CVISN - CVIEW/SAFER DATABASE MAPPING PROJECT

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Research Report FHWA-ICT-07-003

A report of the findings of
ICT R27-14
Commercial Vehicle Information Systems and Networks

Illinois Center for Transportation
March 2007
**Abstract**

Map existing state:
- International Registration Plan carrier and vehicle data by Illinois Secretary of State to the CVIEW/SAFER database.
- Intra state registration carrier and vehicle data by Illinois Secretary of State to CVIEW/SAFER database.
- International Fuel Tax Agreement carrier data by the Illinois Department of Revenue to CVIEW/SAFER database.
- Single State Registration System by the Illinois Commerce Commission to expanded CVIEW database.
- Document completeness of mapping of state carrier IDs to USDOT IDs.
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Acknowledgment

This publication is based on the results of ICT-R27-14, IDOT CVISN Documentation Project. ICT-R27-14 was conducted in cooperation with the Illinois Center for Transportation; the Illinois Department of Transportation, Division of Highways and Office of Planning and Programming, Intelligent Transportation Systems Program Office; and the U.S. Department of Transportation, Federal Highway Administration.

Disclaimer

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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.


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.

- SAFER View Summary Report  
  ([view_sum_report.doc](http://cvisn.fmcsa.dot.gov/downdocs/cvisndocs/6_safer/safer_v50/SAFER_schema.zip))
- SAFER Snapshot Definition Report for Carrier Data  
  ([carrier_snapshot_def_report.doc](http://cvisn.fmcsa.dot.gov/downdocs/cvisndocs/6_safer/safer_v50/SAFER_schema.zip))
- Snapshot Definition Report for Vehicle Data  
  ([vehicle_snapshot_def_report.doc](http://cvisn.fmcsa.dot.gov/downdocs/cvisndocs/6_safer/safer_v50/SAFER_schema.zip))
- SAFER View Definition Report for Carrier Data  
  ([view_matrix_dot30_car_revised11_02.doc](http://cvisn.fmcsa.dot.gov/downdocs/cvisndocs/6_safer/safer_v50/SAFER_schema.zip))
- SAFER View Definition Report for Vehicle Data  
  ([view_matrix_dot30_veh_revised11_02.doc](http://cvisn.fmcsa.dot.gov/downdocs/cvisndocs/6_safer/safer_v50/SAFER_schema.zip))

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

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](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
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=safer
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.
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:

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC_NBR</td>
<td>state ID</td>
</tr>
<tr>
<td>DOT_NBR</td>
<td>federal US DOT ID</td>
</tr>
<tr>
<td>FMCSA_NBR</td>
<td>federal motor carrier safety administration ID</td>
</tr>
</tbody>
</table>

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.

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

Legacy Data Organization - Tables at a Detailed Level

Primary Tables

BASEREG

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Key</th>
<th>Foreign Key Table</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASEREG_ID</td>
<td>bigint</td>
<td>primary key</td>
<td></td>
<td>internal use only</td>
</tr>
<tr>
<td>MC_NBR</td>
<td>bigint</td>
<td>candidate key</td>
<td></td>
<td>state ID (probably should be primary key)</td>
</tr>
<tr>
<td>BASEREG_CD</td>
<td>nvarchar(2)</td>
<td></td>
<td>BASEREG_TAB</td>
<td>special type of registration</td>
</tr>
<tr>
<td>SERVICE_DATE</td>
<td>datetime</td>
<td></td>
<td></td>
<td>date the service was performed</td>
</tr>
<tr>
<td>AGENT_LIST_IND</td>
<td>bit</td>
<td></td>
<td></td>
<td>have agent residency list</td>
</tr>
<tr>
<td>FMCSA_ORDER_IND</td>
<td>bit</td>
<td></td>
<td></td>
<td>have FMCSA authority</td>
</tr>
<tr>
<td>SELF_INS_IND</td>
<td>bit</td>
<td></td>
<td></td>
<td>carrier is self insured</td>
</tr>
<tr>
<td>REQ_INS_AMT</td>
<td>money</td>
<td></td>
<td></td>
<td>required insurance for this carrier</td>
</tr>
<tr>
<td>EMPCODE</td>
<td>nvarchar(32)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Key</td>
<td>Foreign Key Table</td>
<td>Comment</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------</td>
<td>-----</td>
<td>-------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>RECEIPT_ID</td>
<td>bigint</td>
<td>primary key</td>
<td></td>
<td>internal use only</td>
</tr>
<tr>
<td>FEE_CHG_ID</td>
<td>bigint</td>
<td>candidate key (part)</td>
<td></td>
<td>order number</td>
</tr>
<tr>
<td>MC_NBR</td>
<td>bigint</td>
<td>candidate key (part)</td>
<td></td>
<td>state ID</td>
</tr>
<tr>
<td>VOUCHER_ID</td>
<td>bigint</td>
<td></td>
<td>VOUCHER</td>
<td>related to fees due to/from other states</td>
</tr>
<tr>
<td>CARRIER_STATE_CD</td>
<td>nvarchar(2)</td>
<td></td>
<td></td>
<td>base state</td>
</tr>
<tr>
<td>TRAVEL_STATE_CD</td>
<td>nvarchar(2)</td>
<td>candidate key (part)</td>
<td></td>
<td>state traveled in</td>
</tr>
<tr>
<td>VEHICLES</td>
<td>int</td>
<td></td>
<td></td>
<td>number of vehicles for this state for this order</td>
</tr>
<tr>
<td>FEE_AMT</td>
<td>money</td>
<td></td>
<td></td>
<td>amount paid</td>
</tr>
<tr>
<td>REC_CD</td>
<td>nvarchar(2)</td>
<td></td>
<td>REC_TAB</td>
<td>type of vehicles</td>
</tr>
<tr>
<td>RECEIPT_YEAR</td>
<td>int</td>
<td>candidate key (part)</td>
<td></td>
<td>year this receipt is for</td>
</tr>
<tr>
<td>PRINTED_DTE</td>
<td>datetime</td>
<td></td>
<td></td>
<td>timestamp receipt printed</td>
</tr>
<tr>
<td>PRINTED_BY</td>
<td>nvarchar(32)</td>
<td></td>
<td></td>
<td>employee who printed receipt</td>
</tr>
<tr>
<td>ENTERED_DTE</td>
<td>datetime</td>
<td></td>
<td></td>
<td>time receipt entered</td>
</tr>
<tr>
<td>ENTERED_BY</td>
<td>nvarchar(32)</td>
<td></td>
<td></td>
<td>employee who entered receipt</td>
</tr>
<tr>
<td>STAT_CD</td>
<td>nvarchar(32)</td>
<td></td>
<td>STAT_TAB</td>
<td>status code of receipt</td>
</tr>
<tr>
<td>STAT_DTE</td>
<td>datetime</td>
<td></td>
<td></td>
<td>time of STAT_CD entered</td>
</tr>
<tr>
<td>ER_CD_DISP</td>
<td>nvarchar(32)</td>
<td></td>
<td>from ER_TAB</td>
<td>Error message to track down problems</td>
</tr>
</tbody>
</table>
### REGSTRAT (Exempt status)

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

### Coding Tables

#### BASEREG_TAB (3 rows)

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Primary Key</th>
<th>Comments</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASEREG_CD</td>
<td>nvarchar(2)</td>
<td>Primary Key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BASEREG_NAM</td>
<td>nvarchar(50)</td>
<td></td>
<td>Special Nature</td>
<td></td>
</tr>
</tbody>
</table>

RECEIPT
Single State Registration System (SSRS)

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Primary Key</th>
<th>Comments</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>RETIRED_IND</td>
<td>bit</td>
<td></td>
<td>This code is no longer active</td>
<td></td>
</tr>
<tr>
<td>EMPCODE</td>
<td>nvarchar(32)</td>
<td></td>
<td>Employee code</td>
<td></td>
</tr>
<tr>
<td>DATESTAMP</td>
<td>datetime</td>
<td></td>
<td>time of last update</td>
<td></td>
</tr>
</tbody>
</table>

**REC_TAB (4 rows)**

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

**REG_TAB (11 rows)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Primary Key</th>
<th>Comments</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>REG_CD</td>
<td>nvarchar(2)</td>
<td>Primary Key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>REG_NAM</td>
<td>nvarchar(50)</td>
<td></td>
<td>Authorized, Bus, Exempt, ... (see below)</td>
<td></td>
</tr>
<tr>
<td>RETIRED_IND</td>
<td>bit</td>
<td></td>
<td>no longer active</td>
<td></td>
</tr>
<tr>
<td>EMPCODE</td>
<td>nvarchar(32)</td>
<td></td>
<td>Employee code</td>
<td></td>
</tr>
<tr>
<td>DATESTAMP</td>
<td>datetime</td>
<td></td>
<td>time of last update</td>
<td></td>
</tr>
</tbody>
</table>

