

**Commercial Vehicle Information Systems and  
Networks (CVISN) /Performance and Registration  
Information Systems Management (PRISM)**

**Combined Implementation:  
Guidance for States**

**White Paper**

**BASELINE ISSUE**

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**Baseline Issue**

Internal and external reviews of this document, previously published drafts and preliminary versions have been completed. All comments received to date have been incorporated or addressed.

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**Change Summary:**

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D.2	July 2007	Draft posted to CVISN SharePoint Site
V1.0	October 2008	Removed the terms “snapshot” and “Pilot architecture” from figures and text. Clarified Table 2.

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## 1. INTRODUCTION

The Performance and Registration Information Systems Management (PRISM) Program and the Commercial Vehicle Information Systems and Networks (CVISN) Program are closely related programs managed by the Federal Motor Carrier Safety Administration (FMCSA). While both programs seek to improve motor carrier safety through information exchange, they have distinct objectives. They have similar, but not identical, requirements for the exchange of interstate registration credential data with the states but different processing methodologies for updating and processing that data. The two programs share the Safety and Fitness Electronic Records (SAFER) commercial vehicle information exchange system as their common data repository, which is more formally called the SAFER/PRISM Central Site (SPCS).<sup>1</sup>

This paper provides background on each program and discusses options for operational implementation of both programs. The intended audience includes state Commercial Vehicle Operations (CVO) program managers who have implemented or may decide to implement both CVISN and PRISM in their states, and would like more information on the relationship of the two programs and practical options to integrated deployment.

Please note that this paper deals with registration processes and credential data exchange for interstate commercial vehicles. For most states, this is International Registration Plan (IRP) data. For states that are exempt from IRP, it should be assumed that we are referring to the state commercial vehicle registration processes and associated entities whenever the term IRP is used.

## 2. PRISM

The PRISM program originated as a pilot project mandated by Congress in the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. The goal was to explore the benefits of using state commercial vehicle registration sanctions as an incentive to improve motor carrier safety. Congress authorized funding through the Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21) to expand PRISM nationally in 1998.

The business processes for commercial vehicle registration within the states provide the framework for the PRISM program. Using the registration process, PRISM establishes a system of accountability by ensuring that no vehicle is plated without first identifying the motor carrier responsible for the safety of that vehicle during the registration year.<sup>2</sup> Through PRISM, information system connections between participating state agencies and the FMCSA provide the ability to check the safety status of motor carriers prior to issuing or renewing IRP license plates.

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<sup>1</sup> Throughout this document, the database and system are usually referred to as “SAFER”.

<sup>2</sup> PRISM has established rules for identifying the carrier responsible for safety; the default carrier responsible for safety is the registrant. Detailed instructions can be found on the CVISN Web site (<http://cvisn.fmcsa.dot.gov>) under Documents/PRISM/PRISM Carrier Responsible for Safety Assignment v1.1, posted May 2005.

This federal-state partnership improves motor carrier safety and strengthens enforcement policies for cases of unfavorable safety ratings as derived through the FMCSA Motor Carrier Management Information System (MCMIS) SafeStat algorithm.<sup>3</sup> Fundamental to the PRISM program is that state vehicle registration agencies will:

- Suspend a motor carrier's IRP license plates in conjunction with an FMCSA order to cease interstate operation;
- Deny renewal of IRP license plates to any motor carrier that is prohibited from operating in interstate commerce by the FMCSA;
- Identify and target vehicles associated with motor carriers in the Motor Carrier Safety Improvement Program (MCSIP) for mandatory roadside inspections;
- Improve the quality of data submitted to FMCSA by requiring Motor Carrier Identification Report (MCS-150) updates before the start of the registration cycle, and through the mandatory use of bar code technology to program and imprint a specific bar code on the vehicle cab card to facilitate accurate data collection at the roadside.

In addition, PRISM provides for the deployment of roadside enforcement technologies that allow for accurate identification of high-risk carriers and more efficient roadside inspections.

### **3. CVISN**

The Intelligent Transportation Systems/Commercial Vehicle Operations (ITS/CVO) objectives, guiding principles, and concepts have been stakeholder developed and stakeholder driven since 1991, the first year of ISTEA. The CVISN Program is one element of the FMCSA ITS/CVO Program.

