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# CVISN - CVIEW/SAFER DATABASE MAPPING PROJECT

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## Disclaimer

*The contents of this report reflect the view of the author, who is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Illinois Center for Transportation, the Illinois Department of Transportation, or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.*

## Manufacturers' Names

*Trademark or manufacturers' names appear in this report only because they are considered essential to the object of this document and do not constitute an endorsement of product by the Federal Highway Administration, the Illinois Department of Transportation, or the Illinois Center for Transportation.*

# Introduction

## Background

Note: This information is also available at <http://cs.uic.edu/~jhayward/CVISN>.

From: <http://cvisn.fmcsa.dot.gov/downdocs/cvisndocs/whitepapers/snpshtwp.doc> (August 2001)

The national Safety and Fitness Electronic Records (SAFER) system and its distributed version, the state Commercial Vehicle Information Exchange Window (CVIEW) system or equivalent, manage information related to the safety and credentials of motor carriers and vehicles. The information stored in both SAFER and CVIEW today is organized into two major types of data, carrier and vehicle. The design also accommodates a driver data type for future use. These data types are called snapshots since they provide summary information that is intended to give a quick picture of the safety performance history and basic credential information. In addition, SAFER and CVIEW make available, but do not permanently store, more detailed information contained in reports. This paper discusses the SAFER/CVIEW snapshots. For CVISN Level 1, only carrier and vehicle snapshots are supported.

SAFER/CVIEW snapshots contain three general categories of information: identification/census, safety, and credential. The identification/census section of the snapshot provides identifying numbers, names, addresses and other information that establishes the identity of the carrier or vehicle. The safety information includes selected statistics related to accidents, violations and inspections, as well as safety ratings, if they exist. The credential information is equivalent to the decals and paper documents carried today on commercial vehicles. The information included in the snapshots has been undergoing a process of review and refinement over the course of two to four years; additions are still possible as new uses are identified for snapshots.

The original purpose for the SAFER/CVIEW snapshots was to support electronic screening of vehicles at commercial vehicle check stations. In one operating scenario, on approach to the check station, identification information is read from the vehicle's transponder, and the vehicle is weighed. The identifiers are correlated with the SAFER/CVIEW snapshots; safety history, registration and authority data are checked; credentials check flags are examined, weight is checked against legal limits, and a decision made as to whether or not the vehicle should be pulled in. As the SAFER and CVIEW or equivalent systems are implemented, the value of snapshots for administrative processes becomes clear. Today, programs such as Performance and Registration Information Systems Management (PRISM) also plan to use snapshots to evaluate safety history in connection with vehicle registration.

## Statement of Work

The University of Illinois at Chicago is to perform the analysis on the legacy information and network systems for the International Registration Plan (IRP) system at the office of Illinois Secretary of State (SOS), the International Fuel Tax Agreement (IFTA) system at the Illinois Department of Revenue (DOR) and the Single State Registration System (SSRS) at the Illinois Commerce Commission (ILCC) and present each agency with the information it needs in order to design and implement the legacy system interfaces with these systems to the CVIEW.

## Introduction

The CVIEW data structures and snapshots are standardized and the layouts are documented on the CVISN/FMCSA web site <http://cvisn.fmcsa.dot.gov/default.aspx?PageID=cvview> particularly in the following documents.

- SAFER View Summary Report  
( [view\\_sum\\_report.doc](#) )
- SAFER Snapshot Definition Report for Carrier Data  
( [carrier\\_snapshot\\_def\\_report.doc](#) )
- Snapshot Definition Report for Vehicle Data  
( [vehicle\\_snapshot\\_def\\_report.doc](#) )
- SAFER View Definition Report for Carrier Data  
( [view\\_matrix\\_dot30\\_car\\_revised11\\_02.doc](#) )
- SAFER View Definition Report for Vehicle Data  
( [view\\_matrix\\_dot30\\_veh\\_revised11\\_02.doc](#) )

The XML schema definitions for SAFER transactions can be found here:

( [http://cvisn.fmcsa.dot.gov/downdocs/cvisndocs/6\\_safer/safer\\_v50/SAFER\\_schema.zip](http://cvisn.fmcsa.dot.gov/downdocs/cvisndocs/6_safer/safer_v50/SAFER_schema.zip) )

The University will produce documentation that will map legacy data fields to their equivalent fields in the SAFER snapshots and provide documentation of procedures and process flows to facilitate development of the data extraction and transformation programs. Conditions and constraints surrounding the transformation of the data should be documented. These conditions may take the form of cross-field comparisons, concatenations of multiple fields or breaking apart single fields into multiple fields and/or any mathematical or date calculations necessary to format the data correctly. A trigger field or fields should be identified that will indicate a change in carrier and vehicle registration information that would invoke an upload or deletion of that record to the CVIEW system. There are separate transactions used to update SAFER data from CVIEW. Consistency between the CVIEW Legacy System Interface (LSI) import formats and these SAFER/CVIEW transaction formats is necessary for accurate and reliable synchronization of data from the legacy systems and SAFER. There will be an initial load of legacy information with periodic uploads from the legacy systems to CVIEW.

The USDOT Motor Carrier Number is the preferred key for the CVIEW carrier snapshot (although state identifiers can be used). Each of the agencies has added the USDOT number to its records and was to update the field through the normal course of processing registrations and filings. The completeness of the cross-reference between state carrier records and the USDOT number must be documented.

## Deliverables

1. Interface design document(s) mapping IRP carrier and vehicle data maintained by the Illinois Secretary of State to SAFER carrier and vehicle snapshots.
2. Interface design document(s) that map intrastate carrier and vehicle registration (Motor Vehicle Registration - MVR) data maintained by the Illinois Secretary of State to SAFER carrier and vehicle snapshots.
3. Interface design document mapping IFTA carrier data maintained by the Illinois Department of Revenue to SAFER carrier snapshot.
4. Interface design document identifying pertinent SSRS data maintained by the Illinois Commerce Commission for export to the Illinois CVIEW system. There is no corresponding snapshot for SSRS data in SAFER. The Illinois CVIEW will be expanded to accommodate



SSRS data.

In addition to these interface design documents, the completeness of USDOT numbers cross referenced with state IDs for the Illinois Commerce Commission SSRS system, Illinois Department of Revenue IFTA system and Illinois Secretary of State IRP system is required.

## General Mapping Rules

These rules apply to all transactions.

1. Any special characters (&"<>) need to get mapped to the XML equivalents. Note: Php's htmlspecialchars does this.
2. In addresses:
  1. At least one of the STREET\_LINE addresses needs to be present.
  2. Standard States 2 character code need to be present (globalJurisdictionType)
  3. Zip codes can be between 1 and 10 characters (globalZipType)
  4. City, State, Zip codes need to be present
  5. Country names if present need to be mapped to balOptCountryType (US, CA, M, MX, P)
3. Timestamps (date+time) need to be converted to XML format (YYYY-MM-DDTHH:MM:SS - note T is literal).

## XML Creation Scripts

To further refine the documentation of this project, a script was written for each area (SSRS, IRP, MVR and IFTA) to generate the XML transactions. In the case of IFTA, the "report" the DOR produced was processed by the script to create T0019 XML transactions. In the other three cases, databases were set up which had the schema based on the information provided by ILCC or SOS and minimal test data populated these databases. Scripts were then written to create the T0020, T0021, T0022, T0023 XML transactions. The resultant XML transaction files were applied to the XCVIEW implementation of CVIEW.

These scripts also can be used to document in a different way how the mappings could be done and could be used as the basis for constructing a CVIEW system.

## Resources

In addition to the resources mentioned above, the following resources have been helpful in understanding the SAFER/CVIEW and state systems.

The primary resource center is the <http://cvisn.fmcsa.dot.gov> site. The Documentation tab has almost all of the SAFER/CVIEW documentation. The John Hopkins University Applied Physics Laboratory (JHU/APL) documents start in 1996 and major contributions continued to 2003. The Volpe National Transportation Systems Center has continued the documentation of updates to the SAFER/CVIEW system. Some of the documents are dated and the organization of the documents is not particularly intuitive.

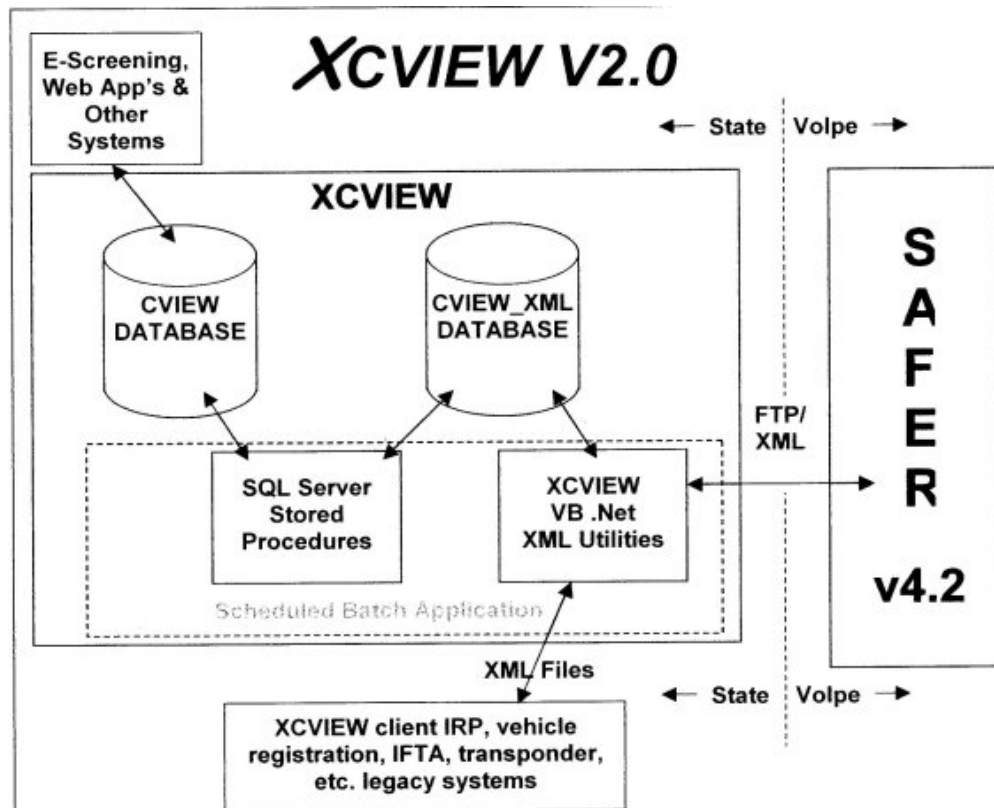
As indicated previously, SAFER is a national database with safety and credential carrier information while CVIEW is a distributed (mostly individual state but could be groups of states) system which

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interacts with both the national SAFER database and legacy state systems.

CVIEW is also designed to be the querying target for state systems.

Our research indicates the diagram below, from [XCVIEW 2.0 Overview Installation and Users Manual](#), is the best overview diagram from the state perspective of how CVIEW, SAFER and state systems interact.



The best document for understanding the transactions between CVIEW and SAFER is [SAFER v4.2 Interface Control Document \(ICD\) POR-02-7374 Baseline Version 1.0](#). This document was finalized in September 2003 and needs to be augmented with the current schema documentation [Updated XML Schema for SAFER Version 5.0](#) (May 2006). Both of these documents are found on the SAFER tab of the documentation area of the FMCSA site at: <http://cvisn.fmcsa.dot.gov/default.aspx?PageID=saferr>

# Single State Registration System (SSRS)

## Background

From: <http://www.icc.illinois.gov/mc/EOSSsrs.aspx> (Credentials information updated by communications with Brad Smith)

Thirty-eight states, including Illinois, require interstate for-hire motor carriers of property and passengers to provide information on the carrier's Federal Motor Carrier Safety Administration (FMCSA) operating authority. Regulated interstate motor carriers file the information on an annual basis so the carrier's operations can be monitored. For each state they operate in, regulated carriers are responsible for applying for the right to operate, to pay appropriate vehicle fees, to provide continuous proof of insurance, and to identify a designated resident agent. To make the administration of regulating these carriers more efficient for the states and regulated carriers, the 38 states have entered into a cooperative agreement to administer an operating authority program. Through this program, the Single State Registration System (SSRS), carriers may obtain operating authority (for any of the participating states in which they will be active) with a single request to the carrier's base State. SSRS issues a receipt that documents the States in which that carrier is authorized to operate. The Illinois Commerce Commission (ILCC) administers the Single State Registration System in Illinois.

The SSRS registration cycle is January to December and the renewal period is from October through December each year. In 2006, the Commerce Commission issued approximately 86,100 SSRS credentials to Illinois-based carriers.

The Commerce Commission provides a simple 38 field application form and mails it to the SSRS registrants. The carrier completes the application and either mails or faxes the application to the SSRS Unit. The carrier also remits the proper payment for SSRS credentials to the SSRS Unit.

Upon receipt of the renewal application, which may be submitted via e-mail, the SSRS Unit reviews the contents of the renewal application. The application's contents are evaluated to determine whether all required information has been submitted. If any omissions are discovered, the carrier is contacted, either by telephone or mail, to rectify the omission. Complete applications are input into the Commerce Commission system where online edits are performed. Upon notification that the appropriate funds have been received by the State, the SSRS Unit issues new credentials for the carrier's vehicles.

## Contacts

- Lead administrator of the SSRS ILLINOIS COMMERCE COMMISSION (Single State Registration System) :
  - ◆ Name: David Lazarides
  - ◆ Phone: (217) 782-9228
  - ◆ e-Mail: dlazarid @ icc.Illinois.gov
- Technical Contact:
  - ◆ Name: Bradley A. Smith IT Supervisor of Development Illinois Commerce Commission
  - ◆ Address: 527 East Capitol Avenue Springfield, IL 62701
  - ◆ Phone: (217) 558-6816
  - ◆ e-Mail: bsmith @ icc.Illinois.gov

## Database Environment

Microsoft SQL Server 2005 in a clustered environment.

## Scope of SSRS Data

While the ILCC appears to have a fairly complete database on motor carriers, the purpose of this analysis is limited to the SSRS system. The process for motor carriers to register in the SSRS system includes the following areas:

- Registering with the Federal Highway Administration
- Resident Agent for each state of operation (Form BOC-3)
- Proof of insurance (Forms BMC91 or BMC91x)
- Application to SSRS in the base state indicating which states and how many vehicles along with payment of fees.

The SAFER database already contains both Federal Highway Administration authority and insurance information. The resident agents is also a federal form which is filed with the Federal Motor Carrier Safety Administration (FMCSA) but does not appear to be part of the SAFER database. Dave Lazarides indicated that this was not in the scope of the SSRS system.

The SSRS data primarily is concerned with the registration of the carrier to the SSRS system along with payment for each state and number of vehicles operated in these states. The SSRS generates receipts and sends these receipts to the carrier on successful completion of the SSRS application. The carrier retains the original receipts at its office and makes copies for the vehicles which are paid for. Some carriers transport interstate commodities, which are exempt from fees, in which case they receive an exempt authority from the FMCSA. These carriers are also documented in the SSRS system.

## Legacy Data Organization - Tables at a Conceptual Level

The legacy data are primarily kept in three tables, with several assisting coding (lookup) tables. The carrier ID in these three tables is a state ID number. Since SAFER/CVIEW are keyed by the federal US DOT identities, the CARRIER table is of interest since it relates to federal US DOT identities, FMCSA identities and state identities.

The three primary tables are:

- BASEREG - includes information about the carrier agent list, FMCSA authorization, and insurance information and timestamps.
- RECEIPT - a row for each carrier state ID, state operation, year and receipt order number. It contains number of vehicles and fees, some status codes, base state, print information and status information.
- REGSTRAT - (Exempt info) - contains carrier state ID, order, dates, status codes.

Normally a carrier would have a row in BASEREG and either rows in RECEIPT or a single row in REGSTRAT but if a carrier moved to or from exempt status, it might have rows in both RECEIPT or REGSTRAT tables.

## Single State Registration System (SSRS)

The RECEIPT table may have several rows for a carrier in a particular state and year because the carrier may need to add vehicles after the regular registration period.

The CARRIER table has the following mapping fields:

Column Name	Information
MC_NBR	state ID
DOT_NBR	federal US DOT ID
FMCSA_NBR	federal motor carrier safety administration ID

There are presumably other fields in the CARRIER table.

Unless more than one primary table uses the coding table, its name is associated with the primary table name. See detailed coding tables below for values in these tables.

Coding Table Name	Information Coded
BASEREG_TAB	Indicates special type of registration (new/temporary/emergency)
REC_TAB	Indicates type of vehicles (Route Bus, Charter Bus, Truck, None)
REG_TAB	Type of exemption (Authorized, Bus, Charter 0, Exempt, Truck ...)
STAT_TAB	Status code in both REGSTRAT and RECEIPT (Active, Suspended ...)
ER_TAB	Error code used in processing in both REGSTRAT and RECEIPT (None, Missing US DOT Number ...)

## Legacy Data Organization - Tables at a Detailed Level

### Primary Tables

#### BASEREG

Field	Type	Key	Foreign Key Table	Comment
BASEREG_ID	bigint	primary key		internal use only
MC_NBR	bigint	candidate key		state ID (probably should be primary key)
BASEREG_CD	nvarchar(2)		<u>BASEREG_TAB</u>	special type of registration
SERVICE_DATE	datetime			date the service was performed
AGENT_LIST_IND	bit			have agent residency list
FMCSA_ORDER_IND	bit			have FMCSA authority
SELF_INS_IND	bit			carrier is self insured
REQ_INS_AMT	money			required insurance for this carrier
EMPCODE	nvarchar(32)			

Single State Registration System (SSRS)

				employee who processed this carrier
DATESTAMP	datetime			time of last change

**RECEIPT**

Field	Type	Key	Foreign Key Table	Comment
RECEIPT_ID	bigint	primary key		internal use only
FEE_CHG_ID	bigint	candidate key (part)		order number
MC_NBR	bigint	candidate key (part)		state ID
VOUCHER_ID	bigint		VOUCHER	related to fees due to/from other states
CARRIER_STATE_CD	nvarchar(2)			base state
TRAVEL_STATE_CD	nvarchar(2)	candidate key (part)		state traveled in
VEHICLES	int			number of vehicles for this state for this order
FEE_AMT	money			amount paid
REC_CD	nvarchar(2)		<u>REC TAB</u>	type of vehicles
RECEIPT_YEAR	int	candidate key (part)		year this receipt is for
PRINTED_DTE	datetime			timestamp receipt printed
PRINTED_BY	nvarchar(32)			employee who printed receipt
ENTERED_DTE	datetime			time receipt entered
ENTERED_BY	nvarchar(32)			employee who entered receipt
STAT_CD	nvarchar(32)		<u>STAT TAB</u>	status code of receipt
STAT_DTE	datetime			time of STAT_CD entered
ER_CD_DISP	nvarchar(32)		from <u>ER TAB</u>	Error message to track down problems

Single State Registration System (SSRS)

EMPCODE	nvarchar(32)			employee last worked on receipt
DATESTAMP	datetime			time of last change

**REGSTRAT (Exempt status)**

Field	Type	Key	Foreign Key Table	Comments
REGSTRAT_ID	bigint	Primary Key		internal use only
FEE_CHG_ID	bigint			order number
MC_NBR	bigint	Candidate key		state ID
REG_CD	nvarchar(2)		<u>REG_TAB</u>	Type of Exemption
ISSUE_DTE	datetime			date exemption issued
WARN_DTE	date			optional - warning about problems of exemption sent
SUSP_DTE	date			optional - suspension of exemption date
REV_DTE	date			optional - revocation of exemption date
STAT_CD	nvarchar(32)			status code of receipt
STAT_DTE	datetime			time of STAT_CD entered
ER_CD_DISP	nvarchar(32)		<u>ER_TAB</u>	Error code to track down problems
MESSAGE	nvarchar(150)			Optional message associated with order
EMPCODE	nvarchar(32)			Employee last worked on REGISTAT
DATESTAMP	datetime			time of last update

**Coding Tables**

**BASEREG\_TAB (3 rows)**

Field	Type	Primary Key	Comments	Values
BASEREG_CD	nvarchar(2)	Primary Key		
BASEREG_NAM	nvarchar(50)		Special Nature	

Single State Registration System (SSRS)

				New, Temporary, Emergency
RETIRED_IND	bit		This code is no longer active	
EMPCODE	nvarchar(32)		Employee code	
DATESTAMP	datetime		time of last update	

**REC\_TAB (4 rows)**

Field	Type	Primary Key	Comments	Values
REC_CD	nvarchar(2)	Primary Key		
REC_NAM	nvarchar(50)			Route Bus, Charter Bus, Truck, None
RETIRED_IND	bit		this code is no longer active	
EMPCODE	nvarchar(32)		Employee code	
DATESTAMP	datetime		time of last update	

**REG\_TAB (11 rows)**

Field	Type	Primary Key	Comments	Values
REG_CD	nvarchar(2)	Primary Key		
REG_NAM	nvarchar(50)			Authorized, Bus, Exempt, ... ( <a href="#">see below</a> )
RETIRED_IND	bit		no longer active	
EMPCODE	nvarchar(32)		Employee code	
DATESTAMP	datetime		time of last update	

**STAT\_TAB (20 rows)**

Field	Type	Primary Key	Comment	Values
STAT_CD	nvarchar(2)	primary key		
STAT_NAM	nvarchar(50)		Name	Active, Revoked, Inactive ... ( <a href="#">see below</a> )
RETIRED_IND	bit		this code no longer active	
EMPCODE	nvarchar(32)		Employee code	

BASEREG\_TAB (3 rows)



## Single State Registration System (SSRS)

DATESTAMP	datetime		time of last update	
-----------	----------	--	---------------------	--

### ER\_TAB (66 rows)

Field	Type	Primary Key	Comment	Values
ER_CD	nvarchar(2)	Primary Key		
ER_NAM	nvarchar(50)		Name	None, Missing DOT Number ... ( <a href="#">see below</a> )
RETURN_IND	bit		this application is returned to the carrier	
RETIRED_IND	bit		this code no longer active	
EMPCODE	nvarchar(32)		Employee code	
DATESTAMP	datetime		time of last update	

## Discussion of SSRS Organization in Extended CVIEW

Since SAFER/CVIEW has no current facility for SSRS information and CVIEW is designed for extensions like SSRS, we need to specify the organization in CVIEW as part of a mapping of legacy SSRS to CVIEW data.

To simplify the mapping, the organization of the CVIEW data should be similar to the organization of the legacy SSRS data. Discussed below are the motivations for alterations from that organization.

1. Since the CVIEW/SAFER system is organized around the US DOT ID, that should be either the primary key or part of the primary key in all non-coding tables.
2. It is believed that the base state is associated with the carrier and does not need to be in the RECEIPT table but rather with the BASEREG table.
3. The exempt information is in a table that should be renamed.
4. CVIEW/SAFER is designed as a snapshot not history of information. As such, receipt information of previous years are of little value.
5. Voucher information - (settlement of fees between states) is not of interest to SSRS under CVIEW
6. Employee codes are not of interest in CVIEW

## Proposed Primary Tables in CVIEW

### SSRS\_CARRIER

Contains BASE\_REG info along with carrier ID mapping and Base State info.

Field	Type	Primary Key	Foreign Key Table	Comment
CARRIER_ID_NUMBER	bigint	primary key		US DOT

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STATE_MC_NBR	bigint			state ID
FMCSA_NBR	bigint			federal motor carrier safety administration ID
CARRIER_STATE_CD	nvarchar(2)			base state
BASEREG_CD	nvarchar(2)		BASEREG_TAB	special type of registration
SERVICE_DATE	datetime			date the service was performed
AGENT_LIST_IND	bit			have agent residency list
FMCSA_ORDER_IND	bit			have FMCSA authority
SELF_INS_IND	bit			carrier is self insured
REQ_INS_AMT	money			required insurance for this carrier
DATESTAMP	datetime			time of last change

**SSRS\_RECEIPT**

Contains Receipt info - primary key (CARRIER\_ID\_NUMBER, TRAVEL\_STATE\_CD, FEE\_CHG\_ID, RECEIPT\_YEAR)

Field	Type	Primary Key	Foreign Key	Comment
CARRIER_ID_NUMBER	bigint	Primary Key (part)		US DOT
TRAVEL_STATE_CD	nvarchar(2)	Primary Key (part)		state traveled in
FEE_CHG_ID	bigint	Primary Key (part)		order number
RECEIPT_YEAR	int	Primary Key (part)		year this receipt is for
VEHICLES	int			number of vehicles for this state for this order
FEE_AMT	money			amount paid
REC_CD	nvarchar(2)		REC_TAB	type of vehicles
PRINTED_DTE	datetime			time receipt printed
ENTERED_DTE	datetime			time receipt entered

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STAT_CD	nvarchar(2)		STAT_TAB	status code of receipt
STAT_DTE	datetime			time of STAT_CD entered
ER_CD_DISP	nvarchar(32)			Error code to track down problems
DATESTAMP	datetime			time of last update

### SSRS\_EXEMPT

Contains Exempt information for carriers who are exempt

Field	Type	Primary Key	Foreign Key	Comment
CARRIER_ID_NUMBER	bigint	primary key		US DOT
FEE_CHG_ID	bigint			order number
REG_CD	nvarchar(2)		REG_TAB	Type of Exemption
ISSUE_DTE	date			date exemption issued
WARN_DTE	date (optional)			warning about problems of exemption sent
SUSP_DTE	date (optional)			suspension of exemption date
REV_DTE	date (optional)			revocation of exemption date
STAT_CD	nvarchar(32)			status code of receipt
STAT_DTE	datetime			time of STAT_CD entered
ER_CD_DISP	nvarchar(32)			Error code to track down problems
MESSAGE	nvarchar(150)			Optional message associated with order
DATESTAMP	datetime			time of last update

### Proposed Coding Tables

The coding tables can be left as they are - with the following changes:

1. Dropping the EMPCODE field
2. Consider renaming of tables/fields to the CVIEW/SAFER style.

## Mapping of Legacy SSRS Data to Proposed CVIEW SSRS Data Considerations

1. General Mapping rules: These rules apply to all transactions.
  1. Any special characters (&""<>) need to get mapped to the XML equivalents. Note: Php's htmlspecialchars does this.
  2. In addresses:
    1. At least one of the STREET\_LINE addresses needs to be present.
    2. Standard States 2 character code need to be present (globalJurisdictionType)
    3. Zip codes can be between 1 and 10 characters (globalZipType)
    4. City, State, Zip codes need to be present
    5. Country names if present need to be mapped to balOptCountryType (US, CA, M, MX, P)
  3. Timestamps (date+time) need to be converted to XML format (YYYY-MM-DDTHH:MM:SS - note T is literal).
2. Since US DOT is either the primary key or part of the primary key in these tables, mapping the legacy tables will require obtaining the US DOT ID from the CARRIER table.
3. The base state is now contained in the SSRS\_CARRIER table. The base state will need to be obtained from a RECEIPT row.
4. Only RECEIPT rows which have the RECEIPT\_YEAR greater or equal to the current year should be processed.