**STAT_TAB (20 rows)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Primary Key</th>
<th>Comment</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT_CD</td>
<td>nvarchar(2)</td>
<td>primary key</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT_NAM</td>
<td>nvarchar(50)</td>
<td></td>
<td>Name</td>
<td>Active, Revoked, Inactive ... (see below)</td>
</tr>
<tr>
<td>RETIRED_IND</td>
<td>bit</td>
<td></td>
<td>this code no longer active</td>
<td></td>
</tr>
<tr>
<td>EMPCODE</td>
<td>nvarchar(32)</td>
<td></td>
<td>Employee code</td>
<td></td>
</tr>
</tbody>
</table>

**BASEREG_TAB (3 rows)**
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.
### STATE_MC_NBR
- **Type**: bigint
- **Comment**: state ID

### FMCSA_NBR
- **Type**: bigint
- **Comment**: federal motor carrier safety administration ID

### CARRIER_STATE_CD
- **Type**: nvarchar(2)
- **Comment**: base state

### BASEREG_CD
- **Type**: nvarchar(2)
- **Comment**: special type of registration

### SERVICE_DATE
- **Type**: datetime
- **Comment**: date the service was performed

### AGENT_LIST_IND
- **Type**: bit
- **Comment**: have agent residency list

### FMCSA_ORDER_IND
- **Type**: bit
- **Comment**: have FMCSA authority

### SELF_INS_IND
- **Type**: bit
- **Comment**: carrier is self insured

### REQ_INS_AMT
- **Type**: money
- **Comment**: required insurance for this carrier

### DATESTAMP
- **Type**: datetime
- **Comment**: time of last change

### SSRS_RECEIPT

Contains Receipt info - primary key (CARRIER_ID_NUMBER, TRAVEL_STATE_CD, FEE_CHG_ID, RECEIPT_YEAR)

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Primary Key</th>
<th>Foreign Key</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARRIER_ID_NUMBER</td>
<td>bigint</td>
<td>Primary Key (part)</td>
<td></td>
<td>US DOT</td>
</tr>
<tr>
<td>TRAVEL_STATE_CD</td>
<td>nvarchar(2)</td>
<td>Primary Key (part)</td>
<td></td>
<td>state traveled in</td>
</tr>
<tr>
<td>FEE_CHG_ID</td>
<td>bigint</td>
<td>Primary Key (part)</td>
<td></td>
<td>order number</td>
</tr>
<tr>
<td>RECEIPT_YEAR</td>
<td>int</td>
<td>Primary Key (part)</td>
<td></td>
<td>year this receipt is for</td>
</tr>
<tr>
<td>VEHICLES</td>
<td>int</td>
<td>Primary Key (part)</td>
<td></td>
<td>number of vehicles for this state for this order</td>
</tr>
<tr>
<td>FEE_AMT</td>
<td>money</td>
<td></td>
<td></td>
<td>amount paid</td>
</tr>
<tr>
<td>REC_CD</td>
<td>nvarchar(2)</td>
<td>REC_TAB</td>
<td></td>
<td>type of vehicles</td>
</tr>
<tr>
<td>PRINTED_DTE</td>
<td>datetime</td>
<td></td>
<td></td>
<td>time receipt printed</td>
</tr>
<tr>
<td>ENTERED_DTE</td>
<td>datetime</td>
<td></td>
<td></td>
<td>time receipt entered</td>
</tr>
</tbody>
</table>
### Single State Registration System (SSRS)

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

### SSRS_EXEMPT

Contains Exempt information for carriers who are exempt

### 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.

**SSRS_RECEIPT**
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

<table>
<thead>
<tr>
<th>To</th>
<th>From</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARRIER_ID_NUMBER</td>
<td>CARRIER.DOT_NBR</td>
<td></td>
</tr>
<tr>
<td>STATE_MC_NBR</td>
<td>BASEREG.MC_NBR</td>
<td></td>
</tr>
<tr>
<td>FMCSA_NBR</td>
<td>CARRIER.FMCSA_NBR</td>
<td></td>
</tr>
<tr>
<td>CARRIER_STATE_CD</td>
<td>NULL initially updated</td>
<td>with RECEIPT rows</td>
</tr>
<tr>
<td>BASEREG_CD</td>
<td>BASEREG.BASEREG_CD</td>
<td>Validation required</td>
</tr>
<tr>
<td>SERVICE_DATE</td>
<td>BASEREG.SERVICE_DATE</td>
<td></td>
</tr>
<tr>
<td>AGENT_LIST_IND</td>
<td>BASEREG.AGENT_LIST_IND</td>
<td></td>
</tr>
<tr>
<td>FMCSA_ORDER_IND</td>
<td>BASEREG.FMCSA_ORDER_IND</td>
<td></td>
</tr>
<tr>
<td>SELF_INS_IND</td>
<td>BASEREG.SELF_INS_IND</td>
<td></td>
</tr>
<tr>
<td>REQ_INS_AMT</td>
<td>BASEREG.REQ_INS_AMT</td>
<td></td>
</tr>
<tr>
<td>DATESTAMP</td>
<td>BASEREG.DATESTAMP</td>
<td></td>
</tr>
</tbody>
</table>
Single State Registration System (SSRS)

**SSRS_RECEIPT**

- Join: RECEIPT with CARRIER on MC_NBR

<table>
<thead>
<tr>
<th>To</th>
<th>From</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARRIER_ID_NUMBER</td>
<td>CARRIER.DOT_NBR</td>
<td></td>
</tr>
<tr>
<td>TRAVEL_STATE_CD</td>
<td>RECEIPT.TRAVEL_STATE_CD</td>
<td></td>
</tr>
<tr>
<td>FEE_CHG_ID</td>
<td>RECEIPT.FEE_CHG_ID</td>
<td></td>
</tr>
<tr>
<td>RECEIPT_YEAR</td>
<td>RECEIPT.RECEIPT_YEAR</td>
<td>Validation required</td>
</tr>
<tr>
<td>VEHICLES</td>
<td>RECEIPT.VEHICLES</td>
<td></td>
</tr>
<tr>
<td>FEE_AMT</td>
<td>RECEIPT.FEE_AMT</td>
<td>Validation required</td>
</tr>
<tr>
<td>REC_CD</td>
<td>RECEIPT.REC_CD</td>
<td>Validation required</td>
</tr>
<tr>
<td>PRINTED_DTE</td>
<td>RECEIPT.PRINTED_DTE</td>
<td></td>
</tr>
<tr>
<td>ENTERED_DTE</td>
<td>RECEIPT.ENTERED_DTE</td>
<td></td>
</tr>
<tr>
<td>STAT_CD</td>
<td>RECEIPT.STAT_CD</td>
<td>Validation required</td>
</tr>
<tr>
<td>STAT_DTE</td>
<td>RECEIPT.STAT_DTE</td>
<td></td>
</tr>
<tr>
<td>ER_CD_DISP</td>
<td>RECEIPT.ER_CD_DISP</td>
<td></td>
</tr>
<tr>
<td>DATESTAMP</td>
<td>RECEIPT.DATESTAMP</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>To</th>
<th>From</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARRIER_ID_NUMBER</td>
<td>CARRIER.DOT_NBR</td>
<td></td>
</tr>
<tr>
<td>FEE_CHG_ID</td>
<td>REGSTRAT.FEE_CHG_ID</td>
<td></td>
</tr>
<tr>
<td>REG_CD</td>
<td>REGSTRAT.REG_CD</td>
<td>Validation required</td>
</tr>
<tr>
<td>ISSUE_DTE</td>
<td>REGSTRAT.ISSUE_DTE</td>
<td></td>
</tr>
<tr>
<td>WARN_DTE</td>
<td>REGSTRAT.WARN_DTE</td>
<td></td>
</tr>
<tr>
<td>SUSP_DTE</td>
<td>REGSTRAT.SUSP_DTE</td>
<td></td>
</tr>
<tr>
<td>REV_DTE</td>
<td>REGSTRAT.REV_DTE</td>
<td></td>
</tr>
<tr>
<td>STAT_CD</td>
<td>REGSTRAT.STAT_CD</td>
<td>Validation required</td>
</tr>
<tr>
<td>STAT_DTE</td>
<td>REGSTRAT.STAT_DTE</td>
<td></td>
</tr>
<tr>
<td>ER_CD_DISP</td>
<td>REGSTRAT.ER_CD_DISP</td>
<td></td>
</tr>
<tr>
<td>MESSAGE</td>
<td>REGSTRAT.MESSAGE</td>
<td></td>
</tr>
<tr>
<td>DATESTAMP</td>
<td>REGSTRAT.DATESTAMP</td>
<td></td>
</tr>
</tbody>
</table>
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:

<table>
<thead>
<tr>
<th>Records Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total SSRS</td>
<td>12763</td>
</tr>
<tr>
<td>Have US_DOT Carrier ID</td>
<td>12434</td>
</tr>
<tr>
<td>Missing US_DOT Carrier ID</td>
<td>329</td>
</tr>
<tr>
<td>Missing US_DOT Have FMCSA</td>
<td>254</td>
</tr>
<tr>
<td>Missing US_DOT Missing FMCSA</td>
<td>75</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>BASEREG_CD</th>
<th>BASEREG_NAM</th>
<th>RETIRED_IND</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Emergency Temporary Authority</td>
<td>0</td>
</tr>
<tr>
<td>N</td>
<td>New Certificate/Permit</td>
<td>0</td>
</tr>
<tr>
<td>T</td>
<td>Temporary Authority</td>
<td>0</td>
</tr>
<tr>
<td>ER_CD</td>
<td>ER_NAM</td>
<td>RETURN_IND</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>00</td>
<td>None</td>
<td>0</td>
</tr>
<tr>
<td>01</td>
<td>Document not Properly Signed</td>
<td>1</td>
</tr>
<tr>
<td>02</td>
<td>Missing DOT Number</td>
<td>0</td>
</tr>
<tr>
<td>03</td>
<td>Principle Names / Titles Missing</td>
<td>1</td>
</tr>
<tr>
<td>04</td>
<td>Invalid Fee Code</td>
<td>0</td>
</tr>
<tr>
<td>05</td>
<td>Underpayment $_____.__<strong>, Correct Amount is $</strong>____</td>
<td>1</td>
</tr>
<tr>
<td>06</td>
<td>Missing Full Legal Name</td>
<td>1</td>
</tr>
<tr>
<td>07</td>
<td>Incomplete Business Address / Telephone Number</td>
<td>0</td>
</tr>
<tr>
<td>08</td>
<td>Business Address Contains P.O. Box Number Only</td>
<td>0</td>
</tr>
<tr>
<td>09</td>
<td>Duplicate Motor Carrier on File</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Insufficient Funds to Cover Payment</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Invalid Motor Carrier Number Specified</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Payment not Received</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Authority / Registration Revoked</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Current Annual Report not on File</td>
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<tr>
<td>15</td>
<td>Invalid FEIN/SSN Code or Number</td>
<td>0</td>
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<tr>
<td>16</td>
<td>Invalid Zip Code</td>
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<tr>
<td>17</td>
<td>Invalid State Abbreviation</td>
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<tr>
<td>40</td>
<td>ICC Motor Carrier Number Missing</td>
<td>1</td>
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<tr>
<td>41</td>
<td>Process Agent not Specified</td>
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<tr>
<td>42</td>
<td>Type of Business not Specified</td>
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</tr>
<tr>
<td>43</td>
<td>Registration Type (A or E) Missing</td>
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</tr>
<tr>
<td>44</td>
<td>No Authority to Operate in Illinois</td>
<td>1</td>
</tr>
<tr>
<td>45</td>
<td>Business State Changed, No Proof Provided</td>
<td>1</td>
</tr>
<tr>
<td>46</td>
<td>Prior Application Revoked or Suspended</td>
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</tr>
<tr>
<td>47</td>
<td>Pending Application Already on File</td>
<td>1</td>
</tr>
<tr>
<td>48</td>
<td>Revoked: Sec. of State Corporation Fees Not Paid</td>
<td>1</td>
</tr>
<tr>
<td>49</td>
<td>State of Incorporation Missing</td>
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</tr>
<tr>
<td>50</td>
<td>Shipper Support Statement not Filed</td>
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<tr>
<td>51</td>
<td>County Code/Name Missing</td>
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</tr>
<tr>
<td>52</td>
<td>&lt;&lt; Invalid Error Code &gt;&gt;</td>
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</tr>
<tr>
<td>53</td>
<td>&lt;&lt; Invalid Error Code &gt;&gt;</td>
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<tr>
<td></td>
<td>Description</td>
<td>Count</td>
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<tr>
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<td>-----------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
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</tr>
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<td>55</td>
<td>&lt;&lt; Invalid Error Code &gt;&gt;</td>
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</tr>
<tr>
<td>56</td>
<td>&lt;&lt; Invalid Error Code &gt;&gt;</td>
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</tr>
<tr>
<td>57</td>
<td>Compensation type not given / amount invalid</td>
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</tr>
<tr>
<td>58</td>
<td>Letters of Office / Probate Court Order Missing</td>
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</tr>
<tr>
<td>59</td>
<td>Small Estate / Heirship Affidavit Missing</td>
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</tr>
<tr>
<td>60</td>
<td>Identification of Equipment Section Incomplete</td>
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</tr>
<tr>
<td>61</td>
<td>Lease Eff / Exp Date Missing or Incorrect</td>
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</tr>
<tr>
<td>62</td>
<td>Lessee Control Indicator should be 'Y'</td>
<td>1</td>
</tr>
<tr>
<td>63</td>
<td>Lease Term is Greater Than 3 Years</td>
<td>1</td>
</tr>
<tr>
<td>64</td>
<td>Abstract of Shipments Missing</td>
<td>0</td>
</tr>
<tr>
<td>65</td>
<td>Contract For Transfer Missing</td>
<td>0</td>
</tr>
<tr>
<td>66</td>
<td>Operator / Dispatcher Indicator Not Present</td>
<td>0</td>
</tr>
<tr>
<td>67</td>
<td>No Response Present / Invalid Response</td>
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<tr>
<td>68</td>
<td>Driver's License Not Present / Invalid</td>
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</tr>
<tr>
<td>70</td>
<td>No Insurance FORM-E on File</td>
<td>1</td>
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<tr>
<td>71</td>
<td>Duplicate Insurance Form/Policy</td>
<td>1</td>
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<tr>
<td>72</td>
<td>Insurance Company/Policy Number Missing or Invalid</td>
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<tr>
<td>73</td>
<td>COD Affidavit or Bond Already on File</td>
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<tr>
<td>74</td>
<td>No Active Insurance FORM/POLICY to Cancel</td>
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<tr>
<td>75</td>
<td>Invalid Insurance FORM/POLICY Type</td>
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<tr>
<td>76</td>
<td>No Insurance POLICY/BOND Effective Date</td>
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<tr>
<td>77</td>
<td>&quot;ILLINOIS COMMERCE COMMISSION&quot; name not on Form</td>
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<tr>
<td>78</td>
<td>Insurance Company Inactive</td>
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<tr>
<td>80</td>
<td>Stamp Ordering Fee Not Paid</td>
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</tr>
<tr>
<td>81</td>
<td>Stamps Not ordered with Application</td>
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</tr>
<tr>
<td>82</td>
<td>Missing Expiration Date for Stamps</td>
<td>0</td>
</tr>
<tr>
<td>83</td>
<td>Missing Quantity for Stamps</td>
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<td>84</td>
<td>Total Fees for Stamps not Specified or Incorrect</td>
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</tr>
<tr>
<td>85</td>
<td>Incomplete Stamp Mailing Address</td>
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</tr>
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<td>86</td>
<td>Invalid Re-Issued/Re-Printed Stamp Serial Numbers</td>
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<tr>
<td>90</td>
<td>Other</td>
<td>1</td>
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<tr>
<td>91</td>
<td>Docket Sub Number Missing</td>
<td>0</td>
</tr>
<tr>
<td>99</td>
<td>Overpayment - Check amount reduced</td>
<td>0</td>
</tr>
<tr>
<td>REC_CD</td>
<td>REC_NAM</td>
<td>RETIRED_IND</td>
</tr>
<tr>
<td>--------</td>
<td>---------------</td>
<td>-------------</td>
</tr>
<tr>
<td>B</td>
<td>Regular-Route Bus</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>Charter Bus</td>
<td>0</td>
</tr>
<tr>
<td>X</td>
<td>None</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REG_CD</th>
<th>REG_NAM</th>
<th>RETIRED_IND</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Authorized</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>Bus</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>Charter</td>
<td>0</td>
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<tr>
<td>E</td>
<td>Exempt</td>
<td>0</td>
</tr>
<tr>
<td>N</td>
<td>None</td>
<td>0</td>
</tr>
<tr>
<td>S</td>
<td>S: Unknown</td>
<td>0</td>
</tr>
<tr>
<td>T</td>
<td>Truck</td>
<td>0</td>
</tr>
<tr>
<td>U</td>
<td>U: Unknown</td>
<td>0</td>
</tr>
<tr>
<td>V</td>
<td>V: Unknown</td>
<td>0</td>
</tr>
<tr>
<td>X</td>
<td>X: Unknown</td>
<td>0</td>
</tr>
<tr>
<td>Y</td>
<td>Y: Unknown</td>
<td>0</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>STAT_CD</th>
<th>STAT_NAM</th>
<th>RETIRED_IND</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>Active</td>
<td>0</td>
</tr>
<tr>
<td>01</td>
<td>Permanent Pending</td>
<td>0</td>
</tr>
<tr>
<td>02</td>
<td>Temporary Pending</td>
<td>0</td>
</tr>
<tr>
<td>03</td>
<td>Registration / Authority Issued</td>
<td>0</td>
</tr>
<tr>
<td>04</td>
<td>Suspension - Insurance Canceled</td>
<td>0</td>
</tr>
<tr>
<td>05</td>
<td>Suspension - Voluntary Request</td>
<td>0</td>
</tr>
<tr>
<td>06</td>
<td>Suspension - Bankruptcy</td>
<td>0</td>
</tr>
<tr>
<td>07</td>
<td>Revoked</td>
<td>0</td>
</tr>
<tr>
<td>08</td>
<td>Inactive</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>Stp Order - Inter. Canceled / Intra. Okay</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>Stp Order - Inter. Okay / Intra. Canceled</td>
<td>0</td>
</tr>
<tr>
<td>12</td>
<td>Stp Order - Inter. Canceled / Intra. Canceled</td>
<td>0</td>
</tr>
<tr>
<td>13</td>
<td>Stp Order - Inter. Canceled / Intra. Compliance</td>
<td>0</td>
</tr>
<tr>
<td>14</td>
<td>Stp Order - Inter. Okay / Intra. Compliance</td>
<td>0</td>
</tr>
</tbody>
</table>
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
<?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
');
if (!mssql_select_db("LSI_SSRS"))
die("Could not select LSI_SSRS
");
// open output file
$FileNameOut = ($argc > 1) ? $argv[1] : "CVIEWX0011V1.xml";
($fhout = fopen($FileNameOut, "w")) || die("Cannot open output file $FileNameOut
");