CVISN refers to the collection of information systems and communications networks that support commercial vehicle operations at the federal and state levels. In 1994, the CVISN Program was initiated by what is now the FMCSA. The goal of the CVISN Program is to improve the safety and efficiency of commercial vehicle operations. The CVISN program provides a framework or “architecture”, in line with the National ITS Architecture, that enables government agencies, the motor carrier industry, and other parties engaged in CVO safety assurance and regulation to exchange information and conduct business transactions electronically through the use of standards and available communications infrastructure.

Most states are currently deploying some aspect of Core CVISN capabilities: safety and credential information exchange, inspection reporting using ASPEN, electronic screening using transponders and vehicle and carrier safety data from SAFER, electronic credentialing for IRP and International Fuel Tax Agreement (IFTA), and supporting base state agreements via the IRP and IFTA Clearinghouses.

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<sup>3</sup> MCMIS uses results of compliance reviews, crash reports and safety inspections to derive carrier safety performance measures for interstate carriers.

## 4. CVISN ARCHITECTURE AND PRISM

The CVISN Guiding Principles support the goals of the PRISM Program as well. Those that are related to motor carrier safety and IRP registration are shown in Table 1.

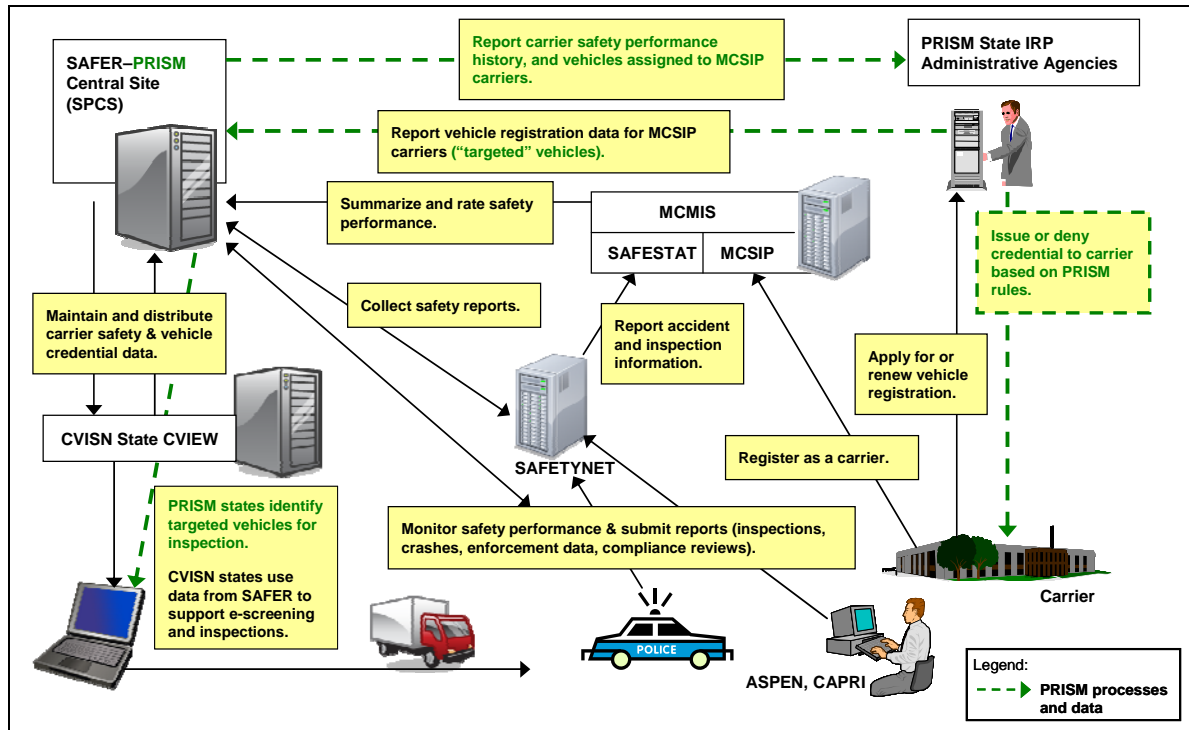
**Table 1**  
**CVISN Guiding Principles Related to PRISM**

Focus on eliminating unsafe and illegal carriers, drivers, and vehicles from service.
Safety assurance activities will focus resources on high-risk carriers.
Improve CVO credential and tax administration efficiency for carriers and government.

