Oklahoma Commercial Vehicle Information Systems (CVISN) Top Level Design Document

Oklahoma Department of Transportation

In Coordination With:

U.S. Department of Transportation

July 2003

Contents

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Oklahoma's Commitment to CVISN Deployment

Oklahoma is joining 48 other states nationally who are using technology to improve the efficiency and effectiveness of commercial vehicle operations (CVO) for both state agencies and motor carriers alike. Oklahoma's participation in the Federal Motor Carrier Safety Administration's (FMCSA) Commercial Vehicle Information Systems and Networks (CVISN) program stem from this commitment.

The national CVISN program promotes information exchange within and among states, carriers and federal regulators to increase the efficiency and effectiveness of CVO credentialing, screening and safety assurance. Guiding principals of the CVISN program include:

- Capturing regulatory, compliance and enforcement data at the source to increase the accuracy and timeliness of information;
- Making information that is currently "locked up" in state and national legacy systems (hardware and software systems managing credentialing, safety and screening programs) available to all authorized users from both roadside and deskside locations;
- Development and implementation of open standards that facilitate data exchange.

The overriding purpose of the national CVISN program and its implementation in Oklahoma is to apply proven technologies to accomplish the following:

- Improve the safety of commercial vehicles and drivers;
- Improve motor carrier, vehicle and driver compliance;
- Improve motor carrier and state productivity by reducing the steps, paper, dollars, time and person-hours required to ensure safety and compliance.

Deployment of Oklahoma's CVISN program will assist the state in meeting its CVO goals of:

- Improved administrative efficiency;
- Maximization of commercial vehicle operational safety, security and productivity; and
- Expedited freight movements through operational productivity enhancements.

Purpose of This Document

This document provides an overview of Oklahoma's system design and high level requirements for its CVISN Level 1 program deployment. It is intended to guide development and implementation of the state's CVISN systems. Oklahoma's CVISN deployment design adapts the Federal Motor Carrier Safety Administration's CVISN Architecture specifications and the general CVISN System Design Description to the state's specific needs.

Background / Organization

The Top Level Design Description was developed by Oklahoma's CVISN project team. The CVISN Team is managed by the Oklahoma Department of Transportation (ODOT) Planning and Research Division, and includes representatives of all state agencies and other entities with responsibility for commercial vehicle credentialing, screening and enforcement. Team members include:

- ODOT, Bridge Division, and Planning and research Division;
- Department of Public Safety, Troop S, Size and Weights Permits Division, and Telecommunications Division;
- Oklahoma Tax Commission (OTC), Motor Vehicle and Management In formation Systems (MIS) Divisions;
- Oklahoma Corporation Commission (OCC), Data Processing and Transportation Divisions;
- Oklahoma Trucking Association (OTA); and
- State offices of the Federal Motor Carrier Safety Administration (FMCSA) and Federal Highway Administration (FHWA).

Various other stakeholders have contributed to the development of Oklahoma's CVISN deployment program and will continue to be involved through the deployment phase. These include metropolitan planning organizations, including ACOG and INCOG, the Oklahoma Transportation Authority (responsible for toll road operation and management) and representatives of individual trucking companies, including UPS, Groendyke, McCorkle Trucking, and others.

ODOT, OCC, OTC and DPS have signed a memorandum of understanding committing each agency to work with industry, FHWA and FMCSA to plan for and work toward deployment of "CVISN Level 1" functionality, as resources permit.

Components of Oklahoma's CVISN Deployment

CVISN Level 1 deployment will provide Oklahoma with the capabilities described below. Some of the projects described below are in addition to the level of functionality defined by FMCSA as comprising "CVISN Level 1 functionality". Projects which exceed the FMCSA definition of Level 1 functionality are included here as they are an integral part of the state's ongoing ITS / CVO program. Projects outside of the FMCSA definition of Level 1 functionality are labeled as "Post" Level 1 projects.

CVISN Level 1 Safety Assurance Projects

Full Deployment of SafetyNet 2000 / 32-bit ASPEN

The Oklahoma DPS and OCC use ASPEN units to record safety inspections in the field. DPS uploads the inspections to the state SafetyNet and federal Safety and Fitness Electronic Record (SAFER) systems. The newest version of SafetyNet, SafetyNet 2000, provides a robust, client-server application running on a SQL database management system. Oklahoma has completed installation of SafetyNet 2000 and has installed 32-bit ASPEN on all laptop field units.

Deployment of 32-bit ASPEN provides Oklahoma field officers with capabilities to upload inspection reports directly to the national SAFER database, to query SAFER for credential and safety status information on carriers and vehicles ("snapshots"), and to query SAFER for past inspection reports. However, this functionality can be utilized only if wireless communications are in place. The DPS satellite project described below is designed to enable officers at the roadside to take full advantage of the functionality offered by the enhanced ASPEN installation.

DPS Satellite Communications and Open Connection to SAFER

The Oklahoma Highway Patrol (OHP) is planning to implement a satellite communications system to provide statewide wireless connectivity from mobile units in the field to central databases. The system being implemented by the OHP will enable officers to access the Oklahoma Law Enforcement Telecommunications System (OLETS), the National Law Enforcement Telecommunications System (NLETS), the National Crime Information center (NCIC), dispatch and the DPS networks for both voice and data communications.

Troop S has pilot tested the system and is preparing for Phase 1 deployment, equipping 12 cars with satellite receivers. To meet the special communication needs of Troop S (as distinct from the needs of the general OHP), a related CVISN project has been identified. The related project is an open connection to the national Safety and Fitness Electronic Record (SAFER). This project will provide LAN to LAN virtual private network (VPN) between the DPS networks and SAFER, enabling Troop S officers to perform Inspection Selection System (ISS) and Past Inspection Queries (PIQ queries), snapshot queries, and inspection uploads on a real-time basis from any roadside location statewide. This is expected to improve officers' inspection selection capabilities and to ensure that vehicle and driver out of service (OOS) information is immediately available to roadside officers. The satellite / DPS WAN connectivity will also enable officers at roadside to

query the state's Commercial Vehicle Information Exchange Window (CVIEW).

The LAN to LAN VPN, though located on the DPS networks, may be accessible from other agencies through the satellite link, or through the Oklahoma government agency WAN, enabling other agencies to utilize the connectivity to SAFER and the Oklahoma CVIEW.

Universal Carrier ID

Oklahoma's DPS modified state rules in 2002 to require intrastate motor carriers to obtain DOT numbers and display the DOT number on their trucks. Intrastate carriers who register with the OCC already have DOT numbers assigned, but this rule change ensures that all intrastate carriers will have DOT numbers assigned. Assignment of the DOT number enables safety information to be aggregated at the carrier level, assisting DPS in motor carrier safety assurance functions.

Oklahoma CVIEW

Oklahoma plans to implement a Commercial Vehicle Information Exchange Window (CVIEW). The CVIEW is a key component in Oklahoma's efforts to make Oklahoma-based carriers' credential status information available to safety, screening and credentialing staff in all states, and to make credential and safety status of carriers based in other states available to Oklahoma agencies involved in credentialing, screening and safety assurance. The Oklahoma CVIEW will perform the following functions:

- Collect and route interstate credential status information (snapshots) to SAFER. This will include International Registration Plan (IRP), International Fuel tax Agreement (IFTA) and Single State Registration (SSRS) information.
- Collect and house intrastate credential status information, including intrastate vehicle and carrier registration and OS/OW and other permit data.
- Transmit intrastate credential snapshots supported by the PrePass system (but not supported by SAFER) to the PrePass host server for use in electronic screening decisions ("Post" Level 1 implementation).
- Receive periodic downloads from the SAFER database to support manual queries from credentialing, screening and safety personnel and automated queries from various credentialing systems.

Oklahoma does not plan to route inspection uploads, PIQ queries, ASPEN-based vehicle or carrier snapshot queries through CVIEW. Rather, uploads and queries will be transmitted directly to SAFER (utilizing the satellite network and LAN to LAN VPN connection to SAFER.) This assumes that SAFER and MCMIS will be enhanced to accommodate intrastate safety snapshot information..

CVISN Level 1 Credentials Projects

IRP Legacy System Modifications Electronic Credentialing

Oklahoma's IRP system is a state-owned system, developed and maintained by the OTC. The system credentials more than 20,000 carriers and more than 400,000 trucks and 300,000 trailers annually. The legacy system must be modified to accommodate the implementation of the Performance Registration Information Systems Management (PRISM) program, web-based credentialing and transmittal of updated credential status information to the state CVIEW.

Oklahoma will undertake a requirements analysis to determine the nature and extent of modifications required to accommodate PRISM, web-based credentialing and CVIEW interfaces and will evaluate other states non-proprietary IRP systems. The OTC will determine whether it is more cost-effective to modify the existing legacy system or replace it with a clone of another state's system, and then modify that system to met Oklahoma's specific needs.

Oklahoma's IRP system includes a module which enables carriers to download application and renewal information from the carriers' fleet management systems and transmit the application information to the state utilizing electronic data interchange (EDI) x12 interface standards. State personnel then open the attachments, review them, upload them to the IRP legacy system and manually package credentials which are mailed to the carrier, typically within 24-48 hours.

As part of the Legacy Systems Modification project, the OTC will evaluate the modifications necessary to automate the "back-end" of the EDI / bulletin board process, automating the checking, upload and credentials issuance process.

Larger carriers utilize the EDI / bulletin board application process. Carriers utilizing the EDI process represent a small proportion of total carriers, but approximately 60% of the interstate trucks credentialed in Oklahoma. Smaller carriers, however, tend not to use the automated system. Oklahoma plans to develop web-based credentialing capabilities to serve the needs of these smaller carriers. The web-based system will support electronic funds transfer (EFT), will allow a carrier using a commercial web browser to access the web systems, transmit application and fee information to the state electronically, upload application and fee information to the state's IRP legacy system, and, upon validation of the application and associated fee transmittal, will allow the carrier to print required credentials at their offices. The IRP web system may not be linked to other web-credentialing systems in the state, but will appear seamless to the carrier.

The web-based IRP system will include an automated check for safety status to meet the requirements of the PRISM program, described below.

PRISM

The Performance Registration Information Systems Management (PRISM) program is a FMCSA program designed to improve the safety performance of motor carriers. Under the PRISM program, motor carriers must meet minimum safety performance guidelines as a condition of registration. Carriers falling below this minimum threshold are enrolled in the national Motor Carrier Safety Improvement Program (MCSIP), where they are subject to monitoring and "treatment" to improve their safety performance. Oklahoma has submitted its PRISM Implementation Plan to FMCSA. Oklahoma will verify DOT numbers and census data for interstate carriers using the MCS 150, assign DOT numbers to intrastate carriers and will modify its IRP and intrastate registration systems to allow tracking of the US DOT number at both the carrier and vehicle levels. Implementation of the intrastate portion of the PRISM program will be phased in following the interstate portion, as funding is available.

IFTA Legacy System Modifications / Electronic Credentialing and Quarterly Filing

Oklahoma's IFTA legacy system is a state-owned system, developed and maintained by the OTC. The legacy system must be modified to better accommodate web-based credentialing and tax filing, and transmitting required credential status updates to the state CVIEW.

Oklahoma will undertake a requirements analysis to determine the nature and extent of modifications required to accommodate web-based credentialing and CVIEW interfaces and will evaluate other states non-proprietary IFTA systems. The OTC will also evaluate the costs / benefits of using the Regional Processing Center (RPC) as the IFTA tax management system, maintaining only an IFTA-credentialing system in-house. The OTC will then identify the most cost-effective option and will modify / replace the legacy system accordingly.

Oklahoma will implement a web-based automated IFTA credentialing and tax filing system. The system will support electronic funds transfer (EFT). The system will allow a carrier to use a commercial web browser to access the supported web system, and transmit mileage and fee information to the

state, which will be uploaded and processed by the IFTA system. The system will include interfaces between the credentialing and accounting systems.

IRP and IFTA Clearinghouse Membership

Oklahoma will evaluate the costs / benefits of Clearinghouse membership and will implement interfaces as appropriate.

Interfaces with Oklahoma CVIEW

The following credentialing systems will report credential status information to the Oklahoma CVIEW:

- IRP
- IFTA
- OCC Carrier Authorities
- Intrastate registration
- OS / OW
- Hazardous Waste Registration

Interfaces will be required between each system and are planned for implementation in the order listed above. Interface development is incorporated in each of the IRP, IFTA, OCC and OS / OW legacy system modification projects.

"Post" Level 1 Credentials Projects

OCC Transportation Database Legacy System Modifications

The OCC transportation database legacy system is a state owned system, developed and maintained by the OCC. The system manages the SSRS program, Interstate Exempt, Intrastate Authority credentialing programs and the Deleterious Substance and Wash Pit permit programs. The system will be modified to accommodate web-based credentialing and implementation of CVIEW interfaces.

The OCC will undertake a requirements analysis to determine the nature and extent of modifications required to accommodate web-based credentialing and CVIEW interfaces and will evaluate other states non-proprietary systems, including systems developed by Louisiana and North Carolina. The OCC will determine whether it is more cost-effective to modify the existing legacy system or replace it with a clone of another state's system, and then modify that system to met Oklahoma's specific needs.

The OCC intends to develop a web-based front-end for the SSRS, interstate exempt and intrastate operating authority registration systems. The system will support electronic funds transfer (EFT), will allow a carrier using a commercial web browser to access the web system, transmit application information and fees to the state electronically, and, upon validation of the application and associated fee transmittal, will allow the carrier to print the SSRS (or other) license. The web system may not be linked to the IRP or IFTA web systems, but will appear seamless to the carrier.

Automated OS / OW Permitting

The Oklahoma DPS is responsible for oversize / overweight permitting. DPS is currently replacing the existing FoxPro OS/OW permitting system with a more robust system that will accommodate internet interface. Subsequent phases of this project will include web-based permit capabilities to enable motor carriers to apply for, route and receive OS/OW permits electronically.

The first phase of permit automation will allow carriers to apply for certain "envelope" permits over the web. This is expected to accommodate as much as 40 percent of the demand for permits. Subsequent phases will provide more robust routing capabilities.

OS / OW Permit System / Bridge Interface

Approximately 1,000 of the permits issued annually by DPS must be forwarded to ODOT for bridge analysis. DPS and ODOT plan to develop an interface between the ODOT Bridge Analysis System and the OS / OW permitting system to allow the permits to be transmitted electronically. ODOT also plans to automate the analytics for permits involving simple span bridges to reduce turn-around time and reduce the FTE requirement for bridge analysis.

Oklahoma's Automated Screening Projects

Oklahoma uses HELP Inc.'s PrePass screening system. Under the PrePass program, HELP, Inc. issues transponders and assigns a unique transponder ID number to enrolled vehicles. Only carriers who meet specific compliance and safety requirements are eligible for enrollment. HELP, Inc. has installed readers, screening systems and roadside operations computers at seven highway sites in Oklahoma.

At present, Oklahoma does not have plans to install WIM scales at its fixed scale sites. However, the state is considering implementation of the project identified below to evaluate the operational benefits associated.

WIM / DMS/ Camera Installation at One Interstate Scale

This project would include installation of mainline weigh-in-motion (WIM) scales, cameras and dynamic message signs (DMS) at one high volume interstate scale. The DMS would be used to notify mainline traffic of scale closings to prevent peak period back-up. The DMS could also be used for peak-period weight-only screening to reduce total volumes into the scale house when back-up is a possibility. WIM scales would be integrated with the PrePass clearance system. Cameras would be used to assist scale house staff in manual query / sorting capabilities.
Operational effects of these installations will be evaluated to determine the desirability of implementing similar improvements at other scales.

Pilot Project to Enhance Mobile Screening Operations

Upon deployment of the Oklahoma CVIEW and implementation of the DPS satellite project, OCC, OTC and DPS mobile enforcement officers will have roadside access to current and accurate safety and credential status information that can assist them in making more informed inspection selection decisions. Officers can query CVIEW or SAFER from their laptops units and receive information that, at a glance, provides an indicator of whether the carrier and vehicle's credentials are in order and whether a safety inspection is warranted.

However, officers will have to stop vehicles to manually capture their plate or DOT number before they are able to make a query. While this would provide productivity improvements over the current process, it would still result in a number of safe and legal carriers and vehicles being stopped (albeit for a shorter duration). A more effective means of identifying potentially higher risk carriers / vehicles for inspection may be to capture plate and / or DOT numbers upstream of the inspection site using CCTV cameras, automatically match the unique identifier with data in the CVIEW, and notify the officer at the mobile enforcement site regarding which trucks to stop; or to relay the image back to the officer and allow him or her to manually query the CVIEW system prior to the truck's arrival at the site.

Scale House Computer and Communications Upgrades

Access to safety and credential snapshot data from fixed scales would assist OTC and OCC enforcement officers in credentials verification and inspection selection decisions. With an open connection from the fixed scales to the Oklahoma CVIEW, scale officers could key in plate or DOT number as vehicles are moving over the fixed scales, review snapshot data and either flag the driver through or call him in for further inspection.

This project will evaluate options for scale house computer upgrades and connections to the state agency WAN (T1, satellite, other) and implement

appropriate connections to provide scale staff with access to the CVIEW server.

Expanded PrePass Functionality

Information such as intrastate safety inspection results or OOS orders, or intrastate credential snapshots required for local screening decisions which may not ultimately be supported by SAFER will be transmitted periodically from the Oklahoma CVIEW to the PrePass host server or PreView (the PrePass CVIEW equivalent).

Design Overview

The diagram on the following page illustrates Oklahoma's system design template, or functional architecture, for CVISN Level 1 deployment. The top level physical design, detailing host computers and networks involved in CVISN deployment are depicted in Exhibit 0-2. Exhibits 0-3 summarizes the physical design.

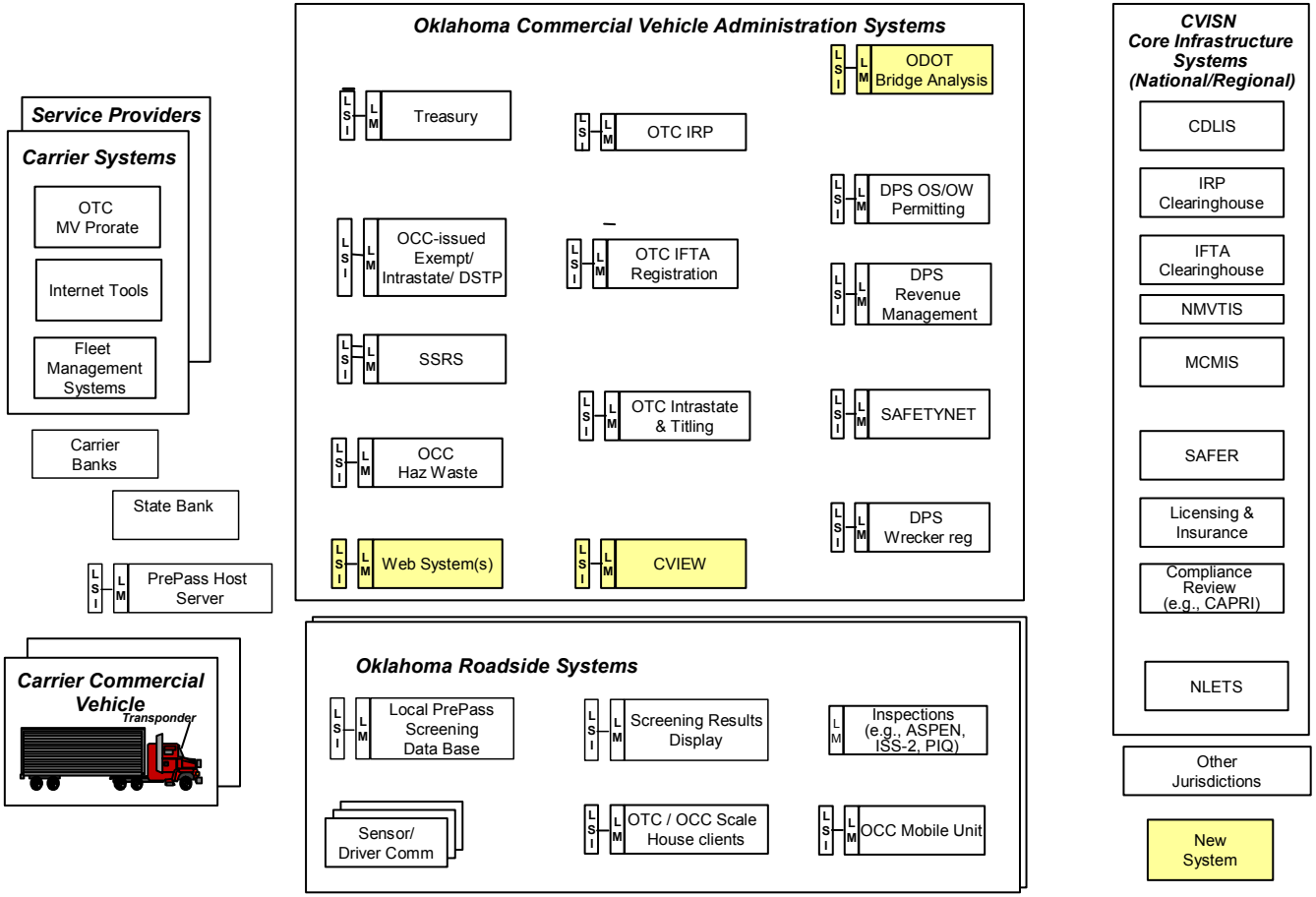


Exhibit 0-1. Oklahoma CVISN Architecture

Oklahoma Host Computers and Networks Template
(—— Changes Required for CVISN projects)

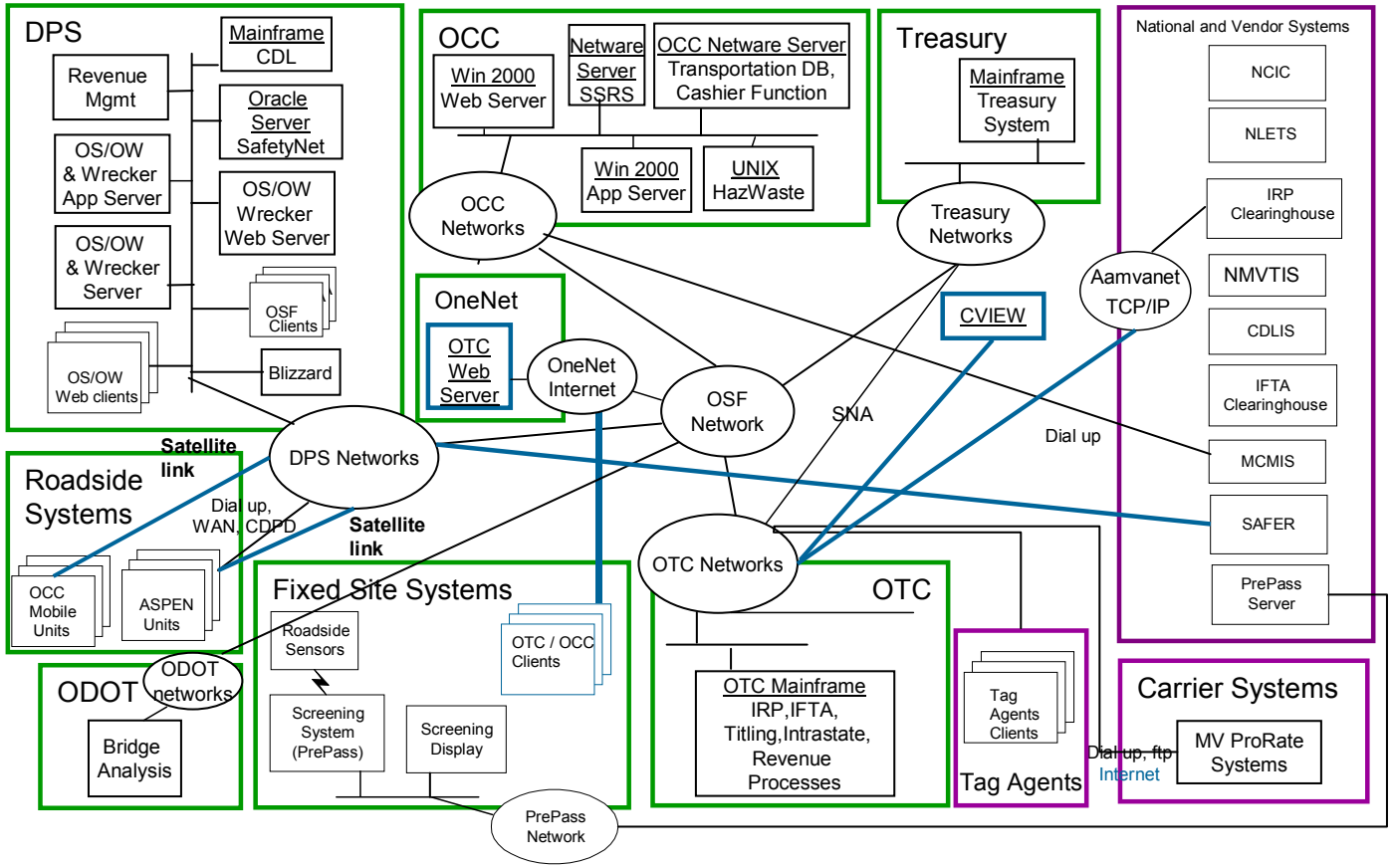


Exhibit 0-2. Oklahoma CVISN Physical Design: Host Computers and Networks

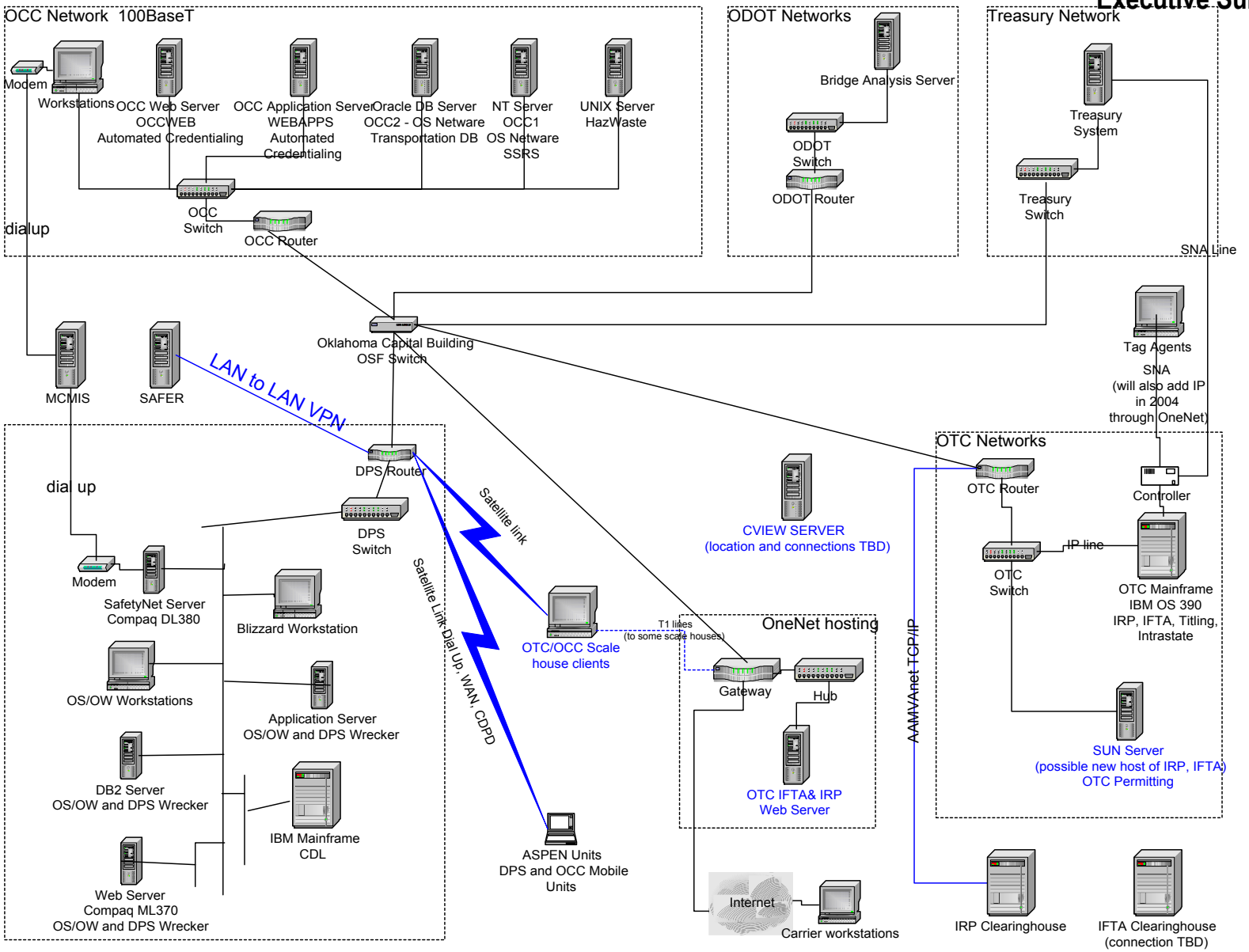


Exhibit 0-3. Oklahoma Physical Design

1.1 Purpose and Scope

This document provides an overview of Oklahoma's system design and high level requirements for its Commercial Vehicle Information Systems and Networks (CVISN) Level 1 program deployment. It is intended to guide development and implementation of Oklahoma's CVISN systems. Oklahoma's CVISN deployment design adapts the Federal Motor Carrier Safety Administration's CVISN Architecture specifications and the general CVISN System Design Description to the state's specific needs.

The Top Level Design Description was developed by Oklahoma's CVISN project team. The CVISN Team is managed by the Oklahoma Department of Transportation (ODOT) Planning and Research Division, and includes representatives of all state agencies and other entities with responsibility for commercial vehicle credentialing, screening and enforcement. Team members include:

- ODOT, Bridge Division and Planning and Research Division;
- Department of Public Safety, Troop S, Size and Weights Permit Division, and Telecommunications Division;
- Oklahoma Tax Commission (OTC), Motor Vehicle and Management Information Systems (MIS) Divisions;
- Oklahoma Corporation Commission (OCC), Data Processing and Transportation Divisions;
- Oklahoma Trucking Association (OTA); and
- State offices of the Federal Motor Carrier Safety Administration (FMCSA) and Federal Highway Administration (FHWA).

Various other stakeholders have contributed to the development of Oklahoma's CVISN deployment program and will continue to be involved through the deployment phase. These include metropolitan planning organizations, including ACOG and INCOG, the Oklahoma Transportation Authority (responsible for toll road operation and management) and representatives of individual trucking companies, including UPS, Groendyke, McCorkle Trucking, and others.

ODOT, OCC, OTC and DPS have signed a memorandum of understanding committing each agency to work with industry, FHWA and FMCSA to plan for and work toward deployment of "CVISN Level 1" functionality, as resources permit.

Exhibits 1-1 and 1-2, at the end of this section, highlight the CVISN program organization.

1.2 Background

Commercial Vehicle Operations (CVO) are the various activities in which public agencies and motor carriers engage to credential or permit commercial vehicles; to clear vehicles through weigh stations; to assure motor carrier, vehicle and driver safety and compliance; and to manage the flow of commercial vehicle traffic. Intelligent Transportation Systems (ITS) is the application of advanced technologies to surface transportation needs. ITS / CVO activities involve automating existing CVO processes such as credentialing, clearance or safety assurance to improve the efficiency and effectiveness of these processes, for both carriers and states.

The Federal Motor Carrier Safety Administration initiated the National ITS / CVO program in the early 1990s. The National Program is focused on providing resources and guidance to states and carriers interested in applying technology to CVO activities. The National ITS / CVO program includes two primary sub-programs – Mainstreaming and Commercial Vehicle Information Systems and Networks (CVISN). The Mainstreaming program was designed to help states understand and plan for the technological change that was coming about in association with CVO. The Mainstreaming Program also focused on assisting states in developing the institutional infrastructure required to accommodate and implement technological change occurring nationally.

Oklahoma will complete its ITS / CVO Business Plan in the third quarter of 2002. The Business Plan identifies a program of "no-tech", low-tech and technology-based initiatives focused on achieving the high-level goals summarized below:

- Improve administrative efficiency
- Maximize commercial vehicle operational safety, security and productivity
- Improve freight flows by increasing commercial vehicle operational productivity

Whereas the Mainstreaming Program focused on helping states develop the institutional infrastructure required to automate CV safety, credentialing and screening functions, CVISN is focused on developing the technological infrastructure required for automation. CVISN is the collection of state, federal, and private sector information systems and communications networks that facilitate information exchange in support more efficient, more effective commercial vehicle operations.

Specific examples of new or enhanced services include:

- providing timely safety information to inspectors at the roadside,
- providing operating credentials to motor carriers electronically,
- allowing states to exchange registration and fuel tax information electronically, and
- conducting electronic screening of commercial vehicles at fixed and mobile sites while vehicles travel at highway speeds.

1.3 Oklahoma CVO Program Scope

Oklahoma is committed to improving commercial vehicle operations and services within the state. Toward this end, Oklahoma is committed to meeting CVISN Level 1 deployment requirements, as well as implementing a number of projects designed to improve the efficiency and effectiveness of CVO operations for both the state and carriers, which are not necessarily part of Level 1 functionality as defined by FMCSA. To differentiate these projects from those required for Level 1 compliance, this document refers to these additional projects as "post" Level 1 implementation projects. Level 1 and "post" Level 1 deployment projects are listed in the call-out box below, and are described in detail in Section 2, System Requirements.

Oklahoma CVISN Deployment Program

Automated Safety Assurance

- Full deployment of SafetyNet 2000 and 32-bit ASPEN
- Open Connection to SAFER via LAN to LAN VPN from DPS Networks
- Universal Carrier ID
- Oklahoma Commercial Vehicle Information Exchange Window (OK CVIEW).

Credentials Administration

- IRP Legacy System Modifications / Electronic Credentialing
- IFTA Legacy System Modifications / Electronic Credentialing
- Evaluate IRP and IFTA Clearinghouse membership
- PRISM Implementation
- OCC Transportation Database Legacy System Modifications / Electronic credentialing ("Post" Level 1)
- Automated OS/OW permitting / routing ("Post" Level 1)
- OS / OW Permitting / DOTD Bridge System Interface ("Post" Level 1)

Electronic Screening

- WIM / DMS installation at One Interstate Scale Facility
- Pilot Project to Enhance Mobile Screening Operations
- Open Connection from Scale House Computers to CVIEW and Associated Communications Upgrades
- Expanded PrePass Functionality

1.3.1 CVISN Level 1 Scope

Oklahoma's CVISN program is consistent with the program of projects defined in the state's ITS / CVO Business Plan, and is consistent with the functional requirements of CVISN Level 1, as defined by the FMCSA. Level 1 requirements, as defined by FMCSA, include the basic capabilities described below:

Automated Safety Assurance:

- ASPEN or equivalent at all major inspection sites;
- Connection to SAFER to provide for exchange of interstate carrier and vehicle snapshots;
- Implementation of CVIEW (or equivalent) system for the exchange of intrastate and intrastate safety and credentials snapshots.

Automated Credentialing:

- Accept and process electronic IRP applications for supplements and renewals;
- Accept and process electronic IFTA credential applications for supplements and renewals;
- Accept and process electronic quarterly filings for IFTA tax returns;
- Automated credentialing system ready to extend to other credentials (intrastate registration, OS/OW permits, carrier registration, etc.); and
- At least 10% of transaction volumes handled electronically; ready to bring on additional carriers as carriers sign up; ready to extend to branch offices where applicable.

Electronic Screening at a Minimum of One Site:

- To include WIM, AVI, automated credentials verification.

1.3.2 "Post" Level 1 Scope

In some areas, such as automated Oversize / Overweight (OS / OW) permitting, and automated credentialing for OCC-issued credentials, Oklahoma will implement additional functionality beyond the Level 1 requirements in tandem with its CVISN Level 1 deployment. Although FMCSA does not require that "post" Level 1 projects be documented in the Top Level Design Description, project descriptions are provided in Section 2, and current deployment status is defined here, to enable readers to understand the state's full CVO program for near-term implementation.

1.4 Deployment Status as of May, 2002

This section highlights the current status of Oklahoma's CVISN deployment program. Oklahoma has completed an ITS / CVO Business Plan which defines the current CVO environment, identifies a series of goals and objectives for improving the efficiency and effectiveness of commercial vehicle operations in Oklahoma, and defines a program of projects to address those goals and objectives. The CVISN Program Plan and Design Document build upon the program identified in the Business Plan. Copies of the Plan are available from the ODOT Planning and Research Division.

Oklahoma has received a FY 2002 CVISN deployment earmark totaling $775,000, and a FY 2003 earmark totaling $710,000. The earmarks will be utilized to set up the state CVIEW and complete modifications to the state's IRP and OCC transportation database legacy systems to prepare those systems for automated credentialing, CVIEW interfaces, and, in the case of IRP, PRISM implementation. Earmarks will also be used to upgrade communications to the state's scale houses, implement an interface between the OS/OW permitting and bridge analysis systems, and to provide web-based credentialing / tax filing for the IFTA system. The state has completed detailed project plans, refining the more general WBS, budget and phase planning information contained in the Program Plan for the projects to be implemented with FY 2002 funds and is working to prepare project plans for the FY 2003 projects.

Oklahoma's PRISM Implementation Plan has been approved by the FMCSA and PRISM Grant funding in the amount of $499,700 has been authorized

for program deployment. The state is working toward a FY 2004 CVISN Deployment earmark.

1.4.1 Safety Assurance

Oklahoma's MCSAP and safety-certified OCC officers use laptops and ASPEN software for safety inspection reporting. 100 percent of DPS Troop S and OCC safety-certified officers are equipped with laptop units.

The DPS has installed SafetyNet 2000 on its SafetyNet server, has installed 32-bit ASPEN on all ASPEN units.

The DPS is installing satellite units on all Troop S laptops. The satellite system will enable officers to upload inspections and access OLETS, NLETS, NCIC, and, ultimately, CVIEW and SAFER, from any location in the state.

Oklahoma has installed and is evaluating the State of Washington's xCVIEW.

1.4.2 Credentials Administration

The Oklahoma Tax Commission, Corporation Commission and DPS use state-owned systems for managing all credential and permit types.

Oklahoma is unique in the nation in that it credentials almost 20 percent of the interstate trucks registered in the US. To better accommodate the large carriers who credential in Oklahoma, and to reduce the data entry requirements on state personnel, the OTC implemented a system several years ago which enables motor carriers to download IRP application and renewal information from their fleet management systems and transmit the data electronically to the state bulletin board in an EDI x12 format. Approximately 50 percent of the interstate trucks credentialed in Oklahoma are processed through the EDI / bulletin board application.

Oklahoma is not currently a member of the IRP or IFTA Clearinghouses.

The Oklahoma Tax Commission and DPS have signed a letter of intent to participate in the PRISM program.

The DPS is pilot testing a new oversize / overweight permit system and plans to begin issuing certain types of permits with simple routing requirements via the web in the summer of 2002.

1.4.3 Electronic Screening

Oklahoma is a member of HELP, Inc. and has installed PrePass readers and screening systems at seven highway locations.

1.5 Document Organization

This design document is organized as follows:

- **Section 2, System Requirements,** following this Introduction, highlights Oklahoma's ITS / CVO program goals and objectives, presents detailed project descriptions and defines the high-level system requirements based on the CVISN objectives. The state's exceptions to the national guidelines and requirements as documented in the CVISN Architectural and Compatibility Handbook (COACH), Part 1 are included in Section 2. The full COACH Part 1 is included as Appendix A.
- **Section 3, System Design,** describes Oklahoma's key design features, defines the state's high-level CVISN system architecture, provides a description of the system components included in the architecture and provides an overview of the physical design. The remainder of this section is organized around each of the state's project areas and includes operating scenarios, system interfaces, and system changes relating to each project area. Interface specifications are further detailed in Appendix B, the COACH, Part 4.

- **Section 4, Issues,** notes technical and policy issues that emerged during the top-level design process and defines the strategies for addressing these issues.

Three appendices provide supplementary information:

- **Appendix A** contains the COACH Part 1.
- **Appendix B** contains the COACH Part 4.
- **Appendix C** contains the COACH Part 3.

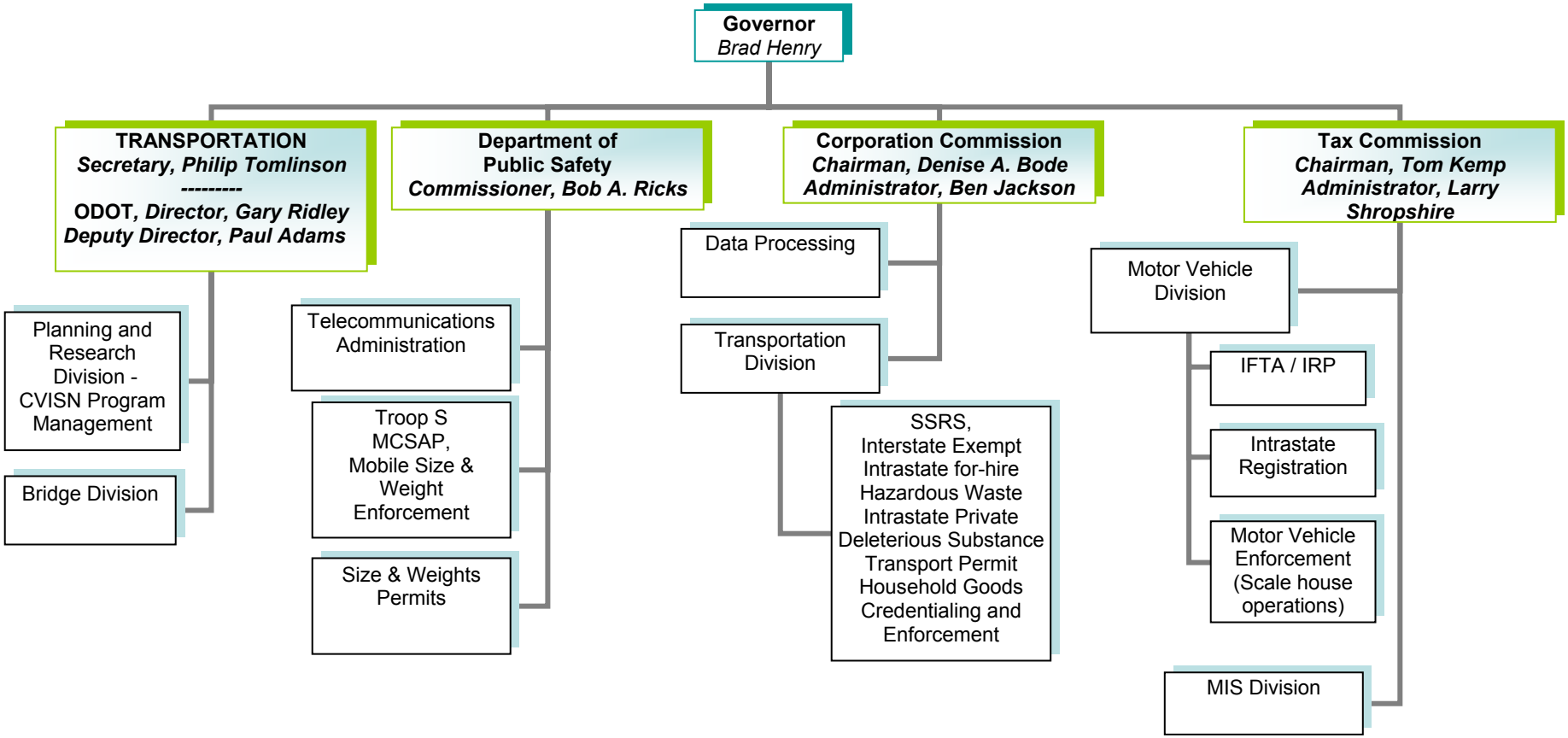


Exhibit 1-1. State Agency Organization - CVO Functions

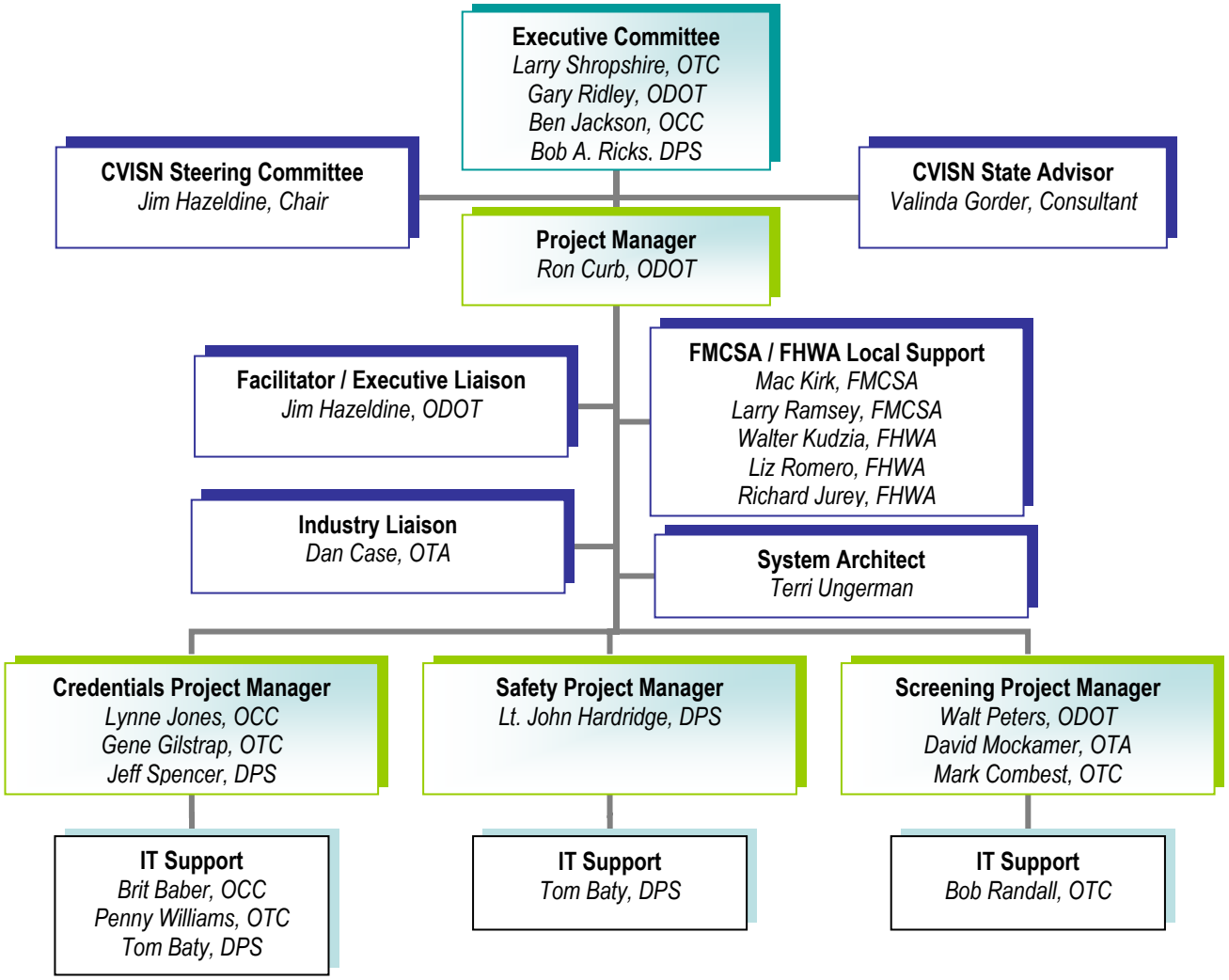


Exhibit 1-2. CVISN Program Organization

2.1 Oklahoma CVISN Goals

Oklahoma's CVISN goals and objectives build upon those established in the state's ITS / CVO Business Plan. Oklahoma's primary goals and objectives are as follows:

Improve Administrative Efficiency

Specific objectives include:

- Continue to improve the level of customer service provided in Oklahoma.
- Improve state and motor carrier productivity and motor carrier compliance by reducing the steps, paper, dollars or people required to fulfill regulatory obligations.
- Improve safety compliance and motor carrier accountability through provision of timely, current, accurate credential status information to the roadside.

Maximize CV Operational Safety, Security and Productivity

Specific objectives include:

- Focus safety assurance and screening resources on higher risk motor carriers to reduce crashes, maintain security of shipments, improve operational productivity of safe and legal motor carriers, and reduce public and private sector unit costs per violation / citation issued.
- Improve the operating productivity of safe and legal motor carriers and maximize the efficiency and effectiveness of enforcement resources by allowing for mainline screening and bypass at key locations throughout the state.

Improve freight flows by Increasing CVO Operational Productivity

Specific objectives include:

- Maintain and enhance mobility on priority freight corridors.
- Increase available funding dedicated to freight flow mobility improvements.

2.2 Oklahoma CVISN Deployment Projects

Oklahoma will implement a variety of safety assurance, credentialing and screening projects to meet CVISN Level 1 functionality requirements.

Oklahoma also plans a number of projects that are in addition to the level of functionality required to meet the FMCSA definition of CVISN Level 1 compliance. Projects which exceed Level 1 functionality requirements as defined by FMCSA are detailed here, as they are part of the state's ongoing CVO deployment program and relate directly to the Level 1 projects. Projects which go beyond Level 1 functionality are labeled as "post" Level 1 projects. "Post" does not necessarily refer to timing; rather it indicates that a project is in addition to the Level 1 projects. Some "post" Level 1 projects will be undertaken concurrently with Level 1 efforts; others will be undertaken as funding is available and may be implemented after the Level 1 deployment timeframe.

Each of these projects is described below.

2.2.1 Automated Safety Assurance Projects

Oklahoma intends to implement four safety projects as part of its Level 1 and post Level 1 deployment program.

- Full deployment of SafetyNet 2000 / 32-bit ASPEN
- DPS Satellite Communications and Open Connection to SAFER

- Universal carrier ID
- Oklahoma Commercial Vehicle Information Exchange Window (OK CVIEW)

Each of these projects is described below.

2.2.1.1 CVISN Level 1 Safety Deployment Projects

Full Deployment of SafetyNet 2000 / 32-bit ASPEN

Project Objectives:

- Take advantage of the functionality offered by latest versions of FMCSA-provided software
- Upload inspection reports directly to the SAFER data mailbox, reducing turn-around time for inspection upload

Project Benefits:

Full deployment of SafetyNet 2000 / 32-bit ASPEN will allow MCSAP officers to:

- Take advantage of ISS2, PIQ query and direct upload to SAFER functions, improving safety assurance efforts

Project Description:

The SafetyNet system was developed by FMCSA and is distributed to any state who desires to use SafetyNet for managing safety inspection reports, CV crash reports, compliance reviews, enforcement data and carrier identification information. FMCSA maintains SafetyNet and periodically updates and enhances the system. The most recent version of SafetyNet, SafetyNet 2000, provides a robust, client-server application running on a SQL database management system.

