



# State of Wisconsin CVISN Program Plan

*Final Version*

November 16, 2001



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# EXECUTIVE SUMMARY

## **CVISN Definition**

CVISN is a Federal Motor Carrier Safety Administration (FMCSA) initiative to bring commercial vehicle operations into the 21<sup>st</sup> century by applying Intelligent Transportation Systems (ITS) technologies.

CVISN, which stands for Commercial Vehicle Information Systems and Networks, is a public/private effort to establish electronic linkages allowing the exchange of motor carrier information between Commercial Vehicle Operations (CVO) agencies, regional clearinghouses, and national databases. Additionally, the program will establish the communications and computer infrastructure to enable electronic transactions and information exchange between motor carriers and the CVO agencies.

CVISN features electronic fee and tax payments, credential transmittals and recaps, on-line registration and validation, interstate automated information exchange - a plethora of clearance, credentialing, and safety information that will reduce the current costs of state regulatory activities, improve motor carrier compliance, and enhance roadway safety.

## **CVISN Benefits**

By implementing CVISN capabilities, Wisconsin will see these benefits:

- Data interchange among states, carriers, financial institutions, and insurance companies will be electronic, and therefore more timely, accurate and less expensive.
- Administrators and enforcement personnel will have rapid, electronic access to required data.
- Credentials issuance, tax filing, interstate reconciliation, and audits will be automated to proceed more effectively and efficiently.
- Better enforcement of registration, licensing, weight, size, and tax regulations.
- Enforcement resources can be focused on noncompliant carriers and drivers.
- Better customer service to safe and legal motor carriers and drivers.
- In the long term, policies and practices can be based on measured data and careful analysis.

## **CVISN History**

Wisconsin completed its ITS/CVO State Business Plan in 1998 and attended the first two ITS/CVO training courses in 1999. That same year, the Wisconsin Department of Transportation (WisDOT) signed a Memorandum of Agreement and a Partnership Agreement with the United States Department of Transportation (USDOT) to work toward CVISN deployment.

In 2000, the CVISN team was established and the third ITS/CVO training course was conducted. The series of three CVISN Deployment Workshops was begun, with participation in the Scope Workshop in October of 2000, the Planning Workshop in February of 2001, and the Design Workshop in May of 2001. Following these workshops, the CVISN Top-Level Design was updated and submitted for review and approval. This CVISN Program Plan will be submitted for approvals upon completion.

Implementation and deployment will follow approval of the CVISN Program Plan and Top-Level Design. Following the plan, Wisconsin will build or buy various subsystems and integrate them into their existing operations capabilities. Complete implementation of the plan will depend upon funding and resource constraints.

## **CVISN Support**

CVISN is truly a multi-divisional effort. Representatives from the Divisions of Motor Vehicles, State Patrol, Business Management, and Transportation Infrastructure Development are actively involved in planning for this effort.

The Wisconsin Motor Carriers Association (WMCA) is supportive of CVISN. WMCA President Tom Howells is a member of the CVISN Steering Committee.

There is considerable Federal support for Wisconsin's CVISN efforts. Ray Lukesic of FMCSA serves on both the CVISN Steering Committee and Core Team. Federal Highway Administration (FHWA) ITS Engineer John Berg serves on the Core Team as well.

## **CVISN Champions**

WisDOT Secretary Terry Mulcahy signed the original CVISN memorandum of agreement and continues to support the project. DMV Administrator Roger Cross serves as the Executive Sponsor of the project. Senior Staff member Roman Kyweluk of the Bureau of Automation Services (BAS) has been a long-time booster of ITS efforts in general and CVISN in particular. Section Chief Tom Cantwell and Policy Analyst Susan Kavulich of Motor Carrier Services (MCS) have worked hard to promote CVISN and explore funding opportunities. There are many others within WisDOT who understand the promise of CVISN and have fully participated in the planning and design effort.

## **CVISN Projects, Costs, & Timeline**

The following projects have been identified as part of the CVISN program. Details on each project may be found later in this document.

- Credential Interface/Message Interface (CI/MI)
- Commercial Vehicle Information Exchange Window (CVIEW)
- Motor Carrier Enforcement System (MCES) Client
- PrePass and Integrated Weigh-In-Motion (WIM)
- Oversize/Overweight Permit Processing System (OOPPS)
- Electronic IFTA and IRP Credentialing
- IRP Clearinghouse

Scoping efforts are currently underway in the Bureau of Automation Services (BAS) that should provide preliminary estimates for the CI/MI and CVIEW projects. A scoping effort for the MCES Client will also need to be conducted to provide a preliminary estimate for that project. Preliminary estimates to complete the last four projects based upon previous estimates and experiences in other states range from \$5.5 million to \$6.1 million.

Due primarily to funding and resource constraints, even a tentative timeline for completion of these projects is impossible to construct with any certainty. The federal target date for deployment of CVISN Level 1 capabilities is September 30, 2003. It is anticipated that Wisconsin will not meet this date and that deployment efforts will continue at least through fiscal year 2004.

## INTRODUCTION

This document is intended to provide general information about Wisconsin's CVISN program and specific information about individual projects within the CVISN Program.

This CVISN Program Plan, along with an associated document entitled *State of Wisconsin CVISN Top-Level Design*, outlines how CVISN deployment efforts will be accomplished in Wisconsin. Questions or comments about this plan may be directed to:

- Tom Cantwell, [thomas.cantwell@dot.state.wi.us](mailto:thomas.cantwell@dot.state.wi.us);
- Susan Kavulich, [susan.kavulich@dot.state.wi.us](mailto:susan.kavulich@dot.state.wi.us); or
- Barry Larson, [barry.larson@dot.state.wi.us](mailto:barry.larson@dot.state.wi.us).

## **CVISN Overview**

According to a March 2001 newsletter from the National Conference of State Legislatures, each year trucks and commercial motor carriers travel more than 152 billion miles on America's roads. As demands on the nation's highways and the need for more efficient movement of goods increase, the trucking industry and federal, state and local governments are using ITS technologies to streamline commercial vehicle operations, reduce congestion and improve travel.

The 1998 Transportation Equity Act for the 21st Century (TEA-21) established the goal of deploying CVISN Level 1 in the majority of the states by 2003. The Federal Motor Carrier Safety Administration (FMCSA) hopes to have CVISN deployed in between 22 and 35 states by 2005. CVISN's goal is to establish a nationwide infrastructure for data exchange for commercial vehicles that are traveling in interstate commerce.

## **CVISN Definition**

The term CVISN refers to the collection of information systems and communications networks that support commercial vehicle operations (CVO). These include information systems owned and operated by governments, motor carriers, and other stakeholders.

The FMCSA-led CVISN program is a public/private effort to establish electronic linkages allowing exchange of motor carrier information between CVO agencies, regional clearinghouses, and national databases. Additionally, the program will establish the communications and computer infrastructure to enable electronic transactions and information exchange between motor carriers and the CVO agencies.

CVISN features electronic fee and tax payments, credential transmittals and recaps, on-line registration and validation, interstate automated information exchange - a plethora of clearance, credentialing, and safety information that will reduce the current costs of state regulatory activities, improve motor carrier compliance, and enhance roadway safety.

## CVISN Level 1

FMCSA is using CVISN “levels” to allow definition of a specific set of capabilities that can be deployed incrementally by a state and its motor carriers. The level definitions include capabilities a state would deploy, capabilities motor carriers in a state would deploy, and capabilities for several critical national systems, referred to as core infrastructure systems.

The definition of CVISN Level 1 has been baselined. The definition of CVISN Level 2 is being developed. Possible elements for Level 3 and beyond are being collected to support planning. The level definitions include capabilities a state would deploy, capabilities motor carriers in a state would deploy, and capabilities for several critical national systems, referred to as core infrastructure systems

The following table describes the minimum capabilities a state must implement to achieve CVISN Level 1. Wisconsin has additionally defined CVISN Level 1 as including the deployment of oversize/overweight permit processing.

Capability Area	State CVISN Level 1 Capabilities
	<ul style="list-style-type: none"> <li>▪ <i>An organizational framework for cooperative system development has been established among state agencies and motor carriers.</i></li> <li>▪ <i>A State CVISN System Design has been established that conforms to the CVISN Architecture and can evolve to include new technology and capabilities.</i></li> <li>▪ <i>All the elements of three capability areas (below) have been implemented using applicable architectural guidelines, operational concepts, and standards.</i></li> </ul>
<b>Safety Information Exchange</b>	<ul style="list-style-type: none"> <li>▪ ASPEN (or equivalent) at all major inspection sites.</li> <li>▪ Connection to the Safety and Fitness Electronic Records (SAFER) system to provide exchange of interstate carrier and vehicle snapshots among states.</li> <li>▪ Implementation of the Commercial Vehicle Information Exchange Window (CVIEW) (or equivalent) system for exchange of intrastate and interstate snapshots within state and connection to SAFER for exchange of interstate snapshots.</li> </ul>
<b>Credentials Administration</b>	<ul style="list-style-type: none"> <li>▪ Automated processing (i.e., carrier application, state application processing, credential issuance, and tax filing) of at least International Registration Plan (IRP) and International Fuel Tax Agreement (IFTA) credentials; ready to extend to other credentials [intrastate, titling, oversize/overweight (OS/OW), carrier registration, and hazardous material (HAZMAT)]. Note: processing does not necessarily include e-payment.</li> <li>▪ Connection to IRP and IFTA Clearinghouses.</li> <li>▪ At least 10 percent of the transaction volume handled electronically; ready to bring on more carriers as carriers sign up; ready to extend to branch offices where applicable.</li> </ul>
<b>Electronic Screening</b>	<ul style="list-style-type: none"> <li>▪ Implemented at a minimum of one fixed or mobile inspection site.</li> <li>▪ Ready to replicate at other sites.</li> </ul>

## **CVISN Program Organization**

Wisconsin is fortunate to have most of the agencies responsible for various aspects of CVISN located in the Department of Transportation. The chart in Appendix A will provide an overview of how various state agencies are organized to support the CVISN Program.

### **CVISN Steering Committee**

The Steering Committee is responsible for communicating WisDOT business objectives, setting scope and direction for the project, resolving project issues, determining expected return on investment, providing organizational support, and approving project budget and changes. The organizational chart in Appendix B shows the membership of this committee.

### **CVISN Core Team**

The Core Team helps drive the project in appropriate directions and assists with issue resolution. Core Team members assist with the preparation of pre-work materials required for USDOT sponsored workshops. They also attend these workshops and assist the CVISN Project Manager with the preparation of the CVISN Project Plan and Top-Level Design. The Core Team meets regularly, advising the CVISN Project Manager when issues and concerns arise and reviewing work in process with an eye toward keeping the CVISN Project focused and functional. The organizational chart in Appendix C shows the membership of this team.

## **CVISN Program History**

Wisconsin completed its ITS/CVO State Business Plan in 1998 and attended the first two ITS/CVO training courses in 1999. That same year, the Wisconsin Department of Transportation (WisDOT) signed a Memorandum of Agreement and a Partnership Agreement with the United States Department of Transportation (USDOT) to work toward CVISN deployment.

In 2000, the CVISN team was established and the third ITS/CVO training course was conducted. The series of three CVISN Deployment Workshops was begun, with participation in the Scope Workshop in October of 2000, the Planning Workshop in February of 2001, and the Design Workshop in May of 2001. Following these workshops, the CVISN Top-Level Design was updated and submitted for review and approval. This CVISN Program Plan will be submitted for approvals upon completion.

Implementation and deployment will follow approval of the CVISN Program Plan and Top-Level Design. Following the plan, Wisconsin will build or buy various subsystems and integrate them into their existing operations capabilities. Completion of the plan will be dependent upon funding and resource constraints.

## **CVISN Program Objectives**

Wisconsin intends to satisfy the following objectives via the deployment of various projects within the CVISN program:

- Provide efficient application, processing and delivery of motor carrier credentials (e.g. registration, tax payments, permits, etc.)
- Increase the efficiency and effectiveness of CVO enforcement.
- Enhance safety of commercial vehicle operations.

There is a history behind the development of these objectives. In Wisconsin's ITS/CVO Business Plan, the ITS/CVO planning effort was guided by the following departmental vision for WisDOT's CVO program:

- Increase safety and efficiency.
- Continuously improve processes.
- Complement regional and national CVO and ITS efforts.
- Maintain partnerships with industry to gain their input and address their concerns and needs.
- Protect taxpayer investment in Wisconsin's transportation infrastructure.

Because the department is the umbrella agency for all of Wisconsin's major motor carrier enforcement, credentialing, planning, and facility development and operation efforts, it is in a unique position to identify and act upon problem areas. With participation by industry and department staff, a work group developed the following list of CVO problems and issues that needed attention:

- WisDOT faces an increasing credential workload with decreasing staff resources.
- Application processing backlogs cause inconvenience and financial burdens to motor carriers.
- Current processing systems were unable to support process improvements that would improve both state and carrier efficiency, such as electronic transmission of reports, self-issuance of credentials, staggered IRP renewals, and permanent IRP plates.
- WisDOT's CVO enforcement program must handle an increasing truck volume with static or decreasing staffing levels.
- Current CVO enforcement methods could not automatically identify non-compliant carriers. As a result, mostly "legal" carriers are stopped, which reduces carrier efficiency and does not contribute to the effectiveness of enforcement.
- Carriers not in compliance with weight, size and safety regulations may be using alternate routes to avoid being stopped at safety and weight enforcement facilities (SWEF) on major truck routes.
- The department's CVO enforcement efforts in southern Wisconsin are of critical importance to Wisconsin and the region, given the large volume of trucks traveling to and from this area along the Illinois, Indiana, Ohio, Pennsylvania and New York tollway corridor, where there are virtually no SWEFs.

- Safety inspections are time-consuming, limiting the number of carriers that can be checked for safety violations.
- Routing of oversize/overweight loads is done by manual processes that are slow and prone to human error.

The identified problems fell into two areas – deskside (credential administration) and roadside (safety, weight, size and credential enforcement). The work group developed goals and objectives to address the problems, and to serve as an outline for project development. The identified ITS/CVO goals and objectives were as follows:

**Goal 1:** Improve efficiency of application, processing and delivery of motor carrier credentials.

- Objective a: Implement IFTA and IRP electronic access for carriers.
- Objective b: Implement electronic self-issuance on O/O permit system.
- Objective c: Achieve interoperability with other related systems, both within Wisconsin as well as in other jurisdictions.

**Goal 2:** Improve effectiveness and efficiency of CVO enforcement.

- Objective a: The total number of Commercial Motor Vehicles (CMV) weighed or screened for overweight violations steadily increases.
- Objective b: The number of CMV screened for safety violations steadily increases.
- Objective c: The number of CMV required to stop at fixed SWEFs steadily decreases.
- Objective d: Focus enforcement efforts on carriers operating illegally and those with unsatisfactory safety ratings.
- Objective e: Coordinate with regional and national enforcement efforts through joint planning and system interoperability.

**Goal 3:** Enhance safe and efficient movement by commercial vehicles.

- Objective a: Deploy equipment and technology necessary to accomplish mainline automatic screening of size, weight, credentials and safety at both fixed and mobile locations.
- Objective b: Steadily decrease the number of carriers operating outside of legal size and weight limitations.
- Objective c: Increase compliance with credentialing rules.

Wisconsin has numerous opportunities to meet these goals and objectives, through both process improvements and use of ITS technologies. The ITS/CVO work group developed general strategies for improvements to deskside and roadside operations.

