Commercial Vehicle Information Systems and Networks (CVISN)

CVISN Program Plan and Top-Level Design

For the State of (INSERT STATE)

Insert Date

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Executive Summary

[The Executive Summary should provide readers with a high level understanding of the mission/purpose of the state's Core Commercial Vehicle Information Systems and Networks (CVISN) program. The summary should indicate the program's relevance to the state, the role of the state's agencies in program deployment, specific projects to be deployed, high-level budget and schedule information, and high-level system design. The Executive Summary also should note any other Federal or state programs (e.g., PRISM, MCSAP, CDL, safety data improvement, border crossings) with which a state's CVISN program will be coordinated.

Optional high level diagrams and tables may be included at the state's discretion, such as those shown in Appendix A, Exhibits 3–1, 3–2, 5–1, and 6–1.

Note: The System Design Diagram should represent the state systems that support the CVISN architecture in your state. All the system labels or names used on the System Design Diagram should also be found on the Network Diagram, and they should be consistent.]

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1. INTRODUCTION

[The introduction should orient the reader to the purpose, scope, and contents of the document, and provide an overview of the purpose of the state's Core CVISN program. The introduction should be no more than 2–3 pages in length.]

1.1 Purpose and Scope

[This subsection should describe the purpose of the document. for example, "to provide a management framework and system architecture to guide CVISN deployment in the state; to advise policy makers/decision makers of the fiscal and technical resources required for successful implementation of CVISN Core capabilities…"]

1.2 Background

[This subsection should provide background information/context regarding a state's Core CVISN program. Elements of this section should include:

- Brief statement describing the national CVISN program and the state's commitment to deploying a program of projects to implement CVISN Core capabilities in the state
- Text or tabular listing of CVISN Core capabilities as defined by FMCSA, indicating that state's Program Plan/Top-Level Design is consistent with these capabilities
- Description of project team (e.g., lead agency, member agencies, motor carrier association, FHWA/FMCSA Division Offices) key participants and key responsibilities (e.g., contact for each CVISN agency and key project responsibilities – coordination with other programs, project management, procurement)
- Organizational chart depicting functional organization of state agencies with CVO responsibilities (see Appendix A, Exhibit 1–1 for an example)
- Organizational chart or table depicting state CVISN team responsibilities (see Appendix A, Exhibit 1–2, for an example)
- Reference to/citation from state's Program Management Processes (e.g., configuration management, issue tracking, documentation, procurement, etc.)
- Reference to the relationship and agreement between the participating agencies (Memorandum of Understanding), state ITS/CVO Business Plan, and COACH, Parts 1 and 2.]

2. PROGRAM OBJECTIVES AND PROJECT DESCRIPTIONS

[This section should provide an overview of the state's CVO goals and objectives, as well as an overview of the Safety, Credentials Administration, and Screening projects the state will undertake to complete its CVISN Core deployment. This section also will identify any core capabilities that the state is electing not to undertake. In these cases, the state will be required to explain its rationale for not deploying Core CVISN functionality. This section is expected to be 10–15 pages in length.

Note: Use the same system names throughout the design documentation, i.e., on all diagrams, in the project descriptions, in the schedules, milestones, and financial information sections.]

2.1 State CVISN Goals

[This subsection should build upon (or reflect) the goals and objectives established in the state's ITS/CVO Business Plan.]

2.2 Current CVISN Deployment Status

[This subsection should provide an overview of the current status of the state's efforts to deploy Core CVISN functionality. The section should document all Core CVISN functionality that the state has deployed to date. The section should be organized by the Core CVISN program areas – Safety Information Exchange, Electronic Screening, and Electronic Credentialing. The introduction to this section should include the state's CVISN program management activities to date (e.g., organization of a CVISN team, organization of a motor carrier advisory group).]

2.2.1 Safety Information Exchange

[This subsection should provide a description of the state's current deployment of Safety Information Exchange capabilities including, but not limited to:

- Information exchange with SAFER: what data is exchanged and how it is used
- Status of deployment of ASPEN or equivalent at major inspection sites
- Status of CVIEW deployment (when deployed, when certified by Volpe and for which transactions, frequency of uploads, inclusion of PRISM functionality, etc.)]

2.2.2 Electronic Screening

[This subsection should describe the state's current deployment of e-screening capabilities – including your state's participation in a screening program, the number of sites included in this program, a description of the program's screening algorithm, and the frequency that credentialing and safety data are updated for use in the screening algorithm. Other related

screening capabilities such as the use of weigh-in-motion systems, automatic vehicle identification, license plate readers, etc., may also be described.]

2.2.3 Electronic Credentialing

[This subsection should describe the state's current deployment of electronic credentialing – including the credentials that currently are available to motor carriers and/or service bureaus electronically, the percentage of transactions processed electronically, and your state's use of enhanced credentialing services (e.g., single portal, electronic payment). Status of participation in IRP and IFTA clearinghouses should also be included.]

2.3 Planned CVISN Deployment Projects

[This section should include a description of the Core CVISN projects that the state is planning to deploy. The description should include an overview of project objectives, expected benefits, lead agency, and high-level requirements for implementation. The description should include key operational scenarios from a user's perspective (e.g., types of electronic payment accepted, how electronic credentialing systems will be accessed, how roadside personnel will query necessary data). Each scenario should explain the sequence of key activities, user actions, information used, and what systems the information comes from and goes to. It is recommended that the System Design Diagram be used as a template for the operational scenario descriptions, with applicable interfaces numbered in sequence and explained in an accompanying table of sequential steps. Where applicable, a state also should identify key factors considered in the development of the project's operational scenario (e.g., Federal/state regulations, Federal/state law, CVISN program requirements, customer service considerations).