$QryStr = "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";
$Results = mssql_query($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
$XMLHeader = "<?xml version="1.0"?
xsi:schemaLocation="http://www.safersys.org/namespaces/X0011V1 X0011V1.xsd">
<INTERFACE>
<NAME>SAFER</NAME>
<VERSION>04.02</VERSION>
</INTERFACE>
<TRANSACTION>
<OPERATION>REPLACE</OPERATION>
<DATE_TIME>$SnapDate</DATE_TIME>
</TRANSACTION>
</X0011>"

?>
```

Single State Registration System (SSRS)

<table>
<thead>
<tr>
<th></th>
<th>Stp Order - Inter. Acceptbl. / Intra. Okay</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Stp Order - Inter. Acceptbl. / Intra. Canceled</td>
<td>0</td>
</tr>
<tr>
<td>17</td>
<td>Stp Order - Inter. Acceptbl. / Intra. Compliance</td>
<td>0</td>
</tr>
<tr>
<td>18</td>
<td>Stp Order - Don't Print This Order Yet!</td>
<td>0</td>
</tr>
<tr>
<td>99</td>
<td>Process Not Completed</td>
<td>0</td>
</tr>
</tbody>
</table>
Single State Registration System (SSRS)

<tz>CD</tz>
</transaction>
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
            $XMLReceipt = " </SSRS_BASE>
        fwrite($fhout, $XMLReceipt);
    }
    $Last_MC_NBR = $Row->MC_NBR;
    $XMLReceipt = " <SSRS_BASE>
    // 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;
    $SERVICE_DATE = date("Y-m-d",strtoltime($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;
    $DATESTAMP = date("Y-m-dTh:i:s",strtoltime($Row->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>
    ">
    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;
    $PRINTED_DTE = date("Y-m-d",strtoltime($Row->PRINTED_DTE));
    $ENTERED_DTE = date("Y-m-d",strtoltime($Row->ENTERED_DTE));
    $STAT_CD = $Row->STAT_CD;
    $DATESTAMP = date("Y-m-dTh:i:s",strtoltime($Row->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>
    </SSRS_RECEIPT>";
Single State Registration System (SSRS)

<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>$ER_CD_DISP</ER_CD_DISP>
</SSRS_RECEIPT>
fwrite($fhout,$XMLReceipt);}

XMLReceipt = "";</SSRS_RECEIPT>
fwrite($fhout,$XMLReceipt);
fclose($fhout);

// open output file
($fhout = fopen($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\n");
$SnapDate = date("Y-m-d\Th:i:s");
// output XML heading
$xmlHeader = "<?xml version="1.0"?>
INTERFACE
<NAME>SAFER</NAME>
<VERSION>04.02</VERSION>
</INTERFACE>

<TRANSACTIO
<VERSION>01.00</VERSION>
<OPERATION>REPLACE</OPERATION>
<DATE_TIME>$SnapDate</DATE_TIME>
<TZ>CD</TZ>
</TRANSACTIO
fwrite($fhout,$xmlHeader);
while ($Row = mssql_fetch_object($Results)){
	$XMLExempt = "";
	// 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 = $Row->REQ_INS_AMT;
	fwrite($fhout,"$XMLExempt";
	fwrite($fhout,"<SSRS_CARRIER>
	<SSRS_BASE>
		<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>
		<REGSTRAT_DATESTAMP>$REGSTRAT_DATESTAMP</REGSTRAT_DATESTAMP>
		<BASEREG_DATESTAMP>$BASEREG_DATESTAMP</BASEREG_DATESTAMP>
	</SSRS_BASE>
	</SSRS_CARRIER>
	fwrite($fhout,"</SSRS_BASE>");
"";
fwrite($fhout,$XMLExempt);}}}
Single State Registration System (SSRS)

```php
$DATESTAMP = date("Y-m-d\Th:i:s", strtotime($Row->BASEREG_DATESTAMP));
$xmlExempt = "
" <CARRIER_ID_NUMBER>$CARRIER_ID_NUMBER</CARRIER_ID_NUMBER>
<STATE_MC_NBR>$STATE_MC_NBR</STATE_MC_NBR>
<FMCSCA_NBR>$FMCSCA_NBR</FMCSCA_NBR>
<BASEREG_CD>$BASEREG_CD</BASEREG_CD>
<SERVICE_DATE>$SERVICE_DATE</SERVICE_DATE>
<AGENT_LIST_IND>$AGENT_LIST_IND</AGENT_LIST_IND>
<FMCSCA_ORDER_IND>$FMCSCA_ORDER_IND</FMCSCA_ORDER_IND>
<SELF_INS_IND>$SELF_INS_IND</SELF_INS_IND>
<REQ_INS_AMT>$REQ_INS_AMT</REQ_INS_AMT>
</SSRS_BASE>
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>
 <!--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 != "") $xmlExempt .= " <REV_DTE>$REV_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>
fwrite($fhout, $XMLExempt);
} 
$xmlExempt = "
" </SSRS_EXEMPT>
</X0012>
fwrite($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"/>
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 -->

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

<!-- 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>
</complexType>

</schema>
Single State Registration System (SSRS)

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

<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"/>
        <element name="STATE_MC_NBR" type="ts:globalCarrierIdNumberType"/>
        <element name="FMCSA_NBR" type="ts:globalOptCarrierIdNumberType" minOccurs="0" />
        <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"/>
        <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"/>
    </sequence>
</complexType>

Check these types do we need to have minOccurs with Opt types-->
<!-- Receipt has this while Exempt does not -->
<!-- need to adjust number -->
<!-- Check these types do we need to have minOccurs with Opt types-->
<!-- X0012V1.xsd - SSRS Exempt Transaction" minOccurs="1" maxOccurs="1"/>
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

- Lead administrator of the IRP ILLINOIS SECRETARY OF STATE (International Registration Plan):
  - Name: Michael Ramirez
  - Phone: (217) 785-1803
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- Office Administrator
  - Name: Eva Letterle
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- Technical Contact (IRP System):
  - Name: Marinda Beccue D.O.I.T.
  - Phone: (217) 782-7224
  - e-Mail: MBeccue @ ilsos.net
- 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 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>
<thead>
<tr>
<th>Table</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR_FIRM</td>
<td>Carrier info</td>
</tr>
<tr>
<td>IR_ADDRESS</td>
<td></td>
</tr>
<tr>
<td>IR_FLEET</td>
<td></td>
</tr>
<tr>
<td>IR_VEHICLE</td>
<td></td>
</tr>
<tr>
<td>IR_FINANCE</td>
<td>Contains Registration Start Date</td>
</tr>
<tr>
<td>IR_WEIGHT</td>
<td>See Notes in Mapping area</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>T0020V1 Field</th>
<th>Legacy Field</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRP_CARRIER_ID_NUMBER(12)</td>
<td>IR_FIRM.US_DOT_NUMBER_1(12)</td>
<td></td>
</tr>
<tr>
<td>IRP_BASE_COUNTRY(2)</td>
<td>&quot;US&quot;</td>
<td></td>
</tr>
<tr>
<td>IRP_BASE_STATE(2)</td>
<td>&quot;IL&quot;</td>
<td></td>
</tr>
</tbody>
</table>
### International Registration Plan (IRP)