The recommended strategy for deskside operations is as follows:

- Further automate credentialing processes
- Open the processing systems to electronic access by carriers
- Achieve electronic sharing of information with other jurisdictions

The recommended strategy for addressing roadside issues is the following:

- Maintain a strong deterrent to CVO non-compliance
- Increase the efficiency and effectiveness of enforcement
- Use SWEFs to check high volume truck traffic on major highway corridors
- Use mobile enforcement on bypass routes and in areas without SWEFs

Increasing the efficiency and effectiveness of CVO enforcement included:

- Completion of department's long-range SWEF location and development plan
- Coordination with other states on basic concepts of SWEF location/operation
- Implementing ITS technologies at SWEFs and mobile sites

## **CVISN Program Benefits**

According to *A Report to the Maryland General Assembly Senate Budget and Taxation Committee and House Appropriations Committee*, a cost-benefit analysis of the CVISN program in Maryland estimated benefit/cost ratios for a variety of ITS/CVO applications. The ratios are based on a 10-year lifecycle for the project, with full deployment of the system in the first year and participation in the program by industry increasing gradually in the early years, more rapidly in the middle years and leveling off in the final years of the lifecycle. Findings include:

- Overall benefit/cost ratios ranging from 3.17 to 4.83.
- Roadside operations of safety enforcement with benefit/cost ratios between 4.01 and 6.08.
- The benefit/cost ratios for state agencies are between 1.41 and 1.66.
- Commercial motor carriers achieving benefit/cost ratios between 6.49 and 10.71.

By implementing CVISN Level 1 capabilities, Wisconsin will see these benefits:

- Data interchange among states, carriers, and financial institutions will be electronic, and therefore more timely, accurate and less expensive.
- Administrators and enforcement personnel will have rapid, electronic access to required data.
- Credentials issuance, tax filing, interstate reconciliation, and audits will be automated to proceed more effectively and efficiently.
- Better enforcement of registration, licensing, weight, size, and tax regulations.
- Enforcement resources can be focused on noncompliant carriers and drivers.
- Better customer service to safe and legal motor carriers and drivers.
- In the long term, policies and practices can be based on measured data and careful analysis.

Motor carriers will see these benefits:

- Reduced administrative burden in regulatory compliance.
  - Electronic credentials application and electronic tax filing
  - Electronic access to credentials, tax, and safety data will allow carriers to view their own records, reducing the need for personal interaction with WisDOT staff.
- Vehicles of safe and legal carriers will incur less delay.
  - Mainline electronic screening
  - Automated inspections
- Uniformity of credentialing and electronic screening services across North America.
- Reduced numbers of illegal and unsafe carriers, providing a “level playing field” for competition.

The benefits to shippers as a result of doing business in states and with motor carriers that have implemented CVISN capabilities include:

- Improved motor carrier safety
- More efficient and effective motor carriers
- Fewer delays and more predictable schedules
- Improved access to motor carrier safety information

## **PROGRAM REQUIREMENTS AND DESIGN**

Wisconsin's design incorporates the following underlying principles:

- Application system integration required by CVISN will be accomplished using a messaging / queuing approach.
- Communication among internal state systems will continue to use syntax native to those systems to minimize legacy system changes.
- State application system interfaces to external systems will be minimized to the greatest extent possible.
- Updates from state credentialing and safety systems will be applied on a real time transactional basis to a state summary database (CVIEW), which in turn forwards updates to SAFER.

Wisconsin's design reflects a concerted effort to tie existing legacy systems and newly acquired applications together in a manner that can respond to future changes. For more detail, refer to Wisconsin's CVISN Top-Level Design document.

Appendices D and E document Wisconsin's responses to several CVISN Operational and Architectural Compatibility Handbook (COACH) questionnaires. Appendices F and G depict Wisconsin's currently deployed and future (post-CVISN) systems. Note that on the diagram of future systems, the unshaded boxes represent new functionality while the shaded boxes represent existing systems tied together with a messaging interface.

### **CVISN Conformance With the National ITS Architecture**

Most of us have an idea of what is meant by the architecture of a building. It means the overall design of a building, including the structural elements and style. The information technology community uses the term to mean the same thing with respect to information systems.

The ITS Program has developed a National ITS Architecture, which was defined and baselined in 1996. ITS has been interpreted to be a "system of systems," and its architecture serves as the master blueprint.

The National ITS Architecture is comprised of several "subsystems" that are components of the overall ITS. CVO comprises four of these subsystems, and a more detailed architecture consistent with, and derived from, the National ITS Architecture exists to support it. The ITS/CVO Architecture was developed to provide a technical framework for the development of systems for implementing various ITS/CVO user services that utilize information systems and networks. It is intended to guide implementations throughout all of North America, to foster commercial motor vehicle safety and efficiency across the United States and beyond its borders into Mexico and Canada.

The CVISN Architecture is the CVO information systems and networks portion of the National ITS Architecture. The CVISN Architecture begins with the National ITS Architecture and adds more detail in some areas to facilitate further development.

## CVISN PROJECT DESCRIPTIONS

The following projects have been identified as part of the CVISN Level 1 program:

- Credential Interface/Message Interface (CI/MI)
- Commercial Vehicle Information Exchange Window (CVIEW)
- Motor Carrier Enforcement System (MCES) Client
- PrePass and Integrated Weigh-In-Motion (WIM)
- Oversize/Overweight Permit Processing System (OOPPS)
- Electronic IFTA and IRP Credentialing
- IRP Clearinghouse
- USDOT Numbers for Intrastate Carriers

### CI / MI

The Credential Interface (CI) will be the sole state interface point for EDI transactions from carriers and carrier agents. Its principal function is to receive transactions from the carriers or agents, send acknowledgements and products back to the carrier or agent, and provide basic editing for application completeness. It will also provide EDI (eventually XML) translations to and from internal state system formats. Communication among legacy systems internal to the state will continue to use the syntax native to the legacy system. The exception is for vendor-supplied applications such as IRP and IFTA that will use EDI, as well as external interfaces to carrier systems and federal systems.

The Messaging Interface (MI) is closely integrated with the CI and provides messaging and queuing services. Conceptually, the Messaging Interface would have scripts associated with specific application transaction types that would enable it to:

- Receive and store transactions arriving from carriers and carrier agents;
- Spawn transactions to other systems to gather status information needed by a credentialing system to process an incoming transaction;
- Assemble “information packages” (the incoming carrier application transaction, and required status information) and forward to appropriate credentialing system;
- Send acknowledgements and credentialing system products back to carrier or carrier agent;
- Route credentialing system updated status to CVIEW;
- Return detailed credential information in response to an enforcement query from the MCES client;
- Route snapshots from CVIEW to roadside systems; and
- Route selected snapshots to PrePass Service Center CVIEW equivalent (PreVIEW) periodically.

## **CVIEW**

The CVIEW will be the interface point between the state and the federal SAFER system. State credentialing & safety legacy systems will provide status updates to CVIEW via the Messaging Interface. Roadside or credentialing systems will not communicate directly with federal core systems such as SAFER. CVIEW will serve as the motor carrier summary information database for both interstate and intrastate carriers.

## **MCES Client**

The MCES Client provides the functions associated with the Roadside Operations Computer (ROC), i.e. interface to CVIEW to get snapshot data, and to provide roadside access to state source systems. It also, in conjunction with MCES, provides the ASPEN equivalent automated inspection reporting function.

## **PrePass and Integrated Weigh-In-Motion (WIM)**

The PrePass system allows checking motor carrier credentials and weight at highway speeds without stopping the vehicles at inspection stations. As the truck passes over automatic sensors built into the highway, the sensors weigh the vehicle and transmit data to a roadside computer, which verifies that state-required credentials are in order.

The PrePass Screening Computer is a new component to be added. This is supplied as part of the PrePass program. The Screening Computer is used to make the screening decision (pull in or by pass) based on sensor inputs and the snapshot screening criteria. We expect the MCES Client will ultimately connect to the PrePass Screening Computer to obtain the VINs for vehicles receiving a pull in signal. The MCES Client will use these VINs to query state source systems for detail information to be made available to the roadside inspector, without needing to manually key the inquiries.

## **Oversize Overweight Permit Processing System (OOPPS)**

As part of the DMV biennial budget initiative to develop and implement an automated oversize/overweight permit processing and routing system, the OOPPS Phase 1 project was completed and went into production on May 15, 2001. This project provided the ability for some simple single-trip applications to be issued via the Web. Other single-trip and multiple-trip applications are accepted and referred to the Permit Unit for issuance.

Further enhancements to the existing system along with some new development are planned. The ultimate goal of the project is to implement a GIS map-based automated routing and issuance system for oversize/overweight permits. Permit applicants will be able to apply for and receive permits via the Web. To minimize risk and to deliver benefit early on in the project, a phased approach will be used.

Phase II of the OOPPS project will include the following:

- Allow multiple trip applications that fall within the envelope, to be auto issued by Web.
- Allow multiple trip applications to be renewed by Web. A renewal will only be allowed if no details changed from the original annual multiple permit that was issued.
- When fax server infrastructure is in place, extend functionality of OOPPS to send issued permits directly by fax. Depending on the complexity, functionality will be developed in the Oversize Unit Permit System (OPUS) to allow automated faxing.
- Extend OOPPS functionality to accept credit card payments. This is dependent on the decision made by DOA as to which implementation to use for credit card payments.
- Replace the existing billing coding in OPUS with DB2 stored procedures. This will simplify the billing process and improve the turn around time.
- Extend the vehicle type table to include additional vehicle types required by Oversize/Overweight permits.
- Combine the OPUS vehicle make table with the DMV vehicle make table, to reduce duplication of data.

## **Electronic IFTA and IRP Credentialing**

DMV's contract with The Polk Company includes a requirement that the COVERS IRP (International Registration Plan) and COVERSft IFTA (International Fuel Tax Agreement) systems provide for electronic reporting and credentials. The Polk Company has developed the technology architecture to meet this need.

This project will allow motor carriers to electronically transmit their IRP applications and IFTA reports. DMV staff will no longer have to re-key numbers and data into the processing systems, thus improving turnaround time and accuracy for reports and credentials. In 1999, 3,800 IFTA carriers submitted quarterly reports and renewals, and IRP had 5,000 carriers submit IRP renewals or supplements. Received by fax were 10,000 IRP temporary vehicle (TVR) registration requests, which required staff to produce a temporary vehicle registration and fax it back to the customer.

This project consists of implementing two separate Polk Company systems. The COVERSnet system provides a secure web site where carriers can compose and submit transactions to the COVERS and COVERSft systems. The COVERS-EDI system allows a carrier to exchange IRP and IFTA information over the Internet, via a Value Added Network (VAN) or through direct dial-up connection with the jurisdiction COVERS and COVERSft systems.

Staff from the Polk Company will provide the bulk of the development efforts. They have asked for Wisconsin's assistance in Beta testing the products. The initial Beta testing will focus on IFTA transactions.

## **IRP Clearinghouse**

IRP is a multi-jurisdictional program that allows interstate motor carriers to submit one application to their base state to cover registration credentials for all IRP jurisdictions in which they operate. As an IRP member jurisdiction, Wisconsin must transmit considerable amounts of registration and financial information to other member jurisdictions. Currently this requires DMV to produce, check and distribute large amounts of paper records and checks. IRP requires transmittal of carrier registration information and fees to other jurisdictions every 45 days. A proposal to change that requirement to every 30 days is being considered.

Recognizing the paperwork burden on its member jurisdictions, IRP Inc. established a clearinghouse to allow jurisdictions to share exchange information electronically. Participation in the IRP Clearinghouse will allow WisDOT to sharply reduce and ultimately eliminate staff production, handling and transmission of paperwork for other jurisdictions. The IRP Clearinghouse provides both data transmission and financial netting of funds. This will improve efficiency by reducing the flow of paperwork between jurisdictions, and allowing all clearinghouse members to inquire electronically about carrier operations.

The project will allow DMV to transmit and receive data and fees electronically with other IRP jurisdictions through a central IRP Clearinghouse. Clearinghouse participation requires linking to the IRP Clearinghouse server while maintaining security and data integrity. The Polk Company will be responsible for performing work on the Covers IRP system to achieve this function. It is WisDOT's responsibility to translate the data into the ANSI X12 standard format (required by both IRP and CVISN) and make the communication link to the IRP Clearinghouse server. IRP has established the ANSI X12 standard format as the base requirement for sending data to the clearinghouse.

Sending data to the IRP Clearinghouse will occur at least once a month for transmittals. The data will be taken from the Oracle production server and sent to the IRP Clearinghouse server. We will also receive data and fees from the IRP Clearinghouse server as other jurisdictions transmit registration information and fees they assessed and collected for Wisconsin. A future enhancement would be electronic transmission of funds from the clearinghouse to the WisDOT accounting system.

## **USDOT Numbers for Intrastate Carriers**

Interstate carriers are currently required to have an assigned USDOT number. This number provides a unique identifier for entering and/or looking up information about a carrier. Assigning a USDOT number to intrastate carriers would provide the same benefits. This project, currently planned as part of the DMV Registration Redesign effort, will add the necessary field to various databases to provide room for storage of this USDOT number, and add capabilities to existing applications for entry and maintenance of this number.

Because of many unknowns, this project is not estimated or shown in the Work Breakdown Structure. Once planning is finalized, an estimate may be prepared.

## WORK ASSIGNMENTS

A Work Breakdown Structure (WBS) is a decomposition of the tasks to be done, presented in a product-oriented hierarchical representation such that the full scope and limits of the program and its projects can be easily seen. The WBS is a way of visualizing and graphically portraying the entire program. The WBS structure also forms a basis for Wisconsin's CVISN procurement plan. Appendix H provides a graphical representation of the top levels of Wisconsin's WBS.

A table in Appendix H provides a more detailed look at individual projects within the WBS. Preliminary estimates to complete these projects are based primarily upon experiences in other states. This information was distributed by FMCSA for use by states in preparing initial estimates. Scoping efforts are currently underway in the Bureau of Automation Services (BAS) that should provide preliminary estimates for the CI/MI and CVIEW projects. A scoping effort for the MCES Client will also need to be conducted to provide a preliminary estimate for that project.

Due primarily to funding and resource constraints, even a tentative timeline for completion of these projects is impossible to construct with any certainty. The federal target date for deployment of CVISN Level 1 capabilities is September 30, 2003. It is anticipated that Wisconsin will not meet this date and that deployment efforts will continue at least through fiscal year 2004.

## PROCUREMENT STRATEGY

Wisconsin intends to use a mix of internal staff and external vendors to complete the deployment of CVISN Level 1 capabilities.

- Staff from the Division of State Patrol and Division of Transportation Infrastructure Development will manage non-IT components of CVISN projects (e.g. PrePass deployments). Vendors contracted by Wisconsin will perform implementation activities.
- Staff from the Division of Motor Vehicles, Division of State Patrol, and Division of Business Management will manage IT projects. A mix of internal IT staff, contract staff, and vendors will perform implementation activities.

The table in Appendix I provides a detailed breakdown of how various products and services will be procured.

## PHASES AND BUILDS

Appendix J provides a graphical depiction of the various phases and builds for CVISN project deployment. Due primarily to funding and resource constraints, even a tentative timeline for completion of these projects is impossible to construct with any certainty. The federal target date for deployment of CVISN Level 1 capabilities is September 30, 2003. It is anticipated that Wisconsin will not meet this date and that deployment efforts will continue at least through fiscal year 2004.

### Phase 1

- **Project Planning** – Overall CVISN project planning.
- **OSOW Build 1** – Limited self-issuance of single-trip permits, using a table based route restriction evaluation routine. Online application for the most common types of annual multiple-trip permits.