The format suggested below lends itself to inclusion in deployment funding applications and also helps the state in defining the steps/phases required for project implementation.]

Table 2–1: Project Description #1 [Repeat for each project]

PROJECT NAME:	
Project Objectives:	
Project Benefits:	
	Benefits to the State:
	Benefits to the Motor Carrier Industry:
Project Description:	
Operational Scenario:	
Lead (host) Agency:	
Participating Agencies:	

Core CVISN Requirements (from Appendix A, Exhibit 3–5) Addressed by Project:	
	1.
	2.
	3.

2.4 High-Level Requirements for Top-Level Design

[This section should document the state's acceptance of guiding principals, operational concepts, institutional framework, and design principles included in the COACH, Part 1. The state should highlight any exceptions to the COACH, Part 1, and provide rationale for this exception, focusing on unique state circumstances, impact (or lack of impact) on safety, effect on industry, effect on national program.]

3. SYSTEM DESIGN

[This section should present the proposed system design for the state's deployment. It is intended to provide an overview of the existing state and national systems/networks involved in the state's Core CVISN deployment, new systems/connectivity to be implemented in order to complete deployment, and a summary of the system changes required to implement CVISN Core capabilities. This section also should define the interfaces required between/among systems and the interface documents (i.e., interface control documents) that will be followed and/or developed. This section is expected to be approximately 15 pages in length.]

3.1 Architecture Overview

[This section should provide an overview of the state's CVISN architecture. It should summarize the key concepts (e.g., single sign-on for enforcement officers to access any information they need) that shape the design. It should summarize key aspects of the approach chosen to implement CVISN (e.g., Web services). It should include the System Design Diagram and the Network diagram, which highlight new and modified systems and networks. See examples of these diagrams in Appendix A, Exhibits 3–1 and 3–2.

Note: All the names used on the System Design Diagram should also be found on the Network Diagram, and they should be consistent.

If the design proposed is not represented in or aligned with the National ITS Architecture and/or the CVISN Architecture, explain how and why. Include sufficient detail to explain all departures from the standard architecture. See Appendix A, Exhibit 3–3, for an example architecture description from the state of Texas; please use this format to explain where the proposed design is in compliance with the architecture and add similar text, tables, and figures to explain

deviations from the architecture. If the proposed design suggests that updates are needed to the National ITS Architecture and/or the CVISN Architecture to achieve nationwide interoperability, please describe them in this section.]

3.2 Description of System Components

[This section should describe the state legacy systems involved in CVISN deployment, including the platform (mainframe, Oracle, etc.), whether it is a state- or vendor-owned system, the host network, the current functions/interfaces, and the functions/interface requirements under the CVISN design. This information can be excerpted and incorporated into RFPs or work scopes for vendors, contractors, and in-house staff in the deployment phase. This section should also describe the network environment for each agency.

This section could include a bulleted list of the systems and a short (one paragraph) description of what the system does. As an example:

- **International Registration Plan (IRP).** There is an existing IRP system that was purchased from *vendor x* in 1995. It is a mainframe application that processes all IRP transactions and sends information to the IRP Clearinghouse via a flat file. It will be replaced by a new Web-based system.
- **International Fuel Tax Agreement (IFTA).** The proposed IFTA system will be a Web-based application that is capable of processing all IFTA transaction types and will provide a link to the IFTA RPC for the filing of quarterly fuel tax returns. It will utilize carrier safety, credentialing and PRISM data extracted from CVIEW before issuing a credential. It will supply CVIEW any new or revised carrier and vehicle information on a nightly basis and will also send information to the IFTA Clearinghouse via a flat file.]

3.3 Project Design Elements

[This section should include a subsection for each of the state's planned Core CVISN deployment projects. For each project, a table showing the interface requirements (existing and planned) with other systems (state, national, and carrier) and the interface types that will be employed (where known) should be included. Identify where published standards apply. Identify other interface documents (e.g., interface control documents) that will be followed or developed.

An example interface table is shown below. Note that, if there is two-way communication between two systems, a separate line should be used for each of the communications channels. For example, if your CVIEW and IFTA systems will exchange information, there should be a line showing how data will flow from the CVIEW system to the IFTA system and another line showing the communication from IFTA to CVIEW:

Table 3–1: Table of System Interfaces

Source System	Destination System	Interface Type
IRP	IRP Clearinghouse	Flat file
IRP	CVIEW	XML
CVIEW	IRP	XML
CVIEW	SAFER	XML
SAFER	CVIEW	XML
Sensor/Driver Communications	Vehicle Transponder	DSRC
System 'x'	System 'y'	interface

This section also should include a table indicating the required high-level system changes, the magnitude of change (small, medium, large), and whether the state anticipates buying or "building" the change (See Appendix A, Exhibit 3–4 for an example System Change Summary table).

Finally, this section should document which system(s) will perform which functions in order to satisfy the Core CVISN requirements. See Exhibit 3–5 for an example Summary of Systems to Perform Required Core CVISN Functionality table. **Note: There may be more than one system in the proposed design that will support each function**.]

3.4 System Testing

[This section should present a high-level overview of the types of testing (e.g., system tests, interoperability tests, operational tests) that will be conducted as part of the state's CVISN program. This section should include end-to-end tests, the SAFER Interface Certification process, and any state-specific testing requirements.]

4. PROCUREMENT STRATEGY/PRODUCTS

[This section should document the products/services that the state may need to procure for each project. This section also should detail the state's planned procurement strategy for all identified products/services (e.g., where RFPs will be required, where state contracts or existing contracts might be used, where in-house development resources may be required). This section could consist of a table with a format similar to that shown in Appendix A, Exhibit 4–1. This section is expected to be no more than 3–5 pages in length.]

