

USDOT Institutional Framework for ITS Evaluation of Field Demonstrations

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USDOT Institutional Framework

- USDOT is a conglomerate organization, comprised of an Office of the Secretary and nine distinct modally oriented agencies, such as
 - Federal Highway Administration, Federal Transit Administration, National Highway Traffic Safety Administration, Federal Rail Administration, Federal Aviation Administration, Research and Innovative Technologies Administration, and more
- Policy directives come through legislation passed by Congress, and from the President through the Secretary of Transportation
- Each agency and each program is aligned with law and leadership in accord with its mission

Institutional Framework for the ITS Program

- The ITS program is modally independent, with direction from a leadership group comprised of agency Administrators from the surface transportation agencies: highway, rail, transit, highway safety, maritime, and motor carrier safety
- Themes for major ITS research programs and goals emerge from legislation and from a complex set of interactions among USDOT leadership and staff across all of the agencies.
- Research programs then determine the goal, shape, and content of subsequent “field operational tests”, demonstrations, and field research.



USDOT ITS Research Program Direction

- Major ITS research programs are approved by the USDOT, and the final shape of the field demonstrations are carefully detailed by the ITS program leadership—a top down approach to research
- Due diligence leading up to the final approach to the demonstration will have incorporated expert opinion
- Once the field test is released for “call”, the budget and duration and direction of the evaluation will have been framed.
- Evaluation contractors, comprised of subject matter experts, are overseen by USDOT evaluation experts



What is a “field operational test”?

- A generic term, not a specific term of art
- We deploy new ITS applications, or new combinations of technology and practice, and evaluate the impact
- Evaluations generally address benefit cost ratio, mobility, network impact, environmental impact, traveler behavior, and customer satisfaction, as a minimum
 - Policy goals inform evaluation content
- ITS evaluations are subject to the vagaries of real-life
- Vehicle safety research is distinct and uses experimental design to ensure the application improves safety, and its evaluations also include human factors (ergonomics)



Demonstration/Field Operational Test Goals

- Demonstrate the capabilities of new ITS applications and practices
- Measure the impact of new applications on the transportation enterprise
- Disseminate the information to the transportation community to support investment, management, and operations decisions



ITS Evaluation Practical Challenges

- Field tests/demonstrations aren't always designed or funded with evaluation requirements foremost
- Real-life procurement, political, and operational issues affect the characteristics of the deployment and influence evaluation opportunities
- Everything takes longer and costs more
- Sometimes the final field test won't create a change worth measuring
- Some things cannot be measured within budget and schedule
- It is complex and expensive to develop and maintain evaluation information resources
- Comparability of impact and data from different sites and programs is not always possible



Communicating the Impact

- ITS program web site resources: Benefits, Costs, Deployment and Lessons Learned data bases
- Webinars
- Popular, trade, and academic publications
- Sponsored workshops
- Conference sessions
- ITS and related transportation associations: ITS America, ITE, APTA, AASHTO
- Courses
- Focused outreach programs, such as 511



In Conclusion

- ITS field tests are intended to demonstrate and provide insight into the capabilities of new ITS applications
- Evaluation findings are intended to provide decision-support to practitioners and policy-makers
- Real world working conditions make clean consistent data collection a continual challenge
- Communication of findings to transportation managers, operators, and policy-makers is a constant goal
- We are continuously reviewing our framework and practices for evaluating and communicating findings to improve our relevance, clarity, and reach