### Phase 2

- **CVIEW Build 1** – Begin development of a local CVIEW, using existing software available from Johns Hopkins University Applied Physics Lab or other vendor as a framework for our CVIEW.
- **OSOW Build 2** – Online renewals of annual multiple-trip permits. Automated faxing of self-issued SS permits. Online inquiry of permit application status. Routing system decision.
- **Electronic Credentialing Build 1** – Provide electronic access to COVERSft, a vendor package from The Polk Company used to process IFTA transactions. The initial functionality will allow a carrier to submit fuel tax returns.
- **Credential Interface/Message Interface Build 1** – Begin introduction of the IBM MQSeries product into the WisDOT computing environment to serve as the underlying technical infrastructure component for this messaging and queuing application.
- **Credential Interface/Message Interface Build 2** – Begin development of a prototype application to link this messaging interface with a small number of other systems.
- **PrePass Build 1** – Implementation of a PrePass facility at the Hudson, WI SWEF.

### **Phase 3**

- **CVIEW Build 1** – Complete development of a local CVIEW, using existing software available from Johns Hopkins University Applied Physics Lab or a vendor as a framework for our CVIEW.
- **USDOT# Build 1** – Begin modifications to existing systems to add the USDOT number for intrastate carriers to data files and allow entry and maintenance of the USDOT number for intrastate carriers.
- **OSOW Build 3** – Acceptance of credit card as payment method. Limited self-issuance of annual multiple-trip permits without weight.
- **Electronic Credentialing Build 2** – Provide electronic access to COVERS, a vendor package from The Polk Company used to process IRP transactions. The initial functionality will allow a carrier to apply for supplements.
- **Credential Interface/Message Interface Build 1** – Complete introduction of the IBM MQSeries product into the WisDOT computing environment to serve as the underlying technical infrastructure component for this messaging and queuing application.
- **Credential Interface/Message Interface Build 2** – Complete development of a prototype application to link this messaging interface with a small number of other systems.
- **PrePass Build 2** – Implement snapshot-based PrePass screening via access to PreVIEW.
- **MCES Build 1** – Migrate the current MCES Client from the existing 3270 environment to a LAN-based workstation environment.

### **Phase 4**

- **CVIEW Build 2** – Implement connectivity between CVIEW and SAFER.
- **USDOT# Build 1** – Continue modifications to existing systems to add the USDOT number for intrastate carriers to data files and allow entry and maintenance of the USDOT number for intrastate carriers.
- **OSOW Build 4** – Automated Routing. Expand self-issuance of single-trip permits.
- **Credential Interface/Message Interface Build 3** – Begin expansion of the prototype application to include links with other systems.
- **IRP Clearinghouse Build 1**– Join the IRP Clearinghouse and implement connections between the Polk COVERS application and the clearinghouse.
- **PrePass Build 3** – Implementation of a PrePass facility at the Menomonie, WI SWEF.
- **MCES Build 2** – Begin the connection of the MCES Client to CVIEW.

## **Phase 5**

- **CVIEW Build 3** – Add intrastate information to CVIEW.
- **USDOT# Build 1** – Complete modifications to existing systems to add the USDOT number to data files and allow entry and maintenance of the USDOT number for intrastate carriers.
- **Electronic Credentialing Build 3** – Add increased functionality to electronic access to both the COVERS and COVERSft applications, including the ability to accept electronic payments.
- **Credential Interface/Message Interface Build 3** – Complete expansion of the prototype application to include links with other systems.
- **MCES Build 2** – Complete the connection of the MCES client to CVIEW.

## **Phase 6 and Beyond**

Additional projects will be identified and initiated. These will likely include additional PrePass implementations at the Kenosha, Superior, and Beloit SWEFs.

# **IMPLEMENTATION ISSUES**

## **Electronic IFTA and IRP Credentialing**

- Inadequate server performance will probably require a hardware upgrade - perhaps to a dedicated server.
- Ability to accept EFT and credit cards is unresolved.
- MCS organizational structure does not provide adequate support capabilities for various Polk systems.
- Enabling inquiries by enforcement personnel will require assigning a USDOT number to each carrier and providing the necessary software and database support for entry and maintenance of this information.

## **IRP Clearinghouse**

- Reinstallation of updated COVERS software will be required.
- Procedural changes will likely be required.
- There may be issues with upgrading the Oracle database software to accommodate the Clearinghouse connection.
- The current dial-up connections are inadequate and should be upgraded. This upgrade would need to be performed by the vendor.

## **OOPPS**

- Existing data needed for routing purposes may require modification. Some data are not in a format usable for routing, and other data are simply inaccurate and will need significant cleansing.
- The timing of funding will be critical to completion of the project.
- Necessary staff time is at a premium.
- Modifications to the application will be necessary to accommodate any future wireless connectivity for remote permit amendments.

## **Mobile Data Computers (MDC)**

- Currently use proprietary communication method and need to be upgraded to Internet Protocol (IP). The vendor has been unable to provide the modification necessary for this upgrade. A pilot project to test the use of Cellular Digital Packet Data (CDPD) is currently underway.

## **MCES Client**

- Requires an upgrade from 3270 terminals to a LAN/Workstation environment.
- Support Staff availability is limited.

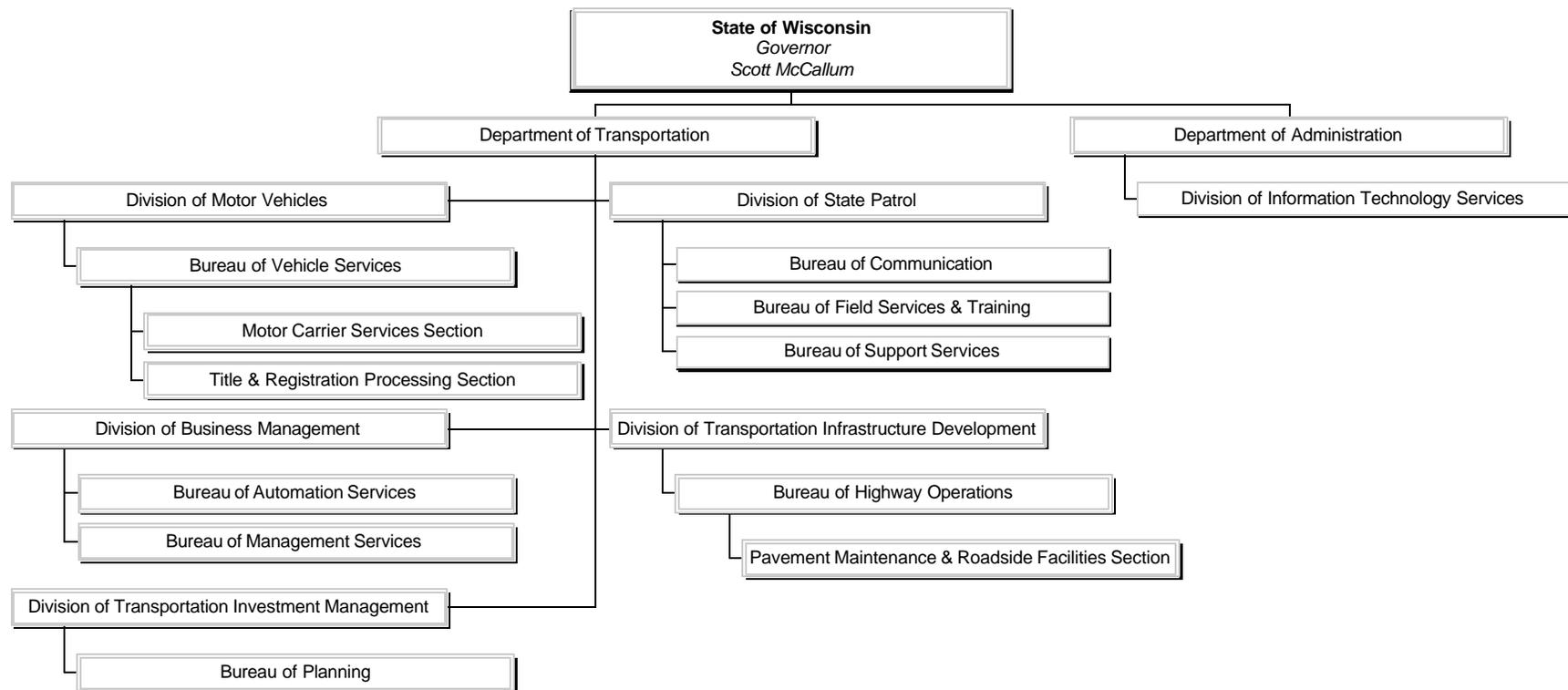
## **Automated Clearance**

- PrePass will not recognize non-PrePass transponders.

## **Cross Cutting Issues**

- IT Support availability for 24 x 7 operations.
- FileHandler Database is no longer supported by training programs.

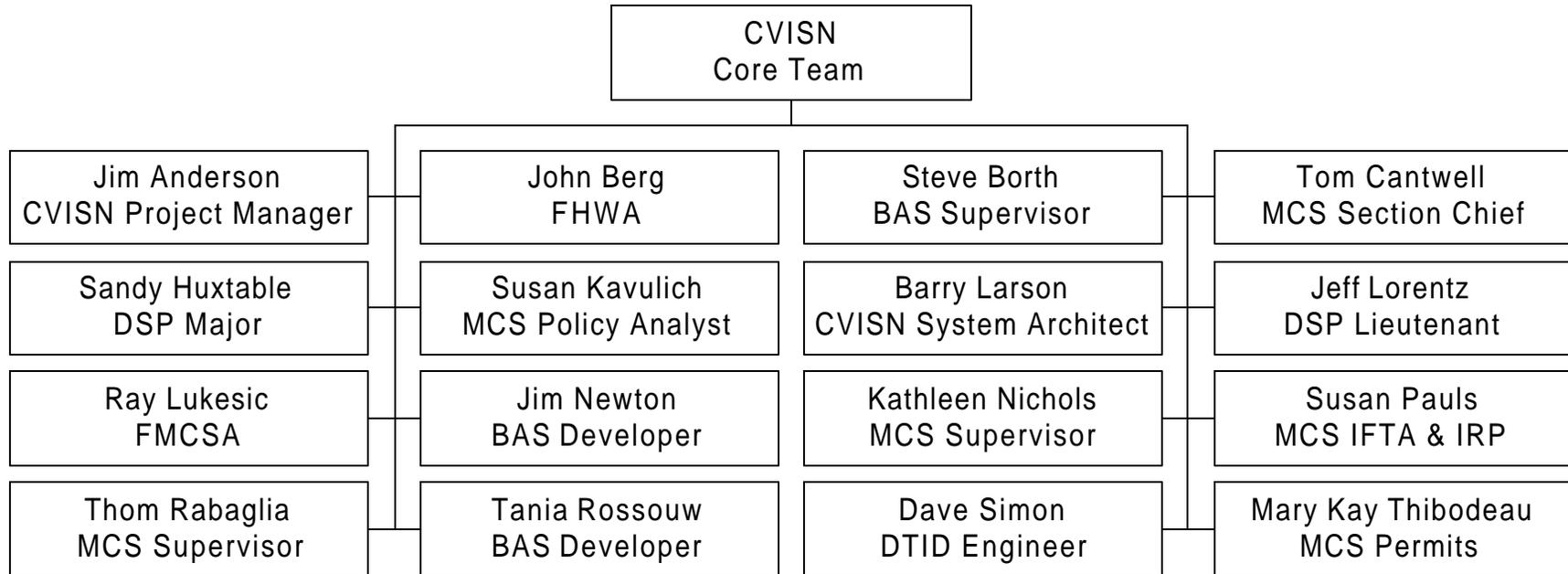
# APPENDIX A – STATE OF WISCONSIN CVISN ORGANIZATION



## APPENDIX B – CVISN STEERING COMMITTEE



## APPENDIX C – CVISN CORE TEAM



## **APPENDIX D – COACH PART 1, CHAPTER 4**

**Intelligent Transportation Systems (ITS)**

**Commercial Vehicle Operations (CVO)**

# **CVISN Operational and Architectural Compatibility Handbook (COACH)**

## **Part 1**

**Operational Concept and Top-Level Design Checklists**

Baseline Version

POR-97-7067 V2.0

**August 2000**

## **4. State Systems Checklists**

The checklists in this chapter describe operational concepts and top-level requirements. The tables are divided into these categories:

- General
- CV Administration
- Safety Information Exchange and Safety Assurance
- Electronic Screening

Operational concepts and top-level requirements in the “general” category apply to the other three categories.

For each category there are two tables.

- The first table in each category lists Operational Concepts. The concepts are based on an interpretation of the guiding principles and the state of existing and emerging technologies today. The elements in each table in this section were originally based on the Key Operational Concepts sections of the OCD [Reference 9]. Updated versions of the operational concepts are included in the CVISN Guide to Top-Level Design [Reference 13] and in the CVISN Guides to Safety Information Exchange, Credentials Administration, and Electronic Screening [References 14- 16]. This version of the COACH reflects the updated concepts.
- The second table in each category lists top-level requirements for the design of state systems. The tables show more detail about what “CVISN Level 1” means. The CVISN Level 1 requirements are marked with “L1” in the fourth column (Req Level (L1/E/C)). For an overview of CVISN Level 1, see the Introductory Guide to CVISN [Reference 12].

### **4.1 General Operational Concepts and State Systems Design Requirements**

The general state system design requirements apply to **all** state systems. They facilitate interoperability and the exchange of information within a single state, and across jurisdictions. These requirements apply to safety, credentialing, and electronic screening systems.

CRF 1048 authorized updating CVISN documents to reflect FMCSA’s new policy on credentials administration. The policy change resulted from analyzing the results of a survey about electronic credentialing interactions between motor carriers and state information systems (see Reference 38). The new policy is:

- FMCSA requires that states implement either a person-to-computer or a computer-to-computer interface.

- FMCSA recommends that states survey their stakeholders to determine whether both interfaces would be appropriate.
- FMCSA recommends that, in the near term (over the next ~2 years), carriers and states use X12 EDI for computer-to-computer interfaces unless the state has evidence that customers support another approach.
- FMCSA encourages the exploration of XML as an alternative to EDI.

This is a policy regarding CVISN Level 1. If a state chooses to implement only a person-to-computer credentialing approach, then implementation of a computer-to-computer interface is considered an Enhanced capability. Similarly, if a state chooses to implement only a computer-to-computer credentialing approach, then implementation of a person-to-computer interface is considered an Enhanced capability. The tables in this section have been updated accordingly.

The concepts in the following table are based on an interpretation of the guiding principles and the state of existing and emerging technologies today. The elements in this table were originally based on the Key Operational Concepts sections of the OCD [Reference 9]. Updated versions of the operational concepts are included in the CVISN Guide to Top-Level Design [Reference 13] and in the CVISN Guides to Safety Information Exchange, Credentials Administration, and Electronic Screening [References 14-16]. This version of the COACH reflects the updated concepts.

