



The United States Congress passed the Transportation Equity Act for the 21st Century (TEA-21) into law in June of 1998. TEA-21 establishes the direction of the Intelligent Transportation Systems (ITS) Program through 2003. It requires that ITS projects funded from the Highway Trust Fund must be consistent with the National ITS Architecture and applicable standards. It sets a goal of nationwide deployment of the Commercial Vehicle Information Systems and Networks (CVISN) Level 1 capabilities in a majority of the states by September 30, 2003. The Federal Motor Carrier Safety Administration (FMCSA) has committed to provide all interested states the ITS/Commercial Vehicle Operations (CVO) architecture and standards, training, workshops, documentation, and other guidance necessary to achieve this goal.

5.1 What is the FMCSA Deployment Strategy for CVISN Level 1?

The FHWA (now FMCSA) established a National Deployment Strategy for CVISN capabilities in 1994. Although the details of the plan have evolved since, the major elements have not changed. As shown in Figure 5-1, the strategy consists of five major steps with a parallel mainstreaming effort.

- ① The first step developed the management (plans) and technical (architecture) frameworks necessary to coordinate the subsequent phases. This step established an essential foundation for achieving national interoperability.
- ② The second step was to prototype the technology in an integrated way in two Prototype States (Maryland and Virginia) to demonstrate operational concepts and validate requirements.
- ③ The third step was to pilot the approach in eight additional Pilot States (California, Connecticut, Colorado, Kentucky, Michigan, Minnesota, Oregon, and Washington). This allowed testing and evaluating in a program of manageable size before proceeding to widespread deployment. The Prototype and Pilot State Initiatives are sometimes referred to collectively as the CVISN Model Deployment Initiative (MDI). As the projects have proceeded, the Prototype and Pilot efforts have merged into one effort. A few of the states are scheduled to complete the CVISN Level 1 deployment in 2000, the majority in 2001, and some will finish later. Schedules have slipped from original plans due to federal funding delays, year 2000 (Y2K) issues and long procurement cycles.