## Detailed Mapping of SSRS Legacy Data to Proposed CVIEW SSRS Data

### SSRS\_CARRIER

- Join: BASEREG with CARRIER on MC\_NBR, possibly left join with RECEIPT on MC\_NBR to pick up CARRIER\_STATE\_CD

To	From	Notes
CARRIER_ID_NUMBER	CARRIER.DOT_NBR	
STATE_MC_NBR	BASEREG.MC_NBR	
FMCSA_NBR	CARRIER.FMCSA_NBR	
CARRIER_STATE_CD	NULL initially	updated with RECEIPT rows
BASEREG_CD	BASEREG.BASEREG_CD	Validation required
SERVICE_DATE	BASEREG.SERVICE_DATE	
AGENT_LIST_IND	BASEREG.AGENT_LIST_IND	
FMCSA_ORDER_IND	BASEREG.FMCSA_ORDER_IND	
SELF_INS_IND	BASEREG.SELF_INS_IND	
REQ_INS_AMT	BASEREG.REQ_INS_AMT	
DATESTAMP	BASEREG.DATESTAMP	

## SSRS\_RECEIPT

- Join: RECEIPT with CARRIER on MC\_NBR

To	From	Notes
CARRIER_ID_NUMBER	CARRIER.DOT_NBR	
TRAVEL_STATE_CD	RECEIPT.TRAVEL_STATE_CD	
FEE_CHG_ID	RECEIPT.FEE_CHG_ID	
RECEIPT_YEAR	RECEIPT.RECEIPT_YEAR	Validation required
VEHICLES	RECEIPT.VEHICLES	
FEE_AMT	RECEIPT.FEE_AMT	
REC_CD	RECEIPT.REC_CD	Validation required
PRINTED_DTE	RECEIPT.PRINTED_DTE	
ENTERED_DTE	RECEIPT.ENTERED_DTE	
STAT_CD	RECEIPT.STAT_CD	Validation required
STAT_DTE	RECEIPT.STAT_DTE	
ER_CD_DISP	RECEIPT.ER_CD_DISP	
DATESTAMP	RECEIPT.DATESTAMP	

Note: when processing transactions from RECEIPT the RECEIPT.BASE\_STATE\_CD may need to update SSRS\_CARRIER.BASE\_STATE\_CD if SSRS\_CARRIER.BASE\_STATE\_CD is null.

## SSRS\_EXEMPT

- Join: REGSTRAT with CARRIER on MC\_NBR

To	From	Notes
CARRIER_ID_NUMBER	CARRIER.DOT_NBR	
FEE_CHG_ID	REGSTRAT.FEE_CHG_ID	
REG_CD	REGSTRAT.REG_CD	Validation required
ISSUE_DTE	REGSTRAT.ISSUE_DTE	
WARN_DTE	REGSTRAT.WARN_DTE	
SUSP_DTE	REGSTRAT.SUSP_DTE	
REV_DTE	REGSTRAT.REV_DTE	
STAT_CD	REGSTRAT.STAT_CD	Validation required
STAT_DTE	REGSTRAT.STAT_DTE	
ER_CD_DISP	REGSTRAT.ER_CD_DISP	
MESSAGE	REGSTRAT.MESSAGE	
DATESTAMP	REGSTRAT.DATESTAMP	

## Trigger Fields

Since DATESTAMP in BASEREG, RECEIPT and REGSTRAT are updated when changes are made to those respective tables they can serve as a trigger field for including them in a transaction to update the SSRS\_CARRIER, SSRS\_RECEIPT, SSRS\_EXEMPT tables respectively.

## Additional Considerations

1. Since the coding tables are stable and small they can be loaded in a special process when creating the CVIEW database.
2. Validation on BASE\_REG\_CD, REC\_CD, REG\_CD and STAT\_CD is required for non null values in SSRS\_CARRIER, SSRS\_RECEIPT, SSRS\_EXEMPT
3. Validation required for RECEIPT\_YEAR. Only current year information should be included.
4. Probably two different transactions - one for update and one for complete load should be set up. As part of the complete load transaction, any existing rows in the CVIEW database related to the SSRS primary tables should be removed. This will allow for clearing of last year's data over a calendar year change.
5. The CVIEW RECEIPT table is probably too granular for summary views since for a particular state the number of vehicles can be on different orders. A view of the total number of licenses for a particular state, carrier and year separated by status may be needed.

## US\_DOT Cross Reference Completeness

The US\_DOT Carrier ID mapping to state ID in the SSRS system is contained in the following table:

Records Category	Count
Total SSRS	12763
Have US_DOT Carrier ID	12434
Missing US_DOT Carrier ID	329
Missing US_DOT Have FMCSA	254
Missing US_DOT Missing FMCSA	75

The data in this table was effective as of 10/25/2006 based on queries run by Brad Smith.

The FMCSA is the Federal Motor Carrier Safety Administration ID. This identifier may be helpful in determining US\_DOT Carrier IDs.

## Legacy Coding Table Values

### BASEREG\_TAB - without EMPCODE or DATESTAMP

BASEREG_CD	BASEREG_NAM	RETIRED_IND
E	Emergency Temporary Authority	0
N	New Certificate/Permit	0
T	Temporary Authority	0

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**ER\_TAB - without EMPCODE or DATESTAMP**

ER_CD	ER_NAM	RETURN_IND	RETIRED_IND
00	None	0	0
01	Document not Properly Signed	1	0
02	Missing DOT Number	0	0
03	Principle Names / Titles Missing	1	0
04	Invalid Fee Code	0	0
05	Underpayment \$_____.__, Correct Amount is \$_____	1	0
06	Missing Full Legal Name	1	0
07	Incomplete Business Address / Telephone Number	0	0
08	Business Address Contains P.O. Box Number Only	0	0
09	Duplicate Motor Carrier on File	1	0
10	Insufficient Funds to Cover Payment	1	0
11	Invalid Motor Carrier Number Specified	1	0
12	Payment not Received	1	0
13	Authority / Registration Revoked	1	0
14	Current Annual Report not on File	0	0
15	Invalid FEIN/SSN Code or Number	0	0
16	Invalid Zip Code	0	0
17	Invalid State Abbreviation	0	0
40	ICC Motor Carrier Number Missing	1	0
41	Process Agent not Specified	0	0
42	Type of Business not Specified	0	0
43	Registration Type (A or E) Missing	0	0
44	No Authority to Operate in Illinois	1	0
45	Business State Changed, No Proof Provided	1	0
46	Prior Application Revoked or Suspended	0	0
47	Pending Application Already on File	1	0
48	Revoked: Sec. of State Corporation Fees Not Paid	1	0
49	State of Incorporation Missing	0	0
50	Shipper Support Statement not Filed	0	0
51	County Code/Name Missing	0	0
52	<< Invalid Error Code >>	0	0
53	<< Invalid Error Code >>	0	0

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54	<< Invalid Error Code >>	0	0
55	<< Invalid Error Code >>	0	0
56	<< Invalid Error Code >>	0	0
57	Compensation type not given / amount invalid	1	0
58	Letters of Office / Probate Court Order Missing	0	0
59	Small Estate / Heirship Affidavit Missing	0	0
60	Identification of Equipment Section Incomplete	1	0
61	Lease Eff / Exp Date Missing or Incorrect	1	0
62	Lessee Control Indicator should be 'Y'	1	0
63	Lease Term is Greater Than 3 Years	1	0
64	Abstract of Shipments Missing	0	0
65	Contract For Transfer Missing	0	0
66	Operator / Dispatcher Indicator Not Present	0	0
67	No Response Present / Invalid Response	0	0
68	Driver's License Not Present / Invalid	0	0
70	No Insurance FORM-E on File	1	0
71	Duplicate Insurance Form/Policy	1	0
72	Insurance Company/Policy Number Missing or Invalid	1	0
73	COD Affidavit or Bond Already on File	1	0
74	No Active Insurance FORM/POLICY to Cancel	1	0
75	Invalid Insurance FORM/POLICY Type	0	0
76	No Insurance POLICY/BOND Effective Date	1	0
77	"ILLINOIS COMMERCE COMMISSION" name not on Form	1	0
78	Insurance Company Inactive	1	0
80	Stamp Ordering Fee Not Paid	1	0
81	Stamps Not ordered with Application	1	0
82	Missing Expiration Date for Stamps	0	0
83	Missing Quantity for Stamps	1	0
84	Total Fees for Stamps not Specified or Incorrect	1	0
85	Incomplete Stamp Mailing Address	0	0
86	Invalid Re-Issued/Re-Printed Stamp Serial Numbers	1	0
90	Other	1	0
91	Docket Sub Number Missing	0	0
99	Overpayment - Check amount reduced	0	0



**REC\_TAB - without EMPCODE or DATESTAMP**

REC_CD	REC_NAM	RETIRED_IND
B	Regular-Route Bus	0
C	Charter Bus	0
X	None	0

**REG\_TAB - without EMPCODE or DATESTAMP**

REG_CD	REG_NAM	RETIRED_IND
A	Authorized	0
B	Bus	0
C	Charter	0
E	Exempt	0
N	None	0
S	S: Unknown	0
T	Truck	0
U	U: Unknown	0
V	V: Unknown	0
X	X: Unknown	0
Y	Y: Unknown	0

**STAT\_TAB - without EMPCODE or DATESTAMP**

STAT_CD	STAT_NAM	RETIRED_IND
00	Active	0
01	Permanent Pending	0
02	Temporary Pending	0
03	Registration / Authority Issued	0
04	Suspension - Insurance Canceled	0
05	Suspension - Voluntary Request	0
06	Suspension - Bankruptcy	0
07	Revoked	0
08	Inactive	0
10	Stp Order - Inter. Canceled / Intra. Okay	0
11	Stp Order - Inter. Okay / Intra. Canceled	0
12	Stp Order - Inter. Canceled / Intra. Canceled	0
13	Stp Order - Inter. Canceled / Intra. Compliance	0
14	Stp Order - Inter. Okay / Intra. Compliance	0

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15	Stp Order - Inter. Acceptbl. / Intra. Okay	0
16	Stp Order - Inter. Acceptbl. / Intra. Canceled	0
17	Stp Order - Inter. Acceptbl. / Intra. Compliance	0
18	Stp Order - Don't Print This Order Yet!	0
99	Process Not Completed	0

## XML Creation Script

Below is a php script which was used to generate X0011 and X0012 transactions which were then applied to XCVIEW implementation of CVIEW. A database was created and minimally populated with test data. The application of the test cases were successful and the scripts could be used as the basis for an implementation of a XML creation script for the SSRS system.

The \$Host, \$Username, \$Password, "LSI\_SSRS" database would need to be adjusted to reflect the actual SSRS database. This script assumes the database is a MS-SQL 2005 database server which is true in the case of SSRS information.

```
<?php
$Host = "lsissrshost";
// This script will open up the SSRS database and produce a transaction
// file for processing in the augmented cview tasks
/* Connecting, selecting database */
$Username = "username";
$Password = "password";
$link = mssql_connect($Host, $Username, $Password)
    or die('Could not connect\n');
if (!mssql_select_db("LSI_SSRS"))
    die("Could not select LSI_SSRS\n");
// open output file
$FileNameOut = ($argc > 1) ? $argv[1] : "CVIEWX0011V1.xml";
($fhout = fopen($FileNameOut, "w")) || die("Cannot open output file $FileNameOut\n");

$queryStr = "SELECT *, RECEIPT.DATESTAMP RECEIPT_DATESTAMP,
BASEREG.DATESTAMP BASEREG_DATESTAMP
FROM CARRIER, BASEREG, RECEIPT WHERE CARRIER.MC_NBR = BASEREG.MC_NBR
AND CARRIER.MC_NBR = RECEIPT.MC_NBR";
$results = mssql_query($queryStr);
if ($results === FALSE)
    die("Failed Query - $queryStr\n");
if ($results === TRUE) die("no rows");
$SnapDate = date("Y-m-d\Th:i:s");
// output XML heading
$xmlHeader = "<?xml version='1.0'?>
<X0011 xmlns='http://www.safer.org/namespaces/X0011V1'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
xsi:schemaLocation='http://www.safer.org/namespaces/X0011V1 X0011V1.xsd'>
<INTERFACE>
<NAME>SAFER</NAME>
<VERSION>04.02</VERSION>
</INTERFACE>
<TRANSACTION>
<VERSION>01.00</VERSION>
<OPERATION>REPLACE</OPERATION>
<DATE_TIME>$SnapDate</DATE_TIME>
```

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```
<TZ>CD</TZ>
</TRANSACTION>\n";
fwrite($fhout, $XMLHeader);
$Last_MC_NBR = "";
while ($Row = mssql_fetch_object($Results)){
    if ($Row->MC_NBR != $Last_MC_NBR){ // new Carrier
        if ($Last_MC_NBR != ""){ // Finish last Carrier with Receipt
            $XMLReceipt =
" </SSRS_BASE>\n";
            fwrite($fhout, $XMLReceipt);
        }
        $Last_MC_NBR = $Row->MC_NBR;
        $XMLReceipt =
" <SSRS_BASE>\n";
        // SSRS_CARRIER info
        $Piece = $Row->DOT_NBR;
        $CARRIER_ID_NUMBER = $Piece != "" ? $Piece : $Row->MC_NBR;
        // Map state ID if required
        $STATE_MC_NBR = $Row->MC_NBR;
        $FMCSA_NBR = $Row->FMCSA_NBR;
        $CARRIER_STATE_CD = $Row->CARRIER_STATE_CD;
        $BASEREG_CD = $Row->BASEREG_CD;
        $SERVICE_DATE = date("Y-m-d", strtotime($Row->SERVICE_DATE));
        $AGENT_LIST_IND = $Row->AGENT_LIST_IND;
        $FMCSA_ORDER_IND = $Row->FMCSA_ORDER_IND;
        $SELF_INS_IND = $Row->SELF_INS_IND;
        $REQ_INS_AMT = $Row->REQ_INS_AMT;
        $DATESTAMP = date("Y-m-d\Th:i:s", strtotime($Row->BASEREG_DATESTAMP));
        $XMLReceipt .=
" <CARRIER_ID_NUMBER>$CARRIER_ID_NUMBER</CARRIER_ID_NUMBER>
<STATE_MC_NBR>$STATE_MC_NBR</STATE_MC_NBR>
<FMCSA_NBR>$FMCSA_NBR</FMCSA_NBR>
<CARRIER_STATE_CD>$CARRIER_STATE_CD</CARRIER_STATE_CD>
<BASEREG_CD>$BASEREG_CD</BASEREG_CD>
<SERVICE_DATE>$SERVICE_DATE</SERVICE_DATE>
<AGENT_LIST_IND>$AGENT_LIST_IND</AGENT_LIST_IND>
<FMCSA_ORDER_IND>$FMCSA_ORDER_IND</FMCSA_ORDER_IND>
<SELF_INS_IND>$SELF_INS_IND</SELF_INS_IND>
<REQ_INS_AMT>$REQ_INS_AMT</REQ_INS_AMT>
<DATESTAMP>$DATESTAMP</DATESTAMP>\n";
        fwrite($fhout, $XMLReceipt);
    }
    // SSRS_RECEIPT info
    //CARRIER_ID already set
    $TRAVEL_STATE_CD = $Row->TRAVEL_STATE_CD;
    $FEE_CHG_ID = $Row->FEE_CHG_ID;
    $RECEIPT_YEAR = $Row->RECEIPT_YEAR;
    $VEHICLES = $Row->VEHICLES;
    $FEE_AMT = $Row->FEE_AMT;
    $REC_CD = $Row->REC_CD;
    $PRINTED_DTE = date("Y-m-d", strtotime($Row->PRINTED_DTE));
    $ENTERED_DTE = date("Y-m-d", strtotime($Row->ENTERED_DTE));
    $STAT_CD = $Row->STAT_CD;
    $STAT_DTE = date("Y-m-d", strtotime($Row->STAT_DTE));
    $ER_CD_DISP = $Row->ER_CD_DISP;
    $DATESTAMP = date("Y-m-d\Th:i:s", strtotime($Row->RECEIPT_DATESTAMP));

    $XMLReceipt =
" <SSRS_RECEIPT>
<CARRIER_ID_NUMBER>$CARRIER_ID_NUMBER</CARRIER_ID_NUMBER>
<TRAVEL_STATE_CD>$TRAVEL_STATE_CD</TRAVEL_STATE_CD>
<FEE_CHG_ID>$FEE_CHG_ID</FEE_CHG_ID>
```

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```
<RECEIPT_YEAR>$RECEIPT_YEAR</RECEIPT_YEAR>
<VEHICLES>$VEHICLES</VEHICLES>
<FEE_AMT>$FEE_AMT</FEE_AMT>
<REC_CD>$REC_CD</REC_CD>
<PRINTED_DTE>$PRINTED_DTE</PRINTED_DTE>
<ENTERED_DTE>$ENTERED_DTE</ENTERED_DTE>
<STAT_CD>$STAT_CD</STAT_CD>
<STAT_DTE>$STAT_DTE</STAT_DTE>
<ER_CD_DISP>$ER_CD_DISP</ER_CD_DISP>
<DATESTAMP>$DATESTAMP</DATESTAMP>
</SSRS_RECEIPT>\n";
fwrite($fhout,$XMLReceipt);
}
XMLReceipt =
" </SSRS_BASE>
</X0011>\n";
fwrite($fhout,$XMLReceipt);
fclose($fhout);

// open output file
$FileNameOut = ($argc > 2) ? $argv[2] : "CVIEWX0012V1.xml";
($fhout = fopen($FileNameOut, "w")) || die("Cannot open output file $FileNameOut\n");
$QryStr = "SELECT *, REGSTRAT.DATESTAMP REGSTRAT_DATESTAMP,
BASEREG.DATESTAMP BASEREG_DATESTAMP FROM CARRIER, BASEREG, REGSTRAT WHERE
CARRIER.MC_NBR = BASEREG.MC_NBR AND CARRIER.MC_NBR = REGSTRAT.MC_NBR";
$Results = mssql_query($QryStr);
if ($Results === FALSE)
    die("Failed Query - $QryStr\n");
if ($Results === TRUE) die("no rows");
$SnapDate = date("Y-m-d\Th:i:s");
// output XML heading
$xmlHeader = "<?xml version=\\"1.0\\"?>
<X0012 xmlns=\\"http://www.safer.org/namespaces/X0012V1\\"
xmlns:xsi=\\"http://www.w3.org/2001/XMLSchema-instance\\"
xsi:schemaLocation=\\"http://www.safer.org/namespaces/X0012V1 X0012V1.xsd\\">
<INTERFACE>
<NAME>SAFER</NAME>
<VERSION>04.02</VERSION>
</INTERFACE>
<TRANSACTION>
<VERSION>01.00</VERSION>
<OPERATION>REPLACE</OPERATION>
<DATE_TIME>$SnapDate</DATE_TIME>
<TZ>CD</TZ>
</TRANSACTION>\n";
fwrite($fhout,$xmlHeader);
while ($Row = mssql_fetch_object($Results)){
    $XMLExempt=
    " <SSRS_EXEMPT>
<SSRS_BASE>\n";
    // SSRS_CARRIER info
    $Piece = $Row->DOT_NBR;
    $CARRIER_ID_NUMBER = $Piece != "" ? $Piece : $Row->MC_NBR;
    // Map state ID if required
    $STATE_MC_NBR = $Row->MC_NBR;
    $FMCSA_NBR = $Row->FMCSA_NBR;
    $BASEREG_CD = $Row->BASEREG_CD;
    $SERVICE_DATE = date("Y-m-d",strtotime($Row->SERVICE_DATE));
    $AGENT_LIST_IND = $Row->AGENT_LIST_IND;
    $FMCSA_ORDER_IND = $Row->FMCSA_ORDER_IND;
    $SELF_INS_IND = $Row->SELF_INS_IND;
    $REQ_INS_AMT = $Row->REQ_INS_AMT;
```

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```
$DATESTAMP = date("Y-m-d\Th:i:s",strtotime($Row->BASEREG_DATESTAMP));
$xmlExempt .=
" <CARRIER_ID_NUMBER>$CARRIER_ID_NUMBER</CARRIER_ID_NUMBER>
<STATE_MC_NBR>$STATE_MC_NBR</STATE_MC_NBR>
<FMCSA_NBR>$FMCSA_NBR</FMCSA_NBR>
<BASEREG_CD>$BASEREG_CD</BASEREG_CD>
<SERVICE_DATE>$SERVICE_DATE</SERVICE_DATE>
<AGENT_LIST_IND>$AGENT_LIST_IND</AGENT_LIST_IND>
<FMCSA_ORDER_IND>$FMCSA_ORDER_IND</FMCSA_ORDER_IND>
<SELF_INS_IND>$SELF_INS_IND</SELF_INS_IND>
<REQ_INS_AMT>$REQ_INS_AMT</REQ_INS_AMT>
<DATESTAMP>$DATESTAMP</DATESTAMP>
</SSRS_BASE>\n";
fwrite($fhout, $xmlExempt);
// SSRS_EXEMPT info
//CARRIER_ID already set
$FEE_CHG_ID = $Row->FEE_CHG_ID;
$REG_CD = $Row->REG_CD;
$ISSUE_DTE = date("Y-m-d",strtotime($Row->ISSUE_DTE));
$PieceWarn = $Row->WARN_DTE;
$WARN_DTE = $PieceWarn != "" ? date("Y-m-d",strtotime($PieceWarn)) : "";
$PieceSusp = $Row->SUSP_DTE;
$SUSP_DTE = $PieceSusp != "" ? date("Y-m-d",strtotime($PieceSusp)) : "";
$PieceRev = $Row->REV_DTE;
$REV_DTE = $PieceRev != "" ? date("Y-m-d",strtotime($PieceRev)) : "";
$STAT_CD = $Row->STAT_CD;
$STAT_DTE = date("Y-m-d",strtotime($Row->STAT_DTE));
$ER_CD_DISP = $Row->ER_CD_DISP;
$MESSAGE = $Row->MESSAGE;
$DATESTAMP = date("Y-m-d\Th:i:s",strtotime($Row->REGSTRAT_DATESTAMP));
$xmlExempt =
" <SSRS_EXEMPT>
<CARRIER_ID_NUMBER>$CARRIER_ID_NUMBER</CARRIER_ID_NUMBER>
<FEE_CHG_ID>$FEE_CHG_ID</FEE_CHG_ID>
<REG_CD>$REG_CD</REG_CD>
<ISSUE_DTE>$ISSUE_DTE</ISSUE_DTE>\n";
if ($PieceWarn != "") $xmlExempt .=
" <WARN_DTE>$WARN_DTE</WARN_DTE>\n";
if ($PieceSusp != "") $xmlExempt .=
" <SUSP_DTE>$SUSP_DTE</SUSP_DTE>\n";
if ($PieceRev != "") $xmlExempt .=
" <REV_DTE>$SUSP_DTE</REV_DTE>\n";
$xmlExempt .=
" <STAT_CD>$STAT_CD</STAT_CD>
<STAT_DTE>$STAT_DTE</STAT_DTE>
<ER_CD_DISP>$ER_CD_DISP</ER_CD_DISP>
<MESSAGE>$MESSAGE</MESSAGE>
<DATESTAMP>$DATESTAMP</DATESTAMP>
</SSRS_EXEMPT>\n";
fwrite($fhout, $xmlExempt);
}
$xmlExempt =
" </SSRS_EXEMPT>
</X0012>\n";
fwrite($fhout, $xmlExempt);
fclose($fhout);
?>
```

## XML Transactions

There are no XML transactions in the regular CVISN CVIEW/SAFER system. The CVIEW system is designed so it can be augmented to include additional state systems such as SSRS. Below are the state XML transactions to accommodate SSRS systems. The two transactions are Receipt and Exempt input transactions.

### X0011V1.xsd - SSRS Receipt Transaction

```
<?xml version="1.0"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://www.safersys.org/namespaces/X0011V1"
  xmlns:ts="http://www.safersys.org/namespaces/X0011V1"
  elementFormDefault="qualified">

  <!-- SSRSReceipt Input Transaction, X0011, version 1 -->

  <include schemaLocation="globalTypes.xsd"/>

  <!-- Root element -->

  <element name="X0011" type="ts:X0011V1Type"/>

  <!-- Root element type -->

  <complexType name="X0011V1Type">
    <sequence>
      <element name="INTERFACE" type="ts:interfaceHeaderType"/>
      <element name="TRANSACTION" type="ts:transHeaderType"/>
      <element name="SSRS_BASE" type="ts:SSRSReceiptType"
        minOccurs="1" maxOccurs="5000"/>
    </sequence>
  </complexType>

  <!-- Interface Header type -->

  <complexType name="interfaceHeaderType">
    <sequence>
      <element name="NAME" type="string" fixed="SAFER"/>
      <element name="VERSION" type="string" fixed="04.02"/>
    </sequence>
  </complexType>

  <!-- Transaction Header type -->

  <complexType name="transHeaderType">
    <sequence>
      <element name="VERSION" type="string" fixed="01.00"/>
      <element name="OPERATION" type="string" fixed="REPLACE"/>
      <element name="DATE_TIME" type="dateTime"/>
    </sequence>
  </complexType>

```

## Single State Registration System (SSRS)

```
<element name="TZ" type="ts:globalTimeZoneType"/>
</sequence>
</complexType>

<complexType name="SSRSReceiptType">
  <sequence>
    <element name="CARRIER_ID_NUMBER" type="ts:globalCarrierIdNumberType" /><!--
Check these types do we need to have minOccurs with Opt types-->
    <element name="STATE_MC_NBR" type="ts:globalCarrierIdNumberType"/>
    <element name="FMCSA_NBR" type="ts:globalOptCarrierIdNumberType" minOccurs="0" />
<!-- Receipt has this while Exempt does not -->
    <element name="CARRIER_STATE_CD" type="ts:globalJurisdictionType"
minOccurs="0" />
    <element name="BASEREG_CD" type="ts:localBaseRegTabType"/>
    <element name="SERVICE_DATE" type="date"/>
    <element name="AGENT_LIST_IND" type="string"/>
    <element name="FMCSA_ORDER_IND" type="string"/>
    <element name="SELF_INS_IND" type="string"/>
<!-- need to adjust number -->
    <element name="REQ_INS_AMT" type="string"/>
    <element name="DATESTAMP" type="dateTime"/>
    <element name="SSRS_RECEIPT" type="ts:SSRSReceiptDetailType" minOccurs="1"
maxOccurs="100"/>
  </sequence>
</complexType>

<complexType name="SSRSReceiptDetailType">
  <sequence>
    <element name="CARRIER_ID_NUMBER" type="ts:globalCarrierIdNumberType" /><!--
Check these types do we need to have minOccurs with Opt types-->
    <element name="TRAVEL_STATE_CD" type="ts:globalJurisdictionType"/>
    <element name="FEE_CHG_ID" type="string"/>
    <element name="RECEIPT_YEAR" type="string"/>
    <element name="VEHICLES" type="string"/>
    <element name="FEE_AMT" type="string"/>
    <element name="REC_CD" type="ts:localRecTabType"/>
    <element name="PRINTED_DTE" type="date"/>
    <element name="ENTERED_DTE" type="date"/>
    <element name="STAT_CD" type="ts:localStatTabType"/>
    <element name="STAT_DTE" type="date"/>
    <element name="ER_CD_DISP" >
      <simpleType>
        <restriction base="string">
          <minLength value="1"/>
          <maxLength value="32"/>
        </restriction>
      </simpleType>
    </element>
    <element name="DATESTAMP" type="dateTime"/>
  </sequence>
</complexType>
<simpleType name="localRecTabType">
```

## Single State Registration System (SSRS)

```
<restriction base="string">
  <minLength value="1"/>
  <maxLength value="2"/>
</restriction>
</simpleType>
<simpleType name="localRegTabType">
  <restriction base="string">
    <minLength value="1"/>
    <maxLength value="2"/>
  </restriction>
</simpleType>
<simpleType name="localBaseRegTabType">
  <restriction base="string">
    <minLength value="1"/>
    <maxLength value="2"/>
  </restriction>
</simpleType>
<simpleType name="localStatTabType">
  <restriction base="string">
    <minLength value="2"/>
    <maxLength value="2"/>
  </restriction>
</simpleType>
</schema>
```

## X0012V1.xsd - SSRS Exempt Transaction