From an architectural and philosophical standpoint, the CVISN and PRISM programs are mutually supportive and compatible. With CVISN as the architectural framework and PRISM procedures and credentialing process logic integrated into the vehicle registration and maintenance systems, a state can implement and satisfy the requirements of both programs.

To facilitate information exchange, several systems have been developed under CVISN. One of those systems is the SPCS. Other information systems and networks that are part of the CVISN architecture [e.g., SAFETYNET, MCMIS, ASPEN, Carrier Automated Performance Review Information (CAPRI)] are used to supply data for the PRISM processes as well. The federally maintained carrier safety ratings support the safety performance evaluations that are central to PRISM program goals.

Figure 1 shows the relationship between the CVISN and PRISM program entities for the case of two states: one in the PRISM Program and one in the CVISN Program. PRISM processes and data are indicated with **green** arrows and text.



**Figure 1: Relationship between PRISM and CVISN Program Entities**

## 5. BENEFITS OF IMPLEMENTING BOTH PROGRAMS

The CVISN and PRISM programs may be managed together or as separate activities within the state. It is important to recognize that the programs share the same stakeholders, the same data sources, and the same data repository. Most importantly, both programs share the same goal of improving motor carrier safety through information exchange. Rather than managing them separately, states may find it expedient to develop the programs in a mutually supportive and synergistic manner.

Both CVISN and PRISM are concerned with improving the safety of the nation's highways and have a programmatic interest in roadside activities related to safety improvement. The PRISM Program focuses inspections and compliance reviews on targeted vehicles, which gives the MCSIP carriers an opportunity to improve their safety scores and, thus, remove their vehicles from the targeted list. CVISN uses SAFER data in the electronic screening and inspection selection process at the roadside, primarily using the Inspection Selection System (ISS) scores derived from the MCMIS SafeStat algorithm to determine which vehicles to pull in for inspection. The goal of both programs is to focus limited resources on the higher risk carriers and vehicles. Under one implementation plan, each program can leverage the other to achieve the common goal.

## 6. UNDERSTANDING PROGRAMMATIC DIFFERENCES

Many states would like to participate in both the CVISN and PRISM programs; this is encouraged by the FMCSA. With more and more states implementing both programs, the technical leaders of each program recognize the importance of cross-program understanding and stakeholder training in order to support the objectives of both programs. The following sections point out how differences between the programs can be resolved by using a combined approach.

### **Accommodating differences using a common framework**

PRISM is concerned with enforcement and catching the MCSIP carriers who are attempting to commit fraud by re-registering with a new DOT number instead of actually improving their safety records. These are sometimes called “chameleon carriers”. Thus, the registration data required for PRISM requires the USDOT number for the carrier responsible for safety, which is an optional field for CVISN states.

CVISN uses credential and safety data to make e-screening decisions at the roadside and to support inspections. The credential data includes jurisdictions and registered weight information from the IRP cab card, which is not required by PRISM. Consequently, there is a fundamental difference in how credentials data are organized for the CVISN and PRISM programs. It is possible, however, to utilize the CVISN infrastructure to provide the required data exchange for both programs.

SAFER uses an XML-based data management process to control information exchange with the participating CVISN states; SAFER historically has used a different process based on a unique file format to exchange data with participating PRISM states. For those states participating in both programs, PRISM and CVISN architects have agreed that the XML-based process shall be used for uploading vehicle data to SAFER. This implementation strategy was chosen because the CVISN XML files contain a superset of data elements used for both programs; the PRISM files only contain data elements necessary to satisfy PRISM program requirements. The options for downloading the required data from SAFER for each program are described in Section 7.

### **Different ways to identify active registrations**

PRISM processing to update SAFER is based on a daily file replace function for all targeted vehicles (those vehicles associated with MCSIP carriers). By definition, the PRISM file contains only “active” registrations and any registrations from the current cycle that have a carrier responsible for safety that has been placed out of service.

CVISN processing updates to SAFER are transactional in nature in that only changes or additions to vehicle registrations are uploaded to SAFER. Updates include all vehicles, not just targeted vehicles, as required for PRISM. Data that are downloaded via the CVISN processing logic include “inactive” as well as “active” registrations.



In order for the CVISN XML files to support PRISM processing requirements and provide the same level of awareness for targeted vehicles, it is required that the “IRP status” field be strictly maintained in the XML transaction so that PRISM processing can distinguish “active” from “inactive” registrations. This is a responsibility of all CVISN states.