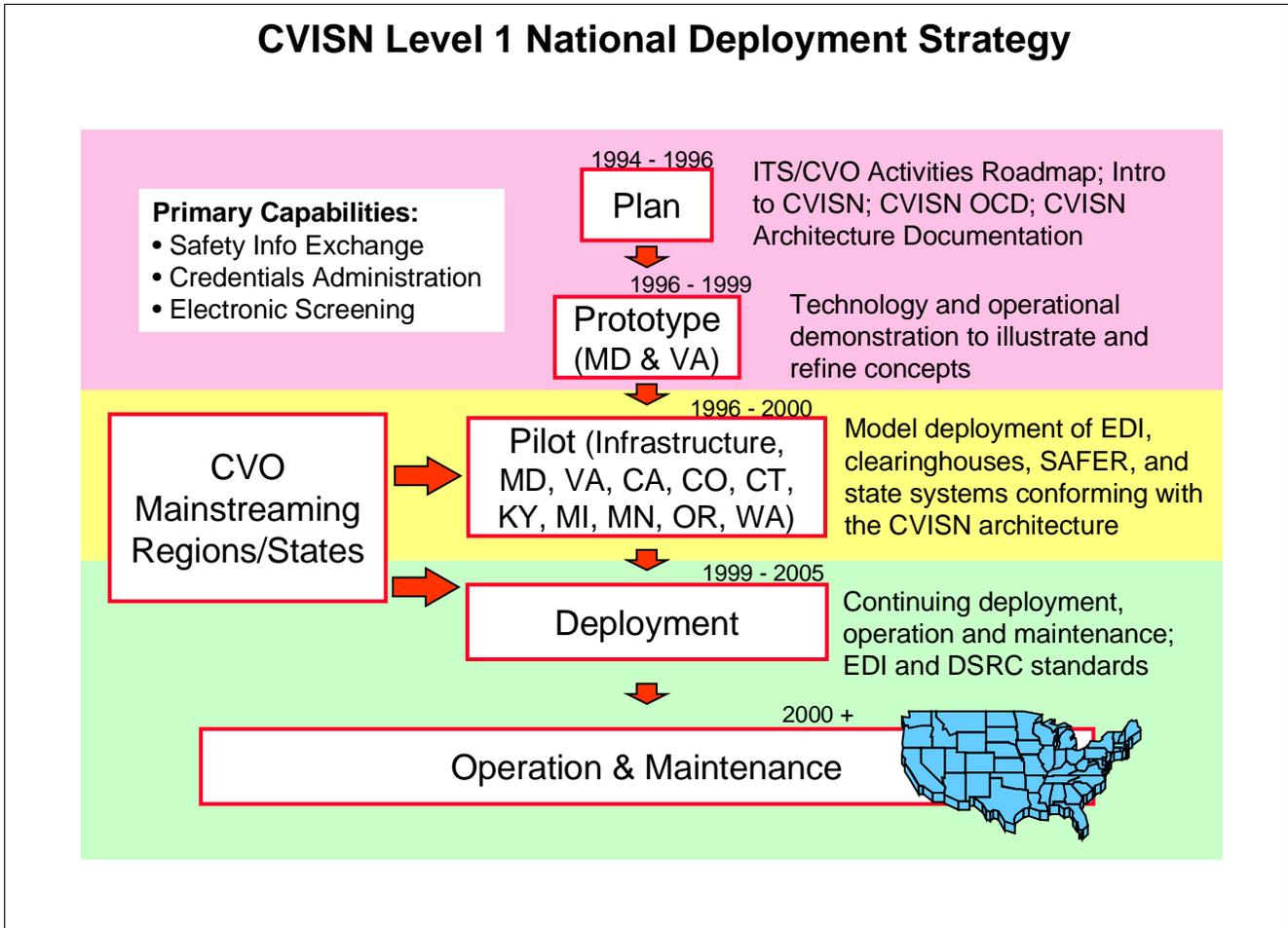


Figure 5-1 CVISN Level 1 National Deployment Strategy

④ The fourth step will expand the program scope from the model deployment states to all interested states. Currently, the concepts, technology, costs and benefits are well understood, providing a good experience base for the next group of states. Congress has established a goal of deployment of CVISN Level 1 to a majority of states by September of 2003. It is expected that deployment will continue beyond that date and through 2005 as a final group of states work to complete deployment.

⑤ The last step is operation and maintenance. Some of the model deployment states will enter this step in 2000. Having deployed CVISN Level 1 capabilities, their efforts will turn to operating and maintaining the systems that provide these capabilities, deploying to additional sites and carriers, as well as working to expand into additional capabilities (Level 2 and beyond).

5.2 What are the Elements of the ITS/CVO Program?

The purpose of the ITS/CVO Program is to foster the development and implementation of technology designed to assist trucks and buses in moving safely and freely throughout North America. The ITS/CVO Program encompasses many parts including:

- ◆ CVISN Program (discussed in Subsection 5.3)
- ◆ International Border Clearance (IBC) Project (outside the scope of this guide)
- ◆ ITS/CVO Mainstreaming (discussed in Subsection 5.4)
- ◆ ITS/CVO Training (discussed in Chapter 8)
- ◆ Various operational tests and small studies (outside the scope of this guide).

There are also ITS activities related to commercial vehicles in some elements of the Intelligent Vehicle Initiative (IVI), a newer program aimed at the vehicle portion of ITS. The IVI will include integration of commercial vehicle onboard systems to significantly improve safety.

5.3 What are the Elements of the CVISN Program?

The **CVISN Program** is a component of the ITS/CVO Program. It currently consists of five primary parts:

- ◆ CVISN Architecture and Standards Project
- ◆ CVISN Model Deployment Initiative (a.k.a., Prototype and Pilot Programs)

- ◆ Dedicated Short Range Communication (DSRC) Standards Demonstration Project
- ◆ CVISN Interoperability Test Project
- ◆ CVISN Deployment Workshops (discussed in Chapter 8).

CVISN Architecture and Standards Project – This project developed the CVISN operational concepts and CVISN architecture and refined them through the design stage. It established electronic data interchange (EDI) interface standards through the American National Standards Institute (ANSI) to promote information exchange through common open interfaces. It developed and will maintain the CVISN technical guides. It continues to feed back lessons learned from model deployment projects and standards efforts into the architecture design.

CVISN Model Deployment Initiative – The CVISN Model Deployment Initiative contains two elements:

- ◆ *CVISN Prototype Program*: started demonstrating CVISN in Maryland and Virginia in 1996 to verify the operational concepts, architecture, design, standards, deployment methodology, and interoperability tests.
- ◆ *CVISN Pilot Program*: started the model deployment of CVISN in California, Colorado, Connecticut, Kentucky, Michigan, Minnesota, Oregon, and Washington in 1996 to put CVISN operational concepts, designs, standards, methods, and interoperability testing into practice. (Note: Washington and Oregon formed a single team in this effort.)

DSRC Standards Demonstration Project – The DSRC Standards Demonstration Project involves several activities that are intended to expedite development and adoption of new DSRC standards to enable geographic and functional interoperability. Activities include:

- ◆ Working with standards development organizations (SDOs) such as the Institute of Electrical and Electronics Engineers (IEEE) and American Society of Testing and Materials (ASTM) to develop DSRC physical, data link, and message set standards.
- ◆ Prototyping the new DSRC standards in operational settings.
- ◆ Developing a migration strategy for moving to the new standards.
- ◆ Developing a set of interoperability tests to verify that systems have implemented the interoperability aspects of the DSRC standards correctly.

CVISN Interoperability Test Project – This project is developing a set of standardized test suites to test selected, critical aspects of interoperability. (Please see Chapter 7 for further information.)

5.4 What was the ITS/CVO Mainstreaming Program?

Mainstreaming was a highly successful FHWA initiative designed to foster and support ITS/CVO deployment and to communicate the program to all stakeholders. The Mainstreaming Program objectives were to:

- ◆ Incorporate ITS/CVO into state and metropolitan transportation planning.
- ◆ Coordinate ITS/CVO activities among agencies and states.
- ◆ Explain the ITS/CVO program to key decision makers.