```
<?xml version="1.0"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://www.safersys.org/namespaces/X0012V1"
  xmlns:ts="http://www.safersys.org/namespaces/X0012V1"
  elementFormDefault="qualified">

  <!-- SSRSExempt Input Transaction, X0012, version 1 -->

  <include schemaLocation="globalTypes.xsd"/>

  <!-- Root element -->

  <element name="X0012" type="ts:X0012V1Type"/>

  <!-- Root element type -->

  <complexType name="X0012V1Type">
    <sequence>
      <element name="INTERFACE" type="ts:interfaceHeaderType"/>
      <element name="TRANSACTION" type="ts:transHeaderType"/>
      <element name="SSRS_EXEMPT" type="ts:SSRSExemptType"
        minOccurs="1" maxOccurs="5000"/>
    </sequence>
```



## Single State Registration System (SSRS)

```
</complexType>

<!-- Interface Header type -->

<complexType name="interfaceHeaderType">
  <sequence>
    <element name="NAME" type="string" fixed="SAFER"/>
    <element name="VERSION" type="string" fixed="04.02"/>
  </sequence>
</complexType>

<!-- Transaction Header type -->

<complexType name="transHeaderType">
  <sequence>
    <element name="VERSION" type="string" fixed="01.00"/>
    <element name="OPERATION" type="string" fixed="REPLACE"/>
    <element name="DATE_TIME" type="dateTime"/>
    <element name="TZ" type="ts:globalTimeZoneType"/>
  </sequence>
</complexType>

<complexType name="SSRSExemptType">
  <sequence>
    <element name="CARRIER_ID_NUMBER" type="ts:globalCarrierIdNumberType" /><!--
Check these types do we need to have minOccurs with Opt types-->
    <element name="STATE_MC_NBR" type="ts:globalCarrierIdNumberType"/>
    <element name="FMCSA_NBR" type="ts:globalOptCarrierIdNumberType" minOccurs="0" />
<!-- Receipt has this while Exempt does not -->
    <element name="CARRIER_STATE_CD" type="ts:globalJurisdictionType"
minOccurs="0" />
    <element name="BASEREG_CD" type="ts:localBaseRegTabType"/>
    <element name="SERVICE_DATE" type="date"/>
    <element name="AGENT_LIST_IND" type="string"/>
    <element name="FMCSA_ORDER_IND" type="string"/>
    <element name="SELF_INS_IND" type="string"/>
<!-- need to adjust number -->
    <element name="REQ_INS_AMT" type="string"/>
    <element name="DATESTAMP" type="dateTime"/>
    <element name="SSRS_EXEMPT" type="ts:SSRSExemptDetailType" minOccurs="1"
maxOccurs="1"/>
  </sequence>
</complexType>
<!-- SSRS Exempt Detail type -->

<complexType name="SSRSExemptDetailType">
  <sequence>
    <element name="CARRIER_ID_NUMBER" type="ts:globalCarrierIdNumberType" />
<!-- Check these types do we need to have minOccurs with Opt types-->
    <element name="FEE_CHG_ID" type="string"/>
    <element name="REG_CD" type="ts:localRegTabType"/>
  </sequence>
</complexType>
```

## Single State Registration System (SSRS)

```
<element name="ISSUE_DTE" type="date"/>
<element name="WARN_DTE" type="date" minOccurs="0"/>
<element name="SUSP_DTE" type="date" minOccurs="0"/>
<element name="REV_DTE" type="date" minOccurs="0"/>
<element name="STAT_CD" type="ts:localStatTabType"/>
<element name="STAT_DTE" type="date"/>
<!-- Check length -->
<element name="ER_CD_DISP" >
  <simpleType>
    <restriction base="string">
      <minLength value = "1"/>
      <maxLength value="32"/>
    </restriction>
  </simpleType>
</element>
<element name="MESSAGE" >
  <simpleType>
    <restriction base="string">
      <minLength value = "0"/>
      <maxLength value="150"/>
    </restriction>
  </simpleType>
</element>
<element name="DATESTAMP" type="dateTime"/>
</sequence>
</complexType>
<simpleType name="localRecTabType">
  <restriction base="string">
    <minLength value="1"/>
    <maxLength value="2"/>
  </restriction>
</simpleType>
<simpleType name="localRegTabType">
  <restriction base="string">
    <minLength value="1"/>
    <maxLength value="2"/>
  </restriction>
</simpleType>
<simpleType name="localBaseRegTabType">
  <restriction base="string">
    <minLength value="1"/>
    <maxLength value="2"/>
  </restriction>
</simpleType>
<simpleType name="localStatTabType">
  <restriction base="string">
    <minLength value="2"/>
    <maxLength value="2"/>
  </restriction>
</simpleType>
</schema>
```

# International Registration Plan (IRP)

## Background

From: <http://www.icc.illinois.gov/mc/EOSSirp.aspx> (Credential information updated by communications with Mick Ramirez)

The IRP is an agreement among 48 states, 10 Canadian Provinces and the District of Columbia whereby a motor carrier can register commercial vehicle fleets for travel in all IRP jurisdictions by filing the paperwork with the home (base) jurisdiction.

Interstate commercial vehicles legally based in Illinois must be registered under the International Registration Plan (IRP). The Office of the Secretary of State Commercial and Farm Truck Division administers IRP in Illinois. The IRP is a registration reciprocity agreement among jurisdictions in the United States and Canada, which provides for payment of license fees on the basis of fleet miles operated in various jurisdictions. The unique feature of the IRP Plan is that *only one license plate and one cab card* is issued for each fleet vehicle even though license fees are paid to the various jurisdictions in which fleet vehicles are operated. A fleet vehicle may be operated both inter-jurisdictionally and intra-jurisdictionally.

The IRP registration cycle in Illinois is April 1 through March 31 each year and the renewal period extends from December until March. In 2006, the Secretary of State issued 165,810 IRP credentials to Illinois-based carriers.

## Contacts

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## Registration Systems

There are two sources of registration information of commercial vehicles at the Secretary of State. The IRP system is documented here. There is also the Motor Vehicle Registration (MVR) system for intrastate vehicles. The documentation of the MVR system is documented on the [MVR](#) tab.

## Database Environment

The database server is an IBM DB2 database environment. There are the following tables:

Table	Notes
IR_FIRM	Carrier info
IR_ADDRESS	
IR_FLEET	
IR_VEHICLE	
IR_FINANCE	Contains Registration Start Date
IR_WEIGHT	See Notes in Mapping area

## Mapping

- General Mapping rules: These rules apply to all transactions.
  1. Any special characters (&"<>) need to get mapped to the XML equivalents. Note: Php's htmlspecialchars does this.
  2. In addresses:
    1. At least one of the STREET\_LINE addresses needs to be present.
    2. Standard States 2 character code need to be present (globalJurisdictionType)
    3. Zip codes can be between 1 and 10 characters (globalZipType)
    4. City, State, Zip codes need to be present
    5. Country names if present need to be mapped to balOptCountryType (US, CA, M, MX, P)
  3. Timestamps (date+time) need to be converted to XML format (YYYY-MM-DDTHH:MM:SS - note T is literal).

Dates are of the form ccyymmdd format which will need to be converted to yyyy-mm-dd format.

## IRP Account (T0020V1)

T0020V1 Field	Legacy Field	Comments
IRP_CARRIER_ID_NUMBER(12)	IR_FIRM.US_DOT_NUMBER_1(12)	
IRP_BASE_COUNTRY(2)	"US"	
IRP_BASE_STATE(2)	"IL"	

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IRP_ACCOUNT_NUMBER(32)	IR_FIRM.FIRM_NO(5)	
IRP_ACCOUNT_TYPE(1)	"I"	
IRP_STATUS_CODE(3)	IR_FIRM.STATUS_CODE(1)	See <a href="#">Note 1 below</a>
IRP_STATUS_DATE (yyyy-mm-dd)	IR_FIRM.LAST_ACTION_DATE (ccyymmdd)	See <a href="#">Note above about dates</a>
IRP_UPDATE_DATE (yyyy-mm-dd)	IR_FIRM.LAST_ACTION_DATE (ccyymmdd)	
IRP_NAME.NAME[LG](120)	IR_FIRM.NAME(35)	LG (Legal Name)
IRP_NAME.NAME[DB](120)	IR_FIRM.DBA_NAME(35)	DB (Doing Business as) Name
IRP_NAME.STREET_LINE_1[LG][PH](90)	IR_ADDRESS.FLEET_STREET(35)	PH (Physical Address)
IRP_NAME.STREET_LINE_2[LG][PH](90)	(none)	
IRP_NAME.PO_BOX[LG][PH](90)	(none)	
IRP_NAME.CITY[LG][PH](90)	IR_ADDRESS.FLEET_CITY(21)	
IRP_NAME.STATE[LG][PH](2)	"IL"	
IRP_NAME.ZIP[LG][PH](9)	IR_ADDRESS.FLEET_ZIP(9)	
IRP_NAME.COUNTY[LG][PH](90)	(none)	
IRP_NAME.COLONIA[LG][PH](90)	(none)	
IRP_NAME.COUNTRY[LG][PH](2)	"US"	
IRP_NAME.STREET_LINE_1[LG][MA](90)	IR_ADDRESS.MAIL_STREET(35)	MA (Mail Address)
IRP_NAME.STREET_LINE_2[LG][MA}(90)	(none)	
IRP_NAME.PO_BOX[LG][MA}(90)	(none)	
IRP_NAME.CITY[LG][MA}(90)	IR_ADDRESS.MAIL_CITY(21)	
IRP_NAME.STATE[LG][MA}(2)	IR_ADDRESS.MAIL_STATE(2)	
IRP_NAME.ZIP[LG][MA}(9)	IR_ADDRESS.MAIL_ZIP(9)	
IRP_NAME.COUNTY[LG][MA}(90)	(none)	
IRP_NAME.COLONIA[LG][MA}(90)	(none)	
IRP_NAME.COUNTRY[LG][MA}(2)		See <a href="#">Note 2 below</a>

Notes:

1) The status code maps from the legacy system of one character to the following three digit codes:

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SOS Status Code	CVIEW IRP_STATUS_CODE	Meaning
A	100	Active
I	900	Inactive
D	999	Deleted

2) The COUNTRY[MA] is determined by the MAIL\_STATE. If the MAIL\_STATE is MX then COUNTRY[MA] IS MX. If the MAIL\_STATE is a Canadian Province or Territory then the COUNTRY[MA] IS CA, otherwise the COUNTRY[MA] is US. See [Jurisdiction Mappings](#) below for valid Canadian Jurisdictions

### IRP FLEET (T0021V1)

Note: Fleet information has no name or address - only fleet number

T0021V1 Field	Legacy Field	Comment
IRP_ACCOUNT_NUMBER(32)	IR_FIRM.FIRM_NO(5)	
IRP_BASE_COUNTRY(2)	"US"	
IRP_BASE_STATE(2)	"IL"	
FLEET_NUMBER(15)	IR_FLEET.FLEET_NO(3)	
FLEET_STATUS_CODE(3)	IR_FLEET.FLEET_STATUS_CODE	See <a href="#">Note 1 above</a>
FLEET_STATUS_DATE	IR_FLEET.FLEET_STAT_DATE	See <a href="#">Note above about dates</a>
FLEET_EXPIRE_DATE	March 31 or STAT_DATE if not active	See <a href="#">Note above about dates</a>
FLEET_UPDATE_DATE	IR_FLEET.FLEET_STAT_DATE	See <a href="#">Note above about dates</a>
FLEET_NAME	(none)	

### IRP CAB (T0022V2)

T0022V2 Field	Legacy Field	Notes
VIN(30)	IR_VEHICLE.VIN(20)	
TITLE_NUMBER(17)	IR_VEHICLE.TITLE_NO(10)	
TITLE_JURISDICTION(4)	IR_VEHICLE.TITLE_STATE(2)	See <a href="#">Note 5 below</a>
OWNER_NAME(55)	IR_FIRM.FIRM_NAME(35) or IR_VEHICLE.LESSOR(35)	See <a href="#">Note 1 below</a>
MODEL_YEAR(4)	IR_VEHICLE.VEH_YEAR(4)	
MAKE(10)	IR_VEHICLE.VEH_MAKE(4)	
TYPE(2)	IR_VEHICLE.VEH_TYPE(2)	See <a href="#">Note 2 below</a>

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MODEL(3)	(none)	
FUEL(1)	IR_VEHICLE.FUEL(1)	
UNLADEN_WEIGHT(8)	IR_VEHICLE.UNLADEN_WEIGHT(5)	
NUMBER_OF_AXLES(2)	IR_VEHICLE.AXLES(2)	
LICENSE_PLATE_NUMBER(12)	IR_VEHICLE.PLATE_NO(9)	
IRP_BASE_COUNTRY(2)	"US"	
IRP_BASE_STATE(2)	"IL"	
UNIT_NUMBER(20)	IR_VEHICLE.UNIT_NO(9)	
LAST_UPDATE(10)	IR_VEHICLE.STATUS_DATE(8)	See <u>Note above about dates</u>
INTERSTATE_FLAG(1)	"I"	
IRP_STATUS_CODE	IR_VEHICLE.STATUS_CODE	See <u>Note 1 above</u>
IRP_STATUS_DATE	IR_VEHICLE.STATUS_DATE	See <u>Note above about dates</u>
IRP_ACCOUNT_NUMBER(32)	IR_VEHICLE.FIRM_NO(5)	
IRP_FLEET_NUMBER(15)	IR_VEHICLE.FLEET_NO(3)	
REGISTRATION_START_DATE	IR_FINANCE.PAY_DATE(8)	See <u>note above about dates</u>
REGISTRATION_STOP_DATE	IR_VEHICLE.STATUS_DATE(8) or "March 31"	See <u>Note 3 below</u>
OPERATOR_NAME(55)	(none)	
SAFETY_CARRIER(12)	IR_FIRM.US_DOT_NUMBER_1(12)	
IRP_CARRIER_NUMBER(12)	IR_FIRM.US_DOT_NUMBER_1(12)	
IFTA_LICENSE_NUMBER(18)	(none)	
GVW(8)		See <u>Note 4 below</u>
GVW_EXPIRE_DATE	IR_VEHICLE.STATUS_DATE(8) or "March 31"	See <u>Note 3 below</u>

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IRP_PRORATION.IRP_JURISDICTION(4)		See <a href="#">Note 5 below</a>
IRP_PRORATION.IRP_WEIGHT(8)		See <a href="#">Note 6 below</a>
IRP_PRORATION. IRP_WEIGHT_EXPIRATION_DATE	IR_VEHICLE.STATUS_DATE(8) or "March 31"	See <a href="#">Note 3 below</a>

Notes:

1) If LESSOR exists then OWNER\_NAME is LESSOR, otherwise OWNER\_NAME is FIRM\_NAME.

2) The vehicle type mapping codes used in Illinois IRP are similar but have slightly different mappings. Below is the table to convert IL codes to SAFER/CVIEW codes:

(IL)VEH_TYPE(2)	Name	(CVIEW)TYPE(2)	Name
BS	Bus	BS	Bus
FT	Full Trailer	FT	Full Trailer
MT	Mobile Home Trailer	MT	Mobile Home Trailer
PW	Power Wrecker	WR	Tow Truck Wrecker
ST	Semi-Trailer	SR	Semi-Trailer
TR	Tractor	TT	Truck Tractor
TT	Truck Tractor	TT	Truck Tractor
TK	Truck (single)	ST	Straight Truck

3) In addition to date mapping documented above the expiration date is either IR\_VEHICLE.STATUS\_DATE if the IR\_VEHICLE.STATUS\_CODE is "I" or March 31 of the year associated IR\_FINANCE.PAY\_DATE.

4) The weights allowed in various jurisdictions are explained in more detail in note 6 (see below). One uses the IR\_VEHICLE.WTG\_GRP to determine which weight group is appropriate for this vehicle. To find the Illinois weight, consult the field IR\_WEIGHT.STATE\_WEIGHT\_10\_18 character positions 37-42.  
Consult note 6 for more information on why this is the case.

5) The mapping of JURISDICTION in TITLE\_JURISDICTION or IRP\_PRORATION is a full jurisdiction which is 4 characters in size. The first two characters are the country code (US, CA, MX) and the last two are the state/province code (et IL, CA, ...). Examples:

- The 2 character jurisdiction codes in TITLE\_STATE is CA then the jurisdiction is USCA
- Jurisdiction index 1 (AB) then the jurisdiction is CAAB



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6) The mapping of IRP\_WEIGHT for IRP\_PRORATION is accomplished by first looking at the IR\_VEHICLE.WTG\_GRP to determine which weight group is appropriate. There are fields of the form IR\_WEIGHT.STATE\_WEIGHT\_X\_Y where X is the starting jurisdiction index (1, 10, 19, 28, 37, 46, 55) and Y is X+8 (9, 18, 27, 36, 45, 54, 63). The jurisdiction index is given below. To find the weight for a particular jurisdiction one first determines the jurisdiction index then consults the appropriate STATE\_WEIGHT\_X\_Y field. This is the smallest X which is greater or equal to the jurisdiction index.

One then subtracts the X from the jurisdiction index and multiplies by 6 then add 1 to get the starting character offset in the STATE\_WEIGHT\_X\_Y field. Then 6 characters starting at that position is the weight.

As an example case: IL is index 16. This indicates STATE\_WEIGHT\_10\_18 is the appropriate STATE\_WEIGHT field to consult.  $(16-10)*6 + 1 = 37$  as the starting character position. 37-42 is where the weight is stored for IL.

### Jurisdiction Mappings

Jurisdiction Index	Jurisdiction Code	Country(US unless specified)	Not Used Has space
1	AB	CA	
2	AK		YES
3	AL		
4	AR		
5	AZ		
6	BC	CA	
7	CA		
8	CO		
9	CT		
10	DC		
11	DE		
12	FL		
13	GA		
14	IA		
15	ID		
16	IL		
17	IN		
18	KS		
19	KY		
20	LA		

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21	MA		
22	MB	CA	
23	MD		
24	ME		
25	MI		
26	MN		
27	MO		
28	MS		
29	MT		
30	MX	MX	YES
31	NB	CA	
32	NC		
33	ND		
34	NE		
35	NF	CA	
36	NH		
37	NJ		
38	NM		
39	NS	CA	
40	NT	CA	YES
41	NV		
42	NY		
43	OH		
44	OK		
45	ON	CA	
46	OR		
47	PA		
48	PE	CA	
49	QC	CA	
50	RI		
51	SC		
52	SD		
53	SK	CA	
54	TN		
55	TX		
56	UT		

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57	VA		
58	VT		
59	WA		
60	WI		
61	WV		
62	WY		
63	YT	CA	YES

## Triggers

The trigger field for transactions are as follows:

Transaction	Field
T0020 - Carrier info	IR_FIRM.LAST_ACTION_DATE
T0021 - Fleet info	IR_FLEET.FLEET_STAT_DATE
T0022 - Vehicle (cab) info	IR_VEHICLE.STATUS_DATE

## US\_DOT Cross Reference Mapping

According to Marinda Beccue in a conversation on 10/23/2006, all carrier IRP registrations or renewals now require a US\_DOT Carrier ID. This was implemented at least one year ago so all carriers who are current with their IRP have a US\_DOT Carrier ID. Based on this information, the US\_DOT Cross Reference Mapping is complete.

## XML Creation Script

Below is a php script which was used to generate T0020, T0021, and T0022 transactions which were then applied to XCVIEW implementation of CVIEW. A database was created and minimally populated with test data. The application of the test cases were successful and the scripts could be used as the basis for an implementation of a XML creation script for the IRP system.

The \$Host, \$Username, \$Password, "LSI\_IRP" database would need to be adjusted to reflect the actual IRP database. This script assumes the IRP database is a MS-SQL 2005 database. This is not the case and minor modifications to the script are required to operate with the DB2 database.

```
<?php
$Host = "lsiirphost";
// This script will open up the IRP database and produce a transaction
// file for processing in the augmented cview tasks
/* Connecting, selecting database */
$Username = "username";
$Password = "password";
function ConvertDate($InDate){
    return substr($InDate,0,4) . "-" . substr($InDate,4,2) . "-" . substr($InDate,6,2);
}
function ConvertFullJurisdiction($State){
    global $CanadaStates;
```

## International Registration Plan (IRP)

```
if ($State == "MX") return "MXMX";
if (array_search($State, $CanadaStates) !== FALSE) return "CA" . $State;
return "US" . $State;
}
$CanadaStates = array("AB", "BC", "MB", "NB", "NF", "NT", "NS", "ON", "PE", "PQ", "SN", "YT");

$Jurisdictions = array(
"AB", "AK", "AL", "AR", "AZ", "BC", "CA", "CO", "CT",
"DC", "DE", "FL", "GA", "IA", "ID", "IL", "IN", "KS", "KY",
"LA", "MA", "MB", "MD", "ME", "MI", "MN", "MO", "MS", "MT",
"MX", "NB", "NC", "ND", "NE", "NF", "NH", "NJ", "NM", "NS",
"NT", "NV", "NY", "OH", "OK", "ON", "OR", "PA", "PE", "PQ",
"RI", "SC", "SD", "SN", "TN", "TX", "UT", "VA", "VT", "WA",
"WI", "WV", "WY", "YT");
$OmitJurisdiction = array("AK", "MX", "NT", "YT");
$link = mssql_connect($Host, $Username, $Password)
or die('Could not connect\n');
if (!mssql_select_db("LSI_IRP"))
die("Could not select LSI_IRP\n");
// open output file
$FileNameOut = ($argc > 1) ? $argv[1] : "CVIEWT0020V1.xml";
($fhout = fopen($FileNameOut, "w")) || die("Cannot open output file $FileNameOut\n");

$QryStr = "SELECT * FROM IR_FIRM JOIN IR_ADDRESS ON IR_FIRM.FIRM_NO = IR_ADDRESS.FIRM_NO";
$Results = mssql_query($QryStr);
if ($Results === FALSE)
die("Failed Query - $QryStr\n");
if ($Results === TRUE) die("no rows");
$SnapDate = date("Y-m-d\Th:i:s");
// output XML heading
$xmlHeader = "<?xml version='1.0'?>
<T0020 xmlns='http://www.safer.org/namespaces/T0020V1'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
xsi:schemaLocation='http://www.safer.org/namespaces/T0020V1 T0020V1.xsd'>
<INTERFACE>
<NAME>SAFER</NAME>
<VERSION>04.02</VERSION>
</INTERFACE>
<TRANSACTION>
<VERSION>01.00</VERSION>
<OPERATION>REPLACE</OPERATION>
<DATE_TIME>$SnapDate</DATE_TIME>
<TZ>CD</TZ>
</TRANSACTION>\n";
fwrite($fhout, $xmlHeader);
while ($Row = mssql_fetch_object($Results)) {
$xmlAccount = " <IRP_ACCOUNT>\n";
// IRP_CARRIER info
$IRP_CARRIER_ID_NUMBER = $Row->US_DOT_NUMBER_1;
$IRP_ACCOUNT_NUMBER = $Row->FIRM_NO;
switch ($Row->STATUS_CODE) {
case 'A': $IRP_STATUS_CODE = '100';
break;
case 'I': $IRP_STATUS_CODE = '900';
break;
case 'D': $IRP_STATUS_CODE = '999';
break;
default:
$IRP_STATUS_CODE = '000'; // check this
}
$IRP_STATUS_DATE = ConvertDate($Row->LAST_ACTION_DATE);
$IRP_UPDATE_DATE = $IRP_STATUS_DATE;
```

## International Registration Plan (IRP)

```
$NAME_LG = $Row->NAME;
$NAME_DBA = $Row->DBA_NAME;
$STREET_LINE_1_PH = $Row->FLEET_STREET;
$CITY_PH = $Row->FLEET_CITY;
$ZIP_CODE_PH = $Row->FLEET_ZIP;
$STREET_LINE_1_MA = $Row->MAIL_STREET;
$CITY_MA = $Row->MAIL_CITY;
$STATE_MA = $Row->MAIL_STATE;
$ZIP_CODE_MA = $Row->MAIL_ZIP;
if (array_search($STATE_MA, $CanadaStates) !== FALSE)
$COUNTRY_MA = "CA";
else if ($STATE_MA == "MX")
$COUNTRY_MA = "MX";
else $COUNTRY_MA = "US";
$xmlAccount .=

" <IRP_CARRIER_ID_NUMBER>$IRP_CARRIER_ID_NUMBER</IRP_CARRIER_ID_NUMBER>
<IRP_BASE_COUNTRY>US</IRP_BASE_COUNTRY>
<IRP_BASE_STATE>IL</IRP_BASE_STATE>
<IRP_ACCOUNT_NUMBER>$IRP_ACCOUNT_NUMBER</IRP_ACCOUNT_NUMBER>
<IRP_ACCOUNT_TYPE>I</IRP_ACCOUNT_TYPE>
<IRP_STATUS_CODE>$IRP_STATUS_CODE</IRP_STATUS_CODE>
<IRP_STATUS_DATE>$IRP_STATUS_DATE</IRP_STATUS_DATE>
<IRP_UPDATE_DATE>$IRP_UPDATE_DATE</IRP_UPDATE_DATE>
<IRP_NAME>
<NAME_TYPE>LG</NAME_TYPE>
<NAME>$NAME_LG</NAME>
<IRP_ADDRESS>
<ADDRESS_TYPE>PH</ADDRESS_TYPE>
<STREET_LINE_1>$STREET_LINE_1_PH</STREET_LINE_1>
<CITY>$CITY_PH</CITY>
<STATE>IL</STATE>
<ZIP_CODE>$ZIP_CODE_PH</ZIP_CODE>
<COUNTRY>US</COUNTRY>
</IRP_ADDRESS>
<IRP_ADDRESS>
<ADDRESS_TYPE>MA</ADDRESS_TYPE>
<STREET_LINE_1>$STREET_LINE_1_MA</STREET_LINE_1>
<CITY>$CITY_MA</CITY>
<STATE>IL</STATE>
<ZIP_CODE>$ZIP_CODE_MA</ZIP_CODE>
<COUNTRY>$COUNTRY_MA</COUNTRY>
</IRP_ADDRESS>
</IRP_NAME>";
if ($NAME_DBA != "") {
$xmlAccount .=
" <IRP_NAME>
<NAME_TYPE>DB</NAME_TYPE>
<NAME>$NAME_DBA</NAME>
</IRP_NAME>";
}
fwrite($fhout, $xmlAccount);
}
$xmlAccount =
" </IRP_ACCOUNT>
</T0020>\n";
fwrite($fhout, $xmlAccount);
fclose($fhout);
// open output file
$FileNameOut = ($argc > 2) ? $argv[2] : "CVIEWT0021V1.xml";
($fhout = fopen($FileNameOut, "w")) || die("Cannot open output file $FileNameOut\n");
```

## International Registration Plan (IRP)