High Level Implementation Requirements:

- Oklahoma has installed SafetyNet 2000 on the DPS Oracle SafetyNet server.
- ASPEN units have been upgraded to the 32-bit version of ASPEN.
- DPS is currently working through some issuers related to direct upload of inspection reports to the SAFER data mailbox, and in the meantime is still routing inspection reports through Blizzard to SafetyNet and from SafetyNet to MCMIS.
- DPS expects to be uploading directly to the SAFER data mailbox before year-end 2002.

DPS Satellite Communications and Open Connection to SAFER

Project Objectives:

- Provide voice / data wireless communications capability to roadside from any location in the state
- Provide direct connection to SAFER from the field and replace dial-up connection from deskside

Project Benefits:

- Improve officer security by providing communications to dispatch from any location statewide
- Enable ISS2, PIQ queries from roadside, improving officer's access to accurate, timely data, thus facilitating their efforts to target limited enforcement resources on higher risk carriers
- Enable direct uploads of inspection reports to SAFER upon completion of inspection, providing "downstream" officers and officers in other states with timely inspection and out-of-service (OOS) information, again, facilitating enforcement officers efforts to focus limited enforcement resources on higher risk carriers and vehicles

Project Description:
The Oklahoma Highway Patrol (OHP) is planning to implement a satellite communications system to provide statewide wireless connectivity from mobile units in the field. The system being implemented by OHP will enable officers to access the Oklahoma Law Enforcement Telecommunications System (OLETS), the National Law Enforcement Telecommunications System (NLETS), the National Crime Information center (NCIC), dispatch and central DPS systems for both voice and data communications.

Troop S will pilot test the system for the OHP. To meet the special communication needs of Troop S (as distinct from the needs of the general Highway Patrol), a related CVISN project has been identified. The related project is an open connection to the national Safety and Fitness Electronic Record (SAFER). This project will provide LAN to LAN VPN between the DPS networks and SAFER, enabling Troop S officers, and ultimately certified officers in other agencies, to perform Inspection Selection System (ISS) and Past Inspection Queries (PIQ queries), snapshot queries, and inspection uploads on a real-time basis from any roadside location statewide. Officers at roadside will also be able to access the Oklahoma CVIEW via satellite query to the DPS networks.

High Level Requirements:
- Define functional / technical requirements
- Test ASPEN connectivity from roadside to DPS networks
- Install VPN connection from DPS networks to SAFER
- Test OCC connectivity from roadside to DPS and OCC networks

Universal Carrier ID

Project Objectives:

- Improve enforcement officers' capabilities to track safety performance at the motor carrier level for intrastate carriers by enabling officers to track inspection and crash history at the carrier rather than vehicle level

Project Benefits:

- Target limited enforcement resources toward higher risk carriers

Project Description:

DPS modified its administrative rules in 2002 to require all intrastate carriers based in Oklahoma to obtain an Oklahoma DOT number and display the number on their vehicle.

High Level Implementation Requirements:

- Work with the Oklahoma Trucking Association (OTA) to educate carriers regarding the new requirement for acquisition / display of intrastate DOT numbers
- Provide MCS 150s and associated instructions in the upcoming renewal cycle for LP Gas registrants

Oklahoma CVIEW

- Improve safety, security, compliance for the citizens of Oklahoma, by targeting enforcement / compliance resources on potentially unsafe / Illegal motor carriers, drivers and vehicles.
- Improve productivity of safe and legal carriers.

Project Benefits:

CVIEW deployment will:

- Enable Oklahoma's roadside enforcement officers and deskside regulatory staff to access motor carrier, vehicle and (ultimately) driver safety and credential status information for Oklahoma-based intrastate carriers and vehicles, and interstate carriers / vehicles registered in Oklahoma, any other US state, some Canadian provinces, and Mexico.
- Ensure that other states have access to carrier and vehicle credential status information for interstate carriers registering in Oklahoma.

Project Description:

CVIEW is a state-owned and maintained system. Several states have already deployed CVIEWs; approximately 30 other states are preparing to deploy. Several vendors currently offer systems. Public domain systems have been developed by the state of Washington and Johns Hopkins Applied Physics Lab.

Oklahoma plans to implement a CVIEW which will perform the following functions:

- Collect and route interstate credential status information (snapshots) to SAFER. This will include IRP, IFTA and SSRS information.
- Collect and house intrastate credential status information, including intrastate vehicle registration and OS/OW and other permit data.
- Transmit intrastate credential snapshots supported by the PrePass system (but not supported by SAFER) to the PrePass host server for use in electronic screening decisions.
- Receive periodic downloads from the SAFER database to support manual queries from credentialing, screening and safety personnel and automated queries from various credentialing systems.

Oklahoma credential legacy systems will populate credential fields for Oklahoma-based carriers. The national SAFER system will populate safety fields for Oklahoma-based carriers and credential and safety fields for carriers and vehicles based in other jurisdictions. Data will be updated nightly or weekly, depending upon data type.

All Oklahoma CV enforcement and regulatory agencies will be able to access the database, from deskside or roadside.
Oklahoma does not plan to route inspection uploads, PIQ queries, ASPEN-based vehicle or carrier snapshot queries through CVIEW. Rather, uploads and queries will be transmitted directly to SAFER. This assumes that SAFER and MCMIS will be enhanced to accommodate intrastate safety snapshot information.

Oklahoma will issue an RFP for CVIEW implementation.

High Level Implementation Requirements:

- Evaluate CVIEW systems as developed by state of Washington, Johns Hopkins Applied Physics Lab, and vendors (completed).
- Select system which best meets Oklahoma's needs (completed).
- Install on Oklahoma server and modify to meet Oklahoma-specific needs.
- Interface with national Safety and Fitness Electronic Record (SAFER) system.
- Beta and integration testing of SAFER interface.
- Interface with OTC's IRP, IFTA and intrastate credentialing systems; OCC's SSRS, intrastate and interstate exempt credentialing systems; DPS' OS / OW permitting system, including beta and integration testing
- Interface with PrePass host server to enable electronic clearance of intrastate vehicles at states fixed weigh scales, including beta and integration testing. (It is Oklahoma's understanding that the PrePass host server will interface with SAFER for interstate snapshot information).

2.2.2 Credentials Projects

Oklahoma intends to implement the following credentialing projects as part of its CVISN deployment:

- IRP legacy system modifications and electronic credentialing
- IFTA legacy system modifications and electronic credentialing / tax filing
- PRISM
- Evaluate IRP / IFTA Clearinghouse costs / benefits

- OCC Legacy system modifications and electronic credentialing ("Post" Level 1)
- OS / OW automated permitting / routing ("Post" Level 1)
- OS / OW permitting system / bridge interface ("Post" Lev el 1)

2.2.2.1 CVISN Level 1 Credentials Projects

IRP Legacy System Modifications / Automated Credentialing

Project Objectives:

- Position IRP system for PRISM implementation, CVIEW interface and web-based credentialing.
- Support objective of targeting safety and security resources on higher risk carriers by positioning systems to provide roadside access to credentials status information.
- Improve efficiency of existing computer-to-computer electronic application capabilities for larger carriers and state staff
- Provide web-based credentialing to meet the needs of smaller carriers who do not use EDI

Project Benefits:

- More efficient, robust PRISM, CVIEW and automated credentialing systems can be developed if existing legacy system is first modified
- Ease of maintenance, reduced long-term O&M costs
- Improved processing capabilities
- Increase staff handling capacity without increasing FTEs
- Enable safe and legal carriers to get vehicles on the road in minutes rather than hours or days
- Over time, redeploy resources to revenue recovery functions such as audit rather than routine application processing

Project Description:

Oklahoma's IRP system is a state-owned system, developed and maintained by the OTC. The system credentials more than 20,000 carriers and more than 400,000 trucks annually. The legacy system must be modified to accommodate the implementation of the Performance Registration Information Systems Management (PRISM) program, web-based credentialing and transmittal of updated credential status information to the state CVIEW.

Oklahoma will undertake a requirements analysis to determine the nature and extent of modifications required to accommodate PRISM, web-based credentialing and CVIEW interfaces and will evaluate other states non-proprietary IRP systems. The OTC will determine whether it is more cost-effective to modify the existing legacy system or replace it with a clone of another state's system, and then modify that system to met Oklahoma's specific needs.

Oklahoma's IRP system includes a module which enables carriers to download application and renewal information from the carriers' fleet management systems and transmit the application information to the state utilizing electronic data interchange (EDI) x12 interface standards. State personnel then open the attachments, review them, upload them to the IRP legacy system and manually package credentials which are mailed to the carrier, typically within 24-48 hours.

As part of the Legacy Systems Modification project, the OTC will evaluate the modifications necessary to automate the "back-end" of the EDI / bulletin board process, automating the application verification, upload and credentials issuance process. Depending upon the outcome of that evaluation / requirements analysis, the EDI / bulletin board system may be modified as part of the overall legacy system modifications, or may be modified as part of the Phase 2 electronic credentialing implementation.

The EDI / bulletin board system will be migrated to a web-based application, which will still allow for download from carrier's fleet management systems.

This project also includes implementation of the Oklahoma CVIEW to IRP legacy system interface, enabling periodic downloads and updates of credential "snapshots" to CVIEW, automated verification of carrier safety status prior to issuance of registration, and upload of Oklahoma data to national SAFER system.

The second phase of this project includes implementation of web-based credentialing, enabling smaller carriers who do not use EDI to apply for, pay for and receive their credentials using the Internet. The web-based system will support electronic funds transfer (EFT), will allow a carrier using a commercial web browser to access the web systems, transmit application and fee information to the state electronically, upload application and fee information to the state's IRP legacy system, and, upon validation of the application and associated fee transmittal, will allow the carrier to print required credentials at their offices. The IRP web system may not be linked to other web-credentialing systems in the state, but will appear seamless to the carrier.

The web-based IRP system will include an automated check for safety status to meet the requirements of the PRISM program.

High Level Requirements:

- Complete requirements analysis to accommodate PRISM, CVIEW interfaces, and automated credentialing (web-based and computer-to-computer).
- Evaluate other states' non-proprietary systems for application in Oklahoma.
- Modify (existing legacy system or other state's system) as required to meet Oklahoma needs, including beta and integration testing.
- Incorporate enhanced computer-to-computer credentialing capabilities, including beta and integration testing
- Design / test / deploy interfaces to Oklahoma CVIEW.
- Develop, test and deploy web-based credentialing.

IFTA Legacy System Modifications / Automated Credentialing

Project Objectives:

- Position IFTA legacy system for CVIEW interface and web-based credentialing.
- Support objective of targeting safety and security resources on higher risk carriers by positioning system to provide roadside access to credentials status information.
- Improve efficiency of credentialing for both state and carriers

Project Benefits:

- More efficient, robust CVIEW / automated credentialing systems can be developed if existing legacy system is first modified
- Ease of maintenance, reduced long-term O&M costs
- Improved processing capabilities
- Increase staff handling capacity without increasing FTEs
- Over time, redeploy resources to revenue recovery functions such as audit rather than routine application processing

Project Description:

Oklahoma's IFTA legacy system is a state-owned system, developed and maintained by the OTC. The legacy system must be modified to better accommodate web-based credentialing and tax filing, and transmitting required credential status updates to the state CVIEW.

Oklahoma will undertake a requirements analysis to determine the nature and extent of modifications required to accommodate web-based credentialing and CVIEW interfaces and will evaluate other states non-proprietary IFTA systems. The OTC will also evaluate the costs / benefits of using the Regional Processing Center (RPC) as the IFTA tax management system, maintaining only an IFTA-credentialing system in-house. The OTC will then identify the most cost-effective option and will modify / replace the legacy system accordingly.

This project includes implementation of the IFTA legacy system interface to CVIEW, enabling periodic downloads updates of credential "snapshots" to CVIEW, and upload of Oklahoma data to national SAFER system.

A second phase of the project includes implementing web-based credentialing and quarterly tax filing, enabling carriers to apply for, pay for and receive their IFTA license, and to file and pay quarterly fuel taxes using the Internet. The system will support electronic funds transfer (EFT). The system will allow a carrier to use a commercial web browser to access the supported web system, and transmit mileage and fee information to the state, which will be uploaded and processed by the IFTA system. The system will include interfaces between the credentialing and accounting systems. The IFTA web system may not be linked to other web-credentialing systems in the state, but will appear seamless to the carrier.

High Level Requirements:

- Complete requirements analysis to accommodate CVIEW interfaces, and automated credentialing (web-based).
- Evaluate other states' and RPC systems for application in Oklahoma
- Modify (existing legacy or other state) system as required to meet Oklahoma needs, including beta and integration testing.
- Design / test / deploy interfaces to Oklahoma CVIEW, including beta and integration testing.
- Incorporate web-based credentialing / tax filing.

IRP and IFTA Clearinghouse Membership

Oklahoma will evaluate the costs / benefits of Clearinghouse membership and will implement interfaces as appropriate.

PRISM

Project Objectives:

- Improve safety, security, compliance for the citizens of Oklahoma, by ensuring that motor carriers meet federally-specified minimum safety performance standards as a prerequisite to registration. Assist FHWA / FMCSA in identifying marginal performance and provide incentives for safety performance improvement.
- Reduce CVO-related crashes.

Project Benefits:

PRISM deployment will:

- Create a partnership between Oklahoma credentialing, enforcement and federal safety assurance agencies to improve highway safety for CV and general traffic.
- Assist motor carriers by ensuring that crashes, inspections, citations, OOS actions are more accurately attributed to the motor carrier actually responsible for safety.

Project Description:

PRISM is a national program designed to provide a uniform process to identify motor carriers with marginal and / or unacceptable safety performance prior to registration. The PRISM program provides a series of

progressive ameliorative actions to encourage motor carriers to improve safety performance. Program implementation is 100% funded through federal grants.

FMCSA has approved Oklahoma's PRISM Implementation Plan and has authorized funding for PRISM implementation. Oklahoma will verify DOT numbers and census data for interstate carriers using the MCS 150, assign DOT numbers to intrastate carriers and will modify its IRP and intrastate registration systems to allow tracking of the US DOT number at both the carrier and vehicle levels. Implementation of the intrastate portion of the PRISM program will be phased in following the interstate portion, as funding is available.

High Level Implementation Requirements:

- Modify IRP and (ultimately) intrastate vehicle registration system to track US DOT number at both the registrant and vehicle level.
- Ensure that all carriers have valid US DOT numbers and update carrier census data associated with the number.
- Electronically capture MCS 150 data and enter into federal Motor Carrier Management Information System (MCMIS).
- Modify IRP system to produce bar codes on printed cab cards, enabling roadside enforcement to "wand" cab card for positive ID and electronic transmittal of all required carrier / vehicle data to inspection and crash reporting systems.
- Modify IRP system to automatically verify safety status (via checks to state CVIEW) of registrant / vehicles prior to issuance of registration.
- Provide bar code readers to roadside safety assurance / compliance officers to assist in inspection selection decisions, safety and compliance verification.

2.2.2.2 "Post" Level 1 Credentials Projects

OCC Transportation Database Legacy System Modifications / Electronic Credentialing

Project Objectives:

- Position legacy system for CVIEW interface / automated credentialing.
- Improve carrier compliance through more efficient tracking / registration / citation tracking systems
- Improve efficiency of credentialing for both state and carriers

Project Benefits:

- More efficient, robust CVIEW / automated credentialing systems can be developed if existing legacy system is first modified
- Ease of maintenance, reduced long-term O&M costs
- Improved processing capabilities
- Improved carrier compliance
- Increase staff handling capacity without increasing FTEs
- Enable safe and legal carriers to get vehicles on the road in minutes rather than hours or days
- Over time, redeploy resources to revenue recovery functions such as audit rather than routine application processing

Project Description:

The OCC transportation database legacy system is a state owned system, developed and maintained by the OCC. The system manages the SSRS program, Interstate Exempt, Intrastate Operating Authority and HazWaste credentialing programs. The system will be modified to position it to better accommodate web-based credentialing and implementation of CVIEW interfaces.

The OCC will undertake a requirements analysis to determine the nature and extent of modifications required to accommodate web-based credentialing and CVIEW interfaces and will evaluate other states non-proprietary systems, including systems developed by Louisiana and North Carolina. The OCC will determine whether it is more cost-effective to modify the existing legacy system or replace it with a clone of another state's system, and will then modify that system to met Oklahoma's specific needs.

Legacy system modifications will also include implementation of the Oklahoma CVIEW to OCC legacy system interface, enabling periodic downloads updates of credential "snapshots" to CVIEW, automated verification of carrier insurance status prior to issuance of registration, and upload of Oklahoma data to national SAFER system.

Phase 2 of this project includes deployment of web-based credentialing for OCC-issued credentials, enabling carriers to apply for, pay for and receive their IFTA license, and to file and pay quarterly fuel taxes using the Internet. The system will support electronic funds transfer (EFT), will allow a carrier using a commercial web browser to access the web system, transmit application information and fees to the state electronically, and, upon validation of the application and associated fee transmittal, will allow the carrier to print the SSRS (or other) license. The OCC web system may not be linked to the IRP or IFTA web systems, but will appear seamless to the carrier.

High Level Requirements:

- Complete requirements analysis to accommodate CVIEW interfaces, and automated credentialing (web-based).
- Evaluate other states' systems for application in Oklahoma.
- Modify system as required to meet Oklahoma needs, including beta and integration testing
- Interfaces to Oklahoma CVIEW, including beta and integration testing
- Design / test / deploy web-based credentialing system

Automated OS / OW Permitting

Project Objectives:

- Improve efficiency of credentialing for both state and carriers

Project Benefits:

- Improved processing capabilities
- Improved carrier compliance
- Increase staff handling capacity without increasing FTEs
- Facilitate staff training and reduce staff turnover
- Enable safe and legal carriers to get vehicles on the road in minutes rather than hours or days

Project Description:

The Oklahoma DPS is responsible for oversize / overweight permitting, issuing approximately 200,000 permits annually. On average, DPS permit staff issues one permit every ten minutes. Given the complexity of the permitting process and the fast pace of the job, turn-over rates among new hires are very high. DPS is implementing automated permitting to improve service to customers and to reduce staff turnover. DPS is currently replacing the existing FoxPro OS/OW permitting system with a more robust system that will accommodate internet interface.

The first phase of permit automation will allow carriers to apply for certain "envelope" permits over the web. This is expected to accommodate as much as 40 percent of the demand for permits. Subsequent phases will provide more robust routing capabilities.

OS / OW Permitting / ODOT Bridge Interface

Project Objectives:

- Improve efficiency of credentialing for both state and carriers

Project Benefits:

- Improved processing capabilities
- Improved carrier compliance
- Increase staff handling capacity without increasing FTEs

Project Description

Approximately 1,000 of the permits issued annually by DPS must be forwarded to ODOT for bridge analysis. DPS and ODOT plan to develop an interface between the ODOT Bridge Analysis System and the OS / OW permitting system to allow the permits to be transmitted electronically. ODOT also plans to automate the analytics for permits involving simple span bridges to reduce turn-around time and reduce the FTE requirement for bridge analysis.

2.2.3 Oklahoma's Automated Screening Projects

Oklahoma uses HELP Inc.'s PrePass screening system. Under the PrePass program, HELP, Inc. issues transponders and assigns a unique transponder ID number to enrolled vehicles. Only carriers who meet specific compliance and safety requirements are eligible for enrollment. HELP, Inc. has installed readers, screening systems and roadside operations computers at seven interstate sites in Oklahoma.

As transponder-equipped vehicles pass the roadside readers, the readers use dedicated short-range communications (DSRC) to read the transponder ID. The ID is then electronically transmitted to the local PrePass screening computer at the port. The screening computer makes a bypass / pull-in decision based on credential and safety status information housed in the screening database. The bypass / pull-in decision is transmitted back to the in-cab transponder, which emits a green or red light and audible alarm, depending on the results of the screening decision. Results of the screening decision are sent to the roadside operations computer housed at the scale house.

2.2.3.1 Oklahoma's Automated Screening Projects, CVISN Level 1

Install Mainline WIM, DMS, Cameras at One PrePass-equipped Fixed Scale

Project Objectives:

- Pilot project to demonstrate operational improvements / requirements associated with incorporating weight data in the electronic screening decision
- Pilot project to demonstrate operational efficiencies / safety benefits associated with weight only screening / coupled with random call-ins for non-transponder-equipped trucks during peak periods to reduce potential for mainline back-up from extended ramp queuing
- Pilot project to demonstrate safety / compliance benefits of DMS / camera use in conjunction with manual queries to CVIEW

Project Benefits:

- Improved safety, security and compliance
- Reduce crash potential associated with mainline back-ups
- Reduce pavement deterioration related to overweight vehicles
- Target enforcement resources on higher risk motor carriers
- Over time, provides potential redeploy resources to mobile enforcement operations, which tend to have higher violation recovery rates

Project Description:

Fixed scales in Oklahoma are operated by the OTC. OTC scale officers are authorized to enforce registered weight, but they are not authorized to enforce the state's size and weight laws (rather, this is a DPS function). The OCC also deploys enforcement officers at fixed scales. OCC officers are responsible for enforcing OCC registration requirements and safety.

DPS Troop S officers, who do have authority to enforce the state's size and weight laws, as well as federal and state motor carrier safety requirements and state traffic laws, operate primarily on a mobile basis. Troop S officers carry mobile scales in their cars and conduct size and weight and safety inspections from roadside pull-out locations, as well as from fixed scales.

Because OTC and OCC officers are focused on enforcing registration requirements rather than size and weight laws, the OTC does not currently have plans to install WIM scales at its fixed scale sites. However, the state is considering implementation of this project to evaluate the associated operational benefit. Quartz piezzo WIMs and associated AVI system would be installed on the mainline, along with software / communications to integrate WIM data with the PrePass screening decision.

During peak periods, when there is potential for mainline back-up due to excessive queuing on ramps, weight-only screening in conjunction with random call-ins could be utilized to manage flow of traffic into scale house. Scale house operators can set random call-in rate, signaling drivers via the DMS to pull-in or bypass.

Scale house operators can use CCTV to capture plate numbers of non-transponder equipped vehicles pulling into scale house (during any period) and can manually key plate number or DOT number into the CVIEW query system to validate credentials / safety status of non-transponder-equipped vehicles, assisting them in making inspection selection decisions, thus targeting review of paper credentials to potentially higher risk carriers / vehicles.

High Level Requirements:

- Analyze scale volumes, geometrics, current queuing issues and identify optimal pilot project location.
- Design / deploy / test WIM / DMS / camera installation.
- PrePass integration of WIM / screening data and DMS display
- Train officers in system use.
- Evaluate benefits for additional applications

Pilot Project to Enhance Mobile Screening Operations

Project Objectives:

- Pilot project to demonstrate operational improvements / requirements associated with enhanced mobile enforcement.

Project Benefits:

- Improved safety, security and compliance
- Target enforcement resources on higher risk motor carriers

Project Description:

Upon deployment of the Oklahoma CVIEW and implementation of the DPS satellite project, OCC, OTC and DPS mobile enforcement officers will have roadside access to current and accurate safety and credential status information that can assist them in making more informed inspection selection decisions. Officers can query CVIEW or SAFER from their laptops units and receive information that, at a glance, provides an indicator of whether the carrier and vehicle's credentials are in order and whether a safety inspection is warranted.

However, officers will have to stop non-transponder equipped vehicles to manually capture their plate or DOT number before they are able to make a query. While this would provide productivity improvements over the current process, it would still result in a number of safe and legal carriers and vehicles being stopped (albeit for a shorter duration). A more effective means of identifying potentially higher risk carriers / vehicles for inspection may be to capture plate and / or DOT numbers upstream of the inspection site using CCTV cameras, automatically match the unique identifier with data in the CVIEW, and notify the officer at the mobile enforcement site regarding which trucks to stop; or to relay the image back to the officer and allow him or her to the manually query the CVIEW system prior to the truck's arrival at the site.

High Level Requirements:

- Establish pilot test purpose, success criteria
- Define functional / technical requirements
- Design pilot test
- Pilot test
- Evaluation.

2.2.3.2 Oklahoma's Automated Screening Projects, "Post" Level 1

Scale House Computer and Communications Upgrades

Access to safety and credential snapshot data from fixed scales would assist OTC and OCC enforcement officers in credentials verification and inspection selection decisions. With an open connection from the fixed scales to the Oklahoma CVIEW, scale officers could key in plate or DOT number as vehicles are moving over the fixed scales, review snapshot data and either flag the driver through or call him in for further inspection.
This project will evaluate options for scale house computer upgrades and connections to the state agency WAN (T1, satellite, other) and implement appropriate connections to provide scale staff with access to the CVIEW server.

Expanded PrePass Functionality

Information such as intrastate safety inspection results or OOS orders, or intrastate credential snapshots required for local screening decisions which may not ultimately be supported by SAFER will be transmitted periodically from the Oklahoma CVIEW to the PrePass host server or PreView (the PrePass CVIEW equivalent).

2.3 Oklahoma High Level Requirements for Top Level Design

The CVISN Operational and Architectural Compatibility Handbook (COACH) provides a comprehensive checklist of what is required to conform with CVISN operational concepts and architecture. The COACH, Part 1 provides checklists related to the following:

- *Guiding Principals* - These are statements of principal used to document fundamental concepts supported by the CVO community.
- *Operational Concepts Checklists* - These provide checklists related to compatibility requirements for general, safety, credentialing and screening processes.
- *State Institutional Framework Checklists* - These highlight compatibility requirements for the policies and coordinating activities of states.
- *CVISN Top Level Design Checklists* - These checklists include high level requirements for state and motor carrier system design, and provide opportunity for states to indicate which capabilities offered by "core infrastructure systems" (systems housing multi-state data) a state intends to use.

Oklahoma is fully committed to the CVISN operational concepts and architecture as defined in the COACH, Part 1, with the exceptions as noted in Section 2.3.1. The completed COACH Part 1 is included in Appendix A.

2.3.1 Exceptions to the COACH, Part 1

Table 2.1.3 ITS/CVO Guiding Principles: CVISN Architecture

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
P	1.	A jurisdiction shall have and maintain **ownership of any** data collected by any agent on its behalf.	Electronic Screening Vendor, Help Inc., may not provide all captured data to Oklahoma

Table 2.1.6 ITS/CVO Guiding Principles: Credentials & Tax

Commit Level (F/P/N)	Item # #	Compatibility Criteria	Comments
P	**1.**	**Electronic information** will be used in place of paper documents for the administration of CVO credential and tax requirements.	Electronic information will be used where appropriate; paper documents will be required for a variety of purposes for the foreseeable future.

2.3.1 ITS/CVO Interoperability Guiding Principles: General

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
P	IGP #7	Information systems supporting electronic screening, credentials administration, and safety assurance will use: 7a. US DOT numbers for the identification of both interstate and intrastate motor carriers. 7b. Commercial Drivers License (CDL) numbers for the identification of commercial drivers. 7c. Vehicle Identification Numbers (VIN) and license plate numbers for the identification of power units.	IRP does not currently require USDOT, although field exists in database. Rule changes were adopted in 2002 to requiring intrastate carriers to have DOT number; intrastate registration system does not currently accommodate DOT number. OS/OW may also require a rule or statutory change to require USDOT. IFTA also does not require USDOT.

Table 2.3.2 ITS/CVO Interoperability Guiding Principles: Hardware

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
P	***IGP #8***	Commercial vehicle operators will be able to use one transponder for power unit-to-roadside communications in support of multiple applications including electronic screening, safety assurance, fleet and asset management, tolls, parking, and other transaction processes.	Support but completely not in state's control. Market / technology driven. Oklahoma's PikePass (toll road) transponders and the electronic screening system transponders (from Help Inc.) are not interoperable.
F	***IGP #9***	Public and public-private DSRC applications will support open standards that are consistent with the national ITS architecture.	Vendor dependent.

2.3.4 ITS/CVO Interoperability Guiding Principles: Operations

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
F	***IGP #11***	Jurisdictions will support common standards for placement of DSRC transponders on trucks and buses to ensure the safe and cost-effective use of transponders.	To large extent, driven by vendors / carriers
P	***IGP #12***	Jurisdictions will support a common set of recommended practices concerning the selection, layout, and signage of roadside screening sites (i.e., weigh stations, ports-of-entry, international border crossings, and temporary inspection sites) to ensure safe operations.	For new or modified scale sites
P	***IGP #13***	Jurisdictions will support a common performance standard for roadside electronic enforcement screening and passage of transponder-equipped motor carriers to ensure equity in enforcement.	With caveat that standards reflect variations in pull in rates to meet specific state needs and other criteria for different carrier types and scale staffing certifications.
P	***IGP #15***	Jurisdictions will support quarterly reviews of carrier qualifications to ensure that the standards evolve to meet the changing needs of government and motor carriers.	Routine reviews are useful, quarterly may be too frequent. Annual or as needed.
P	***IGP #17***	Jurisdictions will support a common performance standard for selection of vehicles and drivers for roadside safety inspection.	With caveat that standards reflect variations in pull in rates and other criteria for different carrier types and scale staffing certifications.

Table 2.3.5 ITS/CVO Interoperability Guiding Principles: Program

Commit Level (F/P/N	Item #	Compatibility Criteria	Comments
P	***IGP #21***	Motor carriers will have the option of enrolling in any ITS/CVO roadside electronic screening program.	Help Inc. is Oklahoma's electronic screening provider. Help Inc. may not recognize transponders of carriers enrolled in other programs.
P	***IGP #25***	Motor carriers may obtain a DSRC transponder from the enrolling jurisdiction or a compatible DSRC transponder from an independent equipment vendor of the motor carrier's choice.	Motor carriers receive transponders through the Help Inc. program.
F	***IGP #26***	Each jurisdiction will determine the price and payment procedures, if any, for motor carriers to enroll and participate in its ITS/CVO electronic screening program.	Help, Inc, Board responsibility in Oklahoma
F	***IGP #28***	A jurisdiction will make a motor carrier's DSRC transponder unique identifier available to another jurisdiction upon written request and authorization by the motor carrier.	Subject to existing business agreements
F	***IGP #30***	Each jurisdiction will fully disclose and publish its practices and policies governing, at a minimum: 30a. Enrollment criteria; 30b. Transponder unique identifier standards; 30c. Price and payment procedures for transponders and services; 30d. Screening standards; 30e. Use of screening event data; and 30f. Business interoperability agreements with other programs."	Some disclosures may be dependent on electronic screening vendor, Help Inc.

State Institutional Framework table

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Comments
P	1	The State has contacted or has plans to contact State and local transportation officials to explore potential joint-uses of transponders and ensure integration among multiple applications (i.e., CVO, toll, traffic probes, parking management, etc.)	L1 CRF 1155	The CVISN Team has met with the Oklahoma Transportation Authority. OTA is upgrading their transponders and readers, but have selected a system which is not interoperable with other commercially available transponders.
F	7	A State CVO strategic plan and/or business plan exists and has been accepted by the FHWA (or FMCSA). It outlines the goals, strategies, anticipated benefits and costs, organization, projects, schedules, and resources relevant to achieving the envisioned CVO environment.	L1	
P	22	The legislature provides adequate resources to support an active ITS/CVO program and deployment of the ITS/CVO services.	L1	The initial phase is funded. Additional funding is being pursued.
P	24	The State is willing to provide timely, electronic information to the planned clearinghouses to support the base state agreements.	L1	Oklahoma will perform a cost / benefit analysis of clearinghouse participation.

Table 4.1-1 General Operational Concepts

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Comments
P	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	Oklahoma does not track trips and loads. However, in the future, should Oklahoma begin tracking trips and loads, it supports the use of the DUNS and trip specific ID.

Table 4.1-2 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
N	3	Use XML standards for transactions between state information systems and private systems (CV operators, insurance companies, etc.) (Contingent on demonstration of feasibility).	E				Oklahoma's architecture does not include the use of XML for data exchange between state and private systems. Data exchange will be EDI or over the internet using current web standards.
F	4.1.8	Receive, collect, and archive relevant CVO data for historical, secondary, and non-real-time uses.	E CRF 1047				In accordance with business agreements

Table 4.2-2 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	**4.2.1**	Use ASPEN (or equivalent) at all major inspection sites	L1				
F	6	To assist in inspection, use DSRC to retrieve summary vehicle safety sensor data, if driver allows and vehicle is properly equipped.	C				If feasible with industry and technology capabilities
F	7	To assist in inspection, use DSRC to retrieve driver's daily log, if driver allows and vehicle is properly equipped.	C				If feasible with industry and technology capabilities
F	8	Use electronically-generated driver's daily log, if driver offers as an alternative to a manually-maintained log during an inspection.	C				If feasible with industry and technology capabilities
P	**4.2.5**	Collect, store, analyze, and distribute citation data electronically.	E				Oklahoma does not have plans for this
P	1	Report citations for interstate operators to MCMIS via SAFETYNET	E				Citation is not a conviction; how will MCMIS use citation data?
P	**4.2.6**	Collect, store, analyze, and distribute crash data electronically.	E				Oklahoma does not currently have plans to implement an automated crash data system but does enter crash data into SafetyNet.

Table 4.3-1 CV Administration Operational Concepts

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Comments
P	3	IRP and IFTA base state agreements are supported electronically.	L1	Oklahoma will perform a cost / benefit analysis of clearinghouse participation.
P	4	Credential and fuel tax payment status information for interstate operators are made available electronically nationally to qualified stakeholders.	L1	Oklahoma will report the payment status where SAFER supports such reporting. When Oklahoma implements links to the clearinghouses, payment status will be reported to those systems according to their requirements.
P	8	Electronic access to administrative processes and information is available from “one stop shops” in public sites.	E	Oklahoma is considering a physical one-stop, but is unlikely to support "automated kiosks" for administrative processes (if that is what this criteria is suggesting)

Table 4.3-2 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				

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
F	1	Provide a Web site for a person-to-computer process.	L1; E CRF 1048				Oklahoma will use a web site for credential applications, including IRP.
F	2	Provide a computer-to-computer automated process.	L1; E CRF 1048				Oklahoma also allows industry to apply for IRP credentials using an EDI computer-to-computer interface.
P	2a	Use EDI standards to provide a computer-to-computer automated process.	L1; E CRF 1048				Oklahoma's EDI standards may not be identical to the EDI X.12 286 format.
N	2b	Use XML standards to provide a computer-to-computer automated process.	E CRF 1048				
P	**4.3.4**	Provide IRP Clearinghouse with IRP credential application information (recaps).	L1				Oklahoma will perform a cost / benefit analysis of clearinghouse participation.
P	**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				Oklahoma will perform a cost / benefit analysis of clearinghouse participation.
P	**4.3.6**	Support electronic state-to-state fee payments via IRP Clearinghouse	L1				Oklahoma will perform a cost / benefit analysis of clearinghouse participation.

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
F	**4.3.7**	Support electronic credentialing (electronic submission of applications, evaluation, processing, and application response) for IFTA registration.	L1 CRF 1048				
F	1	Provide a Web site for a person-to-computer process.	L1; E CRF 1048				
N	2	Provide a computer-to-computer automated process.	L1; E CRF 1048				A web site will be implemented instead.
N	2a	Use EDI standards to provide a computer-to-computer automated process.	L1; E CRF 1048				.
N	2b	Use XML standards to provide a computer-to-computer automated process.	E CRF 1048				
P	**4.3.9**	Provide IFTA Clearinghouse with IFTA credential application information using EDI standards.	L1				Oklahoma will perform a cost / benefit analysis of clearinghouse participation.
P	**4.3.10**	Support electronic tax filing for IFTA quarterly fuel tax returns.	L1				
F	1	Provide a Web site for a person-to-computer process.	L1; E CRF 1048				
N	2	Provide a computer-to-computer automated process.	L1; E				

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
			CRF 1048				
N	2a	Use EDI standards to provide a computer-to-computer automated process.	L1; E CRF 1048				
N	2b	Use XML standards to provide a computer-to-computer automated process.	E CRF 1048				
P	**4.3.11**	Provide information on taxes collected by own jurisdiction and the portion due other jurisdictions (transmittals) to the IFTA Clearinghouse using EDI standards.	L1				Oklahoma will perform a cost / benefit analysis of clearinghouse participation.
P	**4.3.12**	Download for automated review the demographic information from the IFTA Clearinghouse using EDI standards.	L1				Oklahoma will perform a cost / benefit analysis of clearinghouse participation.
P	**4.3.13**	Download for automated review the transmittal information from the IFTA Clearinghouse using EDI standards.	L1				Oklahoma will perform a cost / benefit analysis of clearinghouse participation.
	4.3.15	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				
N	3	Vehicle title	E				Currently there are no plans for electronic CVO titling.
N	4	Intrastate vehicle registration	E				Currently there are no plans for

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
							electronic CVO intrastate registration
F	5	HazMat credentialing/permitting, if such credentials/permits are required by state law.	E				Oklahoma will implement electronic credentialing for hazardous waste permitting.
F	6	Oversize/overweight permitting.	E				
P	**4.3.16**	Proactively provide updates to vehicle snapshots as needed when credentials actions are taken.	E				
N	1	Vehicle title	E				
F	2	Intrastate vehicle registration	E				
F	3	Oversize/overweight permitting.	E				
F	**4.3.17**	Proactively provide updates to carrier snapshots as needed when credentials actions are taken.	E				
F	1	Interstate carrier registration	E				
F	2	Intrastate carrier registration	E				
F	3	HazMat credentialing/permitting, if such credentials/permits are required by state law.	E				For Hazardous waste permitting.
F	4	Oversize/overweight permitting.	E				
P	**4.3.18**	Allow CV operators, government-operated, or third party systems to submit one or more applications in a single transaction.	E				Some combinations of applications may be permitted.
N	**4.3.22**	Provide titling information to other jurisdictions via NMVTIS.	C				Oklahoma has no immediate plans to report titling information to NMVTIS.

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
N	**4.3.23**	Provide revoked IFTA motor carrier information to other jurisdictions via STOLEN.	C				Oklahoma has no immediate plans to provide revoked IFTA information to STOLEN.
F	**4.3.25**	Proactively provide updates to driver snapshots as needed when credentials actions are taken.	C				
P	1	Interface to SAFER for driver snapshots, using available SAFER interface.	C				Oklahoma will investigate the feasibility of providing driver snapshots to SAFER when driver snapshots become available.

Table 4.4-1 Electronic Screening Operational Concepts

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Comments
P	2	Jurisdictions disclose practices related to electronic screening.	L1	Some disclosures may be dependent on vendor.

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	Oklahoma participates in the HELP, Inc. screening program. At present our PrePass equipped scales are capable of electronically screening trucks equipped with PrePass transponders. Screening of non-PrePass transponders is dependent upon agreements between HELP, Inc. and other transponder programs
P	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	Help Inc. may be contacted for all jurisdictions that use PrePass as their electronic screening system
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	Dependent upon existing business agreements
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	Dependent upon existing business agreements
P	10	Screening systems are interoperable with those in different jurisdictions.	E	Dependent upon existing business agreements

Table 4.4-2 State Electronic Screening 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	**4.4.2**	Use snapshots updated by a SAFER/CVIEW subscription in an automated process to support screening decisions.	L1 CRF 1171				It is Oklahoma's understanding that PrePass host server will be updated by SAFER snapshots on routine basis; host server to distribute routine updates (go / no go decision) to local PrePass screening databases at fixed scales
F	1	Carrier snapshots.	L1				
F	2	Vehicle snapshots.	L1				
P	3	Driver snapshots.	C				Oklahoma will investigate the feasibility of providing driver snapshots to SAFER when driver snapshots become available.
P	3	Driver snapshots.	C				Assuming privacy issues worked out; and assuming driver information can be accessed from transponder
F	**4.4.3**	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				To the extent that they are reflected in applicable business agreements and accepted by all entities listed

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
P	**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				
P	3	Use WIM or weight history at mainline speed or on the ramp in making screening decisions.	L1				Electronic screening sites may not all be equipped with WIMs.
F	4	Record screening event data.	E				
F	5	For transponder-equipped vehicles, identify driver at mainline or ramp speeds.	C				
P	**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				HELP Inc. Responsibility; subject to business agreement
P	**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				HELP Inc. Responsibility; subject to business agreement
F	**4.4.7**	Record transponder number and default carrier ID for each vehicle that intends to participate in e-screening	L1 CRF 1172				Vendor responsibility
P	**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				HELP Inc. Responsibility; subject to business agreement
P	1	Via SAFER snapshots	E				HELP Inc. Responsibility; subject to business agreement

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
			CRF 1172				
P	**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				HELP Inc. Responsibility; subject to business agreement
P	1	Via SAFER snapshots	E CRF 1172				HELP Inc. Responsibility; subject to business agreement
P	**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				HELP Inc. Responsibility; subject to business agreement
P	**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				HELP Inc. Responsibility; subject to business agreement

2.4 Interface Specifications

The COACH, Part 4 includes several types of checklists related to interfaces, including:

- Standard Interface Identification Tables, which identify standardized interfaces between pairs of products.
- Standard data Definitions, specifying data formats and meaningful conventions for items common to more than one standard interface.

Oklahoma's completed COACH Part 4 is included in Appendix B. Exceptions to the Standard Interfaces are summarized in Section 2.4.1. Exceptions to the Standard Data Definitions are summarized in Section 2.4.2

2.4.1 Exceptions to the Standard Interface Specifications

Oklahoma's exceptions to the standard interface specifications relate primarily to the use of EDI. Oklahoma will be developing a web-based interface for IRP and IFTA credentialing and tax filing and other credentials. The planned interfaces between the credentialing web sites and the back-end IRP and IFTA systems will not be EDI but will be custom interfaces. Oklahoma currently has a computer-to-computer interface operated through a bulletin board system for large IRP credential transactions. The computer-to- computer interface uses EDI standards, however, the transaction set used may not exactly match the EDI X.12 286 transaction set. Oklahoma will continue to offer a computer-to-computer interface, however, it will eliminate the bulletin board system and enhance the web-based interface to allow submittal of EDI files through the Internet.

Oklahoma is currently evaluating what software to use as the baseline for its CVIEW implementation. If Oklahoma determines that the state of Washington's xCVIEW can meet its needs, the state will initially upload credential status data to Washington via a non-EDI interface, and will rely upon Washington to send updated transmittals to SAFER. Regardless of Washington's xCVIEW being chosen as a baseline, once a flat file or XML format is available for interacting with SAFER, Oklahoma will begin implementation of an interface with SAFER. Oklahoma does not, however, anticipate developing an EDI interface between its CVIEW and SAFER.

2.5.2 Exceptions to the Standard Data Definitions

Commit Level (F/P/N)	Entity	Identifier Name	Identifier Segments	Number of Characters	Reqts Level	Comments
P	Motor Carrier	Primary Carrier ID e.g., For ***interstate*** carrier: MCI 12345 A001 (note that MCI is the code used for ID Type USDOT #) e.g., For ***intrastate*** carrier 0B US-CA 123A45689 1234 (note that 0B is the code used ID Type State-Specific)	ID Type (alphanumeric); if carrier is interstate, the type must be USDOT type code (MCI); for intrastate carrier without a USDOT number, the type code must be state-specific (0B) + Jurisdiction Code, if carrier is intrastate (alphanumeric); 2 character country code, hyphen, 2-character subdivision code; the allowable country and subdivision codes will be defined in the FMCSA Code Directory + Carrier-Specific Identifier corresponding to the ID type (alphanumeric); if carrier is interstate, must be USDOT number; if carrier is intrastate and has a USDOT number, must be USDOT number; for state-specific IDs, the Carrier-Specific Identifier may include a prefix to clarify the agency/source of the identifier) + Carrier Terminal ID designated by carrier (alphanumeric)	3 (max) 5 12 (max)	L1	Oklahoma will use USDOT for Interstate carrier registration and tracking, and for Intrastate Registration. Oklahoma does not use the carrier terminal ID

Commit Level (F/P/N)	Entity	Identifier Name	Identifier Segments	Number of Characters	Reqts Level	Comments
				4 (max)		
F	Transponder	Transponder ID e.g., 0 123456789	Transponder ID Definition Flag (0=current; 1=IEEE P1455) + *If Transponder ID Definition Flag = current*, then the other segment is: Transponder Serial Number assigned by manufacturer *If Transponder ID Definition Flag = IEEE P1455*, then the other segments are: Manufacturer Identifier + Transponder Serial Number assigned by manufacturer	1 bit 32-bit unsigned integer 16 bits 20 bits	L1 E	Oklahoma uses PrePass. Commitment to this format is dependent on the PrePass vendor.
F	Driver	Driver Unique ID e.g., US NM B99999999999A	Country code + Jurisdiction (state or province) code (alphanumeric) + Driver specific identifier (driver license number) assigned by jurisdiction	2 (using country code from ISO-3166) 2 (using subdivision code from ISO-3166) 16 (max)	L1	Oklahoma may also specify driver's license class. Classes are A, B, C, D.

Commit Level (F/P/N)	Entity	Identifier Name	Identifier Segments	Number of Characters	Reqts Level	Comments
			(alphanumeric)			
N	Shipment	Shipment Unique ID e.g., 776655443322	Bill of Lading number assigned by the carrier (numeric)	12 (max)	C	Not currently tracked. May implement standard if Oklahoma chooses to track shipments
N	Trip	Trip/Load Number e.g., 123456789761231	Carrier DUNS number as assigned by Dun and Bradstreet (numeric) + Trip unique number as assigned by carrier (numeric)	9 6	E	Currently not tracked. May implement standard if Oklahoma chooses to track trip/load numbers.

3.1 Overview

This section provides information on Oklahoma's proposed CVISN system architecture. Contents of this Section include:

3.2 Architecture Overview - provides a diagram of the components of the architecture.

3.3 Description of System Components - provides a description of each of the components in the Architecture Overview diagram.

3.4 Allocation of Requirements by System - allocates the requirements of the projects to the system components

3.5 Overall Physical Design – provides an overview of the Oklahoma host systems and servers, and the CVISN physical design.

3.6 IRP Projects – describes the operating scenarios, system interfaces, and system changes relating to Oklahoma's IRP projects.

3.7 IFTA Projects - describes the operating scenarios, system interfaces, and system changes relating to Oklahoma's IFTA projects

3.8 OS/OW Projects - describes the operating scenarios, system interfaces, and system changes relating to Oklahoma's OS/OW projects.

3.9 OCC Credentialing Projects - describes the operating scenarios, system interfaces, and system changes relating to Oklahoma's Corporation Commission's (OCC) credentialing projects

3.10 CVIEW Project and Related Communications Projects - describes the operating scenarios, system interfaces, and system changes relating to Oklahoma's CVIEW projects and communications projects.

3.11 ASPEN/SAFETYNET 2000 and Related Communication Projects - describes the operating scenarios, system interfaces` and system changes relating to these projects.

3.12 Screening Projects - describes the operating scenarios, system interfaces, and system changes relating to Oklahoma's screening projects.

3.13 System Testing – outlines the approach that will be used to develop the CVISN test plan.

3.2 Architecture Overview

Oklahoma has established the following guiding principals for its architecture and design:

- Existing legacy systems will be maintained with minimal changes, except where increased functionality is needed to achieve state objectives;
- Where increased functionality is required, systems will be created, replaced, or enhanced in a manner consistent with CVISN objectives;
- Standard communication protocols will be used where needed to communicate with external systems to motor carriers, CVISN core infrastructure systems, and roadside systems;
- In consideration of the characteristics of Oklahoma's motor carrier base, electronic communications to the motor carrier will be primarily through the Internet, however for IRP registration, carriers will have the option to use a computer-to-computer interface.

Key features of Oklahoma's design include the following:

- Member of HELP Inc., using PrePass electronic screening.
- Use of ASPEN for recording / uploading safety inspections
- Will implement a CVIEW.
- Will implement a web-based electronic credentialing system for IRP and IFTA and also for various other interstate and intrastate credentials.
- Currently has in operation an IRP electronic computer-to-computer interface for IRP registrations.
- Oklahoma has submitted a letter of intent to participate in the PRISM program.
- Has begun development of an automated OS/OW permitting system that will be expanded to include automated routing and web-based credentialing.
- Intends to establish a LAN-to-LAN VPN to connect the Department of Public Safety networks to SAFER.

The diagram on the following page illustrates the proposed architecture for Oklahoma's CVISN Level 1 deployment. The diagram shows system components of the architecture, depicted as rectangles with new systems shown in yellow, with a bold outline.

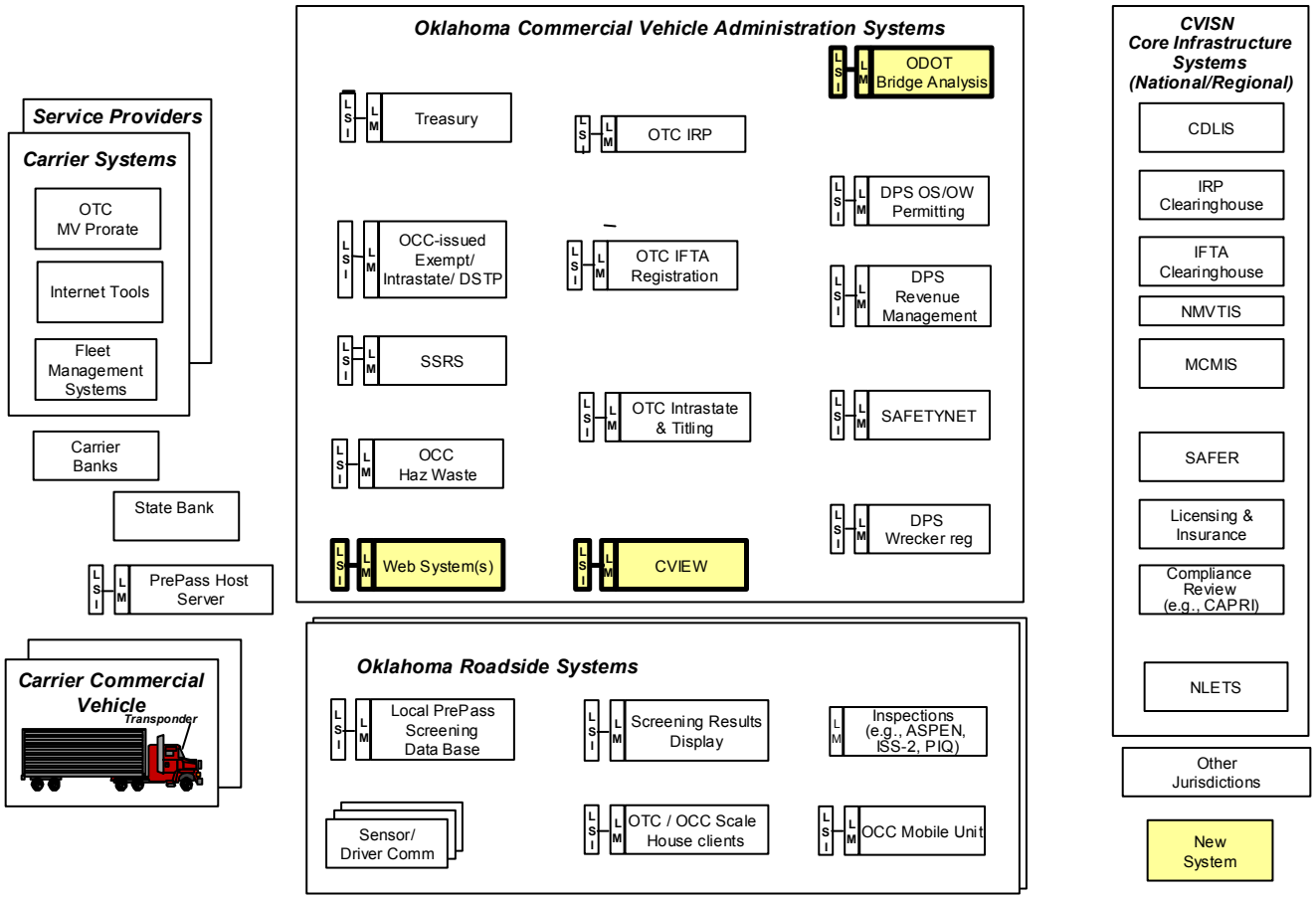


Exhibit 3-1. Oklahoma CVISN Level 1 Architecture

3.3. Description of System Components

This subsection describes each of the components shown in the architecture in Exhibit 3-1, and includes the following: State Systems, National Systems, and Carrier Systems.