5. BUILD DEFINITIONS/PROGRAM SCHEDULE

[This section should document the state's planned deployment schedule. Where appropriate, **a project should be segmented into its constituent "builds", indicating the key milestones and**

the sequence in which a project will be implemented. Example milestones include stakeholder input, design reviews, system development/procurement, and testing.

This section also should include a high-level implementation schedule, similar to the model provided in Appendix A, Exhibit 5–1. This section is expected to be no more than 3–5 pages in length.]

6. FUNDING RESOURCES/PROGRAM BUDGET

[This section should summarize the financial and state staff resources required to implement the state's Core CVISN deployment program. This information should be displayed in a tabular format similar to that shown in Appendix A, Exhibit 6–1.]

7. DESIGN/DEPLOYMENT ISSUES

[This section should highlight unresolved issues that have emerged during the state's planning and design effort. The proposed method for addressing each issue also should be summarized. Issues could be project related, or related to resources, funding, or match capabilities. This section should serve as a placeholder for the state regarding issues in need of resolution prior to full deployment. It also serves as a means of notifying FMCSA reviewers of the fact that the state is actively considering these items and did not omit them from the design.]

APPENDIX A.
EXAMPLES FOR REFERENCE

Exhibit 1–1 Example Organizational Chart

Exhibit 1–2 Example Table of Roles and Responsibilities

Exhibit 3–1 Example System Design Diagram (from Arkansas)

Exhibit 3–2 Example Network Diagram (from Arkansas)

Exhibit 3–3 Example Architecture Description (from Texas)

Exhibit 3–4 Example of System Change Summary Table

Exhibit 3–5 Summary of Systems to Perform Required Core CVISN Functionality

Exhibit 4–1 Example Products/Procurement Table

Exhibit 5–1 Example Summary Schedule

Exhibit 6–1 Example Budget Summary

Exhibit 1–1: Example Organizational Chart

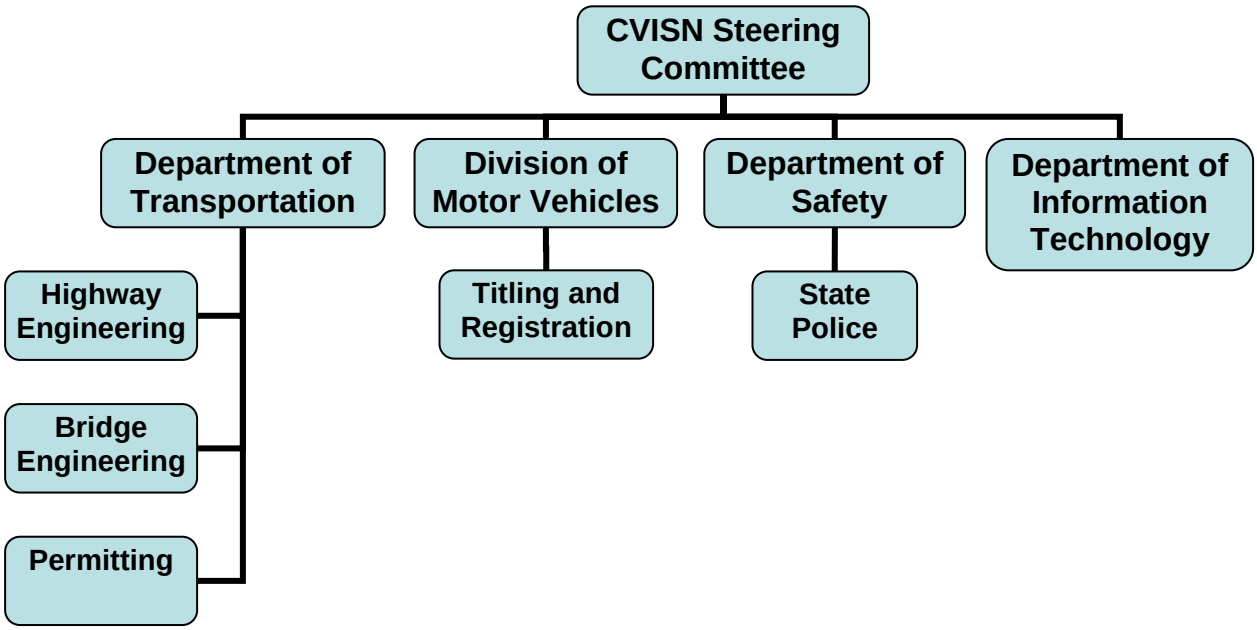

Exhibit 1–2: Example Table of Roles and Responsibilities

Role	Individual	Agency
CVISN Program Manager	John Doe	DOT
CVISN System Architect	Tom Carson	DIT
Senior Advisory Team	Jim Smith	FMCSA
	Jane Doe	DMV
	Michael Jones	Taxation
	Bob Johnson	DOT
Safety Information Exchange Subcommittee	Lead: Name	Agency
	Member 1: Name	Agency
	Member 2: Name	Agency
Electronic Credentialing Subcommittee	Lead: Name	Agency
	Member 1: Name	Agency
	Member 2: Name	Agency
Electronic Screening Subcommittee	Lead: Name	Agency
	Member 1: Name	Agency
	Member 2: Name	Agency
Other Stakeholder Subcommittee	Lead: Name	Agency
	Member 1: Name	Agency
	Member 2: Name	Agency

Exhibit 3–1: Example System Design Diagram (from Arkansas)