```
$QryStr = "SELECT * FROM IR_FLEET";
$Results = mssql_query($QryStr);
if ($Results === FALSE)
    die("Failed Query - $QryStr\n");
if ($Results === TRUE) die("no rows");
$SnapDate = date("Y-m-d\Th:i:s");
// output XML heading
$xmlHeader = "<?xml version=\\"1.0\\"?>
<T0021 xmlns=\\"http://www.safersys.org/namespaces/T0021V1\\"
xmlns:xsi=\\"http://www.w3.org/2001/XMLSchema-instance\\"
xsi:schemaLocation=\\"http://www.safersys.org/namespaces/T0021V1 T0021V1.xsd\\">
  <INTERFACE>
    <NAME>SAFER</NAME>
    <VERSION>04.02</VERSION>
  </INTERFACE>
  <TRANSACTION>
    <VERSION>01.00</VERSION>
    <OPERATION>REPLACE</OPERATION>
    <DATE_TIME>$SnapDate</DATE_TIME>
    <TZ>CD</TZ>
  </TRANSACTION>\n";
fwrite($fhout, $xmlHeader);
while ($Row = mssql_fetch_object($Results)){
  $xmlFleet = " <FLEET_ACCOUNT>\n";
  // IRP_FLEET info
  $IRP_ACCOUNT_NUMBER = $Row->FIRM_NO;
  $FLEET_NUMBER = $Row->FLEET_NO;
  $FLEET_STATUS_DATE = ConvertDate($Row->FLEET_STAT_DATE);
  $FLEET_UPDATE_DATE = $FLEET_STATUS_DATE;
  switch ($Row->FLEET_STAT_CODE) {
    case 'A': $FLEET_STATUS_CODE = '100';
  // check date break on April 1
  $FLEET_EXPIRE_DATE = (substr($Row->FLEET_STAT_DATE,0,4)+1) . "-03-31";
  break;
    case 'I': $FLEET_STATUS_CODE = '900';
  $FLEET_EXPIRE_DATE = $FLEET_STATUS_DATE;
  break;
    case 'D': $FLEET_STATUS_CODE = '999';
  $FLEET_EXPIRE_DATE = $FLEET_STATUS_DATE;
  break;
    default:
  $FLEET_STATUS_CODE = '000'; // check this
  }
  $xmlFleet .= "
  <IRP_ACCOUNT_NUMBER>$IRP_ACCOUNT_NUMBER</IRP_ACCOUNT_NUMBER>
  <IRP_BASE_COUNTRY>US</IRP_BASE_COUNTRY>
  <IRP_BASE_STATE>IL</IRP_BASE_STATE>
  <FLEET_NUMBER>$FLEET_NUMBER</FLEET_NUMBER>
  <FLEET_STATUS_CODE>$FLEET_STATUS_CODE</FLEET_STATUS_CODE>
  <FLEET_STATUS_DATE>$FLEET_STATUS_DATE</FLEET_STATUS_DATE>
  <FLEET_EXPIRE_DATE>$FLEET_EXPIRE_DATE</FLEET_EXPIRE_DATE>
  <FLEET_UPDATE_DATE>$FLEET_UPDATE_DATE</FLEET_UPDATE_DATE>
  </FLEET_ACCOUNT>";
  fwrite($fhout, $xmlFleet);
}
$xmlFleet =
"</T0021>\n";
fwrite($fhout, $xmlFleet);
fclose($fhout);
// open output file
$FileNameOut = ($argc > 3) ? $argv[3] : "CVIEWT0022V1.xml";
($fhout = fopen($FileNameOut, "w")) || die("Cannot open output file $FileNameOut\n");
```

## International Registration Plan (IRP)

```
$QryStr = "SELECT * FROM IR_VEHICLE JOIN IR_FLEET ON
IR_VEHICLE.FIRM_NO = IR_FLEET.FIRM_NO AND
IR_VEHICLE.FLEET_NO = IR_FLEET.FLEET_NO JOIN IR_FIRM ON
IR_FLEET.FIRM_NO = IR_FIRM.FIRM_NO JOIN IR_FINANCE ON
IR_VEHICLE.FIRM_NO = IR_FINANCE.FIRM_NO JOIN IR_WEIGHT ON
IR_VEHICLE.WGT_GRP = IR_WEIGHT.WGT_GRP";
$Results = mssql_query($QryStr);
if ($Results === FALSE)
    die("Failed Query - $QryStr\n");
if ($Results === TRUE) die("no rows");
$SnapDate = date("Y-m-d\Th:i:s");
// output XML heading
$xmlHeader = "<?xml version='1.0'?">
<T0022 xmlns='http://www.safer.org/namespaces/T0022V1'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
xsi:schemaLocation='http://www.safer.org/namespaces/T0022V1 T0022V1.xsd'>
    <INTERFACE>
    <NAME>SAFER</NAME>
    <VERSION>04.02</VERSION>
    </INTERFACE>
    <TRANSACTION>
    <VERSION>01.00</VERSION>
    <OPERATION>REPLACE</OPERATION>
    <DATE_TIME>$SnapDate</DATE_TIME>
    <TZ>CD</TZ>
    </TRANSACTION>\n";
fwrite($hout,$xmlHeader);
while ($Row = mssql_fetch_object($Results)){
    $xmlCab = " <IRP_REGISTRATION>\n";
    // IRP_REGISTRATION (Cab) info
    $VIN = $Row->VIN;
    $TITLE_NUMBER = $Row->TITLE_NO;
    $TITLE_JURISDICTION = ConvertFullJurisdiction($Row->TITLE_STATE);
    if ($Row->LESSOR !== "") $OWNER_NAME = $Row->LESSOR;
    else $OWNER_NAME = $Row->FIRM_NAME;
    $MODEL_YEAR = $Row->VEH_YEAR;
    $MAKE = $Row->VEH_MAKE;
    $TYPE = $Row->VEH_TYPE;
    // fix up special values:
    switch ($TYPE) {
    case "PR": $TYPE = "WR"; // Tow Truck Wrecker
    break;
    case "ST": $TYPE = "SR"; // Semi-Trailer
    break;
    case "TR": $TYPE = "TT"; // Truck Tractor
    break;
    case "TK": $TYPE = "ST"; // Straight Truck
    break;
    default: break;
    }
    $FUEL = $Row->FUEL;
    $UNLADEN_WEIGHT = $Row->UNLADEN_WEIGHT;
    $NUMBER_OF_AXLES = $Row->AXLES;
    $LICENSE_PLATE_NUMBER = $Row->PLATE_NO;
    $UNIT_NUMBER = $Row->UNIT_NO;
    $LAST_UPDATE_DATE = ConvertDate($Row->STATUS_DATE); // check for vehicle
    switch ($Row->STATUS_CODE) { // is this IR_VEHICLE.STATUS_CODE
    case 'A': $IRP_STATUS_CODE = '100';
    }
    // check date wrap at April 1
    $REGISTRATION_EXPIRE_DATE = (substr($Row->STATUS_DATE,0,4)+1) . "-03-31";
    break;
}
```

## International Registration Plan (IRP)

```
case 'I': $IRP_STATUS_CODE = '900';
$REGISTRATION_EXPIRE_DATE = $LAST_UPDATE_DATE;
break;
case 'D': $IRP_STATUS_CODE = '999';
$REGISTRATION_EXPIRE_DATE = $LAST_UPDATE_DATE;
break;
default:
$IRP_STATUS_CODE = '000'; // check this
$REGISTRATION_EXPIRE_DATE = $LAST_UPDATE_DATE;
}
$IRP_CARRIER_NUMBER = $Row->US_DOT_NUMBER_1;
// obtain GVW
$IRP_STATUS_DATE = $LAST_UPDATE_DATE;
$IRP_ACCOUNT_NUMBER = $Row->FIRM_NO;
$IRP_FLEET_NUMBER = $Row->FLEET_NO;
$REGISTRATION_START_DATE = ConvertDate($Row->PAY_DATE);
$GVW = substr($Row->STATE_WEIGHT_10_18,36,6);
$GVW_EXPIRE_DATE = $REGISTRATION_EXPIRE_DATE;
$xmlCab = "
<IRP_REGISTRATION>
<VIN>$VIN</VIN>
<TITLE_NUMBER>$TITLE_NUMBER</TITLE_NUMBER>
<TITLE_JURISDICTION>$TITLE_JURISDICTION</TITLE_JURISDICTION>
<OWNER_NAME>$OWNER_NAME</OWNER_NAME>
<MODEL_YEAR>$MODEL_YEAR</MODEL_YEAR>
<MAKE>$MAKE</MAKE>
<TYPE>$TYPE</TYPE>
<FUEL>$FUEL</FUEL>
<UNLADEN_WEIGHT>$UNLADEN_WEIGHT</UNLADEN_WEIGHT>
<NUMBER_OF_AXLES>$NUMBER_OF_AXLES</NUMBER_OF_AXLES>
<LICENSE_PLATE_NUMBER>$LICENSE_PLATE_NUMBER</LICENSE_PLATE_NUMBER>
<IRP_BASE_COUNTRY>US</IRP_BASE_COUNTRY>
<IRP_BASE_STATE>IL</IRP_BASE_STATE>
<UNIT_NUMBER>$UNIT_NUMBER</UNIT_NUMBER>
<LAST_UPDATE_DATE>$LAST_UPDATE_DATE</LAST_UPDATE_DATE>
<INTERSTATE_FLAG>1</INTERSTATE_FLAG>
<IRP_STATUS_CODE>$IRP_STATUS_CODE</IRP_STATUS_CODE>
<IRP_STATUS_DATE>$IRP_STATUS_DATE</IRP_STATUS_DATE>
<IRP_ACCOUNT_NUMBER>$IRP_ACCOUNT_NUMBER</IRP_ACCOUNT_NUMBER>
<IRP_FLEET_NUMBER>$IRP_FLEET_NUMBER</IRP_FLEET_NUMBER>
<REGISTRATION_START_DATE>$REGISTRATION_START_DATE</REGISTRATION_START_DATE>
<REGISTRATION_EXPIRE_DATE>$REGISTRATION_EXPIRE_DATE</REGISTRATION_EXPIRE_DATE>
<SAFETY_CARRIER>$IRP_CARRIER_ID_NUMBER</SAFETY_CARRIER>
<IRP_CARRIER_ID_NUMBER>$IRP_CARRIER_ID_NUMBER</IRP_CARRIER_ID_NUMBER>
<GVW>$GVW</GVW>
<GVW_EXPIRE_DATE>$GVW_EXPIRE_DATE</GVW_EXPIRE_DATE>\n";
// Jurisdiction weight mapping
$startIx = 0;
foreach ($Jurisdictions as $Index => $Value){
if (array_search($Value, $omitJurisdiction) !== FALSE) continue;
$fullJurisdiction = ConvertFullJurisdiction($Value);
$Ix = $Index + 1;
if ($Ix <= 9)
$Weight = substr($Row->STATE_WEIGHT_1_9, ($Index % 9)*6, 6);
else if ($Ix <= 18)
$Weight = substr($Row->STATE_WEIGHT_10_18, ($Index % 9)*6, 6);
else if ($Ix <= 27)
$Weight = substr($Row->STATE_WEIGHT_19_27, ($Index % 9)*6, 6);
else if ($Ix <= 36)
$Weight = substr($Row->STATE_WEIGHT_28_36, ($Index % 9)*6, 6);
else if ($Ix <= 45)
$Weight = substr($Row->STATE_WEIGHT_37_45, ($Index % 9)*6, 6);
```



## International Registration Plan (IRP)

```
else if ($Ix <= 54)
$Weight = substr($Row->STATE_WEIGHT_46_54, ($Index % 9)*6, 6);
else if ($Ix <= 63)
$Weight = substr($Row->STATE_WEIGHT_55_63, ($Index % 9)*6, 6);

$xmlCab .= "
<IRP_PRORATION>
<IRP_JURISDICTION>$FullJurisdiction</IRP_JURISDICTION>
<IRP_WEIGHT_CARRIED>$Weight</IRP_WEIGHT_CARRIED>
<IRP_WEIGHT_EXPIRE_DATE>$GVW_EXPIRE_DATE</IRP_WEIGHT_EXPIRE_DATE>
</IRP_PRORATION>\n";
}
$xmlCab .= "
</IRP_REGISTRATION>\n";
fwrite($fhout, $xmlCab);
}
$xmlCab =
"</T0022>\n";
fwrite($fhout, $xmlCab);
fclose($fhout);
?>
```

## XML Transactions

There are three CVIEW transactions in the IRP system. The three transactions are IRP Carrier account (T0020), IRP Fleet account (T0021) and IRP cab (T0022) - the first two deal with possibly groups of vehicles while the cab transaction corresponds to one vehicle.

### T0020V1.xsd

```
<schema xmlns="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://www.safersys.org/namespaces/T0020V1"
  xmlns:ts="http://www.safersys.org/namespaces/T0020V1"
  elementFormDefault="qualified">

  <!-- IRP Account Input Transaction, T0020, version 1 -->

  <include schemaLocation="globalTypes.xsd"/>

  <!-- Root element -->

  <element name="T0020" type="ts:T0020V1Type"/>

  <!-- Root element type -->

  <complexType name="T0020V1Type">
    <sequence>
      <element name="INTERFACE" type="ts:interfaceHeaderType"/>
      <element name="TRANSACTION" type="ts:transHeaderType"/>
      <element name="IRP_ACCOUNT" type="ts:IRPAccountType"
        minOccurs="1" maxOccurs="5000"/>
    </sequence>
  </complexType>
```

## International Registration Plan (IRP)

<!-- Interface Header type -->

```
<complexType name="interfaceHeaderType">
  <sequence>
    <element name="NAME" type="string" fixed="SAFER"/>
    <element name="VERSION" type="string" fixed="04.02"/>
  </sequence>
</complexType>
```

<!-- Transaction Header type -->

```
<complexType name="transHeaderType">
  <sequence>
    <element name="VERSION" type="string" fixed="01.00"/>
    <element name="OPERATION" type="string" fixed="REPLACE"/>
    <element name="DATE_TIME" type="dateTime"/>
    <element name="TZ" type="ts:globalTimeZoneType"/>
  </sequence>
</complexType>
```

<!-- IRP Account type -->

```
<complexType name="IRPAccountType">
  <sequence>
    <element name="IRP_CARRIER_ID_NUMBER" type="ts:globalOptCarrierIdNumberType"
minOccurs="0"/>
    <element name="IRP_BASE_COUNTRY" type="ts:globalCountryType"/>
    <element name="IRP_BASE_STATE" type="ts:globalJurisdictionType"/>
    <element name="IRP_ACCOUNT_NUMBER">
      <simpleType>
        <restriction base="string">
          <minLength value="1"/>
          <maxLength value="32"/>
        </restriction>
      </simpleType>
    </element>
    <element name="IRP_ACCOUNT_TYPE" type="ts:globalIRPAccountTypeValues"
minOccurs="1"/>
    <element name="IRP_STATUS_CODE" type="ts:globalIRPStatusCodeType"/>
    <element name="IRP_STATUS_DATE" type="date"/>
    <element name="IRP_UPDATE_DATE" type="date"/>
    <element name="IRP_NAME" type="ts:IRPNameType"
minOccurs="0" maxOccurs="2"/>
  </sequence>
</complexType>
```

<!-- IRP Name type -->

```
<complexType name="IRPNameType">
  <sequence>
    <element name="NAME_TYPE" type="ts:globalNameTypeValues"/>
  </sequence>
</complexType>
```

## International Registration Plan (IRP)

```
<element name="NAME">
  <simpleType>
    <restriction base="string">
      <minLength value="1"/>
      <maxLength value="120"/>
    </restriction>
  </simpleType>
</element>
<element name="IRP_ADDRESS" type="ts:IRPAddressType"
  minOccurs="0" maxOccurs="2"/>
</sequence>
</complexType>

<!-- IRP Address type -->

<complexType name="IRPAddressType">
  <sequence>
    <element name="ADDRESS_TYPE" type="ts:globalAddressTypeValues"/>
    <!--Business rules check that at least one of STREET_LINE_1,
      STREET_LINE_2, and PO_BOX is present -->
    <element name="STREET_LINE_1" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="STREET_LINE_2" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="PO_BOX" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="CITY" type="ts:globalString90Type"/>
    <element name="STATE" type="ts:globalJurisdictionType"/>
    <element name="ZIP_CODE" type="ts:globalZipType"/>
    <element name="COUNTY" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="COLONIA" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="COUNTRY" type="ts:globalOptCountryType" minOccurs="0"/>
  </sequence>
</complexType>

</schema>
```

## T0021V1.xsd - IRP Fleet Account

```
<?xml version="1.0"?>
<schema targetNamespace="http://www.safersys.org/namespaces/T0021V1"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:ts="http://www.safersys.org/namespaces/T0021V1"
  elementFormDefault="qualified">

  <!-- IRP Fleet Input Transaction, T0021V1, Version 1 -->

  <include schemaLocation="globalTypes.xsd"/>

  <!-- Root element -->

  <element name="T0021" type="ts:T0021V1Type"/>
```

## International Registration Plan (IRP)

<!-- Root element type -->

```
<complexType name="T0021V1Type">
  <sequence>
    <element name="INTERFACE" type="ts:interfaceHeaderType"/>
    <element name="TRANSACTION" type="ts:transHeaderType"/>
    <element name="FLEET_ACCOUNT" type="ts:FleetAccountType"
      minOccurs="1" maxOccurs="5000"/>
  </sequence>
</complexType>
```

<!-- Interface header type -->

```
<complexType name="interfaceHeaderType">
  <sequence>
    <element name="NAME" type="string" fixed="SAFER"/>
    <element name="VERSION" type="string" fixed="04.02"/>
  </sequence>
</complexType>
```

<!-- Transaction header type -->

```
<complexType name="transHeaderType">
  <sequence>
    <element name="VERSION" type="string" fixed="01.00"/>
    <element name="OPERATION" type="string" fixed="REPLACE"/>
    <element name="DATE_TIME" type="dateTime"/>
    <element name="TZ" type="ts:globalTimeZoneType"/>
  </sequence>
</complexType>
```

<!-- Transaction data element type -->

```
<complexType name="FleetAccountType">
  <sequence>
    <element name="IRP_ACCOUNT_NUMBER">
      <simpleType>
        <restriction base="string">
          <minLength value="1"/>
          <maxLength value="32"/>
        </restriction>
      </simpleType>
    </element>
    <element name="IRP_BASE_COUNTRY" type="ts:globalCountryType"/>
    <element name="IRP_BASE_STATE" type="ts:globalJurisdictionType"/>
    <element name="FLEET_NUMBER">
      <simpleType>
        <restriction base="string">
          <minLength value="1"/>
          <maxLength value="15"/>
        </restriction>
      </simpleType>
    </element>
  </sequence>
</complexType>
```

## International Registration Plan (IRP)

```
</simpleType>
</element>
<element name="FLEET_STATUS_CODE" type="ts:globalIRPStatusCodeType"/>
<element name="FLEET_STATUS_DATE" type="date"/>
<element name="FLEET_EXPIRE_DATE" type="date"/>
<element name="FLEET_UPDATE_DATE" type="date"/>
<element name="FLEET_NAME" type="ts:FleetNameType" minOccurs="0" maxOccurs="2"/>
</sequence>
</complexType>

<!-- Fleet name element type -->

<complexType name="FleetNameType">
  <sequence>
    <element name="NAME_TYPE" type="ts:globalNameTypeValues"/>
    <element name="NAME">
      <simpleType>
        <restriction base="string">
          <minLength value="1"/>
          <maxLength value="120"/>
        </restriction>
      </simpleType>
    </element>
    <element name="FLEET_ADDRESS" type="ts:FleetAddressType" minOccurs="0"
maxOccurs="2"/>
  </sequence>
</complexType>

<!-- Fleet address element type -->

<complexType name="FleetAddressType">
  <sequence>
    <element name="ADDRESS_TYPE" type="ts:globalAddressTypeValues"/>
    <!--Business rules check that at least one of STREET_LINE_1,
      STREET_LINE_2, and PO_BOX is present -->
    <element name="STREET_LINE_1" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="STREET_LINE_2" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="PO_BOX" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="CITY" type="ts:globalString90Type"/>
    <element name="STATE" type="ts:globalJurisdictionType"/>
    <element name="CITY" type="ts:globalString90Type"/>
    <element name="STATE" type="ts:globalJurisdictionType"/>
    <element name="ZIP_CODE" type="ts:globalZipType"/>
    <element name="COUNTY" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="COLONIA" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="COUNTRY" type="ts:globalOptCountryType" minOccurs="0"/>
  </sequence>
</complexType>

</schema>
```

**T0022V2.xsd - IRP Cab**

```

<?xml version="1.0"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://www.safersys.org/namespaces/T0022V2"
  xmlns:ts="http://www.safersys.org/namespaces/T0022V2"
  elementFormDefault="qualified">

  <!-- IRP Registration (Cab Card) Input Transaction, T0022, version 2 -->

  <include schemaLocation="globalTypes.xsd"/>

  <!-- Root element -->

  <element name="T0022" type="ts:T0022V2Type"/>

  <!-- Root element type -->

  <complexType name="T0022V2Type">
    <sequence>
      <element name="INTERFACE" type="ts:interfaceHeaderType"/>
      <element name="TRANSACTION" type="ts:transHeaderType"/>
      <element name="IRP_REGISTRATION" type="ts:IRPRegType"
        minOccurs="1" maxOccurs="5000"/>
    </sequence>
  </complexType>

  <!-- Interface Header type -->

  <complexType name="interfaceHeaderType">
    <sequence>
      <element name="NAME" type="string" fixed="SAFER"/>
      <element name="VERSION" type="string" fixed="04.02"/>
    </sequence>
  </complexType>

  <!-- Transaction Header type -->

  <complexType name="transHeaderType">
    <sequence>
      <element name="VERSION" type="string" fixed="02.00"/>
      <element name="OPERATION" type="string" fixed="REPLACE"/>
      <element name="DATE_TIME" type="dateTime"/>
      <element name="TZ" type="ts:globalTimeZoneType"/>
    </sequence>
  </complexType>

  <!-- IRP Registration type -->

  <complexType name="IRPRegType">

```

## International Registration Plan (IRP)

```
<sequence>
  <element name="VIN">
    <simpleType>
      <restriction base="string">
        <minLength value="1"/>
        <maxLength value="30"/>
      </restriction>
    </simpleType>
  </element>
  <element name="TITLE_NUMBER" minOccurs="0">
    <simpleType>
      <restriction base="string">
        <maxLength value="17"/>
      </restriction>
    </simpleType>
  </element>
  <element name="TITLE_JURISDICTION" type="ts:globalFullJurisdictionType"
    minOccurs="0"/>
  <element name="OWNER_NAME" minOccurs="0">
    <simpleType>
      <restriction base="string"><maxLength value="120"/></restriction>
    </simpleType>
  </element>
  <element name="MODEL_YEAR" minOccurs="0">
    <simpleType>
      <restriction base="string"><maxLength value="4"/></restriction>
    </simpleType>
  </element>
  <element name="MAKE" minOccurs="0">
    <simpleType>
      <restriction base="string"><maxLength value="10"/></restriction>
    </simpleType>
  </element>
  <element name="TYPE" type="ts:globalVehicleUseType" minOccurs="0"/>
  <element name="MODEL" minOccurs="0">
    <simpleType>
      <restriction base="string"><maxLength value="3"/></restriction>
    </simpleType>
  </element>
  <element name="FUEL" type="ts:globalPowerCodeType" minOccurs="0"/>
  <element name="UNLADEN_WEIGHT" minOccurs="0">
    <simpleType>
      <restriction base="integer"><totalDigits value="8"/></restriction>
    </simpleType>
  </element>
  <element name="NUMBER_OF_AXLES" minOccurs="0">
    <simpleType>
      <restriction base="integer"><totalDigits value="2"/></restriction>
    </simpleType>
  </element>
  <element name="LICENSE_PLATE_NUMBER">
```

## International Registration Plan (IRP)

```
<simpleType>
  <restriction base="string">
    <minLength value="1"/>
    <maxLength value="12"/>
  </restriction>
</simpleType>
</element>
<element name="IRP_BASE_COUNTRY" type="ts:globalVEHCountryType"/>
<element name="IRP_BASE_STATE" type="ts:globalJurisdictionType"/>
<element name="UNIT_NUMBER" minOccurs="0">
  <simpleType>
    <restriction base="string"><maxLength value="20"/></restriction>
  </simpleType>
</element>
<element name="LAST_UPDATE_DATE" type="date"/>
<element name="INTERSTATE_FLAG">
  <simpleType>
    <restriction base="string">
      <enumeration value="0"/> <!-- Intrastate -->
      <enumeration value="1"/> <!-- Interstate -->
    </restriction>
  </simpleType>
</element>
<element name="IRP_STATUS_CODE" type="ts:globalIRPStatusCodeType"/>
<element name="IRP_STATUS_DATE" type="date"/>
<element name="IRP_ACCOUNT_NUMBER" minOccurs="0">
  <simpleType>
    <restriction base="string"><maxLength value="32"/></restriction>
  </simpleType>
</element>
<element name="IRP_FLEET_NUMBER" minOccurs="0">
  <simpleType>
    <restriction base="string"><maxLength value="15"/></restriction>
  </simpleType>
</element>
<element name="REGISTRATION_START_DATE" minOccurs="0"
  type="ts:globalOptionalDateType"/>
<element name="REGISTRATION_EXPIRE_DATE" minOccurs="0"
  type="ts:globalOptionalDateType"/>
<element name="OPERATOR_NAME" minOccurs="0">
  <simpleType>
    <restriction base="string"><maxLength value="55"/></restriction>
  </simpleType>
</element>
<!-- CVIS_DEFAULT_CARRIER has tag SAFETY_CARRIER -->
<element name="SAFETY_CARRIER" minOccurs="0"
  type="ts:globalCarrierIdNumberType"/>
<element name="IRP_CARRIER_ID_NUMBER"
  type="ts:globalOptCarrierIdNumberType" minOccurs="0"/>
<element name="IFTA_LICENSE_NUMBER" minOccurs="0">
  <simpleType>
```



## International Registration Plan (IRP)

```
<restriction base="string"><maxLength value="18"/></restriction>
</simpleType>
</element>
<element name="GVW" minOccurs="0">
  <simpleType>
    <restriction base="integer"><totalDigits value="8"/></restriction>
  </simpleType>
</element>
<element name="GVW_EXPIRE_DATE" type="ts:globalOptionalDateType"
  minOccurs="0"/>
<element name="IRP_PRORATION" type="ts:IRPProrationType"
  maxOccurs="unbounded"/>
</sequence>
</complexType>

<!-- IRP Proration type -->

<complexType name="IRPProrationType">
  <sequence>
    <element name="IRP_JURISDICTION" type="ts:globalFullJurisdictionType"/>
    <element name="IRP_WEIGHT_CARRIED">
      <simpleType>
        <restriction base="string">
          <minLength value="1"/>
          <maxLength value="8"/>
        </restriction>
      </simpleType>
    </element>
    <element name="IRP_WEIGHT_EXPIRE_DATE" type="date"/>
  </sequence>
</complexType>

