

CALIFORNIA TOLL OPERATORS COMMITTEE
("CTOC")

Technical Specification

for

Interagency Electronic Data Interchange

Revision G.4.4.
December 21, 2011

Table of Contents

1.0	List of Revisions	4
2.0	Document Control.....	7
3.0	Goal.....	8
4.0	Business Rules	9
5.0	Technical Specifications	10
5.1	File Exchange Methodology.....	10
5.2	Process Flow Diagram (Example)	11
6.0	File Naming Conventions	11
7.0	California’s Definition for Title 21’s 32-Bit Transponder Id Number Field	14
7.1	Tag Type	14
7.2	Facility Code.....	14
7.3	Internal Tag Id.....	15
7.4	Title 21 Agencies Out-of-state:	16
8.0	General File Format Rules	17
8.1	Toll Charges Processing	18
8.1.1	Narrative	18
8.2	Toll Charges File.....	19
8.2.1	Toll Charges Header Record Format	19
8.2.2	Toll Charges Detail Record Format.....	19
8.2.3	Toll Charges Trailer Record Format.....	19
8.2.4	Toll Charges Sample File.....	19
8.3	Reconciled Toll Charges File.....	20
8.3.1	Reconciled Toll Charges Header Record Format	20
8.3.2	Reconciled Toll Charges Detail Record Format	20
8.3.3	Reconciled Toll Charges Trailer Record Format.....	20
8.3.4	Reconciled Toll Charges Sample File.....	21
8.4	Tag Status File	22
8.4.1	Tag Status Header Record Format	22
8.4.2	Tag Status Detail Record Format.....	22
8.4.3	Tag Status Trailer Record Format.....	22
8.4.4	Tag Status Sample File	23
8.5	Pay by Plate Processing	24
8.5.1	Narrative	24
8.6	Pay By Plate File.....	26
8.6.1	Pay by Plate Header Record Format.....	26
8.6.2	Pay by Plate Detail Record Format.....	26
8.6.3	Pay by Plate Trailer Record Format.....	26
8.6.4	Pay by Plate Sample File	26
8.7	License Plate Status File	27
8.7.1	Plate Status Header Record Format	27
8.7.2	Plate Status Detail Record Format.....	27

8.7.3	Plate Status Trailer Record Format.....	27
8.7.4	Plate Status Sample File.....	27
8.8	Reconciled Pay-By-Plate Charges File.....	28
8.8.1	Reconciled Pay-By-Plate Header Record Format.....	28
8.8.2	Reconciled Pay-By-Plate Detail Record Format	28
8.8.3	Reconciled Pay-By-Plate Trailer Record Format	28
8.8.4	Reconciled Pay-By-Plate Sample File	29
APPENDIX A: Plaza/Lane Descriptions.....		30
APPENDIX B: Title 21 Definition.....		40
B.1	Narrative	40
APPENDIX C: SubType Definitions for Tag Record File.....		41
C.1	Subtype - A	41
C.2	Subtype - B	41
C.3	Subtype - C	41
APPENDIX D: License Plate Date Logic		42
APPENDIX E: Violation Enforcement via Plate Reads.....		43

1.0 List of Revisions

- Rev. A Initial Release
- Rev. B Adds Good Tags File Layout
- Rev. C Adds Toll Violations File Layout
- Rev. D Adds Statement Descriptions in Appendix E
Document Reformatted
- Rev. E Revise Good Tags File to Tag Status File
Changed Processing Times
- Rev. F Modifies Violations File Format
Adds License Plate Exchange File Layout
Adds Document Distribution List
Adds Additional Plaza/Lane Designations for TCA
- Rev. G Modified Tag Status File Format to additional tag information fields
Added new Appendix F - Violations Reject File
Rename old Appendix F (Plaza/Lane Designations) to Appendix I
Re-organize document to current form
Add Title 21 definition as Appendix K
Add Title 21 approved messages codes as Appendix L
- Rev. G (1-7-2002) Combined commented versions of document into current version for
comment and approval
- Rev. G (2-26-2002) Questions and answers revisions to document
- Rev. G (FINAL) Final comments added from teleconference
- Rev. G.1 (FINAL) Final corrections:
1) Remove DIFF from tag status file header
2) Fix sample file for tag status
3) Pay-by-Plate Processing Narrative correction
4) Reconciled Pay-By-Plate Charges File – fixed Reconcile codes
- Rev. G.2 (FINAL) Corrections:
1) Change to General File Format Rule #15 regarding transaction
uniqueness
2) Add General File Format Rule #16 regarding sequence numbering
- Rev. G.3 (FINAL) Corrections:
1) Remove “optional” from 3 subtypes on Tag Status File. Subtypes
must be sent.