3.3.1 State Systems

3.3.1.1 Web Servers

The Oklahoma Web Servers in Exhibit 3-1 represent several web servers to be located on separate local area networks. The web servers include:

- DPS Web Server that will house the OS/OW electronic permitting web system. The DPS Web Server will be housed at DPS on the DPS local area network.
- IFTA Electronic Credentialing and Tax Filing Web Server. The location of the IFTA web server is currently undetermined. It may reside at OneNet, the Internet service provider for Oklahoma agencies. .
- IRP Electronic Registration Web Server. The location of the IRP web server is currently undetermined. It may reside at OneNet, the Internet service provider for Oklahoma agencies
- The OCC Web Server which includes web sites for SSRS, interstate exempt, intrastate, HazWaste and DSTP credentialing, will be housed at OCC on the OCC local area network.

These web servers will allow interstate and intrastate carriers to apply for and receive the above credentials using a web browser.

3.3.1.2 DPS OS/OW Permitting System

The OS/OW system is responsible for maintaining all data on over-dimensional and overweight permits. The OS/OW system uses both a database server and an application server. Both servers are housed at DPS on the DPS networks. DPS OS/OW credentialing staff uses desktop workstations to send phone in or walk in OS/OW application information to the application server. The desktop workstations are connected to the application server through the DPS LAN. Carriers using the web based OS/OW system to apply for credentials do so through OS/OW web server.

The OS/OW system provides access to permit information, routing information, and processing of payments. Functions planned or currently being added to the OS/OW system includes:

- Automated routing, using roadway, construction and bridge analysis.
- Motor carrier automated permitting and payment over the web
- Revenue reporting
- CVIEW permit status updates

3.3.1.3 DPS Revenue Management Systems

The DPS Revenue Management system resides on a server on the DPS networks. Its functions include managing revenue from OS/OW permit payments. Under the CVISN design, the OS/OW automated credentialing system will send payment information to the DPS revenue system.

3.3.1.4 Transportation Database - OCC Exempt, Intrastate and DSTP Systems

The Transportation Database Server houses the Interstate exempt carrier registration, intrastate carrier registration and DSTP oil and gas disposal credential systems. The transportation database will either be replaced or receive substantial revisions to enable web based credentialing and transmittal of CVIEW status updates for Oklahoma's extended CVISN capabilities. The Transportation database is housed on a UNIX server on the OCC networks.

3.3.1.5 Single State Registration System (SSRS)

Oklahoma currently uses the Illinois provided SSRS software. As part of Oklahoma's extended CVISN capabilities, the SSRS system will be replaced

or enhanced to allow processing of web-submitted SSRS credential applications and the transmittal of credential status updates to CVIEW.
The SSRS software currently resides on an NT workstation located on the OCC networks.

3.3.1.6 OCC HazWaste System

Oklahoma requires permits for vehicles carrying hazardous waste. The OCC HazWaste system resides on a UNIX Server on the OCC LAN. As part of Oklahoma's extended CVISN capabilities, the HazWaste system will be enhanced to allow processing of web-submitted credential applications and the transmittal of credential status updates to CVIEW.

3.3.1.7 Office of State Finance Treasury System

All electronic funds transfer transactions are routed from the Oklahoma state bank to the Office of State Finance (OSF) treasury system. In addition, cash, check and credit card payments received by agencies are routed to the OSF. As part of Oklahoma's extended CVISN capabilities, existing electronic interfaces between agency systems and the OSF treasury system will be enhanced to carry more detailed information on electronic funds transfers. In addition the OCC transportation database, SSRS, and Hazwaste systems will be enhanced to include an electronic interface for EFT information transfer from the OSF treasury system.

The OSF Treasury system is housed on a server on the capital complex OSF networks.

3.3.1.8 IRP System

The Oklahoma IRP system was developed and is operated by the Oklahoma Tax Commission (OTC). The system resides on the OTC mainframe and provides for interstate vehicle registration through the Interstate Registration Plan, allowing initial registrations, renewals, and supplementals. The system also performs IRP fee calculations and reporting.

Oklahoma's CVISN design specifies that the IRP system will update CVIEW with changes in vehicle registrations on a periodic basis. The CVISN design also specifies that the IRP system will be able to receive and process IRP applications received from the IRP Web Server.

Currently, OTC is evaluating the costs and benefits of replacing the current system with a client server system available through another state, or of enhancing the system to meet CVISN requirements.

OTC is also performing a cost/benefit analysis of membership in the IRP Clearinghouse. Enhancements to the IRP system to link to the clearinghouse will occur when membership is determined to be financially feasible.

3.3.1.9 IFTA System

The IFTA host was developed and is operated by the Oklahoma Tax Commission (OTC) and is used to manage the Oklahoma IFTA program. The OTC has planned the replacement or significant enhancement of the current IFTA system to prepare for CVISN level one functionality. Functions to be added include the capabilities to process applications submitted electronically via the IFTA Web Server and the transmittal of IFTA credential status information to CVIEW on a periodic basis.

OTC is also performing a cost/benefit analysis of membership in the IFTA Clearinghouse. Enhancements to the IFTA system to link to the clearinghouse will occur when membership is determined to be financially feasible.

The OTC IFTA system resides on the OTC mainframe and is accessible through the OTC networks.

3.3.1.10 OTC Intrastate Vehicle Registration System

The OTC Intrastate Vehicle Registration System is housed on the OTC mainframe and is accessible through the OTC networks. The Intrastate

Vehicle Registration System currently provides for capturing a U.S. DOT number to meet extended PRISM requirements.
Under Oklahoma's extended CVISN design, the Intrastate Registration System will be enhanced to periodically transmit updated vehicle registration information to the Oklahoma CVIEW.

3.3.1.11 CVIEW System

The CVIEW system will be a new system obtained / built by Oklahoma. Oklahoma is currently evaluating available versions of CVIEW to determine which to use as a baseline for Oklahoma CVIEW development. The location of the Oklahoma CVIEW server has also not yet been determined.

Oklahoma's CVIEW will collect interstate and intrastate credential status information from the IFTA, IRP, OCC, and OS/OW credentialing systems. Both intrastate and interstate credential status information will be stored in CVIEW. CVIEW will also periodically transmit IFTA and IRP credential status to SAFER. In addition, CVIEW will receive periodic interstate credential status information from other jurisdictions periodically through SAFER.

The Oklahoma CVISN design specifies that both interstate and intrastate safety inspection data will be transferred directly to the SAFER data mailbox for storage and access, rather than via the CVIEW. CVIEW will receive subscription downloads of the interstate and intrastate safety data to allow for fast local access to the safety information.

When PrePass functionality is expanded to include screening capabilities for intrastate information that is not supported by SAFER, (for example OS/OW permit data) the Oklahoma CVIEW will periodically transmit these data to the PrePass host server.

3.3.1.21 SafetyNet

SafetyNet is a system provided by the FMCSA to each state. Inspection reports are currently routed to SafetyNet from ASPEN through the Blizzard software. The uploads from ASPEN to SAFETYNET are accomplished through dial-up, WAN, or CDPD networks. As part of the CVISN program, Oklahoma plans to implement a satellite communication system for ASPEN/SAFETYNET communications in remote areas. Inspection reports received by SafetyNet are reviewed, verified and uploaded to MCMIS, via the SAFER data mailbox.

3.3.1.13 ASPEN / PIQ / ISS

ASPEN is a distributed software system designed and maintained by the FMCSA, housed on laptop units individually purchased by states. The ASPEN software enables officers to record inspections, upload inspections to the SAFER data mailbox and query SAFER for supported credential and safety status information. In addition, the ASPEN units house a suite of complementary / ancillary software including a Past Inspection Query (PIQ) and Inspection Selection System (ISS) function. The PIQ query enables officers to enter a DOT, plate or VIN number and receive past inspection information for the most recent 45-day period. The ISS tool allows officers to transmit a carrier ID to the SAFER system and receive carrier safety status rating for use in making more informed, targeted inspection selection decisions.
Under the Oklahoma's CVISN program, a LAN-to-LAN VPN will be established between the DPS network and SAFER. Communications between ASPEN/PIQ/ISS and SAFER will be accomplished in two steps. First the ASPEN/PIQ/ISS query or report will be sent to the DPS server through a choice of CDPD, satellite, or WAN connection. Once the DPS network receives the query or inspection, it will be transmitted to SAFER through the LAN to LAN VPN.

3.1.1.14 ODOT Bridge

An Oklahoma Department of Transportation (ODOT) bridge, construction, and roadway database is being established to maintain roadway and bridge travel restrictions. This system will be accessed by the DPS OS/OW system to assist in automated routing.

3.3.1.15 DPS Wrecker

The DPS Wrecker system allows for the permitting of Wrecker equipment in Oklahoma. Under Oklahoma's extended CVISN design, this system will be enhanced to allow automated permitting through a web interface and the transmittal of updated permit status to the Oklahoma CVIEW.

The DPS Wrecker system will use a three-tiered architecture. The web tier, application tier, and database tier will reside on the same servers as the DPS OS/OW web tier, application tier, and database tier, respectively.

3.3.1.16 OCC and OTC Scale House Clients

The Oklahoma Corporation Commission (OCC) and the Oklahoma Tax Commission (OTC) periodically use scale houses for enforcement activities. Some scale houses are equipped with T1 lines and terminals that have SNA connectivity to the OTC networks and databases. Under the CVISN design, TCP/IP connectivity will be installed for communications between all scale houses and the OCC and OTC networks. Client machines will be added to allow verification of credentials against the authoritative legacy systems and/or CVIEW. For scale houses without existing T1 lines, the most cost effective method of establishing TCP/IP connectivity is being investigated. Possible options are additional T1 lines and satellite.

3.3.1.17 OCC Mobile Units

As part of the OCC enforcement activities, OCC deploys mobile units. Under the CVISN design, these mobile units may be equipped with hardware and software to access OCC authoritative sources and CVIEW through satellite systems.

3.3.2 Vendor Systems

3.3.2.1 PrePass Server And Local Screening Databases

Oklahoma is a PrePass state. As such, the PrePass host server contains all the data used in electronically screening enrolled vehicles passing through Oklahoma's PrePass-equipped ports. The host server periodically (daily at present) updates the local screening system databases.

3.3.2.2 Sensor, Driver Communications, Vehicle Transponder

PrePass enrolled trucks are equipped with electronic tags, or transponders, that support Dedicated Short Range Communications (DSRC) and are integrated with an in-cab display (visual and audio) used for driver notification. When transponder-equipped trucks drive past the reader, a roadside reader identifies the vehicle based on its transponder ID, and passes this information on to the local roadside screening system. The local screening system verifies the credential and safety status of the vehicle / carrier tied to the unique transponder ID. The screening system makes a "pass/pull-in" decision and notifies the driver via the in-cab device.

Oklahoma is investigating the installation of WIMs at some or all of the PrePass sites. If WIMS are installed, weight information will be included in the electronic screening criteria.

3.3.3 National Systems

3.3.3.1 Safety and Fitness Electronic Records (SAFER)

SAFER is a multi-state system developed and maintained by FMCSA. It manages information related to safety and credential status of interstate motor carriers and vehicles. It also manages vehicle inspection information submitted through ASPEN. SAFER is used to store and distribute inspection results submitted through ASPEN and inspection queries sent from ASPEN.

At present, SAFER includes safety snapshots / status information for interstate carriers only, and limited interstate credential status information (only two states are currently sending credential information to SAFER as of 10/01). Ultimately, SAFER will support safety and credential status information for interstate carriers, vehicles and drivers, and safety status information for intrastate carriers and vehicles.

Assuming that MCMIS and SAFER are enhanced to accommodate intrastate carrier and vehicle safety status information in a timeframe that meets Oklahoma's needs, the state plans to continue to upload completed inspection reports from the roadside directly to the SAFER data mailbox rather than via its CVIEW.

Officers using ASPEN units would access SAFER directly for all safety related (PIQ and ISS) queries, both for interstate and intrastate carriers, drivers and vehicles, again assuming full MCMIS / SAFER intrastate safety functionality.

The Oklahoma CVIEW will update SAFER nightly with interstate credential snapshots (IRP, IFTA and SSRS). Provision of e-screening enrollment data will be the responsibility of HELP, Inc., who issues the transponders for the Oklahoma's e-screening operations.

3.3.3.2 CDLIS

The Commercial Driver's License Information System (CDLIS) serves "as a clearinghouse and repository of information pertaining to the licensing and identification of operators of commercial motor vehicles and the disqualification of such operators from operating commercial motor vehicles".

The Commercial Driver's License Information System was developed to support the commercial driver's licensing process performed by the states. The primary objectives of the program are to:

- Ensure an individual has only one Commercial Driver's License (CDL)
- Electronically transfer conviction data between states and ensure all convictions are made part of a driver's history in the licensing state

Additionally, the program helps to ensure that only qualified drivers operate commercial vehicles and provides search functions to identify drivers.

CDLIS is a distributed system with a central database, with the on-line states connected by on-line transactions sent through a network. Queries can be made against the central database to verify driver's license status and driver's history.

3.3.3.3 MCMIS

The purpose of the Motor Carrier Management Information System (MCMIS) is to maintain a comprehensive record of the safety performance of motor carriers (truck and bus) and hazardous materials shippers who are subject to the Federal Motor Carrier Safety Regulations (FMCSR) or Federal hazardous materials regulations. It serves as a centralized repository of safety data on interstate motor carriers.

3.3.4 Carrier Systems

3.3.4.1 Transponder

The DSRC transponder communicates using ASTM Version 6 IEEE 1455-99 CMV standards with the transponder readers at the Oklahoma's PrePass sites.

3.3.4.2 Web Browser

The web browser will allow the carrier to access the Oklahoma Web Servers to apply for and receive credentials.

3.3.4.2 OTC Motor Vehicle Prorate

The OTC Motor Vehicle Prorate system is a piece of software developed by the OTC which enables motor carriers to download IRP application and renewal data directly from their fleet management systems using an EDI translator, and to transmit the application / renewal data to the IRP office using a bulletin board system. The bulletin board process will be replaced by a web-based transmittal, with the upload to state systems automated, as part of the IRP CVISN project deployment.

3.4 Allocation of Requirements by System

The COACH Part 3, Detailed System Checklists, is a tool for allocating the state requirements from the COACH Part 1 Operational Concept and Top Level design Checklists to particular elements of the system design. The tables are supplemented by text that further explains the functions assigned to new applications. The completed COACH, Part 3 is contained in Appendix C.

3.5 Overall Physical Design

The network and hardware system diagrams in this section present the top-level physical system design. Exhibit 3-5-1 shows the host computers and networks that comprise Oklahoma's Commercial Vehicle Administration Systems and provides a software-to-hardware allocation. Exhibit 3-5-2 presents a more detailed technical view of the Oklahoma CVISN network environment.

Exhibit 3-5-1 shows the host computers and networks involved in Oklahoma's CVISN Level 1 deployment, and identifies the "owner" of the systems. It also shows the communication links used to connect systems. All connections and hardware shown are in place with the exception of the following:

- PrePass connectivity to SAFER for updates of credential status is a requirement of the Oklahoma CVISN architecture, and is the responsibility of Help, Inc. Also, PrePass connectivity to CVIEW (not shown on the diagram) is required.

- Connectivity for Electronic Funds Transfer (EFT) processes is not yet fully planned. Additional connectivity beyond that shown in the diagrams may need to be developed.
- CVIEW server. The location of the CVIEW server is currently undecided. CVIEW may be housed at on the OCC networks, or on OneNet, Oklahoma government's Internet provider, or another location. Depending on the selected location, a server may need to be procured if an existing server is not satisfactory. Regardless of the location of CVIEW, agencies will be able to access it through the Office of State Finance (OSF) networks that provide interagency communication and access to OneNet. If OCC houses CVIEW, OTC will install a direct line to the OCC networks for CVIEW access, rather than going through the OSF network to reach OCC and CVIEW.
- Connectivity between the OTC networks and the IRP and IFTA Clearinghouses. Pending the cost/benefit analysis of clearinghouse participation, it may be necessary for OTC to establish an AAMVAnet line to the IRP clearinghouse. In addition, the best method of communicating with the IFTA clearinghouse will need to be established.
- LAN-to-LAN VPN Connectivity from DPS to SAFER. As part of the CVISN design, Oklahoma intends to establish a LAN-to-LAN VPN between the DPS networks and SAFER. Other agencies offices, scale houses, ports of entry, and mobile units will use the VPN connection from DPS to access SAFER.
- Satellite connectivity from mobile units to the DPS networks. As part of the CVISN design, Oklahoma intends to use satellite connectivity for OCC and DPS mobile units for ASPEN inspection reporting, PIQ and SAFER queries.
- Network connectivity from scale houses to agency networks. Exhibit 3-5-1 shows connections from the OTC / OCC scale house clients to OneNet. Currently, T1 connections are in place between OneNet and some scale houses. Additional T1 lines or satellite connectivity to remaining scale houses will be established during the CVISN project. Regardless of the type of connectivity established, both agencies will be able to access their networks from the scale houses due to the interagency connectivity provided by OSF. Additional scale house workstations will need to be procured to support scale house operations.
- The OTC web server. OTC plans to have OneNet host the web server for the IRP and IFTA web sites. Arrangements for procurement and hosting at OneNet have not been initiated.

Hardware acquisition and communications installation planned or currently underway include:

- Satellite system connectivity from mobile units to the DPS networks.
- LAN-to-LAN VPN connectivity from DPS networks to SAFER.

Hardware and communications acquisitions that must be investigated further before purchase include:

- AAMVAnet TCP/IP line for connectivity to the IRP clearinghouse.
- Connectivity to the IFTA Clearinghouse
- CVIEW server configuration and location of server.
- Connectivity from scale houses to OTC/OCC networks.
- OTC Web Server to be hosted by OneNet
- OTC / OCC clients for scale houses
- A SUN server should the IRP and IFTA systems be replaced by client server systems.

Exhibit 3-5-1. Oklahoma CVISN Physical Design: Host Computers and Networks; Software to Hardware Allocation

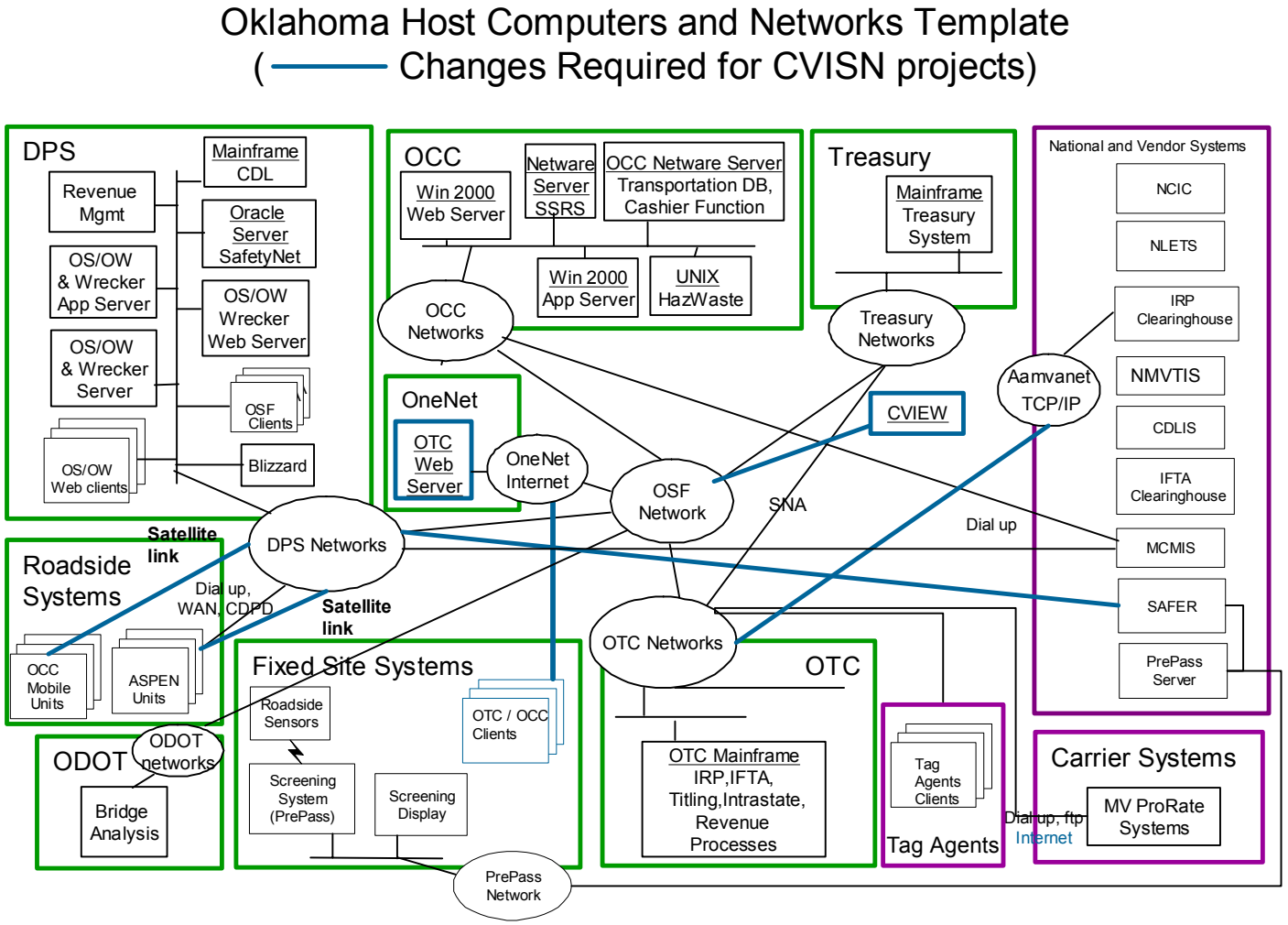


Exhibit 3-5-2 provides a high level overview of network connectivity as related to CVISN. The exhibit shows the same interfaces as the Host Computers and Networks Diagram, but from a network management perspective. Below, the logical and network perspectives of the system-to-system communications are discussed.

Department of Public Safety (DPS) Network Environment: All CVISN related servers are located on a LAN on the DPS network. ASPEN units will access the DPS network through the existing WAN, CDPD, or dial up connections, or using satellite connectivity when it becomes fully operational. The DPS networks are connected to the OSF network that provides access to all other agency networks in the state and access to the state's Internet provider, OneNet. A LAN-to-LAN VPN will be installed between the DPS networks and SAFER for queries, inspections, and snapshot updates.

Web enabled systems at DPS, including the OS/OW and Wrecker systems, will use a three-tiered architecture. Databases will be on the DB2 Server, with the web systems and business rules on the web server and application server.

PrePass Network Environment: The local port screening system accesses the PrePass host computer through the PrePass network. The screening system interacts with the roadside sensors through wireless or laid line connections.

Oklahoma Tax Commission (OTC) Network Environment: The OTC network houses the mainframe where IRP, IFTA, Intrastate Vehicle Registration and Titling systems are hosted. OTC accesses the DPS and OCC networks through the OSF network. OSF also provides the access to OneNet for Internet connectivity. In Oklahoma, tag agents are licensed to provide third party credentialing services for IRP and Intrastate Vehicle Registration. The tag agents use SNA connections to access these applications on the OTC network.

Oklahoma Department of Transportation (ODOT) Network Environment: The ODOT network houses the Bridge Analysis system that will be accessed by the DPS OS/OW system for automated routing purposes. The connection between ODOT and DPS networks will be made through the OSF network.

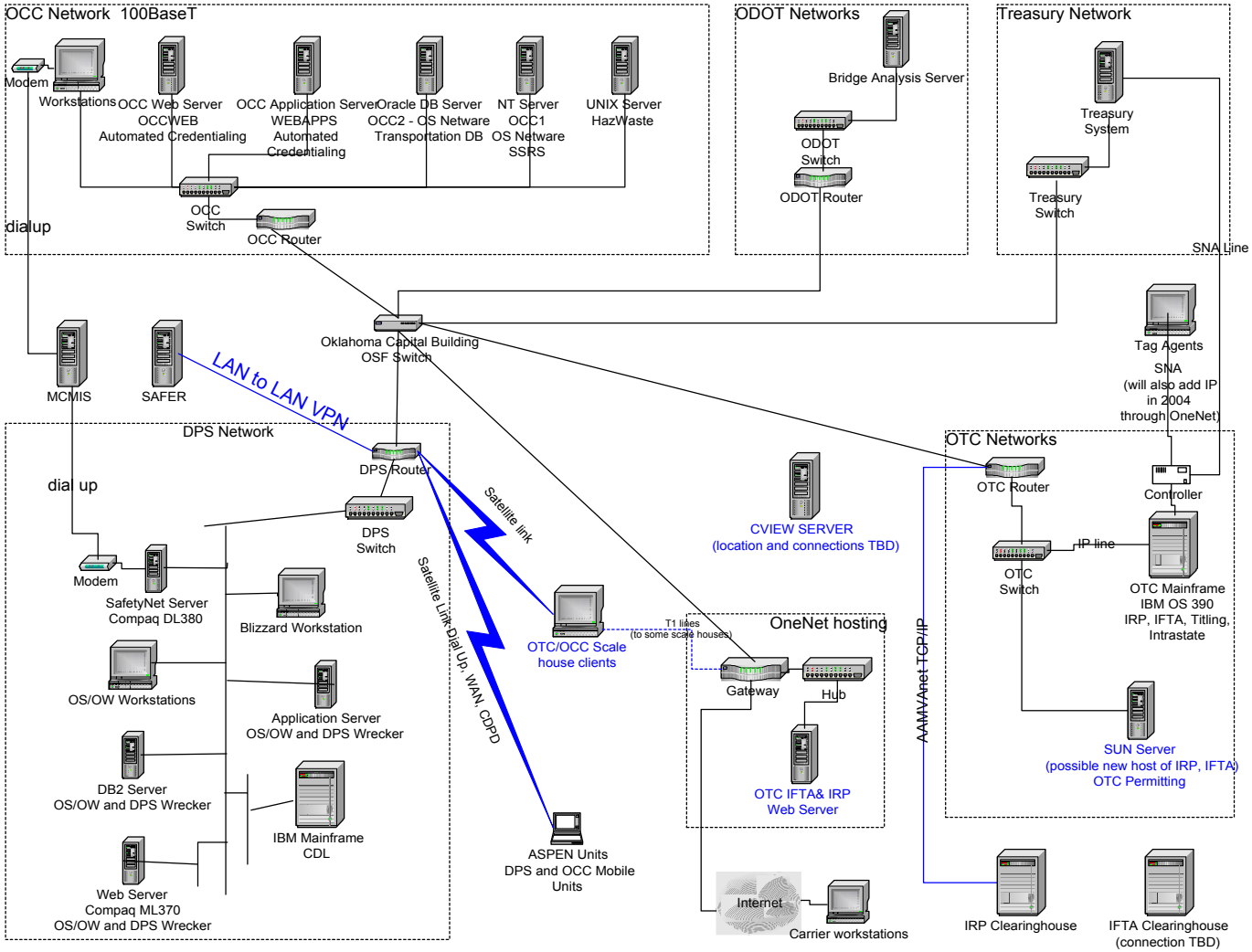
Oklahoma Corporation Commission (OCC) Network Environment: The OCC network environment houses the SSRS system on a Netware server, the Transportation database including interstate exempt and intrastate operating authority systems are also on a Netware server, and the HazWaste system is on an additional server. When the SSRS system is replaced/ enhanced, as a result it may be removed from the current Netware server and hosted elsewhere. The CVIEW access method from the SSRS and intrastate operating authority systems has not yet been determined.

Web enabled systems at OCC will use a three-tiered architecture. Databases will be on the Oracle Server, with the web systems and business rules on the web server and application server.

Treasury Network Environment. The Treasury network environment houses the treasury systems where all payments and accounting are managed for the state. Agencies have IP access to the Treasury network through the OSF capital switch. OTC has an additional connection, using SNA, between the OTC mainframe and the Treasury mainframe.

OneNet Network Environment. OneNet is the Oklahoma state government's Internet access provider. Agencies access OneNet through the OSF capital switch. In addition, OneNet provides web site hosting services, and interagency systems hosting services for the convenience of state agencies.

Exhibit 3-5-2. Physical Design



3.6 IRP Projects

Oklahoma's CVISN IRP projects include:

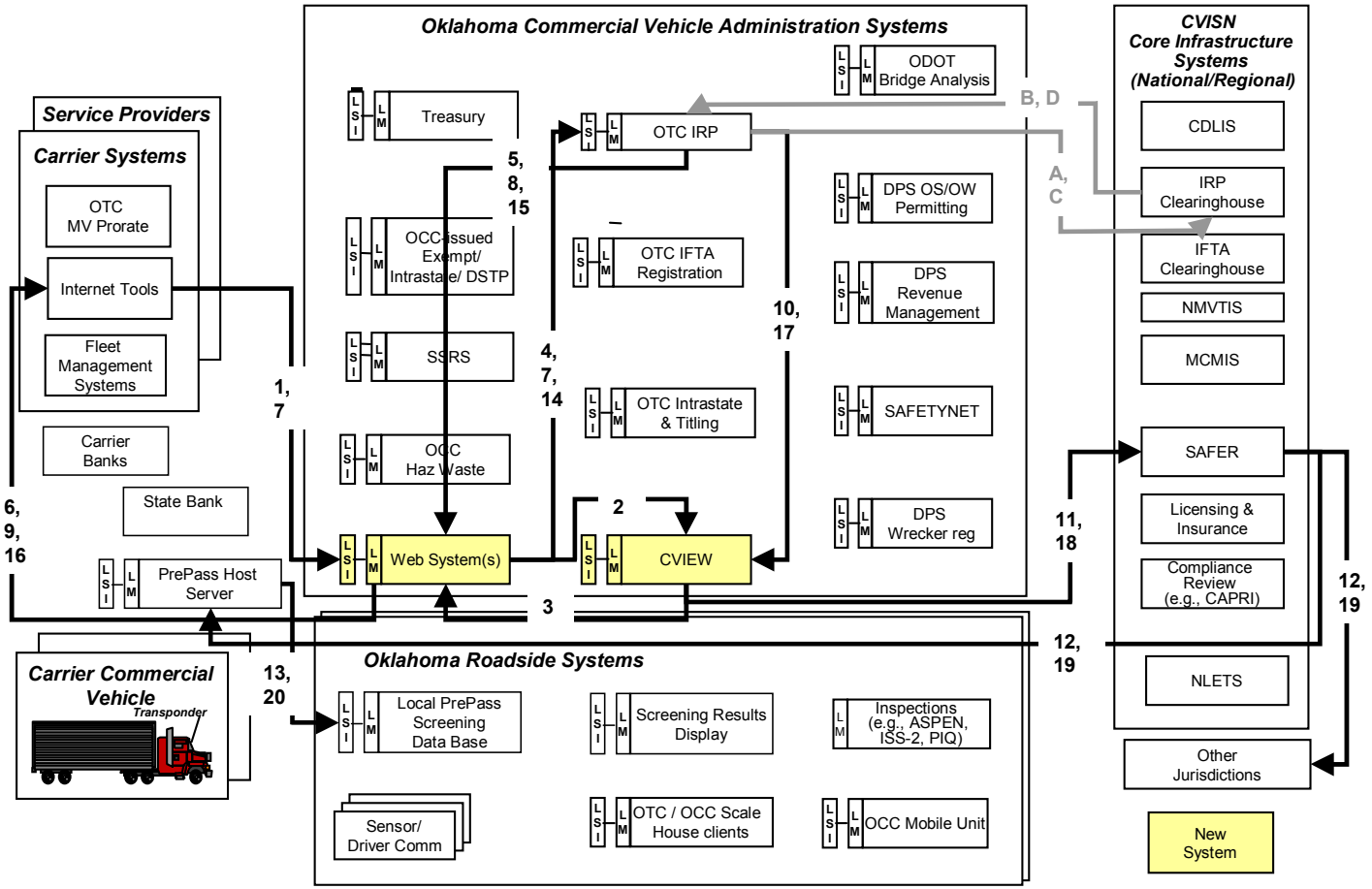
1. IRP Legacy System Modifications – required to accommodate PRISM, web based credentialing and transmitting updated credential status to CVIEW;
2. PRISM – capture US DOT number at vehicle and registrant level, bar code cab cards, and verify safety status prior to issuing credentials;
3. IRP Clearinghouse – evaluate cost / benefits of clearinghouse participation and implement interface as appropriate;Automated
4. Electronic Credentialing – implement web-based credentialing and enhance computer-to-computer system to allow transmission of EDI through the web.

Operating scenarios associated with the above four projects are provided below. Following the operating scenarios, the interface standards are depicted and a system change summary is provided.

3.6.1 IRP Operating Scenarios

The following diagrams provide sample-operating scenarios for IRP including IRP Supplement Add Vehicle and IRP Renewal. Diagrams depicting the flow of data between systems is provided in the exhibits, followed by a description of the processing steps and data flows.

Oklahoma Operating Scenario:
IRP Add Vehicle, Update Snapshot / Interface with Clearinghouse



IRP Supplemental Add Vehicle Process Description

1. Carrier enters an IRP credential application via a Web browser to a state-based Web Site.
2. The Web Site passes a query to its state database to perform preliminary checks as part of evaluating the application. (These checks may include verifying safety status should Oklahoma participate in PRISM.)
3. The state database reports the status, i.e., flags and condition to the web system.
4. If a satisfactory status is received, the application is sent to the IRP system for processing via EDI X12 TS 286.
5. The IRP system processes the application and sends an invoice notice to the web-based system via EDI X12 TS 286. IRP system maintains archival/audit copies of all transactions.
6. The web-based system transmits the invoice notice to the carrier.
7. The carrier reviews the invoice data and verifies that the application data matches the intent. The carrier indicates payment method information via the Web Browser to the Web Site.
8. Details of payment process to be determined. Bank-to-Bank transfer will be one method used.
9. If a Temporary Authority (TA) is requested, the Web Site releases the TA for printing at the carrier office or selected OTC office.
10. If a TA was granted, IRP system sends or updates a vehicle snapshot segment to CVIEW using a SAFER Options Working Group (SOWG) flat file format.
11. CVIEW sends updated snapshot data for TA to SAFER using SOWG or XML format.
12. SAFER sends updated snapshot data (for TA) to subscribers via EDI X12 TS 285 or XML (including PrePass).
13. PrePass host server transmits to local screening database via custom / Internet interface.
14. The web-based system verifies payment method information (financial system interfaces are not shown) and passes payment approval to the IRP system via EDI X12 TS 286.
15. The IRP system validates payment amount and updates application status to indicate the permanent credential granted and notifies the web system via EDI X12 TS 286.
16. The Web Site releases the Cab Cards to print at the carrier's office or other selected OTC office.
17. The IRP system updates CVIEW with permanent credential information using SOWG flat file format.
18. CVIEW sends updated snapshot data for permanent credential to SAFER using XML or SOWG flat file format.

19. SAFER makes updated snapshot data (for permanent credential) available to subscribers, including PrePass, via EDI X12 TS 285 or XML.

20. PrePass host server transmits updated information to local screening databases.

A. Daily, the IRP system sends updates to the IRP Clearinghouse on IRP registration information and fee payments (recaps).

B. Monthly, the IRP Clearinghouse makes available the fee information (pre-netting transmittals) to the participating jurisdictions for approval and/or correction. States review the information interactively using terminals.

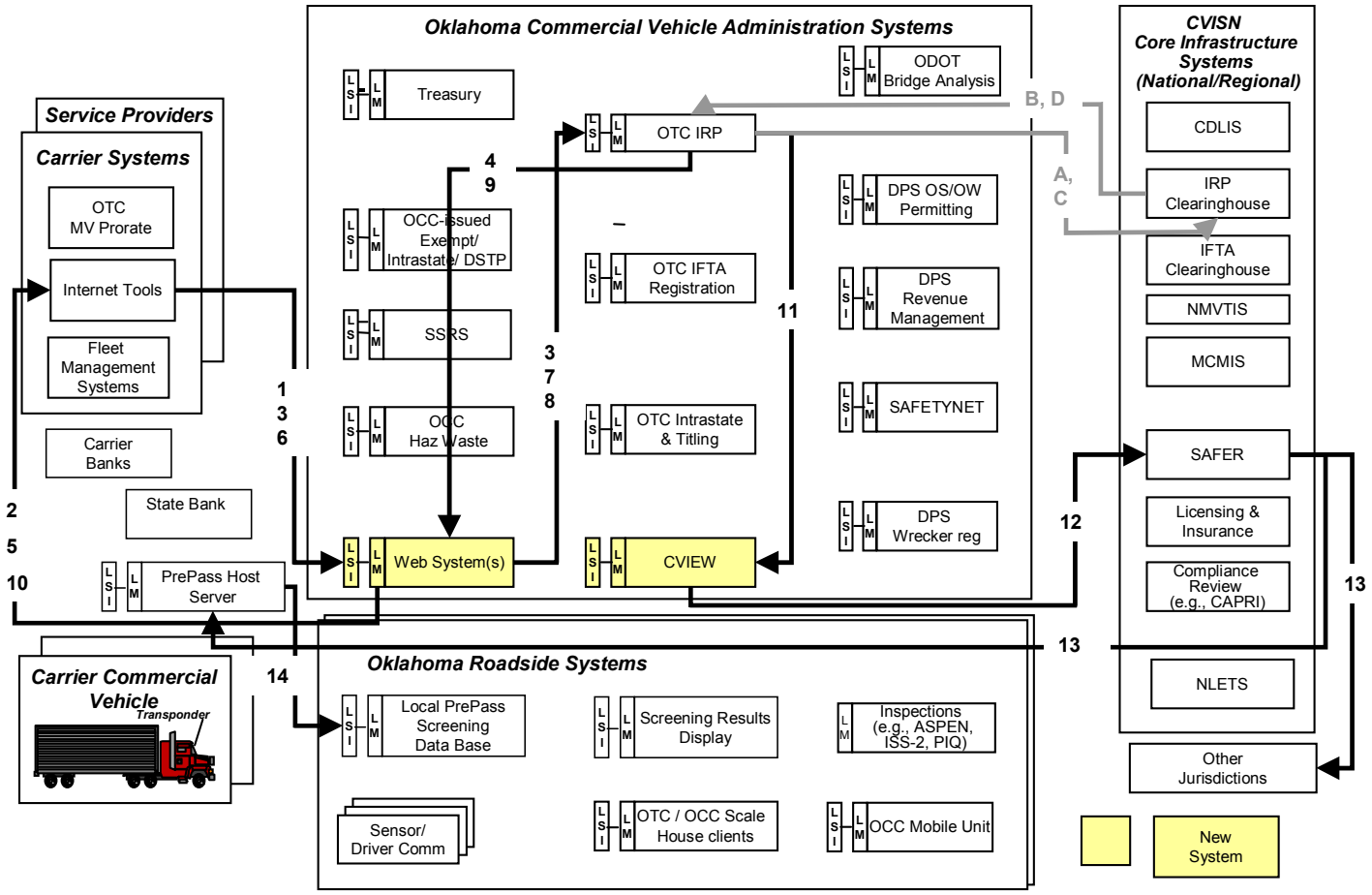
C. The IRP Office and also other participating jurisdictions report back to the IRP Clearinghouse the approvals or corrections. The approvals/corrections are made via terminals.

D. The IRP Clearinghouse performs the actual netting and makes available corrected/approved vehicle and fee actions (post-netting transmittal) and netting results (remittance netting reports) to the participating jurisdictions. The information is reviewed via terminals.

NOTE 1: Electronic payment may include EFT funds transfer initiated by the carrier. The Oklahoma Office of Finance Treasury system receives an ACH formatted file containing funds transfer information, which it may forward to the legacy system. The contents of this file may need to be modified to facilitate reconciliation.

NOTE 2: Oklahoma will continue to send IRP registration reports and netting transmittals to individual jurisdictions until Oklahoma joins the IRP Clearinghouse.

Oklahoma Operating Scenario: IRP Renewal



IRP Renewal Process Description

1. Carrier provides account information to a state-based Web Site.
2. The Web Site verifies the carries eligibility to renew (safety issues, insurance, etc.) and populates the carrier's browser with existing account information if carrier is eligible.
3. The carrier completes the renewal application and the application is sent to the IRP system for processing via an EDI X12 TS 286.
4. The IRP system processes the application (this may involve a time lag) and sends an invoice notice to the web-based system via EDI X12 TS 286. IRP system maintains archival/audit copies of all transactions.
5. The web-based system transmits the invoice notice to the carrier. The web system also provides options for submitting final application or further editing (could include print / mail w/ docs; electronic submittal with EFT and docs to follow prior to release of annual credentials).
6. The carrier reviews the invoice data and verifies that the application data matches the intent. The carrier submits application by selected method. If the selected method is web submittal, the carrier indicates payment method information via the Web Browser to the Web Site.
7. Details of payment process to be determined. Oklahoma will implement bank-to-bank transfer.
8. The web-based system verifies payment method information (financial system interfaces are not shown) and passes payment approval to the IRP system via EDI X12 TS 286.
9. The IRP system validates payment amount and updates application status to indicate the permanent credentials granted and notifies the web system via EDI X12 TS 286.
10. The Web Site releases the Cab Cards to print at the carrier's office, a selected OTC office, or they are mailed depending on carrier's selected method.
11. The IRP system updates CVIEW with permanent credential information via a flat file format.
12. CVIEW sends updated snapshot data to SAFER in an XML format.
13. SAFER makes updated snapshot data available to subscribers, including PrePass, via EDI X12 TS 285 or XML.
14. PrePass host server transmits updated information to local screening databases.

A. Daily, the IRP system sends updates to the IRP Clearinghouse on IRP registration information and fee payments (recaps).

B. Monthly, the IRP Clearinghouse makes available the fee information (pre-netting transmittals) to the participating jurisdictions for approval and/or correction. States review the information interactively using terminals.

C. The IRP Office and also other participating jurisdictions report back to the IRP Clearinghouse the approvals or corrections. The approvals/corrections are made via terminals.

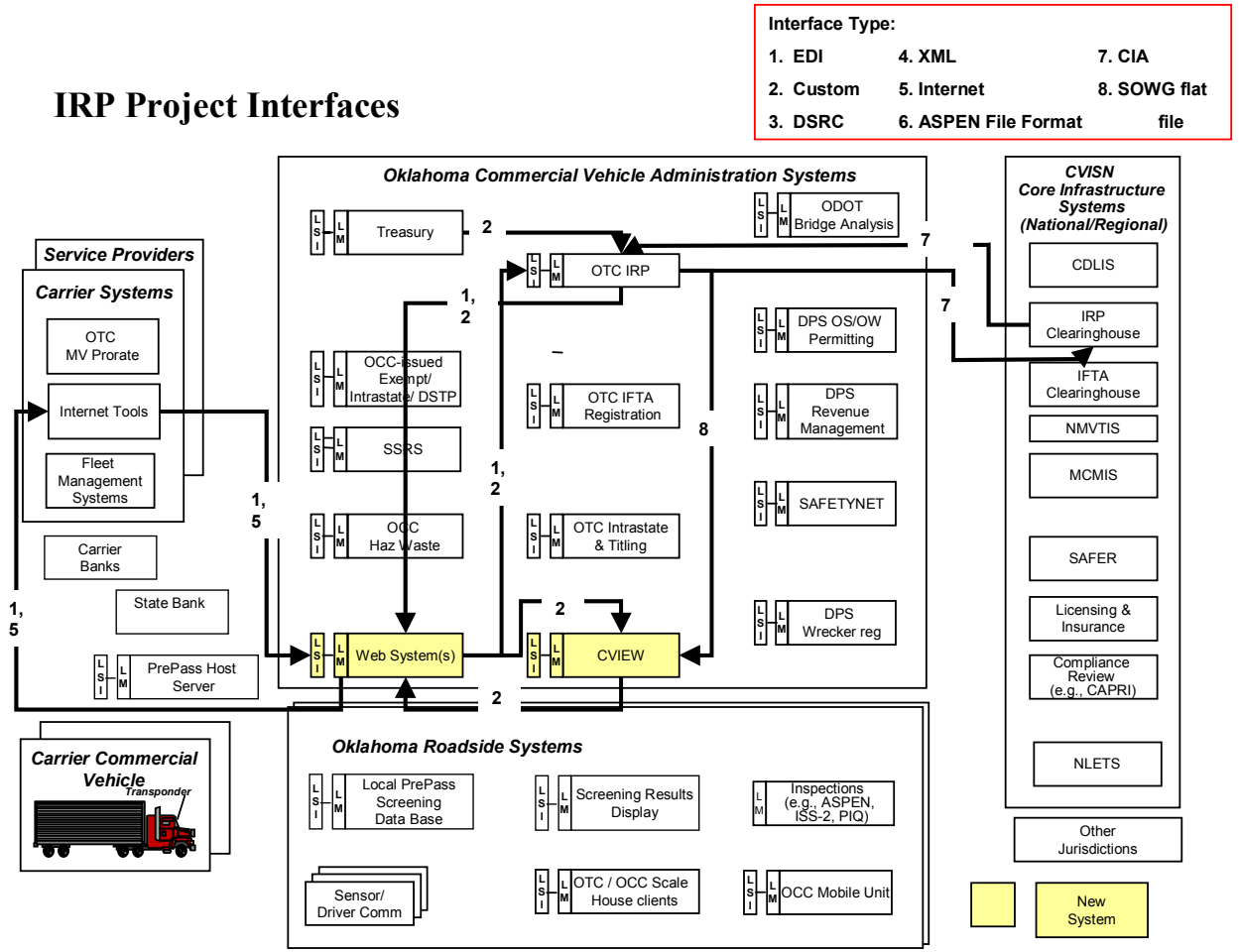
D .The IRP Clearinghouse performs the actual netting and makes available corrected/approved vehicle and fee actions (post-netting transmittal) and netting results (remittance netting reports) to the participating jurisdictions. The information is reviewed via terminals.

NOTE 1: Electronic payment may include EFT funds transfer initiated by the carrier. The Oklahoma Office of Finance Treasury system receives an ACH formatted file containing funds transfer information, which it may forward to the legacy system. The contents of this file may need to be modified to facilitate reconciliation.

NOTE 2: Oklahoma will continue to send IRP registration reports and netting transmittals to individual jurisdictions until Oklahoma joins the IRP Clearinghouse.

Section 3.6.2. IRP Project Interfaces.

The diagram below depicts the types of interfaces that will be used for transmitting data between the IRP project systems, with the exception that electronic screening and CVIEW/SAFER interfaces which are shown under the CVIEW and electronic screening projects.



Section 3.6.3 System Change Summary for IRP Projects

Exhibit 3.6.3 lists the system changes required for the four IRP projects. These system changes include those necessary for Level One CVISN functionality and for extended CVISN functionality.

Exhibit 3.6.3. System Change Summary for IRP projects.