</schema>
```

# Motor Vehicle Registration (MVR)

## Background

Vehicles legally based in Illinois are required to register with the Secretary of State (SOS). Commercial vehicles which operate interstate must register with the SOS International Registration Plan (IRP). Commercial vehicles which operate intrastate in Illinois can satisfy registration requirements by registering with the Motor Vehicle Registration (MVR) system. The MVR system is the source for intrastate commercial vehicles which are mapped to the SAFER/CVIEW system.

The MVR system registers cars, motor cycles and vehicles classified by weight. In the MVR system, commercial vehicles are classified by weight. Only those MVR records which are classified by weight need be examined for the mapping to the SAFER/CVIEW system.

The MVR system is not designed to collect all the information required for IRP. The mapping of the MVR system to SAFER/CVIEW system is primarily limited to registration information. The MVR system does not contain a USDOT carrier ID.

In 2006, there were 2,808,360 vehicles registered by weight; of those, 131,717 were tagged as intrastate -- note, however, there is uncertainty of the accuracy of the intrastate indicator.

This section describes the information from the MVR system as it is mapped to the SAFER/CVIEW system.

## Contacts

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- Technical Contact (MVR System):
  - ◆ Name: Pam Corey
  - ◆ Phone: (217) 785-0002
  - ◆ e-Mail: PCorey @ ilsos.net

## Registration Systems

There are two sources of registration information of commercial vehicles at the Secretary of State. The IRP system is documented in a different section. The MVR registration system for intrastate

## Motor Vehicle Registration (MVR)

vehicles is documented here.

## Database Environment

The database server is an IBM DB2 database environment with the following table:

Table	Notes
RT_REGISTRATION	Contains Registration Information

## Mapping

- General Mapping rules: These rules apply to all transactions.
  1. Any special characters (&"<>) need to get mapped to the XML equivalents. Note: Php's htmlspecialchars does this.
  2. In addresses:
    1. At least one of the STREET\_LINE addresses needs to be present.
    2. Standard States 2 character code need to be present (globalJurisdictionType)
    3. Zip codes can be between 1 and 10 characters (globalZipType)
    4. City, State, Zip codes need to be present
    5. Country names if present need to be mapped to balOptCountryType (US, CA, M, MX, P)
  3. Timestamps (date+time) need to be converted to XML format (YYYY-MM-DDTHH:MM:SS - note T is literal).

Date Note: dates are of the form ccyymmdd format which will need to be converted to yyyy-mm-dd format.

## IRP CAB (T0022V2)

Note: All commercial vehicles are classified by weight. Only vehicle records with values of "3" in VEH\_BODY\_TYPE (which indicates classified by weight) should be used for mapping.

T0022V2 Field	Legacy Field	Notes
VIN(30)	ASGN_VIN(20)	
TITLE_NUMBER(17)	VEH_TITLE_NO(12)	
TITLE_JURISDICTION(4)	"USIL"	
OWNER_NAME(55)	OWN_FIRST_MI (23) OWN_LAST_NAME (35)	In constructing OWNER_NAME take all of OWN_LAST_NAME trimmed and as much of OWN_FIRST_MI trimmed as allowed by the 55 character limit.
MODEL_YEAR(4)	VEH_YR (4)	
MAKE(10)	VEH_MAKE_CODE (4)	

Motor Vehicle Registration (MVR)

TYPE(2)	BODY_STYLE (2)	See <u>Note 1 below</u>
MODEL(3)	(none)	
FUEL(1)	ENGINE_FUEL(1)	1->"G", 2->"D", 3->"E", 8->"O"
UNLADEN_WEIGHT(8)	(none)	
NUMBER_OF_AXLES(2)	AXLES(1)	
LICENSE_PLATE_NUMBER(12)	DISP_ASGN_PLT_NO (9)	
IRP_BASE_COUNTRY(2)	"US"	
IRP_BASE_STATE(2)	"IL"	
UNIT_NUMBER(20)	UNIT_NO (6)	
LAST_UPDATE(10)	ACTION_DATE	See <u>Note above about dates</u>
INTERSTATE_FLAG(1)	"S"	
IRP_STATUS_CODE	(none)	
IRP_STATUS_DATE	(none)	
IRP_ACCOUNT_NUMBER(32)	(none)	
IRP_FLEET_NUMBER(15)	FLEET_ID (6)	
REGISTRATION_START_DATE	VAL_DATE	See <u>note above about dates</u>
REGISTRATION_STOP_DATE	ASGN_EXP_MO (2) ASGN_EXP_YR (4)	Map to YYYY-MM-DD - the DD is the last day of the month.
OPERATOR_NAME(55)	(none)	
SAFETY_CARRIER(12)	(none)	
IRP_CARRIER_NUMBER(12)	(none)	
IFTA_LICENSE_NUMBER(18)	(none)	
GVW(8)	WGT_CYL_CC_HP (5)	Contains 5 position weight, 5 position CCM, or 2 position CYL and 3 position HP (99.9) depending on type of plate. Since only VEH_BODY_TYPE with value of "3" are included this will only contain the weight.
GVW_EXPIRE_DATE	(none)	
IRP_PRORATION.IRP_JURISDICTION(4)	(none)	
IRP_PRORATION.IRP_WEIGHT(8)	(none)	

Motor Vehicle Registration (MVR)

IRP_PRORATION. IRP_WEIGHT_EXPIRATION_DATE	(none)	
--	--------	--

Notes:

1) Unless there is a CVIEW mapping specified in the table below, the default mapping of ZZ (Other unlisted type) should be used.

(IL) BODY STYLE(2)	(IL)EXPANDED BODY STYLE	(CVIEW)TYPE(2)	Name
AC	AUTO CARY	AC	Auto Carrier
AI	AIR COMP		
AL	ATV		
AM	AMBULANCE	AM	Ambulance
AR	ARMORD TK		
AT	ALL TERRN		
AV	AMPHIBIAN		
AW	UTILITY		
A1	CARGO	CK	Cargo Tank Truck
BC	BRSH CHPR		
BD	BULLDOZER		
BG	BUGGY		
BH	BACKHOE		
BR	BEVRG RCK		
BT	BOAT TRLR		
BU	BUS	BS	Bus
CA	CABRIOLET		
CB	CAB CHASS		
CC	REGLR CAB		
CE	CANOPY EX		
CG	CNVTR GER	CD	Converter Dolly/Converter Gear
CH	COACH		
CL	CABL REEL		
CM	CONCR MXR	CM	Concrete or Transit Mixer
CO	COMBINE		
CP	COUPE	CP	Coupe
CR	CRANE	CR	Crane

Motor Vehicle Registration (MVR)

CT	CAMPING		
CU	UTILITY		
CV	CONVERTBL	CO	Convertible
DB	BOTTM DMP	DB	Double Bottom
DE	DELIVERY		
DF	DROP FLAT		
DH	DEPOT HCK		
DM	DIRT BIKE		
DN	DUNE BUGY		
DP	DUMP TK		
DS	TRL TRUCK	DT	Dump Truck
DX	DLX DL TK		
DY	DOLLY		
EC	EXT VAN		
EL	ELECTRIC		
EN	ENDURO		
EI	SPORTTRAC		
FA	FIRE APP		
FB	FLATBED	FB	Flatbed/Platform
FK	FASTBACK		
FL	FORKLIFT		
FR	FLATRACK		
FS	FERTILIZER		
FT	FIRE APP		
FX	FLIP AXLE		
GA	GONDOLA		
GC	GOLF CART		
GD	GRADER		
GE	GENERATOR		
GG	GARBGE TK	GG	Garbage or Refuse Truck
GN	GRAIN/BOX		
GR	GLASS RAK		
HB	HATCHBACK	HB	Hatchback
HD	DUMP TRLR	DP	Dump Trailer
HE	HORSE TLR		
HO	HOPPER		

Motor Vehicle Registration (MVR)

HR	HEARSE		
HS	MOBILE HM		
HT	HARDTOP		
JP	JEEPSTER	JE	Jeep
KT	CAMPER		
LB	LOWBOY		
LD	LOADER		
LK	LOGSKIDDR		
LL	CARRYALL		
LM	LIMOUSINE		
LP	POLE/PIPE		
LS	LIVESTOCK	LS	Livestock Trailer
LW	LUNCH WGN		
MB	MOBLE OFF		
MC	MOTORCYCL	MC	Motorcycle
MD	MOPED		
MF	FARM EQIP		
MH	MOTOR HOM	MA	Motorized Home
MK	MINI BIKE		
MM	MINI MOTO		
MO	YARD TRAC		
MP	MOPED		
MR	MINI ROAD		
MS	MTR SCOOT		
MT	MTRCY TRL		
MW	MTRCL 3WL		
MX	MOTO CROS		
MY	MINI CYCL		
NB	NOTCHBACK		
NM	SEDAN DEL		
OC	OPERA CP		
OP	OPEN BODY		
PA	PARK MODL		
PC	PASS CAR		
PD	PARCL DLV		
PH	PHAETON		

Motor Vehicle Registration (MVR)

PK	PICKUP	PK	Pickup Truck
PL	PALLET		
PM	PICKUP RV		
PN	PANEL	PN	Panel
PP	PUMPER		
PR	PK CAMPER		
RC	RACER CC		
RD	ROADSTER		
RF	REEFER		
RH	HARDTP CV	RH	Retractable Hardtop
RO	ROLLER		
RS	MOTORCYCL	MC	Motorcycle
RT	ROAD/TRAL		
RU	RUNABOUT		
SC	SCRAPER		
SD	SEDAN		
SE	SEMI TRL	ST	Semi-Trailer
SH	SHOVEL		
SK	SKDSTR LDR		
SL	SEDAN DEL		
SM	SNOWBL TL		
SN	STEP VAN		
SO	SNOW RMVL		
SP	SHPNG CNT		
SQ	SP.EQUIP.		
SR	SIDE CAR		
SS	ST SWEEPR		
ST	STAKE/RAK		
SV	SPORT VAN		
SW	STN WAGON		
SX	SP-CONSTD		
TC	CNST TRAC		
TD	TOW DOLLY	TD	Tow Dolly
TE	TENT TLR		
TF	FARM TRAC		
TH	TRENCHER		



Motor Vehicle Registration (MVR)

TI	TRIKE		
TJ	TRLR JCKY		
TK	TRUCK	TC	Truck
TL	TRAILER	TR	Trailer
TM	TANDEM		
TN	TANKER	TV	Tank Vehicle
TO	TOURNGCAR		
TP	TRKCAMPER		
TR	TRIALS		
TS	TRUCKSTER		
TT	TOW TRUCK	TT	Tow Truck
TU	TRACTR TK		
TV	TRAVL TLR		
TW	TOW TRUCK		
UT	UTILITY		
VA	SPORT VAN		
VC	VAN CAMPR		
VN	VAN		
VT	VANETTE		
WA	WAGON		
WD	WELL DRIL	WW	Water Well
WE	WELDER		
WG	UTILITY	UT	Utility Trailer
WI	WINCH		
WK	TOW TRUCK	WK	Tow Truck Wrecker
WL	WHL LOADR		
XT	TRAVELALL		
YY	CUTAWAY		
1W	SNGL WHEL		
2D	2 DOOR		
2F	2D HARDTP		
2H	2D HACHBK		
2L	2D LIFTBK		
2P	2D HARDTP		
2S	2D SEDAN		
2T	2D HARDTP		

## Motor Vehicle Registration (MVR)

2W	TWO WHEEL		
3D	2D HARDTP		
4D	4 DOOR		
4H	4D HTCHBK		
4L	4D LIFTBK		
4P	4D HARDTP		
4S	4D SEDAN		
4T	4D HARDTP		
4W	4WHEEL DR		
5D	4D SEDAN		
5H	5D HTCHBK		

## Triggers

The trigger field for transactions are as follows:

Transaction	Field
T0022 - Vehicle (cab) info	RT_REGISTRATION.ACTION_DATE

## US\_DOT Cross Reference Mapping

According to Pam Corey, the SOS MVR system does not maintain the US\_DOT Carrier ID. Based on this information, the US\_DOT Cross Reference Mapping is nonexistent.

## XML Creation Script

Below is a php script which was used to generate the T0022 transactions which were then applied to XCVIEW implementation of CVIEW. A database was created and minimally populated with test data. The application of the test cases succeeded in creating T0022 transactions and the scripts could be used as the basis for an implementation of a XML creation script for the MVR system.

The \$Host, \$Username, \$Password, "LSI\_MVR" database would need to be adjusted to reflect the actual MVR database. This script assumes the MVR database is a MS-SQL 2005 database. This is not the case and minor modifications to the script are required to operate with the DB2 database.

```
<?php
$Host = "lsimovhost";
// This script will open up the MVR database and produce a transaction
// file for processing in the augmented cview tasks
/* Connecting, selecting database */
$Username = "username";
$Password = "password";
function ConvertDate($InDate){
    return substr($InDate,0,4) . "-" . substr($InDate,4,2) . "-" . substr($InDate,6,2);
}
$link = mssql_connect($Host, $Username, $Password)
```

## Motor Vehicle Registration (MVR)

```
or die('Could not connect\n');
if (!mssql_select_db("LSI_MVR"))
    die("Could not select LSI_MVR\n");
$MapType = array (
    "AC" => "AC",
    "AM" => "AM",
    "A1" => "CK",
    "BU" => "BS",
    "CG" => "CD",
    "CM" => "CM",
    "CP" => "CP",
    "CR" => "CR",
    "CV" => "CO",
    "DB" => "DB",
    "DS" => "DT",
    "FB" => "FB",
    "GG" => "GG",
    "HB" => "HB",
    "HD" => "DP",
    "JP" => "JE",
    "LS" => "LS",
    "MC" => "MC",
    "MH" => "MA",
    "PK" => "PK",
    "PN" => "PN",
    "RH" => "RH",
    "RS" => "MC",
    "SE" => "ST",
    "TD" => "TD",
    "TK" => "TC",
    "TL" => "TR",
    "TN" => "TV",
    "TT" => "TT",
    "WD" => "WW",
    "WG" => "UT",
    "WK" => "WK");
$MapFuel = array (
    1 => "G",
    2 => "D",
    3 => "E",
    8 => "O");
$LastDay = array (
    "01" => 31,
    "02" => 28,
    "03" => 31,
    "04" => 30,
    "05" => 31,
    "06" => 30,
    "07" => 31,
    "08" => 31,
    "09" => 30,
    "10" => 31,
    "11" => 30,
    "12" => 31);
// open output file
$FileNameOut = ($argc > 1) ? $argv[1] : "CVIEWT0022V1.xml";
($fhout = fopen($FileNameOut, "w")) || die("Cannot open output file $FileNameOut\n");

$QryStr = "SELECT * FROM RT_REGISTRATION WHERE VEH_BODY_TYPE = '3'";
$Results = mssql_query($QryStr);
if ($Results === FALSE)
    die("Failed Query - $QryStr\n");
```

## Motor Vehicle Registration (MVR)

```
if ($Results === TRUE) die("no rows");
$SnapDate = date("Y-m-d\Th:i:s");
// output XML heading
$xmlHeader = "<?xml version='1.0'?"
<T0022 xmlns='http://www.safer.org/namespaces/T0022V1'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
xsi:schemaLocation='http://www.safer.org/namespaces/T0022V1 T0022V1.xsd'>
  <INTERFACE>
  <NAME>SAFER</NAME>
  <VERSION>04.02</VERSION>
</INTERFACE>
  <TRANSACTION>
  <VERSION>01.00</VERSION>
  <OPERATION>REPLACE</OPERATION>
  <DATE_TIME>$SnapDate</DATE_TIME>
  <TZ>CD</TZ>
</TRANSACTION>\n";
fwrite($fout, $xmlHeader);
while ($Row = mssql_fetch_object($Results)){
  $xmlCab = " <IRP_REGISTRATION>\n";
  // IRP_REGISTRATION (Cab) info
  $VIN = $Row->ASGN_VIN;
  $TITLE_NUMBER = $Row->VEH_TITLE_NO;
  $TITLE_JURISDICTION = "USIL";
  $LastName = trim($Row->OWN_LAST_NAME);
  $FirstName = trim($Row->OWN_FIRST_MI);
  if (strlen($LastName) + strlen($FirstName) + 2 > 55)
    $OWNER_NAME = $LastName . ", " .
    substr($FirstName, 0, 55 - 2 - strlen($LastName));
  else $OWNER_NAME = $LastName . ", " . $FirstName;
  $MODEL_YEAR = $Row->VEH_YR;
  $MAKE = $Row->VEH_MAKE_CODE;
  if (isset($MapType[$Row->BODY_STYLE])) $TYPE = $MapType[$Row->BODY_STYLE];
  else $TYPE = "FF";
  $FUEL = $MapFuel[$Row->ENGINE_FUEL];
  // $UNLADEN_WEIGHT = $Row->UNLADEN_WEIGHT;
  $NUMBER_OF_AXLES = $Row->AXLES;
  $LICENSE_PLATE_NUMBER = $Row->DISP_ASGN_PLT_NO;
  $UNIT_NUMBER = $Row->UNIT_NO;
  $LAST_UPDATE_DATE = ConvertDate($Row->ACTION_DATE); // check for vehicle
  $INTERSTATE_FLAG = "S";
  // $IRP_CARRIER_NUMBER = $Row->US_DOT_NUMBER_1;
  // obtain GVW
  // $IRP_STATUS_DATE = $LAST_UPDATE_DATE;
  // $IRP_ACCOUNT_NUMBER = $Row->FIRM_NO;
  $IRP_FLEET_NUMBER = $Row->FLEET_ID;
  $REGISTRATION_START_DATE = ConvertDate($Row->VAL_DATE);
  $REGISTRATION_EXPIRE_DATE = $Row->ASGN_EXP_YR . "-" . $Row->ASGN_EXP_MO .
  "-" . $LastDay[$Row->ASGN_EXP_MO]; // need to fix for leap year

  $GVW = $Row->WGT_CYL_CC_HP;
  // $GVW_EXPIRE_DATE = $REGISTRATION_EXPIRE_DATE;
  $xmlCab = "
  <IRP_REGISTRATION>
  <VIN>$VIN</VIN>
  <TITLE_NUMBER>$TITLE_NUMBER</TITLE_NUMBER>
  <TITLE_JURISDICTION>$TITLE_JURISDICTION</TITLE_JURISDICTION>
  <OWNER_NAME>$OWNER_NAME</OWNER_NAME>
  <MODEL_YEAR>$MODEL_YEAR</MODEL_YEAR>
  <MAKE>$MAKE</MAKE>
  <TYPE>$TYPE</TYPE>
  <FUEL>$FUEL</FUEL>
```

## Motor Vehicle Registration (MVR)

```
<NUMBER_OF_AXLES>$NUMBER_OF_AXLES</NUMBER_OF_AXLES>
<LICENSE_PLATE_NUMBER>$LICENSE_PLATE_NUMBER</LICENSE_PLATE_NUMBER>
<IRP_BASE_COUNTRY>US</IRP_BASE_COUNTRY>
<IRP_BASE_STATE>IL</IRP_BASE_STATE>
<UNIT_NUMBER>$UNIT_NUMBER</UNIT_NUMBER>
<LAST_UPDATE_DATE>$LAST_UPDATE_DATE</LAST_UPDATE_DATE>
<INTERSTATE_FLAG>$INTERSTATE_FLAG</INTERSTATE_FLAG>
<IRP_FLEET_NUMBER>$IRP_FLEET_NUMBER</IRP_FLEET_NUMBER>
<REGISTRATION_START_DATE>$REGISTRATION_START_DATE</REGISTRATION_START_DATE>
<REGISTRATION_EXPIRE_DATE>$REGISTRATION_EXPIRE_DATE</REGISTRATION_EXPIRE_DATE>
<GVW>$GVW</GVW>
</IRP_REGISTRATION>
";
fwrite($fhout, $XMLCab);
}
$XMLCab =
"</T0022>\n";
fwrite($fhout, $XMLCab);
fclose($fhout);
?>
```

## XML Transactions

In the MVR system, there is one CVIEW Transaction (T0022) which deals with the registration of the vehicle.

### T0022V2.xsd - IRP Cab

```
<?xml version="1.0"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://www.safersys.org/namespaces/T0022V2"
  xmlns:ts="http://www.safersys.org/namespaces/T0022V2"
  elementFormDefault="qualified">

  <!-- IRP Registration (Cab Card) Input Transaction, T0022, version 2 -->

  <include schemaLocation="globalTypes.xsd"/>

  <!-- Root element -->

  <element name="T0022" type="ts:T0022V2Type"/>

  <!-- Root element type -->

  <complexType name="T0022V2Type">
    <sequence>
      <element name="INTERFACE" type="ts:interfaceHeaderType"/>
      <element name="TRANSACTION" type="ts:transHeaderType"/>
      <element name="IRP_REGISTRATION" type="ts:IRPRegType"
        minOccurs="1" maxOccurs="5000"/>
    </sequence>
  </complexType>
```

## Motor Vehicle Registration (MVR)

<!-- Interface Header type -->

```
<complexType name="interfaceHeaderType">
  <sequence>
    <element name="NAME" type="string" fixed="SAFER"/>
    <element name="VERSION" type="string" fixed="04.02"/>
  </sequence>
</complexType>
```

<!-- Transaction Header type -->

```
<complexType name="transHeaderType">
  <sequence>
    <element name="VERSION" type="string" fixed="02.00"/>
    <element name="OPERATION" type="string" fixed="REPLACE"/>
    <element name="DATE_TIME" type="dateTime"/>
    <element name="TZ" type="ts:globalTimeZoneType"/>
  </sequence>
</complexType>
```

<!-- IRP Registration type -->

```
<complexType name="IRPRegType">
  <sequence>
    <element name="VIN">
      <simpleType>
        <restriction base="string">
          <minLength value="1"/>
          <maxLength value="30"/>
        </restriction>
      </simpleType>
    </element>
    <element name="TITLE_NUMBER" minOccurs="0">
      <simpleType>
        <restriction base="string">
          <maxLength value="17"/>
        </restriction>
      </simpleType>
    </element>
    <element name="TITLE_JURISDICTION" type="ts:globalFullJurisdictionType"
      minOccurs="0"/>
    <element name="OWNER_NAME" minOccurs="0">
      <simpleType>
        <restriction base="string"><maxLength value="120"/></restriction>
      </simpleType>
    </element>
    <element name="MODEL_YEAR" minOccurs="0">
      <simpleType>
        <restriction base="string"><maxLength value="4"/></restriction>
      </simpleType>
    </element>
  </sequence>
</complexType>
```

## Motor Vehicle Registration (MVR)

```
<element name="MAKE" minOccurs="0">
  <simpleType>
    <restriction base="string"><maxLength value="10"/></restriction>
  </simpleType>
</element>
<element name="TYPE" type="ts:globalVehicleUseType" minOccurs="0"/>
<element name="MODEL" minOccurs="0">
  <simpleType>
    <restriction base="string"><maxLength value="3"/></restriction>
  </simpleType>
</element>
<element name="FUEL" type="ts:globalPowerCodeType" minOccurs="0"/>
<element name="UNLADEN_WEIGHT" minOccurs="0">
  <simpleType>
    <restriction base="integer"><totalDigits value="8"/></restriction>
  </simpleType>
</element>
<element name="NUMBER_OF_AXLES" minOccurs="0">
  <simpleType>
    <restriction base="integer"><totalDigits value="2"/></restriction>
  </simpleType>
</element>
<element name="LICENSE_PLATE_NUMBER">
  <simpleType>
    <restriction base="string">
      <minLength value="1"/>
      <maxLength value="12"/>
    </restriction>
  </simpleType>
</element>
<element name="IRP_BASE_COUNTRY" type="ts:globalVEHCountryType"/>
<element name="IRP_BASE_STATE" type="ts:globalJurisdictionType"/>
<element name="UNIT_NUMBER" minOccurs="0">
  <simpleType>
    <restriction base="string"><maxLength value="20"/></restriction>
  </simpleType>
</element>
<element name="LAST_UPDATE_DATE" type="date"/>
<element name="INTERSTATE_FLAG">
  <simpleType>
    <restriction base="string">
      <enumeration value="0"/> <!-- Intrastate -->
      <enumeration value="1"/> <!-- Interstate -->
    </restriction>
  </simpleType>
</element>
<element name="IRP_STATUS_CODE" type="ts:globalIRPStatusCodeType"/>
<element name="IRP_STATUS_DATE" type="date"/>
<element name="IRP_ACCOUNT_NUMBER" minOccurs="0">
  <simpleType>
    <restriction base="string"><maxLength value="32"/></restriction>
  </simpleType>
</element>
```

## Motor Vehicle Registration (MVR)

```
</simpleType>
</element>
<element name="IRP_FLEET_NUMBER" minOccurs="0">
  <simpleType>
    <restriction base="string"><maxLength value="15"/></restriction>
  </simpleType>
</element>
<element name="REGISTRATION_START_DATE" minOccurs="0"
  type="ts:globalOptionalDateType"/>
<element name="REGISTRATION_EXPIRE_DATE" minOccurs="0"
  type="ts:globalOptionalDateType"/>
<element name="OPERATOR_NAME" minOccurs="0">
  <simpleType>
    <restriction base="string"><maxLength value="55"/></restriction>
  </simpleType>
</element>
<!-- CVIS_DEFAULT_CARRIER has tag SAFETY_CARRIER -->
<element name="SAFETY_CARRIER" minOccurs="0"
  type="ts:globalCarrierIdNumberType"/>
<element name="IRP_CARRIER_ID_NUMBER"
  type="ts:globalOptCarrierIdNumberType" minOccurs="0"/>
<element name="IFTA_LICENSE_NUMBER" minOccurs="0">
  <simpleType>
    <restriction base="string"><maxLength value="18"/></restriction>
  </simpleType>
</element>
<element name="GVW" minOccurs="0">
  <simpleType>
    <restriction base="integer"><totalDigits value="8"/></restriction>
  </simpleType>
</element>
<element name="GVW_EXPIRE_DATE" type="ts:globalOptionalDateType"
  minOccurs="0"/>
<element name="IRP_PRORATION" type="ts:IRPProrationType"
  maxOccurs="unbounded"/>
</sequence>
</complexType>

<!-- IRP Proration type -->

<complexType name="IRPProrationType">
  <sequence>
    <element name="IRP_JURISDICTION" type="ts:globalFullJurisdictionType"/>
    <element name="IRP_WEIGHT_CARRIED">
      <simpleType>
        <restriction base="string">
          <minLength value="1"/>
          <maxLength value="8"/>
        </restriction>
      </simpleType>
    </element>
  </sequence>
</complexType>
```



## Motor Vehicle Registration (MVR)

```
<element name="IRP_WEIGHT_EXPIRE_DATE" type="date"/>  
</sequence>  
</complexType>  
  
