Federal Report
to the
ITS America Board of Directors Meeting
November 7, 1999
Toronto, Canada

This report includes updates from the following range of ITS issues:

- [ITS TEA-21 Status Chart](#)

- [Intelligent Vehicle Initiative](#)

- [Metropolitan ITS](#)

- [Rural ITS](#)

- [Commercial Vehicle Information Systems and Networks](#)

- [ITS National Architecture](#)

- [ITS Standards](#)

- [Telecommunications](#)

- [Program Assessment](#)

- [Professional Capacity Building](#)

- [ITS Outreach and Communications](#)
- [Web Resources](#)

See [Standards milestone chart](#)

TEA-21 ITS Update
(Updated as of 11/5/99)

ITS Deployment Program *Sec. 5208*	Status
The ITS deployment program authorized in TEA-21 includes two components: integration and CVISN. The ITS Integration component provides Federal ITS funding for the integration of multimodal ITS components in a variety of settings, including large regional or multi-state areas, metropolitan areas, and rural areas.	In FY 2000, Intelligent Transportation Systems program was designated $211.2 million in funding, according to the Conference Report to the Transportation Appropriations legislation. Of this allocation, $113 million was assigned to the ITS deployment program and $98.2 million for ITS research and development. Of the total for ITS funding, $112.5 million was designated for 75 earmarked projects designated by location. Sixty-seven (67) geographical areas were identified in the 1999 appropriation to participate in the ITS integration program. Project proposals were received from all these geographical areas except one. Funds were obligated for 55 of the projects. Reasons for not obligating funds on the remaining projects included: problems with technical/financial approach, problems getting the project on the area's Transportation Improvement Program (TIP), and timing problems associated

	with the execution of the partnership agreement. Funds for these unobligated projects were carried over to FY 2000 and will be obligated as soon as discrepancies are resolved.
CVISN Deployment Program *Sec. 5209*	**Status**
This component supports complete deployment of Commercial Vehicle Information Systems and Networks (CVISN) in a majority of States by September 30, 2003.	TEA-21 authorized a total of $184 million of Federal ITS funds from FY 1998-03 to meet the congressional goal for CVISN deployment. In FY 1999, Congress designated 17 States to receive Federal ITS deployment funds to support CVISN Level 1 deployment. In FY 2000, Congress selected 14 States to receive $23 million in Federal ITS deployment funds. However, the appropriated funds to support CVISN deployment are much less than originally authorized, and the US DOT does not have the discretion to apply those funds in a manner consistent with the deployment plan. ITS CVO staff will continue to work with these States to use earmarked funding in the best manner possible to advance to the next step of CVISN. Guidance is now being developed to help the states implement these earmarks.
TEA-21 requires the Secretary to carry out a comprehensive program to deploy ITS that improves the safety and productivity of commercial vehicles and drivers; and reduces costs associated with commercial vehicle operations and Federal and State commercial vehicle regulatory requirements.	In addition, FHWA ITS CVO staff is committed to working with any interested State that will use its Federal ITS deployment funds and/or its own funds to advance to the next step of the three-step CVISN deployment process (Planning, Design, and Deployment.) This strategy will ensure that the States are taking the appropriate steps that will support the TEA-21 goal of deploying CVISN in a majority of States by 2003. Maryland and Virginia are expected to deploy CVISN Level 1 capabilities in the areas of safety information exchange and electronic screening by December 31, 1999. However, the interstate credentials component may be delayed until early calendar year 2000. Kentucky is on target for Level 1 deployment by December 31, 1999. California and Minnesota are expected to complete Level 1 deployment by December 31, 2000. The remaining pilot States have been delayed as a result of Congressionally designated funds being redirected to other projects, with no funds being left for discretionary funding. Two pilot states, Michigan and Connecticut were initially split funded to deploy CVISN but did not get any designated funding in FY 2000. Unless R&D funds can be made available to them they may have to put a hold on their progress. In total, over 40 states are in several stages of CVISN deployment. A detailed update is included in the CVISN section of this report.
Architecture Consistency *Sec. 5206(e)*	**Status**
TEA-21 contains a provision requiring ITS projects implemented with funds from the Highway Trust Fund (including the mass transit	Draft regulatory language is prepared which will implement the legislative requirement for conforming with the National ITS Architecture and