**Table 0-1 General Operational Concepts**

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Comments
F	1.	Good business processes can be enhanced through improved automated access to accurate information.	L1	
F	2.	Authoritative sources are responsible for maintaining accurate information. Each jurisdiction participating in ITS/CVO information exchange identifies the authoritative source for each data item.	L1	
F	3.	Sometimes it is practical for authoritative systems to authorize indirect sources to assist in the information exchange process.	L1	

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Comments
F	4.	To enable cross-referencing and standard look-ups in multiple information systems, a common scheme for identifying carriers must be adopted. The Primary Carrier ID should be used in interface agreements (open standards, Internet-based exchanges, and custom interface agreements) to facilitate the exchange of carrier information. How the ID is stored internally outside the interface is up to the system implementers. The ID should be based on the USDOT number for both interstate and intrastate carriers. If it is not feasible for the state to use USDOT number as the ID type for all intrastate carriers, then the state should establish some convention for the Primary Carrier ID that will apply to all intrastate carriers in that state.	L1 – interstate C – intrastate	
F	5.	To enable cross-referencing and standard look-ups in multiple information systems, a common scheme for identifying drivers must be adopted for interstate and intrastate operators. The Commercial Drivers License (CDL) number should be the basis of the Driver ID.	L1	
F	6.	To enable cross-referencing and standard look-ups in multiple information systems, a common scheme for identifying vehicles must be adopted for interstate and intrastate operators. The Vehicle Identification Numbers (VIN) and jurisdiction plus license plate numbers should be the bases for the identification of power units.	L1	

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Comments
F	7.	To enable cross-referencing and standard look-ups in multiple information systems, a common scheme for identifying international trips must be adopted. The Trip/Load number consisting of DUNS and trip-specific ID should be the basis for identifying international trips.	E	
F	8.	Standard information exchange is supported via carrier and vehicle (and eventually driver) snapshots.	L1 – carrier & vehicle C – driver	
F	9.	Flexible implementation/deployment options are accommodated by the ITS/CVO architecture. As technology changes, so will the architecture.	L1	
F	10.	Open standards are used for interchanges between public and private computer systems. Today, ANSI ASC X12 EDI transactions are used for some carrier-state information systems' interactions. We anticipate that XML will be also used in the future. DSRC standards for the messages, data link, and physical layers are used for vehicle-roadside interactions.	L1 CRF 1048 CRF 1164	
F	11.	Enhanced data exchange will allow all activities to focus resources on high risk operators.	L1	
F	12.	Interoperability is assured by a process of architecture conformance checks throughout a project's lifecycle, culminating in execution of standardized interoperability tests. If a tested system is changed, the interoperability tests are re-run as part of the re-validation process.	L1	

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Comments
F	13.	The Fair Information Principles for ITS/CVO will be implemented using a combination of policies, procedures, technology, and training. Stakeholders will be included in the discussions of the techniques to be used to implement the principles.	L1	
F	14.	Citations are based on a review of real-time conditions and checks with authoritative sources.	L1	
F	15.	The Internet is used as a wide area network for information exchange.	L1 CRF 1084	
F	16.	The World Wide Web is used for interactions and information exchanges between private people and government systems (e. g., for credentials applications or commercial vehicle regulations).	L1 CRF 1048 CRF 1164	
F	17.	The focus is on sharing data among safety, credentialing and screening processes. The CVISN Program is structured to encourage states to design and deploy these three elements in parallel.	L1 CRF 632	

Note: F – Full Commitment; P – Partial Commitment; N – No Commitment  
L1 – CVISN Level 1; E – Enhanced Level of CVISN capability; C – Complete level of CVISN capability  
Complete code descriptions are given in section 1.5.

The top-level requirements in the following table apply to the design of all state systems. The table shows more detail about what “CVISN Level 1” means. The CVISN Level 1 requirements are marked with “L1” in the fourth column (Req Level (L1/E/C)). For an overview of CVISN Level 1, see the Introductory Guide to CVISN [Reference 12].

**Table 0-2 General State Systems Design Requirements Checklist**

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req level (L1/E/C)  CRF #	Op Test Date	IOC Date	FOC Date	Comments
F	<b>4.1.1</b>	Adopt standard identifiers for carriers, vehicles, drivers, and transponders to support information exchange.	L1				
F	1	Adopt standard identifiers for interstate carrier, vehicle, driver, and transponder.	L1				
F	2	Adopt standard identifiers for intrastate carrier, vehicle, driver, and transponder.	C				
F	<b>4.1.2</b>	Use the World Wide Web for person-to-computer interactions between private citizens and state information systems.	L1;E CRF 1048 CRF 1164				See the note about CRF 1048 for credentialing, above.
F	<b>4.1.3</b>	Use open standards for <a href="#">computer-to-computer</a> exchange of information with other jurisdictions and with the public.	L1; E CRF 1048 CRF 1164				See the note about CRF 1048 for credentialing, above.

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req level (L1/E/C)  CRF #	Op Test Date	IOC Date	FOC Date	Comments
F	1	Use ANSI X12 EDI standards for transactions between state information systems and private systems (CV operators, insurance companies, etc.).	L1; E				See the note about CRF 1048 for credentialing, above; EDI is recommended in the near term.
F	2	Use ANSI X12 EDI standards for transactions between state information systems and CVISN Core Infrastructure systems, where available.	L1; E				See the note about CRF 1048 for credentialing, above; EDI is recommended in the near term.
P	3	Use XML standards for transactions between state information systems and private systems (CV operators, insurance companies, etc.) (contingent on demonstration of feasibility).	E				Need to see standards and understand process before full commitment.
F	<b>4.1.4</b>	Ensure that all information transfers, fee payments, and money transfers are authorized and secure.	L1				

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req level (L1/E/C)  CRF #	Op Test Date	IOC Date	FOC Date	Comments
F	<b>4.1.5</b>	Exchange safety and credentials data electronically within the state to support credentialing, safety, and other roadside functions. Where useful, exchange snapshots.	L1				
F	1	Data for interstate carriers	L1				
F	2	Data for interstate vehicles	L1				
F	3	Data for intrastate carriers	E				
F	4	Data for intrastate vehicles	E				
F	5	Data for drivers	C				
F	<b>4.1.6</b>	Demonstrate technical interoperability by performing Interoperability Tests.	L1				
F	<b>4.1.7</b>	Support electronic payments.	E				
P	<b>4.1.8</b>	Receive, collect, and archive relevant CVO data for historical, secondary, and non-real-time uses.	E  CRF 1047				Subject to Wisconsin's privacy interpretation.

Note: F – Full Commitment; P – Partial Commitment; N – No Commitment  
L1 – CVISN Level 1; E – Enhanced Level of CVISN capability; C – Complete level of CVISN capability  
Complete code descriptions are given in section 1.5.

## 4.2 State Safety Information Exchange and Safety Assurance Systems Design Requirements

The state safety information exchange and safety assurance systems are likely to consist of:

- Inspection (e.g., ASPEN)
- SAFETYNET
- Citation & Accident
- Compliance Review (e.g., CAPRI (Compliance Analysis Performance Review Information))
- CV Information Exchange Window (CVIEW)

The state CV safety information exchange and safety assurance systems will operate at one or more (generally) fixed locations within a state. The systems perform safety information exchange and safety assurance functions supporting safety regulations. States may form regional alliances to support these functions. Each state coordinates with other states, regional alliances, and CVISN Core Infrastructure systems to support nationwide access to safety information for administrative and enforcement functions.

The concepts in the following table are based on an interpretation of the guiding principles and the state of existing and emerging technologies today. The elements in this table were originally based on the Key Operational Concepts sections of the OCD [Reference 9]. Updated versions of the operational concepts are included in the CVISN Guide to Top-Level Design [Reference 13] and in the CVISN Guide to Safety Information Exchange [Reference 14]. This version of the COACH reflects the updated concepts.

**Table 0-3 Safety Information Exchange and Safety Assurance Operational Concepts**

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Comments
P	1.	Data are collected to quantify the primary measures of effectiveness related to safety of CVO (accidents and fatalities).	L1	Depends on what data can be collected -/ used.
P	2.	Electronic safety records (snapshots) are made available at the roadside to aid inspectors and other enforcement personnel.	L1	Not available to mobile operations.

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Comments
P	3.	Inspectors use computer applications to capture, verify, and submit intrastate and interstate inspection data at the point of inspection.	L1	Mobile cannot submit at the time of inspection currently.
P	4.	Safety data are made available electronically to qualified stakeholders.	L1	
F	5.	User access to data is controlled (restricted and/or monitored) where necessary.	L1	
F	6.	Mechanisms are made available for operators to dispute safety records held by government systems.	L1	
P	7.	Compliance reviews are supported through electronic access to government-held safety records.	E	Not available for intrastate at this time.
F	8.	Safety risk ratings are determined according to uniform guidelines.	E	
P	9.	Jurisdictions support a standard set of criteria for inspection selection.	E	What if they want to include more criteria?
P	10.	A comprehensive safety policy, including roadside and deskside activities, is implemented to improve safety.	C	What does “comprehensive” mean here?
	11.	Carriers are associated with a base state for safety information record storage and credentialing.	C	
	12.	Compliance reviews are supported through electronic access to carrier-held records.	C	

Note: F – Full Commitment; P – Partial Commitment; N – No Commitment  
L1 – CVISN Level 1; E – Enhanced Level of CVISN capability; C – Complete level of CVISN capability  
Complete code descriptions are given in section 1.5.

The top-level requirements in the following table apply to the design of state safety-related systems. The table shows more detail about what “CVISN Level 1” means. The CVISN Level 1 requirements are marked with “L1” in the fourth column (Req Level (L1/E/C)). For an overview of CVISN Level 1, see the Introductory Guide to CVISN [Reference 12].

**Table 0-4 State Safety Information Exchange and Safety Assurance Systems Design Requirements Checklist**

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Op Test Date	IOC Date	FOC Date	Comments
F	<b>4.2.1</b>	Use ASPEN (or equivalent) at all major inspection sites	L1				
F	1	Select vehicles and drivers for inspection based on availability of inspector, standard inspection selection system, vehicle measures, and random process, as statutes permit.	L1				
F	2	Report interstate inspections to MCMIS via SAFETYNET	L1				
F	3	Report intrastate inspections to SAFETYNET	L1				
P	4	Submit interstate and intrastate inspections for 45-day storage to SAFER.	L1				Depends on capability of SafetyNet 2000.
F	5	Periodically check OOS orders issued in the state to focus enforcement and safety assurance activities.	E				
F	6	To assist in inspection, use DSRC to retrieve summary vehicle safety sensor data, if driver	C				

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Op Test Date	IOC Date	FOC Date	Comments
		allows and vehicle is properly equipped.					
P	7	To assist in inspection, use DSRC to retrieve driver's daily log, if driver allows and vehicle is properly equipped.	C				Our training & ability.
P	8	Use electronically-generated driver's daily log, if driver offers as an alternative to a manually-maintained log during an inspection.	C				Requires training of inspectors – some may not be properly trained.
F	<b>4.2.2</b>	SAFETYNET 2000 submits interstate and intrastate inspections reports to SAFER.	L1				As soon as we have it.
	<b>4.2.3</b>	Maintain snapshots (or equivalent information) for operators based in the state and make available to within-state information systems and users.	E  CRF 827				
F	1	For any given snapshot, there is only one authoritative source (or group of authoritative sources, such as ASPEN units) for each field in that snapshot.	E  CRF 827				
F	2	Allow only the authoritative source to update a snapshot data field, with the following exception: <ul style="list-style-type: none"> <li>A "super user" can update any field. An audit trail should be maintained to record super user updates.</li> </ul>	E  CRF 827				

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Op Test Date	IOC Date	FOC Date	Comments
F	3	Validate the sender's identity through some industry-standard means (account ID, IP address, password, security keys, . . .).	E  CRF 827				
F	4	Reject updates attempted by any system other than the authoritative source or a super user with a code explaining why. The rejection transaction should be returned to the sender in a timely fashion. The rejection should be logged for the snapshot system administrator to review.	E  CRF 827				
F	<b>4.2.4</b>	Use CAPRI (or equivalent) for compliance reviews.	L1				
F	1	Report interstate compliance reviews to MCMIS via SAFETYNET	L1				
N	<b>4.2.5</b>	Collect, store, analyze, and distribute citation data electronically.	E				Distribute to who – why – citation data is not adjudication data.
F	1	Report citations for interstate operators to MCMIS via SAFETYNET	E				
P	<b>4.2.6</b>	Collect, store, analyze, and distribute crash data electronically.	E				Not a means of fully analyzing it currently.
F	1	Report interstate crashes as required to MCMIS via SAFETYNET	E				

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Op Test Date	IOC Date	FOC Date	Comments
P	4.2.7	Compute carrier safety risk rating for intrastate carriers based on safety data collected.	E				Working on a system for intrastate at the current time, but don't know when it will be implemented.
P	4.2.8	Identify high risk drivers based in the state through regular performance evaluation of various factors such as license status, points, and inspections.	C				Intrastate?

Note: F – Full Commitment; P – Partial Commitment; N – No Commitment  
L1 – CVISN Level 1; E – Enhanced Level of CVISN capability; C – Complete level of CVISN capability  
Complete code descriptions are given in section 1.5.

### 4.3 State CV Administration Systems Design Requirements

The state CV administrative systems are likely to consist of:

- Interstate & Intrastate Vehicle Registration
- Credentialing Interface
- Carrier Registration (SSRS)
- Titling
- HazMat Credentialing/Permitting
- Electronic Screening Enrollment – see section 4.4 on Electronic Screening (CRF 1172)
- Fuel Tax Credentialing/Tax Return Processing
- Web Site (CRF 1084)
- Driver licensing
- Treasury or Revenue
- Oversize/Overweight Permitting

These systems operate at one or more (generally) fixed locations within a state. The systems perform administrative functions supporting credentials and tax regulations. States may form regional alliances to support these functions. Each state coordinates with other states, regional alliances, and CVISN Core Infrastructure systems to support nationwide access to credentials information for administrative and enforcement functions.

When building a credentialing system, it is useful to think about the process of electronic screening enrollment as part of the design criteria. The requirements for Electronic Screening Enrollment have been moved to the section on Electronic Screening, since the enrollment would not occur unless operators wanted to participate in electronic screening. CRF 1172 authorized this change.

CRF 1048 authorized updating CVISN documents to reflect FMCSA's new policy on credentials administration. The policy change resulted from analyzing the results of a survey about electronic credentialing interactions between motor carriers and state information systems (see Reference 38). The new policy is:

- FMCSA requires that states implement either a person-to-computer or a computer-to-computer interface.
- FMCSA recommends that states survey their stakeholders to determine whether both interfaces would be appropriate.
- FMCSA recommends that, in the near term (over the next ~2 years), carriers and states use X12 EDI for computer-to-computer interfaces unless the state has evidence that customers support another approach.
- FMCSA encourages the exploration of XML as an alternative to EDI.

This is a policy regarding CVISN Level 1. If a state chooses to implement only a person-to-computer credentialing approach, then implementation of a computer-to-computer interface is considered an Enhanced capability. Similarly, if a state chooses to implement only a computer-to-computer credentialing approach, then implementation of a person-to-computer interface is considered an Enhanced capability. The tables in this section have been updated accordingly.

The concepts in the following table are based on an interpretation of the guiding principles and the state of existing and emerging technologies today. The elements in this table were originally based on the Key Operational Concepts sections of the OCD [Reference 9]. Updated versions of the operational concepts are included in the CVISN Guide to Top-Level Design [Reference 13] and in the CVISN Guide to Credentials Administration [Reference 15]. This version of the COACH reflects the updated concepts.

**Table 0-5 CV Administration Operational Concepts**

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Comments
F	1.	Credential applications and fuel tax returns are filed electronically from CVO stakeholder facilities.	L1	
F	2.	Internal state administrative processes are supported through electronic exchange of application data, safety records, carrier background data, and other government-held records.	L1	
F	3.	IRP and IFTA base state agreements are supported electronically.	L1	
F	4.	Credential and fuel tax payment status information for interstate operators are made available electronically nationally to qualified stakeholders.	L1	
F	5.	User access to data is controlled (restricted and/or monitored) where necessary.	L1	Mandatory.
F	6.	Mechanisms are made available for operators to dispute credentials records held by government systems.	L1	

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Comments
F	7.	Fees and taxes are paid electronically.	E	
N	8.	Electronic access to administrative processes and information is available from “one stop shops” in public sites.	E	Means PCs at counters. Either from the carrier or carrier agents.
F or P	9.	Credential and fuel tax payment status information for intrastate operators are made available electronically to qualified stakeholders throughout the state.	E	
F	10.	Carrier audits are accomplished with electronic support.	C	
F	11.	The “paperless vehicle” concept is supported, i.e. electronic records become primary and paper records become secondary.	C	

Note: F – Full Commitment; P – Partial Commitment; N – No Commitment  
L1 – CVISN Level 1; E – Enhanced Level of CVISN capability; C – Complete level of CVISN capability  
Complete code descriptions are given in section 1.5.