## 7. THE ROLE OF CVIEW IN COMBINED CVISN/PRISM DEPLOYMENT

For Core CVISN, there is a requirement to implement a Commercial Vehicle Information Exchange Window (CVIEW) or a CVIEW-equivalent system for exchange of intrastate and interstate data within the state. A CVIEW is a state system that collects information from the commercial vehicle credentialing and tax systems to formulate the interstate carrier, vehicle, and (future) driver transactions and reports for exchange within the state (e.g., to roadside sites) and for exchange with the SAFER system which shares the data with other states. Each state is responsible for maintaining the credential data for interstate carriers with vehicles based within the state.

### What does a CVIEW need to do?

CVIEW performs on a state level the same functions that SAFER performs nationally. It has the potential to consolidate carrier safety, registration, taxation, and permit information from state “legacy” systems that house these data and make it available electronically to roadside locations. The CVIEW system may be a “clone” of the SAFER system except that it runs at the state level, and it supports custom interfaces to communicate with each of the state’s legacy systems using legacy system interfaces (LSIs). CVIEW also interfaces to SAFER to exchange the interstate carrier and vehicle data used at the roadside with other states.

CVIEW must perform the following functions:

- Provide for electronic exchange of credentials and safety data with SAFER using XML transactions in conformance with the SAFER Interface Control Document (ICD)
- Provide for the electronic exchange of:
  - interstate carrier and vehicle credential data between state source systems, users, and SAFER, and
  - 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 credential data exchanged between state source systems, users, and SAFER, and
  - intrastate carrier and vehicle safety and credential data exchanged between state source systems and users
- Provide inter- and intrastate carrier and vehicle safety and credential data to the roadside to support electronic screening and other roadside operations. (Interstate data includes data from other states via SAFER.)

In order to exchange safety and credential data with SAFER, the state must build or procure a CVIEW or equivalent, develop the required interfaces to legacy system data, create the XML transaction sets, and successfully complete the SAFER-CVIEW Interface Certification Testing with the Volpe National Transportation Center. After certification, the state should maintain the exchange of data on a daily basis. The XML transactions that are applicable to Core CVISN capabilities are as follows:

#### Input from CVIEW to SAFER

T0019 – IFTA License  
T0020 – IRP Account  
T0021 – IRP Fleet  
T0022 – IRP Registration (including weights and jurisdictions)

#### Output from SAFER to CVIEW

T0025 – IFTA License  
T0026 – IRP Account  
T0027 – IRP Fleet  
T0028 – IRP Registration (including weights and jurisdictions)  
T0030 – Inspection Summary  
T0031 – MCMIS Safety and Census  
T0032 – Licensing and Insurance

Also, T0041P – PRISM targeted vehicles – is an XML version of the PRISM targeted vehicle file and is available for download to CVISN/PRISM states.

All of the SAFER/CVIEW XML transactions are described in detail in the SAFER ICD, available on the CVISN Web site, <http://cvisn.fmcsa.dot.gov>.

### **CVIEW Supports CVISN and PRISM**

If a state plans on implementing both the CVISN and PRISM programs, the state’s CVISN Top-Level Design and Program Plan, as well as the PRISM Implementation Plan, should reflect the state’s implementation choices that will satisfy both programs.

Some states have asked: “what will the CVIEW provide that we are not already getting with our PRISM program?” Table 2 outlines the data exchange requirements and the corresponding support for those requirements from each program.

Table 2 illustrates why it is required to implement a CVIEW if a state is planning to deploy both CVISN and PRISM. PRISM implementation alone does not satisfy CVISN requirements for exchange of credentials data. CVISN implementation can support PRISM vehicle registration upload requirements if deployed with the PRISM vehicle processing business rules, and it can support download requirements via the T0041P. States have options for deployment configurations, discussed in the following section.