account) to conform to the national architecture, applicable or provisional standards, and protocols.	standards. Part of the regulatory language will appear in a Notice of Proposed Rulemaking (NPRM) on transportation planning (23 CFR 450). The project development language will appear in a separate NPRM on traffic operations (23 CFR 655). FTA is in the process of identifying their approach to implementing the legislative language. The draft NPRMs have been submitted to FHWA legal staff for informal review. The NPRM is expected to be issued simultaneously with the transportation planning NPRM in late fall 1999. Train-the-trainer sessions for all federal field staff on the interim guidance for architecture conformance have been completed. Three consultant training sessions on the interim guidance were held and two more are planned. Advanced training courses on the use of the National ITS Architecture have been developed and conducted for Federal field staff. They have also participated in workshops on application of the interim guidance. Pilot workshops are underway for stakeholders on the development of regional architectures.
Critical Standards *Sec. 5206(b)*	**Status**
Specifically, not later than June 1, 1999, the Department shall submit a report to Congress identifying which standards are critical to ensuring national interoperability or critical to the development of other standards and specifying the status of the development of each standard identified.	**ITS Critical Standards Report:** *Completed and Submitted to Congress*. Background: On July 3, the US DOT announced that it had identified 17 standards as critical to the smooth operation of ITS throughout the United States. The critical standards report is available in the Standards section of the ITS web site and in the ITS Electronic Document Library (EDL) - just type in Document #5515.
TEA-21 requires the ITS program to develop, implement, and maintain a national architecture and supporting standards and protocols to promote the widespread use and evaluation of ITS technology as a component of the surface transportation systems of the United States.	There are 31 standards that have been either published or endorsed (approved). Another 38 are in the balloting stage, while the remaining 11 are still under development. The attached milestone charts indicate the status of the standards as of October 15, 1999. Those falling under the "in ballot" or "under development" categories are listed by their projected balloting dates.
Evaluation Guidelines *Sec. 5204(j)*	**Status**
TEA-21 tasks the US Secretary of Transportation to issue guidelines and requirements for the evaluation of operational tests and deployment projects carried out under Subtitle C --which addresses the ITS program. TEA-21 further requires the guidelines to establish funding evaluation levels based on the size and scope of evaluated projects to ensure adequacy of evaluation activities.	The "Guidelines for the Evaluation of Operational Tests and Deployment Projects for Intelligent Transportation Systems (ITS)," required by the Transportation Equity Act for the 21st Century, were published on the Federal Register on September 20, 1999. They can be viewed on the ITS Web Site. Go to: Evaluation Guidelines
Eligibility - STP, CMAQ, NHS *Sec. 1108(a)(7); Sec. 1110(b)(6); etc*	**Status**
STP funding includes infrastructure-based ITS capital improvements. CMAQ funding qualifies if	No change in status. Action on eligibilities will follow completion of the architecture consistency

the program or project improves traffic flow, including projects to improve signalization, construct high occupancy vehicle lanes, improve intersections, and implement ITS strategies and such other projects.	policy.
Life Cycle Cost Analysis and Financing and Operations Plan *Sec. 5210© ;[Sec.1201(a)(18)(A)]*	**Status**
The Secretary requires that those applying for ITS funding under the integration and CVISN programs (Sec. 5208 and Sec. 5209) submit an analysis of the life-cycle costs of operation and maintenance of ITS elements if the total initial capital costs of the elements exceed $3 million.	No change in status. The JPO is looking at developing technical guidance on life cycle cost and planning for operations and maintenance after the procurement requirements are underway. In addition, a multi-year financing and operations plan is required describing how the project will be cost-effectively operated and maintained.
Procurement Methods for ITS Projects *Sec. 5204 (I)(1)*	**Status**
The Secretary must develop appropriate technical assistance and guidance to assist State and local agencies in evaluating and selecting appropriate methods of procurement for ITS projects carried out using funds made available from the Highway Trust Fund, including innovative and non-traditional methods, such as the Information Technology Omnibus Procurement.	There are two projects aimed at providing assistance to state and local agencies on ITS procurement. A workshop is being developed and will be delivered beginning in January 2000, and a series of case studies on successful ITS procurement approaches will be published by the end of 1999. On October 6, 1999, a memo from the Executive Director was sent to all FHWA District Administrators requesting that they provide assistance to State and local governments in using the flexibility within the FHWA regulations in procuring ITS projects.
National ITS Program Plan *Sec. 5205 (a)(1) & (a)(2)*	**Status**
TEA-21 requires the US DOT to update the National ITS Program Plan as developed by the US DOT and ITS America. US DOT's approach divides the requirement for the development of the National ITS Program Plan into three distinct pieces: 1) Program Plan: Five-year horizon; 2) Program Plan: Ten-year horizon; and 3) the National ITS Deployment Strategy.	The five-year plan is in its final draft and is circulating inside US DOT. This plan is likely to be completed by mid-Fall. The 10-year plan has not yet begun.

Intelligent Vehicle Initiative (IVI)

- <u>IVI Broad Area Announcement</u> -- A request for applications for the Generation 0 operational tests was issued on December 9, 1998. Fourteen applications were received which covered all four platform types. Four cooperative agreements totaling $12.7 million were awarded in September. These funds, matched with $7.7 million in funding from the partners, will support operational tests of advanced safety systems dealing with large truck rollover, collision warning, lateral guidance, and advanced braking and hazard warning.

    - Freightliner will lead a partnership to test a "Rollover Stability Advisor" (RSA) to address large truck rollovers. The test will be conducted in the Midwest. The other partners include Praxair, Inc. (hazardous materials fleet operator and trailer manufacturer), Roaduser International, and the University of Michigan's Transportation Research Institute.

    - Volvo will lead a partnership which operationally tests large trucks equipped with an Eaton VORAD collision warning system and an advanced braking system. The other partners include U.S. Xpress Leasing, Inc. (fleet

operator) and North Carolina A&T University. This test will be conducted throughout the United States.

- Mack Trucks will lead a partnership which is engaged in an operational test regarding an infrastructure-assisted hazard warning system for commercial vehicles. This test will be conducted in the southeastern portion of the United States. The other partners are McKenzie Tank Lines (fleet operator) and the Virginia DOT.

- The Minnesota Department of Transportation will lead a partnership which will engage in an operation test of a fleet of snow plows equipped with a collision warning, lateral guidance and an integrated driver vehicle interface. The other partners include Altra Technology, Navistar, the University of Minnesota, and 3M.

Other IVI Activities

- Infrastructure Consortium Formed. - US DOT identified the need for an Infrastructure Consortium to support the IVI in sponsoring and directing research programs intended to address the IVI problem areas that may require vehicle-infrastructure cooperation. The Infrastructure Consortium will represent the government stakeholders who must ultimately plan, design, build, operate, and maintain the highway infrastructure needed to effectively support any vehicle-highway cooperation.