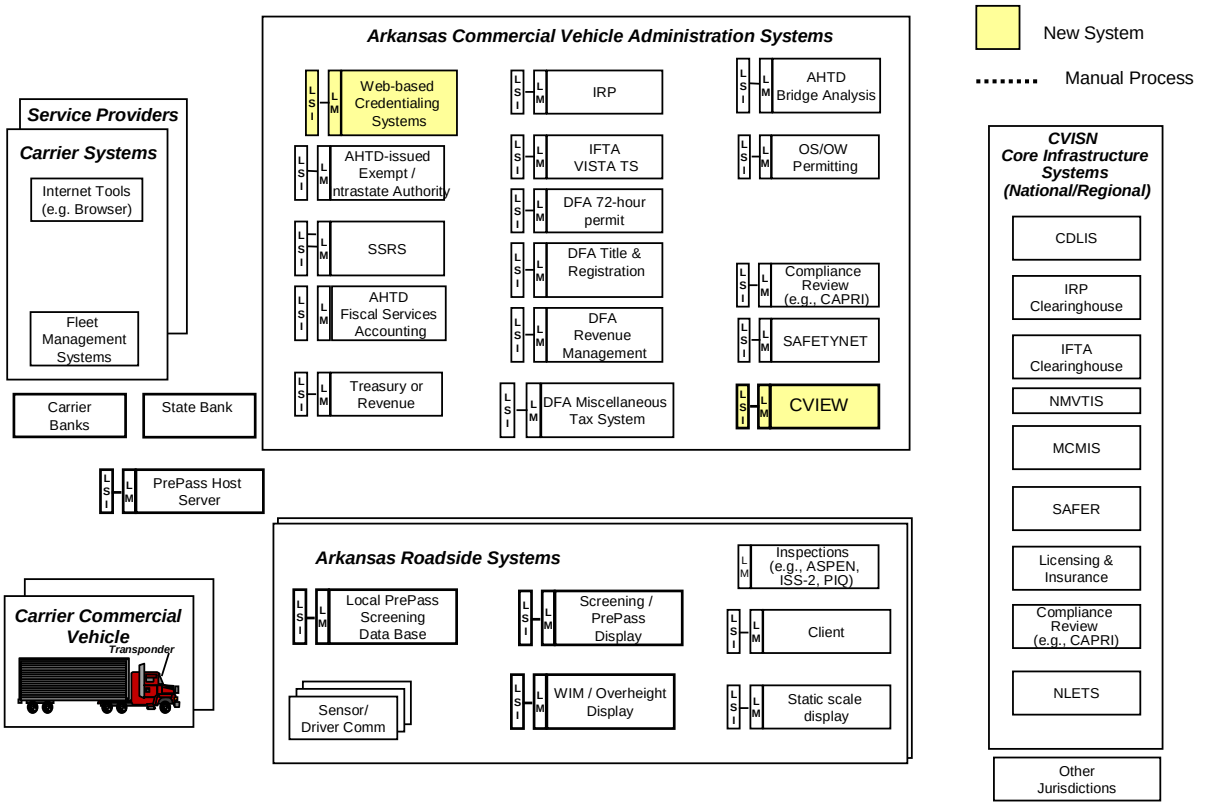

Exhibit 3–2: Example Network Diagram (from Arkansas)

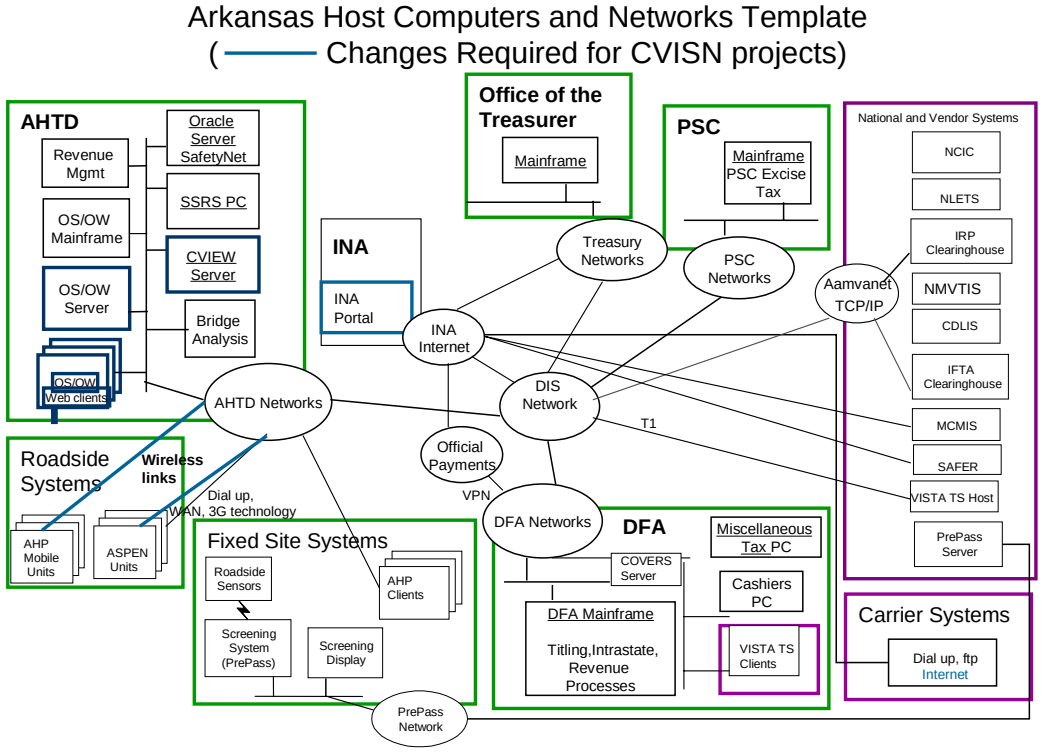

Exhibit 3–3: Example Architecture Description (from Texas)

The following section was taken from the FY 2006 CVISN Grant Application from the state of Texas.