The top-level requirements in the following table apply to the design of state credentials-related systems. The table shows more detail about what “CVISN Level 1” means. The CVISN Level 1 requirements are marked with “L1” in the fourth column (Req Level (L1/E/C)). For an overview of CVISN Level 1, see the Introductory Guide to CVISN [Reference 12].

**Table 0-6 State CV Administration Systems Design Requirements Checklist**

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Op Test Date	IOC Date	FOC Date	Comments
F	4.3.1	Support electronic credentialing (electronic submission of applications, evaluation, processing, and application response) for IRP.	L1 CRF 1048				But not for <u>new</u> licenses.
F	1	Provide a Web site for a person-to-computer process.	L1; E CRF 1048				Note: Either Web or computer-to-computer interface is required for L1.
F	2	Provide a computer-to-computer automated process.	L1; E CRF 1048				Note: Either Web or computer-to-computer interface is required for L1.
F	2a	Use EDI standards to provide a computer-to-computer automated process.	L1; E CRF 1048				EDI is recommended in the near term for computer-to-computer interfaces.
P	2b	Use XML standards to provide a computer-to-computer automated process.	E CRF 1048				Need to see carrier acceptance of this, else we'll support two system-to-system methods.
F	4.3.2	Proactively provide updates to vehicle snapshots as needed when IRP credentials actions are taken.	L1 CRF 1048, 1164				
F	1	Interface to SAFER for interstate vehicle snapshots, using available SAFER interface.	L1 CRF 1048,				Today, EDI is available; plans are to also provide an

Com mit Level (F/P/ N)	Item #	Compatibility Criteria	Req Level (L1/E/C )  CRF #	Op Test Date	IOC Date	FO C Date	Comments
			1164				XML option.
F	4.3.3	Proactively provide updates to carrier snapshots as needed when IRP credentials actions are taken.	L1 CRF 1048, 1164				
F	1	Interface to SAFER for interstate carrier snapshots, using available standards	L1 CRF 1048, 1164				Today, EDI is available; plans are to also provide an XML option.
F	4.3.4	Provide IRP Clearinghouse with IRP credential application information (recaps).	L1				CRF 313 was disapproved; there are no plans for an EDI interface with the IRP CH. The IRP CH interface is specified in IRP CH documents.
F	4.3.5	Review fees billed and/or collected by a jurisdiction and the portion due other jurisdictions (transmittals) as provided by the IRP Clearinghouse.	L1				CRF 313 was disapproved; there are no plans for an EDI interface with the IRP CH. The IRP CH interface is specified in IRP CH documents.
F	4.3.6	Support electronic state-to-state fee payments via IRP Clearinghouse	L1				

Com mit Level (F/P/ N)	Item #	Compatibility Criteria	Req Level (L1/E/C )  CRF #	Op Test Date	IOC Date	FO C Date	Comments
F	<b>4.3.7</b>	Support electronic credentialing (electronic submission of applications, evaluation, processing, and application response) for IFTA registration.	L1 CRF 1048				But not for new licenses and no amended transactions when under audit.
F	1	Provide a Web site for a person-to-computer process.	L1; E CRF 1048				Note: Either Web or computer-to-computer interface is required for L1.
F	2	Provide a computer-to-computer automated process.	L1; E CRF 1048				Note: Either Web or computer-to-computer interface is required for L1.
F	2a	Use EDI standards to provide a computer-to-computer automated process.	L1; E CRF 1048				EDI is recommended in the near term for computer-to-computer interfaces.
P	2b	Use XML standards to provide a computer-to-computer automated process.	E CRF 1048				
F	<b>4.3.8</b>	Proactively provide updates to carrier snapshots as needed when IFTA credentials actions are taken or tax payments are made.	L1 CRF 1048, 1164				
F	1	Interface to SAFER for interstate carrier snapshots, using available SAFER interface.	L1 CRF 1048, 1164				Today, EDI is available; plans are to also provide an XML option.
F	<b>4.3.9</b>	Provide IFTA Clearinghouse with IFTA credential	L1				

Com mit Level (F/P/ N)	Item #	Compatibility Criteria	Req Level (L1/E/C )  CRF #	Op Test Date	IOC Date	FO C Date	Comments
		application information using EDI standards.					
F	<b>4.3.10</b>	Support electronic tax filing for IFTA quarterly fuel tax returns.	L1				Quarterly and annual fuel tax returns.
F	1	Provide a Web site for a person-to-computer process.	L1; E CRF 1048				Note: Either Web or computer-to-computer interface is required for L1.
F	2	Provide a computer-to-computer automated process.	L1; E CRF 1048				Note: Either Web or computer-to-computer interface is required for L1.
F	2a	Use EDI standards to provide a computer-to-computer automated process.	L1; E CRF 1048				EDI is recommended in the near term for computer-to-computer interfaces.
P	2b	Use XML standards to provide a computer-to-computer automated process.	E CRF 1048				
F	<b>4.3.11</b>	Provide information on taxes collected by own jurisdiction and the portion due other jurisdictions (transmittals) to the IFTA Clearinghouse using EDI standards.	L1				
F	<b>4.3.12</b>	Download for automated review the demographic information from the IFTA Clearinghouse using EDI standards.	L1				

Com mit Level (F/P/ N)	Item #	Compatibility Criteria	Req Level (L1/E/C )  CRF #	Op Test Date	IOC Date	FO C Date	Comments
F	<b>4.3.13</b>	Download for automated review the transmittal information from the IFTA Clearinghouse using EDI standards.	L1				
F	<b>4.3.14</b>	Retrieve IFTA tax rate information electronically from IFTA, Inc.	L1				
F	<b>4.3.15</b>	Support electronic credentialing (electronic submission of applications, evaluation, processing, and application response) for other credentials.	E				
F	1	Interstate carrier registration	E				
F	2	Intrastate carrier registration	E				
	3	Vehicle title	E				
	4	Intrastate vehicle registration	E				
N	5	HazMat credentialing/permitting, if such credentials/permits are required by state law.	E				
F	6	Oversize/overweight permitting.	E				
	<b>4.3.16</b>	Proactively provide updates to vehicle snapshots as needed when credentials actions are taken.	E				
	1	Vehicle title	E				
	2	Intrastate vehicle registration	E				
F	3	Oversize/overweight permitting.	E				
	<b>4.3.17</b>	Proactively provide updates to carrier snapshots as needed when credentials actions are taken.	E				

Com mit Level (F/P/ N)	Item #	Compatibility Criteria	Req Level (L1/E/C )  CRF #	Op Test Date	IOC Date	FO C Date	Comments
F	1	Interstate carrier registration	E				
?	2	Intrastate carrier registration	E				
N	3	HazMat credentialing/permitting, if such credentials/permits are required by state law.	E				
F	4	Oversize/overweight permitting.	E				
F	<b>4.3.18</b>	Allow CV operators, government-operated, or third party systems to submit one or more applications in a single transaction.	E				
F	<b>4.3.19</b>	Provide commercial driver information to other jurisdictions via CDLIS.	L1				
	<b>4.3.20</b>	Evaluate carrier safety performance prior to issuing vehicle registration renewal (i.e. support PRISM processes or equivalent).	E				
	<b>4.3.21</b>	Allow carriers to provide information for audits electronically.	C				
	<b>4.3.22</b>	Provide titling information to other jurisdictions via NMVTIS.	C				
	<b>4.3.23</b>	Provide revoked IFTA motor carrier information to other jurisdictions via STOLEN.	C				
	<b>4.3.24</b>	Accept electronic credential and supporting electronic documentation, in lieu of paper versions.	C				
	<b>4.3.25</b>	Proactively provide updates to driver snapshots as	C				

Com mit Level (F/P/ N)	Item #	Compatibility Criteria	Req Level (L1/E/C )  CRF #	Op Test Date	IOC Date	FO C Date	Comments
		needed when credentials actions are taken.					
	1	Interface to SAFER for driver snapshots, using available SAFER interface.	C				

Note: F – Full Commitment; P – Partial Commitment; N – No Commitment  
L1 – CVISN Level 1; E – Enhanced Level of CVISN capability; C – Complete level of CVISN capability  
Complete code descriptions are given in section 1.5.

#### 4.4 State Electronic Screening Systems Design Requirements

The roadside systems involved in electronic screening consist of:

- Screening System
- Roadside Operations System
- Sensor/Driver Communications System
- Electronic Screening Enrollment (CRF 1172)

These electronic screening systems will operate at each fixed or mobile CV check station within a state. The systems perform roadside functions supporting automated carrier, vehicle, and driver identification and associated look-ups in infrastructure-supplied data for credentials and safety checks.

When building an electronic screening system, it is useful to think about the process of electronic screening enrollment as part of the process. The requirements for Electronic Screening Enrollment (ESE) appear in this section on Electronic Screening, since the enrollment would not occur unless operators wanted to participate in electronic screening. CRF 1172 authorized this change. The requirements for ESE should be considered during design of other administrative and credentialing systems.

The concepts in the following table are based on an interpretation of the guiding principles and the state of existing and emerging technologies today. The elements in this table were originally based on the Key Operational Concepts sections of the OCD [Reference 9]. Updated versions of the operational concepts are included in the CVISN Guide to Top-Level Design [Reference 13] and in the CVISN Guide to and Electronic Screening [Reference 16]. This version of the COACH reflects the updated concepts.

**Table 0-7 Electronic Screening Operational Concepts**

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Comments
F	1.	Widespread participation in electronic screening programs is encouraged.	L1	
F	2.	Jurisdictions disclose practices related to electronic screening.	L1	

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C)  CRF #	Comments
P	3.	Electronic screening is provided for vehicles equipped with FHWA-specified DSRC transponders. See Reference 35.	L1	Not at all fixed sites – not at mobile sites.
F	4.	Jurisdictions and/or e-screening programs provide a single point of contact for motor carriers to request enrollment in all jurisdictions' electronic screening programs.	L1  CRF 1172	
P	5.	If one jurisdiction or e-screening program provides a transponder to a carrier, it allows the carrier to use that transponder in other jurisdictions' e-screening programs, and in other applications such as electronic toll collection.	L1  CRF 1172	
P	6.	For an enrolled carrier that has vehicles equipped with compatible transponders, jurisdictions and/or e-screening programs provide a mechanism for participation in electronic screening using those transponders.	L1  CRF 1172	Depends on interoperability & requirements.
F	7.	Credentials and safety checks are conducted as part of the screening process.	L1	
P	8.	Fixed and/or mobile roadside check stations are employed for electronic clearance functions, according to the jurisdiction's needs and resources.	L1	Probably not mobile. Not all fixed.
P	9.	Jurisdictions support a common set of screening criteria.	E	What if states want to have additional criteria?
P	10.	Screening systems are interoperable with those in different jurisdictions.	E	Depends what other have?

Note: F – Full Commitment; P – Partial Commitment; N – No Commitment  
L1 – CVISN Level 1; E – Enhanced Level of CVISN capability; C – Complete level of CVISN capability  
Complete code descriptions are given in section 1.5.

The top-level requirements in the following table apply to the design of state screening-related systems. The table shows more detail about what “CVISN Level 1” means. The CVISN Level 1 requirements are marked with “L1” in the fourth column (Req Level (L1/E/C)). For an overview of CVISN Level 1, see the Introductory Guide to CVISN [Reference 12].

**Table 0-8 State Electronic Screening Systems Design Requirements Checklist**

Com mit Level (F/P/ N)	Item #	Compatibility Criteria	Req Level (L1/E/C )  CRF #	Op Test Date	IOC Date	FO C Date	Comments
F	4.4.1	Follow FHWA guidelines for Dedicated Short Range Communications (DSRC) equipment.	L1 CRF 1159				See the NPRM regarding DSRC in ITS CVO, Reference 35.
F	1	For the immediate future, all CVO and Border crossing projects will continue to utilize the current DSRC configuration employed by the programs. This is the "ASTM version 6" active tag.	L1 CRF 1159				The DSRC provisional standard is defined in the FHWA specification, (Reference 37).
	2	Beginning January 1, 2001, all CVO and Border Crossing projects will use a provisional standard as described below. In addition, this provisional standard will be designed to ensure interoperability with the existing legacy equipment used in CVO that conforms to ASTM Version 6.	E CRF 1159				

Com mit Level (F/P/ N)	Item #	Compatibility Criteria	Req Level (L1/E/C )  CRF #	Op Test Date	IOC Date	FO C Date	Comments
	2a	the new ASTM Physical Layer in the active mode;	E CRF 1159				Reference 32.
	2b	the existing ASTM Version 6 Data Link layer in the synchronous mode;	E CRF 1159				Reference 33.
	2c	and the IEEE 1455 Application Layer.	E CRF 1159				Reference 34.
F	<b>4.4.2</b>	Use snapshots updated by a SAFER/CVIEW subscription in an automated process to support screening decisions.	L1 CRF 1171				
F	1	Carrier snapshots.	L1				
F	2	Vehicle snapshots.	L1				
F	3	Driver snapshots.	C				Will have the data, don't know if it will be used.
F	<b>4.4.3</b>	Implement interoperability policies as they are developed by ITS America, the American Association of State Highway Transportation Officials, HELP, Inc., MAPS, Advantage CVO, I-95 Corridor Coalition, and the Commercial Vehicle Safety Alliance.	L1				
F	1	See AASHTO's Commercial Vehicle Electronic Screening Interoperability Policy Resolution, PR-14-97, Reference 20.	L1				

Com mit Level (F/P/ N)	Item #	Compatibility Criteria	Req Level (L1/E/C )  CRF #	Op Test Date	IOC Date	FO C Date	Comments
F	4.4.4	Provide electronic mainline or ramp screening for transponder-equipped vehicles, and clear for bypass if carrier & vehicle were properly identified and screening criteria were passed.	L1				Not all sites – not mobile operations.
F	1	For transponder-equipped vehicles, identify carrier at mainline or ramp speeds.	L1				Not all sites – not mobile operations.
F	2	For transponder-equipped vehicles, identify vehicle at mainline or ramp speeds.	L1				Not all sites – not mobile operations.
F	3	Use WIM or weight history at mainline speed or on the ramp in making screening decisions.	L1				Not all sites – not mobile operations.
F	4	Record screening event data.	E				
N	5	For transponder-equipped vehicles, identify driver at mainline or ramp speeds.	C				Not included at this time.
F	4.4.5	Collect from the carrier a list of jurisdictions and/or e-screening programs in which it wishes to participate in electronic screening and inform those jurisdictions and/or e-screening programs.	L1 CRF 1172				
F	4.4.6	Collect from the carrier a list of jurisdictions and/or e-screening programs in which each of its vehicles chooses to participate in e-screening, and inform those jurisdictions and/or e-screening programs.	L1 CRF 1172				

Com mit Level (F/P/ N)	Item #	Compatibility Criteria	Req Level (L1/E/C )  CRF #	Op Test Date	IOC Date	FO C Date	Comments
F	4.4.7	Record transponder number and default carrier ID for each vehicle that intends to participate in e-screening	L1 CRF 1172				
F	4.4.8	Share carrier ID for each carrier that intends to participate in e-screening with other jurisdictions and/or e-screening programs as requested by the carrier.	L1 CRF 1172				
F	1	Via SAFER snapshots	E CRF 1172				
F	4.4.9	Share transponder number and default carrier ID for each vehicle that intends to participate in e-screening with other jurisdictions, e-screening programs, or other agencies as requested by the carrier.	L1 CRF 1172				
F	1	Via SAFER snapshots	E CRF 1172				
F	4.4.10	Accept each qualified vehicle already equipped with a compatible transponder into your e-screening program without requiring an additional transponder.	L1 CRF 1172				
F	4.4.11	Enable the carrier to share information about the transponder that you issue with other jurisdictions, e-screening programs, or agencies.	L1 CRF 1172				
F	4.4.12	Verify credentials/safety information with authoritative source prior to issuing citation.	L1				As possible.