- The organization will be a group of states and representative local government agencies who are willing to participate and support, through financial, technical, and deployment means, the objective of improving highway safety through the use of IVI systems. The activities of the Infrastructure Consortium reflect the participants' collective assessment of the most effective means of improving highway safety within the scope of the initiative. The US DOT will, through the IVI and other programs, continue to pursue a broader research agenda, and will coordinate our own research with that supported through the Infrastructure Consortium.

- US DOT has identified intersection and roadway departure collisions as the most likely candidates for vehicle-infrastructure cooperation. US DOT is conducting a comprehensive systems assessment to guide the course of future research. The results of this study will be shared with the Infrastructure Consortium, and jointly define a research program.

- The Infrastructure Consortium will be considered an FHWA Vehicle Regional Pooled Fund Study. This provides a mechanism for states (& others) to combine resources towards common research interests. It allows for contributions of State Planning & Research (SP&R) funds, state DOT funds, and other funds. This pooled fund was established in October 1998 to support specialty vehicle research. In July 1999, the participants agreed to refocus the activity on infrastructure related issues. California and Minnesota are currently members. Virginia, Iowa, Arizona and Michigan are considering membership.

- Cross-Cutting On October 14-15, the U.S. DOT held a workshop on "Liability and Related Issues for the Intelligent Vehicle Initiative (IVI) and Advanced Vehicle Control and Safety Systems (AVCSS)" in Reston, Virginia. The workshop was co-sponsored by ITS America and the Institute of Transportation Engineers (ITE) and was attended by representatives of major automobile manufacturers, equipment suppliers, insurance providers, and state governments. The goal of the workshop was to address the following questions: Is Liability an issue? If so, how does it affect development and deployment of IVI systems? A report documenting the results of the workshop will be issued early next year.

- On September 24, FTA, ITS America, and APTA sponsored the sixth meeting of the Transit Intelligent Vehicle Initiative (IVI) Working Group. The FTA provided a status report on four projects concerning: needs assessment, side collision warning, forward collision warning, and rear impact collision warning. Feedback was received from the industry participants on the following topics: bus rapid transit and the use of IVI technologies, information integration, and pedestrian safety. A report on the meeting is being prepared. Initial comments indicate that FTA should 1) move forward to fund precision docking operating specifications and testing projects [possibly under BRT, instead of the IVI program]; 2) to coordinate potential human factors studies on information integration for the bus driver; and 3) to take a leadership role in pedestrian safety activities using IVI technologies.

IVI Related Activities

- ACN Operational Test -- This quarter, a field operational test of an automatic collision notification systems was scheduled to end this past summer. It had been underway for several years. The test has been very successful and provided considerable insight into the feasibility and benefits of such systems. However, it was decided that the test period should be extended to allow for more experience with these systems and to provide for more data to be collected during actual incidences.

Metropolitan ITS

ITS Service Plans

- Guidance was issued on the FY 2000 Service Plan program. The Service Plan Program focuses on strategic investments to facilitate deployment particularly in metropolitan areas. Additionally, this quarter a pilot service plan workshop was held with resource center and divisions staff. The workshop provided hands-on experience in development of a service plan. Similar workshops are offered to all division offices.

CORSIM Training Course

- A formal training course on the use of the CORSIM traffic simulation model was completed to NHI for presentation. This software training course will allow practioners to use CORSIM to evaluate various traffic control strategies including ITS based solutions. The key aspect of this software is that this is the only tool that performs a "system" analysis, as compared to "spot" analysis performed by Highway Capacity software. Many presentations are on request at this time.

CORSIM Computer Based Training

- The completed version of the CORSIM Computer Based Training has been delivered to the McTRANS Center for sale to practioners. This self taught software will augment the NHI course as a refresher. Advanced Transportation Controller. A draft hardware specification for this multi-tasking machine has been delivered to AASHTO/ITE/NEMA SDO to gain public comment. This machine will afford a cost effective way to operate many of the ITS functions. This machine also operates the FHWA's adaptive traffic control prototypes.

TSIS

- FHWA Research Development & Technology has released Version 4.31 of this software to the McTRANS Center for distribution. This release incorporates many of the fixes and improvements that were made over the last six months.

Rural ITS

Key Rural ITS Conference Held

- From August 29-September 1, the ITS Rural Advanced Technology and Transportation Systems 1999 International Conference was held in Flagstaff, Arizona. The meeting was sponsored by ITS America, the Arizona Department of Transportation, and ITS Arizona. The conference theme, "Preparing for the Millennium," highlights the challenges to improve transportation as we head into the next millennium and the advancement of ITS in rural areas worldwide. The program featured two and a half days of session on topics such as traveler information systems, rural communities and ITS, commercial vehicles, ITS planning and development, rural traffic management, and transit and rail applications-to name just a few. There was an exhibit at which presents an opportunity for participants to present the latest in ITS technologies.

Rural Crash Prevention

- Rural crash prevention is being studied. The objective is to gain a more thorough understanding of safety problems endemic to rural areas and to examine the effectiveness of existing rural ITS safety systems to identify areas of enhancement to these systems and to assess their potential for deployment in other areas.

- Some preliminary work has been conducted toward the analysis of rural crash types. A paper documenting the results of this analysis was prepared and presented at the Rural ITS Annual conference in Flagstaff Arizona. Preliminary literature search has also been conducted on the state-of-the-practice for the Variable Speed Limit (VSL) systems. The activities under this task will be closely coordinated with the Speed Management Team. Draft submittals documenting the findings of this task order will be prepared by mid- December 1999 and could potentially be used at the TRB's Speed Management workshop.