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

**Notes:**

1) The status code maps from the legacy system of one character to the following three digit codes:
<table>
<thead>
<tr>
<th>SOS Status Code</th>
<th>CVIEW IRP_STATUS_CODE</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100</td>
<td>Active</td>
</tr>
<tr>
<td>I</td>
<td>900</td>
<td>Inactive</td>
</tr>
<tr>
<td>D</td>
<td>999</td>
<td>Deleted</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>T0021V1 Field</th>
<th>Legacy Field</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRP_ACCOUNT_NUMBER(32)</td>
<td>IR_FIRM.FIRM_NO(5)</td>
<td></td>
</tr>
<tr>
<td>IRP_BASE_COUNTRY(2)</td>
<td>&quot;US&quot;</td>
<td></td>
</tr>
<tr>
<td>IRP_BASE_STATE(2)</td>
<td>&quot;IL&quot;</td>
<td></td>
</tr>
<tr>
<td>FLEET_NUMBER(15)</td>
<td>IR_FLEET.FLEET_NO(3)</td>
<td></td>
</tr>
<tr>
<td>FLEET_STATUS_CODE(3)</td>
<td>IR_FLEET.FLEET_STATUS_CODE</td>
<td>See Note 1 above</td>
</tr>
<tr>
<td>FLEET_STATUS_DATE</td>
<td>IR_FLEET.FLEET_STAT_DATE</td>
<td>See Note above about dates</td>
</tr>
<tr>
<td>FLEET_EXPIRE_DATE</td>
<td>March 31 or STAT_DATE if not active</td>
<td>See Note above about dates</td>
</tr>
<tr>
<td>FLEET_UPDATE_DATE</td>
<td>IR_FLEET.FLEET_STAT_DATE</td>
<td>See Note above about dates</td>
</tr>
<tr>
<td>FLEET_NAME</td>
<td>(none)</td>
<td></td>
</tr>
</tbody>
</table>

**IRP CAB (T0022V2)**

<table>
<thead>
<tr>
<th>T0022V2 Field</th>
<th>Legacy Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIN(30)</td>
<td>IR_VEHICLE.VIN(20)</td>
<td></td>
</tr>
<tr>
<td>TITLE_NUMBER(17)</td>
<td>IR_VEHICLE.TITLE_NO(10)</td>
<td></td>
</tr>
<tr>
<td>TITLE_JURISDICTION(4)</td>
<td>IR_VEHICLE.TITLE_STATE(2)</td>
<td>See Note 5 below</td>
</tr>
<tr>
<td>OWNER_NAME(55)</td>
<td>IR_FIRM.FIRM_NAME(35) or IR_VEHICLE.LESSOR(35)</td>
<td>See Note 1 below</td>
</tr>
<tr>
<td>MODEL_YEAR(4)</td>
<td>IR_VEHICLE.VEH_YEAR(4)</td>
<td></td>
</tr>
<tr>
<td>MAKE(10)</td>
<td>IR_VEHICLE.VEH_MAKE(4)</td>
<td></td>
</tr>
<tr>
<td>TYPE(2)</td>
<td>IR_VEHICLE.VEH_TYPE(2)</td>
<td>See Note 2 below</td>
</tr>
<tr>
<td>Field</td>
<td>Value</td>
<td>Notes</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>----------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>MODEL</td>
<td>(none)</td>
<td></td>
</tr>
<tr>
<td>FUEL</td>
<td>IR_VEHICLE.FUEL(1)</td>
<td></td>
</tr>
<tr>
<td>UNLADEN_WEIGHT</td>
<td>IR_VEHICLE.UNLADEN_WEIGHT(5)</td>
<td></td>
</tr>
<tr>
<td>NUMBER_OF_AXLES</td>
<td>IR_VEHICLE.AXLES(2)</td>
<td></td>
</tr>
<tr>
<td>LICENSE_PLATE_NUMBER</td>
<td>IR_VEHICLE.PLATE_NO(9)</td>
<td></td>
</tr>
<tr>
<td>IRP_BASE_COUNTRY</td>
<td>&quot;US&quot;</td>
<td></td>
</tr>
<tr>
<td>IRP_BASE_STATE</td>
<td>&quot;IL&quot;</td>
<td></td>
</tr>
<tr>
<td>UNIT_NUMBER</td>
<td>IR_VEHICLE.UNIT_NO(9)</td>
<td>See Note above about dates</td>
</tr>
<tr>
<td>LAST_UPDATE</td>
<td>IR_VEHICLE.STATUS_DATE(8)</td>
<td>See Note above about dates</td>
</tr>
<tr>
<td>INTERSTATE_FLAG</td>
<td>&quot;I&quot;</td>
<td></td>
</tr>
<tr>
<td>IRP_STATUS_CODE</td>
<td>IR_VEHICLE.STATUS_CODE</td>
<td>See Note 1 above</td>
</tr>
<tr>
<td>IRP_STATUS_DATE</td>
<td>IR_VEHICLE.STATUS_DATE</td>
<td>See Note above about dates</td>
</tr>
<tr>
<td>IRP_ACCOUNT_NUMBER</td>
<td>IR_VEHICLE.FIRM_NO(5)</td>
<td>See Note above about dates</td>
</tr>
<tr>
<td>IRP_FLEET_NUMBER</td>
<td>IR_VEHICLE.FLEET_NO(3)</td>
<td>See Note above about dates</td>
</tr>
<tr>
<td>REGISTRATION_START_DATE</td>
<td>IR_FINANCE.PAY_DATE(8)</td>
<td>See note above about dates</td>
</tr>
<tr>
<td>REGISTRATION_STOP_DATE</td>
<td>IR_VEHICLE.STATUS_DATE(8)</td>
<td>See Note 3 below</td>
</tr>
<tr>
<td>OPERATOR_NAME</td>
<td>(none)</td>
<td></td>
</tr>
<tr>
<td>SAFETY_CARRIER</td>
<td>IR_FIRM.US_DOT_NUMBER_1(12)</td>
<td></td>
</tr>
<tr>
<td>IRP_CARRIER_NUMBER</td>
<td>IR_FIRM.US_DOT_NUMBER_1(12)</td>
<td></td>
</tr>
<tr>
<td>IFTA_LICENSE_NUMBER</td>
<td>(none)</td>
<td></td>
</tr>
<tr>
<td>GVW</td>
<td>IR_VEHICLE.STATUS_DATE(8)</td>
<td>See Note 4 below</td>
</tr>
<tr>
<td>GVW_EXPIRE_DATE</td>
<td>IR_VEHICLE.STATUS_DATE(8)</td>
<td>See Note 3 below</td>
</tr>
</tbody>
</table>

International Registration Plan (IRP)
International Registration Plan (IRP)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRP_PRORATION.IRP_JURISDICTION(4)</td>
<td>See Note 5 below</td>
</tr>
<tr>
<td>IRP_PRORATION.IRP_WEIGHT(8)</td>
<td>See Note 6 below</td>
</tr>
<tr>
<td>IRP_PRORATION.IRP_WEIGHT_EXPIRATION_DATE</td>
<td>IR_VEHICLE.STATUS_DATE(8) or &quot;March 31&quot;</td>
</tr>
<tr>
<td>IR_VEHICLE.STATUS_DATE(8) or</td>
<td>&quot;March 31&quot;</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>(IL)VEH_TYPE(2)</th>
<th>Name</th>
<th>(CVIEW)TYPE(2)</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS</td>
<td>Bus</td>
<td>BS</td>
<td>Bus</td>
</tr>
<tr>
<td>FT</td>
<td>Full Trailer</td>
<td>FT</td>
<td>Full Trailer</td>
</tr>
<tr>
<td>MT</td>
<td>Mobile Home Trailer</td>
<td>MT</td>
<td>Mobile Home Trailer</td>
</tr>
<tr>
<td>PW</td>
<td>Power Wrecker</td>
<td>WR</td>
<td>Tow Truck Wrecker</td>
</tr>
<tr>
<td>ST</td>
<td>Semi-Trailer</td>
<td>SR</td>
<td>Semi-Trailer</td>
</tr>
<tr>
<td>TR</td>
<td>Tractor</td>
<td>TT</td>
<td>Truck Tractor</td>
</tr>
<tr>
<td>TT</td>
<td>Truck Tractor</td>
<td>TT</td>
<td>Truck Tractor</td>
</tr>
<tr>
<td>TK</td>
<td>Truck (single)</td>
<td>ST</td>
<td>Straight Truck</td>
</tr>
</tbody>
</table>

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
International Registration Plan (IRP)