**Table 2**  
**CVISN and PRISM Requirements and Corresponding Support**

CVISN Data Exchange Requirement	CVISN Architecture and CVIEW	PRISM Architecture
<b>Provide credential data to SAFER:</b>		
IRP	Yes	Partial
IRP account	Yes	No
IRP fleet	Yes	No
Weights and jurisdictions	Yes	No
IFTA license	Yes	No
<b>Receive credential data from SAFER:</b>		
IRP data	Yes	Partial
IRP account	Yes	No
IRP fleet	Yes	No
Weights and jurisdictions	Yes	No
IFTA license	Yes	No
Other credentials (e.g., OS/OW)	TBD	No
<b>Receive carrier safety data from SAFER:</b>		
MCMIS Safety and Census data	Yes	Yes
PRISM Data Exchange Requirement	CVISN Architecture and CVIEW	PRISM Architecture
Provide MCSIP targeted vehicles to SAFER.	Yes; CVISN architecture provides all registered vehicles, including targeted vehicles. T0022 has been modified to require states to maintain “active status” for registration records to support PRISM.	Yes
Receive MCSIP-carrier vehicle records from SAFER.	Yes, via T0041P, which carries MCSIP-carrier vehicle records from PRISM states.	Yes
Receive carrier census data.	Yes, via the T0031.	Yes

## 8. EXAMPLE DEPLOYMENT OPTIONS

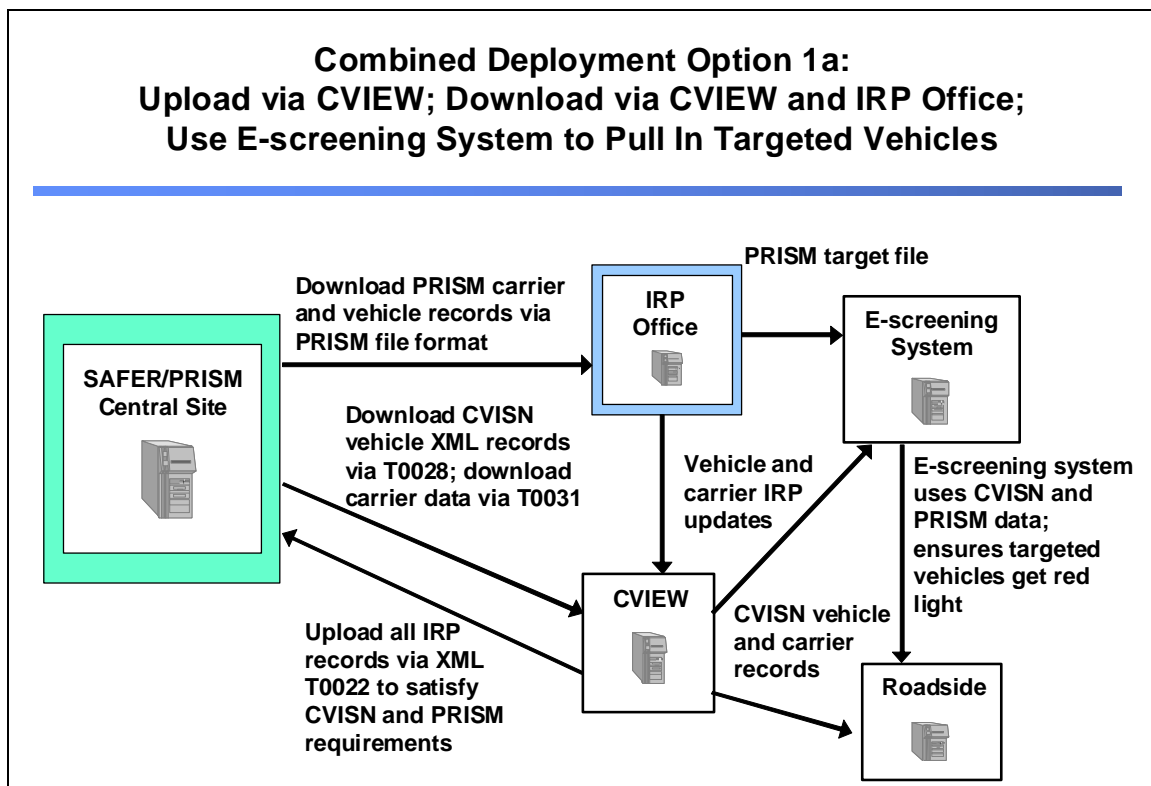
States that implement both PRISM and CVISN must provide updates of commercial vehicle registration data via the CVISN architecture and a CVIEW or CVIEW equivalent. However, there are two choices for downloading the data from SAFER that is required for PRISM processes. These choices give rise to the deployment options described in the following paragraphs.

