IntelliDrive^{SM} Policy and Institutional Issues
Research Plan and Roadmap Workshop Summary
September 2, 2009
8:30 am – 4:30 pm

On September 2, 2009, the U.S. Department of Transportation's (US DOT) Intelligent Transportation Systems Joint Program Office (ITS JPO) held an IntelliDrive^{SM} Policy and Institutional Issues Workshop in Detroit, Michigan. The purpose of the workshop was to review the details of the five-year *IntelliDrive^{SM} Policy and Institutional Issues Research Plan and Roadmap and* to solicit comment and agreement. After presenting a high-level overview of the *Plan* and *Roadmap*, the US DOT staff discussed the work efforts in each individual research track and encouraged questions and discussions. The intention of the workshop was to understand:

- Whether stakeholders found that the document formed the analytical foundation that will guide and deliver a set of relevant policy and institutional issues recommendations by 2013;
- Whether the identified work robustly supported the technical IntelliDrive^{SM} research; and
- Concerns about and areas of consensus for the work plan.

Overview of the Research Plan and Roadmap

The Plan and Roadmap were presented by Valerie Briggs and Walton Fehr of the ITS Joint Program Office (JPO) and Suzanne Sloan of the Volpe National Transportation Systems Center (the Volpe Center). Both of these offices are located within the U.S. DOT's Research and Innovative Technology Administration (RITA). Overall, the Plan and Roadmap were applauded by the participating stakeholders, with follow up comments noting that the Plan and Roadmap:

- Provided appropriate detail and allowed for stakeholders to identify where and when they could participate.
- Allowed for all stakeholders to understand the timeline in a way that they could track progress.
- Provided some level of connection between the Policy and Institutional work related to the technical Roadmaps (although later comments requested that a more explicit set of graphics be provided).

The comments provided throughout the day focused on primarily on detailed aspects of the Plan or Roadmap and are summarized below under each Track. Overall, the following issues were noted throughout discussion on all of the tracks:

- Stakeholder engagement and public communications do not go far enough. More needs to be done to create a public demand for IntelliDrive^{SM} type services and connectivity. A national champion(s) is needed and the messages on IntelliDrive^{SM} need to be communicated by the entire DOT, not just the ITS JPO.
- The Plan and Roadmap should be better aligned with the IntelliDrive^{SM} Taxonomy.
- There were many comments regarding Standards that addressed a range of concerns including:
  - Which standards will be part of IntelliDrive^{SM},(discussion focused on interface standards at the communication and data levels, including J2735)

- o Whether rulemaking will be utilized (at this point, the intent is to develop data standards that the industry will gravitate toward).
- o Whether all interfaces have been documents (not yet).
- o Whether a formal needs analysis is driving the form and process for the IntelliDrive^{SM} research. As standards fall within the technical research part of the IntelliDrive^{SM} Program, the technical staff was available to address comments (Mike Schagrin and Walt Fehr of the ITS JPO, Ray Resendes and John Harding of NHTSA, and Greg Davis of FHWA).
- Discussion included a question on how the research in the roadmaps going to tie into the JPO strategic plan. Valerie noted that the The IntelliDrive Working Group meeting on October 29th and 30th will focus on the strategic plan, the various roadmaps, and stakeholder engagement.
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ACTIONS FOR THE DOT:
- The ITS JPO will provide more of a focused effort on communications and will work with counterparts throughout the DOT on IntelliDrive^{SM} messages.
- With the rewrite of Version 7 of the Plan and Roadmap, the Taxonomy levels will be incorporated, as appropriate.
- The technical staff is currently working toward engaging a Systems Engineering firm that will address the issues around Standards, interfaces, and gaps and will formalize the needs statements regarding the Government's focus in safety, mobility, and environment with regard to IntelliDrive^{SM} investments.

Discussion of Track 1: Defining Deployment Scenarios & Implementation and Operations Strategies and Challenges

Valerie Briggs presented the concept behind Track 1 and described the task efforts that are underway or planned for Track 1. Discussion by workshop participants was wide ranging and included questions regarding the following:
- Whether and how deployment scenario development would include a range of users and who those users would be. It was noted that IntelliDrive^{SM} is intended to be multi-modal and will address a range of users that include transit, commercial vehicles, tolling agencies, pedestrians, and bicyclists. It was also noted that all working group meetings will be fully open to the public and that outreach was occurring to different industry groups (such as telecommunications and aftermarket device manufacturers) and professional associations who can be representative of many organizations that may not be able to participate directly in IntelliDrive^{SM} .
- Participants discussed the development of the deployment scenarios and whether there would be limitations and whether the timing of the activities was correct. It was noted by the DOT that some of the timing needs to be tied to further research and assessment to ensure that timing allows for the right tasks to build from one another. It was also noted that this Plan and Roadmap is a living document that will evolve based not only on research results, but on stakeholder input at meetings such as this one.
- Discussion also focused on whether the current roadmaps incorporated lessons learned from the VII efforts and/or from European counterparts (yes, in both cases)