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

<table>
<thead>
<tr>
<th>Jurisdiction Index</th>
<th>Jurisdiction Code</th>
<th>Country (US unless specified)</th>
<th>Not Used Has space</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AB</td>
<td>CA</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>AK</td>
<td></td>
<td>YES</td>
</tr>
<tr>
<td>3</td>
<td>AL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>AR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>AZ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>BC</td>
<td>CA</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>CA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>CO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>CT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>DC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>DE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>FL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>GA</td>
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</tr>
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<td>14</td>
<td>IA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
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<td></td>
</tr>
<tr>
<td>16</td>
<td>IL</td>
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<td></td>
</tr>
<tr>
<td>17</td>
<td>IN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>KS</td>
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</tr>
<tr>
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<td></td>
</tr>
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</tr>
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<td>Jurisdiction</td>
<td>Corresponding Jurisdiction</td>
<td>Result</td>
</tr>
<tr>
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<td>--------</td>
</tr>
<tr>
<td>21</td>
<td>MA</td>
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</tr>
<tr>
<td>22</td>
<td>MB</td>
<td>CA</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>MD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>ME</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>MI</td>
<td></td>
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</tr>
<tr>
<td>26</td>
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</tr>
<tr>
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<tr>
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<td>MS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>MT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>MX</td>
<td>MX</td>
<td>YES</td>
</tr>
<tr>
<td>31</td>
<td>NB</td>
<td>CA</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>NC</td>
<td></td>
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</tr>
<tr>
<td>33</td>
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</tr>
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<td>34</td>
<td>NE</td>
<td></td>
<td></td>
</tr>
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</tr>
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</tr>
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<td>37</td>
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<td></td>
<td></td>
</tr>
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<td>39</td>
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<td>CA</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>NT</td>
<td>CA</td>
<td>YES</td>
</tr>
<tr>
<td>41</td>
<td>NV</td>
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<tr>
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<tr>
<td>45</td>
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<td>CA</td>
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</tr>
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</tr>
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<td>53</td>
<td>SK</td>
<td>CA</td>
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</tr>
<tr>
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<td>TN</td>
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<td></td>
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<tr>
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<td>TX</td>
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</tr>
<tr>
<td>56</td>
<td>UT</td>
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</tr>
</tbody>
</table>

**International Registration Plan (IRP)**

**Jurisdiction Mappings**
Triggers

The trigger field for transactions are as follows:

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>T0020 - Carrier info</td>
<td>IR_FIRM.LAST_ACTION_DATE</td>
</tr>
<tr>
<td>T0021 - Fleet info</td>
<td>IR_FLEET.FLEET_STAT_DATE</td>
</tr>
<tr>
<td>T0022 - Vehicle (cab) info</td>
<td>IR_VEHICLE.STATUS_DATE</td>
</tr>
</tbody>
</table>

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
<?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 $CanadaStates;
```
if ($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", "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",
  "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) ? $argv[1] : "CVIEW0020V1.xml";
($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
$XMLHeader = "<?xml version="1.0"?>
xsi:schemaLocation="http://www.safersys.org/namespaces/T0020V1 T0020V1.xsd">
  <INTERFACE>
    <NAME>SAFER</NAME>
    <VERSION>04.02</VERSION>
  </INTERFACE>
  <TRANSACTION>
    <VERSION>01.00</VERSION>
    <OPERATION>REPLACE</OPERATION>
    <DATE_TIME>$SnapDate</DATE_TIME>
    <TZ>CD</TZ>
  </TRANSACTION>
  $XMLAccount = " <IRP_ACCOUNT>
    // 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 = $IRP_STATUS_DATE;
    "
  </IRP_ACCOUNT>
</TRANSACTION>
fwrite($fhout, $XMLHeader);
while ($Row = mssql_fetch_object($Results)){
  "$XMLAccount = " <IRP_ACCOUNT>
    // 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 = $IRP_STATUS_DATE;
  "$;
fwrite($fhout, $XMLAccount);
$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>$NAME_LG</NAME>
    </IRP_NAME>
    <IRP_ADDRESS>
      <ADDRESS_TYPE>PH</ADDRESS_TYPE>
      <STREET_LINE_1>$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);
}
$XMLAccount =
"  </IRP_ACCOUNT>
</T0020>
";
fwrite($fhout,$XMLAccount);
fclose($fhout);
// open output file
($fhout = fopen($FileNameOut, "w")) || die("Cannot open output file $FileNameOut\n");
$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>
</T0021>
fwrite($fhout,$XMLHeader);
while ($Row = mssql_fetch_object($results)) {
    $XMLFleet = " <FLEET_ACCOUNT>
        // 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);
}
$XMLFleet = "</T0021>
fwrite($fhout,$XMLFleet);
fclose($fhout);
// open output file
($fhout = fopen($FileNameOut, "w")) || die("Cannot open output file $FileNameOut\n");
$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
$XMLHeader = "<?xml version="1.0"?>
<T0022 xmlns="http://www.safersys.org/namespaces/T0022V1"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.safersys.org/namespaces/T0022V1 T0022V1.xsd">
  <INTERFACE>
    <NAME>SAFER</NAME>
    <VERSION>04.02</VERSION>
  </INTERFACE>
  <TRANSACTION>
    <VERSION>01.00</VERSION>
    <OPERATION>REPLACE</OPERATION>
    <DATE_TIME>$SnapDate</DATE_TIME>
    <TZ>CD</TZ>
  </TRANSACTION>
</T0022>"
fwrite($fhout,$XMLHeader);
while ($Row = mssql_fetch_object($Results)) {
  $XMLCab = "<IRP_REGISTRATION>
  // 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;
    default: break;
  }
"
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>

// 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)

```php
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

```xml
<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>
```

XML Transactions
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"/>
</complexType>

<!-- IRP Address type -->

<complexType name="IRPAddressType">
<sequence>
<element name="ADDRESS_TYPE" type="ts:globalAddressTypeValues"/>
<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"/>
<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)

</complexType>
</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="COUNTRY" type="ts:globalOptCountryType" minOccurs="0"/>
</sequence>
</complexType>
</schema>
<?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">

</complexType>

</schema>
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) -->
    <!-- T0022V2.xsd - IRP Cab -->
International Registration Plan (IRP)

<complexType>
  <restriction base="string">
    <minLength value="1"/>
    <maxLength value="12"/>
  </restriction>
</complexType>

<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>
<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" type="ts:globalOptIFTALicenseNumberType"/>
International Registration Plan (IRP)

<restriction base="string"><maxLength value="18"/></restriction>
</simpleType>
</element>
<element name="GVW" minOccurs="0">
<simpleType>
<restriction base="integer" totalDigits="8"/>
</simpleType>
</element>
<element name="GVW_EXPIRE_DATE" type="ts:globalOptionalDateType" minOccurs="0">
</element>
<element name="IRP_PRORATION" type="ts:IRPProrationType" maxOccurs="unbounded">
</element>
</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
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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 in a different section. The MVR registration system for intrastate
vehicles is documented here.

**Database Environment**

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

<table>
<thead>
<tr>
<th>Table</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT_REGISTRATION</td>
<td>Contains Registration Information</td>
</tr>
</tbody>
</table>

**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 ccyyymmdd 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.

<table>
<thead>
<tr>
<th>T0022V2 Field</th>
<th>Legacy Field</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIN(30)</td>
<td>ASGN_VIN(20)</td>
<td></td>
</tr>
<tr>
<td>TITLE_NUMBER(17)</td>
<td>VEH_TITLE_NO(12)</td>
<td></td>
</tr>
<tr>
<td>TITLE_JURISDICTION(4)</td>
<td>&quot;USIL&quot;</td>
<td></td>
</tr>
<tr>
<td>OWNER_NAME(55)</td>
<td>OWN_FIRST_MI (23)</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>OWN_LAST_NAME (35)</td>
<td></td>
</tr>
<tr>
<td>MODEL_YEAR(4)</td>
<td>VEH_YR (4)</td>
<td></td>
</tr>
<tr>
<td>MAKE(10)</td>
<td>VEH_MAKE_CODE (4)</td>
<td></td>
</tr>
<tr>
<td>TYPE(2)</td>
<td>BODY_STYLE (2)</td>
<td>See Note 1 below</td>
</tr>
<tr>
<td>---------</td>
<td>----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>MODEL(3)</td>
<td>(none)</td>
<td></td>
</tr>
<tr>
<td>FUEL(1)</td>
<td>ENGINE_FUEL(1)</td>
<td>1-&gt;&quot;G&quot;, 2-&gt;&quot;D&quot;, 3-&gt;&quot;E&quot;, 8-&gt;&quot;O&quot;</td>
</tr>
<tr>
<td>UNLADEN_WEIGHT(8)</td>
<td>(none)</td>
<td></td>
</tr>
<tr>
<td>NUMBER_OF_AXLES(2)</td>
<td>AXLES(1)</td>
<td></td>
</tr>
<tr>
<td>LICENSE_PLATE_NUMBER(12)</td>
<td>DISP_ASGN_PLT_NO (9)</td>
<td></td>
</tr>
<tr>
<td>IRP_BASE_COUNTRY(2)</td>
<td>&quot;US&quot;</td>
<td></td>
</tr>
<tr>
<td>IRP_BASE_STATE(2)</td>
<td>&quot;IL&quot;</td>
<td></td>
</tr>
<tr>
<td>UNIT_NUMBER(20)</td>
<td>UNIT_NO (6)</td>
<td></td>
</tr>
<tr>
<td>LAST_UPDATE(10)</td>
<td>ACTION_DATE</td>
<td>See Note above about dates</td>
</tr>
<tr>
<td>INTERSTATE_FLAG(1)</td>
<td>&quot;S&quot;</td>
<td></td>
</tr>
<tr>
<td>IRP_STATUS_CODE</td>
<td>(none)</td>
<td></td>
</tr>
<tr>
<td>IRP_STATUS_DATE</td>
<td>(none)</td>
<td></td>
</tr>
<tr>
<td>IRP_ACCOUNT_NUMBER(32)</td>
<td>(none)</td>
<td></td>
</tr>
<tr>
<td>IRP_FLEET_NUMBER(15)</td>
<td>FLEET_ID (6)</td>
<td></td>
</tr>
<tr>
<td>REGISTRATION_START_DATE</td>
<td>VAL_DATE</td>
<td>See note above about dates</td>
</tr>
<tr>
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| GVW_EXPIRE_DATE | (none) | |
| IRP_PRORATION.IRP_JURISDICTION(4) | (none) | |
| IRP_PRORATION.IRP_WEIGHT(8) | (none) | |
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1) Unless there is a CVIEW mapping specified in the table below, the default mapping of ZZ (Other unlisted type) should be used.