Acadia National Park Intelligent
Transportation Systems Field Operational Test

- The US Department of Transportation (USDOT) and the US Department of the Interior (USDOI) have initiated an operational test of Intelligent Transportation Systems (ITS) at Acadia National Park. USDOT and the US Department of the Interior will conduct an ITS operational test that will be centered around an Advanced Traveler Information System (ATIS). The ATIS will be designed to provide travelers to the region with the type of information they find most useful via media they prefer most (e.g., radio, Internet, signs).

- The Acadia ITS operational test will demonstrate to the National Park Service (NPS) how ITS can enhance the quality of the park experience by improving traveler awareness of available transportation options. It will also increase US DOT's expertise for deploying ITS in rural areas. An ITS concept for the park will be developed. A comprehensive user needs assessment is being conducted. Final design of the system will be complete by early spring of next year and deployment will begin early summer.

Development of Surface Transportation Weather Data Requirements

- Version 1.0 of the Surface Transportation Weather Decision Support Requirements has been drafted by Mitretek and delivered to the FHWA. This document addresses a key need to better respond to the impacts of weather in the surface transportation system. In particular, it lays the foundation for the development of improved decision support systems, which provide decision makers with the specific road-weather information they need for better operations and in a format that is easily interpretable.

- In addition, these requirements support several objectives of the Weather and Winter Mobility program: 1) to help shape the representation of weather in the National ITS Architecture, 2) to facilitate coordination across multi-agency federal activities (via the Office of the Federal Coordinator for Meteorology (OFCM)), 3) to define further FHWA research and development activities, and 4) to promote deployment partnerships between system developers and State and local operators. These requirements will also serve as a primary input to the Symposium on Weather Information for Surface Transportation. This symposium, jointly sponsored by OFCM and the FHWA, represents the first time all those interested in surface transportation weather, including users (e.g., the transportation community) and providers (e.g., the National Weather Service) will be meeting. The Symposium will take place from Nov. 30 to Dec. 2, in Silver Spring, Maryland.

Commercial Vehicle Information Systems and Networks (CVISN)

- In regard to the ITS CVO Business Plans, 42 States have either completed or are in the process of completing them. These plans guide the States in reinventing and streamlining their traditional motor carrier safety and administrative processes. Twenty new States have been identified to participate in the series of three CVISN Deployment Workshops beginning in 1999. Eight States participated in the first series of workshops in July, three States in September, and ten States in October. By October 2000, it is anticipated that there will be 20 State CVISN Project Plans and top-level system designs. This will assist the States in the implementation and deployment of CVISN Level 1 capabilities.

- CVISN Project Managers March 1999 Meeting: On March 30, the project managers and system architects from the Commercial Vehicle Information Systems and Networks (CVISN) prototype and pilot initiatives met with Federal representatives in Washington, D.C. The group discussed several key issues regarding the deployment of CVISN Level 1 capabilities:

  - Federal funding for the State to complete Level 1 deployment, interoperability and electronic screening;
  - The upcoming rulemaking addressing Federal funding and architectural standards, safety and credentialing software; and
  - CVISN evaluation.

- The States were thanked for their accomplishments in testing both technical and non-technical components of the CVISN initiative in light of the uncertain funding environment. The following topics were discussed:

  - Federal funding for the remaining pilot States which have yet to be fully funded;
  - The FY 2000 ITS Deployment Program;
  - The Federal strategy for expanding CVISN Level 1 deployment to new States;
  - Interoperability for ITS/CVO electronic screening systems in the areas of hardware, systems/software, operations, and programs; and
  - The FHWA's field and headquarters reorganization.

- In May 1999, representatives from Maryland and Virginia, in partnership with Lockheed Martin, IDT, and Web critical, agreed to an integrated/accelerated schedule for demonstrating CVISN Level 1 deployment capabilities for the electronic application and processing of the IRP and IFTA credentials. The integrated/accelerated schedule keeps with the goal for Maryland and Virginia to deploy CVISN Level 1 capabilities in the area of interstate credentials administration by the December 31, 1999, deadline. However, the schedule is tight. As a result, the date has been extended for demonstrating CVISN Level 1 capabilities for the IRP and IFTA credentials to January 31, 2000.

- An agreement was negotiated and executed with the Montana Department of Transportation that allowed the use of FY 1999 funds for the State's automated size and weight certification system with the commitment from the State to deploy CVISN Level 1 capabilities with its own funds.

ITS National Architecture

- ITS Deployment Support - Intensive three-day advanced architecture training course were provided for ITS personnel from the FHWA resource centers and selected Division Offices, one each in mid-August and in late September. A total of three more sessions of the course are scheduled to be taught in December, February, and March, with a heavier concentration of FHWA division personnel anticipated.

- Two Interim Guidance workshops on architecture consistency immediately followed these training courses. The one-day workshop provided practical experience in the application of the Interim Guidance on architecture consistency. Three more workshops are planned for the next quarter.

- Workshops will be conducted in the field to assist MPOs in developing their regional architectures. There are two levels, Tier 1 (one day) and Tier 2 (two and a half days). The first Tier 1 workshop, focused on organizing the architecture development process, were conducted in October in Sacramento, California. Others will be scheduled in December in Corpus Christi and Austin, Texas. The first Tier 2 workshop focused on laying out an initial regional architecture and pointed at steps to complete the process. It was conducted this September in Pittsburgh. Tier 2 workshops are scheduled in December and February, in Sacramento and Milwaukee, respectively.