System	Description of Modifications Required	No Change	Change (SML)	Buy	Build
IRP Legacy System	Modifications to accommodate web-based credentialing, CVIEW interface, Treasury interface, additional automation on back-end EDI / bulletin board process. Also modifications to support PRISM including accommodating DOT number at registrant and vehicle level, incorporating safety status verification prior to issuance of registration, and bar code cab cards. In a future phase, also accommodate an interface with the IRP Clearinghouse.		L	X	X
IRP Web-based and EDI formatted Electronic Credentialing	Implement web-based credentialing to enable motor carriers to apply for, pay for and receive IRP credentials electronically. Further automate "back-end" processes of existing computer-to-computer EDI / bulletin board process.		L	X	X
Intrastate Registration	Modify System to allow the capture and maintenance of US DOT numbers for Intrastate carriers. Upload these DOT numbers and registration information to CVIEW.		S		X
Treasury System	Modify output file of system to allow more detailed information to flow to the IRP system.		S		X

3.7 IFTA Projects

Oklahoma's CVISN IFTA projects include:

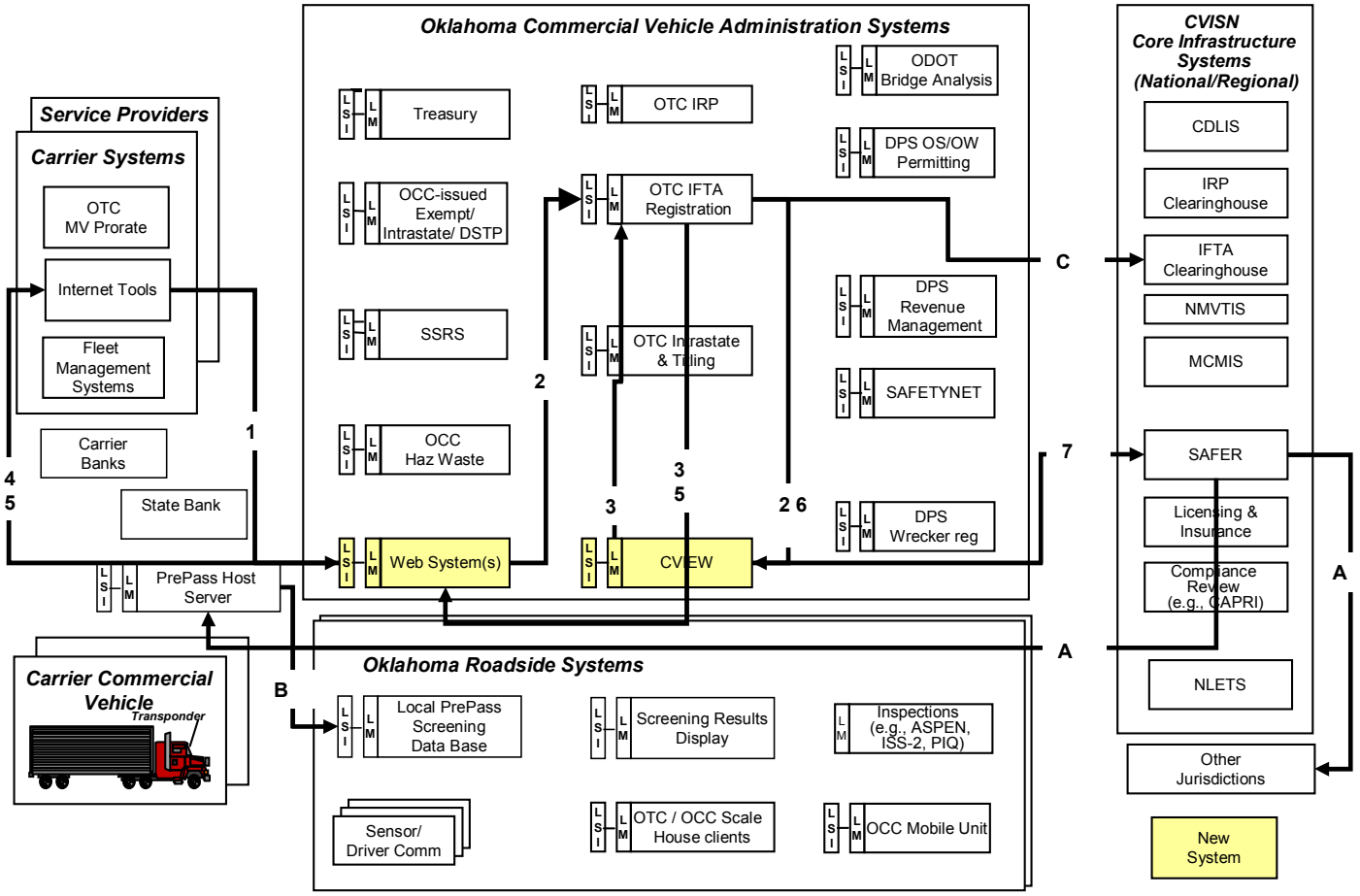
1. IFTA Legacy System Modifications – required to accommodate web based credentialing and transmitting updated credential status to CVIEW;
2. IFTA Clearinghouse – evaluate cost / benefits of clearinghouse participation and implement interface as appropriate;
3. Automated IFTA Credentialing and Tax Filing – implement a web-based system to allow for motor carriers to apply for, pay for, and receive IFTA credentials and submit tax returns and payments.

Operating scenarios associated with the above three projects are provided below. Following the operating scenarios, the interface standards are depicted and a system change summary is provided.

3.7.1 IFTA Operating Scenarios

The following diagrams are sample-operating scenarios for IFTA renewals, IFTA initials, and IFTA quarterly returns. Diagrams depicting the flow of data between systems is provided in the exhibits, followed by a description of the processing steps and data flows.

Oklahoma Operating Scenario:
IFTA Renewal



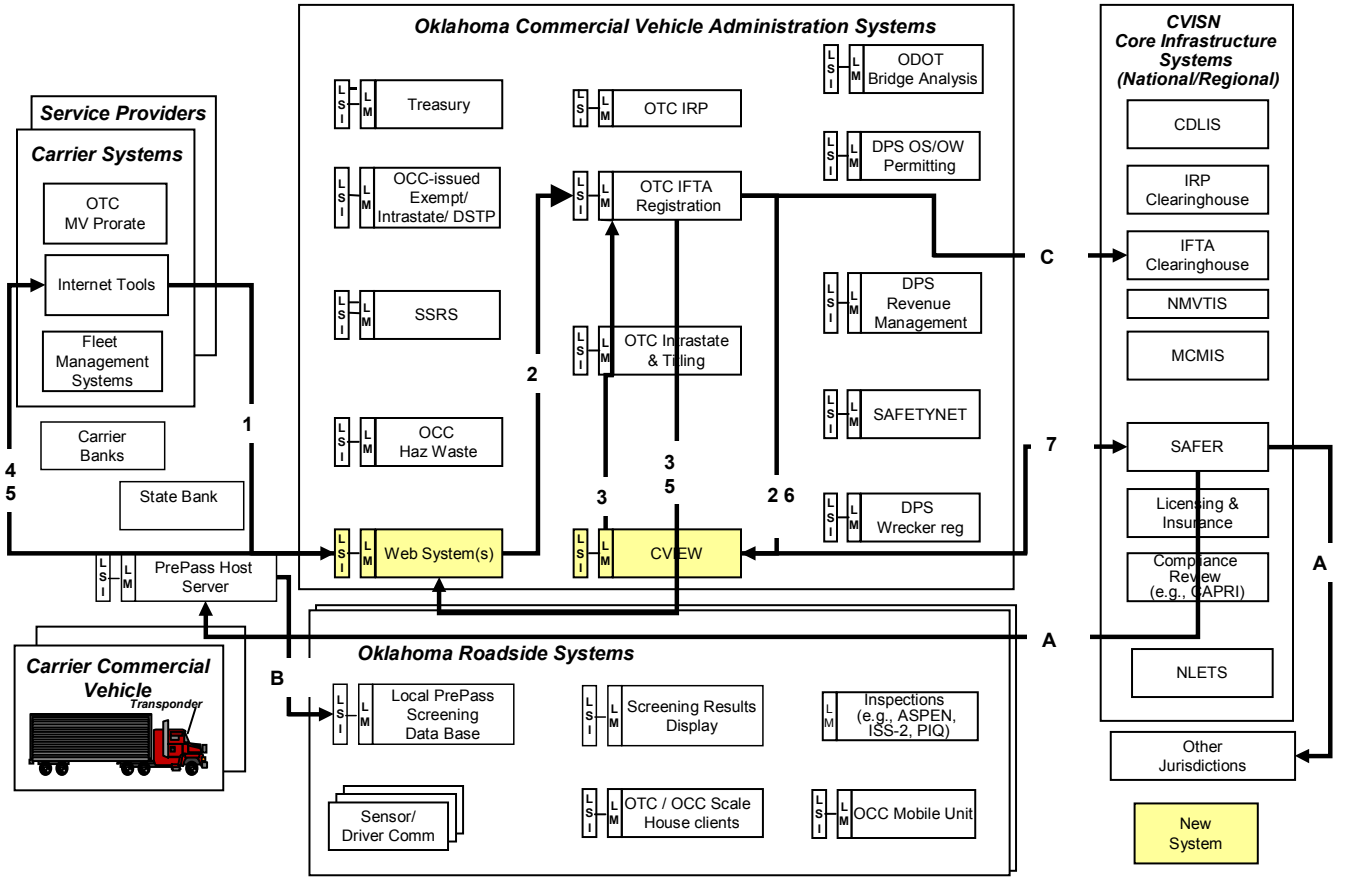
IFTA Renewal Operating Scenario Process Description

1. Carrier accesses web system for IFTA renewal information. Carrier completes required information and submits via web-based system, using Internet standards.
2. Web system queries the IFTA system to perform preliminary checks for flags on account and verifies that an IRP account exists (by querying CVIEW) for the carrier.
3. Web system receives the flags and conditions from the IFTA and CVIEW systems.
4. The web system notifies carrier of flags on account (if applicable)
5. If no flags, the IFTA system processes the application and releases the IFTA license to print on carrier's system (via the web system) and provides report to state to issue X decals to carrier.
6. The IFTA system sends the snapshot data to CVIEW in a SOWG flat file format.
7. CVIEW sends updated snapshot data to SAFER via SOWG flat file format or XML. SAFER makes updated snapshot data available to subscribers, including PrePass, via EDI X12 TS 285 or XML.

B. PrePass host server transmits updated information to local screening databases.

C. Updated IFTA status information is transmitted from the IFTA system to the IFTA Clearinghouse nightly..

Oklahoma Operating Scenario:
IFTA Initial



IFTA Initial Operating Scenario Process Description

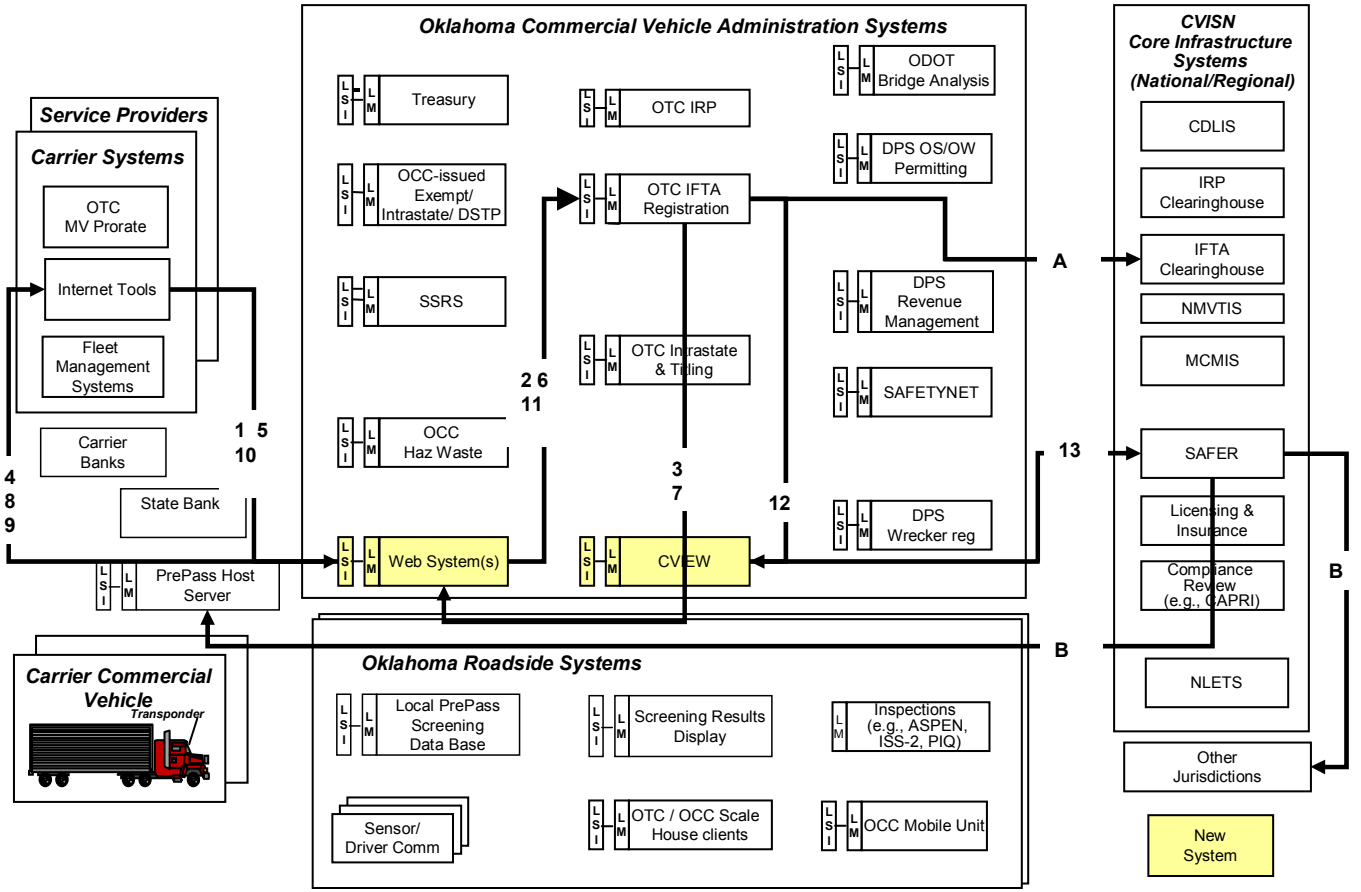
1. Carrier accesses web system for IFTA initial information. Carrier completes required information and submits via web-based system, using Internet standards.
2. Web system queries the IFTA system to perform preliminary checks to verify that an IRP account exists (by querying CVIEW) for the carrier.
3. Web system receives the flags and conditions from the IFTA and CVIEW systems.
4. The web system notifies carrier of flags (if applicable)
5. If no flags, the IFTA system processes the application and releases the IFTA license to print on carrier's system (via the web system) and provides report to state to issue X decals to carrier.
6. The IFTA system sends the snapshot data to CVIEW in a SOWG flat file format.
7. CVIEW sends updated snapshot data to SAFER in SOWG flat file format or XML format.

A. SAFER makes updated snapshot data available to subscribers, including PrePass, via EDI X12 TS 285 or XML.

B. PrePass host server transmits updated information to local screening databases.

C. Updated IFTA status information is transmitted from the IFTA system to the IFTA Clearinghouse nightly.

Oklahoma Operating Scenario:
IFTA Quarterly Return



IFTA Tax Filing Operating Scenario Process Description

1.Using a web-browser, carrier enters identifying information and tax period of filing via web system.

2.Web system transmits information to the IFTA system via custom interface.

3.The IFTA system validates account number and sends the web server notice of credits due, taxes owed, penalties and interest, if any.

4.Web server sends the notices to the carrier.

5.Carrier enters IFTA tax filing information via the web and submits for processing, using Internet standards.

6.Web system transmits quarterly return to the IFTA system via custom interface.

7.The IFTA system completes checks to validate report / taxes due and notifies web system of corrections required, if any. If no corrections are required, the IFTA system notifies web system of amount / refund due.

8.Web system notifies carrier of corrections required or taxes due / refund owed. (If corrections are required, steps 5-7 are repeated.)

9.Web System posts return and carrier can view status, taxes due, refund pending, etc. Refund request or invoice prints at carrier's site for mail / processing.

10.Carrier has option of mailing payment or using an electronic payment method. The electronic payment method is to be determined. If electronic payment is being used, the carrier transmits payment information to the web server.

11.The web server transmits payment information to the IFTA system and report is printed of decals to be mailed.

12.IFTA system updates CVIEW with status changes, using SOWG flat file format.

13.CVIEW updates SAFER using an XML or SOWG flat file format.

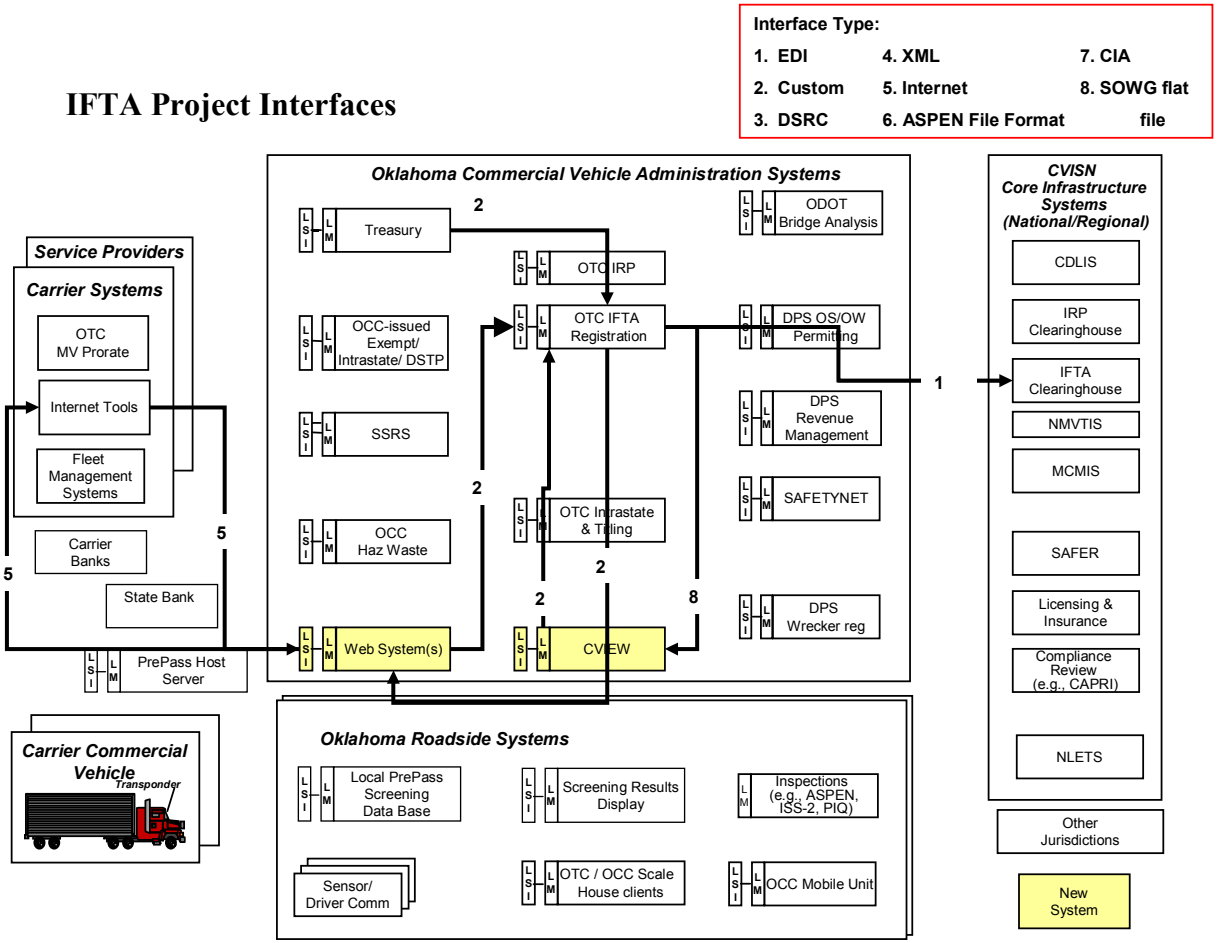
A. IFTA system updates IFTA Clearinghouse nightly with status changes.

B. SAFER periodically updates subscribers with updated credential status information.

NOTE 1: Electronic payment may include EFT funds transfer initiated by the carrier. The Oklahoma Office of Finance Treasury system receives an ACH formatted file containing funds transfer information, which it may forward to the legacy system. The contents of this file may need to be modified to facilitate reconciliation.

Section 3.7.2 IFTA Interfaces

The diagram below depicts the types of interfaces that will be used for transmitting data between the systems involved in the IFTA projects except the electronic screening and CVIEW/SAFER interfaces, which are shown under the CVIEW and electronic screening projects.



Section 3.7.3 System Change Summary for IFTA Projects

Exhibit 3.7.3 lists the system changes required for the three IFTA projects. These system changes include those necessary for Level One CVISN functionality and for extended CVISN functionality.

Exhibit 3.7.3. System Change Summary for IFTA projects.

System	Description of Modifications Required	No Change	Change (SML)	Buy	Build
IFTA Legacy System	Modify or replace IFTA Legacy System to create a more robust system and accommodate interfaces with a web credentialing system, Treasury, CVIEW and the IFTA Clearinghouse.		L	X	X
IFTA Web-based Electronic Credentialing	Implement web-based credentialing / tax filing to enable motor carriers to apply for, pay for and receive IFTA credentials electronically and file and pay IFTA taxes.		L	X	X
Treasury System	Develop EFT interface between the treasury system and IFTA Tax filing system		S		X

3.8 OS/OW Projects

Oklahoma's CVISN OS/OW projects include:

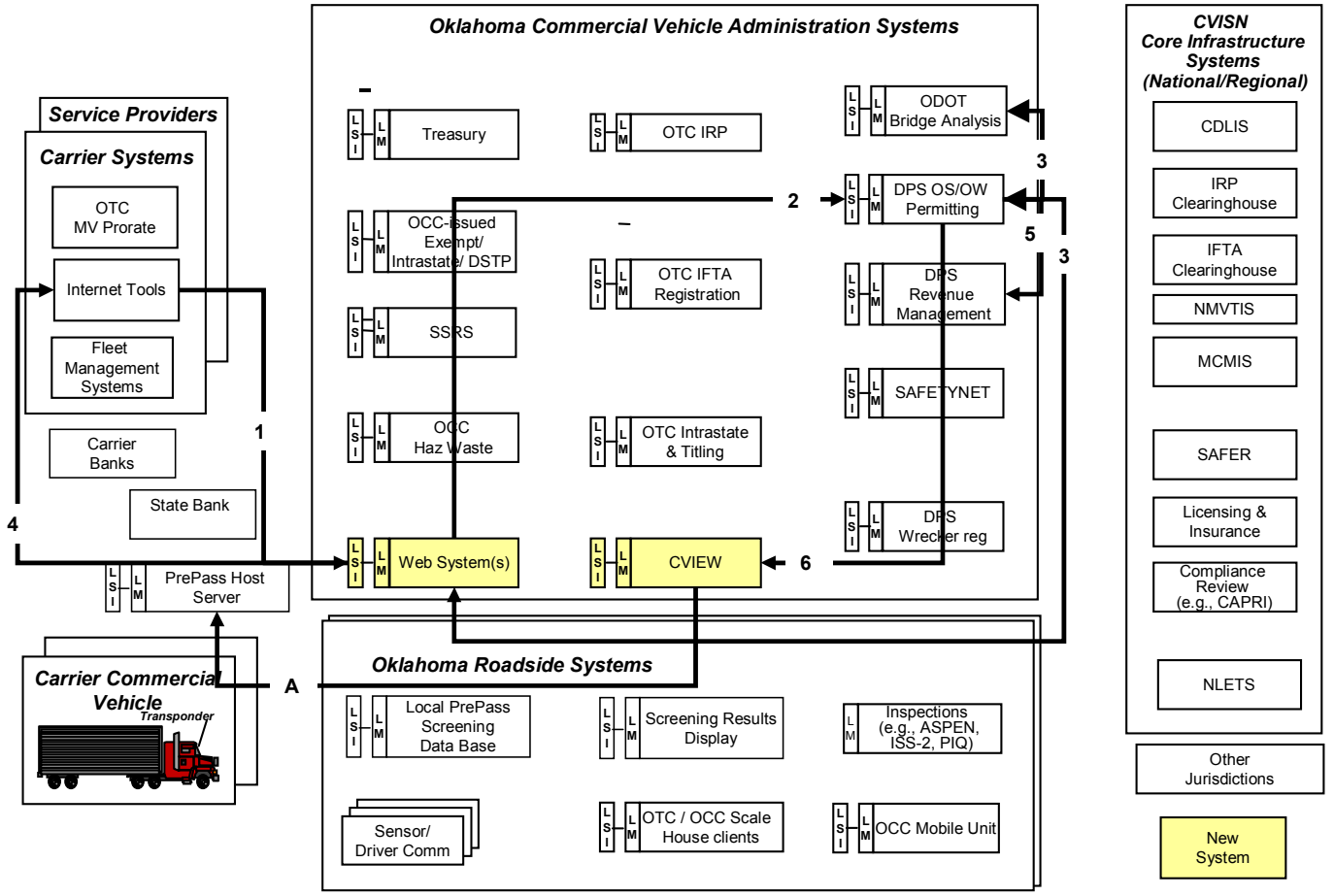
1. OS/OW permit system replacement – replace existing FoxPro System with more robust system that will accommodate Internet interface;
2. OS/OW permit automation – provide web-based permit capabilities to allow motor carriers to apply for, pay for and receive OS/OW credentials via the web;Interface between OS/OW permit system and ODOT Bridge Analysis system – develop interface between the OS/OW system and the Bridge Analysis system and automate analytics for permits involving simple span bridges. .

Operating scenarios associated with the above three projects are provided below. Following the operating scenarios, the interface standards are depicted and a system change summary is provided.

3.8.1 OS/OW Operating Scenarios

The following diagram is a sample-operating scenario for OS/OW automated permitting. The diagram depicts the flow of data between and is followed by a description of the processing steps and data flows.

Oklahoma Operating Scenario:
OS/OW Electronic Permitting



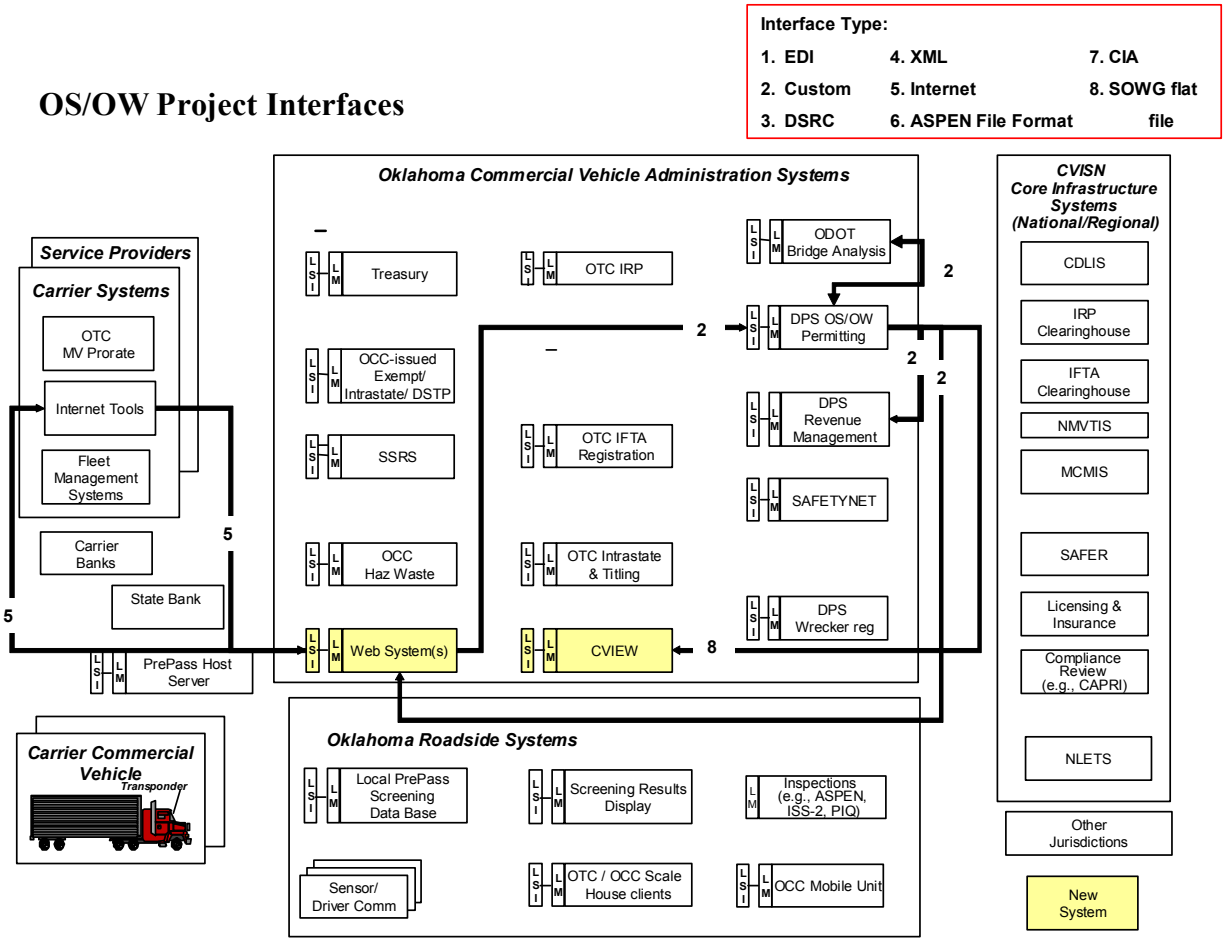
OS/OW Permitting Operating Scenario Process Description

1. Carrier completes permit application / route information / and payment information (surety bond or credit card) using web browser and transmits to DPS OS/OW web server.
2. The application is sent from the web server to the DPS OS/OW backend system
3. The DPS OS/OW backend system processes the application, accessing the ODOT bridge system if required, and returns authority to print a permit. If a surety bond payment type is used the amount is subtracted from the bond amount.
4. The web server allows the carrier to print the permit.
5. The payment information is reported to the DPS Revenue Management System.
6. The OS/OW permit information is sent to CVIEW.

A. CVIEW periodically updates PrePass host server using the SOWG flat file format.

Section 3.8.2 OS/OW Interfaces

The diagram below depicts the types of interfaces that will be used for transmitting data between the systems involved in the OS/OW projects except the electronic screening and CVIEW/SAFER interfaces, which are shown under the CVIEW and electronic screening projects.



Section 3.8.3 System Change Summary for OS/OW Projects

Exhibit 3.8.3 lists the system changes required for the three OS/OW projects. These system changes include those necessary for extended CVISN functionality.

Exhibit 3.8.3. System Change Summary for OS/OW projects.

System	Description of Modifications Required	No Change	Change (SML)	Buy	Build
OS/OW System	Replace existing FoxPro OS / OW system with more robust system that will accommodate internet interface; interface with DPS Revenue and CVIEW. Provide for routing, and interface to ODOT for bridge, roadway, and construction analysis.		L	X	X
OS/OW Web-based Credentialing system	Provide web-based permitting capabilities to enable carrier to apply for, route, pay for and receive permit via the web.		L		X
ODOT Bridge Analysis System	Automate bridge analysis where possible and provide for link to OS/OW System		L		X

3.9 OCC Credentialing Projects

The Oklahoma Corporation Commission (OCC) issues several CVO related credentials, including Single State Registration (SSRS), Interstate Exempt, Intrastate, and Hazwaste. The OCC intends to automate the issuance of these and other credentials by developing web interfaces. The OCC Credentialing projects include:

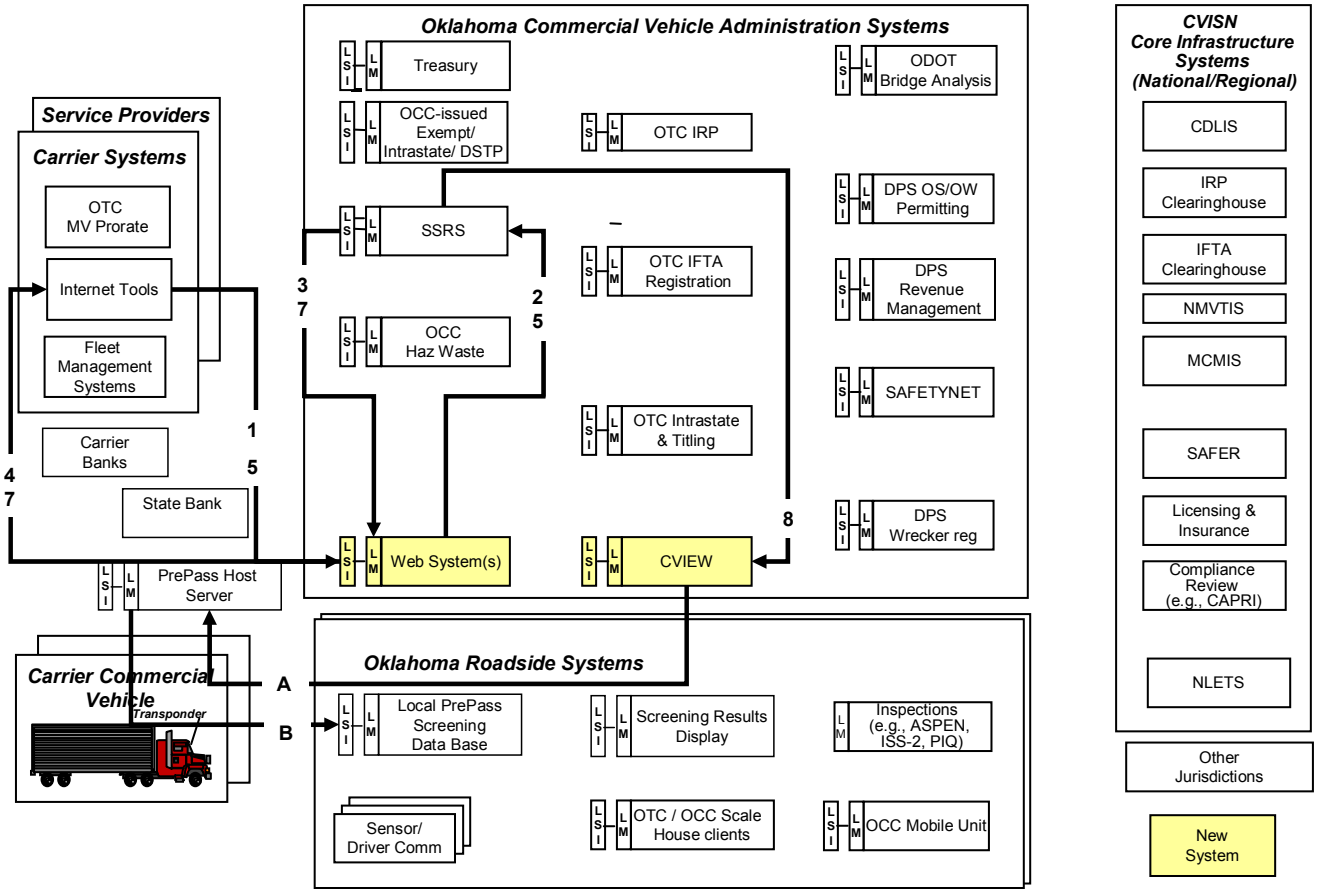
1. OCC Transportation Database legacy system modifications – modify or replace database to accommodate web-based credentialing and implementation of a CVIEW interface;
2. OCC web-based credentialing – develop a web-based credentialing system to allow motor carriers to apply for, pay for, and receive OCC issued credentials electronically.

A sampling of operating scenarios associated with the above two projects are provided below. Following the operating scenarios, the interface standards are depicted and a system change summary is provided.

3.9.1 OCC Credentialing Operating Scenarios

The following diagrams are sample-operating scenarios for SSRS, exempt interstate, intrastate carrier registration, and HazWaste. Diagrams depicting the flow of data between systems is provided in the exhibits, followed by a description of the processing steps and data flows.

Oklahoma Operating Scenario: SSRS Electronic Credentialing



SSRS Operating Scenario Process Description

1. Carrier enters SSRS credential application information via web browser and submits to web system using interface standards.
2. The application is sent to the SSRS system for processing.
3. The SSRS system verifies insurance information and if insurance is current the SSRS system processes the application and sends notification of fees due to the web system.
4. The web system notifies carrier of fees due via the web-based system, and maintains archival/audit copies of all transactions.
5. The carrier reviews the invoice data and verifies that the application data matches the intent. The carrier initiates electronic payment via a selected electronic payment option. Payment record information is transmitted to the web system and then to the SSRS system.
6. The electronic payment options and processing steps are to be determined.
7. Upon verification of receipt of payment, the SSRS system releases credential for printing at carrier's office via the web-based system.
8. Updated SSRS status information is transmitted from SSRS system to Oklahoma CVIEW daily, using SWOG flat file format.

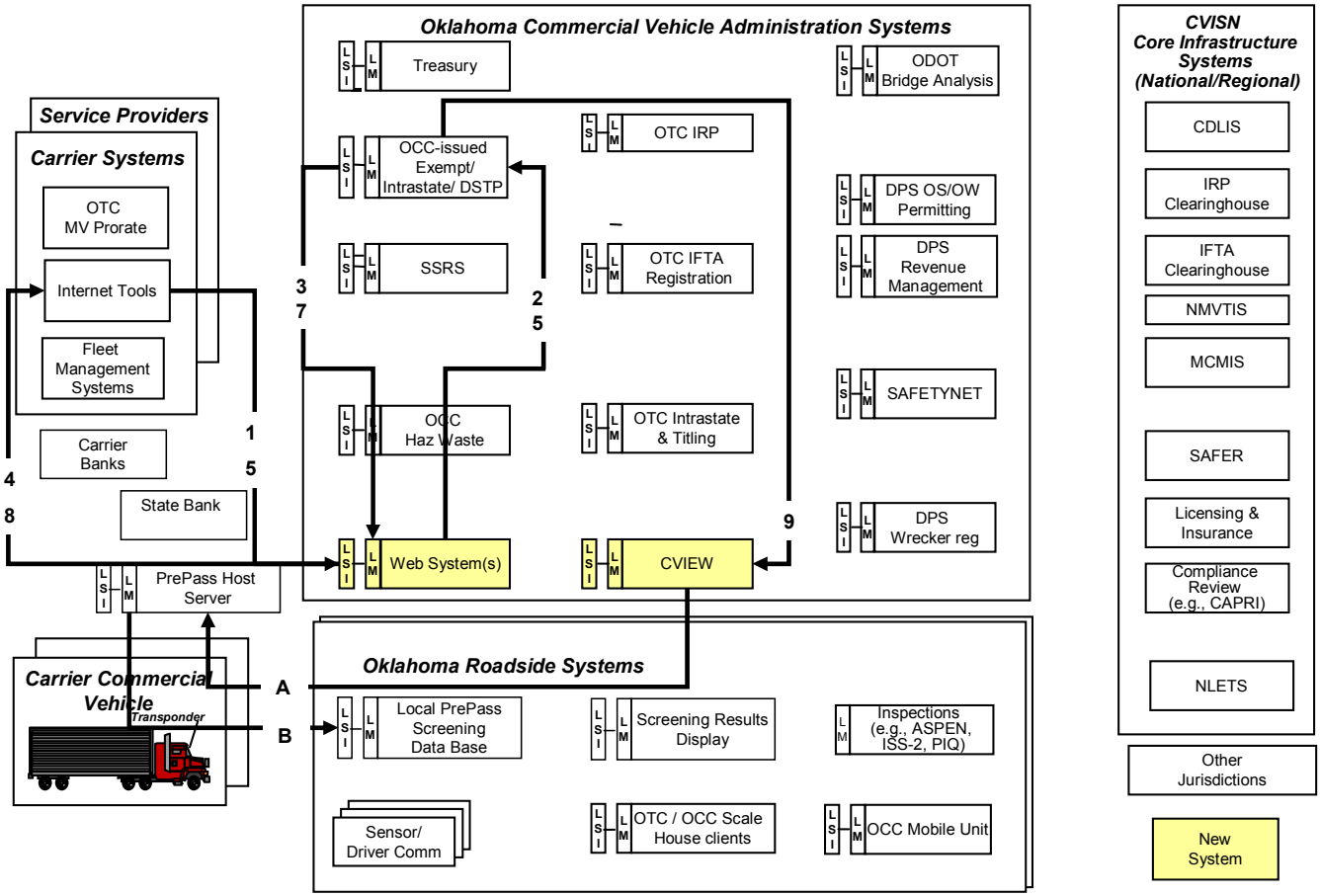
A. CVIEW periodically updates PrePass host server with credential information.

B. The PrePass host server periodically updates local screening databases.

NOTE 1: The SSRS system periodically downloads insurance information updates from the federal insurance database.

NOTE 2: Electronic payment may include EFT funds transfer initiated by the carrier. The Oklahoma Office of Finance Treasury system will receive an ACH formatted file containing funds transfer information that it may forward to the legacy system.

Oklahoma Operating Scenario:
Exempt Interstate



Interstate Exempt Operating Scenario Process Description

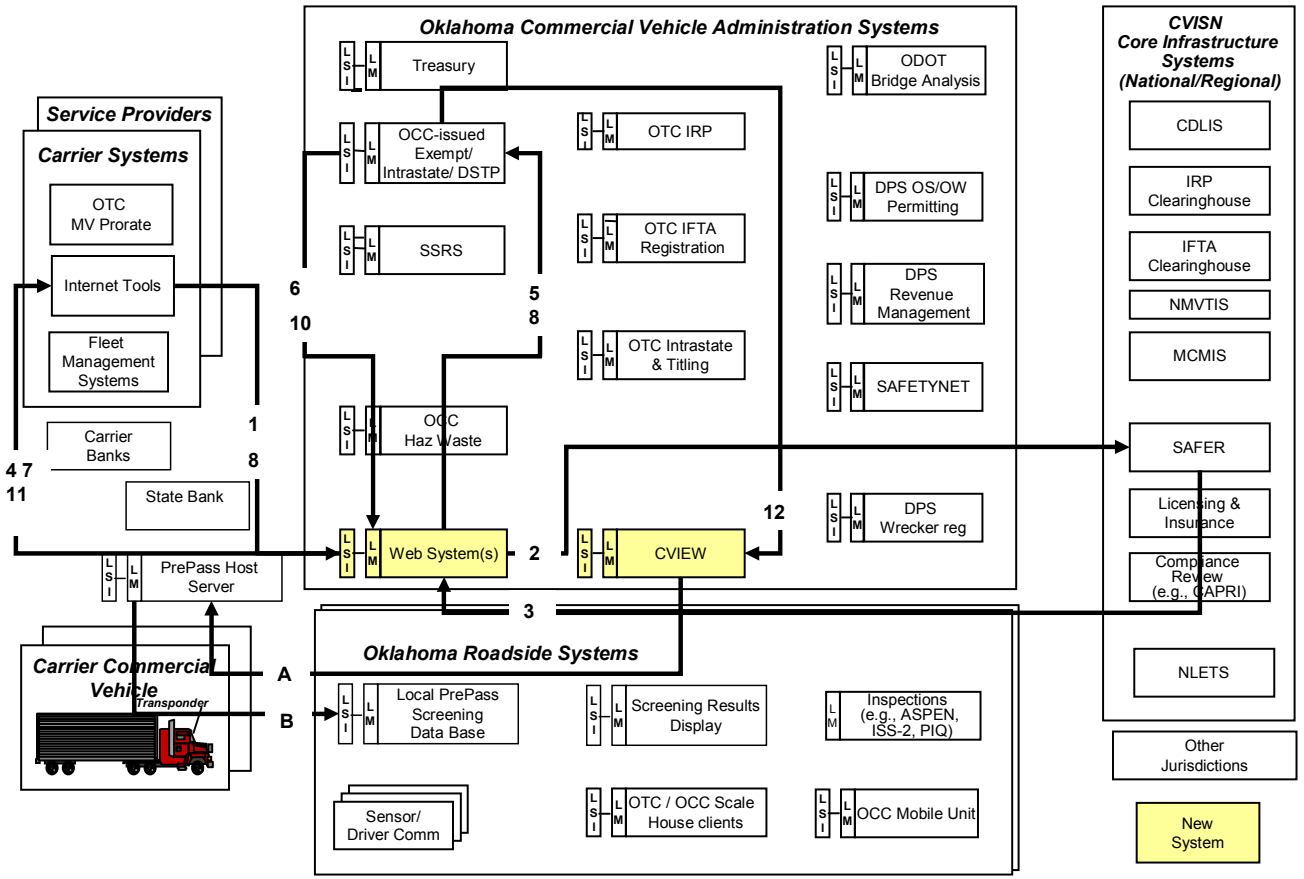
1. Carrier enters data for the credential application via web browser and submits to web system using interface standards.
2. The application is sent to the OCC credential system for processing.
3. The OCC system processes the application and sends notification of fees due to the web system.
4. The web system notifies carrier of fees due, and maintains archival/audit copies of all transactions.
5. The carrier reviews the invoice data and verifies that the application data matches the intent. The carrier initiates electronic payment via a selected electronic payment option. Payment record information is transmitted to the web system and then to the OCC system.
6. The electronic payment options and processing steps are to be determined.
7. Upon verification of receipt of payment, the OCC system releases X credentials for printing at the carrier's office, one for each vehicle with a unique serial number on each credential.
8. The web system forwards the authorization to print credentials to the carrier's browser.
9. Updated OCC status information is transmitted from the OCC system to Oklahoma CVIEW daily, using SOWG flat file format.

A. CVIEW periodically updates PrePass host server with credential information.

B. The PrePass host server periodically updates local screening databases.

NOTE 1: Electronic payment may include EFT funds transfer initiated by the carrier. The Oklahoma Office of Finance Treasury system will receive an ACH formatted file containing funds transfer information that it may forward to the legacy system.

Oklahoma Operating Scenario:
Intrastate Operating Authority



Intrastate Carrier Registration Operating Scenario Process Description

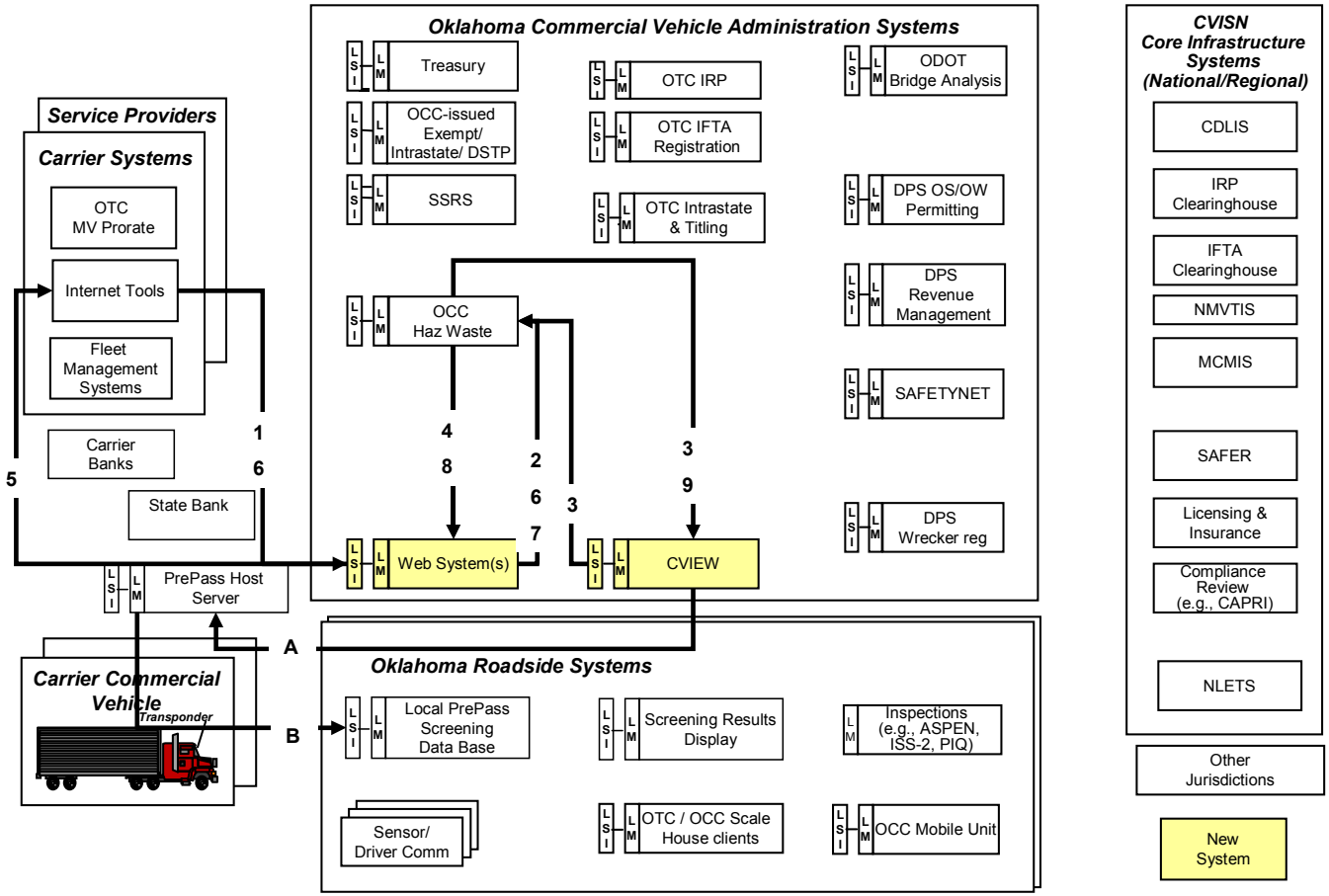
1. Carrier enters data for the application via web browser and submits to web system using interface standards.
2. The Web-based system submits a query to SAFER using EDI or XML standards to obtain the carrier's safety rating.
3. The carrier's safety rating is transmitted back to the web system.
4. If the carrier has an unsatisfactory safety rating, or a conditional safety rating and the carrier's out-of-service percentage is above the national average, or no safety rating, the web site notifies the carrier of deficiencies. It also notifies them that they are eligible to apply but that OCC will perform additional manual checks to verify eligibility and additional documentation may be required.
5. The credential application is sent to the OCC credentialing system and the OCC system processes the application. (If the carrier has an unsatisfactory safety rating, or a conditional safety rating and the carrier's out-of-service percentage is above the national average, or no safety rating, manual checks will be required. If the carrier is approved the notification of fees and credentials will still be sent over the Web.)
6. If the carrier has a satisfactory safety rating or a conditional safety rating with out-of-service percentages equal to or below the national average the OCC system processes the application. The OCC system sends notification of fees due to the web system for both automatically and manually approved applications.
7. The web system notifies carrier of fees due, and maintains archival/audit copies of all transactions.
8. The carrier reviews the invoice data and verifies that the application data matches the intent. The carrier initiates electronic payment via a selected electronic payment option. Payment record information is transmitted to the web system and then to the OCC system.
9. The electronic payment options and processing steps are to be determined.
10. Upon verification of receipt of payment, the OCC system releases X credentials via the Web-based system for printing at carrier's office, one credential per vehicle, each with a unique serial number.
11. The web system forwards the authorization to print credentials to the carrier's browser.
12. Updated OCC status information is transmitted from the OCC system to Oklahoma CVIEW daily, using SOWG flat file format.

A. CVIEW periodically updates PrePass host server with credential information.

B. The PrePass host server periodically updates local screening databases.

NOTE 1: Electronic payment may include EFT funds transfer initiated by the carrier. The Oklahoma Office of Finance Treasury system will receive an ACH formatted file containing funds transfer information that it may forward to the legacy system.

Oklahoma Operating Scenario:
HazWaste Electronic Credentialing



HazWaste OperatingScenario Process Description

1. Carrier enters OCC HazWaste credential application information via web browser and submits to web system using interface standards.
2. The Web-based system sends the application to the HazWaste system.
3. The HazWaste system requests flags and conditions (i.e. IRP mileage, etc.) from CVIEW and other databases.
4. If a satisfactory status is received, the HazWaste system sends the web-system notification of fees due.
5. The web system notifies carrier of fees due, and maintains archival/audit copies of all transactions.
6. The carrier reviews the invoice data and verifies that the application data matches the intent. The carrier initiates electronic payment via a selected electronic payment option. Payment record information is transmitted to the web system and then to the HazWaste system.
7. The electronic payment options and processing steps are to be determined.
8. Upon verification of receipt of payment, the HazWaste system releases credential for printing at carrier's office via the web-based system.
9. Updated HazWaste status information is transmitted from HazWaste system to Oklahoma CVIEW daily, using SOWG flat file format.