### **Option 1 – Hybrid PRISM/CVISN Implementation**

A state may combine the use of CVISN XML transaction files and PRISM targeted vehicle files as the state deems necessary to satisfy both CVISN and PRISM requirements in what is called a “hybrid” PRISM/CVISN implementation. In fact, this approach is used by many CVIEW states participating in the PRISM and CVISN programs today. Two variations of this option are shown as Option 1a and Option 1b in the following paragraphs.

#### **Option 1a**

As shown in Figure 2, the state is using the PRISM file format to download targeted vehicle data to the state IRP system, and it also uses CVISN XML format to download carrier and vehicle data to CVIEW. Figure 2 is also an example of a state that uses an e-screening system; the system (which can be provided by a third party vendor) can use the PRISM data to ensure that targeted vehicles get a red light, and it can use the CVISN data to screen on credential data that include weights and jurisdictions in addition to carrier safety scores. Note that the data available to the e-screening system and the roadside from CVIEW is the same data but it can be used for different purposes. The e-screening system uses it to update the screening algorithms, and the roadside officer can query CVIEW and use the data to support inspections.



**Figure 2: Hybrid PRISM/CVISN Implementation, Option 1a**

### Option 1b

For a state without an e-screening system, Figure 3 shows how roadside operations can use the PRISM targeted vehicle data (PRISM flat file format) from the SPCS to ensure that targeted vehicles are pulled in for inspection. The roadside officer can query CVIEW to support inspections on all vehicles; the PRISM target file can be downloaded from the SAFER/PRISM Central Site.