- Turbo Architecture -- This a software tool is being designed by the Architecture Team to assist transportation professionals in the development of regional and product architectures using the National ITS Architecture as a reference. The 30-day beta test began in mid-October. It is expected that the tool will available for delivery in late January 2000.

  Archive Data User Service (ADUS)

- On October 21, an ADUS Program Development workshop was held with the ADUS Working Group in Washington, D.C. The workshop was used to gather information from the stakeholders for the ADUS Program Plan. Stakeholders included State and local agency officials, academics, and Federal transportation officials from FHWA, FTA, NHTSA and BTS.

- The archived data user service, with strong support from the Office of Highway Information Management, has been integrated into the National ITS Architecture. As of mid-September, it became available on the ITS web site. In December, it will be available and distributed on a CD ROM together with other modifications to the architecture.

  Rural Review of National ITS Architecture

- Four new User Services were identified as possible additions to the National ITS Architecture: operations and maintenance; safe driving enforcement; environmental/weather information management; and disaster response and management. This action was based on a comprehensive review of the user needs documented in the FHWA's Rural ITS User Needs report and an analysis of the User Service Requirements documented in the National ITS Architecture. These candidate User Services will be further analyzed to determine if they meet the criteria necessary for inclusion in the National ITS Architecture. White papers will be prepared to describe these User Services in detail and to develop a plan for stakeholders' involvement.

- Results of the Rural ITS User Needs and User Service Requirements analysis, including descriptions of the four candidate User Services, were presented at the International Rural ITS Conference. A draft version of the Rural ITS Operational Concept Report documenting operational characteristics of ITS applications in rural areas was prepared and delivered.

  Transit Participation in the National ITS Architecture Program

- In coordination with the ITS Joint Program Office, FTA developed a half-day seminar titled, "Introduction to the National ITS Architecture for FTA Senior Staff." It will assist regional staff in understanding their role in facilitating the use of the National ITS Architecture by grantees. The course has been delivered for FTA staff at headquarters and at eight of the ten regional offices. In addition, FTA staff made presentations on the National ITS Architecture at several national meetings, including the TRB and ITS America.

ITS Standards

  Highway-Rail Intersection Standards

- On July 22 and 23, a workshop was held in Arlington, Virginia, to begin the process of establishing industry-consensus standards for the use of ITS technologies in the Highway-Rail Intersection (HRI). The primary objectives of the workshop were to:

  - Identify the standards needed for effective national deployment of ITS systems at HRI;
  - Identify the technical and institutional opportunities and challenges related to the development of these standards;
  - Identify the organizations and individuals who need to participate in the development of the standards; and
  - Begin or enhance the dialog among the relevant stakeholders.

- This effort was jointly sponsored by: Federal Railroad Administration, ITS Joint Program Office, US DOT, ITS America, and Federal Highway Administration Office of Motor Carriers & Highway Safety. In addition, there were eleven co-sponsoring organizations, representing railroad, labor, transit, and other related interests.

- Approximately 150 participants attended the workshop. The participants were divided into six topic-specific breakout groups to address the state of technology, opportunities for standardization, institutional issues, and who (organizationally and individually) should participate in standards development. The workshop luncheon featured a speech by Federal Railroad Administrator.

- On the afternoon of the second day, the breakout groups reported their results and led discussions of their results. The FRA Deputy Administrator received and commented on the results. Over three dozen specific standards were identified by the breakout groups as needing to be developed or refined. Proceedings of the workshop have been drafted and will be available before the end of the calendar year.

Standards Involvement in US DOT ITS Peer-To-Peer Program

- A solicitation to serve as experienced experts or "Peers" in the U.S. DOT ITS Peer-to-Peer program is receiving a good response. Each of the candidate "Peers" will be screened by program staff using established procedures. FHWA and the FTA sponsor the Peer-to-Peer Program which uses public and private sector peers to provide technical assistance to public transportation agencies.

Dedicated Short Range Communications

- The standards community has developed a set of three standards that define the application of Dedicated Short Range Communications (DSRC) technology. Unfortunately, two of these standards essentially codify the current status of two dominant technologies, allowing both to co-exist. While for many applications, this approach may be acceptable, the Commercial Vehicle Operations (CVO) program requires national interoperability to be successful. Therefore, US DOT is in the process of issuing a rulemaking on the application of DSRC to commercial vehicles. This process will produce a Notice of Proposed Rule Making (NPRM) published in the federal register before the end of 1999.

ITS Data Registry

- The ITS Data Registry Configuration Control Committee (CCC) is working on a document titled "Procedures for Reconciliation and Reuse of ITS Data Concepts." During meetings of the ITS Data Registry CCC and ad hoc meetings of Functional Areas Data Dictionary (FADD) Stewards, the need for specific "how to" procedures for harmonization and reuse of data elements, including how to execute the responsibilities of the CCC and the FADD Stewards, became an obstacle. The need for specific procedures for identification, reconciliation, and documentation of data concept overlaps and duplications across FADDs (including reuse of data concepts among FADDs) is especially important in relation to including existing U.S. DOT data systems. The draft document details the procedures, both those applicable during the use of the Interim ITS Database and during the use of the Prototype and "Full-Up" ITS Data Registry.