The National ITS Architecture is comprised of four classes of systems: *Traveler*, *Center*, *Vehicle*, and *Roadside*. These four classes are further divided into 21 subsystems, four of which are most pertinent to Texas CVISN core activities (*Commercial Vehicle*, *Commercial Vehicle Check*, *Commercial Vehicle Administration*, and *Fleet and Freight Management*), and are highlighted in yellow in Figure 2, found in Texas' FMCSA-approved Top-Level Design.

The National ITS Architecture has also identified four communication media types to support the communications requirements between the 21 subsystems: *wireline* (fixed-to-fixed), *wide area wireless* (fixed-to-mobile), *dedicated short-range communications* (fixed-to-mobile), and *vehicle-to-vehicle* (mobile-to-mobile). The communications media and interfaces between the architecture's 21 subsystems are also depicted in this same diagram. Future versions of the Texas CVISN architecture will need to provide information flows to other subsystems such as *Archive Data Management*, *Personal Information Access*, *Emergency Management*, and *Toll Administration*.

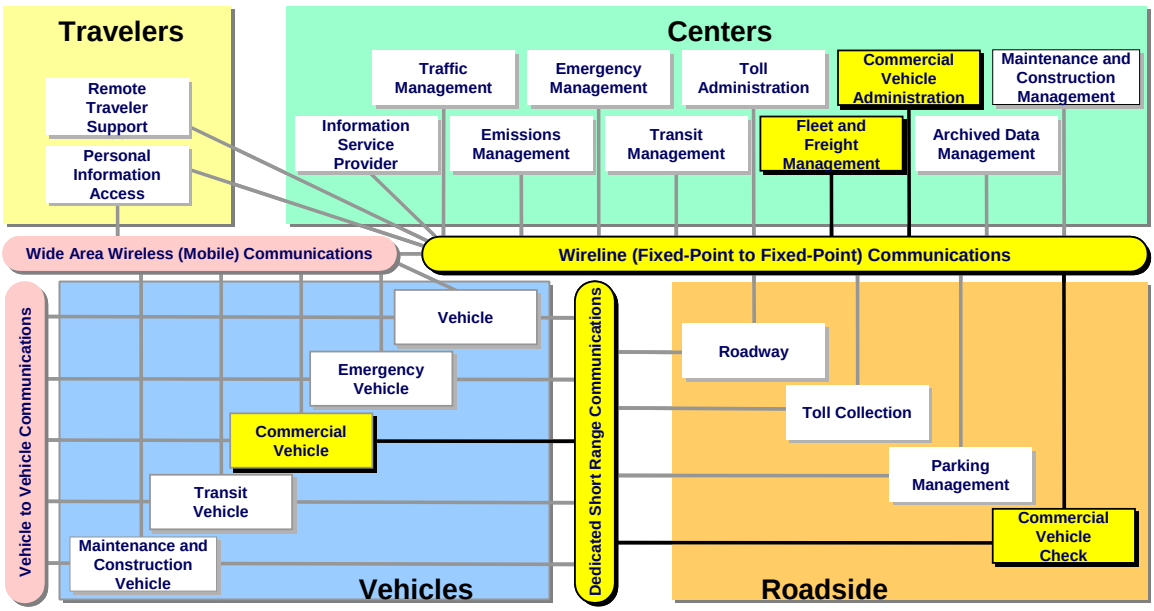

Figure 2: National ITS Architecture Physical Subsystems

The interaction between these subsystems is specified in the National ITS Architecture through *Architecture Flow*s. The National ITS Architecture defines a total of 311 flows; Texas' CVISN architecture uses 26 of these flows, with many flows used multiple times. These architecture flows are described in the following table.

Table 3: NITSA Architecture Flow Identifiers

Flow identifier	Flow name
A1	accident report
A2	audit data
A3	citation
A5	compliance review report
A6	credential application
A7	credential fee coordination
A8	(full) credentials information
A9	credentials status information (snapshot data)
A10	CVO inspector information
A11	CVO inspector input
A12	CVO weight and presence
A13	daily site activity data
A14	electronic screening request
A15	pass/pull-in
A16	payment request
A17	request tag data
A18	safety inspection report
A19	safety status information
A20	screening event record
A21	tag data
A22	tax filing
A23	transaction status
A24	violation notification

Market packages have been developed to assist users of the National ITS Architecture, identifying pieces of the National ITS Architecture required to implement a particular transportation service. These market packages are tailored to fit, separately or in combination, to address real world transportation problems and needs. They show the architecture flows that connect the entities together and with other important external systems.

The Texas CVISN architecture has been developed using four ITS market packages as the foundation. Descriptions for the base market packages are given below.

Electronic Clearance (CVO3)

This market package provides for automated clearance at roadside check facilities. The roadside check facility communicates with the Commercial Vehicle Administration subsystem to retrieve infrastructure snapshots of critical carrier, vehicle, and driver data to be used to sort passing vehicles. This allows a good driver/vehicle/carrier to pass roadside facilities at highway speeds

using transponders and dedicated short range communications to the roadside. Results of roadside clearance activities will be passed on to the Commercial Vehicle Administration. The roadside check facility may be equipped with Automated Vehicle Identification (AVI), weighing sensors, transponder read/write devices and computer workstations.

CV Administrative Processes (CVO4)

This market package provides for electronic application, processing, fee collection, issuance, and distribution of CVO credential and tax filing. Through this process, carriers, drivers, and vehicles may be enrolled in the electronic clearance program provided by a separate market package, which allows commercial vehicles to be screened at mainline speeds at roadside check facilities. Through this enrollment process, current profile databases are maintained in the Commercial Vehicle Administration subsystem and snapshots of this database are made available to the roadside check facilities at the roadside to support the electronic clearance process.