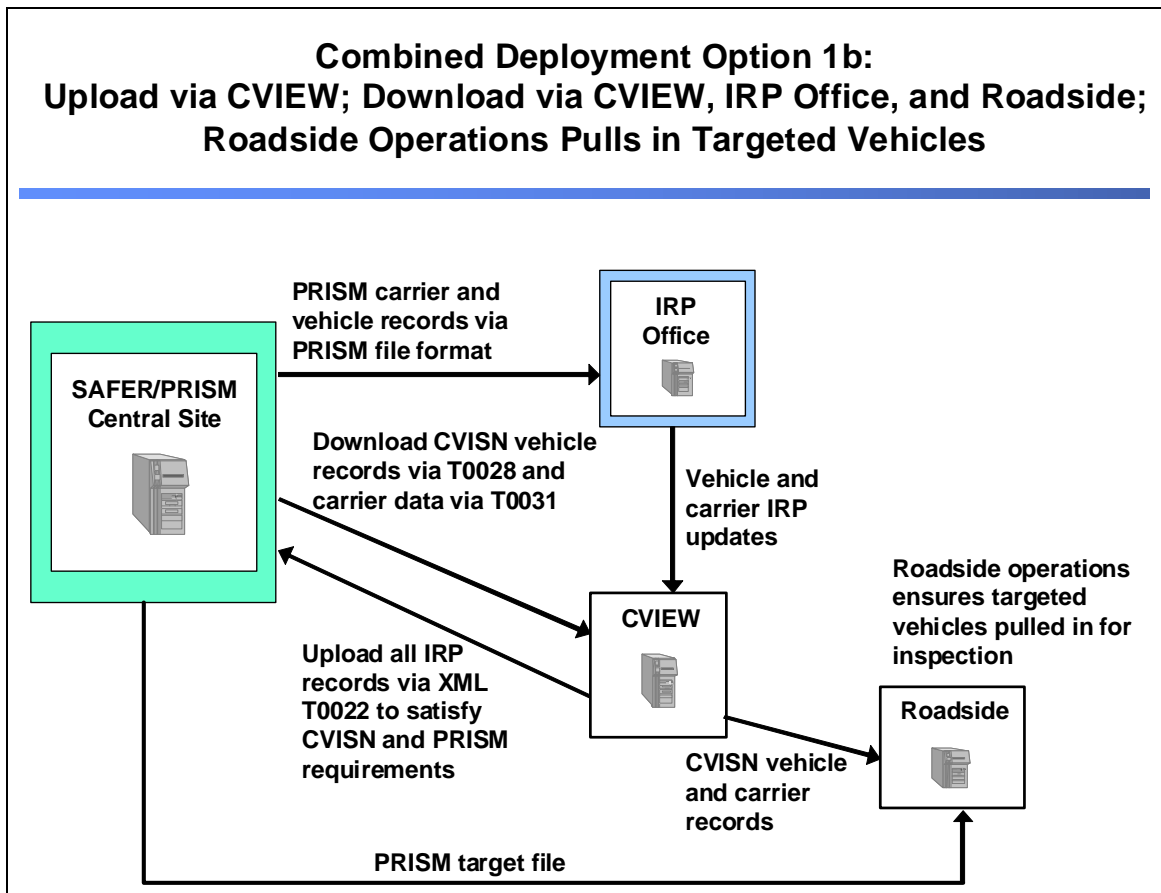


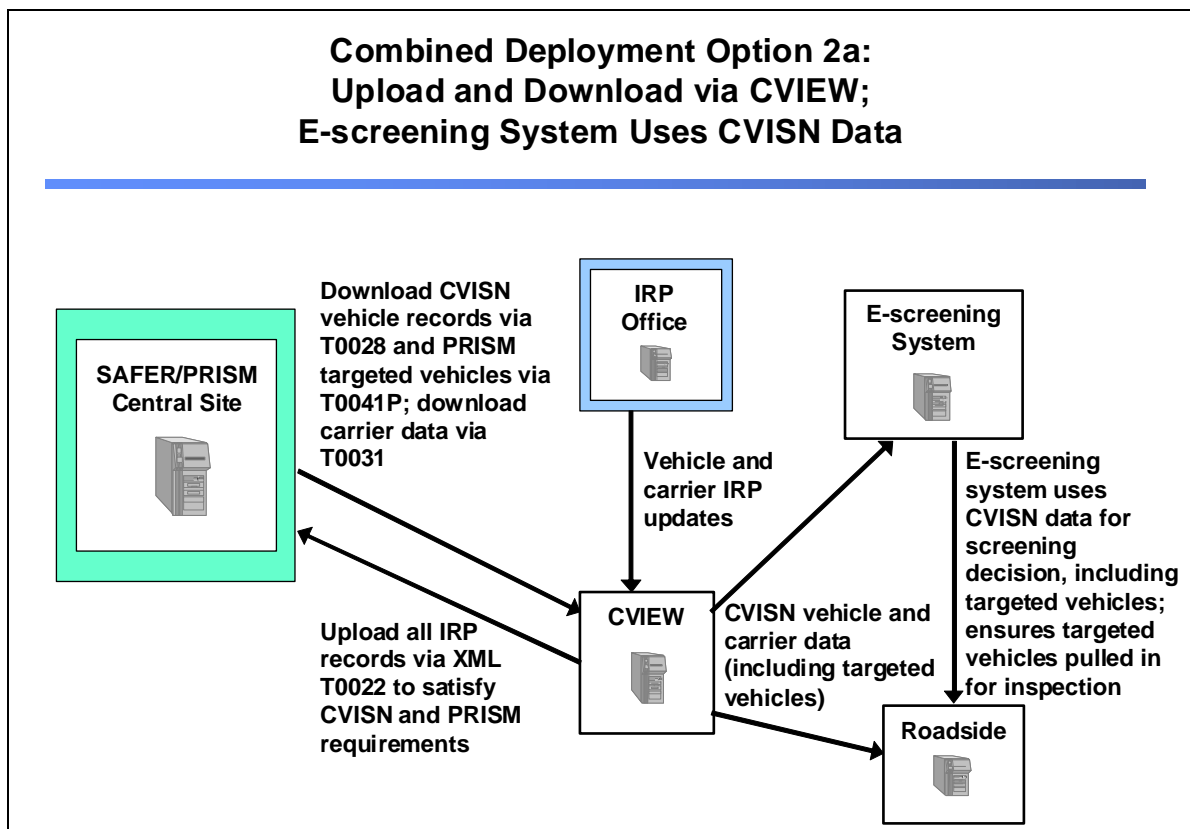
Figure 3: Hybrid PRISM/CVISN Implementation, Option 1b

## **Option 2 – CVISN Implementation**

In a second deployment option, illustrated in Figures 4 and 5, the state uses CVIEW XML transactions to download the targeted vehicle data directly to the state's CVIEW (the T0041P transaction) as well as the required CVISN transactions for carrier and vehicle data. Two variations of this option are shown as Option 2a and Option 2b in the following paragraphs.

### **Option 2a**

Figure 4 shows this option with an e-screening system (which may be a third-party vendor) that uses the carrier and vehicle data from CVIEW in the screening decision process. Note that the data available to the e-screening system and the roadside from CVIEW is the same data but it can be used for different purposes. The e-screening system uses it to update the screening algorithms, and the roadside officer can query CVIEW and use the data to support inspections. Also, in this case, the CVIEW can provide the required vehicle and carrier IRP data to the IRP office for use in credentials administration.