- On October 25 and 26, the CCC held a two-day meeting to discuss: (1) updated data element harmonization procedures, (2) identification of participants who will represent the various ITS data dictionaries and the U.S. DOT data systems, and (3) the data registrar's current data element harmonization proposals. The second day of the meeting included a full review of the system functional requirements and design for the prototype data registry. Because of an accelerated schedule, the CCC will have a limited opportunity to use experience with the prototype data registry to make changes to the final full-system data registry design.

Standards Technical Testing

- The standards technical testing program, which emphasizes real-world field deployments and will test the operation, correctness and completeness of the standards, is in final preparations for the first complete technical test of a suite of NTCIP standards, expected later in the 1999 calendar year. This first test, which will focus on verifying the overall standards testing approach that has been developed, will be for NTCIP standards associated with dynamic message signs.

- It will include the Illinois State Toll Highway Authority and the Washington State Department of Transportation's Seattle Model Deployment Initiative. The Illinois site is deploying over 30 NTCIP-compliant dynamic message signs that were made by two different vendors. The Seattle site has four NTCIP-compliant signs, made by a third vendor, already deployed and operational. Memoranda of Understanding are being developed with each site.

Transit Standards Program

- FTA provided support for continuing Transit Communications Interface Profiles (TCIP) development, and in FY99 several object definition standards were balloted and approved as standards. TCIP workshops were held in Oakland, CA and in Sacramento, CA. Also, work was begun to integrate TCIP and a European equivalent standard, called Transmodel.

- In other standards activities, FTA provided support for the formation of the Transit Standards Consortium, an organization that facilitates the development of standards to benefit the transit industry.

- Guidelines for multiple electronic payment system integration have started development, and draft modules were completed for regional transit integration, transit-university integration, transit-financial services integration and transit-employer integration. As part of this effort, FTA was active in the ITS America Electronic Payments Task Force, soliciting input from the industry for the development of an upcoming operational test.

- FTA supported work to bring vehicle area network standards to the level of international standardization and developed a 5-year plan for FTA Transit ITS Standards development.

  National Transportation Communications for ITS Protocol Guide

- NTCIP Guide - A new "draft for comment" edition of "The NTCIP Guide" is now available to the public on the NTCIP Web site, www.ntcip.org. The new NTCIP Guide, numbered NTCIP 9001 version 02.05 (September 1999) is a complete update of the 1997 edition. The guide, which was produced by the Joint AASHTO, ITE, and NEMA Committee on NTCIP, is technically still a "draft" because it has not yet been formally balloted by the three organizations.

- Major sections of the new draft NTCIP Guide include: Executive Summary, Understanding NTCIP, Procuring NTCIP, Designing NTCIP, and Implementing NTCIP. The guide also includes a definition list, a selected bibliography, selected descriptions of possible NTCIP implementations, and a list of NTCIP standards documents. NTCIP standards documents specify communications among non-mobile transportation monitoring and control system components, such as traffic management centers and roadway traffic control devices.

Telecommunications

- FCC Approval of Radio Band - On October 21, the Federal Communications Commission's (FCC) approved allocation of a range of 5850-5925 megahertz (MHZ) for Dedicated Short Range Communications (DSRC) between vehicles and electronic systems on the roadside, such as at toll booths or intersections. Transportation safety operations are a primary reason for this allocation of spectrum It will support intelligent transportation systems activities such as:

  - Intersection collision avoidance;
  - Transit or emergency vehicle signal priority;
  - Electronic parking payments; and
  - Commercial vehicle clearance and safety inspections.
  - This FCC allocation culminates many years of work initiated by the department's Federal Highway Administration (FHWA), which partnered with ITS America in this initiative. ITS America petitioned the FCC for radio spectrum for this purpose.

Program Assessment

  Model Deployment Initiative Evaluations

- MMDI Evaluations -- Work continued on the analysis of survey data and preparation of survey reports. Draft survey reports were completed for Tempe, Arizona; San Antonio, Texas; and Seattle and King County, Washington. Also completed were two customer satisfaction draft reports--the Seattle Traffic TV and Traveler Information User Profile reports. A presentation on customer satisfaction results is being prepared for presentation at the ITS World Congress in Toronto, Canada on November 8-12, 1999.

- CVISN Evaluations -- Data collection continued for the Oregon and Kentucky Screening Assessment studies, and for the final phase of Oregon Compliance Rate Assessment study. The Baseline Motor Carrier survey was approved, and planning is underway for its implementation. This survey is designed to provide baseline measurements of motor carriers' awareness, behaviors, and attitudes concerning the deployment of CVISN technologies and user services for credentialing and roadside enforcement.

  ITS Deployment Tracking

- Metropolitan Deployment Tracking -- Distribution of 1999 Metropolitan ITS deployment tracking surveys was completed to the 78 largest metropolitan areas in the U.S., with a 77% return rate. Efforts to increase the return rate will continue. Meanwhile, reports are being prepared that will summarize the results of the surveys for each metropolitan area and for the United States. These reports will include both the deployment levels for 1999 as well as comparisons of 1997 and 1999 deployment levels. The web site containing 1996 and 1997 data also will be updated with the information gathered in 1999.

- CVISN Deployment Tracking -- Distribution of CVISN deployment tracking surveys was completed to the 50 states and the District of Columbia, with an 86% return rate. Reports are being prepared that will summarize the results of the surveys at the State and national levels. The reports will include both comparisons of 1996 and 1988 deployments and plans for deployment in the next two years. Drafts of the State reports will be distributed for comments to the states in

early November, and the draft national report will be distributed for comments in late November. The goal is to complete the final versions of the reports by the end of the calendar year.