Weigh-In-Motion (CVO6)

This market package provides for high speed weigh-in-motion with or without Automated Vehicle Identification (AVI) capabilities. This market package provides the roadside equipment that could be used as a stand-alone system or to augment the Electronic Clearance (CVO3) market package.

Roadside CVO Safety (CVO7)

This market package provides for automated roadside safety monitoring and reporting. It automates commercial vehicle safety inspections at the roadside check facilities. The capabilities for performing the safety inspection are shared between this market package and the On-Board CVO Safety (CVO8) Market Package, which enables a variety of implementation options. The basic option, directly supported by this market package, facilitates safety inspection of vehicles that have been pulled in, perhaps as a result of the automated screening process provided by the Electronic Clearance (CVO3) Market Package. In this scenario, only basic identification data and status information is read from the electronic tag on the commercial vehicle. The identification data from the tag enables access to additional safety data maintained in the infrastructure, which is used to support the safety inspection, and may also inform the pull-in decision if system-timing requirements can be met. More advanced implementations, supported by the On-Board CVO Safety (CVO8) market package, utilize additional on-board vehicle safety monitoring and reporting capabilities in the commercial vehicle to augment the roadside safety check.

For a physical architecture, the National ITS Architecture identifies two different types of entities, subsystems and terminators, where terminators represent the boundary of the architecture. The National ITS Architecture defines 71 terminators; Texas CVISN Architecture has four terminators, the human and sensor elements, among its existing CVISN elements. Table 4, found in Texas' Top-Level Design (again, modified to show CVE–3 and OASIS rather

than SIDS), shows the mapping of the Texas CVISN elements to the National ITS Architecture subsystems and terminators.

Table 4: Texas CVISN Subsystems and Terminators

Subsystem	Texas Element
Commercial Vehicle Administration Subsystem (CVAS)	CPS–III (OS/OW) CRIS DL Mainframe IFTA (Tax Program) IRP MCCS MCD & VTR Mainframe SAFETYNET 2000 SSRS Tax Mainframe Texas One-Stop Web Site TexVIEW
Commercial Vehicle Check Subsystem (CVCS)	CVE–3 OASIS Texas Roadside Systems
Fleet and Freight Management Subsystem (FMS)	Texas CVISN Customers
Commercial Vehicle Subsystem (CVS)	Commercial Vehicle Transponder
Terminator	**Texas Element**
Other CVAS (X59)	CAPRI CDLIS IFTA CH & NY System IRP CH Safety and Fitness Electronic Records (SAFER)
Basic Commercial Vehicle (X08)	Commercial Vehicle WIM/PBBT
CVO Inspector (X10)	City & County Inspectors
Financial Institution (X21)	Financial Institution

In the Texas CVISN system design, extensive use is made of XML and AFF for internal interfaces between systems. This is due primarily to the fact that most of these interfaces currently exist as AFF. As each system is modified or replaced, these AFF interfaces will be converted to XML. Table 5, also found in Texas' Top-Level Design, provides a quick reference of the Pspecs for a given element and the interfaces identified for the selected architecture flows.

Table 5: Texas CVISN Element, Pspecs, and Interfaces

Texas CVISN Elements, Pspecs, and Interfaces				
Texas Element	**Architecture Flow**	**In/Out**	**Pspec**	**Standards**
CAPRI	safety status information	Out	2.5.4	AFF
CDLIS	credentials information	In/Out	2.5.4	AFF
	safety inspection report	In/Out	2.5.4	AFF
	safety status information	In/Out	2.5.4	AFF
City & County Inspectors	CVO inspector input	Out	2.3.5	AFF
	CVO inspector information	In	2.3.5	AFF
Commercial Vehicle Transponder	screening event record	In/Out	2.6.2	DSRC
	tag data	Out	2.6.2	DSRC
	electronic screening request	In	2.6.2	DSRC
	pass/pull-in	In	2.3.7	DSRC
	request tag data	In	2.6.2	DSRC
Commercial Vehicle WIM/PBBT	CVO weight and presence	Out	N/A	CIA
CPS–III (OS/OW)	payment request	Out	7.4.1.1	EFT
	credential fee coordination	Out	2.5.4	XML
	credentials information	In/Out	2.5.1 2.5.4	XML, AFF, and INT
	transaction status	In	7.4.1.1	EFT
	tax filing	In	2.5.1	INT
	safety inspection report	In	2.5.4	XML
	safety status information	In	2.5.4	XML
CRIS	credentials information	In/Out	2.5.4	SQL and AFF
	safety inspection report	In/Out	2.5.4	SQL and AFF
	safety status information	In/Out	2.5.4	SQL and AFF
DL Mainframe	credential fee coordination	Out	2.5.4	SQL
	credentials information	In/Out	2.5.4	SQL and AFF
	credentials status information	Out	2.5.4	SQL
	safety inspection report	In	2.5.4	SQL
	safety status information	In	2.5.4	SQL
Financial Institution	transaction status	Out	N/A	EFT
	payment request	In	N/A	EFT
IFTA System (IFTA CH & NY System)	credentials information	In/Out	N/A	AFF
	credential fee coordination	In/Out	N/A	AFF
IRP	credential application	In	2.5.1	XML
	credentials information	In/Out	2.5.1 2.5.4	XML and AFF
	credentials status information	Out	2.5.4	XML