- There was some discussion on the issue of market research and whether any would be conducted for the IntelliDrive^{SM} applications. Valerie noted that is more appropriate for the private sector to conduct market research, but that the federal government will collect needs and identify, through a systems engineering process, how needs can be met with the applications. Scott McCormick described some market research results that should be used to inform the systems engineering process and that he would forward these results.
- An overall theme to the discussion in Track 1 was whether the task efforts were delivering actual policies and regulations or whether the end results were a set of recommendations. Valerie emphasized that the role of the ITS JPO was to conduct research and not to set policy. The end results of each research track would be a set of recommendations generated through research and stakeholder input.

DOT ACTIONS:
- The DOT is developing a Knowledge Management Tool with ITS America that will help collect feedback from stakeholders and help create greater transparency about the progress and steps associated with each task effort. Additionally, all working group meetings will also be broadcast through web conference technologies. In this respect, the DOT hopes to include a wider range of users and identify needs.
- The DOT is working with Noblis/Pinyon Partners and the Volpe Center to develop a set of deployment scenarios that will be presented to help generate discussion and build a robust, user-driven set of scenarios. Pinyon Partners will be scheduling interviews as a means of collecting needs statements and providing a broad, environment scan that will identify the social, political, environmental, and technical perspectives that will either enable or present obstacles to successful IntelliDrive^{SM} deployment. In addition, the Volpe team will revisit the timing of the tasks with Version 8 of the Plan and Roadmap.
- The DOT will provide summaries of the work and progress under the VII within each Track. The Governance Needs Summary will be the first summary that will identify how VII accomplishments are incorporated into IntelliDrive^{SM}. Additionally, the IntelliDrive^{SM} Program has formalized working relationships with European counterparts to collaborate on international standards, focusing specifically on how these efforts can catalyze a more robust marketplace.
- The DOT will follow-up with Scott McCormick regarding the research results, and will accept other market research input from stakeholders that can be publicly offered as inputs to the IntelliDrive^{SM} Program..

Track 2: Investigating Options for Investment Models
Suzanne Sloan presented the concept behind Track 2 and described the research efforts, noting that Track 2 was not as evolved as Track 1 but that initial research would help identify further detail with Track 2 efforts and their timing.

The discussion mainly focused on the following concerns:
- Whether public funding was still an option, as many stakeholder believe that there are aspect of IntelliDrive^{SM} that cannot generate a profit and therefore will not realistically meet the criteria for a Return on Investment analysis. Suzanne and Valerie responded that all financing options are on the table going forward, and that it is likely that the IntelliDrive^{SM} concept will be segregated into a series of markets that attract different forms of financing. Suzanne described how the first task is to engage a wider range of finance experts on the possibilities. Participants expressed an interest in being kept

- Participants noted that the Pre-Pass system had encountered many of the finance and governance issues when launching the system many years ago. Dick Landis was identified as a person to contact.
- There was much discussion regarding the issue of marketing in order to generate demand. Valerie noted that a high level Benefits report would be developed by early 2010 to communicate some of these messages. Participants additionally pushed for an "elevator speech" set of talking points.
- A number of participants noted that data ownership was and will continue to be a critical element in understanding any market return on investment for IntelliDrive^{SM}. Valerie and Suzanne noted that a number of tasks related to data ownership were detailed in Track 4 to address what is considered to be a "show-stopper" issue. Participants encouraged them to launch the analysis around data ownership earlier.
- Participants also noted that first responder and emergency management costs need to be considered as part of ROI. Participants also noted that there are non-traditional benefits that need to be factored into IntelliDrive^{SM} analysis going forward and to be open to these ideas. Valerie encouraged participants to email her with their priorities and their ideas.
- Participants voiced interest in whether the public sector fund roadside RSE infrastructure or not? The research plan does not show where the answer will be determined. There are a few core questions? Can these be fast tracked? The DOT staff noted that the goal of Track 2 is to provide recommendations on this issue, based on research. A discussion ensued on whether the decision can be made at the Executive level of whether through Congress. Participants and DOT staff discussed the role of FHWA in identifying how State can use their funds.

DOT Actions:
- The DOT will keep stakeholders in the loop regarding discussions and workshops with the finance industry. The DOT will look into contacts with the insurance industry.
- The DOT will contact Dick Landis to learn from the Pre-Pass experiences.
- The DOT will develop a set of talking points related to creating greater IntelliDrive^{SM} awareness along with a high level brochure that promotes the benefits.
- The DOT will make plans to launch data ownership analysis earlier.
- The DOT is looking to engage the public safety audience.