Com mit Level (F/P/ N)	Item #	Compatibility Criteria	Req Level (L1/E/C )  CRF #	Op Test Date	IOC Date	FO C Date	Comments
F	4.4.13	If a vehicle illegally bypasses or leaves the CV check station, alert law enforcement for possible apprehension.	C				
	4.4.14	Report periodically to State safety information system on the activities conducted at each station (e.g. statistics).	C				Who is the State safety information entity?

Note: F – Full Commitment; P – Partial Commitment; N – No Commitment  
L1 – CVISN Level 1; E – Enhanced Level of CVISN capability; C – Complete level of CVISN capability  
Complete code descriptions are given in section 1.5.

## **APPENDIX E – COACH PART 2**

**Intelligent Transportation Systems (ITS)**

**Commercial Vehicle Operations (CVO)**

# **CVISN Operational and Architectural Compatibility Handbook (COACH)**

**Part 2**

**Management Checklists**

Preliminary Version

POR-97-7067 P2.0

## Program / Project Management Checklist

This section defines the overall program and project management practices which are recommended for every CVISN state.

Commit (F/P/N)	Intended Actions	Preparer Comments
F	1. Establish program executive sponsorship. For example an agency head or chief information officer; or a group such as an executive-level steering committee.	
F/P	2. Empower a Program Manager, dedicated to the program at least 30% of the time on average. More time is needed in the startup phase, when a team is new, and if there are many simultaneous projects under the CVISN umbrella. (One state with 20 projects has a full-time Program Manager.)	The time may be split among 2 people.
F/P	3. Engage a System Architect, dedicated to the program approximately 80% of the time on average.	Depends upon funding.
F/P	4. Engage a facilitator/scheduler/administrator, dedicated to the program approximately 50% of the time on average.	Depends on funds & % may be lower.
F	5. When multiple state agencies are involved, establish an inter-agency coordinating council.	
F	6. Obtain an approved memorandum of agreement among all involved state agencies.	Statement of Work.
F	7. Establish a state carrier advisory council.	Wisconsin already has a Motor Carrier Advisory Committee.
F	8. Recruit interstate, intrastate, and owner-operator carriers to participate in the program before production deployment (both motor carriers and motor coach companies).	Wisconsin already does this.
F	9. Where appropriate initiate separate deployment projects under the scope of the CVISN program. For example, deployments in disparate domains such as credentials administration vs electronic screening are likely to be developed by different teams operating as distinct projects.	Separate projects will be initiated by both State Patrol and Motor Vehicle Redesign units.
F	10. Assign a Project Leader for each separate deployment project, dedicated to each project at least 30% of the time on average. More time is needed in the startup phase..	This is standard project development policy. The % may be less.
F	11. Provide adequate training opportunities to project team members, such as attendance at FHWA's CVISN training courses and CVISN workshops.	Not all team members of each project will attend these workshops.
F	12. Ensure all team members acquire a broad and common understanding of CVISN activities, architecture, and design guidance -- for example, by reading the CVISN Guides, and noting lessons-learned by other states.	
F	13. Foster a sense of professional fellowship and teamwork. Likely to require teambuilding interventions such as a partnering workshop; and periodic face-to-face meetings of geographically dispersed teams.	This is standard project development policy.

Commit (F/P/N)	Intended Actions	Preparer Comments
F	14. Adopt the strategy of incrementally developing and deploying products in 3-6 month phases, where each phase adds additional CVISN capabilities. This is called the “spiral” development model as opposed to the “linear” model. Refer to the CVISN Guide to Phase Planning & Tracking.	This approach is already being used in the OSOW area, and will be continued for future CVISN projects.
F	15. Establish a configuration management process for controlling changes to the system baseline; this typically includes a Configuration Control Board. Utilize state's existing configuration control process wherever possible.	Standard project development policy includes configuration management control.
F	16. Set up a program library; obtain needed references identified in the CVISN Guide to Program & Project Planning.	Repository established by J. Anderson.
F	17. Maintain a list of action items, decisions, and issues. (By definition action items require formal closure.)	BAS will maintain a standard “issues” list for project-related action items, decisions, and issues. The program side will probably keep a separate list of program-related issues.
F	18. Delineate needs for external communications with stakeholders (including the state legislature), and with related projects.	Communication needs with both internal and external stakeholders are identified for each project within the project proposal document.
F	19. Conduct monthly team meetings and status assessments.	At the project level, weekly meetings are held with project leaders for status assessment. Individual team meetings are held as needed.

Commit (F/P/N)	Intended Actions	Preparer Comments
F	20. Track progress versus schedule monthly; strategize accordingly.	Projects are tracked visually through several monitoring tools, including reports that are reviewed with the executive sponsors (DMV Directors)
F	21. Conduct quarterly stakeholder progress reviews before a wider audience.	Monthly DMV Directors and CVISN Steering committee reviews already occur. MCAC meets 3 times a year.
F	22. Monitor actual costs and resource expenditures relative to estimates.	This is standard project development policy.

## Program / Project Planning Checklist

This section defines desired elements of the CVISN program plan, and the subsidiary project plans. It also defines the recommended approach.

Commit (F/P/N)	Intended Actions	Preparer Comments
F	1. Review state's ITS/CVO strategic plan and business plan.	This documentation will be important basic information for Project Leaders and team members. Program-side participants will also most likely use this information to become familiar with the overall direction.
F	2. Define objectives for CVISN Program.	This is already taking place with the CVISN core team, composed of IT and program resources.
F	3. Derive requirements for deployment projects.	BAS will probably lead the effort to identify requirements for each project, with full participation and input from the program side.
F	4. Establish project development standards, such as design margin as a function of development lifecycle.	Standards and guidelines for project development will be used.
F	5. Define project-specific processes, such as required design reviews, or how to close an action item.	These are part of the standards and guidelines for project development.
F	6. Establish a system design baseline. (See the CVISN Guide to Top-Level Design.)	Assume this will be done, probably by the Project Manager/team.

Commit (F/P/N)	Intended Actions	Preparer Comments
F	7. Create a program Work Breakdown Structure.	Assume this will be done as part of the Program planning effort. As part of each project, a WBS will be produced as part of the project proposal.
F	8. Delineate program deliverables, including support documentation and training.	These are part of the standards and guidelines for project development, and are identified in the project proposal.
F	9. Establish a program organization structure, with clear roles and responsibilities.	Assume this will be done at the program level, and it will also be done individually as part of the proposal for each project.
F	10. Assign each element of the work breakdown structure to an element of the program organization structure.	Standard project development policy at the project level.
F	11. Develop project-specific "partnering charters" covering four areas: mission statement; communication objectives (e.g. decision-making at lowest possible level); performance objectives (e.g. complete the project without litigation); issue resolution system (e.g. management levels and timeframes).	Each project will have a separate proposal that will outline the mission, goals and objectives for communication, performance, and issue resolution among other things.
F	12. Develop a flexible procurement strategy. Allocate sufficient calendar time for the required steps.	Procurement procedures are in place and flexible enough to meet the needs of this project.

Commit (F/P/N)	Intended Actions	Preparer Comments
F	13. Establish a top-level schedule divided into phases; ensure milestones are measurable.	This is typically done as part of the initial proposal for a multi-phase project, and is revisited as each phase completes and a new one starts.
F	14. Outline high-level objectives for each phase; express in a 1-2 page phases chart that explains capabilities from a user's point of view.	This is typically done as part of the initial proposal for a multi-phase project, and is revisited as each phase completes and a new one starts.
F	15. Set the stage for the transition to production use and support; such as database backup and restoration, and a user "help" desk.	Standard project development policy.
F	16. Identify project external dependencies, with their need-by date.	Standard project development policy.
F	17. Estimate cost and resource requirements first using summary top-down methods, such as historical analogy and manager's judgment. This will initiate the process and set targets.	This is usually done as part of the 'abstract' process, which seeks to establish initial cost targets. It is later revised with a bottom-up approach in the proposal.
F	18. Estimate cost and resource requirements using bottoms -up detailed methods, such as resource-type quantities for each element of the WBS. This will get 'buy in" from the staff, and validate the top-down estimates.	Done as part of the proposal process.
F	19. Determine potential funding sources and obtain funding commitments	Standard project development policy.
F	20. Identify both programmatic and technical issues and develop a resolution plan.	Standard project development policy.

Commit (F/P/N)	Intended Actions	Preparer Comments
F	21. Obtain approval, publish, and distribute program plan document. Include completed COACH Part 2 checklists as an appendix.	Assume the program plan will follow the same procedures for development and publication as the project proposals.
F	22. Maintain on each project a Project Leader's notebook with up-to-date copies of essential key charts and diagrams.	This information, along with other important documentation, notes, and data becomes the "Project File" upon completion of the project, and is kept for later lookup and reference.
F	23. Maintain a Program Manager's notebook with up-to-date copies of essential key charts and diagrams.	Assume this will be done by the Program Manager, similar to what Project Leaders will do.
F	24. Once a year or more often, re-figure the estimate-to-completion.	Standard project development policy for multi-phase projects.

## Phase Planning and Incremental Development Checklist

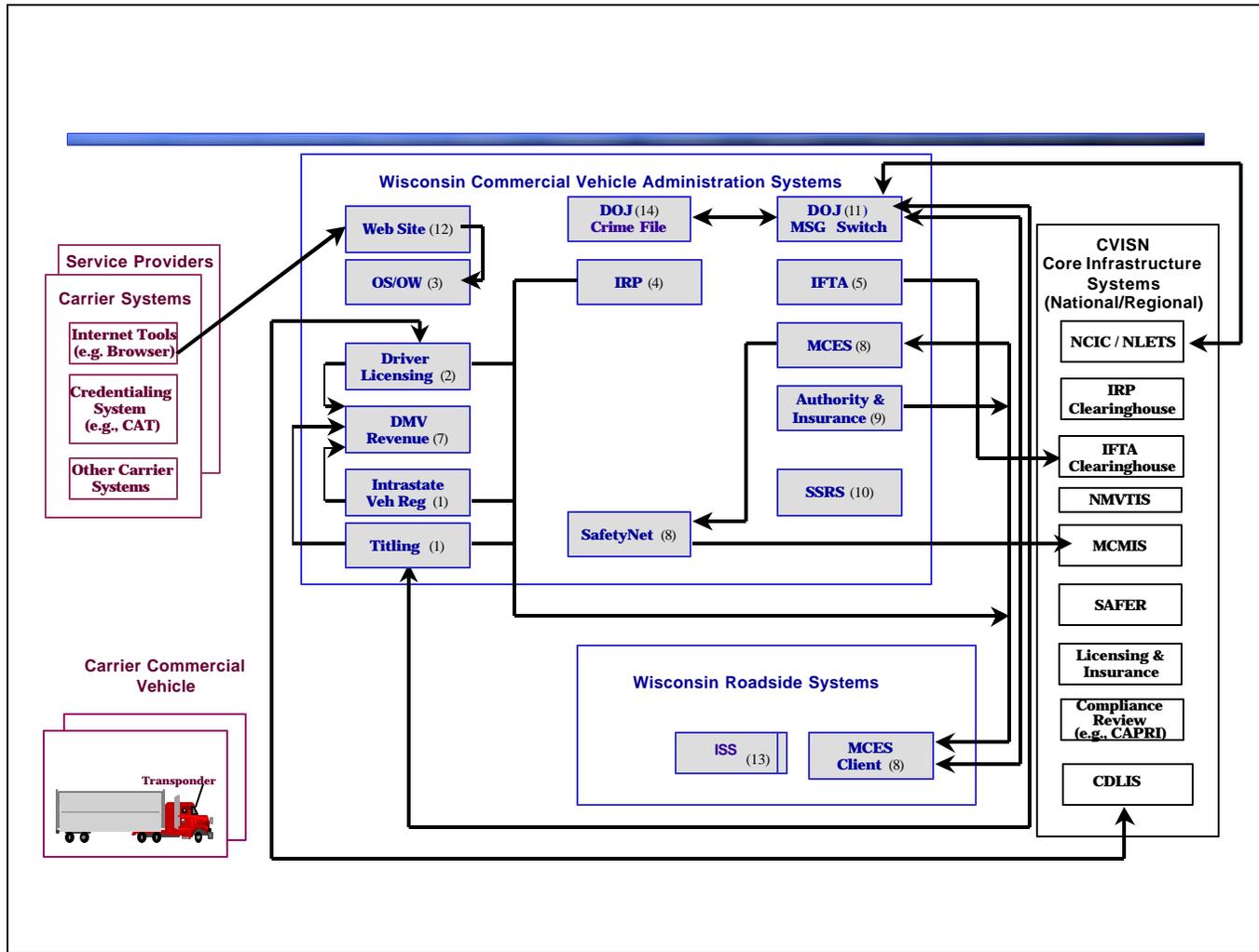
This section defines desired elements of the CVISN phase plan, and the recommended method of approach for phase planning and incremental development. Phase planning is performed for each project, and aggregated for the CVISN program. Incremental development is project-specific but applied program-wide. Incremental deployment is the outcome of incremental development.

Commit (F/P/N)	Intended Actions	Preparer Comments
F	1. Sustain a system perspective -- a vision of the overall CVISN architecture and deployment strategy.	Assuming funding is available to embark on this effort, the vision established through the CVISN Business Plan and developed more fully in the CVISN Level 1 Planning Process will be followed through in planned projects.
F	2. Plan, develop, and release incrementally, such that at the end of each phase useful end-to-end functionality is delivered in a way that subsequent phases can build upon.	Standard project development policy.
F	3. Choose and format the elements of the phase plan such that they are naturally useful for presenting status. For example, the list of deliverables could also include columns for dates, current standing, and reasons for change.	Phase plans are included as part of the Proposal at the start of each phase, and include elements useful for status reporting.
F	4. Employ the rolling wave planning technique, with more detail for the near-term tasks and progressively less detail for the far-term tasks.	This is done with the initial Proposal, and revised prior to the start of each new phase.
F	5. Involve the project staff in the phase planning process, for example in a team-oriented planning session.	Standard project development policy.
F	6. Review items on the issues list; resolve to the extent possible.	Standard project development policy.
F	7. Close open action items, to the extent possible.	Standard project development policy.

Commit (F/P/N)	Intended Actions	Preparer Comments
F	8. Review items on the decisions list -- as a reminder and to verify they are still relevant and correct.	Standard project development policy.
F	9. Set phase objectives.	Done as part of the proposal for each specific phase.
F	10. Flesh out the applicable lowest-level details of the Work Breakdown Structure.	Done as part of the proposal for each specific phase.
F	11. Derive phase requirements; refer to COACH Part 1 checklists and the Program Plan as starting points. Look for alternative design and development approaches.	Done as part of the proposal for each specific phase.
F	12. Itemize phase deliverables.	Done as part of the proposal for each specific phase.
F	13. Indicate which elements of the system design baseline are to be deployed; update presentation diagrams accordingly.	Done as part of the proposal for each specific phase.
F	14. Perform studies to determine whether to make, buy, or modify subsystem components.	Standard project development policy.
F	15. Develop a detailed schedule for the work to be accomplished during the current phase. Most effectively done by identifying and linking activities per the critical path method, utilizing a desktop scheduling tool. The output can be printed as both a Gantt (bar) chart and a PERT (network) chart.	Standard project development policy.
F	16. Identify named individuals who will perform the activities in the detailed schedule.	Standard project development policy.
F	17. Update project external dependencies, with their need-by date.	Standard project development policy.
F	18. Update the master program phases chart.	This would probably be presented in the proposal for the current phase, and as such would be the most up-to-date version of the planned phases.

