of transition. Let’s start with a bit of background on Connected Vehicles. CV is enabled by wireless technology and a series of devices that allow vehicles to broadcast information from an equipped car to another car (V2V) via Dedicated Short-Range Radio Communications (DSRC) protocol using the 5.9 Mhz Public Safety wireless frequency band. The DSRC-equipped vehicle is allowed to communicate to infrastructure devices (V2I), and to pedestrians or other miscellaneous devices (V2X) within this system. What is the purpose or why should we implement CV in America? In short, America’s transportation system is substantial, and one of our nation’s greatest achievements. This infrastructure represents a lifeblood and key component of the U.S. economy; critical improvements are needed to make surface transportation safer, smarter, greener
and ultimately enhance livability for Americans. CV applications provide connectivity (e.g. a network):

- Among vehicles to enable crash prevention and congestion/queues.
- Between vehicles and the infrastructure to enable safety, mobility, and environmental benefits.
- Among vehicles, infrastructure, and wireless devices to provide continuous real-time connectivity to all system users.

To achieve these enhancements and objectives and improve our transportation system, the USDOT is actively working on testing, designing and developing these technologies. With the first CV Test Bed contract executed already, the Ann Arbor Connected Vehicle Test Environment (AACVTE), and others being selected later this year, work is well underway to begin updating equipment to more advanced standards versions and begin rigorous testing. The vehicle equipment takes several forms: On-board Units (OBU) are installed into vehicles within the Ann Arbor area, Active Safety Devices (ASD) are after-market devices that are installed and integrated with warning messages to the driver. Integrated Safety Devices (ISDs) are units installed by the OEM, attached to the Controller Area Network (CAN) within the vehicle, and also used for driver and safety testing within the area as well. Vehicle Awareness Devices (VADs) are units that are similar to a probe and enable more interactions within other equipped vehicles by broadcasting their Temporary ID, GPS Position, Speed, and light Path information. All of these OBUs interact via DSRC with the RSUs that are being upgraded from the USDOT Roadside Equipment Specification, version 3.0 to the revised 4.0 RSU version. In addition, there are a series of standards that are key in understanding the functions and implementation for the CV environment; some of these include Systems Engineering Tool for Intelligent Transportation (SET-IT) Architecture Tool, IEEE 802.11, IEEE 1609 (.2, .3, .4, .12), SAE J2735 and J2745, and SAE J3067. With the standards and device certifications programs progressing, as well as a series of test beds contracts coming online there are a substantial amount of ongoing activities in the CV program.

Additionally, the USDOT and NHTSA are still pursuing the Federal rulemaking to enable this equipment for V2V. This rulemaking will provide a key foundational step to enabling CV across the transportation industry. In parallel, the USDOT has implemented the Vehicle Situational Data Clearinghouse, a large data warehouse poised to ingest Basic Safety Messages (BSM). The BSM Part 1 data elements will be enabled initially, and vehicles that are equipped transmit the BSM via DSRC equipped Roadside Units (RSUs) installed along roadways. These enabled vehicles send the BSM Part 1 for transactional real-time to an aggregation point that is the Vehicle Situation Data Clearinghouse. In addition, the Vehicle Situation Data Warehouse is the larger repository of data that stakeholders (DOTs), Original Equipment Manufacturer’s (OEMs, like Ford/GM of the world), or application
developers can use data via subscription and store/process the data over longer periods of time (30 minutes +), still on a transactional basis (point in time), or on a region by region basis. These tools are being implemented, tested, and enhanced by a series of CV test bed pre-deployment projects that are in the works now. All of these activities are fundamental to achieving our safety and mobility goals for our Country’s infrastructure and future.

For more information, please see: http://www.its.dot.gov/connected_vehicle/connected_vehicle_research.htm.

New ITS Technologies in Vehicles
by Kyle Tarnoviski, STV, Incorporated
ITS MD, Board Member

Today’s ITS vehicle technology like brake assist, park assist and lane departure warnings are innovative and exciting, but when will newer technologies and applications allow our vehicles to communicate with each other? The National Highway Traffic Safety Administration (NHTSA) possesses the authority to mandate V2V technology in new light vehicles and to require V2V technology in commercial vehicles. Also, V2V technology has its own dedicated frequency (5.8 GHz) and research is needed to observe how Wifi enabled devices interact with V2V communications so as to not jeopardize safety.

While we wait to see more research and data on V2V testing and how it will work together we cannot forget about V2I technology; there are vehicles communicating with existing infrastructure today. The February Issue of the ITE Journal contained an article titled “An Online Prediction System of Traffic Signal Status for Assisted Driving on Urban Streets: Pilot Experiences in the United States, China and Germany,” which detailed V2I technology testing locations and some of the data that was collected. If you would like to find out more about the technology being tested and how it will improve safety and efficiency, please see http://www.slideshare.net/majingtao/itepublication.

Previous Events Recap
ITS MD hosted the USDOT Connected Vehicles (CV) course 101 at the University of Maryland CATT Lab on June 19th. About 40 persons attended the course and participated in a lively discussion about the future implementation of CV in Maryland. USDOTs CV 102 course was unveiled at the ITS America Annual Meeting last month and we hope to offer it to ITS Maryland later this year, or in early 2016.

**ITSMD 1/2 Day Event**
ITS MD had its annual Orioles baseball event, combined with a two-hour Lunch and Learn and ITS MD Board Meeting on July 10th at Jacobs Engineering. 20 persons attended the Traffic Systems & Technology - Latest in Traffic Technology Lunch and Learn, and 40 persons attended the cook-out at the Babe Ruth museum and the following Orioles v. Washington Nationals game. The Orioles won 3-2 in the ninth inning following a tense match-up.

**Upcoming Events**

**GridSmart Video Detection Lunch & Learn**
During the lunch and learn event, GridSmart will be talking about the evolution of detection technology from in-ground sensors to the new generation of 3D Omni-Directional Tracking. Gridsmart will present the physical equipment and speak about the ease-of installation. There are several software modules that can be added as add-ons and they will go over each of them and what their potential can be. Video of the device in operation will be presented to see how the detection process occurs. There will be a discussion on how to specify the GridSmart product and how to show the product on construction plans.

Location: Sabra, Wang & Associates
7055 Samuel Morse Drive
Suite 100
Columbia, MD 21046
When: July 22, 2015, Noon-1:00 PM
Cost: Free for members

Register here: https://www.eventbrite.com/e/gridsmart-video-detection-technology-lunch-learn-tickets-17800171793

Are you an ITS Maryland member?

Chances are that you are a member! ITS Maryland is an "organization of organizations," and membership is by firm, agency, University, etc. It is not an individual membership. So, if your employer is a member... so are you!

To see if you are a member, check out our list of member organizations here: http://itsmd.org/about-us/its-maryland-members/

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