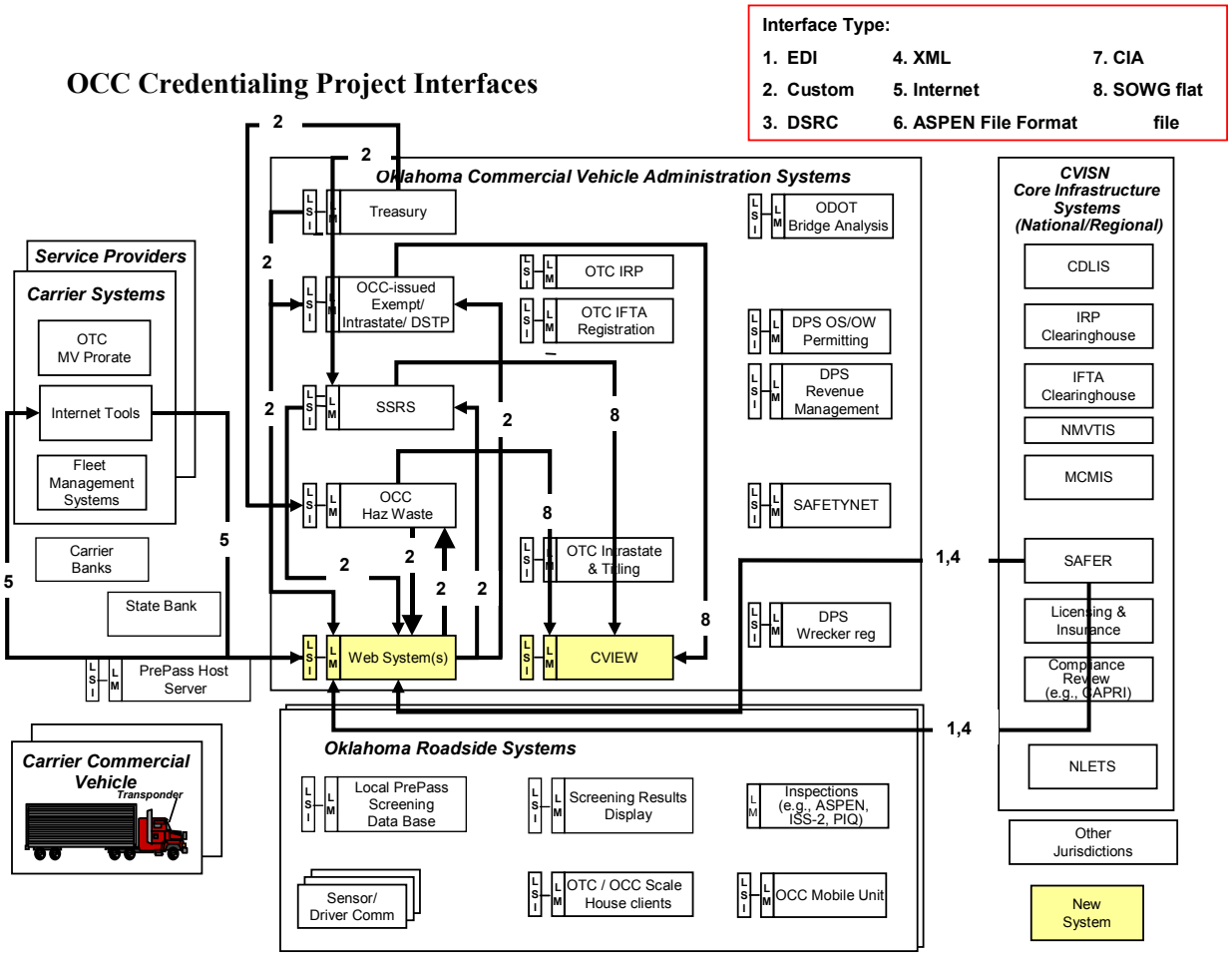
A. CVIEW periodically updates PrePass host server with credential information.

B. The PrePass host server periodically updates local screening databases.

NOTE 1: Electronic payment may include EFT funds transfer initiated by the carrier. The Oklahoma Office of Finance Treasury system will receive an ACH formatted file containing funds transfer information that it may forward to the legacy system.

Section 3.9.2 OS/OW Interfaces

The diagram below depicts the types of interfaces that will be used for transmitting data between the systems involved in the OCC credentialing projects except the electronic screening interfaces, which are shown under the CVIEW project.



Section 3.9.3 System Change Summary for OCC Credentialing Projects

Exhibit 3.9.3 lists the system changes required for the two OCC credentialing projects. These system changes include those necessary for extended CVISN functionality.

Exhibit 3.9.3. System Change Summary for OCC Credentialing projects.

System	Description of Modifications Required	No Change	Change (SML)	Buy	Build
OCC Transportation DB	Replace or enhance existing system to accommodate web-based credentialing and the CVIEW interface. Also, interface with Treasury.		L		X
OCC Web-based Credentialing system	Develop web-based credentialing to enable motor carriers to apply for, pay for and receive SSRS, interstate exempt, DSTP, HazWaste, and private-for-hire intrastate credentials electronically. Also implement a SAFER interface to verify safety score before issuing intrastate operating authority.		M		X
HazWaste System	Enhance to accommodate an interface with the OCC web-based credentialing system. Also, interface with Treasury.		M		X
SSRS	Enhance/replace to accommodate an interface with the OCC web-based credentialing system. Also, interface with Treasury system.		M-L		X
Treasury System	Develop EFT interfaces between the Treasury system and legacy systems		S		X

3.10 CVIEW Project and Related Communications Projects.

Oklahoma's CVIEW project involves implementing CVIEW capabilities to electronically transmit credential snapshots to SAFER, provide a repository for both interstate and intrastate credential and safety status information and provide Intrastate credential information to the electronic screening system. Interfaces between legacy credentialing systems and CVIEW will be implemented to periodically update CVIEW with changes in credential status.

Related to the CVIEW project are two Oklahoma communications/networks projects.

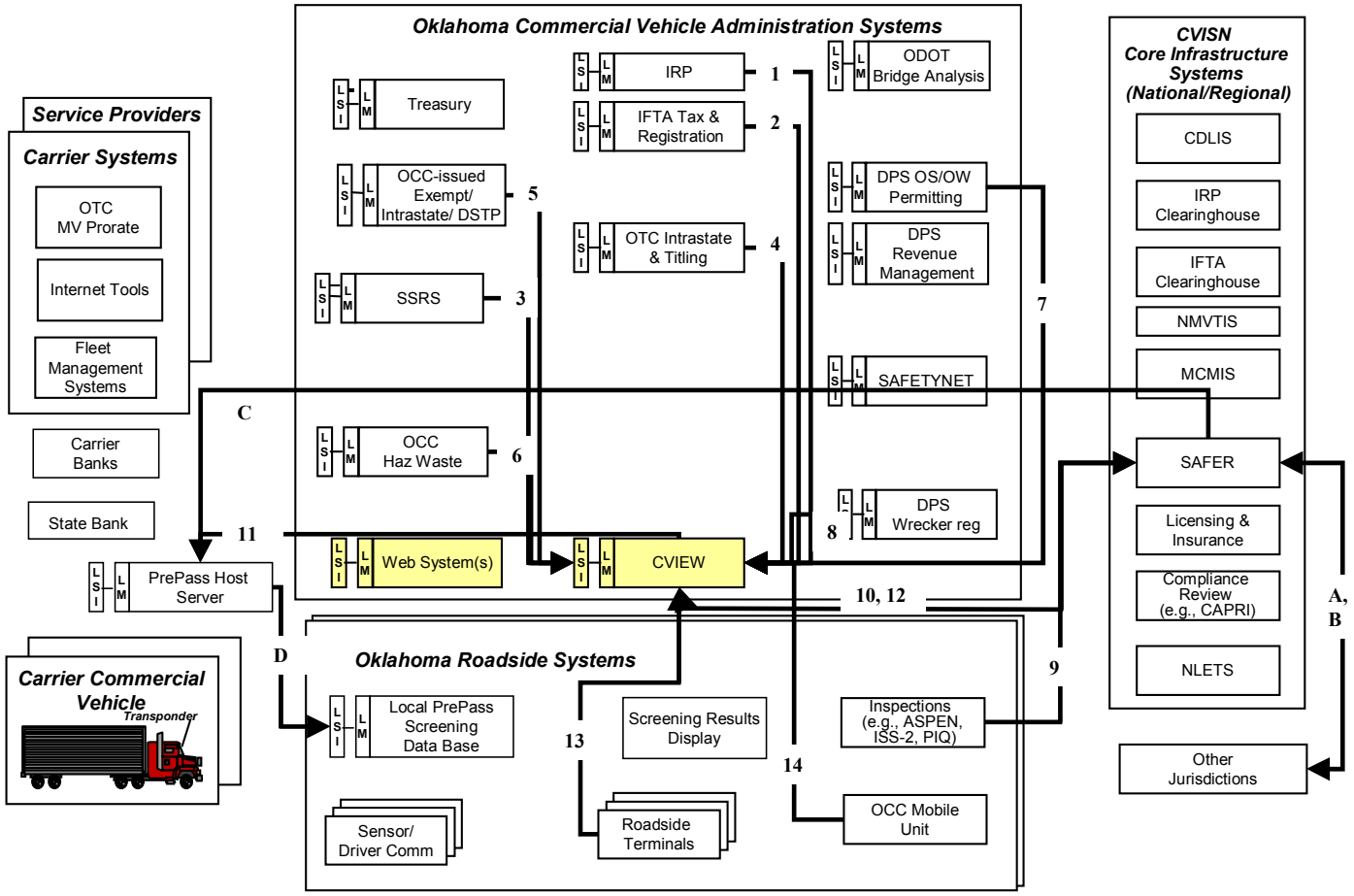
1. The satellite project which is designed to allow both DPS and OCC mobile enforcement units to query both CVIEW and SAFER in remote areas of the state.
2. The scale house improvements project which is designed to enhance existing communication between scale houses and CVIEW, SAFER, and other credential and law enforcement databases. In this project client machines will be installed at scale houses and T1 lines or satellite communications will be made available to allow electronic access to the databases.

An operating scenario associated with the CVIEW project is provided below. Following the operating scenario, the interface standards are depicted and a system change summary is provided.

3.10.3 CVIEW Operating Scenario

The following diagram is a sample operating scenario that depicts the flow of information between legacy systems and CVIEW, between CVIEW and SAFER, and between CVIEW and the screening systems. The diagram is followed by a description of the processing steps and data flows.

Oklahoma - Access and Maintain Snapshots



CVIEW Update and Maintain Snapshots Operating Scenario

1. Transmit updated credential status information nightly from IRP system to CVIEW, in SOWG flat file format.
2. Transmit updated credential status information nightly from IFTA system to CVIEW, in SOWG flat file format.
3. Transmit updated credential status information nightly from SSRS system to CVIEW, in SOWG flat file format.
4. Transmit updated credential status information nightly from OTC Intrastate registration system to CVIEW, using SOWG flat file standards.
5. Transmit updated credential status information nightly from OCC Transportation System (Interstate Exempt, Intrastate, DSTP) to CVIEW, using SOWG flat file standards.
6. Transmit updated credential status information nightly from OCC HazWaste system to CVIEW, using SOWG flat file standards.
7. Transmit updated credential status information upon issuance from DPS OS / OW system to CVIEW, using SOWG flat file standards.
8. Transmit updated credential status information nightly from DPS Wrecker system to CVIEW, using SOWG flat file standards.
9. Upload safety inspection reports from ASPEN units to SAFER data mailbox in AFF using RPC. This may be done through satellite link, CDPD, WAN or dial up connection.
10. Periodically transmit updated IRP, IFTA credential snapshots from Oklahoma CVIEW to SAFER, using XML or SOWG flat file standards.
11. Periodically transmit updated intrastate credential snapshots from Oklahoma CVIEW to PrePass host server, EDI or XML.
12. Periodically download updated credential and safety snapshots from SAFER, using XML or SOWG flat file standards.
13. Officers at fixed sites may manually query CVIEW database / SAFER to access credential and safety status information for both inter and intrastate carriers/vehicles through satellite or T1.
14. OCC mobile units may manually query CVIEW, SAFER and other law enforcement and credential databases through a satellite link.

A. Other jurisdictions periodically transmit updated credential and safety snapshots to SAFER.

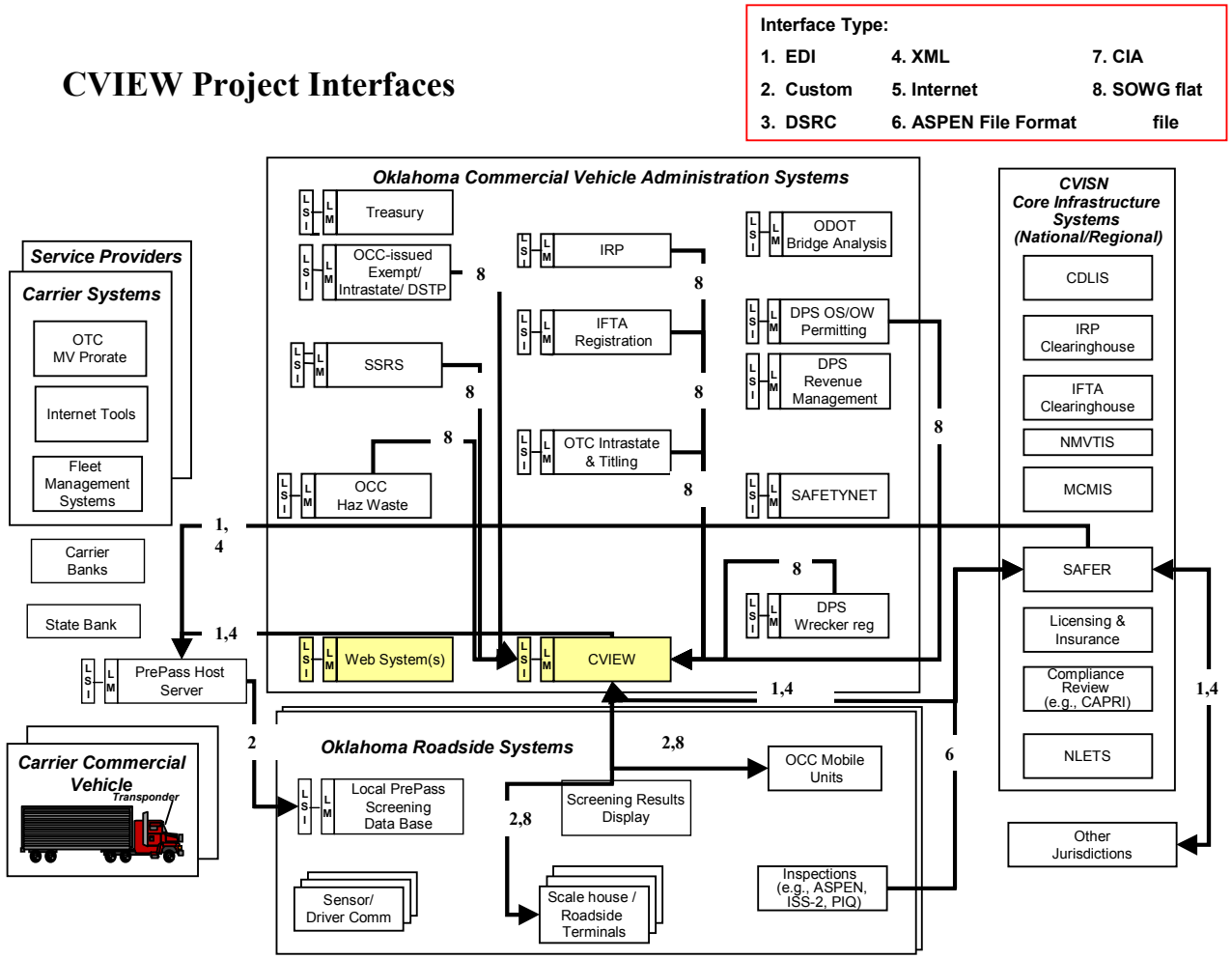
B. Other jurisdictions periodically download updated credential and safety snapshots from SAFER.

C. PrePass host server periodically receives safety and credential status updates from SAFER.

D. PrePass host server periodically transmits safety and credential status updates to local PrePass screening databases.

Section 3.10.2 Interfaces for CVIEW and Related Communications Projects

The diagram below depicts the types of interfaces that will be used for transmitting data between the systems involved in the CVIEW project and related communications projects.



Section 3.10.3 System Change Summary for CVIEW and Related Communications Projects

Exhibit 3.10.3 lists the system changes required for CVIEW and related communications projects. These system changes include those necessary for level one and extended CVISN functionality.

Exhibit 3.10.3. System Change Summary for CVIEW and Related Communications Projects.

System	Description of Modifications Required	No Change	Change (SML)	Buy	Build
IRP Legacy System	Develop CVIEW interface.		S		X
IFTA Legacy System	Develop CVIEW interface.		S		X
OS/OW System	Develop CVIEW interface.		S		X
OCC Transportation DB	Develop CVIEW interface		S		X
HazWaste System	Develop CVIEW interface.		S		X
SSRS	Develop CVIEW interface.		S		X
Intrastate Registration	Develop CVIEW interface		S		X
DPS Wrecker Registration	Develop CVIEW interface		L		X
CVIEW	Implement CVIEW capabilities to electronically transmit credential snapshots to SAFER; receive credential snapshots from SAFER. Develop interfaces between CVIEW and IRP, IFTA, SSRS, HazWaste, Intrastate Registration, Transportation DB, and OS/OW permitting systems. For screening, develop periodic download to PrePass and a roadside query interface. Also develop an interface for queries over a satellite connection.		L	✔	✔

System	Description of Modifications Required	No Change	Change (SML)	Buy	Build
Satellite Communication Systems	Modify satellite communication system to allow roadside and scale house CVIEW queries and responses.		L	✔	
PrePass	Allow periodic receipt of SAFER information; CVIEW information.		M**		
Scale house communication systems	Enhance scale-house communication systems to allow for CVIEW and SAFER queries and connectivity to Oklahoma agency networks.		L	✔	✔

** Vendor Responsibility

3.11 ASPEN/SAFETYNET 2000 Project and Related Communication Projects.

Oklahoma's DPS and OCC agencies use ASPEN and SAFETYNET for inspection reporting. As part of the Oklahoma program of CVISN projects, the 32 bit ASPEN and SAFETYNET 2000 were scheduled for installation. The installation of 32 bit ASPEN on all enforcement units' laptops and the installation of SAFETYNET 2000 has been completed as of May 10, 2002.

Related to the ASPEN/SAFETYNET 2000 project are two Oklahoma communications/networks projects. These two communication projects have not yet been completed.

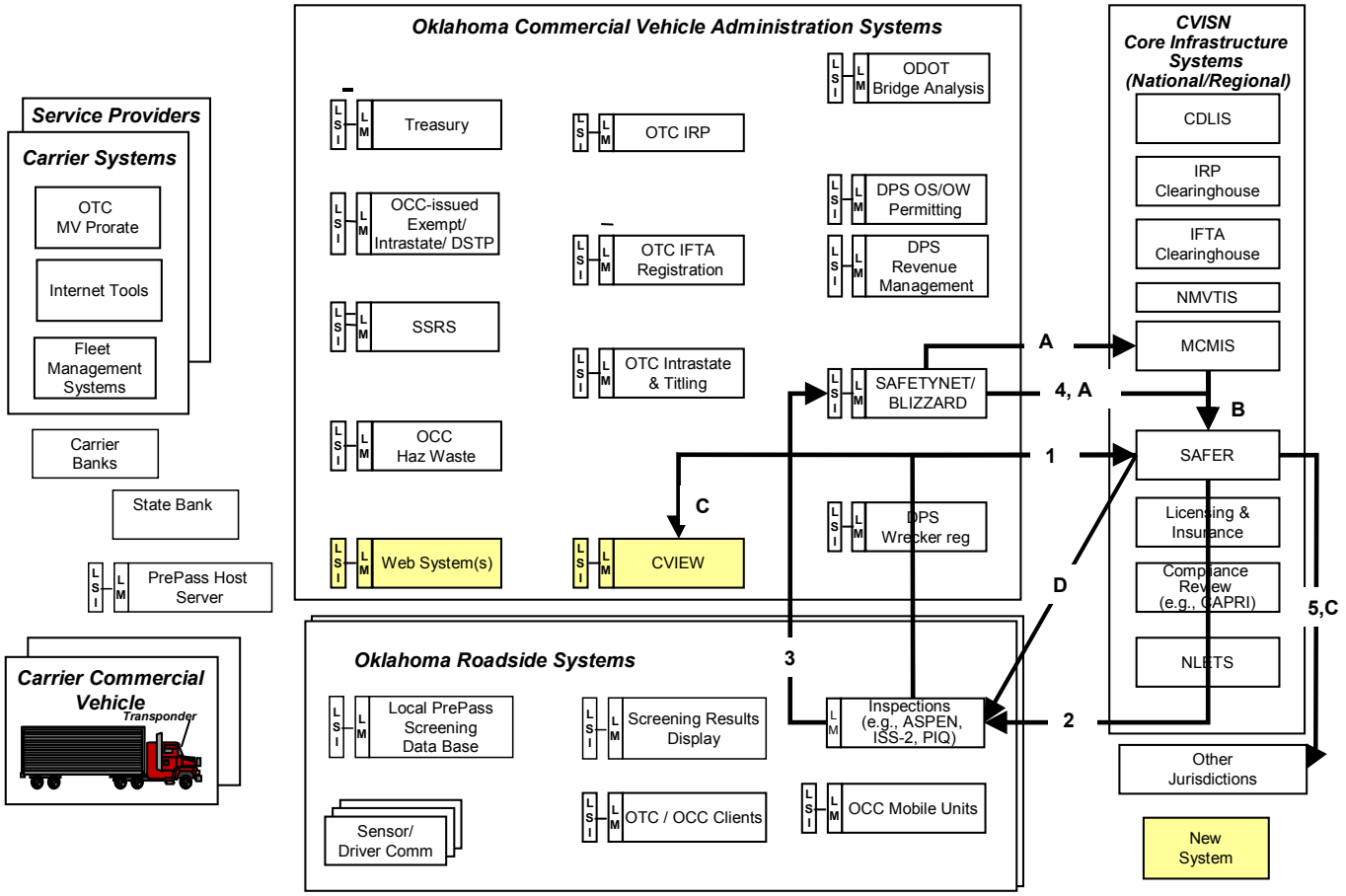
1. The satellite project that is designed to allow both DPS and OCC mobile enforcement units to upload inspections to SAFETYNET 2000 from the roadside.
2. The establishment of a LAN-to-LAN VPN between the DPS networks and SAFER for open connectivity for inspection upload and queries to SAFER. The LAN-to-LAN VPN, though located on the DPS networks, will be accessible from other agencies through the satellite link, or through the Oklahoma OSF switch.

Operating scenario associated with the ASPEN/SAFETYNET 2000 Project and related communication projects are provided in Section 3.11.1. Following the operating scenario, the interface standards are depicted and a system change summary is provided.

3.11.1 ASPEN/SAFETYNET 2000 Operating Scenarios

The following diagrams are sample-operating scenarios that depict the flow of information between ASPEN units, SAFETYNET, SAFER, and MCMIS for inspection reporting, querying for past inspection reports, and querying for a snapshot. Each diagram is followed by a description of the processing steps and data flows.

Oklahoma Operating Scenario:
Record and Upload Inspections to MCMIS and SAFER



Record and Upload Inspections to MCMIS and SAFER: Process Description

1. An enforcement officer, using the Past Inspection Query system (PIQ), issues a query to SAFER's input mailbox in the SAFER Data Mailbox (SDM), for all inspection reports relating to a particular carrier, in ASPEN-Unique, non-EDI file format.

   Note: Intrastate and Interstate Inspection reports are stored in SAFER for 45 days.

2. SAFER receives, processes, and sends all inspection reports matching the query to ASPEN, in ASPEN-Unique, non-EDI file format. The past inspections show that this carrier's vehicles often have brake problems

   Note: The SAFER system retrieves the query from its input mailbox in the SAFER Data Mailbox (SDM), processes the request, and then retrieves the inspection report from data storage. The report is placed in the requester's query mailbox in the SDM. The PIQ detects and processes the report for display on ASPEN.

3. The enforcement officer conducts the inspection and finds, for example, that the brakes are not functioning properly. He completes the inspection and places the vehicle Out-Of-Service (OOS). ASPEN sends the inspection report to Blizzard.

4. Blizzard sends to SAFER's input mailbox and SAFETYNET in ASPEN-Unique, non-EDI file format.

5. SAFER updates the vehicle snapshot segment with inspection information e.g., OOS status, Inspection history. SAFER forwards snapshot views to subscribers via their subscription mailboxes in the SDM in EDI X12 TS 285 format.

A. The SAFETYNET staff member reviews the inspection report and sends it to MCMIS and SAFER using existing methods.

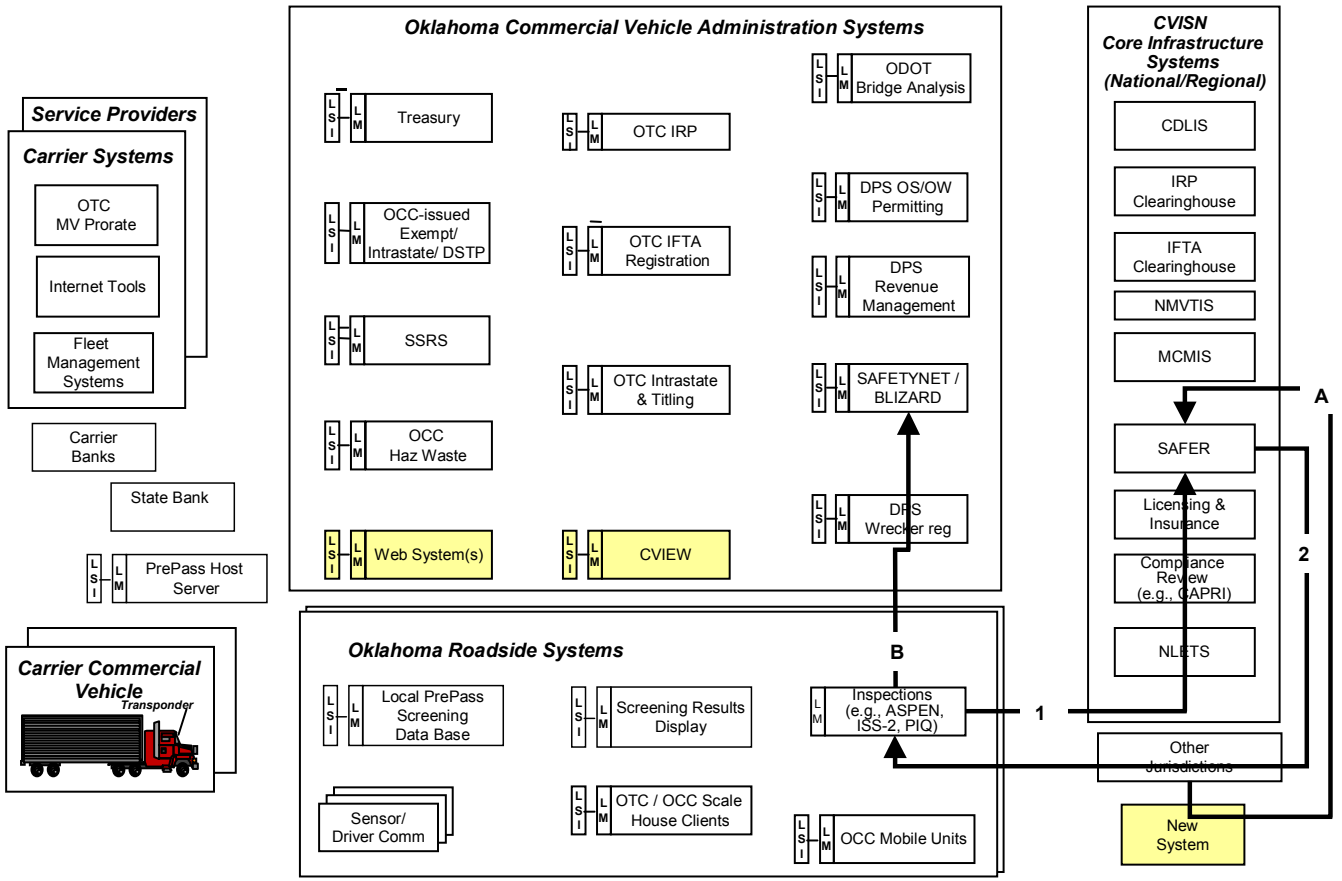
B. MCMIS receives the inspection report and updates carrier summary information and computes carrier safety statistics, e.g., carrier safety ratings, history and inspection summaries. Weekly, MCMIS sends SAFER updated carrier snapshot segments in flat file format.

C. SAFER updates its stored snapshots with carrier snapshot segments it receives from MCMIS. SAFER forwards snapshot views to subscribers via their subscription mailboxes in the SDM in EDI X12 TS 285 format or XML format.

D. SAFER then forwards carrier snapshot views to ASPEN subscribers in AFF.

NOTE: Functional acknowledgment for all EDI messages (except TS 997) is made by responding with a TS 997. The results of processing an incoming TS 285 are reported via TS 824.

Oklahoma Operating Scenario:
Query for Past Inspection Reports



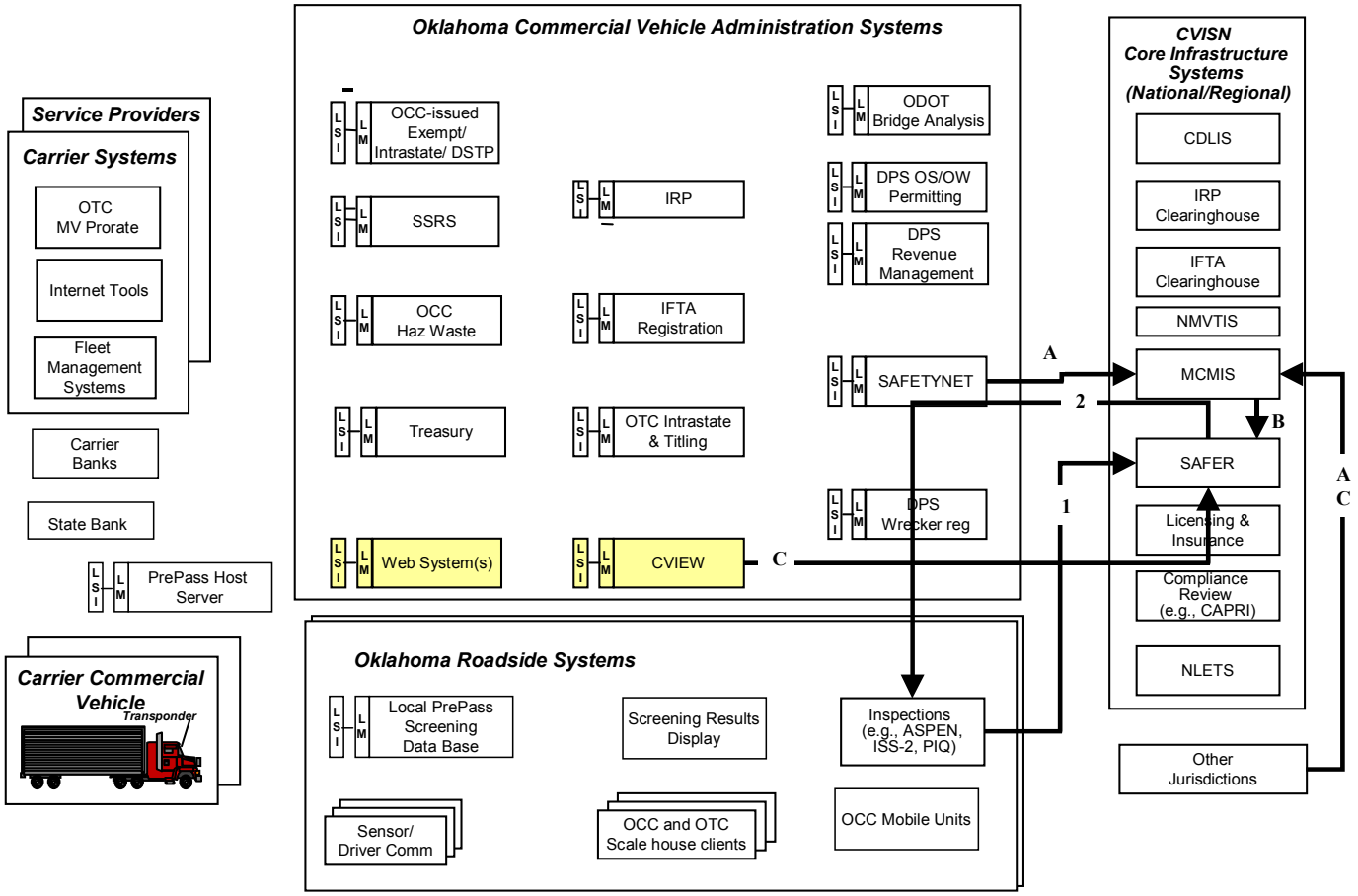
Query for Past Inspection Reports

1. An enforcement officer, using the Past Inspection Query system (PIQ), issues a query via the satellite network to the DPS networks, then to SAFER Data Mailbox (SDM) via remote procedure call, for all inspection reports relating to a particular carrier. The PIQ is in Application File Format (AFF), a precursor to EDI translation.
2. SAFER retrieves query from its data mailbox, processes request, and retrieves relevant reports from data storage. Reports are placed in the requestor's query mailbox in the SDM. The PIQ detects and processes the information for display on ASPEN screen – transmittal is in ASPEN unique non-EDI file format.

A. Other jurisdictions (states) transmit inspection reports to the SDM via ASPEN, ISS, PIQ units or CVIEW.

B. Oklahoma DPS and OCC transmit inspection reports to Blizzard/SafetyNet from their ASPEN units or other input methods, in ASPEN unique non-EDI file format.

Oklahoma Operating Scenario: Query for a Snapshot



Query for a Snapshot Process Description

1. Inspector queries SAFER via the satellite system and DPS network, using a RPC.
2. Safer receives the query, processes the request, and sends snapshot data matching the query for display on the ASPEN unit generating the request.

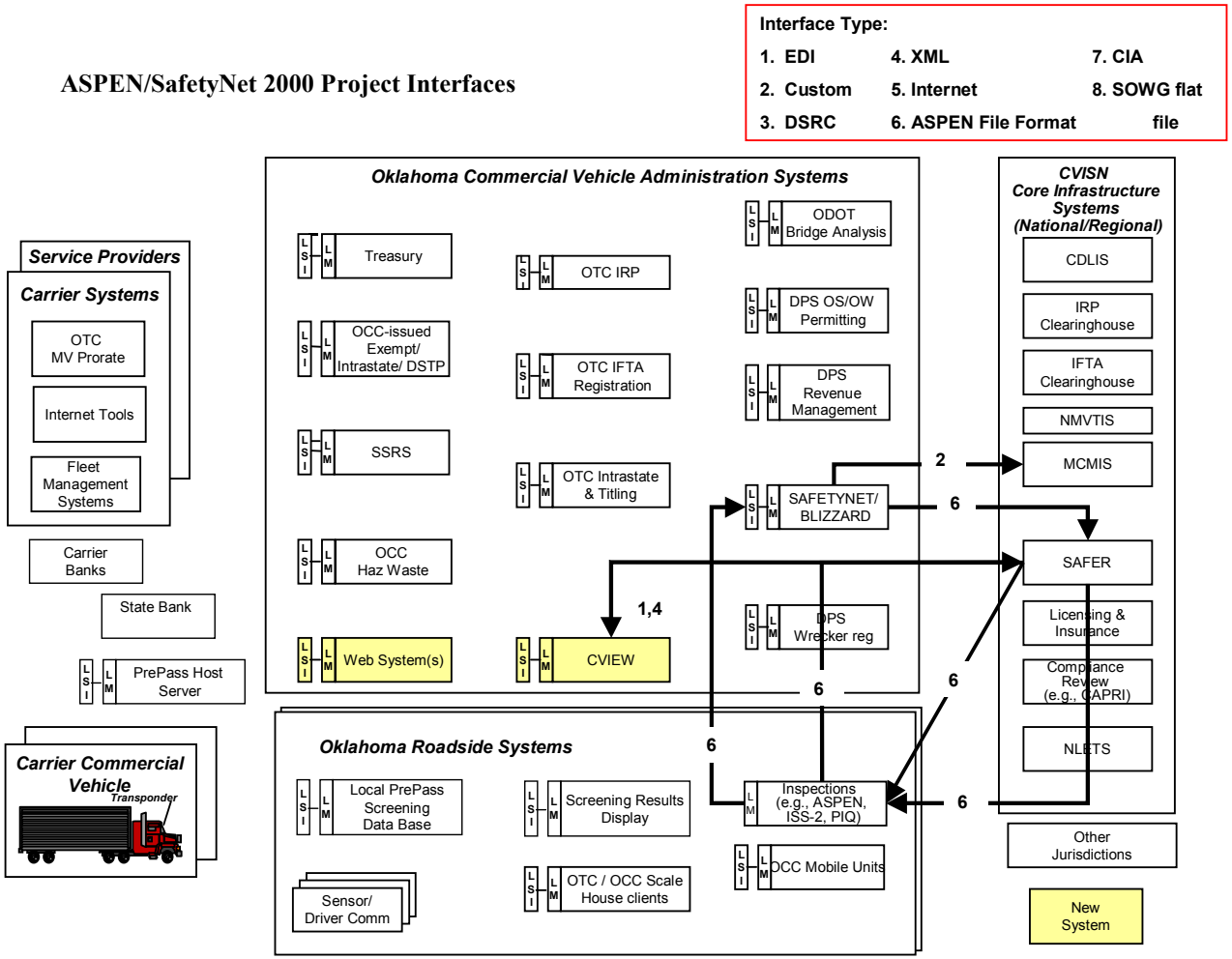
A. Oklahoma and other jurisdictions transmit inspection and accident data to MCMIS via SafetyNet.

B. MCMIS provides snapshot information to SAFER

C. Oklahoma and other jurisdictions transmit interstate credential status information / check flags to SAFER.

Section 3.11.2 ASPEN/SAFETYNET 2000 and Related Communications Projects

The diagram below depicts the types of interfaces that will be used for transmitting data between the systems involved in the ASPEN/SAFETYNET 2000 project and related communications projects.



Section 3.11.3 System Change Summary for ASPEN/SAFETYNET 2000 and Related Communications Projects

Exhibit 3.11.3 lists the system changes required for ASPEN/SAFETYNET 2000 and related communications projects. These system changes include those necessary for level one CVISN functionality.

Exhibit 3.11.3. System Change Summary for ASPEN/SAFETYNET 2000 and Related Communications Projects.

System	Description of Modifications Required	No Change	Change (SML)	Buy	Build
Satellite Communication Systems	Modify satellite communication system to allow ASPEN/ISS2/PIQ transactions with SAFER and to allow roadside and scale house CVIEW queries and responses.		L	X	
ASPEN, SafetyNet	Install 32-bit ASPEN and SafetyNet 2000; COMPLETED. Install LAN-to-LAN VPN between DPS networks and SAFER.	X			

3.12 Screening Projects

Oklahoma uses the Help Inc. PrePass system for Interstate screening. Oklahoma is evaluating the potential of adding WIM equipment to some of the interstate screening sites and incorporating weight into the screening decisions.

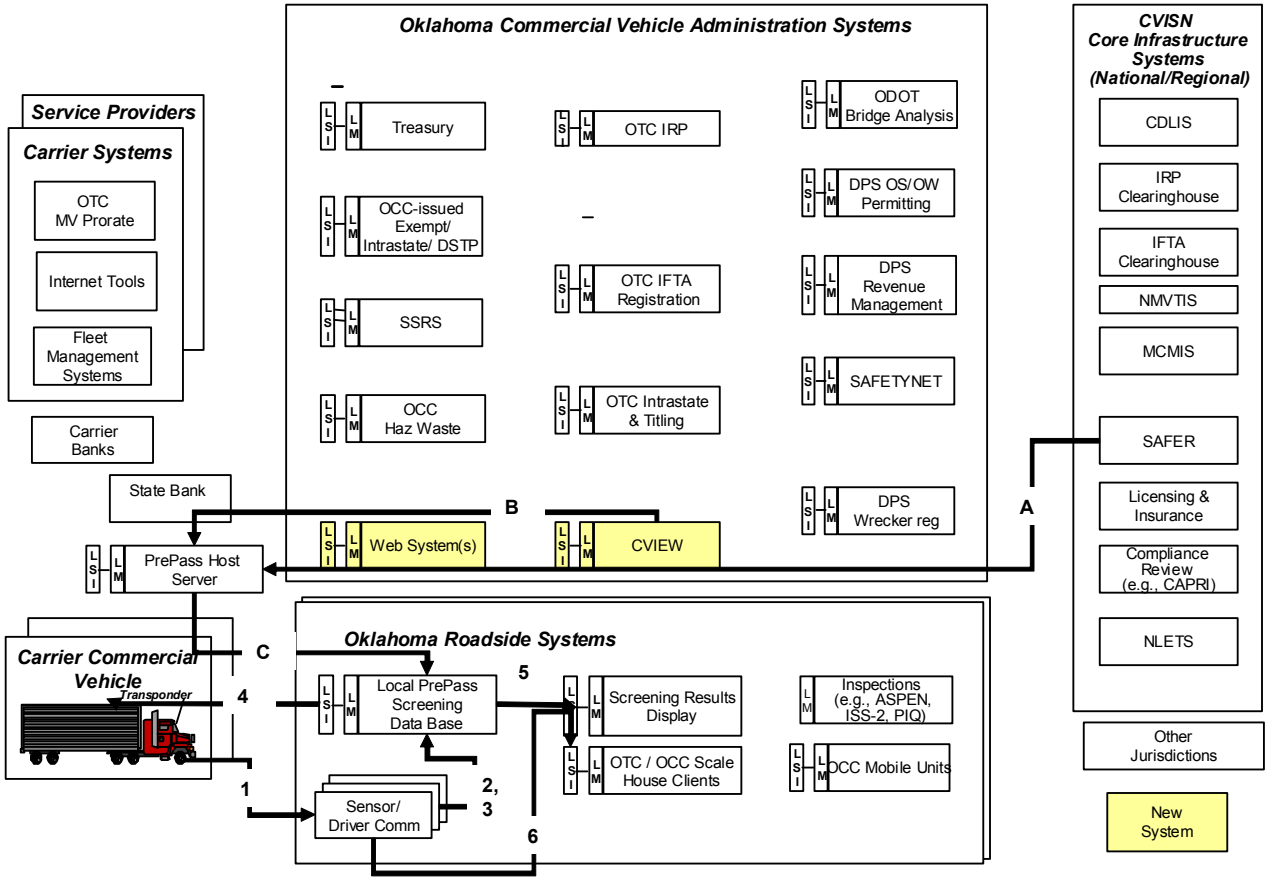
Also, the Oklahoma Corporation Commission (OCC) periodically performs roadside screening for credential enforcement. The OCC is investigating developing a mobile screening system using roadside cameras and CVIEW access to perform the screening.

An operating scenario associated with Interstate electronic screening using PrePass is provided in Section 3.11.1. Following the operating scenario, the interface standards are depicted and a system change summary is provided. OCC mobile screening is not included in the current design, as several design issues are unresolved.

3.12.1 Screening Projects Operating Scenario

The following diagram is a sample operating scenario that depicts the flow of information for interstate electronic screening. The diagram is followed by a description of the processing steps and data flows.

Oklahoma Screening at Fixed Scales



Port of Entry Screening Operating Scenario Process Description

1. Transponder ID is transmitted from the transponder on board a CV to the PrePass reader at the roadside using ASTM Version 6 and IEEE Std. 1455-1999 CMV Screening Identification message.
2. WIM / AVI data are transmitted from the associated sensors to the screening component.
3. ID is transmitted from the reader to the screening component, matched with WIM / AVI information and correlated with carrier and vehicle snapshot information. A screening decision is made.
4. Screening decision is communicated back to the driver, again using the ASTM Version 6 and IEEE Std. 1455-1999 message set.
5. Screening decision is displayed for use by roadside staff on roadside operations computer.
6. Compliance reader checks for appropriate response and alerts roadside operations to results, using a non-standard interface.

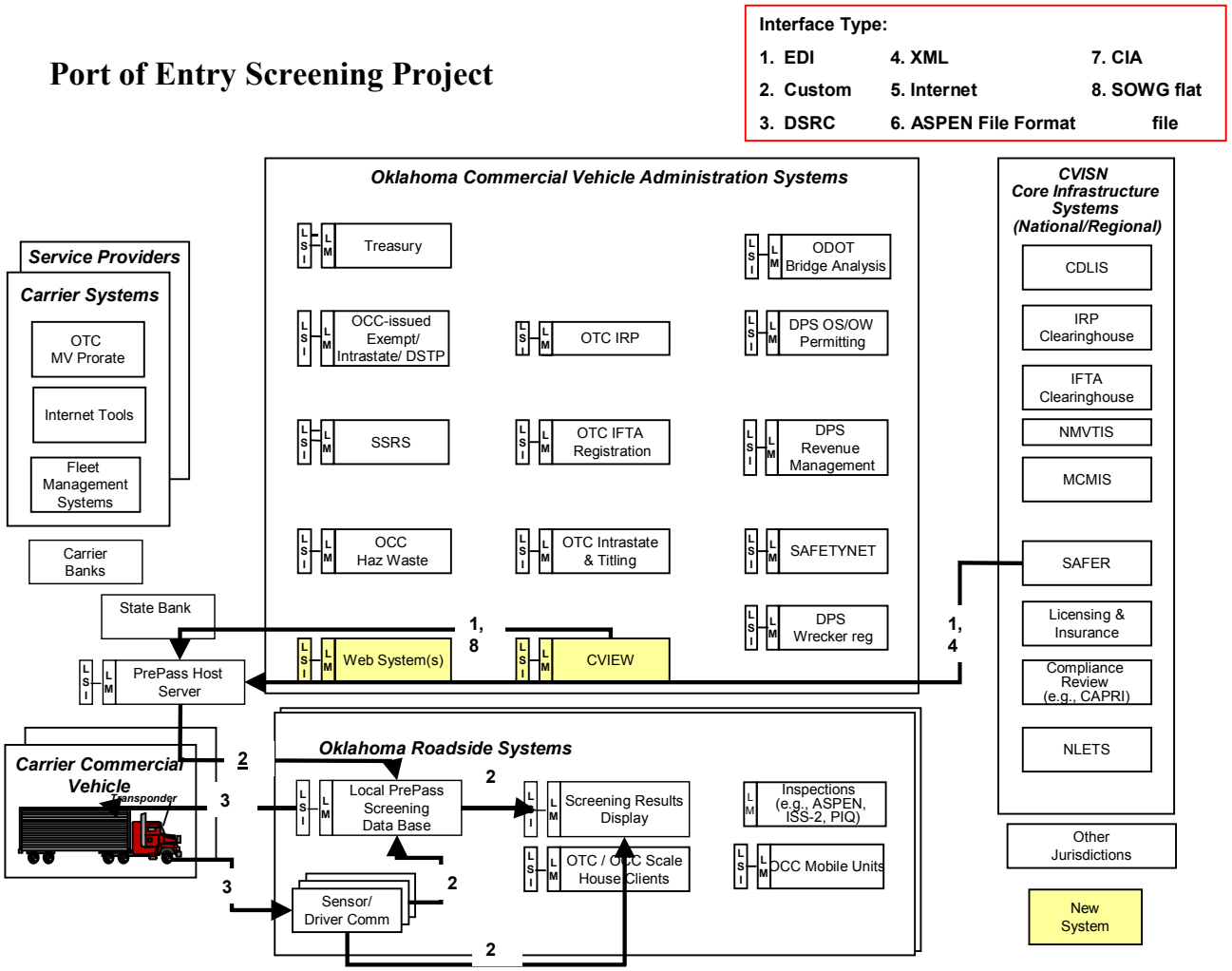
A. SAFER sends subscription updates for carriers / vehicles to PrePass host for all PrePass accounts supported by SAFER. Snapshots are transmitted by SAFER as TS 285 transactions.

B. Oklahoma CVIEW transmits intrastate snapshots updates not supported by SAFER to PrePass host using XML or SOWG flat file format.

C. PrePass host provides routine updates to local screening databases.

Section 3.12.2 Screening Projects

The diagram below depicts the types of interfaces that will be used for transmitting information between systems for Port of Entry electronic screening.



Section 3.12.3 System Change Summary for Screening Projects

Exhibit 3.12.3 lists the system changes required for screening projects. These system changes include those necessary for level one and extended CVISN functionality.

Exhibit 3.12.3. System Change Summary for Screening Projects.

System	Description of Modifications Required	No Change	Change (SML)	Buy	Build
CVIEW	Develop periodic download to PrePass.		S		**X**
PrePass	Allow periodic receipt of SAFER information; CVIEW information; incorporate weight into screening decision criteria if WIMs are installed at port of entries.		M**		
WIM systems at interstate sites	Evaluate WIM installation and use at port of entries and scale houses. Install WIM systems and corresponding software where cost/benefit analysis deems installation is appropriate.		L	**X**	
OCC Screening System	Design and develop system to allow roadside verification of OCC issued credentials.		S-M		**X**

** Vendor responsibility

3.13 System Testing

Overview

Oklahoma recognizes that testing is a critical element in the software development life cycle. This section describes at a high level the type and purpose of tests to be conducted to ensure that each system, system interface and end-to-end process works correctly and that end-to-end processing among systems meets defined requirements.

This Test Plan provides a high-level description of the three types of tests to be conducted over the course of the CVISN implementation project:

- System Tests
- Limited Operational Tests
- Interoperability Tests

Detailed test plans will be developed as each phase is implemented. Oklahoma has included high-level system test, limited operation test and interoperability test descriptions here to demonstrate understanding of the purpose and scope of each type of testing and to provide input to the planning process.

System Tests

A series of system tests will be performed over the course of the Oklahoma CVISN implementation project. Each system test will be designed to verify that requirements allocated to that particular functionality and phase have been met by the new or modified systems and that each system involved operates correctly.

System Test scenarios will be defined in detail for end-to-end execution of systems involved and provide a means to verify that detailed requirements as documented and approved by the State have been implemented. Test scenarios are based on the operational scenarios to the degree that they are completed in a given phase.