Texas CVISN Elements, Pspecs, and Interfaces				
Texas Element	**Architecture Flow**	**In/Out**	**Pspec**	**Standards**
	safety inspection report	In	2.5.4	XML
	safety status information	In	2.5.4	XML
IRP CH	credentials information	In/Out	N/A	AFF
	credential fee coordination	In/Out	N/A	AFF
MCCS	credential fee coordination	Out	2.5.4	XML
	credentials information	In/Out	2.5.1 2.5.4	XML and AFF
	credentials status information	Out	2.5.4	XML
	payment request	Out	7.4.1.1	EFT
	safety inspection report	In	2.5.4	XML
	safety status information	In	2.5.4	XML
	transaction status	In	7.4.1.1	EFT
MCD & VTR Mainframe	credential fee coordination	In/Out	2.5.4	XML and AFF
	credentials information	In/Out	2.5.4	XML and AFF
	credentials status information	Out	2.5.4	XML
	payment request	Out	7.4.1.1	EFT
	safety inspection report	In	2.5.4	XML
	safety status information	In	2.5.4	XML
	transaction status	In	7.4.1.1	EFT
Safety and Fitness Electronic Records (SAFER)	credentials status information	In/Out	2.5.4	XML
	safety inspection report	In/Out	2.5.4	XML
	safety status information	In/Out	2.5.4	XML
	tag data	In/Out	2.6.2	XML
SAFETYNET 2000	accident report	In	2.5.8	SQL
	citation	In	2.5.8	SQL
	compliance information	In	2.5.4	SQL
	safety inspection report	In/Out	2.5.4 2.5.6 2.5.8	AFF and SQL
	safety status information	In/Out	2.5.4	AFF and SQL
	violation notification	In	2.5.8	SQL
DPS server (was TexVIEW Client in old architecture diagram)	accident report	Out	2.3.6	SQL
	accident report	In	2.5.8	SQL
	citation	Out	2.3.3.5	SQL
	citation	In	2.5.8	SQL
	CVO inspector information	Out	2.3.5	SQL
	CVO inspector input	In	2.3.3.2	SQL
	safety inspection report	In/Out	2.5.4 2.5.6 2.5.8	SQL

Texas CVISN Elements, Pspecs, and Interfaces				
Texas Element	**Architecture Flow**	**In/Out**	**Pspec**	**Standards**
	safety status information	In/Out	2.5.4 2.5.6	SQL and XML
	violation notification	Out	2.3.3.5	SQL
	violation notification	In	2.5.8	SQL
TexVIEW	credentials information	In/Out	2.5.4	XML
	credentials status information	In/Out	2.5.4	XML
	safety inspection report	In/Out	2.5.4	XML
	safety status information	In/Out	2.5.4	XML
	tag data	In/Out	2.6.2	XML
Tax Mainframe	credential application	In	2.5.1	XML and EDI
	credential fee coordination	In/Out	2.5.4	XML and AFF
	credentials information	In/Out	2.5.1 2.5.4	XML and EDI
	payment request	Out	7.4.1.1	EFT
	tax filing	In	2.5.1	EDI and XML
	transaction status	In	7.4.1.1	EFT
Texas CVISN Customer System	audit data	Out	2.1.1	INT
	compliance review report	In	2.1.1	INT
	credential application	Out	2.1.1 2.2.1	INT
	credentials information	In	2.1.1 2.2.1	INT
	credentials status information	In	2.1.1	INT
	payment request	Out	7.4.1.1	EFT
	transaction status	In	7.4.1.1	EFT
	safety status information	In	2.1.1	INT
	tax filing	Out	2.1.1	INT
Texas One-Stop Web Site	audit data	In	2.5.1	INT
	compliance review report	In/Out	2.5.8	INT and XML
	credential application	In	2.5.1	INT
	credentials information	In/Out	2.5.1 2.5.4	XML and INT
	tax filing	In	2.5.1	INT

Additional details on Texas' CVISN architecture and the relationship to the National ITS Architecture can be found in the companion documents: Texas CVISN Program Plan and Texas CVISN Top-Level Design.

Exhibit 3–4: Example of System Change Summary Table

System	Description of Modifications Required	No Change	Change (S,M,L)	Buy	Build
IRP Legacy System	Develop CVIEW interface.		S	✓	
IFTA Legacy System	Develop CVIEW interface.		M	✓	
OS/OW System	Develop CVIEW interface.		S	✓	
Intrastate Registration	Develop CVIEW interface.		M		✓
CVIEW	Implement CVIEW capabilities to electronically transmit credential status information to SAFER; receive credential/safety status updates from SAFER. Develop interfaces between CVIEW and IRP, IFTA, SSRS, Intrastate Registration, Intrastate Authority, and OS/OW permitting systems. Develop manual and automated system-to-system query capabilities. Integrate Query Central web service query/display capabilities. For screening, develop periodic download to screening system.		L	✓	
Broadband Wireless Communication Systems	Ensure broadband wireless mobile communication system access to allow roadside enforcement officers to query CVIEW.		S	✓	

Note: The following guidelines should be used in determining whether a change is “small,” “medium” or “large”:

- Small – Change to existing software to add new functionality
- Medium – New application of limited scope
- Large – New enterprise-wide application or new application with multiple state, national or 3rd party interfaces

Also note that the description of the required “modification” can also include the development of a new application.