**Figure 4: CVISN Implementation, Option 2a**

### Option 2b

The PRISM targeted vehicle data can also be downloaded to the roadside directly from the SPCS. Figure 5 shows this option without an e-screening system, in which case the CVIEW provides the data to the roadside for screening and inspection purposes. As in Option 2a, the CVIEW provides the required vehicle and carrier IRP data to the IRP office for use in credentials administration.

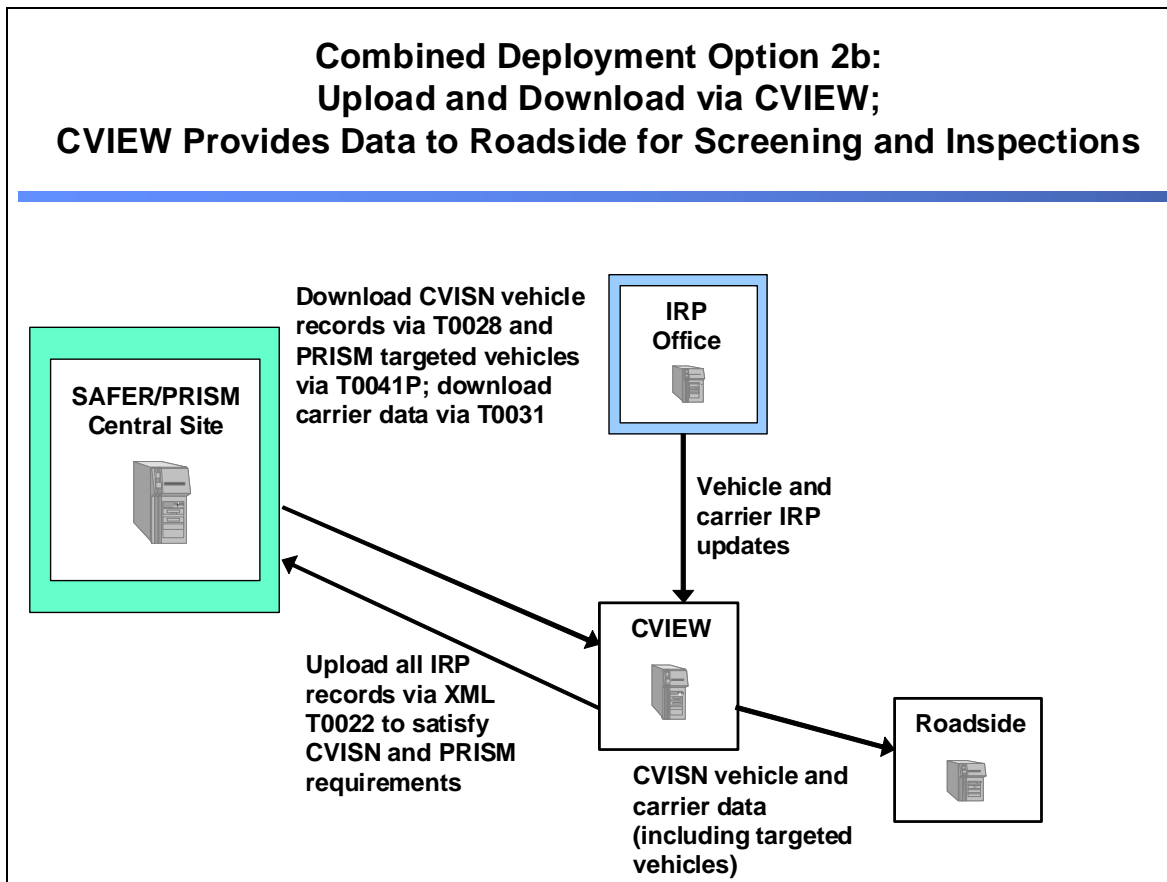


Figure 5: CVISN Implementation, Option 2b

## 9. CONCLUSIONS

Increasing numbers of stakeholders are participating in both CVISN and PRISM programs, and mutual understanding of combined implementation is improving. This white paper discusses how to implement both programs with uniform and mutually supportive requirements and processing rules. This paper also describes at a high level the deployment options that are available to a state for implementing both programs.