Safety Information Exchange

- Report Inspection Electronically
- Query for Past Inspection Report
- Maintain Carrier and Vehicle Snapshots
- Query for Snapshot

Electronic Screening

- Screen Vehicles Electronically

Credentialing

- IRP Supplementals
- IRP Renewal
- IRP PRISM Check
- IRP Safety Check
- IRP Snapshot Updates to CVIEW
- IFTA Initial (New Accounts) and Renewal Applications
- IFTA Snapshot Updates to SAFER
- IFTA Quarterly Tax Filing
- IFTA Amended Return
- OCC Credentialing (all credential types)
- OS/OW permitting

Limited Operational Test

Limited Operational Tests involve a small number of motor carriers actually using CVISN functionality (e.g., IRP registration via the Web). They take place after the State has successfully completed development and system testing of one component of CVISN functionality – IRP and IFTA Web-based credentialing, payment, safety data updates and electronic screening. The purpose of the test is to (1) further test system functionality, usability, and

correct operation, and (2) to involve motor carriers and get their feedback before making systems operational.

The operational test scenarios will be based on operational scenarios and system test scenarios.

Interoperability Tests

Interoperability tests provide a means for the State to verify that system-to-system interfaces designated as standard interfaces in the CVISN Architecture have been implemented in conformance with the published standard and as described in associated CVISN documentation.

Oklahoma will perform two levels of interoperability testing based on CVISN COACH Part 5, Interoperability Test Criteria:

Pair-wise Interface Testing involves interoperability interface tests that are designed to verify that interfaces between selected pairs of products or systems meet the applicable standards. The State will conduct two pair-wise interface tests:

- The interface between CVIEW and SAFER
- The DSRC interface between carriers and state screening/roadside systems

End-to-end Interface Testing is interoperability testing designed to verify data flow and data usage among several selected products or systems. End-to-End tests provide implicit verification of standards by looking at the overall results from multiple systems working together. Pair-wise tests, in contrast, test specific transactions that flow across interfaces.

Test Specifications and Criteria

Test Specifications will build on CVISN Interoperability Test Suite Package, Part 1 Test Specifications (DRAFT). The State interoperability tests will reflect the following test criteria as outlined in CVISN COACH Part 5:

- Each product generates the correct outputs according to the standards
- Each product accepts inputs from partners according to the standards
- Each product acknowledges inputs according to the standards
- Each product handles errors according to the standards
- The flow of interactions occurs according to the implementation conventions
- Each product interprets and handles inputs correctly

Pair-wise Interface Interoperability Testing

Electronic Screening: Vehicle Transponder – Electronic Clearance System Sensor (Roadside Reader)

Objectives:

In these tests, the focus is on the application of the IEEE message and ASTM hardware standards that support vehicle-roadside dedicated short-range communications (DSRC) electronic screening functions.

Participating Systems:

- Motor Carrier Transponder
- State Roadside Screening System

Test Scenarios:

1. Type II transponders permit no memory write access from the external port. So, in this scenario, only the transponder ID can be used for screening.
2. Type III transponders permit no memory write access from the external port. So, in this scenario, only the transponder ID can be used for screening.
3. Type IIIm transponders support memory write access from the external port, but not all screening programs plan to use that capability. So, in this scenario, only the transponder ID will be used for screening.
4. Type IIIm transponders permit memory write access from the external port. So, in this scenario, the carrier and vehicle IDs can be used for screening. These transponders do not contain sufficient memory to accept the CMV Screening event message, so the results of screening are simply reflected in the command set sent back to the tag. Unlike the other scenarios in this set of tests, this scenario is not a required CVISN Level 1 test.

Safety Information Exchange: CVIEW and SAFER Snapshot Exchanges

Objectives:

In these tests, the focus is on the application the XML standards being developed for CVIEW / SAFER interface. These tests will be conducted once the Oklahoma CVIEW is communicating directly with SAFER for snapshot updates.

Participating Systems:

- CVIEW
- SAFER

Test Scenarios:

1. CVIEW Sends a Vehicle Snapshot Segment Update to SAFER (IRP Supplemental: Add Vehicle)
2. SAFER System sends a carrier snapshot segment update to the State CVIEW System.
3. SAFER System sends a vehicle snapshot segment update to the State CVIEW System.

End-to-end interoperability testing will be conducted as needed, for example in the context of automated credentialing systems (IRP, IFTA and SSRS): From carrier systems to state web systems to appropriate legacy system, with appropriate response back to carrier system, and with update of CVIEW with modified credential status information.

Test Plan

System Tests, Limited Operational Test, Interoperability Tests and End-to-end testing will be performed during various phases of the project. System tests will occur after a given set of functionality is completed. Interoperability Tests will take place after standard interfaces have been completed and system tested. Limited operational tests will be performed after the conclusion of the system tests and interoperability tests.

4.1 Design and Deployment Issues

This section highlights unresolved issues that have emerged during Oklahoma's design effort. The proposed method for addressing each issue is summarized.

4.1.1 Issues Associated with Safety Projects

CVIEW Implementation: Oklahoma will issue an RFP for CVIEW implementation. Final decisions have not yet been made regarding whether the state or successful vendor will host / maintain the CVIEW.

Satellite Connectivity: DPS is implementing a satellite communications system. Discussions are currently underway to define the specific requirements to enable each roadside enforcement agency to access SAFER from the roadside via the satellite system, and to access OTC, OCC and DPS networks via the satellite system.

4.1.2 Issues Associated with Credentialing Projects

Legacy System Modification / Replacement: Each of the IRP, IFTA and OCC Transportation Database legacy systems has been in place for some time. These are mainframe systems, written in older programming languages. Maintenance and enhancement of these systems has become increasingly difficult. Oklahoma is evaluating the detailed requirements for CVIEW interface development, PRISM implementation, and interface with web-based credentialing systems. OTC and OCC are deliberating whether to replace or modify their existing legacy systems.

The OTC and OCC are evaluating modifications required to existing legacy systems to meet the needs of PRISM, CVIEW and web-based credentialing implementation. OTC and OCC are also evaluating systems available from other states and will move forward with whichever option makes the most sense, taking into account functionality requirements, long-term maintenance needs, etc.

OTC Web Server Location: The OTC is currently evaluating whether its web server for IRP / IFTA credentialing should be hosted on OneNet, the state's internet service provider, or GovConnect, a vendor system which provides electronic filing capabilities for a variety of Oklahoma tax types.

EFT Processing: OCC, OTC and DPS plan to provide electronic funds transfer capabilities as part of their web-based credentialing services. However, the details of EFT processing and the commitment from Treasury to make the necessary changes to the Treasury system have not yet been finalized.

Clearinghouse Participation: The OTC is evaluating the costs / benefits of participation in the IRP and IFTA Clearinghouses. There are some concerns with benefits associated with IFTA Clearinghouse participation. There are also concerns with the ability of the IRP Clearinghouse to handle the transaction volume associated with Oklahoma transmittals, given the problems encountered with Illinois transmittals previously.

4.1.3 Issues Associated with Screening Projects

Scale House Communications Upgrades: It is recognized that scale house communications upgrades are required to enable OCC and OTC staff manning the facilities to access CVIEW. The CVISN Team is currently evaluating options for communications upgrades to identify the most cost-effective options.

Mobile Screening: There is some interest in increasing the effectiveness of mobile screening efforts, for both transponder-equipped trucks and non-transponder-equipped trucks. The CVISN team is evaluating

options to increase the effectiveness of mobile screening by providing access to CVIEW from mobile units, possibly utilizing roadside cameras to provide officers with plate / DOT number information while truck is still "upstream" of mobile enforcement unit.

WIM / DMS Installations: The CVISN Team is deliberating the benefits of WIM / DMS installations at one or more fixed scales, given the nature of enforcement operations at Oklahoma's fixed scales (registered weight versus state size and weight laws).

APPENDIX A – COACH, PART 1

Intelligent Transportation Systems (ITS)
Commercial Vehicle Operations (CVO)

CVISN Operational and Architectural Compatibility Handbook (COACH)

Part 1

Operational Concept and Top-Level Design Checklists

OKLAHOMA COACH, Part 1

POR-97-7067 V2.0

August 2000

Note

The Motor Carrier Safety Improvement Act was signed into law on December 9, 1999. This act established a new FMCSA within the US DOT, effective January 1, 2000. Prior to that, the motor carrier and highway safety program was administered under the Federal Highway Administration (FHWA).

The mission of the FMCSA is to improve truck and commercial passenger carrier safety on our nation's highways through information technology, targeted enforcement, research and technology, outreach, and partnerships. The FMCSA manages the ITS/Commercial Vehicle Operations (CVO) Program, a voluntary effort involving public and private partnerships that uses information systems, innovative technologies, and business practice reengineering to improve safety, simplify government administrative systems, and provide savings to states and motor carriers. The FMCSA works closely with the FHWA's ITS JPO to ensure the integration and interoperability of ITS/CVO systems with the national ITS program.

This is a Baseline Issue

This document has completed internal and external reviews of previously published drafts and preliminary versions. All comments received to date have been incorporated or addressed.

Note: This document and other CVISN-related documentation are available for review and downloading by the ITS/CVO community from the JHU/APL CVISN site on the World Wide Web. All updates to this document will be maintained and published on that site; hardcopies of future versions will not normally be distributed. The URL for the CVISN site is: http://www.jhuapl.edu/cvisn/

Additional review and comments to this document are welcome.

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Change Summary:

This document is under configuration management by the CVISN Architecture Configuration Control Board. The list below provides a brief description of the change request forms (CRFs) processed by the board that impacted this document. Soon we hope to post the CRFs on the CVISN Web site referenced above.

Version V1.0 of the document incorporated revisions related to these change reports:

- 970116 – Stakeholder view, system names, flows associated with inspection reporting
- 970303 – Capability names
- 970307 – Add intrastate vehicle registration where missing
- 970312 – A baseline update of design drawings to incorporate comments received from stakeholders and the CVISN technical team. Additional top-level design information has also been added.
- 970710 – Change groupings on Stakeholder View; add Treasury
- CRF 220 – Change inspection reporting/retrieval paths & methods
- CRF 285 – Add WebCAT, remove Safety Information System; change CAT to Credentialing System (e.g., CAT)
- CRF 311 – Clarify ITS/CVO versus CVISN Architecture
- CRF 493 – Update COACH Part 1 Chapter 4
- CRF 356 – Modifies the way intrastate inspections are reported
- CRF 529 – Add Electronic Screening Enrollment to the design
- CRF 530 – Add Licensing & Insurance, RSPA HazMat, SSRS; remove UCR
- CRF 548 – Primary Carrier ID
- CRF 549 – Transponder ID
- CRF 564 – Update COACH Part 1 Chapters 1, 3, 5-8

References to the CRFs listed below appear in the text or tables of the document so that the reader knows how each CRF affected Version V2.0 of the document

Version V2.0 of the document incorporates revisions related to these change reports:

- CRF 313 – Disapproved (EDI interface for IRP CH)
- CRF 632 – Add general operational concept to COACH to explain CVISN Level 1 focus
- CRF 827 – Snapshot update views & control, esp. how SAFER & CVIEW should handle data from multiple sources
- CRF 1047 – Update CVISN to include Archived Data User Service
- CRF 1048 – Update CVISN for Web sites and XML for Credentialing
- CRF 1084 – Update Design Template and Stakeholder View

- CRF 1154 – Simplify and consolidate the COACH Part 1
- CRF 1155 – Add conformance requirements
- CRF 1159 – Update DSRC references
- CRF 1164 – Clarify interface options (EDI, XML, Web, other) for Safety
- CRF 1171 – Use Snapshots for E-Screening in Automated Process
- CRF 1172 – Clarify & complete concepts and requirements for E-Screening Enrollment

CVISN Operational and Architectural Compatibility Handbook (COACH)
Part 1 - Operational Concept and Top-Level Design Checklists

Table of Contents

1. Introduction

The CVISN Operational and Architectural Compatibility Handbook (COACH) provides a comprehensive checklist of what is required to conform with the Commercial Vehicle Information Systems and Networks (CVISN) operational concepts and architecture. It is intended for use by state agencies with a motor carrier regulatory function. Other readers may include motor carriers and developers/operators of CVISN Core Infrastructure systems.

Reference 1, the CVISN Glossary, contains an acronym list as well as brief descriptions of many commonly used terms.

COACH Structure

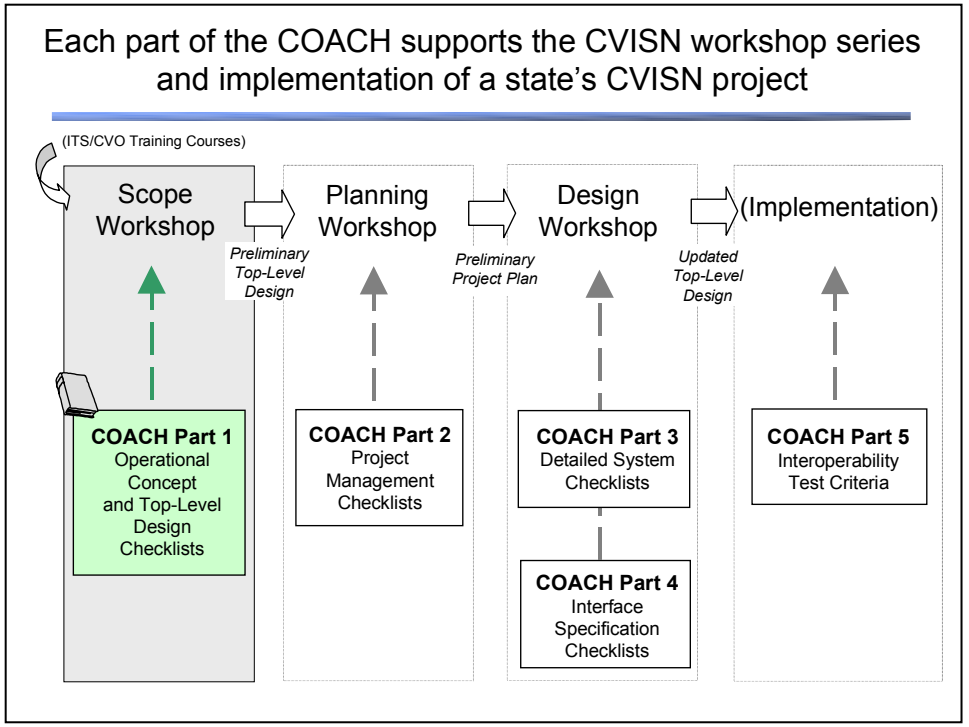
The COACH is divided into 5 parts:

Part 1 - Operational Concept and Top-Level Design Checklists

Part 2 - Project Management Checklists
Part 3 - Detailed System Checklists
Part 4 - Interface Specification Checklists
Part 5 - Interoperability Test Criteria

This is the fourth revision to the COACH Part 1 [see References 2, 3, and 36 for earlier versions]. The other parts of the COACH are available at the Browse and Download Documentation; Architecture section of the JHU/APL CVISN web site http://www.jhuapl.edu/cvisn/. Updated versions of Parts 3 [Reference 5] and 4 [Reference 6] will be published in 2000.

Figure 0-1 The COACH supports the workshops



COACH Part 1 Description

This is Part 1. Part 1 includes several types of checklists related to operational concepts and top-level design. In accordance with CRF 1154, this version of the document has been restructured to simplify and consolidate material as shown below:

- Guiding Principles: high level strategic guidelines [Chapter 2]
- State Institutional Framework Checklists: compatibility requirements for the policies and coordinating activities for states [Chapter 3]
- CVISN Operational Concepts and Top-level Design Checklists: compatibility requirements for processes and top-level compatibility requirements for state designs [Chapter 4]. In this version of the COACH Part 1, the tables that listed the planned or proposed capabilities for CVISN Core Infrastructure systems and carrier systems have been removed.

The COACH Part 1 checklists are intended to be used to indicate the scope and depth of CVISN commitment, and to provide a mechanism for planning development and test activities. Each state should maintain a filled-in master copy of the COACH.

COACH Heritage

The first versions of this part of the COACH [References 2, 3, and 36] were derived from other CVISN technical documents:

- Introduction to CVISN [Reference 8]
- CVISN Operational Concept Document [Reference 9]
- CVISN Architecture Specification [Reference 10]
- CVISN System Design Description [Reference 11]

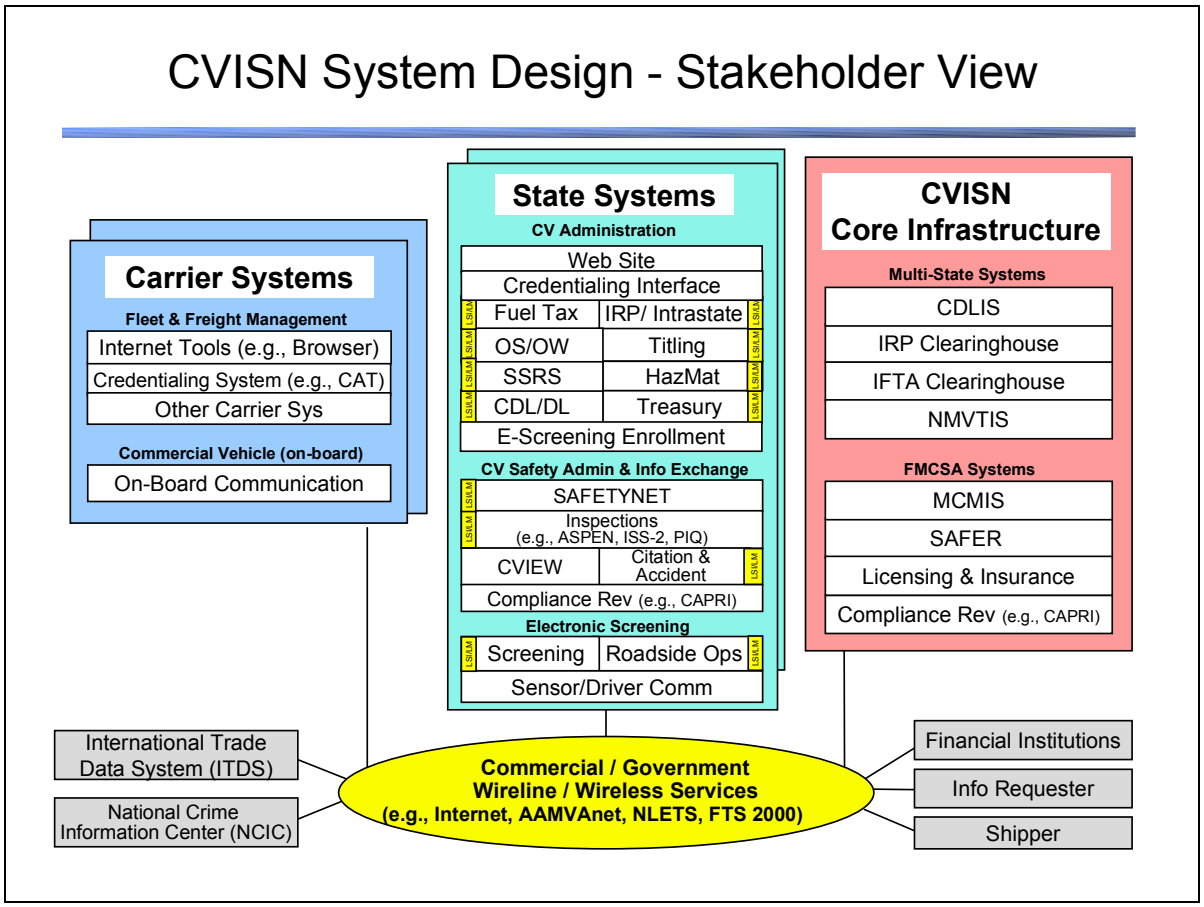
Only the last document in that list is still being maintained. The other documents have been replaced with some of the volumes in the CVISN Guide series. Technical guidance about CVISN is now provided in:

- The CVISN General and Technical Guides
- Introductory Guide to CVISN [Reference 12]
- CVISN Guide to Top-Level Design [Reference 13]
- CVISN Guide to Safety Information Exchange [Reference 14]
- CVISN Guide to Credentials Administration [Reference 15]
- CVISN Guide to Electronic Screening [Reference 16]
- Other volumes of the COACH [Reference 4-7]
- CVISN System Design Description [Reference 11]
- Electronic Data Interchange standards and implementation guides [References 25, 27-31]
- Dedicated Short-Range Communications standards [References 32-34]

CVISN System Design

The figure below depicts the CVISN System Design - Stakeholder View. CRF 1084, requesting that the diagram be updated to reflect current terminology and components involved in CVISN, has been applied. Chapter 4 of this document focuses on the State systems. For a brief description of each system shown on this figure, see the CVISN System Design Description [Reference 11].

Figure 0-1 CVISN System Design - Stakeholder View



How States Should Use This Document

The COACH summarizes key concepts and architectural guidelines for CVISN. The COACH focuses on topics important to states. The COACH Part 1 defines the CVISN Level 1 criteria.

To gain a more complete understanding of CVISN, state planners and designers should read the Introductory Guide to CVISN [Reference 12], other parts of the COACH [References 4-7], and the CVISN System Design Description [Reference 11]. This version of the COACH Part 1 is intended to be a working document that is used for setting requirements for modifications and enhancements to existing state systems, and for planning the development of new systems in states. This document will be used first in the CVISN Scope workshop.

The key concepts and architectural guidelines for CVISN states have been summarized in this document in a series of checklist tables. Each table in this document consists of these columns, unless otherwise noted:

- Commit Level (F/P/N) – the state's commitment level to the item

  Using the first column of each checklist entry, a **commitment level should be filled in** by the state. There are three possible levels of commitment:

  (F) This rating indicates a full commitment. This level means that at least 80% of the state's systems involved in the process implied by the checklist item are compatible or are intended to be compatible with the checklist item statement.

  (P) This rating indicates a partial commitment. This level means that between 50% and 80% of the state's systems involved in the process implied by the checklist item are compatible or are intended to be compatible with the checklist item statement.

  (N) This rating indicates no commitment. This level means that less than 50% of the state's systems involved in the process implied by the checklist item are compatible or are intended to be compatible with the checklist statement.

- Item # – a label to identify each row in the table.

- Compatibility Criteria - summary versions of operational concepts or architectural guidelines, culled from other CVISN documentation.

- Req Level (chapters 3 and 4 only) - the compatibility requirement level assigned to this compatibility criterion by the FMCSA CVISN project team

  For a state to be "compatible with CVISN," it must implement selected items in the checklists. To distinguish those items, the CVISN project team has assigned a **compatibility requirement level** to each checklist item:

  (L1) This rating identifies a CVISN Level 1 compatibility requirement.

  (E) This rating indicates an enhanced level of CVISN capability. These items may require a little longer to complete (3-4 years).

  (C) This rating indicates a complete level of CVISN capability. Satisfying all these provides complete CVISN compatibility. These items are expected to require a longer-range (5 or more years) time frame.

  States are expected to focus initially on checklist items with an *L1* compatibility requirement level rating. Making a *partial commitment* indicates that the state will at least demonstrate the feasibility of that concept or architectural guideline. Making a *full commitment* indicates that the state will fully implement the concept or architectural guideline and be ready for the next steps.

  CRF # - if the item has been changed since the last revision, the Change Request Form (CRF) number for the CR that triggered the document update will appear in this column. A list of all CRFs incorporated in this revision is included on the back of the title page.

- Op Test Date (chapter 4 only) - to be used for planning/tracking by the owner of a particular copy of the document; indicates when the criterion is to be (has been) operationally tested (op test); may refer to a milestone by name rather than a specific date; if plans change, this column should be updated accordingly

- IOC Date (chapter 4 only) - to be used for planning/tracking by the owner of a particular copy of the document; indicates when initial operating capability (IOC) for the criterion is to be (has been) achieved; may refer to a milestone by name rather than a specific date; if plans change, this column should be updated accordingly

- FOC Date (chapter 4 only) - to be used for planning/tracking by the owner of a particular copy of the document; indicates when final operating capability (FOC) for the criterion is to be (has been) achieved; may refer to a milestone by name rather than a specific date; if plans change, this column should be updated accordingly

- Comments – available for the state to refer to another document or plan, note a question, record a clarifying comment, etc.

If the state maintains its master copy of this document electronically, the following conventions are recommended when filling in the columns to illustrate the "firmness" of the state's plan:

- *Italics type* : Tentative, not approved by the final decision makers
- Regular type : Approved by the decision makers (or supported by consensus)
- **Bold type** : Completed

States are to fill out the "Commit Level" column for the tables in chapters 2 (Guiding Principles), 3 (State Institutional Framework), and 4 (State Systems Checklists) prior to attending the CVISN Scope Workshop. Since the first workshop focuses on *what* the states will do rather than *when* those actions will be scheduled, it is not necessary to complete the planning columns (Op Test Date, IOC Date, FOC Date) for the CVISN Scope Workshop. The remainder of the columns will be completed as the project progresses.

Guiding Principles

Statements of principle are being used to document fundamental concepts and guidelines supported by the CVO community. In addition to the specific checklists provided in subsequent sections, these guiding principles provide a top-level checklist of fundamental guidelines for all CVISN activities. CVO stakeholders should ensure that their actions are consistent with these principles. No planning columns are included in the tables for guiding principles since the principles provide guidance rather than specific details that can be scheduled or measured.

The guiding principles were developed under the auspices of the ITS America CVO Program Subcommittee [References 17, 18, 19]. These principles continue to be under review by ITS America and the US Department of Transportation. They will be updated as required to reflect the consensus of the CVO community. The current principles are copied verbatim into the tables in this chapter.

ITS/CVO Guiding Principles [Reference 17]

"The ITS America CVO Committee presents this set of guiding principles which will guide the states and federal government on matters concerning technology and commercial vehicle operations. This list of 39 guiding principles was established by the CVO Programs Subcommittee with representation from National Private Truck Council, ATA, carriers, owner operators, motorcoach

representation, UPS, several state administrative and regulatory agencies, AAMVA, AASHTO, and Canada. These principles took two years to create and 100% consensus was reached.

ITS/CVO Guiding Principles : Summary

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
F	1.	A **balanced approach** involving ITS/CVO technology as well as institutional changes will be used to achieve measurable improvements in efficiency and effectiveness for carriers, drivers, governments, and other CVO stakeholders. Specific technology and process choices will be largely **market-driven**.	
F	2.	The CVISN architecture will enable **electronic information exchange** among authorized stakeholders via open standards.	
F	3.	The architecture **deployment will evolve incrementally**, starting with legacy systems where practical and proceeding in manageable steps with **heavy end-user involvement**.	
F	4.	Safety assurance activities will **focus resources on high risks**, and be structured so as to reduce the compliance costs of low-risk carriers and drivers.	
F	5.	Information technology will support improved practices and procedures to **improve CVO credential and tax administration efficiency** for carriers and government.	
F	6.	Roadside operations will **focus on eliminating unsafe and illegal operations by carriers, drivers, and vehicles** without undue hindrance to productivity and efficiency of safe and legal carriers and drivers.	

ITS/CVO Guiding Principles: General CVO

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
F	1.	To the extent possible, ITS/CVO technology development and deployment will be **market-driven**. The federal role in ITS deployment will be limited to instances in which a government role is indispensable and in which the technology is proven and reliable.	
F	**2.**	**Investment and participation** in ITS/CVO technology will be **voluntary**.	
F	3.	The relative benefits of various ITS/CVO technology applications and investments will be assessed quantitatively using **measures of effectiveness** and established methods of quality control.	
F	4.	Potential ITS/CVO technology applications will be evaluated against regulatory choices involving low-technology and non-technological options to ensure applications are **cost-effective for both government and industry**.	
F	5.	Government CVO policies and regulatory practices will permit safe and legal carriers and drivers to operate without **unnecessary regulatory and administrative burdens**.	
F	6.	Stakeholders will use **technology and institutional reform** to implement continuous process improvement and cost-effective process re-engineering.	
F	7.	The **confidentiality** of proprietary and other sensitive stakeholder information will be preserved.	
F	8.	The United States CVO community will work to implement **compatible policies** and architecture and **interoperable systems** in all states.	
F	9.	The United States CVO community will work with those in Canada, Mexico, and other nations to encourage **compatible policies** and architecture and to implement **interoperable systems** throughout North America and, when possible, worldwide.	

ITS/CVO Guiding Principles: CVISN Architecture

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
F	2.	The CVISN architecture will be **open**, modular, and adaptable.	
F	3.	The architecture will enable **data exchange** among systems, a key to reaching CVO objectives. Methods used to exchange data will ensure **data integrity and prevent unauthorized access**.	
F	4.	Data exchange will be achieved primarily via **common data definitions**, message formats, and communication protocols. These enable development of interoperable systems by independent parties.	
P	5.	A jurisdiction shall have and maintain **ownership of any** data collected by any agent on its behalf.	Electronic Screening Vendor, PrePass may not provide all captured data to Oklahoma
F	6.	The architecture will accommodate **existing** and near-term **communications** technologies.	
F	7.	The architecture will accommodate **proven technologies and legacy systems** whenever possible.	
F	8.	The CVISN architecture will allow government and industry a **broad range of options**, open to competitive markets, in CVO technologies.	

ITS/CVO Guiding Principles: CVISN Deployment

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
F	1.	The feasibility of the **architecture will be demonstrated incrementally** in simulations, prototypes, operational tests, and pilots. There will be **heavy end-user involvement** in each step of the process.	
F	2.	After feasibility has been demonstrated, key architectural elements will be incorporated into appropriate national and international **standards**.	
F	3.	The architecture **deployment will evolve incrementally**, starting with legacy systems where practical and proceeding in manageable steps.	
F	**4.**	**Strong federal leadership** will foster voluntary cooperative efforts within government jurisdictions and among groups of other stakeholders to develop systems which are in accord with the architecture.	

ITS/CVO Guiding Principles: Safety Assurance

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
F	**1.**	**Carriers and drivers will be responsible** for the safe and legal operation of commercial vehicles.	
F	2.	Jurisdictions will develop and implement **uniform standards, practices, procedures, and education programs** to improve safety. These activities will leverage market forces that encourage safety.	
F	3.	Jurisdictions **will focus** safety **enforcement** resources **on high risk** carriers and drivers. They will remove chronic poor performers from operation and help cooperative marginal performers to improve.	
F	4.	Jurisdictions will conduct **inspections** and **audits** to provide **incentives** for carriers and drivers to improve poor performance and to collect information for assessing carrier and driver performance.	
F	5.	Jurisdictions will use a **safety risk rating** for all carriers based on best available information and common criteria.	
F	6.	Jurisdictions will identify **high risk drivers** based on best available information and common criteria.	
F	7.	Safety programs will provide **benefits which exceed costs** for carriers and drivers as well as governments.	

ITS/CVO Guiding Principles: Credentials & Tax

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
P	**2.**	**Electronic information** will be used in place of paper documents for the administration of CVO credential and tax requirements.	Electronic information will be used where appropriate; paper documents will be required for a variety of purposes for the foreseeable future.
F	3.	Authorized users will be able to electronically exchange credential and tax-related information and funds via **open standards** and transmission options.	
F	4.	The information needed to administer tax and credential programs involving carriers, drivers, and vehicles will be **available to authorized officials**, on a need-to-know basis.	
F	5.	Individual jurisdictions, or their designated agent, will be the **authoritative source** of information on credentials they issue.	

ITS/CVO Guiding Principles: Roadside Operations

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
F	1.	Roadside operations will **focus on eliminating unsafe and illegal operations by carriers, drivers, and vehicles** and will be designed and administered to accomplish this in a manner that does not unduly hinder the productivity and efficiency of safe and legal motor carriers and drivers.	
F	2.	Jurisdictions will support CVO roadside operations programs with **timely, current, accurate, and verifiable electronic information**, making it unnecessary for properly equipped vehicles to carry paper credentials."	

Note: F – Full Commitment; P – Partial Commitment; N – No Commitment
Complete code descriptions are given in section 1.5.

Fair Information Principles for ITS/CVO [Reference 18]

"*These fair information principles were prepared in recognition of the importance of protecting individual privacy in implementing Intelligent Transportation Systems (ITS) for Commercial Vehicle Operations (CVO). They have been adopted by the ITS America CVO Technical Committee.*

These principles represent values and are designed to be flexible and durable to accommodate a broad scope of technological, social, and cultural change. ITS America may, however, need to revisit them periodically to assure their applicability and effectiveness.

These principles are advisory, intended to educate and guide transportation professionals, policy-makers, and the public as they develop fair information and privacy guidelines for specific ITS/CVO projects. They are not intended to supersede existing statutes or regulations. Initiators of ITS/CVO projects are urged to publish the fair information principles that they intend to follow. Parties to ITS/CVO projects are urged to include enforceable provisions for safeguarding privacy in their contracts and agreements.

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
F	***FIP #1***	***Privacy*** The reasonable expectation of privacy regarding access to and use of personal information should be assured. The parties must be reasonable in collecting data and protecting the confidentiality of that data.	
F	***FIP #2***	***Integrity*** Information should be protected from improper alteration or improper destruction.	
F	***FIP #3***	***Quality*** Information shall be accurate, up-to-date, and relevant for the purposes for which it is provided and used.	
F	***FIP #4***	***Minimization*** Only the minimum amount of relevant information necessary for ITS applications shall be collected; data shall be retained for the minimum possible amount of time.	
F	***FIP #5***	***Accountability*** Access to data shall be controlled and tracked; civil and criminal sanctions should be imposed for improper access, manipulation, or disclosure, as well as for knowledge of such actions by others.	
F	***FIP #6***	***Visibility*** There shall be disclosure to the information providers of what data are being collected, how they are collected, who has access to the data, and how the data will be used.	
F	***FIP #7***	***Anonymity*** Data shall not be collected with individual driver identifying information, to the extent possible.	
F	***FIP #8***	***Design*** Security should be designed into systems from the beginning, at a system architecture level.	

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
F	***FIP #9***	***Technology*** Data encryption and other security technologies shall be used to make data worthless to unauthorized users.	
F	***FIP #10***	***Use*** Data collected through ITS applications should be used only for the purposes that were publicly disclosed.	
F	***FIP #11***	***Secondary Use*** Data collected by the private sector for its own purposes through a voluntary investment in technology should not be used for enforcement purposes without the carrier's consent.	

Date approved by the Board of Directors: April 22, 1999

Note: These guiding principles address only issues of privacy and data control. They do not address all issues related to concepts of operations or interoperability. These issues are addressed in separate guiding principles."

Note: F – Full Commitment; P – Partial Commitment; N – No Commitment; Complete code descriptions are given in section 1.5.

ITS/CVO Interoperability Guiding Principles [Reference 19]

"These interoperability guiding principles were prepared in recognition of the importance of promoting interoperability in the implementation of Intelligent Transportation Systems (ITS) for Commercial Vehicle Operations (CVO). They have been adopted by the ITS America CVO Technical Committee.

These principles represent values and are designed to be flexible and durable to accommodate a broad scope of technological, social, and cultural change. ITS America may, however, need to revisit them periodically to assure their applicability and effectiveness. These principles are advisory, intended to educate and guide transportation professionals, policy-makers, and the public as they develop interoperability guidelines for specific ITS/CVO projects. They are not intended to supersede existing statutes or regulations. Initiators of ITS/CVO projects are urged to publish the interoperability principles that they intend to follow. Parties to ITS/CVO projects are urged to include enforceable provisions for assuring interoperability in their contracts and agreements.

ITS/CVO Interoperability Guiding Principles: General

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
F	***IGP #1***	The CVO community will work to implement interoperable ITS/CVO systems in all United States jurisdictions.	
F	***IGP #2***	The CVO community will work with the CVO communities in Canada and Mexico to implement interoperable ITS/CVO systems throughout North America.	
F	***IGP #3***	The CVO community will work to ensure that ITS/CVO systems, where appropriate, are interoperable with other ITS systems (e.g., electronic toll systems).	
F	***IGP #4***	Interoperable ITS/CVO systems will be achieved through the development, adoption, and adherence to common standards for hardware, systems/software, operations, and program administration.	
F	***IGP #5***	Each jurisdiction will support the national ITS/CVO information system architecture and data exchange standards developed under the Commercial Vehicle Information Systems and Networks (CVISN) program.	
F	***IGP #6***	Transponders shall have a unique identifier.	
F	***IGP #7***	Information systems supporting electronic screening, credentials administration, and safety assurance will use: 7a. US DOT numbers for the identification of both interstate and intrastate motor carriers. 7b. Commercial Drivers License (CDL) numbers for the identification of commercial drivers. 7c. Vehicle Identification Numbers (VIN) and license plate numbers for the identification of power units.	IRP does not currently require USDOT, although field exists in database. Legislation is anticipated to be approved in 2002 session to require intrastate carriers to have DOT number; intrastate registration system does not currently accommodate DOT number. OS/OW may also require a rule or statutory change to require USDOT. IFTA also does not require USDOT.

ITS/CVO Interoperability Guiding Principles: Hardware

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
P	***IGP #8***	Commercial vehicle operators will be able to use one transponder for power unit-to-roadside communications in support of multiple applications including electronic screening, safety assurance, fleet and asset management, tolls, parking, and other transaction processes.	Support but not completely in state's control. Market / technology driven. Oklahoma's PikePass (toll road) transponders and the electronic screening system transponders (PrePass) may not be interoperable.
F	***IGP #9***	Public and public-private DSRC applications will support open standards that are consistent with the national ITS architecture.	Vendor dependent.

ITS/CVO Interoperability Guiding Principles: Systems/Software

Commit Level (F/P/N)	Item #	Compatibility Criteria	Comments
F	***IGP #10***	Public and public-private organizations will support open data exchange standards for the state-state, state-federal, state-provincial, and carrier-agency exchange of safety and credentials information as described in the national ITS architecture.	

ITS/CVO Interoperability Guiding Principles: Operations

P	***IGP #11***	Jurisdictions will support common standards for placement of DSRC transponders on trucks and buses to ensure the safe and cost-effective use of transponders.	To large extent, driven by vendors / carriers
P	***IGP #12***	Jurisdictions will support a common set of recommended practices concerning the selection, layout, and signage of roadside screening sites (i.e., weigh stations, ports-of-entry, international border crossings, and temporary inspection sites) to ensure safe operations.	for new or modified scale sites
P	***IGP #13***	Jurisdictions will support a common performance standard for roadside electronic enforcement screening and passage of transponder-equipped motor carriers to ensure equity in enforcement.	With caveat that standards reflect variations in pull in rates to meet specific state needs and other criteria for different carrier types and scale staffing certifications.
F	***IGP #14***	Roadside electronic enforcement screening criteria will include the following: motor carriers must be enrolled in the jurisdiction's program; must meet the jurisdiction's enrollment criteria; and must meet all legal requirements established by the jurisdiction.	
P	***IGP #15***	Jurisdictions will support quarterly reviews of carrier qualifications to ensure that the standards evolve to meet the changing needs of government and motor carriers.	Routine reviews are useful, quarterly may be too frequent. Annual or as needed.
F	***IGP #16***	A jurisdiction will not retain the identification codes or other data from the DSRC transponders of passing motor carriers who are not enrolled in the jurisdiction's program.	
P	***IGP #17***	Jurisdictions will support a common performance standard for selection of vehicles and drivers for roadside safety inspection.	With caveat that standards reflect variations in pull in rates and other criteria for different carrier types and scale staffing certifications.
F	***IGP #18***	Jurisdictions will support a common performance standard for recording and reporting roadside safety inspection results.	
F	***IGP #19***	Jurisdictions will support a common performance standard for reconciling disputed roadside safety inspection results.	

ITS/CVO Interoperability Guiding Principles: Program

Commit Level (F/P/N	Item #	Compatibility Criteria	Comments
F	***IGP #20***	Motor carrier participation in ITS/CVO roadside electronic screening programs will be voluntary; motor carriers will not be required to purchase or operate DSRC transponders.	
P	***IGP #21***	Motor carriers will have the option of enrolling in any ITS/CVO roadside electronic screening program.	PrePass is Oklahoma's electronic screening provider. PrePass may not recognize transponders of carriers enrolled in other programs.
F	***IGP #22***	Jurisdictions will support uniform criteria for enrollment of motor carriers in ITS/CVO roadside screening programs.	
F	***IGP #23***	Enrollment criteria will include consideration of safety performance and credentials status (e.g., registration, fuel and highway use taxes, and insurance).	
F	***IGP #24***	No jurisdiction will be required to enroll motor carriers that do not meet the criteria for enrollment.	
P	***IGP #25***	Motor carriers may obtain a DSRC transponder from the enrolling jurisdiction or a compatible DSRC transponder from an independent equipment vendor of the motor carrier's choice.	Motor carriers receive transponders through the PrePass program.
F	***IGP #26***	Each jurisdiction will determine the price and payment procedures, if any, for motor carriers to enroll and participate in its ITS/CVO electronic screening program.	HELP, Inc. Board responsibility in Oklahoma
F	***IGP #27***	Jurisdictions shall work to establish business interoperability agreements among roadside electronic screening programs.	
P	***IGP #28***	A jurisdiction will make a motor carrier's DSRC transponder unique identifier available to another jurisdiction upon written request and authorization by the motor carrier.	Subject to existing business agreements

Commit Level (F/P/N	Item #	Compatibility Criteria	Comments
F	***IGP #29***	Jurisdictions will work toward development of a single point of contact for motor carriers enrolling in more than one ITS/CVO roadside screening program.	
F	***IGP #30***	Each jurisdiction will fully disclose and publish its practices and policies governing, at a minimum: 30a. Enrollment criteria; 30b. Transponder unique identifier standards; 30c. Price and payment procedures for transponders and services; 30d. Screening standards; 30e. Use of screening event data; and 30f. Business interoperability agreements with other programs."	

Date approved by the Board of Directors: April 22, 1999

Note: These guiding principles address only issues of interoperability. They do not address all issues related to concepts of operations or privacy and data control. These issues are addressed in separate guiding principles."

Note: F – Full Commitment; P – Partial Commitment; N – No Commitment
Complete code descriptions are given in section 1.5.

State Institutional Framework

The checklist in this section summarizes the institutional and business planning steps that states should take to become ready to implement the CVISN architecture and concepts. The checklist is based on the ideas outlined in the January 1999 letter from the Director, Office of Motor Carrier Safety & Technology on CVISN Workshops [Reference 23] and the CVISN Model Deployment Request for Information and Request for Application [References 21-22].

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Comments
F	1.	The State has contacted or has plans to contact State and local transportation officials to explore potential joint-uses of transponders and ensure integration among multiple applications (i.e., CVO, toll, traffic probes, parking management, etc.)	L1 CRF 1155	Support interoperability, but market decision / issue; Oklahoma Transportation Authority (toll road operator) is part of CVISN team; discussions underway, but first priority is likely to pursue toll transponder interoperability with neighboring states; issue still under consideration
F	2.	The State has contacted or has plans to contact State and local transportation officials to explore potential joint-uses of transponders and ensure integration among multiple applications (i.e., CVO, toll, traffic probes, parking management, etc.)	L1 CRF 1155	
F	3.	The State has evaluated or has plans to evaluate the data that is being collected for CVISN initiatives to determine if other State and local transportation entities (e.g., traffic management center) outside the CVO community could use the data which is collected under CVISN deployment, consistent with data privacy agreements.	L1 CRF 1155	

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Comments
F	4.	The State has conducted or has plans to conduct outreach to its motor carrier partners about metropolitan and rural ITS initiatives within the State that could provide benefits to its motor carrier operations. Examples of these initiatives include web sites on roadway weather information systems, incident management systems, and traffic management systems.	L1 CRF 1155	
F	5.	The State is committed to complete the full cycle of the workshops, and upon completion, to begin deployment of the ITS/CVO systems and services that meet the unique economic, administrative, and transportation needs, as outlined in the State ITS/CVO Business Plan.	L1	
F	6.	A qualified core project team that will participate in all three of the workshops has been identified. This project team must include the following individuals: the State's CVISN project manager; the State's CVISN system architect; a project facilitator/administrator, who could be a representative of a participating State agency or a consultant working with the State; operations staff representing the agencies responsible for the State's major CVO functional areas (i.e., IRP, IFTA, safety information systems, roadside safety inspections, size and weight enforcement, and credentials enforcement); staff from the State department of information technology or comparable information technology units within the State CVO agencies; representative of the State Department of Transportation; representatives of the FMCSA and FHWA Division office; and a motor carrier industry representative (invited). See Reference 23 for qualification details.	L1	

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Comments
F	7.	Appropriate and sufficient staff, equipment, and State and private funding are available to carry out the deployment of CVISN and ITS/CVO services. The CVISN project has sufficient priority (i.e., other higher-priority projects are not competing for the same resources).	L1	
P	8.	A State CVO strategic plan and/or business plan exists and has been accepted by the FHWA (or FMCSA). It outlines the goals, strategies, anticipated benefits and costs, organization, projects, schedules, and resources relevant to achieving the envisioned CVO environment.	L1	Development of the plan is underway.
F	9.	A planning and coordination process exists which includes all State agencies involved in any aspect of motor carrier safety and regulation.	L1	
F	10.	The top executives and chief information systems managers of each involved agency have endorsed State CVO plans and given the CVISN project manager adequate authority.	L1	
F	11.	A process for resolution of conflicts among participating agencies exists.	L1	
F	12.	State agencies have a strong commitment to customer service and the ability to work with the motor carrier industry in their State.	L1	
F	13.	State agencies involve the motor carrier industry in the planning process.	L1	
F	14.	State agencies conduct education programs to improve the safety performance and regulatory compliance of motor carriers.	L1	
F	15.	State agencies provide periodic forums for obtaining suggestions and concerns from the motor carrier industry.	L1	
F	16.	State agencies actively pursue opportunities for and implement business process reengineering projects.	L1	

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Comments
F	17.	An e-mail system is available among agencies.	L1	
F	18.	At least key agency staff members have access to the Internet.	L1	
F	19.	The State has adopted an open standard (ANSI ASC X12, for example) for electronic data interchange with the public.	L1	
F	20.	The State's communications infrastructure is sufficiently developed to extend to the kinds of exchanges needed under the CVISN Architecture.	L1	
F	21.	There are no State legislative barriers relative to data privacy, physical signature requirements, data exchange among agencies, data exchange with other states, or other uses of information technology required to implement the CVISN concept of operations.	L1	
P	22.	The legislature provides adequate resources to support an active ITS/CVO program and deployment of the ITS/CVO services.	L1	The initial phase is funded. Additional funding is begin pursued.
F	23.	The State participates in one or more regional CVO forums to assist in developing regional and national interoperable systems and compatible policies and procedures.	L1	
P	24.	The State is willing to provide timely, electronic information to the planned clearinghouses to support the base state agreements.	L1	Oklahoma will perform a cost/ benefit/analysis of clearinghouse participation.

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Comments
F	25.	The project team has completed the ITS/CVO technical training courses. The first course, Introduction to ITS/CVO, is recommended for workshop participants but can be waived for personnel with prior ITS/CVO knowledge and experience. The second course, ITS/CVO Technical Project Management for Non-Technical Managers, and third course, Understanding ITS/CVO Technology Applications, are required for the personnel who will represent each State at the workshops.	L1	
	~~26.~~	~~The State has identified and made adequate progress towards the resolution of any Y2K problems among CVO agencies. It is strongly recommended that States resolve any Year 2000 computer problems among CVO agencies before beginning the workshops.~~	~~L1~~	No longer applicable.
F	27.	Effective procurement plans and processes are in place to acquire services and equipment needed to support the CVISN project, and the CVISN team is aware of constraints the processes impose.	L1	
F	28.	Effective subcontract management processes are in place and allow timely identification and resolution of performance problems.	L1	
F	29.	The CVISN team has a clear understanding of the State-specific requirements for information technology projects, e. g., whether or not a feasibility study is required.	L1	
F	30.	The CVISN team has a clear understanding of the State-specific budget cycles and is aware of constraints they impose.	L1	

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.

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].

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	Oklahoma will use US DOT for intrastate and interstate carriers.
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	
P	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	Oklahoma does not track trips and loads. However, in the future, should Oklahoma begin tracking trips and loads, it supports the use of the DUNS and trip specific ID.

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Comments
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	
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	

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Comments
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	**4.1.1**	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				Transponder identifiers are controlled by vendor.
F	**4.1.2**	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	**4.1.3**	Use open standards for computer-to-computer 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.
F	1	Use ANSI X12 EDI standards for transactions between state information systems and private systems (CV operators, insurance companies, etc.).	L1; E				Oklahoma uses EDI for IRP computer to computer transactions. As Oklahoma implements CVISN L1 electronic credentialing, those systems using web interfaces. It will also retain the EDI interface for IRP.

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
F	2	Use ANSI X12 EDI standards for transactions between state information systems and CVISN Core Infrastructure systems, where available.	L1; E				Interactions with SAFER, will be either XML or the SAFER Options Working Group flat file standard once these standards are available in SAFER.
N	3	Use XML standards for transactions between state information systems and private systems (CV operators, insurance companies, etc.) (contingent on demonstration of feasibility).	E				Oklahoma's architecture does not include the use of XML for data exchange between state and private systems. Data exchange will be EDI or over the internet using current web standards.
F	**4.1.4**	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	**4.1.5**	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	**4.1.6**	Demonstrate technical interoperability by performing Interoperability Tests.	L1				
F	**4.1.7**	Support electronic payments.	E				
F	**4.1.8**	Receive, collect, and archive relevant CVO data for historical, secondary, and non-real-time uses.	E CRF 1047				In accordance with business agreements

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.

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
F	1.	Data are collected to quantify the primary measures of effectiveness related to safety of CVO (accidents and fatalities).	L1	
F	2.	Electronic safety records (snapshots) are made available at the roadside to aid inspectors and other enforcement personnel.	L1	Oklahoma does not currently have wireless communications in place statewide. The state is currently in discussions with a satellite vendor; availability of snapshots statewide is dependent upon implementation

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Comments
				of satellite or other wireless communications in areas currently not served by such communications
F	3.	Inspectors use computer applications to capture, verify, and submit intrastate and interstate inspection data at the point of inspection.	L1	With same caveat as above
F	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	
F	7.	Compliance reviews are supported through electronic access to government-held safety records.	E	
F	8.	Safety risk ratings are determined according to uniform guidelines.	E	
F	9.	Jurisdictions support a standard set of criteria for inspection selection.	E	With caveat re: officer discretion
F	10.	A comprehensive safety policy, including roadside and deskside activities, is implemented to improve safety.	C	
F	11.	Carriers are associated with a base state for safety information record storage and credentialing.	C	
F	12.	Compliance reviews are supported through electronic access to carrier-held records.	C	To extent that carriers grant access

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	**4.2.1**	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				
F	4	Submit interstate and intrastate inspections for 45-day storage to SAFER.	L1				
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 allows and vehicle is properly equipped.	C				Implementation depends on Help, Inc's technology and participation.
F	7	To assist in inspection, use DSRC to retrieve driver's daily log, if driver allows and vehicle is properly	C				

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
		equipped.					
F	8	Use electronically-generated driver's daily log, if driver offers as an alternative to a manually-maintained log during an inspection.	C				
F	**4.2.2**	SAFETYNET 2000 submits interstate and intrastate inspections reports to SAFER.	L1				
F	**4.2.3**	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: • A "super user" can update any field. An audit trail should be maintained to record super user updates.	E CRF 827				
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	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
		administrator to review.					
F	**4.2.4**	Use CAPRI (or equivalent) for compliance reviews.	L1				
F	1	Report interstate compliance reviews to MCMIS via SAFETYNET	L1				
P	**4.2.5**	Collect, store, analyze, and distribute citation data electronically.	E				Oklahoma does not have plans for this
P	1	Report citations for interstate operators to MCMIS via SAFETYNET	E				Citation is not a conviction; how will MCMIS use citation data?
P	**4.2.6**	Collect, store, analyze, and distribute crash data electronically.	E				Oklahoma does not currently have plans to implement an automated crash data system but does enter crash data into SAFETYNET.
F	1	Report interstate crashes as required to MCMIS via SAFETYNET	E				
F	**4.2.7**	Compute carrier safety risk rating for intrastate carriers based on safety data collected.	E				
F	**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				

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.