Exhibit 3–5: Summary of Systems to Perform Required Core CVISN Functionality

Required Core CVISN Functionality	System(s) to Perform Required Function
State Safety Information Exchange and Safety Assurance Systems	
Use ASPEN (or equivalent) at all major inspection sites.	
SAFETYNET submits interstate and intrastate inspection reports to SAFER.	
Implement the CVIEW (or equivalent) system for exchange of intrastate and interstate data within state and connection to SAFER for exchange of interstate data through snapshots. - OR -	
Utilize the SAFER option for exchange of inter- and intrastate data through snapshots.	
Use CAPRI (or equivalent) for compliance reviews.	
State Commercial Administration Systems	
Support electronic credentialing (electronic submission of applications, evaluation, processing, and application response) for IRP.	
Proactively provide updates to vehicle snapshots as needed when IRP credentials actions are taken.	
Proactively provide updates to carrier snapshots as needed when IRP credentials actions are taken.	
Provide IRP Clearinghouse with IRP credential application information (recaps).	
Review fees billed and/or collected by a jurisdiction and the portion due other jurisdictions (transmittals) as provided by the IRP Clearinghouse.	
Support electronic state-to-state fee payments via IRP Clearinghouse.	

Required Core CVISN Functionality	System(s) to Perform Required Function
Support electronic credentialing (electronic submission of applications, evaluation, processing, and application response) for IFTA registration.	
Proactively provide updates to carrier snapshots as needed when IFTA credentials actions are taken or tax payments are made.	
Support electronic tax filing for IFTA quarterly fuel tax returns.	
Retrieve IFTA tax rate information electronically from IFTA, Inc.	
Provide IFTA Clearinghouse with IFTA credential application information using available interface.	
Provide information on taxes collected by own jurisdiction and the portion due other jurisdictions (transmittals) to the IFTA Clearinghouse using available interface.	
Download for automated review the demographic information from the IFTA Clearinghouse.	
Download for automated review the transmittal information from the IFTA Clearinghouse.	
Provide commercial driver information to other jurisdictions via CDLIS (Commercial Driver's License Information System).	
State Electronic Screening Systems	
At one or more sites, provide electronic mainline or ramp screening for transponder-equipped vehicles, and clear for bypass if carrier and vehicle were properly identified and screening criteria were passed.	
Follow FHWA guidelines for Dedicated Short Range Communications (DSRC) equipment.	
Use snapshots updated by a SAFER/CVIEW subscription in an automated process to support screening decisions.	
Accept each qualified vehicle already equipped with a compatible transponder into your e-screening program without requiring an additional transponder.	

Required Core CVISN Functionality	System(s) to Perform Required Function
Enable the carrier to share information about the transponder that you issue with other jurisdictions, e-screening programs, or agencies.	
Carrier enrollment: Collect from the carrier a list of jurisdictions and/or e-screening programs in which it wishes to participate. Inform those jurisdictions and/or e-screening programs.	
Vehicle enrollment: Collect from the carrier a list of the vehicles for each jurisdiction and/or e-screening program. Inform those jurisdictions and/or e-screening programs.	
Record transponder number and default carrier ID for each vehicle that intends to participate in e-screening.	
For each carrier that intends to participate in e-screening, share carrier ID with other jurisdictions and/or e-screening programs as requested by the carrier.	
For each vehicle that intends to participate in e-screening, share transponder number and default carrier ID with other jurisdictions, e-screening programs, or other agencies as requested by the carrier.	
Verify credentials/safety information with authoritative source prior to issuing citation.	

Exhibit 4–1: Example Products/Procurement Table

Procurement Item Group	Description of Procurement	Procurement Item	Category	Contracting Approach		Procurement Leader	Earliest Date Procurement Anticipated
				Type	Method of Award		
Safety	CVIEW	Software / Hardware	Software development / professional services; may also include hardware / communications depending upon vendor selected and whether state or vendor-hosted system	New contract	RFP	DPS, CVEU	
	CVIEW / legacy systems interface development; automated queries to CVIEW	Development of interfaces to vendor legacy systems	Software development / professional services	Existing contract	Contract Modification	BMV	
		Development of interfaces to state-owned legacy systems	In-house staff or CVIEW vendor	New contract (if required)	Included in CVIEW RFP (if required)	DPS, CVEU	

Procurement Item Group	Description of Procurement	Procurement Item	Category	Contracting Approach		Procurement Leader	Earliest Date Procurement Anticipated
				Type	Method of Award		
Credentials	Electronic credentialing modifications for IRP	Modify IRP system to accommodate automated system-to-system queries to CVIEW	Software development / Professional services	Existing contract	Contract Modification	BMV	
etc…..							

Exhibit 5–1: Summary Schedule

Project	2004	2005		2006		2007	
	Jul–Dec	Jan–Jun	Jul–Dec	Jan–Jun	Jul–Dec	Jan–Jun	Jul–Dec
Safety Projects							
CVIEW							
Full deployment of SafetyNet and 32-bit ASPEN							
Wireless Communications (Roadside Connectivity to CVIEW / SAFER)							
Credentials Projects							
IRP Web-based Credentialing							
IFTA Web-based Credentialing							
PRISM Implementation							
Automate OS / OW Permitting System							
Web-based 72-hour Trip Permit							
Web Portal							
Screening Projects							
Pilot Project to Enhance Mobile Screening							

Exhibit 6–1: Budget Summary

CVISN Project / Task Area	Total Deployment Costs	State Staff Resource (Hours)	Anticipated Funding Source				Estimated Annual O&M Funding Needed
			CVISN Grant Funds	State Funds	MCSAP Grant	PRISM Grant	
Program Management							
Systems Engineering and Integration							
Safety Projects							
CVIEW							
SAFER Connectivity							
Wireless Communications							
Credentials Projects							
IRP Web-based credentialing							
PRISM							
IFTA Web-based credentialing							
OS/OW Web-based Permitting and Automated Routing							
Web-based 72-hour trip permit							
Web Portal							
Screening Projects							
Mainline WIM, DMS Camera at one transponder equipped Fixed Scale							
Pilot Project to Enhance Mobile Screening Operations							
Total, All Projects							
Total CVISN Deployment Funds Required							
State Funds Eligible as Match							