Mainstreaming has occurred at three levels: state, regional, and national. Coordination is necessary at the state level because the states have the power and responsibility for building, maintaining and operating highways and regulating the motor carriers that use them. Coordination is required at the regional level because most trucks operate within a region (a.k.a., truckshed). Coordination at the national level ensures uniformity of services for interregional and national motor carriers.

The Mainstreaming Program evolved from an earlier ITS/CVO Institutional Issues Study. The Institutional Issues Study encouraged states to work together to identify issues with ITS/CVO and barriers to its implementation. The results from these studies were published in a series of reports in the mid 1990's. The approach of the Mainstreaming Program was to establish regional lead states to coordinate and promote ITS/CVO deployment in regional "trucksheds." A lead state was chosen from each of four regions. The lead states promoted the development of policies, plans and agreements that would expedite regional deployment of CVISN. They conducted regional forums a few times a year. These forums provided an opportunity for states to share plans, lessons learned and benefits related to their experiences in deploying ITS/CVO. The lead states encouraged each state to develop a State ITS/CVO Business Plan. They each established an ITS/CVO Regional Coordination Plan.

The lead states provided one or more ITS/CVO specialists, who were sometimes referred to as "ITS/CVO champions." These folks were skilled professionals experienced in CVO and worked with a group of states to promote and coordinate the application of ITS to CVO. The role of the champions was to participate in planning meetings, disseminate information, and organize forums. They now also serve as trainers for delivering the ITS/CVO courses and provide facilitation support at ITS/CVO Deployment Workshops. The champion role has in fact evolved

to that of a CVISN State Advisor (CSA). The CSA is a CVO professional who can provide a mix of advocacy, facilitation, training, and technical consulting services to states.

To date, 40 states have participated in the ITS/CVO Mainstreaming Program. The focus has been on encouraging process improvement and application of ITS/CVO technologies, in particular deployment of CVISN Level 1 capabilities. The majority of these states have completed the development of their State

ITS/CVO Business Plans. All Regional ITS/CVO Coordination Plans have also been completed. See Figure 5-2 for a detailed description.

The ITS/CVO Mainstreaming Program is now wrapping up. Most states are shifting from high-level business planning to CVISN Level 1 deployment. The FMCSA has defined a process that it recommends for states to follow in CVISN deployment. This process includes a series of trainings and workshops sponsored by the FMCSA. Chapters 6 through 9 provide the details of this process.

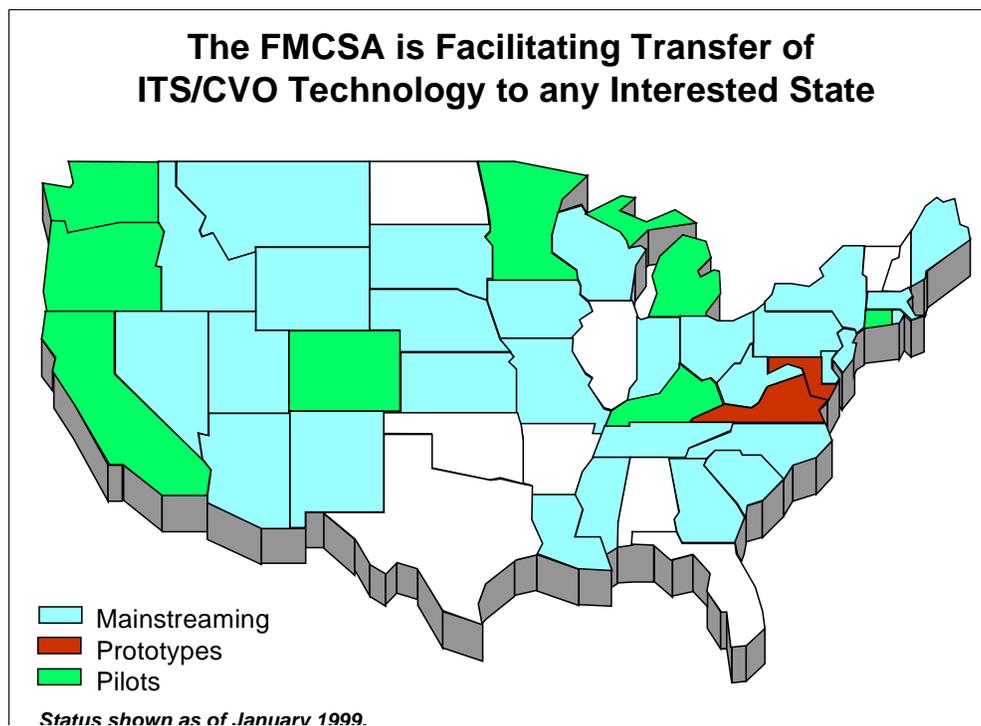


Figure 5-2 Transfer of ITS/CVO Technology to Interested States