</schema>
```

# International Fuel Tax Agreement (IFTA)

## Background

From: <http://www.icc.illinois.gov/mc/EOSSifta.aspx> (Credentials information updated from communications with Trent Knoles)

The International Fuel Tax Agreement (IFTA) is an agreement in which the base jurisdiction administers motor fuel use taxes for all IFTA jurisdictions (all contiguous United States and Canadian provinces), and apportions payments to those jurisdictions. Illinois based carriers operating commercial motor vehicles interstate must register and comply with the IFTA program requirements. Qualified motor vehicles are defined as those having two axles and a gross vehicle weight or registered gross vehicle weight exceeding 26,000 pounds, or, having three or more axles regardless of weight, or, used in a combination and the weight exceeds 26,000 pounds.

The motor carrier's registration is authorized for one calendar year, with a grace period for previously registered carriers from January 1 through February 28 to affix the decals. After registration, the carrier is responsible for filing quarterly tax returns detailing the miles traveled and gallons purchased in each jurisdiction. In Illinois, IFTA is administered by the Department of Revenue (DOR).

A new motor carrier either mails or phones in a request for a blank application. A carrier previously registered with Illinois IFTA, and in good standing, will receive a computer generated preprinted application each October. The carrier completes the application, including the order for the number of decals requested, and submits the application and payment for the decals to the IFTA section. Decals are \$3.75 per set. One set of decals must be affixed to each qualified vehicle in an account's fleet. Each commercial motor vehicle must carry a photocopy of the license.

Upon receipt of the application, the IFTA section reviews the contents to determine that all information required has been submitted, and that it has been properly signed. The carrier is notified by telephone or letter of any missing information. Applications are input into the department's processing system where online edits are performed to identify if all returns have been filed, or if the taxpayer has outstanding liabilities, or if the account has been revoked. The fees are calculated for the number of decals requested, and payments are posted. The license is printed at the department. The system identifies the next available serial number from the decal inventory, and assigns these numbers to a specific carrier. The license and decals are mailed to the carrier, or physically given to walk-in carriers in Department of Revenue lobby locations.

Returns, as well as IFTA Fuel Tax Rate Sheets, are printed each quarter, approximately thirty (30) days before each due date.

The taxpayer must detail all miles traveled and gallons purchased for each fuel type in each IFTA jurisdiction for the quarter to be filed. Taxes are calculated on the net gallons in each jurisdiction. The taxpayer pays or is credited/refunded the net amount. The carrier completes the return, signs the form and mails it to the IFTA section accompanied by the required payment, if applicable.

Upon receipt of the return, the envelope is retained for proof of postmark. The IFTA staff enters the data into the Polk system. In addition to calculating the correct tax rates, the system performs many math calculations and systemic edits.

## International Fuel Tax Agreement (IFTA)

The IFTA Section is required to enter data from all returns 30 days from the postmark date to comply with the International Fuel Tax Agreement. A transmittal is generated from the system on the last day of each month, detailing for each jurisdiction the miles and gallons reported by the Illinois carriers. The accumulation of data represents the amounts that should be apportioned to the individual jurisdiction.

In 2006, there were 12,667 IFTA licenses and 176,411 decals issued.

## Contacts

- Lead administrator of the IFTA Illinois Department of Revenue (International Fuel Tax Agreement):
  - ◆ Name: Trent Knoles
  - ◆ Phone: (217) 524-6784
  - ◆ e-Mail: TRENT.KNOLES @ Illinois.gov>
- Assistant to IFTA administrator
  - ◆ Name: Maryann Market
  - ◆ Phone (217) 785-6493
- Technical Contact: Sales & Excise Tax Division Information Services Administration
  - ◆ Name: Peggy Lau
  - ◆ Phone: (217) 785-4177
  - ◆ e-Mail: PEGGY.LAU @ Illinois.gov
- Technical Contact:
  - ◆ Name Roland Marr
  - ◆ e-Mail: ROLAND.MARR @ Illinois.gov

## Database Environment

The DOR has "reports" relative to IFTA, which it sends to the ILCC. Since most of the information needed by CVIEW/SAFER is contained on these reports, it was decided to modify the reports to cover the data required for CVIEW/SAFER. As such, the internal database environment becomes the nature of these reports.

The reports are fix field text files with a preamble containing the date and headers followed by one row per record and followed by a postamble containing the number of records. See [Mapping](#) for more details.

## Mapping

- General Mapping rules: These rules apply to all transactions.
  1. Any special characters (&"<>) need to get mapped to the XML equivalents. Note: Php's htmlspecialchars does this.
  2. In addresses:
    1. At least one of the STREET\_LINE addresses needs to be present.
    2. Standard States 2 character code need to be present (globalJurisdictionType)
    3. Zip codes can be between 1 and 10 characters (globalZipType)
    4. City, State, Zip codes need to be present

## International Fuel Tax Agreement (IFTA)

5. Country names if present need to be mapped to balOptCountryType (US, CA, M, MX, P)
3. Timestamps (date+time) need to be converted to XML format (YYYY-MM-DDTHH:MM:SS - note T is literal).

The DOR "reports" sent to the ILCC relating to IFTA are fix-field text files with a preamble containing the date and headers followed by one row per record and followed by a postamble containing the number of records. They are detailed below:

### Preamble

Line	Contents	Notes
1	CURRENT_DATE	Date Header
2	-----	Separator
3	MM/DD/YYYY HH:MM:SS am/pm	Date of report
4	(blank line)	
5	(blank line)	
6	22 field names	Field names in fixed places
7	22 field separators (---)	Field separators in fixed places

### Data Records

Legacy Name	Start Offset(length)	IFTA Field(length)	Comments
TAXPAYER_ID	0(15)	IFTA_LICENSE_NUMBER(18)	FEIN01 or SSN02
BUSINESS_NAME	16(50)	IFTA_NAME.NAME(120) [LG]	LG (Legal) Name
DBA_NAME	67(50)	IFTA_NAME.NAME(120) [DB]	DB (Doing Business As) Name
BUSINESS_ADDR1	118(50)	IFTA_NAME.IFTA_ADDRESS STREET_LINE_1(90)[LG][PH]	LG (Legal) PH (Physical) Line1
BUSINESS_ADDR2	169(50)	IFTA_NAME.IFTA_ADDRESS STREET_LINE_2(90)[LG][PH]	At least one of Line 1 or Line 2 should exists
BUSINESS_CITY	220(25)	IFTA_NAME.IFTA_ADDRESS CITY(90)[LG][PH]	
BUS_ST	246(6)	IFTA_NAME.IFTA_ADDRESS STATE(2)[LG][PH]	Verify with globalJurisdictionType
BUS_ZIP	253(9)	IFTA_NAME.IFTA_ADDRESS ZIP_CODE	
BUS_COUNTRY	263(15)	IFTA_NAME.IFTA_ADDRESS COUNTRY	Map to globalOptCountrType
US_DOT	279(12)	IFTA_CARRIER_ID_NUMBER	
STATUS_CD	292(10)	IFTA_STATUS_CODE	Map to globalIftaStatusType

International Fuel Tax Agreement (IFTA)

STATUS_DT	303(10)	IFTA_STATUS_DATE	<u>Note below on IFTA_STATUS_DATE</u>
LIAB_DT	314(10)	IFTA_ISSUE_DATE	<u>Note below on IFTA_STATUS_DATE</u>
WITHDRL_DT	325(10)	IFTA_EXPIRE_DATE	<u>Note below on IFTA_STATUS_DATE</u>
REVOKE_CD	336(10)	IFTA_STATUS_CODE	<u>Note below on IFTA_STATUS_CODE</u>
REVOKE_DT	347(10)	IFTA_STATUS_DATE	<u>Note below on IFTA_STATUS_DATE</u>
MAIL_ADDR1	358(50)	IFTA_NAME.IFTA_ADDRESS STREET_LINE1(120)[LG][MA]	LG MA(Mail) Line1
MAIL_ADDR2	409(50)	IFTA_NAME.IFTA_ADDRESS STREET_LINE2(120)[LG]{MA}	LG MA(Mail) Line 2
MAIL_CITY	560(25)	IFTA_NAME.IFTA_ADDRESS CITY(90)[LG][MA]	
MAIL_ST	586(7)	IFTA_NAME.IFTA_ADDRESS STATE(2)[LG][MA]	Map to globalJurisdictionType
MAIL_ZIP	494(9)	IFTA_NAME.IFTA_ADDRESS ZIP(9)[LG][MA]	
MAIL_COUNTRY	505(15)	IFTA_NAME.IFTA_ADDRESS COUNTRY	Map to globalOptCountryType

Notes:

1. The CVIEW/SAFER IFTA\_STATUS\_CODE needs to be derived from the following legacy fields: STATUS\_CD, REVOKE\_CD, WITHDRL\_DT. Note STATUS\_DT and WITHDRL\_DT can be in the future (though not often). Active 0, 1, 2 Suspense 0, 1, 2 are all in good standing.
2. The Count is the number of records in the IFTA system as of 10/5/2005.
3. Map is the globalIftaStatusType which IFTA\_STATUS\_CODE will be mapped to.
4. IFTA\_STATUS\_CODE Mapping Table:

Count	STATUS_CD	REVOKE_CD	WITHDRL_DT	Map	Meaning
11379	ACTIVE	(blank)	(blank)	1	Active
608	ACTIVE	0	(blank)	2	Active Pending
161	ACTIVE	1	(blank)	2	Active Pending
61	ACTIVE	2	(blank)	2	Active Pending
72	ACTIVE	R	(blank)	3	Active Delinquent
1	CANCEL	R	(blank)	7	Canceled
9	INACTIVE	R	(blank)	A	Inactive Delinquent
255	SUSPENSE	(blank)	(blank)	6	Suspended
11	SUSPENSE	0	(blank)	2	Active Pending
2	SUSPENSE	1	(blank)	2	Active Pending

International Fuel Tax Agreement (IFTA)

0	SUSPENSE	2	(blank)	2	Active Pending
9	SUSPENSE	R	(blank)	C	Revoked
7700	CANCELED	(blank)	date	4	Closed
478	CANCELED	0	date	4	Closed
7	CANCELED	1	date	4	Closed
4	CANCELED	2	date	4	Closed
1386	CANCELED	R	date	4	Closed
2568	INACTIVE	(blank)	date	4	Closed
85	INACTIVE	0	date	4	Closed
1	INACTIVE	1	date	4	Closed
3	INACTIVE	2	date	4	Closed
6090	INACTIVE	R	date	4	Closed
66	PENDING	(blank)	date	5	Closed Pending
7	PENDING	0	date	5	Close Pending
7	PENDING	1	date	5	Close Pending
3	PENDING	2	date	5	Close Pending
132	PENDING	R	date	5	Close Pending

5. IFTA\_STATUS\_DATE mapping should be the latest date among LIAB\_DT, STATUS\_DT, REVOKE\_DT and WITHDRL\_DT (some of which may be missing). Note: there is one record which has a WITHDRL\_DT in the future.

6. Country code mapping:

(MAIL/BUS)_COUNTRY	IFTA_ADDRESS.COUNTRY	Notes
USA	US	
CA	CA	Only one occurrence
Canada	CA	
(blank)		all US states

7. Generally fields should be trimmed of white space on the right in the conversion process.

8. Some dates are blank and should be omitted - but there should always be a mapped IFTA\_STATUS\_DATE

## Postamble

Line	Contents	Notes
1	(blank line)	
2	(blank line)	
3	(YYYYYY) records selected	record count of data rows

## Triggers

Because the DOR periodically generates "reports" that is a complete picture of the status of IFTA, there is no need for trigger fields. A baseline load can be done each time a new report is created. Based on experience of doing the prototype, this can be done well within a reasonable time period. If there is desire to have update-only transactions, a difference from the previous report could be generated and that could be the basis for deciding which records should be included in the T0019 transaction.

## US\_DOT Cross Reference Mapping

Based on a snapshot of IFTA data as of 10/5/2006 of the 12,581 carriers with ACTIVE STATUS\_CD only 37 do not have US\_DOT carrier IDs. Of those without US\_DOT carrier IDs, 2 have REVOKE\_CD of '0' and 1 has REVOKE\_CD of 'R'.

## XML Creation Script

Below is a php script which was used to generate T0019 transactions which were then applied to XCVIEW implementation of CVIEW. A "report" was provided by the DOT. The application of these actual cases was successful and the scripts could be used as the basis for implementation of a XML creation script for the IFTA system.

```
<?php
DEBUG = FALSE;
$MaxRecords = 50000;
// This script will open the text file from Illinois Department of Revenue (DOR)
// of the International Fuel Tax Agreement (IFTA) and creates a T0019V1.xsd
// transactions file CVIEWT0019V1.xml which can be run as part of the XCVIEW
// CVIEW.bat process.

// get report date
$FileName = ($argc > 1) ? $argv[1] : "SAFER.txt";
($fh = fopen($FileName, "r")) || die("Cannot open file $FileName\n");

// open output file
$FileNameOut = ($argc > 2) ? $argv[2] : "CVIEWT0019V1.xml";
($fhout = fopen($FileNameOut, "w")) || die("Cannot open output file $FileNameOut\n");

// open DB
mysql_connect("localhost","root","sqlmysql");
mysql_select_db("IFTA");
// should be of format

// CURRENT_DATE
// -----
// MM/DD/YYYY HH:MM:SS am/pm
$Line = rtrim(fgets($fh));
if ($Line != "CURRENT_DATE") die("$Line - Expecting line 1 CURRENT_DATE\n");
$Line = rtrim(fgets($fh));
if ($Line != "-----") die("Expecting line 2 -----");
$Line = rtrim(fgets($fh));
$SnapDate = date("Y-m-d\Th:i:s",strtotime($Line));
echo "$SnapDate\n";

// 2 blank lines
```

## International Fuel Tax Agreement (IFTA)

```
$Line = rtrim(fgets($fh));
if ($Line != "")die("Expecting line 4 empty");
$Line = rtrim(fgets($fh));
if ($Line != "")die("Expecting line 5 empty");

// Header line with field names
// Header line with -- for field separators

$Line = rtrim(fgets($fh));
$Line = rtrim(fgets($fh));
// ignore header and ----

// output XML heading
$xmlHeader = "<?xml version='1.0'?">
<T0019 xmlns='http://www.safer.org/namespaces/T0019V1'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
xsi:schemaLocation='http://www.safer.org/namespaces/T0019V1 T0019V1.xsd'">
  <INTERFACE>
  <NAME>SAFER</NAME>
  <VERSION>04.02</VERSION>
  </INTERFACE>
  <TRANSACTION>
  <VERSION>01.00</VERSION>
  <OPERATION>REPLACE</OPERATION>
  <DATE_TIME>$SnapDate</DATE_TIME>
  <TZ>CD</TZ>
  </TRANSACTION>\n";
fwrite($fhout,$xmlHeader);

// Data follows 1 line per record - no data lines start with blank
$LineCount = 0;
$Line = fgets($fh);
$Line = substr($Line, 0, strlen($Line)-2);
while (trim($Line) != ""){
  $LineCount++;
  if ($LineCount > $MaxRecords) break;
  $TAXPAYER_ID = trim(substr($Line, 0, 15));
  $BUSINESS_NAME = htmlspecialchars(trim(substr($Line, 16, 50)));
  $DBA_NAME = htmlspecialchars(trim(substr($Line, 67, 50)));
  $BUSINESS_ADDR1 = htmlspecialchars(trim(substr($Line, 118, 50)));
  $BUSINESS_ADDR2 = htmlspecialchars(trim(substr($Line, 169, 50)));
  $BUSINESS_CITY = htmlspecialchars(trim(substr($Line, 220, 25)));
  $BUS_ST = rtrim(substr($Line, 246, 6));
  $BUS_ZIP = rtrim(substr($Line, 253, 9));
  $BUS_COUNTRY = rtrim(substr($Line, 263, 15));
  $US_DOT = rtrim(substr($Line, 279, 12));
  $STATUS_CD = rtrim(substr($Line, 292, 10));
  $PieceSTDT = trim(substr($Line, 303, 10));
  $STATUS_DT = $PieceSTDT == "" ? "" : date("Y-m-d",strtotime($PieceSTDT));
  $PieceLBDT = trim(substr($Line, 314, 10));
  $LIAB_DT = $PieceLBDT == "" ? "" : date("Y-m-d", strtotime($PieceLBDT));
  $PieceWDDT=trim(substr($Line, 325, 10));
  $WITHDRDL_DT = $PieceWDDT == "" ? "" : date("Y-m-d",strtotime($PieceWDDT));
  $REVOKE_CD = rtrim(substr($Line, 336, 10));
  $PieceRKDT = trim(substr($Line, 347, 10));
  $REVOKE_DT = $PieceRKDT == "" ? "" : date("Y-m-d",strtotime($PieceRKDT));
  $MAIL_ADDR1= htmlspecialchars(trim(substr($Line, 358, 50)));
  $MAIL_ADDR2 = htmlspecialchars(trim(substr($Line, 409, 50)));
  $MAIL_CITY = htmlspecialchars(trim(substr($Line, 460, 25)));
  $MAIL_ST = rtrim(substr($Line, 486, 7));
  $MAIL_ZIP = rtrim(substr($Line, 494, 9));
  $MAIL_COUNTRY = rtrim(substr($Line, 504, 15));
```



## International Fuel Tax Agreement (IFTA)

```
// special mappings
// if no US_DOT make STATE ID
$CARRIER_ID_NUMBER = $US_DOT == "" ? "$TAXPAYER_ID" : $US_DOT;
// Status code mapping
$STATUS_CODE = 0; // not available - for any which fall thru
if ($WITHDRL_DT == "") { // no Withdrawal date
if ($REVOKE_CD == "") { // blank revoke code
if ($STATUS_CD == "ACTIVE") $STATUS_CODE = "1"; //Active
else if ($STATUS_CD == "SUSPENSE") $STATUS_CODE = "6"; // Suspended
}
else if ($REVOKE_CD == "R"){
if ($STATUS_CD == "ACTIVE") $STATUS_CODE = "3"; //Active Delinquent
else if ($STATUS_CD == "CANCELED") $STATUS_CODE = "7"; // Canceled
else if ($STATUS_CD == "INACTIVE") $STATUS_CODE = "6"; // Inactive Delinquent
else if ($STATUS_CD == "SUSPENSE") $STATUS_CODE = "C"; // Revoked
} else { // REVOKE_CD 0, 1, 2
if ($STATUS_CD == "ACTIVE" || $STATUS_CD == "SUSPENSE")
$STATUS_CODE = "2"; // Active Pending
}
} else { // Has withdrawal date
if ($STATUS_CD == "PENDING") $STATUS_CODE = "5"; // Close Pending
else $STATUS_CODE = "4"; // Closed
}
}
// Status Date - look at STATUS_DT, REVOKE_DT and WITHDRL_DT
$STATUS_DATE = $PieceLBDT;
if ($PieceSTDT != "" && strtotime($PieceSTDT) > strtotime($STATUS_DATE))
$STATUS_DATE = $PieceSTDT;
if ($PieceWDDT != "" && strtotime($PieceWDDT) > strtotime($STATUS_DATE))
$STATUS_DATE = $PieceWDDT;
if ($PieceRKDT != "" && strtotime($PieceRKDT) > strtotime($STATUS_DATE))
$STATUS_DATE = $PieceRKDT;
$STATUS_DATE = date("Y-m-d", strtotime($STATUS_DATE));

// Map Country Code
if ($BUS_COUNTRY != ""){
if ($BUS_COUNTRY == "USA") $BUS_COUNTRY = "US";
else if ($BUS_COUNTRY == "CA" || $BUS_COUNTRY == "Canada") $BUS_COUNTRY = "CA";
}
if ($MAIL_COUNTRY != ""){
if ($MAIL_COUNTRY == "USA") $MAIL_COUNTRY = "US";
else if ($MAIL_COUNTRY == "CA" || $MAIL_COUNTRY == "Canada") $MAIL_COUNTRY = "CA";
}
$xmlAccountValid = TRUE; // hack to detect bad data - need xml checker
$xmlAccount = "
<IFTA_ACCOUNT>
<IFTA_CARRIER_ID_NUMBER>$CARRIER_ID_NUMBER</IFTA_CARRIER_ID_NUMBER>
<IFTA_BASE_COUNTRY>US</IFTA_BASE_COUNTRY>
<IFTA_BASE_STATE>IL</IFTA_BASE_STATE>
<IFTA_LICENSE_NUMBER>$TAXPAYER_ID</IFTA_LICENSE_NUMBER>
<IFTA_STATUS_CODE>$STATUS_CODE</IFTA_STATUS_CODE>
<IFTA_STATUS_DATE>$STATUS_DATE</IFTA_STATUS_DATE>
<IFTA_ISSUE_DATE>$LIAB_DT</IFTA_ISSUE_DATE>\n";
// check "UPDATE_DATE"
if ($WITHDRL_DT != "") $xmlAccount .=
" <IFTA_EXPIRE_DATE>$WITHDRL_DT</IFTA_EXPIRE_DATE>\n";
$xmlAccount .=
" <IFTA_UPDATE_DATE>$STATUS_DATE</IFTA_UPDATE_DATE>
<IFTA_NAME>
<NAME_TYPE>LG</NAME_TYPE>
<NAME>$BUSINESS_NAME</NAME>
<IFTA_ADDRESS>
<ADDRESS_TYPE>PH</ADDRESS_TYPE>
```

## International Fuel Tax Agreement (IFTA)

```
<STREET_LINE_1>${BUSINESS_ADDR1}</STREET_LINE_1>\n";
if (${BUSINESS_ADDR2} != "") $XMLAccount .=
" <STREET_LINE_2>${BUSINESS_ADDR2}</STREET_LINE_2>\n";
//<!-- Check for PO BOX addresses in data -->
$XMLAccount .=
" <CITY>${BUSINESS_CITY}</CITY>
<STATE>${BUS_ST}</STATE>
<ZIP_CODE>${BUS_ZIP}</ZIP_CODE>
<!-- Omit County, COLONIA -->\n";
if (${BUS_COUNTRY} != "") $XMLAccount .=
" <COUNTRY>${BUS_COUNTRY}</COUNTRY>\n";
if (${BUS_ST} == "" || ${BUS_ZIP} == "") $XMLAccountValid = FALSE;
$XMLAccount .=
" </IFTA_ADDRESS>\n";
// deal with different mail address
if (${MAIL_ADDR1} != "" && ${MAIL_ADDR1} != ${BUSINESS_ADDR1} ||
${MAIL_ADDR2} != "" && ${MAIL_ADDR2} != ${BUSINESS_ADDR2} ||
${MAIL_CITY} != "" && ${MAIL_CITY} != ${BUSINESS_CITY} ||
${MAIL_ST} != "" && ${MAIL_ST} != ${BUS_ST} ||
${MAIL_ZIP} != "" && ${MAIL_ZIP} != ${BUS_ZIP} ||
${MAIL_COUNTRY} != "" && ${MAIL_COUNTRY} != ${BUS_COUNTRY}) {
$XMLAccount .=
" <IFTA_ADDRESS>
<ADDRESS_TYPE>MA</ADDRESS_TYPE>
<STREET_LINE_1>${MAIL_ADDR1}</STREET_LINE_1>\n";
if (${MAIL_ADDR2} != "") $XMLAccount .= "
<STREET_LINE_2>${MAIL_ADDR2}</STREET_LINE_2>\n";
//<!-- Check for PO BOX addresses in data -->
$XMLAccount .=
" <CITY>${MAIL_CITY}</CITY>
<STATE>${MAIL_ST}</STATE>
<ZIP_CODE>${MAIL_ZIP}</ZIP_CODE>
<!-- Omit County, COLONIA -->\n";
if (${MAIL_COUNTRY} != "") $XMLAccount .=
" <COUNTRY>${MAIL_COUNTRY}</COUNTRY>\n";
$XMLAccount .=
" </IFTA_ADDRESS>\n";
if (${MAIL_ST} == "" || ${MAIL_ZIP} == "") $XMLAccountValid = FALSE;
}
// deal with different DBA
if (${DBA_NAME} != "" && ${DBA_NAME} != ${BUSINESS_NAME}) {
$XMLAccount .=
" </IFTA_NAME>
<!-- include DBA only if different and include no addresses -->
<IFTA_NAME>
<NAME_TYPE>DB</NAME_TYPE>
<NAME>${DBA_NAME}</NAME>\n";
}
// end tags
$XMLAccount .=
" </IFTA_NAME>
</IFTA_ACCOUNT>\n";
if ($XMLAccountValid) fwrite($fhout,$XMLAccount);
else echo "*** Invalid XMLAccount\n$xmlAccount\n\n";
if ($DEBUG) {
echo "*** $LineCount ***" . strlen($Line) . "\n";
echo "|$US_DOT|\n";
echo "|$TAXPAYER_ID|\n";
echo "|$BUSINESS_NAME|\n";
echo "|$DBA_NAME|\n";
echo "|$BUSINESS_ADDR1|\n";
echo "|$BUSINESS_ADDR2|\n";
```

## International Fuel Tax Agreement (IFTA)

```
echo "|$BUSINESS_CITY|\n";
echo "|$BUS_ST|\n";
echo "|$BUS_ZIP|\n";
echo "|$BUS_COUNTRY|\n";
echo "|sc:$STATUS_CD|\n";
echo "|sd:$STATUS_DT|\n";
echo "|ld:$LIAB_DT|\n";
echo "|wd:$WITHDRL_DT|\n";
echo "|rc:$REVOKE_CD|\n";
echo "|rd:$REVOKE_DT|\n";
echo "|$MAIL_ADDR1|\n";
echo "|$MAIL_ADDR2|\n";
echo "|$MAIL_CITY|\n";
echo "|$MAIL_ST|\n";
echo "|$MAIL_ZIP|\n";
echo "|$MAIL_COUNTRY|\n";
} // DEBUG
$QryStr = "INSERT INTO IFTA (SnapDate, US_DOT, TAXPAYER_ID, BUSINESS_NAME,
DBA_NAME, BUSINESS_ADDR1, BUSINESS_ADDR2, BUS_ST, BUS_ZIP, BUS_COUNTRY,
STATUS_CD, STATUS_DT, LIAB_DT, WITHDRL_DT, REVOKE_CD, REVOKE_DT, MAIL_ADDR1,
MAIL_ADDR2, MAIL_ST, MAIL_CITY, MAIL_ZIP, MAIL_COUNTRY) VALUES (
'$SnapDate', '$US_DOT', '$TAXPAYER_ID', '$BUSINESS_NAME',
'$DBA_NAME', '$BUSINESS_ADDR1', '$BUSINESS_ADDR2', '$BUS_ST', '$BUS_ZIP', '$BUS_COUNTRY',
'$STATUS_CD', '$STATUS_DT', '$LIAB_DT', '$WITHDRL_DT', '$REVOKE_CD', '$REVOKE_DT',
'$MAIL_ADDR1',
'$MAIL_ADDR2', '$MAIL_ST', '$MAIL_CITY', '$MAIL_ZIP', '$MAIL_COUNTRY')";
if (strlen($REVOKE_CD) > 1) echo "$QryStr\n";
/*if (mysql_query($QryStr) === FALSE){
die("Failed Query $QryStr\n");
}
*/
$Line = fgets($fh);
}
// 2 blank lines
$Line = rtrim(fgets($fh));
//if ($Line != "") die("Expecting empty line near end of file");
$Line = rtrim(fgets($fh));///
echo "$LineCount is the count - $Line\n";
// yyyy record(s) selected
// EOF
fwrite($fhout, "</T0019>\n");
fclose($fhout);
?>
```

## XML Transactions

Below is T0019.xsd which describes IFTA transactions input to CVIEW. It depends on globalTypes.xsd.

### T0019.xsd IFTA input transaction

```
<?xml version="1.0"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://www.safersys.org/namespaces/T0019V1"
```

## International Fuel Tax Agreement (IFTA)

```
xmlns:ts="http://www.safersys.org/namespaces/T0019V1"
elementFormDefault="qualified">

<!-- IFTA Input Transaction, T0019, version 1 -->

<include schemaLocation="globalTypes.xsd"/>

<!-- Root element -->

<element name="T0019" type="ts:T0019V1Type"/>

<!-- Root element type -->

<complexType name="T0019V1Type">
  <sequence>
    <element name="INTERFACE" type="ts:interfaceHeaderType"/>
    <element name="TRANSACTION" type="ts:transHeaderType"/>
    <element name="IFTA_ACCOUNT" type="ts:IFTAAccountType"
      minOccurs="1" maxOccurs="5000"/>
  </sequence>
</complexType>

<!-- Interface Header type -->

<complexType name="interfaceHeaderType">
  <sequence>
    <element name="NAME" type="string" fixed="SAFER"/>
    <element name="VERSION" type="string" fixed="04.02"/>
  </sequence>
</complexType>

<!-- Transaction Header type -->

<complexType name="transHeaderType">
  <sequence>
    <element name="VERSION" type="string" fixed="01.00"/>
    <element name="OPERATION" type="string" fixed="REPLACE"/>
    <element name="DATE_TIME" type="dateTime"/>
    <element name="TZ" type="ts:globalTimeZoneType"/>
  </sequence>
</complexType>

<!-- IFTA Account type -->

<complexType name="IFTAAccountType">
  <sequence>
    <element name="IFTA_CARRIER_ID_NUMBER" type="ts:globalOptCarrierIdNumberType"
minOccurs="0"/>
    <element name="IFTA_BASE_COUNTRY" type="ts:globalCountryType"/>
    <element name="IFTA_BASE_STATE" type="ts:globalJurisdictionType"/>
    <element name="IFTA_LICENSE_NUMBER">
```

## International Fuel Tax Agreement (IFTA)