State CV Administration Systems Design Requirements

The state CV administrative systems are likely to consist of:

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

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 0-1 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	
P	3.	IRP and IFTA base state agreements are supported electronically.	L1	Oklahoma will perform a cost / benefit analysis to determine when it will implement links to the IRP and IFTA clearinghouses.
P	4.	Credential and fuel tax payment status information for interstate operators are made available electronically nationally to qualified stakeholders.	L1	Oklahoma will report the payment status where SAFER supports such reporting. If Oklahoma implements links to the clearinghouses, payment status will be reported to those systems according to their requirements.
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 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	
P	8.	Electronic access to administrative processes and information is available from “one stop shops” in public sites.	E	Oklahoma is considering a physical one-stop, but is unlikely to support "automated kiosks" for administrative processes (if that is what this criteria is suggesting)
F	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 0-2 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				
F	1	Provide a Web site for a person-to-computer process.	L1; E CRF 1048				Oklahoma will use a web site for credential applications, including IRP.
F	2	Provide a computer-to-computer automated process.	L1; E CRF 1048				Oklahoma also allows industry to apply for IRP credentials using an EDI computer to computer interface.
P	2a	Use EDI standards to provide a computer-to-computer automated process.	L1; E CRF 1048				Oklahoma's EDI standards may not be identical to the EDI X.12 286 format.
N	2b	Use XML standards to provide a computer-to-computer automated process.	E CRF 1048				
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 XML option.

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
			1164				
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.
P	**4.3.4**	Provide IRP Clearinghouse with IRP credential application information (recaps).	L1				Oklahoma will perform a cost/benefit analysis of clearinghouse participation. Interfaces will be implemented if Oklahoma becomes a participant.
P	**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				Oklahoma will perform a cost/benefit analysis of clearinghouse participation. Transmittals will be implemented if Oklahoma becomes a participant.
P	**4.3.6**	Support electronic state-to-state fee payments via IRP Clearinghouse	L1				Oklahoma will perform a cost/benefit analysis of clearinghouse participation,

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
							including electronic payments.
F	**4.3.7**	Support electronic credentialing (electronic submission of applications, evaluation, processing, and application response) for IFTA registration.	L1 CRF 1048				

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
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.
N	2	Provide a computer-to-computer automated process.	L1; E CRF 1048				.
N	2a	Use EDI standards to provide a computer-to-computer automated process.	L1; E CRF 1048				.
N	2b	Use XML standards to provide a computer-to-computer automated process.	E CRF 1048				
F	**4.3.8**	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.
P	**4.3.9**	Provide IFTA Clearinghouse with IFTA credential application information using EDI standards.	L1				Oklahoma will perform a cost/benefit analysis of clearinghouse participation. Data will be provided to the clearinghouse if Oklahoma

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
							participates.
P	**4.3.10**	Support electronic tax filing for IFTA quarterly fuel tax returns.	L1				
F	1	Provide a Web site for a person-to-computer process.	L1; E CRF 1048				
N	2	Provide a computer-to-computer automated process.	L1; E CRF 1048				
N	2a	Use EDI standards to provide a computer-to-computer automated process.	L1; E CRF 1048				
N	2b	Use XML standards to provide a computer-to-computer automated process.	E CRF 1048				
P	**4.3.11**	Provide information on taxes collected by own jurisdiction and the portion due other jurisdictions (transmittals) to the IFTA Clearinghouse using EDI standards.	L1				Oklahoma will perform a cost/benefit analysis of clearinghouse participation..
P	**4.3.12**	Download for automated review the demographic information from the IFTA Clearinghouse using EDI standards.	L1				Oklahoma will perform a cost/benefit analysis of clearinghouse participation.
P	**4.3.13**	Download for automated review the transmittal information from the IFTA Clearinghouse using EDI standards.	L1				Oklahoma will perform a cost/benefit analysis of clearinghouse participation.

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
F	**4.3.14**	Retrieve IFTA tax rate information electronically from IFTA, Inc.	L1				
P	**4.3.15**	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				
N	3	Vehicle title	E				Currently there are no plans for electronic CVO titling.
N	4	Intrastate vehicle registration	E				Currently there are no plans for electronic CVO intrastate registration
F	5	HazMat credentialing/permitting, if such credentials/permits are required by state law.	E				Oklahoma will implement electronic credentialing for hazardous waste permitting.
F	6	Oversize/overweight permitting.	E				
P	**4.3.16**	Proactively provide updates to vehicle snapshots as needed when credentials actions are taken.	E				
N	1	Vehicle title	E				
F	2	Intrastate vehicle registration	E				
F	3	Oversize/overweight permitting.	E				
F	**4.3.17**	Proactively provide updates to carrier snapshots as needed when credentials actions are taken.	E				
F	1	Interstate carrier registration	E				
F	2	Intrastate carrier registration	E				

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
F	3	HazMat credentialing/permitting, if such credentials/permits are required by state law.	E				For Hazardous waste permitting.
F	4	Oversize/overweight permitting.	E				
P	**4.3.18**	Allow CV operators, government-operated, or third party systems to submit one or more applications in a single transaction.	E				Some combinations of applications may be permitted.
F	**4.3.19**	Provide commercial driver information to other jurisdictions via CDLIS.	L1				
F	**4.3.20**	Evaluate carrier safety performance prior to issuing vehicle registration renewal (i.e. support PRISM processes or equivalent).	E				
F	**4.3.21**	Allow carriers to provide information for audits electronically.	C				
N	**4.3.22**	Provide titling information to other jurisdictions via NMVTIS.	C				Oklahoma has no immediate plans to report titling information to NMVTIS.
N	**4.3.23**	Provide revoked IFTA motor carrier information to other jurisdictions via STOLEN.	C				Oklahoma has no immediate plans to provide revoked IFTA information to STOLEN.
F	**4.3.24**	Accept electronic credential and supporting electronic documentation, in lieu of paper versions.	C				
F	**4.3.25**	Proactively provide updates to driver snapshots as needed when credentials actions are taken.	C				

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
P	1	Interface to SAFER for driver snapshots, using available SAFER interface.	C				Oklahoma will investigate the feasibility of providing driver snapshots to SAFER when driver snapshots become available.

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.

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 0-1 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	
P	2.	Jurisdictions disclose practices related to electronic screening.	L1	Some disclosures may be dependent on vendor.

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	Oklahoma participates in the HELP, Inc. screening program. At present our PrePass equipped scales are capable of electronically screening trucks equipped with PrePass transponders. Screening of non-PrePass transponders is dependent upon agreements between HELP, Inc. and other transponder programs
P	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	Help Inc. may be contacted for all jurisdictions that use PrePass as their electronic screening system
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	Dependent upon existing business agreements
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	Dependent upon existing business agreements
F	7.	Credentials and safety checks are conducted as part of the screening process.	L1	
F	8.	Fixed and/or mobile roadside check stations are employed for electronic clearance functions, according to the jurisdiction's needs and resources.	L1	
F	9.	Jurisdictions support a common set of screening criteria.	E	
P	10.	Screening systems are interoperable with those in different jurisdictions.	E	Dependent on existing business agreements

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 0-2 State Electronic Screening 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	**4.4.1**	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).
F	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				
F	2a	the new ASTM Physical Layer in the active mode;	E				Reference 32

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
			CRF 1159				
F	2b	the existing ASTM Version 6 Data Link layer in the synchronous mode;	E CRF 1159				Reference 33
F	2c	and the IEEE 1455 Application Layer.	E CRF 1159				Reference 34

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
F	**4.4.2**	Use snapshots updated by a SAFER/CVIEW subscription in an automated process to support screening decisions.	L1 CRF 1171				It is Oklahoma's understanding that PrePass host server will be updated by SAFER snapshots on routine basis; host server to distribute routine updates (go / no go decision) to local PrePass screening databases at fixed scales
F	1	Carrier snapshots.	L1				
F	2	Vehicle snapshots.	L1				
P	3	Driver snapshots.	C				Assuming privacy issues worked out; and assuming driver information can be accessed from transponder
F	**4.4.3**	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				To the extent that they are reflected in applicable business agreements and accepted by all entities listed
F	1	See AASHTO's Commercial Vehicle Electronic Screening Interoperability Policy Resolution, PR-14-97, Reference 20.	L1				

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
P	**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				
F	1	For transponder-equipped vehicles, identify carrier at mainline or ramp speeds.	L1				
F	2	For transponder-equipped vehicles, identify vehicle at mainline or ramp speeds.	L1				
P	3	Use WIM or weight history at mainline speed or on the ramp in making screening decisions.	L1				Electronic screening sites may not all be equipped with WIMs.
F	4	Record screening event data.	E				
F	5	For transponder-equipped vehicles, identify driver at mainline or ramp speeds.	C				
P	**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				HELP Inc. Responsibility; subject to business agreement
P	**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				HELP Inc. Responsibility; subject to business agreement
F	**4.4.7**	Record transponder number and default carrier ID for each vehicle that intends to participate in e-screening	L1				Vendor responsibility

Commit Level (F/P/N)	Item #	Compatibility Criteria	Req Level (L1/E/C) CRF #	Op Test Date	IOC Date	FOC Date	Comments
			CRF 1172				
P	**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				HELP Inc. Responsibility; subject to business agreement
P	1	Via SAFER snapshots	E CRF 1172				Dependent on electronic screening vendor.
P	**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				Dependent on electronic screening vendor.
P	1	Via SAFER snapshots	E CRF 1172				Dependent on electronic screening vendor.
P	**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				Dependent on electronic screening vendor.
P	**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				Dependent on electronic screening vendor.
F	**4.4.12**	Verify credentials/safety information with authoritative source prior to issuing citation.	L1				

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

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APPENDIX B – COACH, PART 4

Intelligent Transportation Systems (ITS)
Commercial Vehicle Operations (CVO)

CVISN Operational and Architectural Compatibility Handbook (COACH)

Part 4

Interface Specification Checklists

Preliminary Version

POR-97-7067 P2.0

October 2000

Please note that this is a Preliminary Issue

It is important to note that this is a preliminary document. All sections included are complete and have been reviewed by JHU/APL, but not by other DOT contractors or state/federal government agencies. The purpose of this issue is to obtain comments and feedback on this document from those external organizations before a baseline version is published.

Note: This document and other CVISN-related documentation are available for review and downloading by the ITS/CVO community from the JHU/APL CVISN site on the World Wide Web. The URL for the CVISN site is: **http://www.jhuapl.edu/cvisn/**

Review and comments to this document are welcome. Please send comments to:

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Change Summary:

This document is under configuration management by the CVISN Architecture Configuration Control Board. The list below provides a brief description of the change request forms (CRFs) processed by the board that impacted this document. Soon we hope to post the CRFs on the CVISN Web site referenced above.

References to the CRFs listed below appear in the text or tables of the document so that the reader knows how each CRF affected Version P2.0 of the document

Version P2.0 of the document incorporates revisions related to these change reports:

- CRF 313 – Disapproved (EDI interface for IRP CH)
- CRF 549 – Transponder ID specified to be a two-part identifier, with the ID itself in hexadecimal representation
- CRF 630 – Split country and subdivision in Driver Unique ID
- CRF 631 – Clarify description of Trip/Load Number to match IEEE P1455 standard
- CRF 1048 – Update CVISN for Web sites and XML for Credentialing
- CRF 1084 – Update Design Template and Stakeholder View

- CRF 1159 – Update DSRC references
- CRF 1164 – Clarify interface options (EDI, XML, Web, other) for Safety
- CRF 1172 – Clarify & complete concepts and requirements for E-Screening Enrollment

CVISN Operational and Architectural Compatibility Handbook (COACH)
Part 4 – Interface Specification Checklists

Table of Contents

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Introduction

The CVISN Operational and Architectural Compatibility Handbook (COACH) provides a comprehensive checklist of what is required to conform with the Commercial Vehicle Information Systems and Networks (CVISN) operational concepts and architecture. It is intended for use by state agencies with a motor carrier regulatory function and by motor carriers. It is also intended to provide a quick reference for developers of CVISN Core Infrastructure systems.

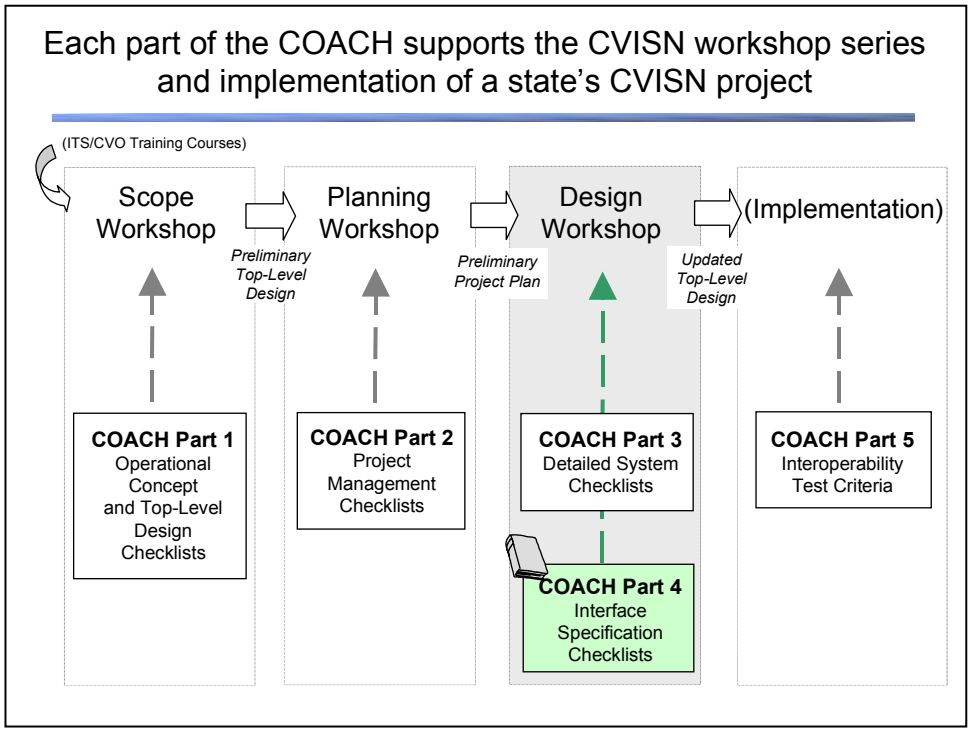
COACH Structure

The COACH is divided into 5 parts:

Part 1 - Operational Concept and Top-Level Design Checklists
Part 2 - Project Management Checklists
Part 3 - Detailed System Checklists
Part 4 - Interface Specification Checklists
Part 5 - Interoperability Test Criteria

The other parts of the COACH are available at the Browse and Download Documentation; Architecture section of the JHU/APL CVISN web site http://www.jhuapl.edu/cvisn/. This is the first revision to the COACH Part 4 [see Reference 37 for the earlier version].

Figure 0-1 The COACH supports the workshops



COACH Part 4 Interface Specification Checklists Description

This volume is Part 4. Part 4 includes several types of checklists related to interfaces:

- Standard Interface Identification Tables, identifying the standardized interfaces to be used between pairs of products [Chapter 2].

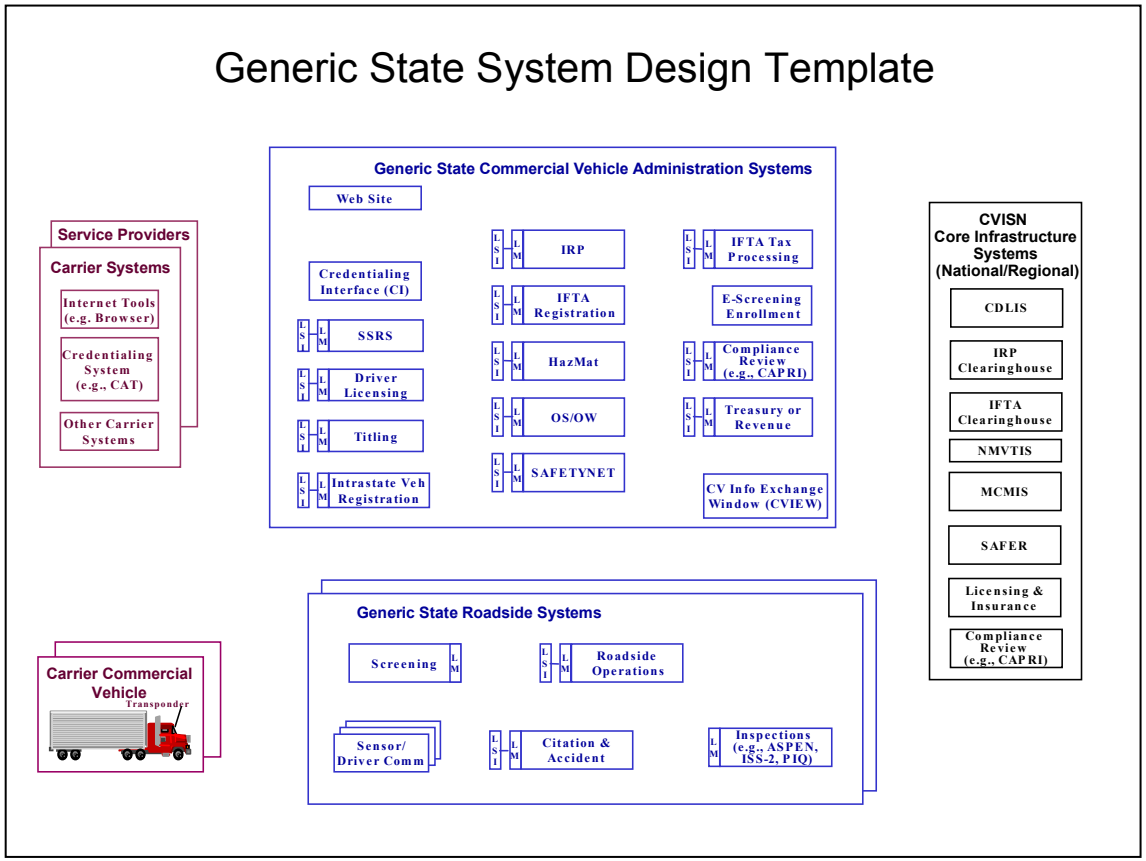
- Standard Data Definitions, specifying data format and meaning conventions for items common to more than one standard interface [Chapter 3].
- References, a list of standards and recommended practices related to ITS/CVO interfaces [Chapter 4].

In Part 4, the checklists are intended to be used to indicate which items the reader agrees with, and to provide a mechanism for planning development activities. Each state should maintain a master filled-in copy of the COACH.

Generic CVISN State System Design

Figure 1-2 below depicts the generic CVISN state system design template. CRF 1084 has been applied. Material in this document is based upon this generic design. Products equivalent to the carrier and state products shown may be substituted in the design. For example, a state may choose to combine the HazMat and Oversize/Overweight permitting functions into one product. In that case, the interfaces specified would apply to the combined product rather than to two distinct products.

Figure 0-2 Generic State Design Template



The systems shown in the generic design are defined in the CVISN Glossary [Reference 1]. The generic design represents the main elements and interfaces needed for a state to implement the CVISN architecture. Each state will adapt the generic design to accommodate their existing (legacy) systems, and to meet their own unique needs. The generic design is explained in more detail in the COACH Part 3 [Reference 5].

Use of standardized Dedicated Short Range Communications (DSRC) and either computer-to-computer or Web interfaces is required for architecture conformance. For now, ANSI X12 Electronic Data Interchange (EDI) interfaces are recommended for computer-to-computer exchanges, since CVO implementation guidance already exists. In the future, the eXtensible Markup Language (XML) may be an alternative to EDI for some interfaces. It may also be possible to use XML with or instead of HTML for Web interfaces. Each state chooses whether to modify a legacy system (LM - legacy modification) to support EDI or non-EDI formats (and other new functions and interfaces), or to create a Legacy System Interface (LSI) to deal with the EDI or non-EDI-to-native form interface. Many CVISN states are implementing a mix of LSIs and LMs. Throughout this document, the generic state system design is based on choosing to modify the legacy systems (i.e., implement LMs).

In the generic design depicted here, the legacy credentials systems update the appropriate snapshot segments in CVIEW using EDI. In this design, both the Roadside Operations and the inspection system products subscribe to CVIEW to receive snapshots. The CVIEW-Roadside Operations connection is an EDI interface. The CVIEW-inspection system interface uses the "application file format" that corresponds to a file format that could be input into an EDI translator.

To achieve interoperability, the CVISN architecture calls for the use of open standards for carrier-state and state-state (via the CVISN Core Infrastructure) interfaces. Interfaces that are wholly within a state government's control (e.g., between state agencies) are not required to use open standards. Most CVISN Model Deployment States have chosen to use open standards for some within-state interfaces, and have chosen to use existing custom interface agreements for others. For example, some states have chosen to implement LSIs instead of modifying their existing IRP or IFTA products. They are implementing the LSIs as small applications running on the same computer as the Credentialing Interface (CI). For those states, there are no EDI interfaces between the CI and their existing IRP or IFTA systems. Some of those states have also decided that the CI will provide snapshot segment updates of credentials data to CVIEW on behalf of the IRP or IFTA systems. In this document we depict one generic design for simplicity. The generic design shown here maximizes the use of open standards. Other designs are also acceptable under the CVISN architecture. Refer to the technical volumes of the CVISN Guide series for further information [References 16-19].

How States Should Use This Document

The COACH summarizes key concepts and architectural guidelines for CVISN. This version of the COACH Part 4 focuses on topics important to states. The COACH Part 1 defines the CVSIN Level 1 criteria. This document identifies the detailed interface requirements associated with CVISN Level 1.

To gain a more complete understanding of CVISN, state planners and designers should read the Introductory Guide to CVISN [Reference 20], other parts of the COACH [References 2-6], and the CVISN System Design Description [Reference 15]. This version of the COACH Part 4 is intended to be a working document that is used for designing modifications and enhancements to existing state systems, and for planning the development of new systems in each user's state. This document will be used in the planned CVISN workshops.

The key concepts and architectural guidelines for CVISN states have been summarized in this document in a series of checklist tables. Each table in this document consists of these columns, unless otherwise noted:

- Commit Level (F/P/N) – the state's commitment level to the item

  Using the first column of each checklist entry, a **commitment level should be filled in** by the state. There are three possible levels of commitment:

  (F) This rating indicates a full commitment. This level means that at least 80% of the state's systems involved in the process implied by the checklist item are or intend to be compatible with the checklist item statement.

  (P) This rating indicates a partial commitment. This level means that between 50% and 80% of the state's systems involved in the process implied by the checklist item are or intend to be compatible with the checklist item statement.

  (N) This rating indicates no commitment. This level means that less than 50% of the state's systems involved in the process implied by the checklist item are or intend to be compatible with the checklist statement.

- Reqts Level - the compatibility requirement level assigned to this compatibility criterion by the FMCSA CVISN project team

  For a state to be "compatible with CVISN," it must implement selected items in the checklists. To distinguish those items, the CVISN project team has assigned a **compatibility requirement level** to each checklist item:

  (L1) This rating identifies a CVISN Level 1 compatibility requirement.

  (E) This rating indicates an enhanced level of CVISN compatibility. These items may require a little longer to complete (3-4 years).

(C) This rating indicates a complete level of CVISN Compatibility. Satisfying all these provides complete CVISN compatibility. These items are expected to require a longer-range (5 or more years) time frame.

States are expected to focus initially on checklist items with an "L1" compatibility requirement level rating. Making a *partial commitment* indicates that the state will at least demonstrate the feasibility of that concept or architectural guideline. Making a *full commitment* indicates that the state will fully implement the concept or architectural guideline and be ready for the next steps.

- Comments – available for the state to refer to another document or plan, note a question, record a clarifying comment, etc.

If the state maintains its master copy of this document electronically, the following conventions are recommended when filling in the columns to illustrate the "firmness" of the state's plan:

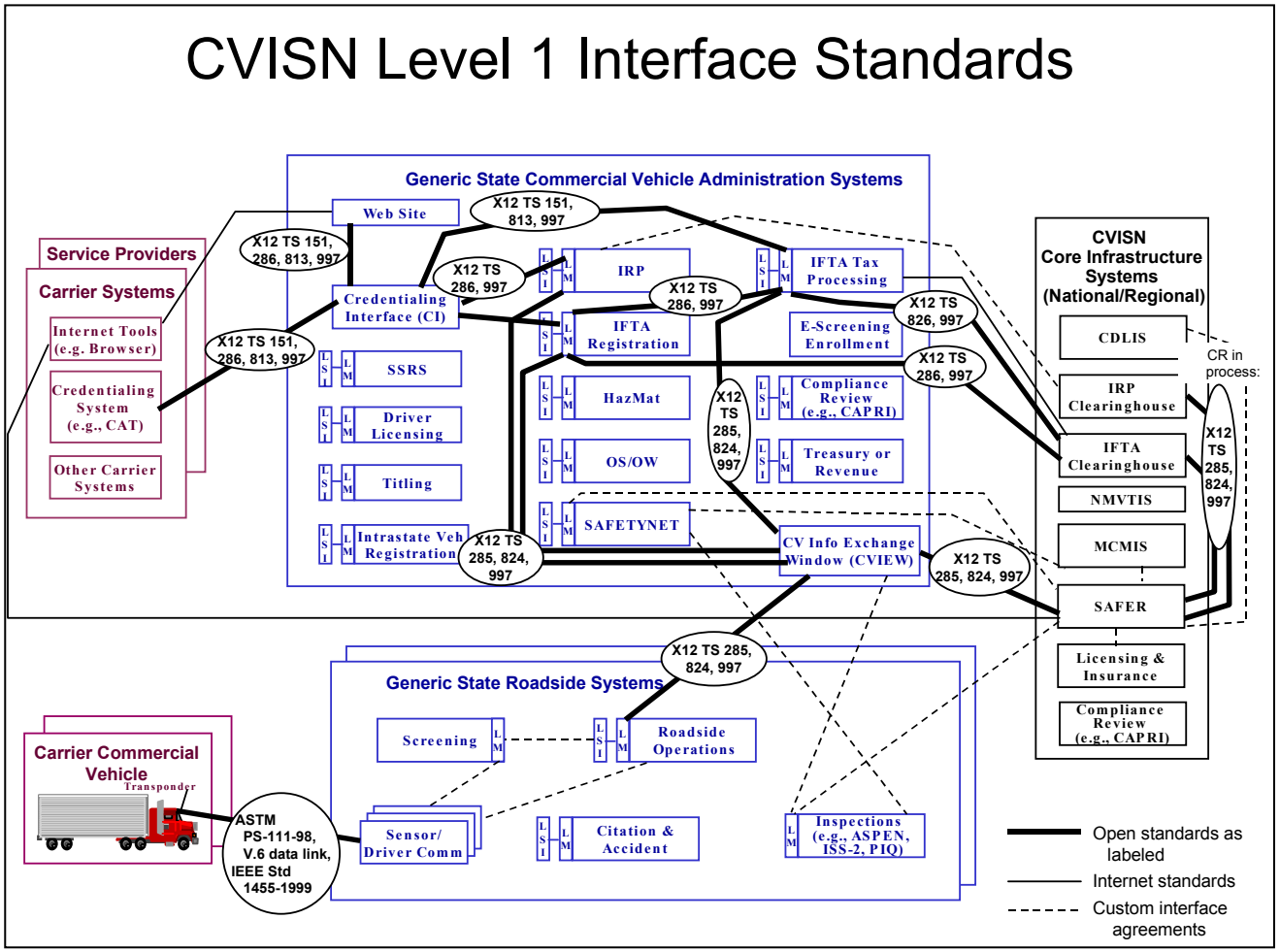
- *Italics type* : Tentative, not approved by the final decision makers
- Regular type : Approved by the decision makers (or supported by consensus)
- **Bold type** : Completed

States are to fill out the "Commit Level" column for the tables prior to attending the CVISN Design Workshop.

Standard interface identification

Figure 2-1 shows all the CVISN Level 1 interface standards overlaid onto the generic state design template. CRF 313, 1084, and 1159 have been applied. The **open standards shown in the ovals** are listed below:

Figure 0-1 CVISN Level 1 Interface Standards



ANSI ASC X12 EDI Standard Transaction Sets

These are the ANSI EDI standards used in CVISN applications. A subset of these transactions is used to support Level 1 capabilities.

TS 150 Tax Rate Notification
TS 151 Electronic Filing of Tax Return Data Acknowledgement
TS 284 CV Safety Reports (available for non-ASPEN inspection systems)
TS 285 CV Safety & Credentials Information Exchange (snapshots)
TS 286 Commercial Vehicle (CV) Credentials
TS 813 Electronic Filing of Tax Return Data
TS 820 Payment Order/Remittance Advice
TS 824 Application Advice
TS 826 Tax Information Exchange
TS 997 Functional Acknowledgement

The EDI standards are available for purchase from the Data Interchange Standards Association (DISA), Inc., 1800 Diagonal Road, Suite 200, Alexandria, VA 22314-2852; email publications@disa.org; phone 1-888-363-2334; web site http://www.disa.org/. As of the publication of this document, Reference 7 is the current standard.

The Federal Highway Administration (FHWA) and Federal Motor Carrier Safety Administration (FMCSA) sponsored the development of several Implementation Guides (IGs) on how to use the EDI transaction sets for CVO applications. JHU/APL has developed IGs for TS 284, TS 285, TS 286 (IRP, IFTA, OS/OW, Electronic Screening Enrollment), and TS 824, as well as a FMCSA Code Directory. See the Browse and Download Documentation; EDI Implementation Guides section of the JHU/APL CVISN web site http://www.jhuapl.edu/cvisn/ for the latest implementation guides. For information about the transaction sets related to tax filing, see http://www.taxadmin.org/.

DSRC-Related Standards

ASTM PS-111-98	Frequency (Physical) Layer
ASTM v6	Data Link Layer
IEEE Std 1455-1999	Application Layer

CRF 1159 has been applied. The DSRC standards are still in the approval cycle. For current status information, see http://www.its.dot.gov/standard/standard.htm.

These ANSI and DSRC open standards are the ones that states implementing CVISN capabilities should adopt.

The interfaces between carrier's Internet browsers and various World Wide Web applications, such as the State's Web Site, use Internet standards. See http://www.w3.org/ for information about Internet standards.

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.

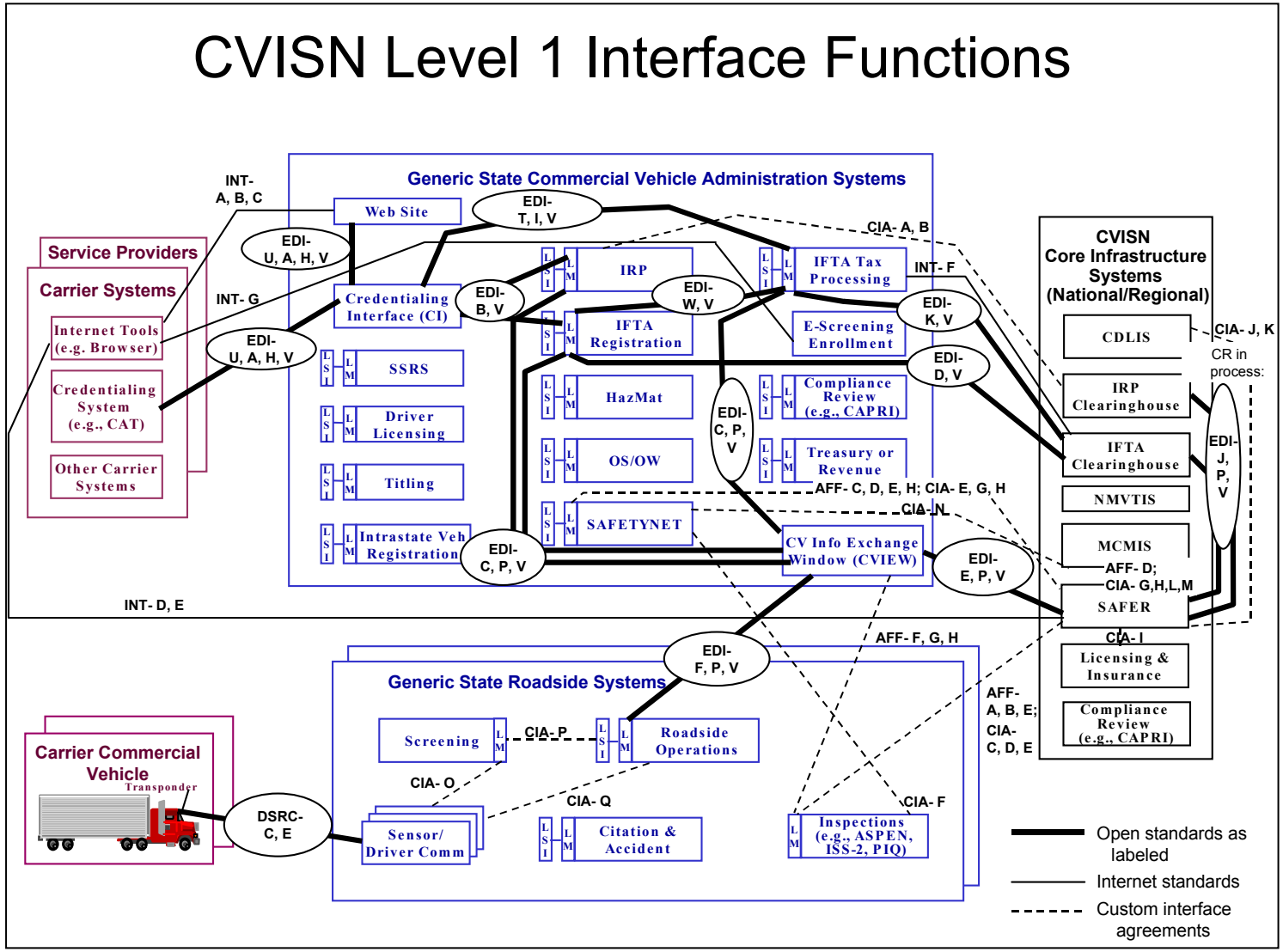
Because it is not yet clear how XML will be used in support of CVISN capabilities, XML interfaces are not shown in Figures 2-1 and 2-2. However, any EDI interface is a potential candidate for an XML interface. This document will be updated to reflect XML interfaces after they have been prototyped by states. See the World Wide Web Consortium (W3C) website http://www.w3.org/XML/ for more information on XML specifications and the W3C recommendations. If you are interested in participating in a working group to explore the use of XML for CVO information exchanges, please contact the person listed on the back of the title page of this document.

The interfaces between FHWA and FMCSA-developed safety-related systems (ASPEN and SAFER, ASPEN and CVIEW, SAFER and SAFETYNET, SAFER and MCMIS, SAFER and Licensing & Insurance) are based on custom interface agreements defined by the system developers and endorsed by FHWA and FMCSA. Under special circumstances, FMCSA tolerates, but does not encourage, the use of custom interface agreements for interchanges between systems operated under different "jurisdictions".

The purposes of the interfaces are explained in the remainder of this section.

In Figure 2-2, the standard names (e.g., X12 TS 286) have been replaced with letters. The letters correspond to particular functions as illustrated in the table that follows. CRF 1084 and 313 have been applied.

Figure 0-2 CVISN Level 1 Interface Functions



The checklist table below, Table 2-1, explains the purpose for each standardized interface shown in Figure 2-2. In addition to the standard column definitions explained in section 1.4, this table contains these columns:

- Label – the identification shown in Figures 2-2
- Std – the open standard or custom interface agreement to which the label refers and references that contain details of the standard and how to implement it
- Interface Purpose - summary versions of the interface exchanges expected, culled from other CVISN documentation
- From System – based on the generic design, the system that will send the information listed in the Interface Purpose column
- To System – based on the generic design, the system that will receive the information listed in the Interface Purpose column

There are more interfaces listed in the table than are shown on the drawings. Those additional interfaces correspond to enhanced or complete capabilities, as indicated by the "Req Level" column. For details about implementing the standardized interfaces, review the standards and implementation guides.

If the 'Req Level" cell is in *italics*, it means that the capability will be supported during the Level 1 timeframe, but is not yet available as of August 2000.

FMCSA's new policy on credentials administration applies to 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.

There are several connection paths shown for ASPEN and SAFETYNET. They represent the capabilities planned as the products evolve to more powerful computers and more sophisticated software. Details of the evolution paths will be included in the CVISN Guide to Safety Information Exchange [Reference 17].

The categories of interfaces shown on Figure 2-2 and in Table 2-1 are:

- EDI – Electronic Data Interchange; ANSI X12 standards
- DSRC – Dedicated Short-Range Communications; IEEE and ASTM standards
- AFF – Application File Format; data structured in a format that is a precursor to an EDI exchange
- INT – Internet; HTML standards
- CIA – Custom Interface Agreement; data exchanged according to a particular custom interface agreement

- XML - eXtensible Markup Language

Table 0-1 Standard Interface Identification Table

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
N/A	EDI-A	TS 286 Ref 7, 9, 11, 12, 14	Commercial Vehicle (CV) Credentials: • Submit initial/renewal/supplemental electronic application for credentials • Submit trip permit application • Notify payee of payment method • Submit corrected application • Send renewal notice • Return credentials data to applicant • Return temporary credential • Return trip permit • Notify payer of fees due • Reject application	CAT (or Web Site) CAT (or Web Site) CAT (or Web Site) CAT (or Web Site) CI CI CI CI CI CI	CI CI CI CI CAT (or Web Site) CAT (or Web Site) CAT (or Web Site) CAT (or Web Site) CAT (or Web Site) CAT (or Web Site)	L1; E	L1 = IRP & IFTA E = other credentials Oklahoma will not be implementing a CI. Credential web sites will use a custom format to communicate with the legacy systems. In addition, for IRP, EDI transaction sets may be submitted through the web site over the internet to the IRP legacy system. The EDI transaction set used for the IRP credential application may not exactly match the TS 286 transaction set.

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
N/A	EDI-B	TS 286 Ref 7, 9, 11, 12, 14	CV Credentials: • Pass application to legacy system • Return credentials data • Return temporary credential • Return trip permit • Report fees due • Reject application	CI Legacy admin system Legacy admin system Legacy admin system Legacy admin system Legacy admin system	Legacy admin system CI CI CI CI CI	L1; E	L1 = IRP & IFTA E = other credentials See comments on EDI-A
N	EDI-C	TS 285 Ref 7, 13-14	CV Safety & Credentials Information Exchange: • Update snapshot segment • Request carrier, vehicle, or driver information (i.e. request a snapshot view) • Respond to carrier, vehicle, or driver information request or fulfill subscription (i.e. send one or more snapshots using a particular view)	Legacy admin system or E-screening Enrollment (or CI) Legacy admin system or E-screening Enrollment (or CI) CVIEW	CVIEW CVIEW Legacy admin system or E-screening Enrollment (or CI)	L1; C	L1 = carrier & vehicle C = driver CRF 1172 E=E-screening Enrollment Oklahoma does not plan to use EDI between legacy systems and CVIEW. E-screening enrollment is the responsibility of the vendor, Help Inc.

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
undetermined	EDI-D	TS 286 Ref 7, 11, 14	CV Credentials: • Submit application data • Retrieve demographic data from Clearinghouse for review	State IFTA Registration IFTA Clearinghouse	IFTA Clearinghouse State IFTA Registration	L1	Oklahoma will perform a cost/benefit analysis of participating in the IFTA Clearinghouse. Once Oklahoma begins participation, the TS 286 will be used.
N	EDI-E	TS 285 Ref 7, 13-14	CV Safety & Credentials Information Exchange: • Update snapshot segment • Request carrier, vehicle, or driver information (i.e. request a snapshot view) • Respond to carrier, vehicle, or driver information request or fulfill subscription (i.e. send one or more snapshots using a particular view) • Update snapshot segment	CVIEW CVIEW SAFER SAFER	SAFER SAFER CVIEW CVIEW	L1; C	L1 = carrier & vehicle C = driver Oklahoma intends to use either XML or the National SAFER Working Group flat file standard for interactions between CVIEW and SAFER
N	EDI-F	TS 285 Ref 7, 13-14	CV Safety & Credentials Information Exchange • Request carrier or vehicle information (i.e. request a snapshot view) • Respond to carrier or vehicle information request (i.e. send one or more snapshots using a particular view)	Roadside Operations CVIEW	CVIEW Roadside Operations	L1; C	L1 = carrier & vehicle C = driver Oklahoma currently plans to use a web interface for roadside queries to CVIEW and internet standards will be used.
	EDI-G		*deleted*				CRF 313

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
N	EDI-H	TS 813 Ref 7, 35	Tax Return: • File electronic IFTA tax return	CAT (or Web Site)	CI	L1	Oklahoma will be using a web site to automate electronic tax filings. Internet standards will be used between the web site and the legacy system. No CI will be used.
N	EDI-I	TS 813 Ref 7, 35	Tax Return: • Pass tax return to IFTA tax return processing system	CI	State IFTA Tax Processing System	L1	See comment on EDI-H
F	EDI-J	TS 285 Ref 7, 13-14	CV Safety & Credentials Information Exchange: • Update snapshot segment	IFTA or IRP Clearinghouse	SAFER	*L1*	
undetermined	EDI-K	TS 826 Ref 7, 36	Tax Information Exchange: • Send data on fuel tax filings among jurisdictions; summarize detailed tax information from individual returns and balance due/owed (netting and pre-netting summaries)	IFTA Clearinghouse	State IFTA Tax Processing System	L1	Oklahoma will perform a cost/benefit analysis of participating in the IFTA Clearinghouse. Once Oklahoma begins participation, the TS 826 will be used.
N/A	EDI-L	TS 150 Ref 7, 34	Tax Rate Notification • Send latest IFTA tax rates	CI	CAT or Web Site	E	Oklahoma will use a web site for IFTA tax filing. Tax rate information will flow from the legacy system to the web server using a custom format..

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
N/A	EDI-M	TS 284 Ref 7, 14, 31	CV Safety Reports (Inspection Report) • Submit safety report • Request safety report • Respond to safety report request	CVIEW CVIEW SAFER	SAFER SAFER CVIEW	*L1*	(not shown on figures; to support non-ASPEN Inspection systems) Oklahoma's ASPEN units will interact directly with SAFER for inspection reports.
N/A	EDI-N	TS 284 Ref 7, 14, 31	CV Safety Reports (Inspection Report) • Submit original safety report • Request safety report • Respond to safety report request	non-ASPEN Inspection system non-ASPEN Inspection system CVIEW	CVIEW CVIEW non-ASPEN Inspection system	*L1*	Oklahoma uses ASPEN.
N	EDI-O	TS 284 Ref 7, 14, 31	CV Safety Reports (Crash Data) • Submit original safety report	Citation & Accident	SAFETYNET 2000 via CVIEW & SDM	C	SDM = SAFER Data Mailbox Data is manually entered into SAFETYNET.
N	EDI-P	TS 824 Ref 7, 14, 40	Application Advice • Acknowledge successful processing of TS 285 update message data • Report errors in processing of TS 285 update message data	receiver of 285 receiver of 285	sender of 285 sender of 285	*L1*	Oklahoma plans to use XML or the National SAFER working group flat file standards in place of the TS 285.
N/A	EDI-Q	TS 150 Ref 7, 34	Tax Rate Notification • Send latest IFTA tax rates	State IFTA Tax Processing System	CI	E	Oklahoma will not be implementing a CI. Tax rate information will flow from the legacy system to the web serving using a custom format.

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
N/A	EDI-R	TS 286 Ref 41	Electronic Screening Enrollment • Submit e-screening enrollment data	CAT or other carrier system	E-Screening Enrollment	E	CRF 1172 Oklahoma's electronic screening vendor is Help Inc. Commitment to this standard is dependent on the vendor.
N	EDI-S	TS 820 Ref 7	Payment Order/Remittance Advice : • Initiate EFT payment • Report payment received	payer state's bank	payer's bank State Treasury or Revenue system	E	Oklahoma uses an ACH flat file standard for transmitting EFT payment information.
N/A	EDI-T	TS 151 Ref 7, 32	Electronic Filing of Tax Return Data Acknowledgement • Report errors encountered when attempting to process IFTA tax return (813)	State IFTA Tax Processing System	CI	L1	Oklahoma will not be implementing a CI. Acknowledgement will be transmitted in a custom format from the legacy system to the web server.
N/A	EDI-U	TS 151 Ref 7, 32	Electronic Filing of Tax Return Data Acknowledgement • Pass IFTA tax return error message • Pass IFTA tax return successfully processed message	CI CI	CAT (or Web Site) CAT (or Web Site)	L1	Oklahoma will not be implementing a CI. Acknowledgement will be transmitted in a custom format from the legacy system to the web server.
N	EDI-V	TS 997 Ref 7, 33	Acknowledge	all EDI-receiving systems	all EDI sending-systems	L1	For the IRP EDI credentialing transaction, Oklahoma will send a custom formatted acknowledgement of receipt back to the web server.
N	EDI-W	TS 286 Ref 7, 11, 14	CV Credentials: • Submit application data (complete or subset; (demographic information)	State IFTA Registration System	State IFTA Tax Processing System	L1	This information will be made available to the tax processing system in a custom format.

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
N/A	EDI-X	TS 284 Ref 7, 14, 31	Inspection Report • Fulfill inspection report subscription • Query for inspection report • Respond to inspection query	SAFER Law Enforc User SAFER	Law Enforcement User SAFER Law Enforc User	*L1*	Oklahoma uses ASPEN/PIQ/ISS2 for inspection queries and their corresponding transmission formats. Law enforcement also uses the SAFER web site.
N	EDI-Y	TS 286 Ref 7, 11, 14	CV Credentials: • Query for latest credentials status • Respond to credentials query	Law Enforcement Credentialing System of record	Credentialing System of record Law Enforcement	E	Law enforcement uses OLETS to query for credential status. Queries are in a custom format
F	DSRC	various	According to draft USDOT policy, • 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. • 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: a. the new ASTM Physical Layer in the active mode; b. the existing ASTM Version 6 Data Link layer in the synchronous mode; c. and the IEEE 1455 Application Layer.				CRF 1159

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
F	DSRC-A	IEEE Std 1455-1999 Ref 24	CV Electronic Screening Message Set • CV Screening Identification	Transponder	Screening/Driver Comm	E	CRF 1159 Oklahoma's electronic screening vendor is Help, Inc. Oklahoma will demonstrate the standards as used by the vendor.
F	DSRC-B	IEEE Std 1455-1999 Ref 24	CV Screening Message Set All messages	Transponder or Screening/Driver Comm	Screening/Driver Comm or Transponder	C	CRF 1159 See comment on DSRC-A
F	DSRC-C	IEEE Std 1455-1999 Ref 24	CV Border Clearance Message Set • Trip Identification Number message	Transponder	Screening/Driver Comm	L1	CRF 1159 See comment on DSRC-A
F	DSRC-D	IEEE Std 1455-1999 Ref 24	CV Border Clearance Message Set All messages	Transponder or Screening/Driver Comm	Screening/Driver Comm or Transponder	C	CRF 1159 See comment on DSRC-A
F	DSRC-E	ASTM 17.51 Ver 6 Ref 30	DSRC provisional standard	Transponder or Screening/Driver Comm	Screening/Driver Comm or Transponder	L1	CRF 1159 See comment on DSRC-A
F	DSRC- F	ASTM 17.51 Ver 6 Ref 22	ASTM Physical Layer in the active mode	Transponder or Screening/Driver Comm	Screening/Driver Comm or Transponder	E	CRF 1159 See comment on DSRC-A
F	DSRC-G	ASTM 17.51 Ver 6 Ref 23	The existing ASTM version 6 Data Link Layer in the synchronous mode	Transponder or Screening/Driver Comm	Screening/Driver Comm or Transponder	E	CRF 1159 See comment on DSRC-A

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
F	DSRC-H	IEEE Std 1455-1999 Ref 24	The IEEE 1455 Application Layer	Transponder or Screening/Driver Comm	Screening/Driver Comm or Transponder	E	CRF 1159 See comment on DSRC-A
F	AFF-A	applica-tion file format Ref 25	Snapshot • Fulfill snapshot subscription • Query for snapshot(s) • Response to query	SAFER ASPEN SAFER	ASPEN SAFER ASPEN	*L1*	
F	AFF-B	applica-tion file format Ref 25	Inspection Report • Submit original inspection report • Query for inspection report • Respond to inspection query	ASPEN ASPEN SAFER	SAFER SAFER ASPEN	*L1*	
F	AFF-C	applica-tion file format Ref 25	Snapshot • Fulfill snapshot subscription • Query for snapshot(s) • Response to query	SAFER SAFETYNET 2000 SAFER	SAFETYNET 2000 SAFER SAFETYNET 2000	*L1*	
F	AFF-D	applica-tion file format Ref 25	Inspection Reports, Compliance Reviews, Crash Data, Enforcement Data • Update request (upload and store) • Update confirmation (confirm success)	SAFETYNET 2000 MCMIS via SDM	MCMIS via SDM SAFETYNET 2000	*L1*	SDM = Safer Data Mailbox
F	AFF-E	applica-tion file format Ref 25	Inspection Report • Submit original inspection report	ASPEN	SAFETYNET 2000 via ~~SDM~~ Blizzard	*L1*	SDM = Safer Data Mailbox Oklahoma's sends ASPEN generated inspection reports to Blizzard, which sends the result to SAFETYNET 2000 and the SDM simultaneously.