Commit (F/P/N)	Intended Actions	Preparer Comments
F	19. Complete the detailed design for all components and interfaces to be developed or modified in the phase. Start with the top-level design and phase objectives. Use COACH Part 3 checklists as guidance, plus the Scope and Design Workshops.	Standard project development policy.
F	20. Define subsystem and component control and data interfaces. Utilize COACH Part 4 for functional allocation.	Standard project development policy.
F	21. Conduct technical reviews in order to catch problems as early as possible in the development life cycle.	Standard project development policy.
P/F	22. Maintain a strict version numbering system for all products.	Not a standard element of our development process, but it could be implemented if necessary.
F	23. Maintain stakeholder commitment via visibility into progress by physical demonstrations of useful capability, and by regular management status reporting.	Standard project development policy.
F	24. Define system acceptance criteria; use COACH Part 5 checklists as guidance.	Standard project development policy.
F	25. Conduct operational acceptance tests at the end of each phase; specify re-work if necessary.	Standard project development policy.
P/F	26. Conduct a lessons learned session at the end of each phase (as part of planning the next phase).	Not always done for each project, but where appropriate it can be conducted.

# APPENDIX F – CURRENT SYSTEMS DIAGRAM



## **Current System Diagram Descriptions**

1. The DMV Registration System that runs in the FileHandler environment (file 10) is the single system that maintains registration, title, and VIN information for all vehicle types. The Titling and Intrastate Registration requirements are both addressed by this single system. This system runs on an OS/390 mainframe operated by the Wisconsin Department of Administration (DOA).
2. The DMV Drivers System that runs in the CICS/DB2 environment is the single system that maintains current and driver history information for all Wisconsin drivers license classification types. There is also a mirror image of this database running in the FileHandler (file 60) environment. Transactions simultaneously update both databases. The FileHandler based Drivers database will be eliminated when all drivers related processing functions are fully migrated to the new CICS/DB2 environment. Both of these systems run on an OS/390 mainframe system operated by the DOA.
3. The OSOW application will be fully migrated to the Visual Basic / DB2 environment in September 2000. This application also has a web interface for application submittal used by a limited number of carriers at this time. The data base server component of the system runs on an OS/390 mainframe operated by the DOA. The Application server runs on a DOT NT machine.
4. The IRP system is the POLK COVERS application. The database is Oracle, running on the DOT HP 9000N Oracle Server. The COVERS application runs on roughly 30 workstations attached to a DMV LAN. Users external to the DMV Motor Carrier workgroup DO NOT have connectivity to the IRP database. This information is provided to the MC inspectors by a nightly batch run which gathers the updates applied to the Oracle data base and creates a set of update transactions to apply to MCES which all permanent scale locations have online access to. It also updates (file 56), the IRP Registration file running under FileHandler.
5. The IFTA system is the Polk COVERSft application. The database is Oracle, running on the DOT HP 9000N Oracle Server. The IFTA and IRP information have been combined in a single Oracle database. The COVERSft application runs on roughly 30 workstations attached to a DOT LAN. Users external to the DMV Motor Carrier workgroup DO NOT have connectivity to the IFTA database. The COVERSft application handles both IFTA Registration & IFTA tax processing.
6. The Wisconsin Department of Natural Resources (DNR) maintains a paper file of proof of insurance for Hazmat transporters. This is \$300,000 coverage per fleet. DNR issues WDNR #'s indicating coverage is on file. DNR's responsibility is for hazardous waste, not hazardous materials.

7. DMV Revenue is the DMV revenue accounting system operated by the Revenue Accounting Unit located in the DMV Bureau of Driver Services. The system is a combination of FileHandler and CICS/DB2 applications. Roughly 90% of the applications are CICS/DB2. Output from this system is journal entries for the FOS system, the DOT departmental accounting system. This system runs on an OS/390 mainframe operated by the DOA.
8. The Motor Carrier Enforcement System (MCES) is a CICS/DB2 system that runs on an OS/390 mainframe operated by the DOA. All fixed scale locations have 3270 terminal access to the system via 56kb leased line connections. One function provided by the MCES is to automate the inspection report creation process. For example, it has the ability to make plate, driver and carrier queries to populate the fields for Wisconsin based vehicles. Inspection reports are printed at the fixed scale location, and a record of the inspection report is maintained in the MCES DB2 database.

A second function of the system is to provide the inspector with background information on the carrier, driver, and vehicle. This information is available for carriers, vehicles, and drivers which State Patrol inspectors have had contact with in the past. Information includes inspection report, size/weight, incidents, and crash supplements.

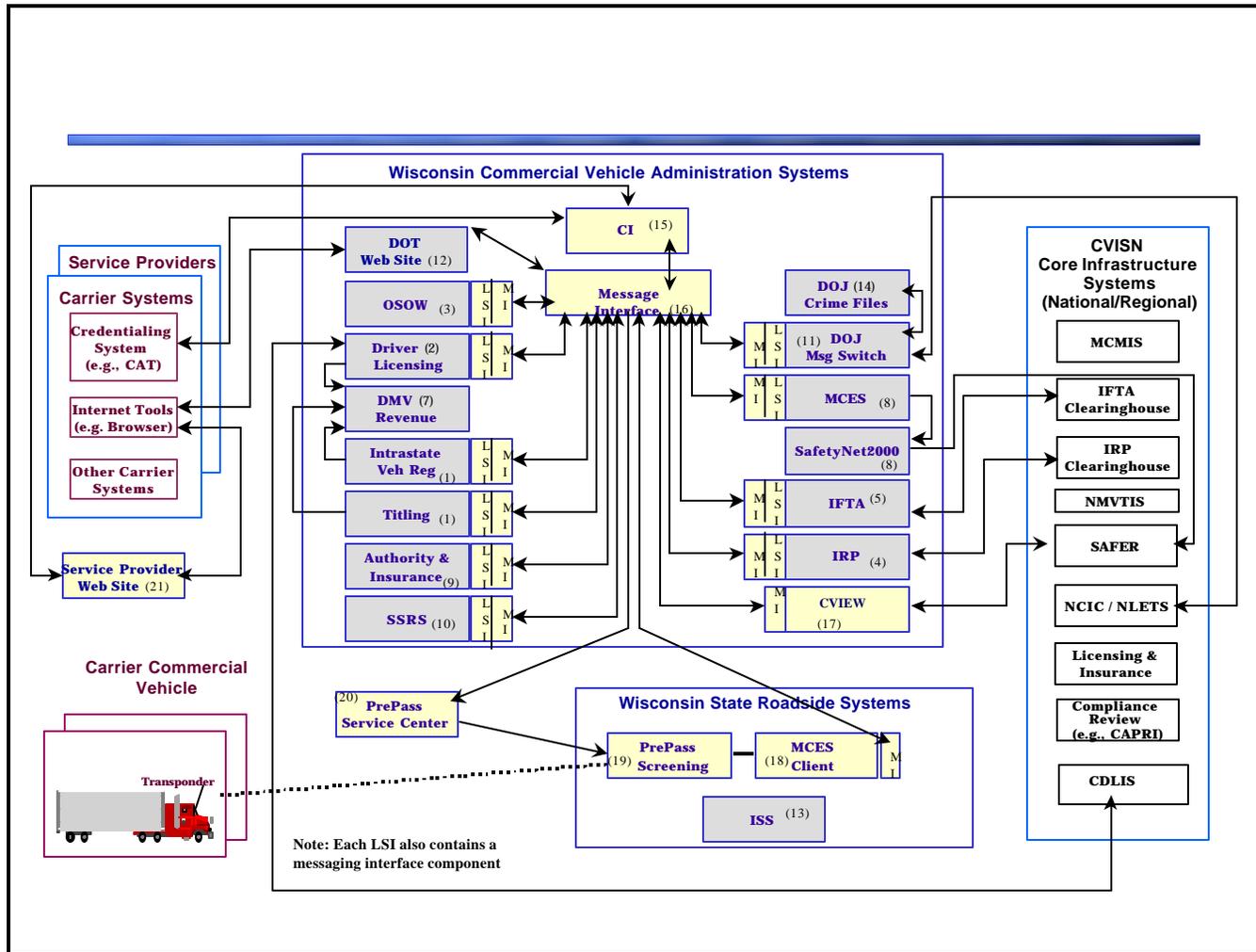
A weekly batch job is run to extract the new inspection reports from MCES and automatically load the required information into SAFTYNET. SAFETYNET in turn periodically uploads the info to MCMIS.

The MCES client (3270 terminal at this time) also has access to the DMV Registration and Drivers systems and has connectivity to the Wisconsin Department of Justice (DOJ) CIB "Hot File" which contains stolen vehicle info, wants and warrants, etc. The MCES client also has access to NCIC and NLETS via the DOJ message switch.

The mobile inspectors have mobile data computers (MDC) with access to DMV Registration and Drivers databases via the DOJ switch, but don't currently have access to MCES. A test is underway to evaluate a cellular MDC to MCES connection.
9. Carrier Authority and Insurance System that runs in the FileHandler environment (file 17) maintains carrier authority and insurance status for intrastate carriers and interstate carriers base stated in Wisconsin. The system runs on an OS/390 mainframe operated by the DOA.
10. The SSRS addresses the requirement that interstate carriers register their USDOT operating authority with their base state. Wisconsin registers interstate for-hire carriers, collects permit fees for Wisconsin and other states, and transmits other states' fees on a monthly basis. This system runs in the FileHandler environment and runs on an OS/390 operated by the DOA.

11. The DOJ Message Switch is a store and forward Unix machine operated by the Wisconsin Dept of Justice. The machine serves as the hub in linking together most Wisconsin law enforcement agencies ranging from local law enforcement, the State Patrol, and agencies such as DOT and DOJ that are data providers for the law enforcement community. The switch also has T1 leased line connectivity to NCIC and NLETS enabling Wisconsin law enforcement connection with other states and NCIC information. Most law enforcement organizations have T1 connections to the switch.
12. The web site is Wisconsin's initial implementation of Web enabled carrier access to motor carrier credentialing services. At the present time a small pilot group of carriers apply for OSOW permits via the Web.
13. The ISS system provides motor carrier safety profiles and is an important tool in the motor carrier inspectors' current screening process. The ISS system runs on laptop computers and has no connectivity to other systems.
14. DOJ crime files contain wants and warrants, stolen vehicle, and stolen parts information for Wisconsin. This is similar to NCIC but is only statewide in scope.

# APPENDIX G – FUTURE SYSTEMS DIAGRAM



## **Future System Diagram Descriptions**

- 1) The DMV Registration System that runs in the FileHandler environment (file 10) is the single system that maintains registration, title and VIN information for all vehicle types. The Titling, and Intrastate Registration requirements are both addressed by this single system. This system runs on an OS/390 mainframe operated by the Wisconsin Department of Administration (DOA). A Legacy System Interface / Messaging Interface (LSI / MI) will be added.
- 2) The DMV Drivers System that runs in the CICS/DB2 environment is the single system that maintains current and driver history information for all Wisconsin drivers license classification types. There is also a mirror image of this database running in the FileHandler (file 60) environment. Transactions simultaneously update both databases. The FileHandler based Drivers database will be eliminated when all drivers related processing functions are fully migrated to the new CICS/DB2 environment. Both of these systems run on an OS/390 mainframe system operated by the DOA. A LSI / MI will be added.
- 3) The OSOW application runs in a Visual Basic / DB2 environment. This application also has a web interface for application submittal used by a limited number of carriers at this time. The database server component of the system runs on an OS/390 mainframe operated by the DOA. The Application server runs on a DOT NT machine. A LSI / MI will be added.
- 4) The IRP system is the Polk COVERS application. The database is Oracle, running on the DOT HP 9000N Oracle Server. The COVERS application runs on roughly 30 workstations attached to a DMV LAN. Users external to the DMV Motor Carrier workgroup DO NOT have connectivity to the IRP database. This information is provided to the Motor Carrier inspectors by a nightly batch run which gathers the updates applied to the Oracle database and creates a set of update transactions to apply to the Motor Carrier Enforcement System (MCES) that all permanent scale locations have online access to. It also updates (file 56) the IRP Registration file running under FileHandler. A LSI / MI will be added.
- 5) The IFTA system is the Polk COVERSft application. The database is Oracle, running on the DOT HP 9000N Oracle Server. The IFTA and IRP information have been combined in a single Oracle database. The COVERSft application runs on roughly 30 workstations attached to a DOT LAN. Users external to the DMV Motor Carrier workgroup DO NOT have connectivity to the IFTA database. The COVERSft application handles both IFTA Registration & IFTA tax processing. A LSI / MI will be added.

- 6) The Wisconsin Department of Natural Resources (DNR) maintains a paper file of proof of insurance for Hazardous Waste transporters. This is \$300,000 coverage per fleet. DNR issues WDNR #'s indicating coverage is on file. DNR's responsibility is for hazardous waste, not hazardous materials. There are no automated systems involved.
- 7) DMV Revenue is the DMV revenue accounting system operated by the Revenue Accounting Unit located in the DMV Bureau of Driver Services. The system is a combination of FileHandler and CICS/DB2 applications. Roughly 90% of the applications are CICS/DB2. Outputs from this system are journal entries for the FOS system, the DOT departmental accounting system. This system runs on an OS/390 mainframe operated by the DOA.
- 8) The Motor Carrier Enforcement System (MCES) is a CICS/DB2 system that runs on an OS/390 mainframe operated by the DOA. All fixed scale locations have access to the system via T1 leased line connections employing IP protocol. One function provided by the MCES is to automate the inspection report creation process. It has the ability to make plate, driver and carrier queries to populate the fields for Wisconsin based vehicles for example. Inspection reports are printed at the fixed scale location, and a record of the inspection report is maintained in the MCES DB2 database.  
  
A second function of the system is to provide the inspector with background information on the carrier, driver, and vehicle. This information is available for carriers, vehicles, and drivers which State Patrol inspectors have had a contact with in the past, either interstate or intrastate. Information includes: inspection report, size/weight, incidents, and crash supplements.  
  
A weekly batch job is run to extract the new inspection reports from MCES, and automatically load the required information into SAFETYNET. SAFETYNET in turn periodically uploads the info to MCMIS. SAFETYNET will be replaced with SAFETYNET2000, in which case its core system connection will be with SAFER and not MCMIS. MCES will continue to be the data source.  
  
The mobile inspectors currently have mobile data computers (MDC). MDC software will be upgraded with IP protocol capability to enable access to MCES via the DOJ message switch. A LSI / MI will be added to MCES.
- 9) Carrier Authority and Insurance System that runs in the FileHandler environment (file 17) maintains carrier authority and insurance status for intrastate carriers and interstate carriers base stated in Wisconsin. The system runs on an OS/390 mainframe operated by the DOA. A LSI / MI will be added.