```
<simpleType>
  <restriction base="string">
    <minLength value="1"/>
    <maxLength value="18"/>
  </restriction>
</simpleType>
</element>
<element name="IFTA_STATUS_CODE" type="ts:globalIftaStatusType"/>
<element name="IFTA_STATUS_DATE" type="date"/>
<element name="IFTA_ISSUE_DATE" type="ts:globalOptionalDateType" minOccurs="0"/>
<element name="IFTA_EXPIRE_DATE" type="ts:globalOptionalDateType" minOccurs="0"/>
<element name="IFTA_UPDATE_DATE" type="date"/>
<element name="IFTA_NAME" type="ts:IFTANameType"
  minOccurs="0" maxOccurs="2"/>
</sequence>
</complexType>
```

<!-- IFTA Name type -->

```
<complexType name="IFTANameType">
  <sequence>
    <element name="NAME_TYPE" type="ts:globalNameTypeValues"/>
    <element name="NAME">
      <simpleType>
        <restriction base="string">
          <minLength value="1"/>
          <maxLength value="120"/>
        </restriction>
      </simpleType>
    </element>
    <element name="IFTA_ADDRESS" type="ts:IFTAAddressType"
      minOccurs="0" maxOccurs="2"/>
  </sequence>
</complexType>
```

<!-- IFTA Address type -->

```
<complexType name="IFTAAddressType">
  <sequence>
    <element name="ADDRESS_TYPE" type="ts:globalAddressTypeValues"/>
    <!--Business rules check that at least one of STREET_LINE_1,
      STREET_LINE_2, and PO_BOX is present -->
    <element name="STREET_LINE_1" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="STREET_LINE_2" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="PO_BOX" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="CITY" type="ts:globalString90Type"/>
    <element name="STATE" type="ts:globalJurisdictionType"/>
    <element name="ZIP_CODE" type="ts:globalZipType"/>
    <element name="COUNTY" type="ts:globalOptString90Type" minOccurs="0"/>
    <element name="COLONIA" type="ts:globalString90Type" minOccurs="0"/>
    <element name="COUNTRY" type="ts:" minOccurs="0"/>
  </sequence>
</complexType>
```

## International Fuel Tax Agreement (IFTA)

```
</sequence>  
</complexType>  
  
</schema>
```

# E-Screening

## Background

E-Screening is the ability to screen vehicles electronically. This is typically accomplished by a transponder in the vehicle which transmits its transponder ID to an Automatic Vehicle Identification (AVI) system located at a weighing or port of entry station. This transponder ID can then be used as a key to look up information on the vehicle such as credentialing, licensing, and safety rating. This information can then be used to determine if the vehicle will need to stop at the station because a manual inspection is required, or there is a credentialing issue, or as part of a random sampling. The driver receives a green or red light in the cab to indicate if he can bypass the station or if stopping is required. This system allows compliant carriers with good safety and inspection ratings to bypass the check station and save significant time. It also benefits the carrier and environment by reducing the fuel consumed (0.55 gallons per stop based on an Iowa transportation study) during the manual checking process. It benefits the state by allowing the enforcement personnel to focus on those vehicles which are most likely to be out of compliance and improves enforcement efficiency.

Transponders for E-Screening may not be granted to carriers with poor safety or inspection histories. All credentialing information must be current at the time of application.

There are at least three systems which are implemented in states which offers E-Screening:

- PrePass (<http://www.prepass.com>) which is a for-profit company
- NORPASS (<http://www.norpass.net>) which is a non-profit group of states
- Green Light - state of Oregon's program

The frequency of random manual screening is typically based on the safety record and frequency of out of service incidences of the carrier. Fewer random manual screenings are performed on carriers with better records.

While in principle E-Screening has some great benefits, the business model of the for-profit implementation may conflict with or compete with the goals of CVISN. PrePass either assesses a fee for each time a carrier is allowed to bypass a weigh station or charges a flat fee per day. To maximize the number of vehicles subscribing, PrePass guarantees that the only information shared with the state jurisdictions relative to the scan is the fact that vehicles have been given a green light. In particular, timestamps between weigh stations are specifically omitted so that carriers don't need to worry that the state will use this information to detect speeding. This confidentiality of information makes it difficult for states with PrePass to use E-Screening information. Illinois is one of the states with the PrePass system.

## PrePass and PrePass Plus

Heavy Vehicle Electronic License Plate (HELP) Inc is a for-profit company, which has several programs which cater to the trucking industry. PrePass and PrePass Plus have 263 sites in the following states: Alabama, Arizona, Arkansas, California, Colorado, Florida, Illinois, Indiana, Iowa, Kansas, Louisiana, Maryland, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, Ohio, Oklahoma, Tennessee, Utah, Virginia, West Virginia, Wisconsin, and Wyoming. In 2005, there were more than 45 million bypass scans.

## E-Screening

The PrePass Plus program combines PrePass with E-ZPass, an electronic toll system.

To apply for PrePass, the carrier fills out information and sends copies of IRP, IFTA and SSRS credentialing information along with the VIN, IRP Account, Fleet Number, and License Number.

The PrePass license agreement authorizes PrePass to acquire and periodically reconfirm with government authorities various credentialing information.

PrePass earns revenue by charging a fee per bypass or fee per day to the carrier per vehicle. It provides the transponders for free. It provides the state with the equipment and also maintains the equipment and systems required to operate the system. This results in financial savings to the state with corresponding loss of data ownership and control.

The information obtained by the PrePass E-Scanning system is owned by PrePass and not the state.

## NORPASS

The NORPASS system is designed to improve the efficiency and safety of motor carrier operations. It is not a data collection system. NORPASS is a non-profit consortium of the following states: Connecticut, Georgia, Idaho, Kentucky, New York, South Dakota, Utah, and Washington. In addition Minnesota, Oregon, North Carolina and Virginia also use the NORPASS system but is not part of this consortium. NORPASS has over 87,000 trucks registered.

With the NORPASS system, the carrier pays once for the transponder charge (\$45) and there are no fees charged for scanning. The state owns and maintains the AVI system and the information associated with it. The data collected by the NORPASS System is neither publicly disclosed nor permanently retained.

Registration can be done online with the IFTA, IRP and US DOT number since the NORPASS system is primarily used to obtain the US DOT number and then that is used to check the validity of the credentialing and safety records at the station.

The NORPASS center is located in Kentucky.

## Oregon Green Light System

Oregon was an early adopter of E-Screening and set up its own system. When PrePass came online and California adopted PrePass, there was a controversy relative to the use of PrePass transponders in Oregon's Green Light System. The transponders used the same technology in both the Green Light and PrePass systems and the PrePass transponders could be read by the Green Light System. Oregon allowed carriers to be E-Screened using PrePass transponders. In 1998, HELP (the company with the PrePass programs) objected, claiming misappropriation of property and violation of telecommunications law. Oregon has suspended enrolling PrePass transponders and not been successful in negotiations with PrePass. Litigation has not resolved the issue and currently Oregon is red lighting all vehicles with PrePass transponders which do not also have Green Light or NORPASS transponders.

Oregon claims that "ELP" of HELP is Electronic License Plate and that this information is not secret. PrePass's business model does not allow the use of its equipment in non PrePass states.



## Summary

While E-Screening holds a lot of potential with the widespread adoption of PrePass, which includes Illinois, there may be significant issues in attempting to deploy CVIEW as it was envisioned unless the VIN or other identifying information is provided to the state by PrePass. It may be that the currency and robustness of the CVIEW system may enjoy an advantage with the PrePass information relative to credentialing and safety information, but without being able to quickly determine information identifying the vehicle from the PrePass system and being able to red light the vehicle based on the current information possessed by the state, this may not allow E-Screening with CVIEW to realize its full potential.

## XML - E-Screening Transactions

### T0023V1.xsd - Carrier Authorization

```
<?xml version="1.0"?>
<schema
  targetNamespace="http://www.safersys.org/namespaces/T0023V1"
  xmlns:ts="http://www.safersys.org/namespaces/T0023V1"
  xmlns="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified">

  <!-- Carrier Authorization Input Transaction, T0023, version 1 -->

  <include schemaLocation="globalTypes.xsd"/>

  <!-- Root element -->

  <element name="T0023" type="ts:T0023V1Type"/>

  <!-- T0023V1 Carrier Authorization Transaction -->
  <!-- Output transaction-->
  <!-- Root element type -->

  <complexType name="T0023V1Type">
    <sequence>
      <element name="INTERFACE" type="ts:interfaceHeaderType"/>
      <element name="TRANSACTION" type="ts:transHeaderType"/>
      <element name="CARRIER_AUTHORIZATION" type="ts:CarrierAuthorizationType"
        minOccurs="1" maxOccurs="5000"/>
    </sequence>
  </complexType>

  <!-- Interface header type -->

  <complexType name="interfaceHeaderType">
    <sequence>
      <element name="NAME" type="string" fixed="SAFER"/>
      <element name="VERSION" type="string" fixed="04.02"/>
    </sequence>
  </complexType>
</schema>
```

## E-Screening

```
</sequence>
</complexType>

<!-- Transaction header type -->

<complexType name="transHeaderType">
  <sequence>
    <element name="VERSION" type="string" fixed="01.00"/>
    <element name="OPERATION" type="string" fixed="REPLACE"/>
    <element name="DATE_TIME" type="dateTime"/>
    <element name="TZ" type="ts:globalTimeZoneType"/>
  </sequence>
</complexType>

<!-- Carrier Authorizations Group type -->

<complexType name="CarrierAuthorizationType">
  <sequence>
    <element name="CARRIER_ID_NUMBER" type="ts:globalCarrierIdNumberType"/>
    <element name="AUTHORIZATION" type="ts:AuthorizationType"
      minOccurs="1" maxOccurs="unbounded"/>
  </sequence>
</complexType>

<!-- Authorization type -->

<complexType name="AuthorizationType">
  <sequence>
    <element name="JURISDICTION_CODE" type="ts:globalFullJurisdictionType"/>
    <element name="ACTIVITY_CODE">
      <simpleType>
        <restriction base="string">
          <enumeration value="10"/> <!-- E-Screen -->
        </restriction>
      </simpleType>
    </element>
    <element name="CARRIER_ACTION">
      <simpleType>
        <restriction base="string">
          <enumeration value="E01"/> <!-- Participation Requested -->
        </restriction>
      </simpleType>
    </element>
    <element name="CARRIER_ACTION_DATE" type="date"/>
    <element name="JURISDICTION_ACTION" minOccurs="0">
      <simpleType>
        <restriction base="string">
          <enumeration value="S28"/> <!-- Approved -->
          <enumeration value="S29"/> <!-- Rejected -->
          <enumeration value="S30"/> <!-- Temporary Accepted -->
          <enumeration value="S31"/> <!-- Temporary Rejected -->
        </restriction>
      </simpleType>
    </element>
  </sequence>
</complexType>
```

## E-Screening

```
    </restriction>
  </simpleType>
</element>
<element name="JURISDICTION_ACTION_DATE" minOccurs="0"
  type="ts:globalOptionalDateType"/>
</sequence>
</complexType>

</schema>
```

## T0024V1.xsd - Transponder ID

```
<?xml version="1.0"?>
<schema
  targetNamespace="http://www.safersys.org/namespaces/T0024V1"
  xmlns:ts="http://www.safersys.org/namespaces/T0024V1"
  xmlns="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified">

  <!-- Vehicle Transponder ID Input Transaction, T0024V1, Version 1 -->

  <include schemaLocation="globalTypes.xsd"/>

  <!-- Root element -->

  <element name="T0024" type="ts:T0024V1Type"/>

  <!-- T024V1 Transponder Account Transaction -->
  <!-- Input transaction-->
  <!-- Root element type -->

  <complexType name="T0024V1Type">
    <sequence>
      <element name="INTERFACE" type="ts:interfaceHeaderType"/>
      <element name="TRANSACTION" type="ts:transHeaderType"/>
      <element name="TRANSPONDER_ACCOUNT" type="ts:TransponderAccountType"
        minOccurs="1" maxOccurs="5000"/>
    </sequence>
  </complexType>

  <!-- Interface header type -->

  <complexType name="interfaceHeaderType">
    <sequence>
      <element name="NAME" type="string" fixed="SAFER"/>
      <element name="VERSION" type="string" fixed="04.02"/>
    </sequence>
  </complexType>
```

## E-Screening

<!-- Transaction header type -->

```
<complexType name="transHeaderType">
  <sequence>
    <element name="VERSION" type="string" fixed="01.00"/>
    <element name="OPERATION" type="string" fixed="REPLACE"/>
    <element name="DATE_TIME" type="dateTime"/>
    <element name="TZ" type="ts:globalTimeZoneType"/>
  </sequence>
</complexType>
```

<!-- Transponder Account type -->

```
<complexType name="TransponderAccountType">
  <sequence>
    <element name="VIN">
      <simpleType>
        <restriction base="string">
          <minLength value="1"/>
          <maxLength value="30"/>
        </restriction>
      </simpleType>
    </element>
    <element name="TRANSPONDER_ID" minOccurs="0">
      <simpleType>
        <restriction base="string">
          <maxLength value="10"/>
        </restriction>
      </simpleType>
    </element>
    <element name="TRANSPONDER_UPDATE_DATE" type="date"/>
  </sequence>
</complexType>
```

</schema>

# XML

## Background

XML is now the preferred way for the state CVIEW system to exchange data with the federal SAFER system. It is also the method used in the open source XCVIEW Washington state system that imports data from state legacy systems to XCVIEW. The transactions associated with each state system have their XML transactions available on the left menu of the web version (<http://cs.uic.edu/~jhayward/CVISN>) and the last section in the pdf version.

All of these XML transactions use a global XML type file which is included in this section. In addition, the new SSRS transactions will have new XML transactions which are included in the SSRS section.

## Global XML

Below is the global XML type file included in each of the transaction XML specifications.

### globalTypes.xsd

```
<?xml version="1.0"?>
<schema xmlns="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified"
version="1.0" xml:lang="EN">
  <simpleType name="globalAddressTypeValues">
    <restriction base="string">
      <enumeration value="MA"/>
      <enumeration value="PH"/>
    </restriction>
  </simpleType>
  <simpleType name="globalIRPAccountTypeValues">
    <restriction base="string">
      <enumeration value="I"/>
      <enumeration value="S"/>
      <!-- IRP Account -->
      <!-- State Specific Account -->
    </restriction>
  </simpleType>
  <simpleType name="globalNameTypeValues">
    <restriction base="string">
      <enumeration value="LG"/>
      <enumeration value="DB"/>
    </restriction>
  </simpleType>
  <simpleType name="globalSimpleStatusType">
    <restriction base="string">
      <enumeration value="0"/>
      <enumeration value="1"/>
      <!-- false/no -->
      <!-- true/yes -->
    </restriction>
  </simpleType>
</schema>
```

## XML

```
</restriction>
</simpleType>
<simpleType name="globalYesNoType">
  <restriction base="string">
    <enumeration value="Y"/>
    <enumeration value="N"/>
    <!-- Yes -->
    <!-- No -->
  </restriction>
</simpleType>
<simpleType name="globalCarrierIdNumberType">
  <restriction base="string">
    <minLength value="1"/>
    <maxLength value="12"/>
  </restriction>
</simpleType>
<simpleType name="globalOptCarrierIdNumberType">
  <restriction base="string">
    <maxLength value="12"/>
  </restriction>
</simpleType>
<simpleType name="globalOptString90Type">
  <restriction base="string">
    <maxLength value="90"/>
  </restriction>
</simpleType>
<simpleType name="globalString90Type">
  <restriction base="string">
    <minLength value="1"/>
    <maxLength value="90"/>
  </restriction>
</simpleType>
<simpleType name="globalZipType">
  <restriction base="string">
    <minLength value="1"/>
    <maxLength value="10"/>
  </restriction>
</simpleType>
<simpleType name="globalOptionalDateType">
  <union memberTypes="date">
    <simpleType>
      <restriction base="string">
        <maxLength value="0"/>
      </restriction>
    </simpleType>
  </union>
</simpleType>
<simpleType name="globalOptionalDateTimeType">
  <union memberTypes="dateTime">
    <simpleType>
      <restriction base="string">
```

```

        <maxLength value="0"/>
    </restriction>
</simpleType>
</union>
</simpleType>
<simpleType name="globalString6Type">
    <restriction base="string">
        <maxLength value="6"/>
    </restriction>
</simpleType>
<simpleType name="globalCharType">
    <restriction base="string">
        <minLength value="1"/>
        <maxLength value="1"/>
        <whiteSpace value="preserve"/>
    </restriction>
</simpleType>
<simpleType name="globalOptCharType">
    <restriction base="string">
        <minLength value="0"/>
        <maxLength value="1"/>
        <whiteSpace value="preserve"/>
    </restriction>
</simpleType>
<simpleType name="globalJurisdictionType">
    <restriction base="string">
        <enumeration value="AB"/>
        <enumeration value="BC"/>
        <enumeration value="MB"/>
        <enumeration value="NB"/>
        <enumeration value="NF"/>
        <enumeration value="NS"/>
        <enumeration value="NT"/>
        <enumeration value="ON"/>
        <enumeration value="PE"/>
        <enumeration value="SN"/>
        <enumeration value="SK"/>
        <enumeration value="QC"/>
        <enumeration value="PQ"/>
        <enumeration value="YT"/>
        <enumeration value="AG"/>
        <enumeration value="BN"/>
        <enumeration value="BS"/>
        <enumeration value="CH"/>
        <enumeration value="CI"/>
        <enumeration value="CL"/>
        <enumeration value="CP"/>
        <enumeration value="CS"/>
        <enumeration value="DF"/>
        <enumeration value="DG"/>
        <enumeration value="GE"/>
    </restriction>
</simpleType>

```

## XML

```
<enumeration value="GJ"/>
<enumeration value="HD"/>
<enumeration value="JA"/>
<enumeration value="MC"/>
<enumeration value="MR"/>
<enumeration value="NA"/>
<enumeration value="NL"/>
<enumeration value="OA"/>
<enumeration value="PU"/>
<enumeration value="QE"/>
<enumeration value="QI"/>
<enumeration value="SI"/>
<enumeration value="SL"/>
<enumeration value="SO"/>
<enumeration value="TA"/>
<enumeration value="TB"/>
<enumeration value="TL"/>
<enumeration value="VC"/>
<enumeration value="YU"/>
<enumeration value="ZA"/>
<enumeration value="AK"/>
<enumeration value="AL"/>
<enumeration value="AR"/>
<enumeration value="AS"/>
<enumeration value="AZ"/>
<enumeration value="CA"/>
<enumeration value="CO"/>
<enumeration value="CT"/>
<enumeration value="DC"/>
<enumeration value="DE"/>
<enumeration value="FL"/>
<enumeration value="FM"/>
<enumeration value="GA"/>
<enumeration value="GU"/>
<enumeration value="HI"/>
<enumeration value="IA"/>
<enumeration value="ID"/>
<enumeration value="IL"/>
<enumeration value="IN"/>
<enumeration value="KS"/>
<enumeration value="KY"/>
<enumeration value="LA"/>
<enumeration value="MA"/>
<enumeration value="MD"/>
<enumeration value="ME"/>
<enumeration value="MH"/>
<enumeration value="MI"/>
<enumeration value="MN"/>
<enumeration value="MO"/>
<enumeration value="MP"/>
<enumeration value="MS"/>
```



## XML

```
<enumeration value="MT"/>
<enumeration value="MX"/>
<enumeration value="NC"/>
<enumeration value="ND"/>
<enumeration value="NE"/>
<enumeration value="NH"/>
<enumeration value="NJ"/>
<enumeration value="NM"/>
<enumeration value="NV"/>
<enumeration value="NY"/>
<enumeration value="OH"/>
<enumeration value="OK"/>
<enumeration value="OR"/>
<enumeration value="PA"/>
<enumeration value="PR"/>
<enumeration value="PW"/>
<enumeration value="RI"/>
<enumeration value="SC"/>
<enumeration value="SD"/>
<enumeration value="TN"/>
<enumeration value="TX"/>
<enumeration value="UM"/>
<enumeration value="UT"/>
<enumeration value="VA"/>
<enumeration value="VI"/>
<enumeration value="VT"/>
<enumeration value="WA"/>
<enumeration value="WI"/>
<enumeration value="WV"/>
<enumeration value="WY"/>
<!-- Alberta -->
<!-- British Columbia -->
<!-- Manitoba -->
<!-- New Brunswick -->
<!-- Newfoundland -->
<!-- Nova Scotia -->
<!-- Northwest Territories -->
<!-- Ontario -->
<!-- Prince Edward Island -->
<!-- Saskatchewan -->
<!-- Saskatchewan -->
<!-- Quebec -->
<!-- Quebec -->
<!-- Yukon Territory -->
<!-- Aguascalientes -->
<!-- Baja California Norte -->
<!-- Baja California Sur -->
<!-- Coahuila -->
<!-- Chihuahua -->
<!-- Colima -->
<!-- Campeche -->
```

## XML

```
<!-- Chiapas -->
<!-- Distrito Federal -->
<!-- Durango -->
<!-- Guerrero -->
<!-- Guanajuato -->
<!-- Hidalgo -->
<!-- Jalisco -->
<!-- Michoacan -->
<!-- Morelos -->
<!-- Nayarit -->
<!-- Nuevo Leon -->
<!-- Oaxaca -->
<!-- Puebla -->
<!-- Queretaro -->
<!-- Quintana Roo -->
<!-- Sinaloa -->
<!-- San Luis Potosi -->
<!-- Sonora -->
<!-- Tamaulipas -->
<!-- Tabasco -->
<!-- Tlaxcala -->
<!-- Veracruz -->
<!-- Yucatan -->
<!-- Zacatecas -->
<!-- Alaska -->
<!-- Alabama -->
<!-- Arkansas -->
<!-- American Samoa -->
<!-- Arizona -->
<!-- California -->
<!-- Colorado -->
<!-- Connecticut -->
<!-- District of Columbia -->
<!-- Delaware -->
<!-- Florida -->
<!-- Federated States Of Micronesia -->
<!-- Georgia -->
<!-- Guam -->
<!-- Hawaii -->
<!-- Iowa -->
<!-- Idaho -->
<!-- Illinois -->
<!-- Indiana -->
<!-- Kansas -->
<!-- Kentucky -->
<!-- Louisiana -->
<!-- Massachusetts -->
<!-- Maryland -->
<!-- Maine -->
<!-- Marshall Islands -->
<!-- Michigan -->
```

## XML

```
<!-- Minnesota -->
<!-- Missouri -->
<!-- Northern Mariana Islands -->
<!-- Mississippi -->
<!-- Montana -->
<!-- Mexico -->
<!-- North Carolina -->
<!-- North Dakota -->
<!-- Nebraska -->
<!-- New Hampshire -->
<!-- New Jersey -->
<!-- New Mexico -->
<!-- Nevada -->
<!-- New York -->
<!-- Ohio -->
<!-- Oklahoma -->
<!-- Oregon -->
<!-- Pennsylvania -->
<!-- Puerto Rico -->
<!-- Palau -->
<!-- Rhode Island -->
<!-- South Carolina -->
<!-- South Dakota -->
<!-- Tennessee -->
<!-- Texas -->
<!-- United States Minor Outlying Islands -->
<!-- Utah -->
<!-- Virginia -->
<!-- Virgin Islands -->
<!-- Vermont -->
<!-- Washington -->
<!-- Wisconsin -->
<!-- West Virginia -->
<!-- Wyoming -->
</restriction>
</simpleType>
<!-- vehicle license plate states used by ASPEN in Inspection reports -->
<simpleType name="globalIRVEHJurisdictionType">
  <restriction base="string">
    <enumeration value="AB"/>
    <enumeration value="BC"/>
    <enumeration value="MB"/>
    <enumeration value="NB"/>
    <enumeration value="NF"/>
    <enumeration value="NS"/>
    <enumeration value="NT"/>
    <enumeration value="ON"/>
    <enumeration value="PE"/>
    <enumeration value="SK"/>
    <enumeration value="PQ"/>
    <enumeration value="YT"/>
  </restriction>
</simpleType>
```

## XML

```
<enumeration value="AG"/>
<enumeration value="BN"/>
<enumeration value="BS"/>
<enumeration value="CH"/>
<enumeration value="CI"/>
<enumeration value="CL"/>
<enumeration value="CP"/>
<enumeration value="CS"/>
<enumeration value="CZ"/>
<enumeration value="DF"/>
<enumeration value="DG"/>
<enumeration value="GE"/>
<enumeration value="GJ"/>
<enumeration value="HD"/>
<enumeration value="JA"/>
<enumeration value="MC"/>
<enumeration value="MR"/>
<enumeration value="MX"/>
<enumeration value="NA"/>
<enumeration value="NL"/>
<enumeration value="OA"/>
<enumeration value="PU"/>
<enumeration value="QE"/>
<enumeration value="QI"/>
<enumeration value="SI"/>
<enumeration value="SL"/>
<enumeration value="SO"/>
<enumeration value="TA"/>
<enumeration value="TB"/>
<enumeration value="TL"/>
<enumeration value="VC"/>
<enumeration value="YU"/>
<enumeration value="ZA"/>
<enumeration value="AK"/>
<enumeration value="AL"/>
<enumeration value="AR"/>
<enumeration value="AS"/>
<enumeration value="AZ"/>
<enumeration value="CA"/>
<enumeration value="CO"/>
<enumeration value="CT"/>
<enumeration value="DC"/>
<enumeration value="DE"/>
<enumeration value="FL"/>
<enumeration value="FM"/>
<enumeration value="GA"/>
<enumeration value="GU"/>
<enumeration value="HI"/>
<enumeration value="IA"/>
<enumeration value="ID"/>
<enumeration value="IL"/>
```

## XML

```
<enumeration value="IN"/>
<enumeration value="KS"/>
<enumeration value="KY"/>
<enumeration value="LA"/>
<enumeration value="MA"/>
<enumeration value="MD"/>
<enumeration value="ME"/>
<enumeration value="MH"/>
<enumeration value="MI"/>
<enumeration value="MN"/>
<enumeration value="MO"/>
<enumeration value="MP"/>
<enumeration value="MS"/>
<enumeration value="MT"/>
<enumeration value="NC"/>
<enumeration value="ND"/>
<enumeration value="NE"/>
<enumeration value="NH"/>
<enumeration value="NJ"/>
<enumeration value="NM"/>
<enumeration value="NV"/>
<enumeration value="NY"/>
<enumeration value="OH"/>
<enumeration value="OK"/>
<enumeration value="OR"/>
<enumeration value="PA"/>
<enumeration value="PR"/>
<enumeration value="PW"/>
<enumeration value="RI"/>
<enumeration value="SC"/>
<enumeration value="SD"/>
<enumeration value="TN"/>
<enumeration value="TX"/>
<enumeration value="UM"/>
<enumeration value="UT"/>
<enumeration value="VA"/>
<enumeration value="VI"/>
<enumeration value="VT"/>
<enumeration value="WA"/>
<enumeration value="WI"/>
<enumeration value="WV"/>
<enumeration value="WY"/>
<enumeration value="BZ"/>
<enumeration value="CR"/>
<enumeration value="ES"/>
<enumeration value="GT"/>
<enumeration value="HO"/>
<enumeration value="NI"/>
<enumeration value="OT"/>
<enumeration value="PN"/>
<enumeration value="UK"/>
```

## XML