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
N	AFF-F	applica-tion file format Ref 25	Snapshot • Fulfill snapshot subscription • Query for snapshot(s) • Response to query	CVIEW ASPEN CVIEW	ASPEN CVIEW ASPEN	*L1*	Oklahoma's CVIEW will receive safety information updates from SAFER.
N	AFF-G	applica-tion file format Ref 25, 26	Inspection Report • Submit original inspection report	ASPEN	SAFER via CVIEW	*L1*	Oklahoma will submit inspection reports directly to SAFER. SAFER will update the Oklahoma CVIEW.
N	AFF-H	applica-tion file format Ref 25, 26	Inspection Report • Submit original inspection report	ASPEN	SAFETYNET 2000 via CVIEW & SDM	*L1*	SDM = Safer Data Mailbox See comment on AFF-E
F	INT-A	Internet Standards	Equivalent of Commercial Vehicle (CV) Credentials: • Submit initial/renewal/supplemental electronic application for credentials • Submit trip permit application • Indicate payment method • Submit corrected application • Display vehicle inventory data (for renewal) • Display credentials data • Display temporary credential for printing • Display trip permit for printing • Display invoice • Display application rejection message	Internet Tools Internet Tools Internet Tools Internet Tools Web Site Web Site Web Site Web Site Web Site Web Site	Web Site Web Site Web Site Web Site Internet Tools Internet Tools Internet Tools Internet Tools Internet Tools Internet Tools	L1; E	L1 = IRP & IFTA E = other credentials CRF 1048
F	INT-B	Internet Standards	Tax Return: • File electronic IFTA tax return	Internet Tools	Web Site	*L1*	CRF 1048

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
F	INT-C	Internet Standards	Electronic Filing of Tax Return Data Acknowledgement • Display IFTA tax return error message • Display IFTA tax return successfully processed message	 Web Site Web Site	 Internet Tools Internet Tools	*L1*	CRF 1048
F	INT-D	Internet Standards	Snapshots • Query for snapshot(s) • Response to query	 Internet Tools SAFER	 SAFER Internet Tools	L1	
F	INT-E	Internet Standards	Inspection Reports • Query for inspection report • Respond to inspection query	 Internet Tools SAFER	 SAFER Internet Tools	*L1*	If technology permits
P	INT-F	Internet Standards	Tax Rate Notification • Send latest IFTA tax rates	 IFTA Clearinghouse	 State IFTA Tax Processing System	L1	
N/A	INT-G	Internet Standards	Electronic Screening Enrollment • Submit e-screening enrollment data	Internet Tools	E-Screening Enrollment	L1	CRF 1172 Demonstration of this capability is dependent on electronic screening vendor, Help Inc.
undetermined	CIA-A	custom interface agreement	Recaps	State IRP	IRP Clearinghouse	L1	Oklahoma will perform a cost/benefit analysis of participating in the IRP Clearinghouse. Once Oklahoma begins participation, the IRP Clearinghouse custom format will be used.
undetermined	CIA-B	custom interface agreement	Netting/Transmittal data	IRP Clearinghouse	State IRP	L1	See comment on CIA-A

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
F	CIA-C	custom interface agreement Ref 25	Snapshots • Fulfill snapshot subscription • Query for snapshot(s) • Response to query	 SAFER ASPEN SAFER	 ASPEN SAFER ASPEN	L1	
F	CIA-D	custom interface agreement Ref 25	Inspection Reports • Submit original inspection report • Query for inspection report • Respond to inspection query	 ASPEN ASPEN SAFER	 SAFER SAFER ASPEN	L1	
F	CIA-E	custom interface agreement	Inspection Reports • Submit original inspection report	ASPEN	SAFETYNET via ~~SDM~~ Blizzard	L1	SDM = Safer Data Mailbox Oklahoma's sends ASPEN generated inspection reports to Blizzard, which sends the result to SAFETYNET 2000 and the SDM simultaneously.
N	CIA-F	custom interface agreement	Inspection Reports • Submit original inspection report	ASPEN	SAFETYNET via electronic bulletin board	L1	
F	CIA-G	custom interface agreement Ref 25	Facsimile request Facsimile response	SAFETYNET MCMIS via SDM	MCMIS via SDM SAFETYNET	L1	SDM = Safer Data Mailbox
N	CIA-H	custom interface agreement Ref 25	F-report request F-report response	SAFETYNET MCMIS via SDM	MCMIS via SDM SAFETYNET	L1	SDM = Safer Data Mailbox
F	CIA-I	custom interface agreement Ref 25	Snapshot • Update carrier snapshot segment	Licensing & Insurance	SAFER	L1	

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
N/A	CIA-J	custom interface agreement Ref 25	Driver Status Report	CDLIS	SAFER	*L1*	Demonstrating the interface between CDLIS and SAFER is a federal responsibility and not within the Oklahoma CVISN project scope.
N/A	CIA-K	custom interface agreement Ref 25	Driver History Report	CDLIS	SAFER	*L1*	See comment on CIA - J
N/A	CIA-L	custom interface agreement Ref 25	Snapshot • Update carrier snapshot segment	MCMIS	SAFER	L1	Demonstrating the interface between MCMIS and SAFER is a federal responsibility.
F	CIA-M	custom interface agreement Ref 25	Inspection Reports, Compliance Reviews, Crash Data, Enforcement Data • Provide past reports	MCMIS	SAFETYNET via SAFER	L1	
F	CIA-N	custom interface agreement Ref 25	Inspection Reports, Compliance Reviews, Crash Data, Enforcement Data • Provide reports	SAFETYNET via SAFER	MCMIS	L1	
F	CIA-O	custom interface agreement	Sensor data Control data	Sensor/Driver Comm Screening	Screening Sensor/Driver Comm	L1	Demonstration of this capability is dependent on the electronic screening system vendor's technology.
F	CIA-P	custom interface agreement	Screening criteria, snapshot data Screening results	Roadside Operations Screening	Screening Roadside Operations	L1	Demonstration of this capability is dependent on the electronic screening system vendor's technology.
F	CIA-Q	custom interface agreement	Sensor data Control data	Sensor/Driver Comm Roadside Operations	Roadside Operations Sensor/Driver Comm	L1	Demonstration of this capability is dependent on the electronic screening system vendor's technology.

Commit Level (F/P/N)	Label	Std	Interface Purpose	From System	To System	Reqts Level	Comments
	XML-tbd	W3C recommendation Ref 39	CV Safety & Credentials Information Exchange	tbd	tbd	E	CRF 1164 Specific information will be added at a later time.
	XML-tbd	W3C recommendation Ref 39	CV Credentials Information Exchange	tbd	tbd	E	CRF 1048 Specific information will be added at a later time.

NOTE: For CVISN Level 1,

- The credentials handled by TS 286 include IRP Registration and IFTA Registration; future credentials include Single State Registration/Unified Carrier Registration, Oversize/Overweight Permitting, HazMat Permitting, Vehicle Titling, Intrastate Vehicle Registration
- The snapshots handled by TS 285 include carrier (safety and credentials elements), vehicle (safety and credentials elements); future snapshots may include driver
- The safety reports handled by TS 284 include Inspection Results; future safety reports include HazMat Incident, Compliance Review, and Crash
- EDI interfaces are potential candidates for XML interfaces. This document will be updated to reflect XML interfaces after they have been prototyped by states.

Standard Data definitions

Ideally, there would be a common data dictionary for use throughout all systems associated with CVISN. That is not practical, since many legacy systems have different data definitions, and new systems are being developed by different organizations. Several documents define data elements that support CVO functions and standards [References 14, 21, 24, 27, 28, 29].

The data items listed in this chapter are common across more than one interface standard. They are used as "keys" to access information about the major entities: carrier, vehicle, driver, shipment, and trip. When systems use common keys, it is possible to match information sets such as safety and credentials data. The specifications in Table 3-1 define the key identifier characteristics to be adopted when exchanging information using the standards. It may be necessary to translate the identifier from a legacy system into this format when using a standard to exchange information. In addition to the standard column definitions explained in section 1.4, this table contains these columns:

- Entity – Any person, place, thing, concept, or event that has meaning to an enterprise, and about which data can be stored. (Example: vehicle)
- Identifier Name – the name of the data element that should be standard across systems for the entity
- Identifier Segment – a list of components that make up the data name, including whether the segment should be alphabetic, numeric, or alphanumeric
- Number of Characters – the maximum length that should be supported for each segment

For further information about standard identifiers, see Reference 8.

Table 0-1 Standard Data Definitions

Commit Level (F/P/N)	Entity	Identifier Name	Identifier Segments	Number of Characters	Reqts Level	Comments
P	Motor Carrier	Primary Carrier ID e.g., For ***interstate*** carrier: MCI 12345 A001 (note that MCI is the code used for ID Type USDOT #) e.g., For ***intrastate*** carrier 0B US-CA 123A45689 1234 (note that 0B is the code used ID Type State-Specific)	ID Type (alphanumeric); if carrier is interstate, the type must be USDOT type code (MCI); for intrastate carrier without a USDOT number, the type code must be state-specific (0B) + Jurisdiction Code, if carrier is intrastate (alphanumeric); 2 character country code, hyphen, 2-character subdivision code; the allowable country and subdivision codes will be defined in the FMCSA Code Directory + Carrier-Specific Identifier corresponding to the ID type (alphanumeric); if carrier is interstate, must be USDOT number; if carrier is intrastate and has a USDOT number, must be USDOT number; for state-specific IDs, the Carrier-Specific Identifier may include a prefix to clarify the agency/source of the identifier) + Carrier Terminal ID designated by carrier (alphanumeric)	3 (max) 5 12 (max)	L1	Oklahoma will use USDOT for Interstate carrier registration and tracking, and for Intrastate Registration. Oklahoma does not use the carrier terminal ID

Commit Level (F/P/N)	Entity	Identifier Name	Identifier Segments	Number of Characters	Reqts Level	Comments
				4 (max)		
F	Vehicle	Vehicle Identification Number e.g., 1FDKE30F8SHB33184 and Vehicle Plate ID e.g., US CA 12345664820M	VIN assigned by manufacturer (alphanumeric) Country code + Jurisdiction (state or province) code (alphanumeric) + License plate ID (alphanumeric)	30 (max) 2 (using country code from ISO-3166) 2 (using subdivision code from ISO-3166) 12 (max)	L1	

Commit Level (F/P/N)	Entity	Identifier Name	Identifier Segments	Number of Characters	Reqts Level	Comments
F	Transponder	Transponder ID e.g., 0 123456789	Transponder ID Definition Flag (0=current; 1=IEEE P1455) + *If Transponder ID Definition Flag = current*, then the other segment is: Transponder Serial Number assigned by manufacturer *If Transponder ID Definition Flag = IEEE P1455*, then the other segments are: Manufacturer Identifier + Transponder Serial Number assigned by manufacturer	1 bit 32-bit unsigned integer 16 bits 20 bits	L1 E	Oklahoma uses PrePass. Commitment to this format is dependent on the PrePass vendor.
F	Driver	Driver Unique ID e.g., US NM B99999999999A	Country code + Jurisdiction (state or province) code (alphanumeric) + Driver specific identifier (driver license number) assigned by jurisdiction (alphanumeric)	2 (using country code from ISO-3166) 2 (using subdivision code from ISO-3166) 16 (max)	L1	Oklahoma may also specify driver's license class. Classes are A, B, C, D.

Commit Level (F/P/N)	Entity	Identifier Name	Identifier Segments	Number of Characters	Reqts Level	Comments
N	Shipment	Shipment Unique ID e.g., 776655443322	Bill of Lading number assigned by the carrier (numeric)	12 (max)	C	Not currently tracked. May implement standard if Oklahoma chooses to track shipments
N	Trip	Trip/Load Number e.g., 123456789761231	Carrier DUNS number as assigned by Dun and Bradstreet (numeric) + Trip unique number as assigned by carrier (numeric)	9 6	E	Currently not tracked. May implement standard if Oklahoma chooses to track trip/load numbers.

Notes:

- In accordance with CRF 630, the Driver Unique ID has been updated to split country and subdivision.
- In accordance with CRF 631, the description of Trip/Load Number has been clarified to match IEEE Std 1455-99.
- In accordance with CRF 549, the Transponder ID is specified to be a two-part identifier, with the ID itself in hexadecimal representation.

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APPENDIX C – COACH, PART 3

Intelligent Transportation Systems (ITS)
Commercial Vehicle Operations (CVO)

CVISN Operational and Architectural Compatibility Handbook (COACH)

Part 3

Detailed System Checklists

Baseline Version

POR-97-7067 V1.0

October 2000

Please note that this is a Preliminary Issue

It is important to note that this is a preliminary document. All sections included are complete and have been reviewed by JHU/APL, but not by other DOT contractors or state/federal government agencies. The purpose of this issue is to obtain comments and feedback on this document from those external organizations before a baseline version is published.

Note: This document and other CVISN-related documentation are available for review and downloading by the ITS/CVO community from the JHU/APL CVISN site on the World Wide Web. The URL for the CVISN site is: http://www.jhuapl.edu/cvisn/

Review and comments to this document are welcome. Please send comments to:

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Change Summary:

This document is under configuration management by the CVISN Architecture Configuration Control Board. The list below provides a brief description of the change request forms (CRFs) processed by the board that impacted this document. Soon we hope to post the CRFs on the CVISN Web site referenced above.

References to the CRFs listed below appear in the text or tables of the document so that the reader knows how each CRF affected Version V1.0 of the document

Version V1.0 of the document incorporates revisions related to these change reports:

- CRF 313 – Disapproved (EDI interface for IRP CH)
- CRF 827 – Snapshot update views & control, esp. how SAFER & CVIEW should handle data from multiple sources
- CRF 1047 – Update CVISN to include Archived Data User Service
- CRF 1048 – Update CVISN for Web sites and XML for Credentialing
- CRF 1084 – Update Design Template and Stakeholder View

- CRF 1159 – Update DSRC references
- CRF 1164 – Clarify interface options (EDI, XML, Web, other) for Safety
- CRF 1171 – Use Snapshots for E-Screening in Automated Process
- CRF 1172 – Clarify & complete concepts and requirements for E-Screening Enrollment
- CRF 1204 – Improve format and guidance in the COACH Part 3

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CVISN Operational and Architectural Compatibility Handbook (COACH)
Part 3 – Detailed System Checklists

Table of Contents

Introduction

The CVISN Operational and Architectural Compatibility Handbook (COACH) provides a comprehensive checklist of what is required to conform with the Commercial Vehicle Information Systems and Networks (CVISN) operational concepts and architecture. It is intended for use by state agencies with a motor carrier regulatory function and by motor carriers.

COACH Structure

The COACH is divided into 5 parts:

Part 1 - Operational Concept and Top-Level Design Checklists
Part 2 - Project Management Checklists
Part 3 - Detailed System Checklists
Part 4 - Interface Specification Checklists
Part 5 - Interoperability Test Criteria

Parts 1 [Reference 2], 2 [Reference 3], and 4 [Reference 4], and 5 [Reference 5] are available at the Browse and Download Documentation; Architecture section of the JHU/APL CVISN web site http://www.jhuapl.edu/cvisn/. This is the fourth revision to the COACH Part 3 [see Reference 19 for the earlier version].

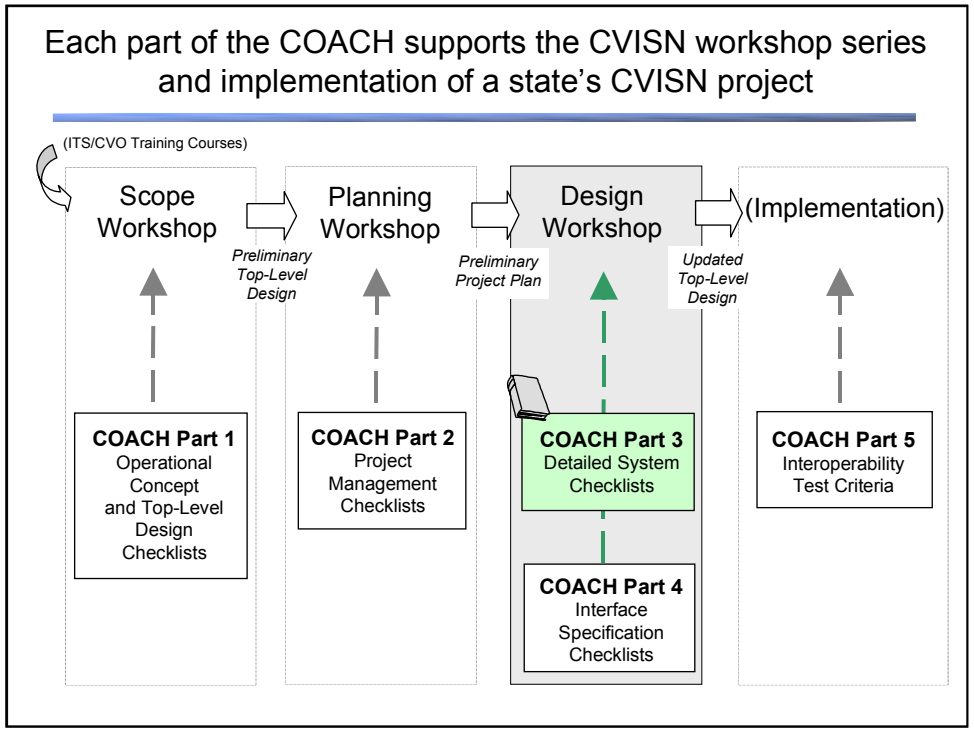


Figure 0-1 The COACH supports the workshops

COACH Part 3 Detailed System Checklists Description

This is Part 3. Part 3 describes the generic CVISN design.

- Data Maintenance Specifications, establishing the requirements incumbent on data "owners" to keep others informed about changes in data values [Chapter 2]
- Description of components of the generic CVISN state design [Chapter 3]
- Description of CVISN Core Infrastructure components [Chapter 4]
- Description of Carrier System components [Chapter 5]
- References [Chapter 6]
- Allocation of State System requirements to components of the generic CVISN state design [Appendix A]

Since the means of communications (e.g., network configuration, protocols supported) are usually specific to each state or to each system, readers should contact the state architect or the system manager for that information. This document is concerned primarily with the information exchanged among systems. Communications standards for vehicle-to-roadside communications are stated.

This document is used to allocate the state requirements from the COACH Part 1 to components of the state system design. The document also includes checklists for data maintenance requirements. Each state should maintain a master filled-in copy of the COACH.

Generic State CVISN System Design

Figure 1.3-1 below depicts the generic CVISN state system design template. CRF 1084 has been applied. Material in this document is based upon this generic design. The systems shown in the generic design are described in chapters 3-5. The CVISN Glossary [Reference 1] explains the acronyms. The generic design represents the main elements needed for a state to implement the CVISN architecture. Each state will adapt the generic design to accommodate their existing (legacy) systems, and to meet their own unique needs.

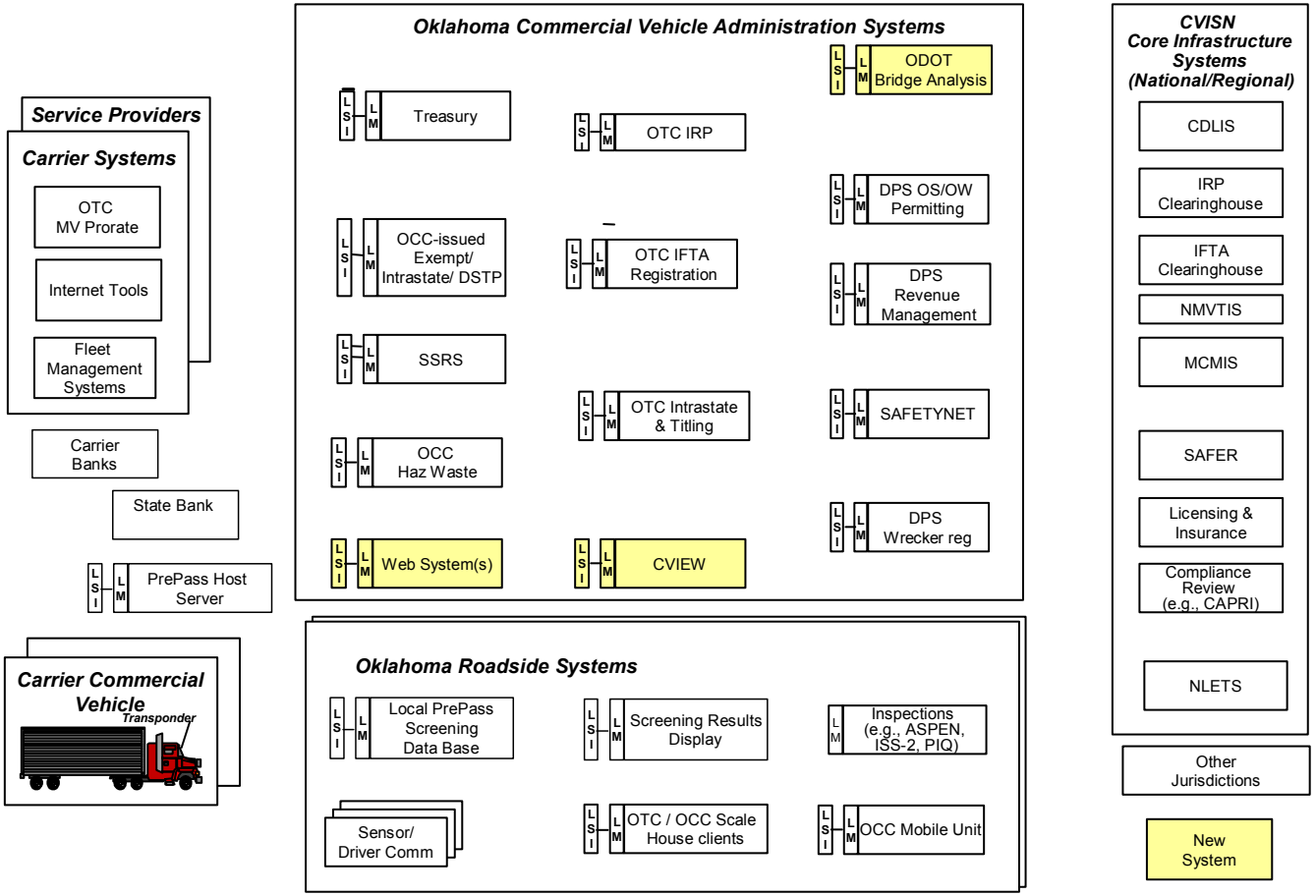
Use of standardized Dedicated Short Range Communications (DSRC) and either Electronic Data Interchange (EDI) or Web interfaces is required for architecture conformance. In the future, the eXtensible Markup Language (XML) may be an alternative to EDI. For safety information exchange, Web transactions may be used to communicate safety information between information systems and human users. SAFER offers access to some carrier data via a Web site. For the credential application process, person-to-computer interfaces based on the World Wide Web standards are popular and conform to the CVISN architecture. In the near term for computer-to-computer interfaces, X12 EDI is recommended.

Each state chooses whether to modify a legacy system (LM - legacy modification) to support EDI or non-EDI formats (and other new functions and interfaces), or to create a Legacy System Interface (LSI) to deal with the EDI or non-EDI-to-native form interface. Many CVISN states are implementing a mix of LSIs and LMs. Throughout this document, the generic state system design is based on choosing to modify the legacy systems (i.e., implement LMs).

In the generic design depicted here, the legacy credentials systems update the appropriate snapshot segments in the Commercial Vehicle Information Exchange Window (CVIEW) using EDI. In this design, both the Roadside Operations and the inspection system products subscribe to CVIEW to receive snapshots. The CVIEW-Roadside Operations connection is an EDI interface. The CVIEW-inspection system interface uses the "application file format" that corresponds to a file format that could be input into an EDI translator.

To achieve interoperability, the CVISN architecture calls for the use of open standards for carrier-state and state-state (via the CVISN Core Infrastructure) interfaces. Interfaces that are wholly within a state government's control (e.g., between state agencies) are not required to use open standards. Most CVISN States have chosen to use open standards for some within-state interfaces, and have chosen to use existing custom interface agreements for others. For example, some states have chosen to implement LSIs instead of modifying their existing International Registration Plan (IRP) or International Fuel Tax Agreement (IFTA) products. They are implementing the LSIs as small applications running on the same computer as the Credentialing Interface (CI). For those states, there are no EDI interfaces between the CI and their existing IRP or IFTA systems. Some of those states have also decided that the CI will provide snapshot segment updates of credentials data to CVIEW on behalf of the IRP or IFTA systems. In this document we depict one generic design for simplicity. The generic design shown here maximizes the use of open standards. Other designs are also acceptable under the CVISN architecture. Refer to the technical volumes of the CVISN Guide series for further information [References 8-10].

Figure 0-1 Oklahoma State Design Template



How States Should Use This Document

The COACH summarizes key concepts and architectural guidelines for CVISN. This version of the COACH Part 3 focuses on topics important to states. The COACH Part 1 defines the CVISN Level 1 criteria. This document allocates the state requirements from the COACH Part 1 to specific components of the generic state CVISN design. This document also provides more information about the CVISN Core Infrastructure products and the components of the Carrier Systems. The Data Maintenance table in Chapter 2 provides guidelines for maintaining data shared across functional areas.

To gain a more complete understanding of CVISN, state planners and designers should read the Introductory Guide to CVISN [Reference 7], other parts of the COACH [References 2-5], and the CVISN System Design Description [Reference 6]. The COACH Part 2 includes checklists that support the project planning processes. The COACH Part 4 defines the interface specification requirements. The COACH Part 5 states interoperability testing criteria. The CVISN System Design Description describes system requirements related to CVISN Level 1 capabilities, the generic CVISN design, and how the elements fit together.

This version of the COACH Part 3 is intended to be a model for how states might allocate the COACH Part 1 requirements to elements of their system designs. This document will be used in the CVISN workshops.

In accordance with CRF 1204, this section has been updated to provide more guidance to the states. The instructions for completing the tables and checklists in the COACH Part 3 have been moved to the specific chapters.

States are to complete these items prior to attending the CVISN Design Workshop:

- States are to indicate their commitment to the data maintenance/update requirements in Chapter 2
- States are to map their state system components to the generic system components in Chapter 3. States should also modify the system component descriptions in this chapter to fit their specific state system design.
- The generic CVISN state design has been summarized in a series of tables in Appendix A. It is recommended that states tailor these tables to specify their state-specific system components, and to allocate their requirements to these state system components.

Chapters 4 and 5 give a little more information about the functions of each of the CVISN Core Infrastructure and Carrier systems than was provided in COACH Part 1. The chapters are provided for information only.

Data Maintenance Requirements

The checklists in this chapter summarize the requirements for maintaining data and sharing updates with other CVO stakeholders. Systems should be designed to meet these criteria. If a user group has more stringent requirements, those requirements override these and should be noted in the "Comments" column.

Table 0-1. Data Maintenance & Update

Commit Level (F/P/N)	Data Need Category	Requirement for data to be maintained or updated	Reqts Level	Comments
F	1. *Routine snapshot segment changes* are those for which users can wait until the next routine snapshot update is scheduled. Routine snapshot data changes include updates related to passed inspections, compliance reviews, or credential renewals or supplements.	The authoritative source system should update the snapshot record within 24 hours of the change.	L1; C	L1 for carrier & vehicle snapshots; C for driver snapshots
F	2. *High-priority snapshot segment changes* are those which users need to know about immediately. High priority snapshot data changes include out-of-service (OOS) resulting from an inspection.	The source system should update the snapshot record within 30 minutes of the change.	L1; C	L1 for carrier & vehicle snapshots; C for driver snapshots
F	3. *Snapshot subscription fulfillment* is the SAFER or CVIEW process for sending specified snapshot output views to users based on standing requests to do so when specified data changes.	Whenever the criteria for sending a snapshot are triggered, the snapshot system (CVIEW or SAFER) should distribute the revised snapshot within 24 hours for routine snapshot segment changes, and within 30 minutes for high-priority snapshot segment changes.	L1; C	L1 for carrier & vehicle snapshots; C for driver snapshots

Commit Level (F/P/N)	Data Need Category	Requirement for data to be maintained or updated	Reqts Level	Comments
F	4. *An inspection report* indicates the results of an inspection conducted at the roadside by a qualified inspector.	Normally, the results of an inspection using ASPEN should be reported electronically within 24 hours of being conducted. If the vehicle or driver was placed OOS, the results should be reported within 30 minutes.	L1	
F	5. *Credential application response* is the response from the state to the applicant. In this context, the "response" reflects the results of evaluating the credential application.	The state system should respond to the applicant's system within 2 hours for a correct transaction that requires no manual intervention. If manual intervention is required, the state system should respond to the applicant's system within 24 hours of receipt of an electronic input.	L1	
UNDETERMINED	6. *IRP base state agreement data* are those data required by other jurisdictions to understand the fees collected on their behalf. In IRP lingo, these data are exchanged via "recaps."	The state IRP system should send recaps to the IRP Clearinghouse at least monthly.	L1	Oklahoma will perform a cost benefit analysis of IRP clearinghouse membership
UNDETERMINED	7. *IFTA base state agreement data* are those data required by other jurisdictions to understand the quarterly fuel taxes collected on their behalf. In IFTA lingo, these data are called "demographic" for basic census information, and "transmittal" for tax return information.	The state IFTA system should send updated demographic and transmittal data to the IFTA Clearinghouse at least monthly.	L1	Oklahoma will perform a cost benefit analysis of clearinghouse membership.

Commit Level (F/P/N)	Data Need Category	Requirement for data to be maintained or updated	Reqts Level	Comments
F	8. The *Privacy Act of 1974* [Reference18] attempts to regulate the collection, maintenance, use, and dissemination of personal information by federal government agencies. Federal systems must adhere to the law. Some sections of the law apply to state and local governments as well. Additionally, some states have related laws regarding privacy and data access.	The systems affected by the Act or related statutes should incorporate procedures, protocols, and designs that support the law. The Privacy Act include sections concerning data disclosure, accounting of disclosure, access, amendment, reporting, archiving, and other activities.	L1	

Generic design – state systems

Description of State Safety Information Exchange and Safety Assurance System Components

Table 3-1 lists the Safety Information Exchange and Safety Assurance products in the Oklahoma CVISN state system design.

Table 0-1 State Safety Information Exchange and Safety Assurance System Components

Commit Level (F/P/N)	System Name in Generic Design	System Name in Our State	Mods in Our State versus Generic Functions (+, -, none)	Comments
F	SAFETYNET		None	
F	Inspections - ASPEN		None	
F	Inspections - ISS		None	
F	Inspections - ISS-2		None	
F	Inspections - PIQ		None	
F	CVIEW		+	
N	Citation & Accident		-	Oklahoma does not use an automated citation and accident reporting system. Crash data is entered manually into SAFETYNET.
F	Compliance Review - CAPRI		None	

PLEASE NOTE THAT OKLAHOMA'S DESIGN DOCUMENT, SECTION 3 DESCRIBES THE SYSTEMS FROM OKLAHOMA'S PERSPECTIVE. SECTION 3 TAKES PRECEDENCE WHERE ANY DISCREPANCIES APPEAR.

SAFETYNET

This product was developed and is maintained by FMCSA. SAFETYNET, operating in every state, is used to collect safety data, analyze and edit the data, and report safety data to FMCSA's MCMIS. According to Reference 12, SAFETYNET is the state-level information management system for motor carrier safety. SAFETYNET captures inter- and intra-state driver/vehicle inspection data, accident data, carrier compliance reviews, enforcement data, and carrier identification data. Originally designed as a manual data entry system, SAFETYNET now allows electronic data collection. The system is central to successful management and operation of the Motor Carrier Safety Assistance Program (MCSAP). It contains many report-generating, prioritizing and task tracking routines. SAFETYNET 2000 is an Oracle-based client-server, Structured Query Language (SQL) database management system.

Inspections (e.g. ASPEN, ISS-2, PIQ)

Record & report safety inspections. According to Reference 12, ***ASPEN*** is a driver/vehicle safety inspection software package that improves the entire inspection process by providing inspectors at the roadside access to safety performance information including the most recent inspection results, the driver's CDL status (see CDLIS) and the safety performance and past safety problems of the carrier (see ISS). ASPEN can be seen as an intelligent assistant that ensures complete and accurate data collection at the roadside. Inspectors select applicable violations from lists of possible citations and add descriptive notes as needed. The program can be customized for use by different States. ASPEN prints an inspection report on-site that is given to the driver. A copy also can be faxed to carrier management. ASPEN inspection data is electronically transferred to State information systems via CVIEW and SAFER. Optimized for use with pen-computers, ASPEN can also be run on Mobile Data Terminals and laptop computers. ASPEN's functions include:

- Interface with Roadside Operations system (to get screening data, notify when inspector available)
- Interface with CDLIS to check CDL status
- Interface to CVIEW/Data Mailbox system (directly or via Roadside Ops) to report inspections and access snapshots and safety reports
- Inspect vehicle - provide operator data entry of inspection results
- Update ASPEN internal database
- Calculate/display Inspection Selection System (ISS) value which recommends inspection based on carrier safety history

According to Reference 12, ***ISS*** is a standardized algorithm that uses carrier safety performance and inspection history data to rank carriers according to the relative value of conducting a vehicle inspection. The objective is to increase inspections on carriers with poor safety performance records (accidents, out-of-service defects and other safety problems) while also increasing inspections on carriers where there is little available information. ISS runs within ASPEN and also as a stand alone for Port of Entry use. Eventually it may also be used for mainline vehicle screening.

The ***ISS-2*** algorithm is substantially different from ISS. ISS is based on the Safety Status Measurement System (SafeStat) algorithm; ISS-2 is not. ISS-2 is computed on the same mainframe, located at the Austin Automation Center (AAC), that runs the MCMIS software; ISS scores were computed on individual laptops in the field based on safety data supplied to those units by SAFER via the subscription process. ISS-2 scores are

normalized from 1 - 100, whereas the SafeStat range used by ISS is considerably larger. ISS-2 also accounts for carriers lacking sufficient data to compute a score by artificially assigning them a high score, e.g. 100, thus ensuring that vehicles for those carriers are inspected.

PIQ is an information retrieval application that allows federal and state law enforcement personnel to quickly obtain recent past vehicle safety inspections on any vehicle regardless of where the inspection was performed. PIQ executes on roadside desktop, laptop, and pen computers. It links to the SAFER system, via the SAFER Data Mailbox, to query and retrieve past inspections based on power unit plate number and state ID. These "past" inspections are saved in SAFER for a 45 day period. Using PIQ, inspection reports can be queried and retrieved at the roadside within seconds of a user's request.

CVIEW

Commercial Vehicle Information Exchange Window. This product is a spin-off of the FMCSA-developed SAFER system. It is owned by and located in a state. In CVISN Level 1, there is a requirement to implement a system called CVIEW (Commercial Vehicle Information Exchange Window) or its equivalent for snapshot exchange within the state and to other states. The CVIEW or equivalent functions for handling the exchange of safety and credentials information within the state, and with other jurisdictions via SAFER, are listed below:

- Provide for the electronic exchange of:
  - **interstate** carrier and vehicle safety and credential data between state source systems, users, and SAFER
  - **intrastate** carrier and vehicle safety and credential data between state source systems and users
- Serve as the repository for a state-selected subset of
  - **interstate** carrier and vehicle safety and credential data
  - **intrastate** carrier and vehicle safety and credential data
- Provide inter- and intrastate carrier and vehicle safety and credential data to the roadside to support screening of non-transponder-equipped trucks and other roadside operations
- Perform electronic exchange using:
  - Electronic Data Interchange (EDI) standards
  - Non-EDI standards, the selection of which is system-dependent
  - New open standard methods of information exchange (e.g., XML) as they become available and are requested by users
- Allow the general public to access data without the security risk of providing a direct connection to sensitive legacy systems

CVIEW has similar Data Mailbox facilities as SAFER to facilitate the exchange of information among state users within the state agencies.

Compliance Review (e.g. CAPRI)

Carrier Automated Performance Review Information. Compliance Reviews are on-site reviews of carriers and hazardous material shippers that cover compliance with critical parts of the Federal Motor Carrier Safety Regulations. The software that supports the electronic capture of compliance

review data is called Carrier Automated Performance Review Information (CAPRI). CAPRI includes worksheets for collecting hours of service data, driver qualification data, and drug and alcohol compliance data. It creates preliminary carrier safety fitness rating and other reports for the motor carrier. Currently, CAPRI transmits completed compliance reviews to SAFETYNET via floppy disk transfer, or, if in a local area network environment, by storing a completed compliance review on a designated disk drive that SAFETYNET accesses directly. Future plans include being able to transfer compliance reviews from CAPRI to SAFETYNET via the SAFER Data Mailbox. This product was developed and is maintained by FMCSA. All Federal staff and most States use CAPRI software.

Description of State CV Credentials Administration System Components

Table 3-2 lists the CV Credentials Administration products in the generic CVISN state system design.

Table 0-2 State CV Credentials Administration System Components

Commit Level (F/P/N)	System Name in Generic Design	System Name in Our State	Mods in Our State versus Generic Functions (+, -, none)	Comments
F	Web Site		+	
N	Credentialing Interface		-	Oklahoma will not implement a CI
F	IFTA Registration	IFTA Registration and Tax	none	
N/A	IFTA Tax Filing	N/A		
F	IRP		None	
F	Intrastate Vehicle Registration		None	
F	OS/OW		+	
P	Titling		-	Current plans do not include vehicle title snapshot updates
P	CDL/DL		-	Current plans do not include driver snapshot updates
F	Treasury System		None	
F	SSRS		+	
F	HazMat	HazWaste	+	Oklahoma issues HazWaste permits

Commit Level (F/P/N)	System Name in Generic Design	System Name in Our State	Mods in Our State versus Generic Functions (+, -, none)	Comments

PLEASE NOTE THAT OKLAHOMA'S DESIGN DOCUMENT, SECTION 3 DESCRIBES THE SYSTEMS FROM OKLAHOMA'S PERSPECTIVE. SECTION 3 TAKES PRECEDENCE WHERE ANY DISCREPANCIES APPEAR.

Web Site
State Web site support for electronic credentialing. The carrier's credential applications will be submitted to the Web Site via an Internet browser. The Web Site would provide input screens and perform initial data checks. The Web Site would pass the application data to the appropriate legacy system. The response from the legacy system would be returned to the carrier via the Web Site.

- Provides on-line forms via a Web site
- Does initial error-checking on data entered onto forms
- Routes application data directly to the appropriate state credentialing system
- Routes responses to the carrier
- May also archive transactions
- Provides temporary credentials, if feasible.
- May enable users to print credentials, for example, a mechanism to print once.

IFTA
International Fuel Tax Agreement systems. See Reference 13. Usually split into two systems, one that handles ***registration*** and one that ***processes fuel tax returns***. The IFTA is a registration reciprocity agreement among states of the United States and provinces of Canada that provides for payment of fuel taxes on the basis of fuel used in various jurisdictions. Carriers pay fuel taxes to the various jurisdictions in which fleet vehicles are operated by registering and filing tax returns through a base state. Only one fuel use license is issued for each carrier when registered under the Agreement. In the OKlahoma CVISN state design, in addition to the normal IFTA functions, the IFTA Registration system also provides carrier snapshot updates.

IRP
International Registration Plan systems. See Reference 14. The International Registration Plan is a registration reciprocity agreement among states of the United States and provinces of Canada that provides for payment of interstate vehicle license fees on the basis of fleet miles operated in

various jurisdictions. License fees are paid to the various jurisdictions in which fleet vehicles are operated through a base state. Only one license plate and one cab card is issued for each fleet vehicle when registered under the Plan. A fleet vehicle is known as an apportionable vehicle and such vehicle, so far as registration is concerned, may be operated both interjurisdictionally and intrajurisdictionally. In the Oklahoma CVISN state design, in addition to the normal IRP functions, the IRP system also provides carrier and vehicle snapshot updates.

Intrastate Vehicle Registration
These systems register commercial vehicles that normally operate within the state. In the Oklahoma CVISN state design, in addition to the normal intrastate vehicle registration functions, the system also provides vehicle snapshot updates.

OS/OW
Issue Oversize/Overweight permits. In the Oklahoma CVISN state design, in addition to the normal OS/OW functions, the OS/OW permitting system also provides carrier and vehicle snapshot updates.

Titling
Title new and used vehicles.

CDL/DL
Issue Commercial Driver's License/ Driver's License.

Treasury System
In this context, the State's Treasury system processes electronic payments. The Treasury system provides payment information to the credentialing system for which the fee/tax is paid. Various electronic payment methods are possible. States authorize electronic payment methods depending on regulations, capabilities, and experiences with individual payers.

SSRS
Single State Registration System. Carrier registration. The SSRS program was created to succeed the "bingo card" program administered by the Interstate Commerce Commission (ICC). The SSRS program is a base-State system whereby a motor carrier registers its interstate operating authority with, and provides proof of financial responsibility coverage to one State (a base-State) instead of multiple States. The base-State then distributes the collected fees to other participating States in which the motor carrier's vehicles operate. State participation in the System was limited to those States participating in the bingo card program prior to January 1991. Transportation agencies in 38 states register interstate authorities under the single state registration system (SSRS).

In the Oklahoma CVISN state design, in addition to the normal registration functions, the SSRS will also provide carrier snapshot updates.

HazMat
Hazardous Material registration and permitting. Provides for registration to carry HazMat and issues HazMat permits. In the Oklahomaq CVISN state design, in addition to the normal HazMat functions, the HazMat system also provides carrier snapshot updates.

Description of State Electronic Screening System Components

Table 3-3 lists the Electronic Screening System products in the generic CVISN state system design. The state should use this checklist to map the state's specific products to the generic components and to reflect the state's specific design.

Table 0-3 State Electronic Screening System Components

Commit Level (F/P/N)	System Name in Generic Design	System Name in Our State	Mods in Our State versus Generic Functions (+, -, none)	Comments
F	Screening System	PrePass	None	
F	Roadside Operations		None	
P	Sensor/Driver Communications		-	All sites may not include WIMs
P	E-Screening Enrollment	N/A	-	E-screening enrollment process is provided by vendor, Help Inc.

PLEASE NOTE THAT OKLAHOMA'S DESIGN DOCUMENT, SECTION 3 DESCRIBES THE SYSTEMS FROM OKLAHOMA'S PERSPECTIVE. SECTION 3 TAKES PRECEDENCE WHERE ANY DISCREPANCIES APPEAR.

Screening System
Make pass/pull-in decision.

- Interface to sensor/driver communications system
- Interface to Roadside Operations system (send sensor data, send screening results)

- Sort vehicles on mainline using: sensor data, snapshot data, availability of inspector, operator configuration selections
- Output screening results to tag via DSRC (includes driver notification)
- Control screening messages and signal lights
- Configure screening based on operator control (via Roadside Operations system) data

Roadside Operations
Process snapshots and control site traffic.

- Interface to electronic screening (send criteria, get screening results, get sensor data, send snapshot summaries)
- On request, retrieve report data and display
- Allow operators to set/view screening criteria
- Display sensor data to operator
- Display snapshot data to operator

Sensor/Driver Communications
Process vehicle measures and communicate via DSRC with driver.

- Weigh In Motion/Automatic Vehicle Classification (possible in future)
- Automatic Vehicle Identification (via DSRC)
- In-cab notification (via DSRC)
- Static scales
- Variable message signs (Possible in future)

E-Screening Enrollment
HELP, Inc. function in Oklahoma.

Generic design – CVISN core infrastructure systems

This chapter describes CVISN Core Infrastructure Systems. This section is for information and requires no action by the state.

CDLIS
Commercial Driver License Information System. A Nationwide linkage of State driver license systems, CDLIS allows quick access to license status and violation history for any CDL driver in North America. CDLIS is used during roadside inspections to identify drivers with revoked, suspended, or bogus licenses.

IRP Clearinghouse
International Registration Plan Clearinghouse. Administration of IRP base state agreement. The IRP Clearinghouse performs these major functions:

- Accepts recaps input from jurisdictions,
- Computes balance due/owed to/from each jurisdiction,
- Facilitates monthly funds transfer, supporting EFT

For more information, contact John Mamone at IRP, Inc. 703-522-1905 or jmamone@aamva.org.

IFTA Clearinghouse
International Fuel Tax Agreement Clearinghouse. Administration of IFTA base state agreement. The IFTA Clearinghouse performs these major functions:

- Responds to standard & ad hoc queries
- Transmittal data entry screens
- Tax Matrix & Reference Table maintenance
- Accepts data (demographic & transmittal) submitted by clients (EDI)
- Provides standard reports

For more information, contact Bob McKee at IFTA, Inc. 602-839-4382 or rmckee@iftach.org.

NMVTIS
National Motor Vehicle Titling Information System. This system is being developed by the American Association of Motor Vehicle Administrators (AAMVA). The initial focus is not on commercial vehicles. It is to provide a pointer to title information for all vehicles.

MCMIS
Motor Carrier Management Information System. The system is operated by the U.S. Department of Transportation's Federal Motor Carrier Safety Administration (FMCSA). According to Reference 12, MCMIS is the national data warehouse of safety performance information on interstate (and some intrastate) motor carriers. It is the authoritative source of safety information used to drive national motor carrier safety programs and to feed other information systems. MCMIS maintains a comprehensive record of the safety performance of the motor carriers and hazardous materials shippers who are subject to the Federal Motor Carrier Safety Regulations or Federal Hazardous Materials regulations. MCMIS is currently accessed directly by Federal and State offices. Routine access to MCMIS data is provided by SAFER.

SAFER
Safety and Fitness Electronic Records system.
From Reference 15,

> "The SAFER System is being developed as a component of ITS. One of its primary functions is to increase the efficiency and effectiveness of the inspection process at the roadside. The SAFER System currently provides carrier, vehicle, and driver safety information to fixed and mobile roadside inspection stations. This capability will be expanded in future releases of the software to include credential information. This will allow roadside inspectors and other potential government and private users to focus their efforts on high-risk areas; i.e., selecting vehicles and/or drivers for inspection based on the number of prior carrier inspections and its safety and credential history. As a result, inspection resources will be directed at drivers and vehicles associated with carriers with few prior inspections or poor safety/credential records, while minimizing time spent inspecting carriers with many prior inspections and good safety/credential histories. This will improve the overall cost effectiveness of the inspection process as well as provide an incentive to safe and legal carriers.
>
> There are many other functions SAFER will support. For example, SAFER will provide data exchange support to the Performance and Registration Information Systems Management (PRISM) project which is currently conducting a feasibility study to determine if vehicle registration can be linked to carrier safety. SAFER will also provide electronic access to carrier safety information to various third party users such as shippers, insurers, vehicle rental/leasing companies, carriers, and others. . .
>
> The primary function of the System is to provide users timely, electronic access to safety and credential data via one or more wide area network (WAN) communication links. This information will include identity data about carriers, vehicles, and drivers, summaries of past safety performance histories (inspections, accidents, and other data) and credential information.
>
> SAFER will provide users with either a summary safety record ("snapshot"), or a more detailed report. Two such reports are the carrier profile and vehicle/driver inspection reports. The System will support on-line query and response for snapshot and report information. It will allow

users to request, via subscriptions, that specific snapshots or reports are sent to them automatically when substantial change in the data occurs. Users will be also able to specify the types of change that triggers transmission of subscription requests. . .

The SAFER system will also support maintenance operations, ensure data currency, provide backup and security protection, track user services and where appropriate, bill users for data exchange services."

One component of the SAFER system is its data mailbox facility. The data mailbox facility provides a simple and universal means of transferring data between State and Federal law enforcement officers and the various information systems.

Licensing & Insurance

Register financial responsibility for interstate carriers. The former Interstate Commerce Commission's (ICC) Licensing and Insurance (L&I) system maintains a comprehensive record of the financial responsibility of motor carriers in order to ensure that they meet the minimum insurance requirements for the activities in which they are engaged. The system is now maintained and operated by the FMCSA. If a motor carrier desires to engage in an activity covered by the financial responsibility regulations, it must provide proof of proper insurance coverage. The carrier's detailed insurance information is maintained in the L&I system along with indicators of its over-all status. When the carrier's insurance profile changes (for instance, when an insurance policy is canceled) the insurance provider informs FMCSA and the system is updated. The L&I information is provided to the public through a variety of mechanisms, including telephone response systems and the SAFER web page.

Compliance Review (e.g. CAPRI)

Carrier Automated Performance Review Information. Compliance Reviews are on-site reviews of carriers and hazardous material shippers that cover compliance with critical parts of the Federal Motor Carrier Safety Regulations. The software that supports the electronic capture of compliance review data is called Carrier Automated Performance Review Information (CAPRI). CAPRI includes worksheets for collecting hours of service data, driver qualification data, and drug and alcohol compliance data. It creates preliminary carrier safety fitness rating and other reports for the motor carrier. Currently, CAPRI transmits completed compliance reviews to SAFETYNET via floppy disk transfer, or, if in a local area network environment, by storing a completed compliance review on a designated disk drive that SAFETYNET accesses directly. Future plans include being able to transfer compliance reviews from CAPRI to SAFETYNET via the SAFER Data Mailbox. This product was developed and is maintained by FMCSA. All Federal staff and most States use CAPRI software.

generic design – carrier systems

The chapter describes Carrier Systems. This section is for information and requires no action by the state.

Credentialing System (e.g. CAT)
Apply for and receive responses about credentials; file fuel tax returns. A stand-alone Carrier Automated Transactions (CAT) system is one possible design solution. Another is a "CAT Module" that is integrated into a larger freight and fleet management system (FMS). The credentialing system performs such functions as:

- Data entry screens for credential applications & fuel tax filing
- Validate application
- Specify payment method
- Get latest fuel tax tables
- Compute fees (some, not all)
- Print applications
- Translate to/from EDI/non-EDI transaction
- Initiate payments through banks (future)
- Send transactions
- Receive transactions
- Acknowledge transactions
- Print credentials, if authorized
- Archive transactions

Internet tools (e.g. Browser)
Via Internet browser, access governmental or private Web sites to apply for and receive responses about credentials, file fuel tax returns, and perform other CV-related functions. CVISN states are exploring Internet-based credentialing solutions. See the description under Web Site in Chapter 3.

Other Carrier Systems

Other elements of fleet and freight management. Carriers have many systems to help them do business. To date, no specific electronic State or CVISN Core Infrastructure interfaces with these carrier activities have been defined. The applications address activities in such areas as:

- Business Operations
  - Accounting & finance
  - Purchasing
  - Billing
  - Human resources & payroll
  - Asset management
  - Management information
  - Planning & forecasting
- Customer Service
  - Sales
  - Scheduling
  - Load matching
  - Order processing
  - Shipment inquiry
- Fleet Management
  - Routing & dispatch
  - Equipment ID & tracking
  - Shipment ID & tracking
  - Driver management
  - Maintenance
  - Safety management

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