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IRP CAB (T0022V2)
Motor Vehicle Registration (MVR)

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<td>4H</td>
<td>4D HITCHBK</td>
</tr>
<tr>
<td>4L</td>
<td>4D LIFTBK</td>
</tr>
<tr>
<td>4P</td>
<td>4D HARDTP</td>
</tr>
<tr>
<td>4S</td>
<td>4D SEDAN</td>
</tr>
<tr>
<td>4T</td>
<td>4D HARDTP</td>
</tr>
<tr>
<td>4W</td>
<td>4WHEEL DR</td>
</tr>
<tr>
<td>5D</td>
<td>4D SEDAN</td>
</tr>
<tr>
<td>5H</td>
<td>5D HITCHBK</td>
</tr>
</tbody>
</table>

**Triggers**

The trigger field for transactions are as follows:

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>T0022 - Vehicle (cab) info</td>
<td>RT_REGISTRATION.ACTION_DATE</td>
</tr>
</tbody>
</table>

**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
<?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)
```
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",
  "AL" => "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" => "RS",
  "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)

```php
if ($Results === TRUE) die("no rows");
$SnapDate = date("Y-m-d\Th:i:s");
// output XML heading
$XMLHeader = "<?xml version="1.0"?>
<INTERFACE>
  <NAME>SAFER</NAME>
  <VERSION>04.02</VERSION>
</INTERFACE>
<TRANSACTION>
  <VERSION>01.00</VERSION>
  <OPERATION>REPLACE</OPERATION>
  <DATE_TIME>$SnapDate</DATE_TIME>
  <TZ>CD</TZ>
</TRANSACTION>
";
fwrite($fhout,$XMLHeader);
while ($Row = mssql_fetch_object($Results)){
  $XMLCab = " <IRP_REGISTRATION>
  // 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;
  $FUEL = $MapFuel[$Row->ENGINE_FUEL];
  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
  $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)

<?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 -->

    <!-- 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>
</schema>

XML Transactions

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

T0022V2.xsd - IRP Cab
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>
<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>
<element name="IRP_FLEET_NUMBER" minOccurs="0">
  <simpleType>
    <restriction base="string" max-length="15"/>
  </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" max-length="55"/>
  </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" max-length="18"/>
  </simpleType>
</element>
<element name="GVW" minOccurs="0">
  <simpleType>
    <restriction base="integer" totalDigits="8"/>
  </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="GVW_EXPIRE_DATE" type="ts:globalOptionalDateType" minOccurs="0"/>
    <element name="IRP_PRORATION" type="ts:IRPProrationType" maxOccurs="unbounded"/>
  </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**

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

**Data Records**

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

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Note Below on</th>
<th>Map to</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATUS_DT</td>
<td>IFTA_STATUS_DATE</td>
<td>STATUS_DT</td>
<td>globalJurisdictionType</td>
</tr>
<tr>
<td>LIAB_DT</td>
<td>IFTA_ISSUE_DATE</td>
<td>STATUS_DT</td>
<td>globalJurisdictionType</td>
</tr>
<tr>
<td>WITHDRL_DT</td>
<td>IFTA_EXPIRE_DATE</td>
<td>STATUS_DT</td>
<td>globalJurisdictionType</td>
</tr>
<tr>
<td>REVOKE_CD</td>
<td>IFTA_STATUS_CODE</td>
<td>STATUS_CD</td>
<td>globalOptCountryType</td>
</tr>
<tr>
<td>REVOKE_DT</td>
<td>IFTA_STATUS_DATE</td>
<td>REVOKE_CD</td>
<td>globalOptCountryType</td>
</tr>
<tr>
<td>MAIL_ADDR1</td>
<td>IFTA_NAME.IFTA_ADDRESS</td>
<td>MAIL_ADDR1</td>
<td>globalOptCountryType</td>
</tr>
<tr>
<td>MAIL_ADDR2</td>
<td>IFTA_NAME.IFTA_ADDRESS</td>
<td>MAIL_ADDR2</td>
<td>globalOptCountryType</td>
</tr>
<tr>
<td>MAIL_CITY</td>
<td>IFTA_NAME.IFTA_ADDRESS</td>
<td>MAIL_CITY</td>
<td>globalOptCountryType</td>
</tr>
<tr>
<td>MAIL_ST</td>
<td>IFTA_NAME.IFTA_ADDRESS</td>
<td>MAIL_ST</td>
<td>globalOptCountryType</td>
</tr>
<tr>
<td>MAIL_ZIP</td>
<td>IFTA_NAME.IFTA_ADDRESS</td>
<td>MAIL_ZIP</td>
<td>globalOptCountryType</td>
</tr>
<tr>
<td>MAIL_COUNTRY</td>
<td>IFTA_NAME.IFTA_ADDRESS</td>
<td>MAIL_COUNTRY</td>
<td>globalOptCountryType</td>
</tr>
</tbody>
</table>

**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:

<table>
<thead>
<tr>
<th>Count</th>
<th>STATUS_CD</th>
<th>REVOKE_CD</th>
<th>WITHDRL_DT</th>
<th>Map</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>11379</td>
<td>ACTIVE</td>
<td>(blank)</td>
<td>(blank)</td>
<td>1</td>
<td>Active</td>
</tr>
<tr>
<td>608</td>
<td>ACTIVE</td>
<td>0</td>
<td>(blank)</td>
<td>2</td>
<td>Active Pending</td>
</tr>
<tr>
<td>161</td>
<td>ACTIVE</td>
<td>1</td>
<td>(blank)</td>
<td>2</td>
<td>Active Pending</td>
</tr>
<tr>
<td>61</td>
<td>ACTIVE</td>
<td>2</td>
<td>(blank)</td>
<td>2</td>
<td>Active Pending</td>
</tr>
<tr>
<td>72</td>
<td>ACTIVE</td>
<td>R</td>
<td>(blank)</td>
<td>3</td>
<td>Active Delinquent</td>
</tr>
<tr>
<td>1</td>
<td>CANCEL</td>
<td>R</td>
<td>(blank)</td>
<td>7</td>
<td>Canceled</td>
</tr>
<tr>
<td>9</td>
<td>INACTIVE</td>
<td>R</td>
<td>(blank)</td>
<td>A</td>
<td>Inactive Delinquent</td>
</tr>
<tr>
<td>255</td>
<td>SUSPENSE</td>
<td>(blank)</td>
<td>(blank)</td>
<td>6</td>
<td>Suspended</td>
</tr>
<tr>
<td>11</td>
<td>SUSPENSE</td>
<td>0</td>
<td>(blank)</td>
<td>2</td>
<td>Active Pending</td>
</tr>
<tr>
<td>2</td>
<td>SUSPENSE</td>
<td>1</td>
<td>(blank)</td>
<td>2</td>
<td>Active Pending</td>
</tr>
</tbody>
</table>

Data Records 72
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:

<table>
<thead>
<tr>
<th>(MAIL/BUS)_COUNTRY</th>
<th>IFTA_ADDRESS.COUNTRY</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>US</td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>CA</td>
<td>Only one occurrence</td>
</tr>
<tr>
<td>Canada</td>
<td>CA</td>
<td></td>
</tr>
<tr>
<td>(blank)</td>
<td>(blank)</td>
<td>all US states</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Line</th>
<th>Contents</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(blank line)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>(blank line)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>(YYYYYY) records selected</td>
<td>record count of data rows</td>
</tr>
</tbody>
</table>
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
<?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
($fhout = fopen($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 ---------\n");
$Line = rtrim(fgets($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
$xmlHeader = "<?xml version="1.0"?>
<T0019 xmlns="http://www.safersys.org/namespaces/T0019V1"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.safersys.org/namespaces/T0019V1 T0019V1.xsd">
  <INTERFACE>
    <NAME>SAFER</NAME>
    <VERSION>04.02</VERSION>
  </INTERFACE>
  <TRANSACTION>
    <VERSION>01.00</VERSION>
    <OPERATION>REPLACE</OPERATION>
    <DATE_TIME>$SnapDate</DATE_TIME>
    <TZ>CD</TZ>
  </TRANSACTION>

fwrite($fhout,$xmlHeader);

// Data follows 1 line per record - no data lines start with blank
$LineCount = 0;
$Line = fgets($fh);
while (trim($Line) != "") {
  $LineCount++;
  if ($LineCount > $MaxRecords) break;
  $TAXPAYER_ID = trim(substr($Line, 0, 15));
  $BUSINESS_NAME = htmlspecialchars(rtrim(substr($Line, 16, 50)));
  $DBA_NAME = htmlspecialchars(rtrim(substr($Line, 67, 50)));
  $BUSINESS_ADDR1 = htmlspecialchars(rtrim(substr($Line, 118, 50)));
  $BUSINESS_ADDR2 = htmlspecialchars(rtrim(substr($Line, 169, 50)));
  $BUSINESS_CITY = htmlspecialchars(rtrim(substr($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));
  $WITHDRL_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));
  $MAIL_ADDR1 = htmlspecialchars(rtrim(substr($Line, 358, 50)));
  $MAIL_ADDR2 = htmlspecialchars(rtrim(substr($Line, 409, 50)));
  $MAIL_CITY = htmlspecialchars(rtrim(substr($Line, 460, 25)));
  $MAIL_ST = rtrim(substr($Line, 486, 7));
  $MAIL_ZIP = rtrim(substr($Line, 494, 9));
  $MAIL_COUNTRY = rtrim(substr($Line, 504, 15));
```

---

XML Creation Script
// special mappings
// if no US_DOT make STATE ID

// 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") $STATUS_CODE = "C"; // Revoked
} else if ($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>
</IFTA_ACCOUNT>

// check "UPDATE_DATE"
if ($WITHDRL_DT != "") $XMLAccount .=
"<IFTA_EXPIRE_DATE>$WITHDRL_DT</IFTA_EXPIRE_DATE>
";
$XMLAccount .=
"<IFTA_UPDATE_DATE>$WITHDRL_DT</IFTA_EXPIRE_DATE>
";
<IFTA_NAME>
<NAME_TYPE>LG</NAME_TYPE>
<NAME>$BUSINESS_NAME</NAME>
<IFTA_ADDRESS>
<ADDRESS_TYPE>PH</ADDRESS_TYPE>

XML Creation Script 76
<STREET_LINE_1>$BUSINESS_ADDR1</STREE_T_LINE_1>
if ($BUSINESS_ADDR2 != "") $XMLAccount .=
" <STREET_LINE_2>$BUSINESS_ADDR2</STREET_LINE_2>
//<!-- 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 -->
if ($BUS_COUNTRY != ") $XMLAccount .=
" <COUNTRY>$BUS_COUNTRY</COUNTRY>
if ($BUS_ST == "" || $BUS_ZIP == ") $XMLAccountValid = FALSE;
$XMLAccount .=
" </IFTA_ADDRESS>
// deal with different mail address
if ($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>
if ($MAIL_ADDR2 != "") $XMLAccount .=
<STREET_LINE_2>$MAIL_ADDR2</STREET_LINE_2>
//<!-- 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 -->
if($MAIL_COUNTRY != ") $XMLAccount .=
" </IFTA_ADDRESS>
if ($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>
}
// end tags
$XMLAccount .=
" </IFTA_NAME>
</IFTA_ACCOUNT>
if ($XMLAccountValid) fwrite($fhout,XMLAccount); else echo "*** Invalid XMLAccount
XMLAccount
if ($DEBUG) {
echo "*** $LineCount ***" . strlen($Line) . 
if ($US_DOT)
echo "|$US_DOT|
echo "|$TAXPAYER_ID|
echo "|$BUSINESS_NAME|
echo "|$DBA_NAME|
echo "|$BUSINESS_ADDR1|
echo "|$BUSINESS_ADDR2|
XML Transactions

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

T0019.xsd IFTA input transaction

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

targetNamespace="http://www.safersys.org/namespaces/T0019V1"

International Fuel Tax Agreement (IFTA)
```
International Fuel Tax Agreement (IFTA)

<include schemaLocation="globalTypes.xsd"/>

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

<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"/>
  </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.
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
<?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>
```

<!-- 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>
T0024V1.xsd - Transponder ID

<?xml version="1.0"?>
<schema
targetNamespace="http://www.safersys.org/namespaces/T0024V1"
xmns:ts="http://www.safersys.org/namespaces/T0024V1"
xmns="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>
<!-- 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
<?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"/> <!-- IRP Account -->
      <enumeration value="S"/> <!-- 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"/> <!-- false/no -->
      <enumeration value="1"/> <!-- true/yes -->
    </restriction>
  </simpleType>
</schema>
```
<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>
                <restriction base="string">
                    <maxLength value="0"/>
                </restriction>
            </simpleType>
        </union>
    </union>
</simpleType>

<simpleType name="globalOptionalDateTimeType">
    <union memberTypes="dateTime">
        <simpleType>
            <restriction base="string">
                <maxLength value="0"/>
            </restriction>
        </simpleType>
    </union>
</simpleType>
<complexType name="globalString6Type">
  <restriction base="string">
    <maxLength value="6"/>
  </restriction>
</complexType>
<complexType name="globalCharType">
  <restriction base="string">
    <minLength value="1"/>
    <maxLength value="1"/>
    <whiteSpace value="preserve"/>
  </restriction>
</complexType>
<complexType name="globalOptCharType">
  <restriction base="string">
    <minLength value="0"/>
    <maxLength value="1"/>
    <whiteSpace value="preserve"/>
  </restriction>
</complexType>
<complexType 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>
</complexType>
<enumeration value="GI"/>
<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"/>
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<enumeration value="IA"/>
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<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"/>
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<enumeration value="MX"/>
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<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"/>
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<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 -->
<!-- Chiapas -->
<!-- Districto 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 -->
<!-- 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>
<enumeration value="AG"/>
<enumeration value="BN"/>
<enumeration value="BS"/>
<enumeration value="CH"/>
<enumeration value="CI"/>
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<enumeration value="CP"/>
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<enumeration value="MC"/>
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<enumeration value="SO"/>
<enumeration value="TA"/>
<enumeration value="TB"/>
<enumeration value="TL"/>
<enumeration value="VC"/>
<enumeration value="YU"/>
<enumeration value="ZA"/>
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<enumeration value="AS"/>
<enumeration value="AZ"/>
<enumeration value="CA"/>
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<enumeration value="CT"/>
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<enumeration value="TX"/>
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<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"/>
<!-- 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 -->
<!-- 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>
</simpleType>

globalTypes.xsd
<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>
<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>
<enumeration value="MXGE"/>
<enumeration value="MXGJ"/>
<enumeration value="MXHD"/>
<enumeration value="MXJA"/>
<enumeration value="MXMC"/>
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<enumeration value="MXTA"/>
<enumeration value="MXTB"/>
<enumeration value="MXTL"/>
<enumeration value="MXVC"/>
<enumeration value="MXYU"/>
<enumeration value="MXZA"/>
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<enumeration value="USAL"/>
<enumeration value="USAR"/>
<enumeration value="USAS"/>
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<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 -->

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<!-- 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>
<enumeration value="MD"/>
<enumeration value="MS"/>
<enumeration value="MT"/>
<enumeration value="ND"/>
<enumeration value="NS"/>
<enumeration value="NT"/>
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<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>
<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>
<enumeration value="SR"/>
<enumeration value="ST"/>
<enumeration value="SW"/>
<enumeration value="TB"/>
<enumeration value="TC"/>
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<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 -->
<simpleType name="globalIRPStatusCodeType">
  <restriction base="string">
    <enumeration value="0"/>
    <enumeration value="100"/>
    <enumeration value="101"/>
    <enumeration value="111"/>
    <enumeration value="121"/>
    <enumeration value="140"/>
    <enumeration value="161"/>
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    <enumeration value="901"/>
    <enumeration value="911"/>
    <enumeration value="940"/>
    <enumeration value="941"/>
    <enumeration value="943"/>
    <enumeration value="951"/>
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    <enumeration value="953"/>
  </restriction>
</simpleType>
<restriction base="string">
  <enumeration value="A"/>
  <enumeration value="B"/>
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