Field Operational Test Update

	Intelligent Infrastructure			Intelligent Vehicle Initiative	
	Metropolitan	Rural	ITS-CVO		
In Progress	16	11	5	1	
Being Redefined	1				
Completed	44	1	12	2	
Totals	**61**	**12**	**17**	**3**	**GRAND TOTAL 93**

ITS Benefits/Cost Tracking

- <u>Benefits Analysis</u> - Since December 1994, the ITS JPO has been collecting and distributing information regarding the benefits and impacts of ITS investments. The latest report, entitled "<u>ITS Benefits: 1999 Update</u>," is available on the ITS Electronic Document Library (EDL) on the U.S. DOT's ITS web page as document #8323. Paper versions are expected to be available before the end of the year.

- <u>The ITS Benefits Database</u> now is available on the Internet (See the end of this report under "Web"). The web-based database successfully went through a prototype testing period during the summer and was made available to the public on September 30. The online database allows users to access ITS benefits data collected by the JPO by using search options or by navigating through ITS services, program areas, or benefit measures. Users also may submit benefits data and reports by using the online forms. Mitretek now is in the process of including new sources of information in the database.

- <u>ITS Cost Analysis</u> - As part of the JPO's effort to track and report ITS costs, a working paper entitled "National Costs of the Metropolitan ITS Infrastructure: Update to the FHWA 1995 Report" has been prepared, and soon will be available on the EDL. The paper provides new estimates of the costs to deploy ITS infrastructure elements in the largest metropolitan areas in the United States. Mitretek completed a round of updates to the ITS unit cost estimates, based on new additions to the cost repository. On September 30, Mitretek placed the current version of the "standard" ITS unit cost estimates on the JPO's benefit and cost web site. Mitretek also is coordinating with the IDAS (which is an ITS sketch planning model) model developers on these updates to the unit costs.

Professional Capacity Building

Architecture Consistency Training

- The last train-the-trainer course was taught on the National ITS Architecture and the Interim Guidance. This completes training of all Division ITS staff as trainers for this material.

- Two advanced training courses on the National ITS Architecture were taught to FHWA Resource Center and Division office personnel. The courses, taught by the National Architecture teams, were well received. Three more are scheduled in the next quarter.

Architecture Training

- Eleven more two-day and three-day courses were taught this past quarter to public and private sector transportation professionals. Since beginning training in late 1997, this brings the total number of courses taught to 89 and the total number of students to 1,935. The courses are expected to be continued to be taught by the Architecture Team through Calendar year 2000.

CVISN Training Efforts

- ITS/CVO trainers under contract to the FHWA conducted seven deliveries of the ITS/CVO course on the CVISN architecture. A special ITS/CVO training course focused on State safety enforcement personnel was created and delivered twice at the CVSA Spring meeting. This second course was conceived and delivered.

- APL staff under contract to FHWA conducted a seminar on the CVISN architecture and electronic credentialing standards at the ATA's Information Technology & Logistics Council meeting. Participants included technical staff from EDI fleet management software vendors.

Transit Training Activities

- In addition to the development and delivery of the half-day seminar, "Introduction to the National ITS Architecture for FTA Senior Staff," FTA made the following ITS course deliveries in FY 99: ITS in Transit Seminar (Executive Summary) in Philadelphia, PA; ITS in Transit Seminar (one day) in Philadelphia, PA, Jacksonville, FL, Salina, KS and St. Louis, MO; and ITS Transit Management Course (two days) in Fall Church, Virginia. Including the architecture deliveries, total attendance at FTA-sponsored ITS PCB courses in FY 99 exceeded 400 people.

Outreach and Communications

Standards Outreach Efforts

- A Non-technical "Business-Case" Information Campaign -- In addition to testing them in real-world transportation settings and providing technical guidance on their use, a variety of outreach activities designed to encourage the use of ITS standards have begun. The Volpe Transportation Research Center is completing a non-technical "business-case" information campaign to explain the methodology and benefits of NTCIP standards to decision-makers in all levels of government. The standards Web site is providing information on all aspects of the ITS standards program. It already provides a considerable amount of information on the status of standards, including plain-English fact sheets and standards ordering information.

- "Lessons Learned" Reports -- Plans are underway for case studies and "lessons learned" reports on ITS standards. During the last quarter, Battelle was chosen to do a series of lessons learned reports. Some of the information will be drawn from Battelle's testing experiences and contacts with deployment sites. The lessons learned reports will be made available on the standards Web site.

- A "Competency Matrix" -- Outreach presentations have been given at transportation conferences and information about ITS standards is being provided at ITS America workshops and meetings. Special emphasis is being placed upon providing support for building competence among staff of FHWA resource centers and division offices. A "competency matrix" was developed to describe the knowledge that ITS staff in FHWA resource centers and division offices and in FTA regional offices should have about standards. Selected field staff members are reviewing the matrix, which also states how knowledge about standards will be delivered to staff. When it is completed, it will be a road map to building the competency of FHWA and FTA field staff.

- Workshops, Seminars and Courses -- The NTCIP Joint Committee is presenting workshops, seminars and courses on NTCIP standards and the U.S. DOT Joint Program Office is developing informational resources on the standards and recruiting experts to serve in the Peer-to-Peer Program. The Institute of Transportation Engineers held a standards needs-requirements workshop in August and is preparing a program to provide information and training on NTCIP standards. In the next quarter, ITE will present a plan for delivering outreach to public and private sector transportation professionals and, in coordination with ITE, the Transit Standards Consortium will present a plan for delivering outreach to transit professionals.