```
<!-- Alberta -->
<!-- British Columbia -->
<!-- Manitoba -->
<!-- New Brunswick -->
<!-- Newfoundland -->
<!-- Nova Scotia -->
<!-- Northwest Territories -->
<!-- Ontario -->
<!-- Prince Edward Island -->
<!-- Saskatchewan -->
<!-- Quebec -->
<!-- Yukon Territory -->
<!-- Aguascalientes -->
<!-- Baja California Norte -->
<!-- Baja California Sur -->
<!-- Coahuila -->
<!-- Chihuahua -->
<!-- Colima -->
<!-- Campeche -->
<!-- Chiapas -->
<!-- Canal Zone -->
<!-- Distrito Federal -->
<!-- Durango -->
<!-- Guerrero -->
<!-- Guanajuato -->
<!-- Hidalgo -->
<!-- Jalisco -->
<!-- Michoacan -->
<!-- Morelos -->
<!-- Mexico -->
<!-- Nayarit -->
<!-- Nuevo Leon -->
<!-- Oaxaca -->
<!-- Puebla -->
<!-- Queretaro -->
<!-- Quintana Roo -->
<!-- Sinaloa -->
<!-- San Luis Potosi -->
<!-- Sonora -->
<!-- Tamaulipas -->
<!-- Tabasco -->
<!-- Tlaxcala -->
<!-- Veracruz -->
<!-- Yucatan -->
<!-- Zacatecas -->
<!-- Alaska -->
<!-- Alabama -->
<!-- Arkansas -->
<!-- American Samoa -->
<!-- Arizona -->
<!-- California -->
```

## XML

```
<!-- Colorado -->
<!-- Connecticut -->
<!-- District of Columbia -->
<!-- Delaware -->
<!-- Florida -->
<!-- Federated States Of Micronesia -->
<!-- Georgia -->
<!-- Guam -->
<!-- Hawaii -->
<!-- Iowa -->
<!-- Idaho -->
<!-- Illinois -->
<!-- Indiana -->
<!-- Kansas -->
<!-- Kentucky -->
<!-- Louisiana -->
<!-- Massachusetts -->
<!-- Maryland -->
<!-- Maine -->
<!-- Marshall Islands -->
<!-- Michigan -->
<!-- Minnesota -->
<!-- Missouri -->
<!-- Northern Mariana Islands -->
<!-- Mississippi -->
<!-- Montana -->
<!-- Mexico -->
<!-- North Carolina -->
<!-- North Dakota -->
<!-- Nebraska -->
<!-- New Hampshire -->
<!-- New Jersey -->
<!-- New Mexico -->
<!-- Nevada -->
<!-- New York -->
<!-- Ohio -->
<!-- Oklahoma -->
<!-- Oregon -->
<!-- Pennsylvania -->
<!-- Puerto Rico -->
<!-- Palau -->
<!-- Rhode Island -->
<!-- South Carolina -->
<!-- South Dakota -->
<!-- Tennessee -->
<!-- Texas -->
<!-- United States Minor Outlying Islands -->
<!-- Utah -->
<!-- Virginia -->
<!-- Virgin Islands -->
<!-- Vermont -->
```

## XML

```
<!-- Washington -->
<!-- Wisconsin -->
<!-- West Virginia -->
<!-- Wyoming -->
<!-- Belize -->
<!-- Costa Rica -->
<!-- El Salvador -->
<!-- Guatemala -->
<!-- Honduras -->
<!-- Nicaragua -->
<!-- Other -->
<!-- Panama -->
<!-- Unknown -->
</restriction>
</simpleType>
<simpleType name="globalCountryType">
  <restriction base="string">
    <enumeration value="CA"/>
    <enumeration value="M"/>
    <enumeration value="MX"/>
    <enumeration value="P"/>
    <enumeration value="US"/>
    <!-- Canada -->
    <!-- Mexican State -->
    <!-- Mexico -->
    <!-- American Territory -->
    <!-- United States of America -->
  </restriction>
</simpleType>
<simpleType name="globalOptCountryType">
  <union>
    <simpleType>
      <restriction base="string">
        <maxLength value="0"/>
      </restriction>
    </simpleType>
    <simpleType>
      <restriction base="string">
        <enumeration value="CA"/>
        <enumeration value="M"/>
        <enumeration value="MX"/>
        <enumeration value="P"/>
        <enumeration value="US"/>
        <!-- Canada -->
        <!-- Mexican State -->
        <!-- Mexico -->
        <!-- American Territory -->
        <!-- United States of America -->
      </restriction>
    </simpleType>
  </union>
```



## XML

```
</simpleType>
<simpleType name="globalVEHCountryType">
  <restriction base="string">
    <enumeration value="CA"/>
    <enumeration value="MX"/>
    <enumeration value="US"/>
    <enumeration value="BZ"/>
    <enumeration value="CR"/>
    <enumeration value="ES"/>
    <enumeration value="GT"/>
    <enumeration value="HO"/>
    <enumeration value="NI"/>
    <enumeration value="OT"/>
    <enumeration value="PN"/>
    <enumeration value="UK"/>
    <enumeration value="M"/>
    <enumeration value="P"/>
    <!-- Canada -->
    <!-- Mexico -->
    <!-- United States of America -->
    <!-- Belize -->
    <!-- Costa Rica -->
    <!-- El Salvador -->
    <!-- Guatemala -->
    <!-- Honduras -->
    <!-- Nicaragua -->
    <!-- Other -->
    <!-- Panama -->
    <!-- Unknown -->
    <!-- Mexican State -->
    <!-- American Territory -->
  </restriction>
</simpleType>
<simpleType name="globalOptVEHCountryType">
  <union>
    <simpleType>
      <restriction base="string">
        <maxLength value="0"/>
      </restriction>
    </simpleType>
    <simpleType>
      <restriction base="string">
        <enumeration value="CA"/>
        <enumeration value="MX"/>
        <enumeration value="US"/>
        <enumeration value="BZ"/>
        <enumeration value="CR"/>
        <enumeration value="ES"/>
        <enumeration value="GT"/>
        <enumeration value="HO"/>
        <enumeration value="NI"/>
      </restriction>
    </simpleType>
  </union>
</simpleType>
```

## XML

```
<enumeration value="OT"/>
<enumeration value="PN"/>
<enumeration value="UK"/>
<enumeration value="M"/>
<enumeration value="P"/>
<!-- Canada -->
<!-- Mexico -->
<!-- United States of America -->
<!-- Belize -->
<!-- Costa Rica -->
<!-- El Salvador -->
<!-- Guatemala -->
<!-- Honduras -->
<!-- Nicaragua -->
<!-- Other -->
<!-- Panama -->
<!-- Unknown -->
<!-- Mexican State -->
<!-- American Territory -->
</restriction>
</simpleType>
</union>
</simpleType>
<!-- *ICD* state and country are switched between appendix and lookup -->
<!-- table -->
<simpleType name="globalFullJurisdictionType">
  <restriction base="string">
    <enumeration value="CAAB"/>
    <enumeration value="CABC"/>
    <enumeration value="CAMB"/>
    <enumeration value="CANB"/>
    <enumeration value="CANF"/>
    <enumeration value="CANS"/>
    <enumeration value="CANT"/>
    <enumeration value="CAON"/>
    <enumeration value="CAPE"/>
    <enumeration value="CAQC"/>
    <enumeration value="CAPQ"/>
    <enumeration value="CASN"/>
    <enumeration value="CASK"/>
    <enumeration value="CAYT"/>
    <enumeration value="MXAG"/>
    <enumeration value="MXBN"/>
    <enumeration value="MXBS"/>
    <enumeration value="MXCH"/>
    <enumeration value="MXCI"/>
    <enumeration value="MXCL"/>
    <enumeration value="MXCP"/>
    <enumeration value="MXCS"/>
    <enumeration value="MXDF"/>
    <enumeration value="MXDG"/>
  </restriction>
</simpleType>
</union>
</simpleType>
```

## XML

```
<enumeration value="MXGE"/>
<enumeration value="MXGJ"/>
<enumeration value="MXHD"/>
<enumeration value="MXJA"/>
<enumeration value="MXMC"/>
<enumeration value="MXMR"/>
<enumeration value="MXMX"/>
<enumeration value="MXNA"/>
<enumeration value="MXNL"/>
<enumeration value="MXOA"/>
<enumeration value="MXPU"/>
<enumeration value="MXQE"/>
<enumeration value="MXQI"/>
<enumeration value="MXSI"/>
<enumeration value="MXSL"/>
<enumeration value="MXSO"/>
<enumeration value="MXTA"/>
<enumeration value="MXTB"/>
<enumeration value="MXTL"/>
<enumeration value="MXVC"/>
<enumeration value="MXYU"/>
<enumeration value="MXZA"/>
<enumeration value="USAK"/>
<enumeration value="USAL"/>
<enumeration value="USAR"/>
<enumeration value="USAS"/>
<enumeration value="USAZ"/>
<enumeration value="USCA"/>
<enumeration value="USCO"/>
<enumeration value="USCT"/>
<enumeration value="USDC"/>
<enumeration value="USDE"/>
<enumeration value="USFL"/>
<enumeration value="USFM"/>
<enumeration value="USGA"/>
<enumeration value="USGU"/>
<enumeration value="USHI"/>
<enumeration value="USIA"/>
<enumeration value="USID"/>
<enumeration value="USIL"/>
<enumeration value="USIN"/>
<enumeration value="USKS"/>
<enumeration value="USKY"/>
<enumeration value="USLA"/>
<enumeration value="USMA"/>
<enumeration value="USMD"/>
<enumeration value="USME"/>
<enumeration value="USMH"/>
<enumeration value="USMI"/>
<enumeration value="USMN"/>
<enumeration value="USMO"/>
```

## XML

```
<enumeration value="USMP"/>
<enumeration value="USMS"/>
<enumeration value="USMT"/>
<enumeration value="USNC"/>
<enumeration value="USND"/>
<enumeration value="USNE"/>
<enumeration value="USNH"/>
<enumeration value="USNJ"/>
<enumeration value="USNM"/>
<enumeration value="USNV"/>
<enumeration value="USNY"/>
<enumeration value="USOH"/>
<enumeration value="USOK"/>
<enumeration value="USOR"/>
<enumeration value="USPA"/>
<enumeration value="USPR"/>
<enumeration value="USPW"/>
<enumeration value="USRI"/>
<enumeration value="USSC"/>
<enumeration value="USSD"/>
<enumeration value="USTN"/>
<enumeration value="USTX"/>
<enumeration value="USUM"/>
<enumeration value="USUT"/>
<enumeration value="USVA"/>
<enumeration value="USVI"/>
<enumeration value="USVT"/>
<enumeration value="USWA"/>
<enumeration value="USWI"/>
<enumeration value="USWV"/>
<enumeration value="USWY"/>
<!-- Alberta -->
<!-- British Columbia -->
<!-- Manitoba -->
<!-- New Brunswick -->
<!-- Newfoundland -->
<!-- Nova Scotia -->
<!-- Northwest Territories -->
<!-- Ontario -->
<!-- Prince Edward Island -->
<!-- Quebec -->
<!-- Quebec -->
<!-- Saskatchewan -->
<!-- Saskatchewan -->
<!-- Yukon Territory -->
<!-- Aguascalientes -->
<!-- Baja California Norte -->
<!-- Baja California Sur -->
<!-- Coahuila -->
<!-- Chihuahua -->
<!-- Colima -->
```

## XML

```
<!-- Campeche -->
<!-- Chiapas -->
<!-- Distrito Federal -->
<!-- Durango -->
<!-- Guerrero -->
<!-- Guanajuato -->
<!-- Hidalgo -->
<!-- Jalisco -->
<!-- Michoacan -->
<!-- Morelos -->
<!-- Mexico -->
<!-- Nayarit -->
<!-- Nuevo Leon -->
<!-- Oaxaca -->
<!-- Puebla -->
<!-- Queretaro -->
<!-- Quintana Roo -->
<!-- Sinaloa -->
<!-- San Luis Potosi -->
<!-- Sonora -->
<!-- Tamaulipas -->
<!-- Tabasco -->
<!-- Tlaxcala -->
<!-- Veracruz -->
<!-- Yucatan -->
<!-- Zacatecas -->
<!-- Alaska -->
<!-- Alabama -->
<!-- Arkansas -->
<!-- American Samoa -->
<!-- Arizona -->
<!-- California -->
<!-- Colorado -->
<!-- Connecticut -->
<!-- District of Columbia -->
<!-- Delaware -->
<!-- Florida -->
<!-- Federated States Of Micronesia -->
<!-- Georgia -->
<!-- Guam -->
<!-- Hawaii -->
<!-- Iowa -->
<!-- Idaho -->
<!-- Illinois -->
<!-- Indiana -->
<!-- Kansas -->
<!-- Kentucky -->
<!-- Louisiana -->
<!-- Massachusetts -->
<!-- Maryland -->
<!-- Maine -->
```

## XML

```
<!-- Marshall Islands -->
<!-- Michigan -->
<!-- Minnesota -->
<!-- Missouri -->
<!-- Northern Mariana Islands -->
<!-- Mississippi -->
<!-- Montana -->
<!-- North Carolina -->
<!-- North Dakota -->
<!-- Nebraska -->
<!-- New Hampshire -->
<!-- New Jersey -->
<!-- New Mexico -->
<!-- Nevada -->
<!-- New York -->
<!-- Ohio -->
<!-- Oklahoma -->
<!-- Oregon -->
<!-- Pennsylvania -->
<!-- Puerto Rico -->
<!-- Palau -->
<!-- Rhode Island -->
<!-- South Carolina -->
<!-- South Dakota -->
<!-- Tennessee -->
<!-- Texas -->
<!-- United States Minor Outlying Islands -->
<!-- Utah -->
<!-- Virginia -->
<!-- Virgin Islands -->
<!-- Vermont -->
<!-- Washington -->
<!-- Wisconsin -->
<!-- West Virginia -->
<!-- Wyoming -->
</restriction>
</simpleType>
<simpleType name="globalTimeZoneType">
  <restriction base="string">
    <enumeration value="AD"/>
    <enumeration value="AS"/>
    <enumeration value="AT"/>
    <enumeration value="CD"/>
    <enumeration value="CS"/>
    <enumeration value="CT"/>
    <enumeration value="ED"/>
    <enumeration value="ES"/>
    <enumeration value="ET"/>
    <enumeration value="HD"/>
    <enumeration value="HS"/>
    <enumeration value="HT"/>
  </restriction>
</simpleType>
```

## XML

```
<enumeration value="MD"/>
<enumeration value="MS"/>
<enumeration value="MT"/>
<enumeration value="ND"/>
<enumeration value="NS"/>
<enumeration value="NT"/>
<enumeration value="PD"/>
<enumeration value="PS"/>
<enumeration value="PT"/>
<enumeration value="TD"/>
<enumeration value="TS"/>
<enumeration value="TT"/>
<enumeration value="10"/>
<enumeration value="12"/>
<enumeration value="14"/>
<!-- Alaska Daylight -->
<!-- Alaska Standard -->
<!-- Alaska -->
<!-- Central Daylight -->
<!-- Central Standard -->
<!-- Central -->
<!-- Easter Daylight -->
<!-- Eastern Standard -->
<!-- Eastern -->
<!-- Hawaii-Aleutian Daylight -->
<!-- Hawaii-Aleutian Standard -->
<!-- Hawaii-Aleutian -->
<!-- Mountain Daylight -->
<!-- Mountain Standard -->
<!-- Mountain -->
<!-- Newfoundland Daylight -->
<!-- Newfoundland Standard -->
<!-- Newfoundland -->
<!-- Pacific Daylight -->
<!-- Pacific Standard -->
<!-- Pacific -->
<!-- Atlantic Daylight -->
<!-- Atlantic Standard -->
<!-- Atlantic -->
<!-- Guam, N. Mariana Is. -->
<!-- Wake Is. -->
<!-- Am. Samoa, Midway Is. -->
</restriction>
</simpleType>
<simpleType name="globalIftaStatusType">
  <restriction base="string">
    <enumeration value="0"/>
    <enumeration value="1"/>
    <enumeration value="2"/>
    <enumeration value="3"/>
    <enumeration value="4"/>
  </restriction>
</simpleType>
```

## XML

```
<enumeration value="5"/>
<enumeration value="6"/>
<enumeration value="7"/>
<enumeration value="8"/>
<enumeration value="9"/>
<enumeration value="A"/>
<enumeration value="B"/>
<enumeration value="C"/>
<enumeration value="D"/>
<!-- Not Available -->
<!-- Active -->
<!-- Active Pending -->
<!-- Active Delinquent -->
<!-- Closed -->
<!-- Closed Pending -->
<!-- Suspended -->
<!-- Canceled -->
<!-- Canceled Pending -->
<!-- Inactive -->
<!-- Inactive Delinquent -->
<!-- Released -->
<!-- Revoked -->
<!-- Revoke Pending -->
</restriction>
</simpleType>
<simpleType name="globalVehicleUseType">
  <restriction base="string">
    <enumeration value="2B"/>
    <enumeration value="2F"/>
    <enumeration value="3B"/>
    <enumeration value="3F"/>
    <enumeration value="AA"/>
    <enumeration value="AC"/>
    <enumeration value="AG"/>
    <enumeration value="AM"/>
    <enumeration value="AU"/>
    <enumeration value="BS"/>
    <enumeration value="BT"/>
    <enumeration value="BX"/>
    <enumeration value="CB"/>
    <enumeration value="CD"/>
    <enumeration value="CK"/>
    <enumeration value="CM"/>
    <enumeration value="CO"/>
    <enumeration value="CP"/>
    <enumeration value="CR"/>
    <enumeration value="CS"/>
    <enumeration value="CT"/>
    <enumeration value="CV"/>
    <enumeration value="DB"/>
    <enumeration value="DL"/>
  </restriction>
</simpleType>
```



## XML

```
<enumeration value="DP"/>
<enumeration value="DT"/>
<enumeration value="ES"/>
<enumeration value="FB"/>
<enumeration value="FI"/>
<enumeration value="FL"/>
<enumeration value="FT"/>
<enumeration value="GG"/>
<enumeration value="HB"/>
<enumeration value="HC"/>
<enumeration value="HD"/>
<enumeration value="HK"/>
<enumeration value="HM"/>
<enumeration value="HT"/>
<enumeration value="HU"/>
<enumeration value="HV"/>
<enumeration value="IF"/>
<enumeration value="JE"/>
<enumeration value="LB"/>
<enumeration value="LG"/>
<enumeration value="LI"/>
<enumeration value="LL"/>
<enumeration value="LS"/>
<enumeration value="M2"/>
<enumeration value="M3"/>
<enumeration value="MA"/>
<enumeration value="MB"/>
<enumeration value="MC"/>
<enumeration value="MH"/>
<enumeration value="MK"/>
<enumeration value="MT"/>
<enumeration value="P1"/>
<enumeration value="P2"/>
<enumeration value="P3"/>
<enumeration value="PK"/>
<enumeration value="PN"/>
<enumeration value="PS"/>
<enumeration value="PU"/>
<enumeration value="PW"/>
<enumeration value="RC"/>
<enumeration value="RD"/>
<enumeration value="RE"/>
<enumeration value="RF"/>
<enumeration value="RH"/>
<enumeration value="RN"/>
<enumeration value="RT"/>
<enumeration value="RV"/>
<enumeration value="SB"/>
<enumeration value="SK"/>
<enumeration value="SL"/>
<enumeration value="SP"/>
```

## XML

```
<enumeration value="SR"/>
<enumeration value="ST"/>
<enumeration value="SW"/>
<enumeration value="TB"/>
<enumeration value="TC"/>
<enumeration value="TD"/>
<enumeration value="TE"/>
<enumeration value="TK"/>
<enumeration value="TL"/>
<enumeration value="TN"/>
<enumeration value="TP"/>
<enumeration value="TR"/>
<enumeration value="TT"/>
<enumeration value="TU"/>
<enumeration value="TV"/>
<enumeration value="TX"/>
<enumeration value="UT"/>
<enumeration value="V1"/>
<enumeration value="V2"/>
<enumeration value="V3"/>
<enumeration value="VL"/>
<enumeration value="VN"/>
<enumeration value="VT"/>
<enumeration value="WK"/>
<enumeration value="WR"/>
<enumeration value="WW"/>
<enumeration value="ZZ"/>
<!-- Double Bottom Trailer -->
<!-- Full Double Bottom Trailer -->
<!-- Triple Bottom Trailer -->
<!-- Full Triple Bottom Trailer -->
<!-- Auxiliary Axle -->
<!-- Auto Carrier -->
<!-- Agricultural/Farm -->
<!-- Ambulance -->
<!-- Automobile -->
<!-- Bus -->
<!-- Boat Trailer -->
<!-- Box Trailer -->
<!-- Cab and Chassis -->
<!-- Converter Dolly/Converter Gear -->
<!-- Cargo Tank Truck -->
<!-- Concrete or Transit Mixer -->
<!-- Convertible -->
<!-- Coupe -->
<!-- Crane -->
<!-- Construction -->
<!-- Cargo Tank Trailer -->
<!-- Combination Vehicle -->
<!-- Double Bottom -->
<!-- Dolly Trailer -->
```

## XML

```
<!-- Dump Trailer -->
<!-- Dump Truck -->
<!-- Executive Sedan -->
<!-- Flatbed/Platform -->
<!-- Fire Truck -->
<!-- Flatbed Trailer -->
<!-- Full Trailer -->
<!-- Garbage or Refuse Truck -->
<!-- Hatchback -->
<!-- HazMat Cargo Tank -->
<!-- Hardtop -->
<!-- HazMat Truck -->
<!-- Household Mover -->
<!-- HazMat Trailer -->
<!-- HazMat Tank Trailer -->
<!-- HazMat Tank Truck -->
<!-- Interstate Farm Vehicle -->
<!-- Jeep -->
<!-- Lowbed/Boy Trailer -->
<!-- Log Truck -->
<!-- Limousine -->
<!-- Carryall -->
<!-- Livestock Trailer -->
<!-- Motorized Home B -->
<!-- Motorized Home C -->
<!-- Motorized Home -->
<!-- Modular Building -->
<!-- Motorcycle -->
<!-- Mobile Home -->
<!-- Motor Truck -->
<!-- Mobile Home Trailer -->
<!-- Pickup Truck: 1 Ton -->
<!-- Pickup Truck: 1/2 Ton -->
<!-- Pickup Truck: 3/4 Ton -->
<!-- Pickup Truck -->
<!-- Panel -->
<!-- Pusher -->
<!-- Pickup -->
<!-- Power Unit -->
<!-- Rental Car -->
<!-- Roadster -->
<!-- Refrigerated Van Trailer -->
<!-- Refrigerated Van -->
<!-- Retractable Hardtop -->
<!-- Recreational Van -->
<!-- Road Tractor -->
<!-- Recreational Vehicle -->
<!-- School Bus -->
<!-- Service Body Truck -->
<!-- Stake or Rack -->
<!-- Special Truck -->
```

## XML

```
<!-- Semi-Trailer -->
<!-- Straight Truck -->
<!-- Station Wagon -->
<!-- Twin Beam -->
<!-- Truck -->
<!-- Tow Dolly -->
<!-- Tow Truck -->
<!-- Truck (Single) -->
<!-- Travel Trailer -->
<!-- Tank Trailer -->
<!-- Triple -->
<!-- Trailer -->
<!-- Truck Tractor -->
<!-- Truck Trailer -->
<!-- Tank Vehicle -->
<!-- Taxi -->
<!-- Utility Trailer -->
<!-- Van: 1 Ton -->
<!-- Van: 1/2 Ton -->
<!-- Van: 3/4 Ton -->
<!-- Van Trailer -->
<!-- Van -->
<!-- Vanette -->
<!-- Tow/Recovery -->
<!-- Tow Truck Wrecker -->
<!-- Water Well -->
<!-- Other Unlisted Type -->
</restriction>
</simpleType>
<simpleType name="globalIRPStatusCodeType">
  <restriction base="string">
    <enumeration value="0"/>
    <enumeration value="100"/>
    <enumeration value="101"/>
    <enumeration value="111"/>
    <enumeration value="121"/>
    <enumeration value="131"/>
    <enumeration value="140"/>
    <enumeration value="161"/>
    <enumeration value="201"/>
    <enumeration value="501"/>
    <enumeration value="511"/>
    <enumeration value="900"/>
    <enumeration value="901"/>
    <enumeration value="911"/>
    <enumeration value="940"/>
    <enumeration value="941"/>
    <enumeration value="943"/>
    <enumeration value="951"/>
    <enumeration value="952"/>
    <enumeration value="953"/>
  </restriction>
</simpleType>
```

## XML

```
<enumeration value="954"/>
<enumeration value="955"/>
<enumeration value="956"/>
<enumeration value="959"/>
<enumeration value="961"/>
<enumeration value="998"/>
<enumeration value="999"/>
<!-- Not Available (Assumed Current) -->
<!-- Original Carrier Fleet (Generic Active Vehicle Status) -->
<!-- All Credentials Issued -->
<!-- Partial Payment Not Yet Due -->
<!-- Vehicle Added On A Fleet To Fleet Transaction -->
<!-- Outstanding Temporary Authority -->
<!-- Vehicle Conversion Record -->
<!-- Activate Suspended Vehicle -->
<!-- Renewed Active Vehicle -->
<!-- Active Vehicle (Converted) -->
<!-- Inactive (Converted) -->
<!-- Not Current (Generic Inactive Vehicle Status) -->
<!-- Suspended Non Payment -->
<!-- Suspended (Weight Violation) -->
<!-- Vehicle Status Code Not Yet Assigned -->
<!-- Sleeping Vehicle -->
<!-- Prevents Credential Issuance -->
<!-- Vehicle Withdrawn From Operation For No Reported Reason -->
<!-- Vehicle Withdrawn From Operations Due To The Vehicle Needing Maintenance
-->
<!-- Vehicle Withdrawn From Operations Due To The Vehicle Being Sold -->
<!-- Vehicle Withdrawn From Operations Due To The Vehicle Being Stolen -->
<!-- Vehicle Withdrawn From Operations Due To The Vehicle Being Wrecked -->
<!-- Vehicle Withdrawn From Operations Due To The Vehicle Being Salvaged -->
<!-- Vehicle Deleted On A Fleet To Fleet Transaction -->
<!-- Vehicle Suspension Code. -->
<!-- Vehicle Soft Deleted But Treated As Hard -->
<!-- Physically Deleted Vehicle -->
</restriction>
</simpleType>
<simpleType name="globalPowerCodeType">
  <restriction base="string">
    <enumeration value="A"/>
    <enumeration value="B"/>
    <enumeration value="D"/>
    <enumeration value="E"/>
    <enumeration value="G"/>
    <enumeration value="N"/>
    <enumeration value="O"/>
    <enumeration value="P"/>
    <enumeration value="S"/>
    <enumeration value="Z"/>
    <!-- Alcohol -->
    <!-- Butane -->
```

## XML

```
<!-- Diesel -->
<!-- Electric -->
<!-- Gas -->
<!-- Natural Gas -->
<!-- Other (Alcohol) -->
<!-- Propane -->
<!-- Steam -->
<!-- Zero - Not Powered -->
</restriction>
</simpleType>
<simpleType name="globalIRPFleetTypeValues">
  <restriction base="string">
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    <enumeration value="503"/>
  </restriction>
</simpleType>
```

## XML

```
<enumeration value="504"/>
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<enumeration value="A05"/>
<enumeration value="A06"/>
<enumeration value="A07"/>
<enumeration value="A08"/>
<enumeration value="A09"/>
```

## XML

```
<enumeration value="B01"/>
<enumeration value="B02"/>
<enumeration value="B03"/>
<enumeration value="B04"/>
<enumeration value="B05"/>
<enumeration value="B06"/>
<enumeration value="B07"/>
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<enumeration value="B09"/>
<enumeration value="C01"/>
<enumeration value="C02"/>
<enumeration value="C03"/>
<enumeration value="C04"/>
<enumeration value="C05"/>
<enumeration value="C06"/>
<enumeration value="C07"/>
<enumeration value="C08"/>
<enumeration value="C09"/>
</restriction>
</simpleType>
</schema>
```