- 10) The Single State Registration System (SSRS) addresses the requirement that interstate carriers register their USDOT operating authority with their base state. Wisconsin registers interstate for-hire carriers, collects permit fees for Wisconsin and other states, and transmits other state's fees on a monthly basis. This system runs in the FileHandler environment and runs on an OS/390 operated by the DOA. A LSI / MI will be added.
- 11) The DOJ Message Switch is a store and forward Unix machine operated by the Wisconsin Dept of Justice. The machine serves as the hub in linking together most Wisconsin law enforcement agencies ranging from local law enforcement, the State Patrol, and agencies such as DOT and DOJ that are data providers for the law enforcement community. The switch also has T1 leased-line connectivity to NCIC and NLETS enabling Wisconsin law enforcement connection with other states and NCIC information. Most law enforcement organizations have T1 connections to the switch. A LSI / MI will be added.
- 12) The DOT web site provides Web enabled carrier access to motor carrier credentialing services. It is anticipated that the existing OSOW Web Site would be enhanced to provide Web access to IRP and IFTA as well.
- 13) The ISS system provides motor carrier safety profiles and is an important tool in the motor carrier inspector's current screening process. The ISS system runs on laptop computers and has no connectivity to other systems. The ISS application on the laptop is updated quarterly with a CD received from FMCSA. (Manual process)
- 14) DOJ crime files contain wants & warrants and stolen vehicle info for Wisconsin. This is similar to NCIC but only statewide in scope.
- 15) The Credential Interface (CI) is a new component to be added. It will be the sole state interface point for EDI transactions from carriers and carrier agents. Its principal function is to receive transactions from carriers or agents, send acknowledgements and products back to the carrier or agent, and to provide basic editing for application completeness. It will also provide EDI (eventually XML) translations to and from internal state system formats. Communication among state legacy systems will continue to use the syntax native to the legacy systems. EDI will be used for external interfaces & vendor supplied products such as IRP & IFTA.

16) The Messaging Interface (MI) is a new component to be added. It is closely integrated with the CI and provides messaging and queuing services. Conceptually, the Messaging Interface would have scripts associated with specific application transaction types that would enable it to:

- Receive and store transactions arriving from carriers and agents.
- Spawn transactions to other systems to gather status information needed by a credentialing or safety system to process an incoming transaction.
- Assemble “Information Packages” (the incoming carrier application transaction, and required status information) and forward to appropriate credentialing system.
- Route acknowledgements and credentialing system products to CI for distribution to carriers or agents.
- Route credentialing and safety system updated status to CVIEW.
- Return detailed credential information in response to an enforcement query from the MCES client.
- Route Snapshots from CVIEW to roadside systems.
- Route Snapshots to the PrePass Service Center (periodically)

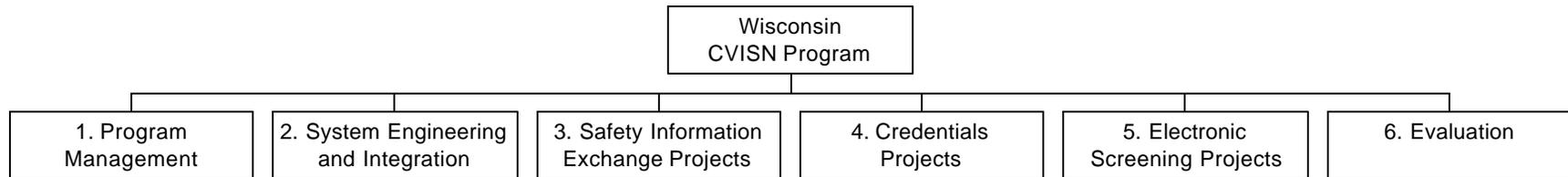
17) The CVIEW is a new component to be added. The CVIEW will be the interface point between state systems and the Federal SAFER system. State credentialing and safety systems will provide status updates to CVIEW via the Messaging Interface. The CVIEW will be the states snapshot repository for intrastate carrier and vehicle information as well as for selected subsets of SAFER interstate carrier and vehicle information.

Note: Although the design presumes the use of the EDI/post office protocol as the data exchange mechanism with SAFER, it is anticipated an FTP/XML or flat file data exchange alternative will become available. CVIEW detail design will isolate the data exchange facility to the extent possible to minimize rework, in the event the FTP/XML alternative isn't available at the time of Wisconsin's CVIEW development.

18) The MCES Client is a new component to be developed and provides the functions associated with the Roadside Operations Computer (ROC), i.e. interface to CVIEW to get snapshot data, and to provide roadside access to state source systems. It also, in conjunction with MCES, provides the ASPEN equivalent automated inspection reporting function.

- 19) The PrePass Screening Computer is a new component to be added. This is supplied as part of the PrePass program. The Screening Computer is used to make the screening decision (pull in or by pass) based on sensor inputs and the snapshot screening criteria. We expect the MCES Client will ultimately connect to the PrePass Screening Computer to obtain the VIN #'s for vehicles receiving a pull in signal. The MCES Client will use these VIN #'s to query state source systems for detail information to be made available to the roadside inspector, without needing to manually key the inquiries.
- 20) The state CVIEW snapshot information will be periodically supplied to the PrePass service center CVIEW equivalent. An Internet IP connection will be employed as the transport mechanism.
- 21) The service provider web site is another option for carriers to use for submitting electronic credentialing applications to the state. The Polk COVERSnet product is an example of this type of service. It in turn routes the completed application to the state CI/MI.

# APPENDIX H – WORK BREAKDOWN STRUCTURE



WBS #	WBS Item	Estimate		Resources	Estimate Derivation	In Kind	Funds ID'd	Funding Source
		Low	High					
<b>1</b>	<b>Program Management</b>							
1.1	Program Plan	\$95,000	\$100,000	Tom Cantwell Susan Kavulich Barry Larson	\$130-\$140,000/yr FY02-04 for Barry Larson split over all his activities. Estimated at 25% of his CVISN time.	Tom Cantwell Susan Kavulich	Yes	FFY99 & 01 CVISN Earmarks
1.1.1	Management Liaison & Coordination							
1.1.2	Phase Plans							
1.1.3	Integrated Master Schedule							
1.1.4	Subsystem Detailed Development Schedules							
1.1.5	Program Progress Facilitation							
1.1.6	Subcontractor Management & Liaison							
1.1.7	Coordination with Related Projects							
1.1.8	Status Reporting							
1.1.9	Presentations at Conferences and Meetings							

WBS #	WBS Item	Estimate		Resources	Estimate Derivation	In Kind	Funds ID'd	Funding Source
		Low	High					
<b>2</b>	<b>System Engineering &amp; Integration</b>							
2.1	System Design	\$80,000	\$85,000	Barry Larson	Estimated at 20% of his CVISN time.		Yes	FFY99 & 01 CVISN Earmarks
2.2	Requirements Analysis	\$80,000	\$85,000	Barry Larson	Estimated at 20% of his CVISN time.		Yes	FFY99 & 01 CVISN Earmarks
2.3	Messaging Interface (MI)	\$775,000	\$950,000	BAS	MQ/MI Scoping report		Yes, Partial; \$750,000	FFY01 CVISN Earmark
2.3.1	IRP/IFTA Snapshot creation	\$135,000	\$165,000	BAS Polk company	Rough estimate	BAS	No	
2.4	Interoperability Tests	\$55,000	\$60,000	Barry Larson	Estimated at 14% of his CVISN time.		Yes	FFY99 & 01 CVISN Earmarks
2.5	Acceptance Tests			DMV DSP		DMV DSP	N/A	
2.6	Operations & Maintenance (Annual)	\$90,000	\$110,000	BAS	MQ/MI Scoping Report		No	

WBS #	WBS Item	Estimate		Resources	Estimate Derivation	In Kind	Funds ID'd	Funding Source
		Low	High					
<b>3</b>	<b>Safety Information Exchange Projects</b>							
3.1	Project Management			Steve Borth Paul Schaefer		Steve Borth Paul Schaefer	N/A	
3.2	System Engineering & Integration	\$25,000	\$30,000	Barry Larson	Estimated at 7% of his CVISN time.		Yes	FFY99 & 01 CVISN Earmarks
3.3	Subcontract & Procurement Mgt			DBM		DBM	N/A	
3.4	CVIEW	\$635,000	\$800,000	Tania Rossouw, et al	CVIEW scoping report	Some BAS	Yes	MCSAP
3.4.1	Connect to SAFER							
3.5	SAFETYNET 2000 Migration			BAS DSP		BAS DSP	N/A	
3.6	Operations & Maintenance (Annual)	\$65,000	\$85,000	BAS DSP	CVIEW scoping report	BAS DSP	No	

WBS #	WBS Item	Estimate		Resources	Estimate Derivation	In Kind	Funds ID'd	Funding Source
		Low	High					
<b>4</b>	<b>Credentialing Projects</b>							
4.1	Project Management			Steve Borth		Steve Borth	Yes	
4.2	System Engineering & Integration	\$25,000	\$30,000	Barry Larson	Estimated at 7% of his CVISN time.		Yes	FFY99 & 01 CVISN Earmarks
4.2.1	Oracle server upgrade	\$270,000	\$330,000	DBM BAS	BAS estimate	DBM BAS	No	
4.3	Subcontract & Procurement Mgt			DBM		DBM	N/A	
4.4	International Registration Plan (IRP)	\$85,000	\$85,000	BAS DMV The Polk Company	Polk estimate.	BAS DMV	Uncertain; approved state ITS funds may have lapsed	
4.4.1	IRP Clearinghouse							
4.4.2	Electronic Access to IRP							
4.5	International Fuel Tax Agreement (IFTA)	\$75,000	\$75,000	BAS DMV The Polk Company	Polk estimate.	BAS DMV	Uncertain; approved state ITS funds may have lapsed	
4.5.1	Electronic Access to IFTA							

WBS #	WBS Item	Estimate		Resources	Estimate Derivation	In Kind	Funds ID'd	Funding Source
		Low	High					
4.6	* Oversize/Overweight Permit Processing System (OOPPS)	\$3,800,000	\$4,300,000	Tania Rossouw, et al	DMV budget issue paper for FY01-03 state biennial budget.	Some BAS	Yes	State funds (Motor Carrier Surcharge) & Federal ITS grant
4.6.1	OOPPS connection to MCES	\$135,000	\$165,000	DBM BAS	BAS estimate	DBM BAS	No	
4.7	Operations & Maintenance (Annual)	\$470,000	\$520,000		IRP/IFTA: Polk estimate. Others: 10% of project totals per year.		No	

\* Defined by Wisconsin as part of CVISN Level 1

WBS #	WBS Item	Estimate		Resources	Estimate Derivation	In Kind	Funds ID'd	Funding Source
		Low	High					
<b>5</b>	<b>Electronic Screening Projects</b>							
5.1	Project Management			Steve Borth Paul Schaefer Dave Simon		Steve Borth Paul Schaefer Dave Simon	N/A	
5.2	System Engineering & Integration	\$25,000	\$30,000	Barry Larson Dave Simon	Estimated at 7% of Barry's CVISN time.	Dave Simon	Yes	FFY99 & 01 CVISN Earmarks
5.3	Subcontract & Procurement Mgt			DBM DTID		DBM DTID	N/A	
5.4	Implement PrePass Pilot at Hudson SWEF	\$155,000	\$155,000	H.E.L.P., Inc. IRD DTID DSP	IRD estimate	Equipment & services valued at \$313,000 from H.E.L.P., Inc.	Yes	State highway funds
5.5	Implement PrePass Pilot at Menomonie SWEF	\$993,000	\$993,000	H.E.L.P., Inc. IRD DTID DSP	IRD estimate	Equipment & services valued at \$313,000 from H.E.L.P., Inc.	Yes	State highway funds
5.6	MCES Client (ROC) implementation	\$415,000	\$510,000	BAS DSP	Preliminary scoping report. Final estimate will be required.	BAS DSP	No	

WBS #	WBS Item	Estimate		Resources	Estimate Derivation	In Kind	Funds ID'd	Funding Source
		Low	High					
5.6.1	Replace 3270 emulation w/ LAN-based system							
5.6.2	Connect Pre-Pass to MCES Client							
5.6.3	MCES Client connects to CVIEW							
5.6.4	Make information available at SWEFs							
5.6.5	Snapshot-based PrePass electronic screening							
5.6.6	WisDOT CVIEW connects to PrePass CVIEW							
5.7	Operations & Maintenance (Annual)	\$180,000	\$200,000		Preliminary scoping report. Final estimate will be required		No	

6	Evaluation							
6.1	Self-Evaluation	\$40,000	\$60,000	WisDOT	5-7% of FFY01 CVISN earmark.	WisDOT	Yes	FFY01 CVISN earmark
6.1.1	Evaluation Team							
6.1.2	Evaluation Strategy							
6.1.3	Evaluation Plan							
6.1.4	Lessons Learned							
6.1.5	Cost Data							
6.1.6	Test Plans							
6.1.7	Analysis							
6.1.8	Final Report							
6.2	National Evaluation, if required by USDOT						Yes	USDOT

WBS #	WBS Item	Estimate		Resources	Estimate Derivation	In Kind	Funds ID'd	Funding Source
		Low	High					
	<b>Estimated USDOT-Defined CVISN Level 1 Projects</b>							
	Funded	\$3,373,000	\$3,688,000					
	Unfunded	\$1,140,000	\$1,530,000					
	<b>Estimated Additional WisDOT-Defined CVISN Level 1 Projects</b>							
	Funded	\$3,800,000	\$4,300,000					
	Unfunded	\$0	\$0					
	<b>Estimated Annual O &amp; M</b>							
		\$805,000	\$905,000					

## APPENDIX I – PROCUREMENT PLAN

WBS	PROCUREMENT ITEM	WHAT	CATEGORY	FUNDING SOURCE	TECHNICAL LEAD FOR REQTS	POTENTIAL VENDORS	PROC NOTES
2.3	MI	Software Development	Professional Services	FFY01 CVISN Earmark	BAS	State Bulletin	Could be provided by in-house development staff.
2.3	MI	MQ Series Licenses	COTS	FFY01 CVISN Earmark	BAS	IBM	
3.4	CVIEW	CVIEW Software	COTS	MCSAP	BAS	APL, Cambridge Systematics, Washington State	
3.4	CVIEW	CVIEW Server	COTS	MCSAP	BAS	State Bulletin	
3.4	CVIEW	Customization & Installation	Professional Services	MCSAP	BAS	State Bulletin	Could be provided by in-house development staff.
3.4.1	Connect to SAFER	Customization & Installation	Professional Services	Federal ITS & MCSAP	BAS	State Bulletin	Could be provided by in-house development staff.
3.4.1	Connect to SAFER	Network Connectivity	Communication Services	Federal ITS & MCSAP	BAS	State Bulletin	

WBS	PROCUREMENT ITEM	WHAT	CATEGORY	FUNDING SOURCE	TECHNICAL LEAD FOR REQTS	POTENTIAL VENDORS	PROC NOTES
5.4 5.5	WIM	Hardware	COTS	State Highway Improvement Setaside	DTID - Dave Simon	IRD	Sole Source
5.4 5.5	Electronic Screening	PrePass System	COTS	N/A	HELP, Inc.	Help, Inc.	
5.6	MCES Client	Customization & Installation	Professional Services	TBD	BAS	State Bulletin	Could be provided by in-house development staff.
5.6	MCES Client	Hardware	COTS	TBD	BAS	State Bulletin	
5.6	MCES Client	LAN/Network Connectivity	Communication Services	TBD	BAS	State Bulletin	
5.6.4	Make information available at SWEFs	Customization & Installation	Professional Services	Federal ITS & MCSAP	BAS	State Bulletin	Could be provided by in-house development staff.

# APPENDIX J – PHASE AND BUILD CHART

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	...
State CVISN Program Plan							
Safety	Project Planning						
		CVIEW Build 1					
				CVIEW Build 2			
			USDOT# Build 1				
		C/MI Build 1				CVIEW Build 3	← Ongoing →
		C/MI Build 2					
				C/MI Build 3			
		Project Planning					
		OSOW Build 1					
Credentials		OSOW Build 2					
		Elec Cred Build 1	OSOW Build 3				
				OSOW Build 4			
		C/MI Build 1			Elec Cred Build 2		
		C/MI Build 2			IRP Clhse Build 1	Elec Cred Build 3	
				C/MI Build 3			
		Project Planning					
		PrePass Build 1	PrePass Build 2				
			MCES Build 1	PrePass Build 3			
Screening		C/MI Build 1		MCES Build 2			
		C/MI Build 2					
				C/MI Build 3			