ITS Benefits Special Studies

- The ITS Joint Program Office initiated an effort to "soak up" lessons learned from both federally and locally funded ITS tests and deployments. The lessons learned and data on ITS benefits then would be repackaged into a number of products. The purpose of these products is to encourage the investment of local budget resources in ITS projects by helping to provide ITS solutions that meet local and regional transportation needs. The following formats have been developed to communicate with people at various levels within local and regional organizations and among their community stakeholders:

  - Benefits Brochures let experienced community leaders and transportation professionals explain in their own words how specific ITS technologies have benefitted their areas;
  - Cross-Cutting Studies examine various ITS approaches that can be taken to meet a community's goals;
  - Case Studies provide in-depth coverage of specific approaches taken in real-life communities across the United States; and
  - Implementation Guides serve as "how to" manuals to assist project staffs in the technical details of implementing ITS.

- The first wave of cross-cutting and case studies now are available in electronic form. The theme of the 9-report series is Metropolitan Transportation Management Centers (TMCs). A cross-cutting study describes successful operations and management practices and lessons learned from eight transportation management centers in the U.S. and Canada. Eight case studies provide profiles of the individual TMCs, describing their design, implementation, and operational management practices. The nine reports may be published in time for distribution at the ITS World Congress in Toronto, Canada, on November 8-12, 1999; however, the exact availability date this Fall is unknown.

CVISN Reports and Studies

- <u>Cost Model and Case Study</u> -- Initiated a project to develop a cost model for deploying components of CVISN Level 1 capabilities. This effort will provide new and existing CVISN states with the latest information regarding cost of implementing components such as CVIEW and the credentialing interface. A CVO case study on electronic credentials has been created.

- <u>A work plan</u> has been developed for the University of New Mexico's Alliance for Transportation Research Institute (ATRI) that outlined their efforts to support the State of New Mexico's CVISN program. The State of New Mexico's CVISN steering committee has officially accepted the work plan and their responsibilities therein.

- <u>A roadside identification feasibility study</u> was conducted by the Kentucky Transportation Center and completed on July 1, 1999. The study evaluates various technologies as applicable to the task of identifying commercial motor vehicles (CMVs) at the roadside. The activity of selecting CMVs for inspection at the roadside needs technology to help in screening since the volume of CMVs far exceeds the resources available to conduct the inspections. The study concludes that two technologies are preeminent in the field: RFID (transponder) and OCR (Optical Character Reader). An internal FHWA panel is being assembled to review the findings of this report.

  Transit Outreach Activities

- <u>Workshops, seminars, sessions</u>, and displays at conferences were conducted throughout FY 1999. Events included the Annual APTA meeting, Annual APTA Commuter Rail Rapid Transit Conference, Annual ITS America meeting, ITS America Annual Rural Conference, the Transportation Research Board Annual Meeting and an Electronic Payment Systems National Meeting.

- <u>APTS Stakeholders Forum</u> - A transit industry group was established and assisted in providing ITS Transit information to the transit industry. A benefits impact matrix was developed and placed on the Web to assist transit agencies in identifying specific benefits that can be derived from the deployment of ITS Transit technologies.

- <u>Rail Transit ITS</u> - FTA held a number of workshops with the transit industry to bring attention to opportunities for ITS applications on rail systems. Outreach efforts consisted of workshops with the Transportation Research Board, APTA Commuter Rail/Rapid Transit Conference, ITS America Conference and several rail committee meetings. FTA also developed a White Paper regarding opportunities afforded urban rail systems through use of ITS technologies.<

- FY99 began the development of the <u>APTS Mobile Showcase</u>, a vehicle that will demonstrate and evaluate the integration of state-of-the-art APTS systems and technologies such as automatic vehicle location, electronic fare payment, automatic passenger counters, traveler information, collision avoidance, video security and other systems. It is also a public-private partnership between the Federal government and the transit community. The government provides funding for project planning, overall project coordination, strategic communications and management and scheduling of the showcase while manufacturers and suppliers provide and maintain the showcase platform and technologies. The showcase will be displayed at transportation and transit conferences, individual transit operator locations, universities and other appropriate venues. In FY 1999 FTA received and evaluated proposals for the showcase from industry, and completed the Mobile Showcase program plan.

ITS Web Information Resources

- <u>New ITS Benefits Web Site</u> -- The US DOT's Joint Program Office (JPO) for Intelligent Transportation Systems (ITS) has sponsored the development of a web-based version of the ITS benefits database and cost information. An on-line database, searchable by ITS component and/or performance measure, summarizes benefits described in evaluations, conference papers, and other reports. A snapshot of the ITS benefits database as of May 1999, as well as a database of unit costs (in Excel spreadsheet format), can be downloaded. The site now is available through the revised and expanded ITS Program Assessment/Evaluation area of the JPO's web site at <u>www.its.dot.gov/eval/eval.htm</u>, by clicking on Program Assessment Analyses, then Benefits and Costs, then ITS Benefits Database.

- <u>ITS Electronic Document Library (EDL)</u> is on line and houses more than 900 ITS documents from a diverse field of sources. The system is based on a search command which helps to find documents quickly using key works and other information. This library can be found at the ITS JPO Web site at <u>www.its.dot.gov.</u>

- The <u>ITS Cooperative Deployment Network (ICDN</u>**)**, located on the World Wide Web, is integrated with each National Associations Working Group member's web site. It is accessible, useable, and responsive to the needs of its members and eager to attract new ones. The ICDN can be reached at the <u>ITS JPO</u> web page or at <u>www.nawgits.com/icdn</u>. There are over 900 documents in the EDL most of which are available to the general public.