Track 3: Establishing Options for a Governance Framework
Suzanne Sloan presented the concept behind Track 3 and described the tasks associated with development governance options. Walt Fehr presented specific examples of how governance is tightly tied to technical issues such as security, authentication, and certification. Overall, the discussion identified that governance options will likely track to the level 1 and level 2 taxonomy to offer a wider yet more specific range of options for what parts of the IntelliDrive^{SM} system will need to be governed. Participants noted the following:
- Progress in this area is critical, as the right governance options can enable markets or hinder them. Also, options in this area will provide the private sector with an ability to develop their own plans for products and services. Participants noted that the development of governance options/frameworks does not occur on the roadmap until later on the timeline and encouraged the movement of the results to be earlier.

- Participants questioned the DOT staff on issues around regulations and authority. The DOT staff noted that NHTSA has the ability to develop regulations but that other options, such as the NCAP Program, offer a way to catalyze markets without regulations. However, as safety is the top priority, regulatory action will be considered for those parts of the system that require a higher level of security and enforcement. At the moment, these are still options and not specific actions that the DOT will take. The research process and stakeholder input will help formulate the ultimate approach.
- Participants then noted that the approach needs to be national and/or inter-jurisdictional as access rules or enforcement rules cannot change at jurisdictional boundaries. Valerie noted the role of AASHTO and other participants representing local governments who will present on their needs and concerns that will be incorporated into the governance analysis.
- Participants noted that the telecommunications industry has likely dealt with some of these issues around authentication, certification, security, and authority to enforce, and that we should learn from these experiences. Valerie noted that the Pinyon Partners effort will be exploring these issues with telecommunications companies.
- Participants emphasized the issues regarding a security framework/architecture and the ability to set up and run a certificate authority to set the stage for deployment. Questions came about regarding when this effort would happen. The DOT staff noted the following:
  o The non-technical aspects of how that is done are addressed by policy studies—how it is implemented—and the technical research is a part of the Technical Roadmaps. As security is a cross-cutting issue (V2V, V2I, etc), the systems engineering process will help define a cohesive and related set of requirements for the system.
  o It is recognized that it is a driving issue and we are working with NHTSA, FHWA, and CAMP on security aspects. This was one of the key issues that came out of the V2V workshop and we've moved from discussion to more proactive exploration of what the security elements and needs are.

DOT Actions:
- The DOT will move Governance tasks up earlier and look forward to a public workshop in early 2010.
- The DOT will ensure outreach to the telecommunications industry to learn from their experiences.

Track 4: Identifying Institutional Issues and Options for Addressing Them

Valerie presented on the concepts behind Track 4 and discussed the task efforts. Participants presented the following questions and concerns:
- Risk analysis needs to be better defined and should include both financial and technical risk. Valerie noted that the technical risk analysis was a part of the Technical Roadmaps and that the Policy and Institutional Issues tasks would include the business, market, and financial risks.
- Participants brought up the issue of texting while driving and how the DOT was currently addressing the problem. Valerie noted the September 29-30th Summit with the Secretary of the DOT and issues with the DOT noted that the results of the Summit would be

- Participants once again noted that the timing of Institutional Issues tasks needs to be moved up.
- Participants requested the identification of a Spectrum Analysis coordinator and noted that AASHTO can engage in some of this role.
- Participants discussed how the systems engineering process will relate to the institutional issues analysis and noted that this is an important relationship. Valerie noted that these process will connect and that requirements setting is iterative starting with technical requirements and then looking at institutional factors which then impact the technical requirements.

DOT Actions:
- The DOT will review the timing of the Institutional Issues tasks**.**
- The DOT will develop a coordinated set of roadmaps to show linkages among technical and policy and institutional tasks.

Summary and Next Steps

USDOT representatives noted that Track 5 was not presented because it pulls the other tracks together into a coherent set of recommendations.

Valerie and Suzanne then summarized the discussion from the day, noting the overall themes:
- There are big picture issues related to stakeholder engagement. Posting information on the web site and having workshops are not the end all and be all. We will think this through further. There is an issue of travel limitations and some stakeholders are not engaged. We need marketing and greater public awareness to generate enthusiasm.
- Use of the IntelliDrive taxonomy was helpful to understand what we are focusing on.
- We heard lots of feedback on the timing of certain tasks. We need language to clarify understanding.
- We need cataloguing of ideas in a tool that we can all access. We may use the knowledge management tool and the web site.
- An underlying theme was the issue of the market moving out in a certain way. Technical research won't happen for a while. We need to consider where the market is and where it is going, and how to keep the research connected.
- There were questions about priorities. How do we gain consensus? Were things presented such that you can respond to them?
- There are issues and roles for both the public and private sectors. We have to maintain good relationships.
- We are pretty good on being comprehensive. We missed a few things. We need to go back and refine the roadmaps to reflect today's conversation. Version 8 of the research plan will be posted on the IntelliDrive web site. The plan will be turned into a project management tracking tool, to assess issues going forward. We hope to be more transparent.