- 2) Remove the San Diego CALTRANS Bridge (Coronado)

Rev. G.4 (April 26, 2004) Corrections:

- 1) Corrected Title 21 tag range assignments to reflect current approved assigned ranges.
- 2) Corrected Definition of License Plate field (in License Plate Status File) to read “Alphanumeric” instead of “Alpha”
- 3) Added the following “Format conforming to DMV Parking Manual” to the description of the License Plate Field
- 4) Added “Daily Violation Sweep” Flowchart to Appendix D
- 5) Updated “Pay by Certificate” Flowchart in Appendix E

Rev. G.4.1.a. (December 13, 2010) Corrections:

- 1) Corrected Table of Contents to include page 11, “File Naming Conventions”
- 2) Updated the “Document Control” to remove Harry Hansen, Jr. and add Joyce Hill as the Document Control contact.
- 3) Updated the California’s Definition for Title 21’s 32-BIT Transponder ID number Field to include the current Facility Codes, descriptions for Tag Type and Title 21 Out-of-state Agencies (February 16,2010)
- 4) Record Appendixes as listed in Rev. G.4:
Appendix A: Plaza/Lane Description
Appendix B: Title 21 Definition
Appendix C: Subtype Definitions for Tag Record File
Appendix D: License Plate Date Logic
Appendix E: Violation Enforcement via Plate Reads
- 5) Appendix A: Added lane and descriptions for TCA (Windy Ridge SB/NB Lane 13, November 3,2009)
- 6) Appendix A: Added lane and descriptions for I-680 Express lanes
- 7) Appendix A: Corrected lane and descriptions for SANGAG

Rev. G.4.1.b. (April 7, 2011) Corrections

- 1) *Appendix A:* Added lane and description for TCA (Tomato Springs SB/NB Lane 13, 2004)
- 2) Updated agency name in Table 2, *Agency Codes*, to add “BATA.”
- 3) Updated the *California’s Definition for Title 21’s 32-BIT Transponder ID number Field* to include the current Facility Codes, descriptions for Tag Type and Title 21 Out-of-state Agencies (January 13, 2011)

Rev. G.4.2. (June 21, 2011)

Corrections:

- 1) *Appendix A*: Deleted lanes and description for TCA (Portola Parkway North Off Lanes 2248-03, 2248-04 and Portola Parkway North On Lanes 2249-03, 2249-04)

Changes:

- 2) Updated *California's Definition for Title 21's 32-Bit Transponder Id Number Field*, Section 7.1 Transponder Tag Type ID for HOV Switchable Tags. (March 24, 2011)
Includes Example Tag
- 3) Updated *General File Format Rules* for switchable tag mode. (February 14, 2011)
Section 8.2.2 Field: Tag ID; *Notes* section
Section 8.3.2 Field: Tag ID; *Notes* section
Section 8.4.2 Field: Tag ID, SUBTYPE; *Notes* section
Includes Example Records

Rev. G.4.3. (November 16, 2011) Changes:

- 1) Added LA Metro to the Agency Codes; Section 6.0, Table 2.
- 2) Updated *California's Definition for Title 21's 32-Bit Transponder Id Number Field*, Section 7.0. (Version 17, October 7, 2011)
- 3) Added lanes and descriptions for LA Metro to Appendix A: Plaza/Lane Descriptions

Rev. G.4.4. (December 21, 2011) Changes:

- 1) **Added lanes and descriptions for 237 Express Lanes to Appendix A: Plaza/Lane Descriptions**

2.0 Document Control

All suggested additions, changes, and deletions should be submitted to:

Joyce Hill
c/o Transportation Corridor Agencies
125 Pacifica
Irvine, CA 92618
Phone: (949) 754-3484
Fax: (949) 754-3464
Email: jhill@thetollroads.com

Archival of this document will be at:

Transportation Corridor Agencies
125 Pacifica
Irvine, CA 92618

Any requests for changes, modifications, corrections, etc. will be logged, and then forwarded (through CALTRANS) to the CTOC members for comment before incorporation into this Specification. No additions, modifications or deletions shall be valid and effective unless and until the same have been agreed to by the CTOC members.

3.0 Goal

The members of the California Toll Operators Committee acknowledge that one of their goals is to offer interoperability to their customers including the ability to offer a single account statement to each customer setting forth their transaction activities on all participating facilities. In addition, and in accordance with California Senate Bill 1523, Chapter 1080, Section 27565, the CTOC agencies will ensure that, for purposes of toll collection, the vehicle owner shall not be required to purchase or install more than one transponder device to use on all participating toll facilities.

Acquiring Agency	The owner/operator of the facilities at which a transaction occurred.
AVI	Automatic Vehicle Identification
CHP	California Highway Patrol – State law enforcement agency charged with enforcing the California Vehicle Code.
Facility Code	A number within a range of numbers assigned by CALTRANS to the Issuing Agency, which is programmed into the transponder for automatic identification purposes
Issuing Agency	The entity that establishes the account and issues the transponders.
Lane Controller	Device which records data read from a transponder by overhead antennas, reads light curtains to provide for vehicle separation, treadles to determine axle count, and can control gates or barriers if the proper toll is paid via AVI or deposit of coins.
Plate	License plate of a vehicle; captured by violation enforcement system (VES) if present.
Reciprocating Agency	Any agency with which the Issuing Agency has a User Fee Processing Agreement.
Tag ID	A number ranging from 0 to 1023 associated with a single facility code that further uniquely identifies a transponder. For example, a facility code of 132196 would have 1024 tag ids associated with it
Tag Type	A number within a range that identifies the type of transponder
Transponder (tag)	Device to allow for automatic transaction identification, works by means of radio signal activation and returns the information programmed into by the Issuing Agency.
VES	Violation Enforcement System: for facilities with video enforcement, this would consist of high speed and video cameras to capture potential violator’s license plate for further identification and forwarding to a Violation Processing System. For facilities without video enforcement, this might consist of visual enforcement by the CHP or other designated agency.

4.0 Business Rules

- 1) Identification of Issuing Agency - The Facility Code on the tag will identify the Issuing Agency (holder of the account). This requirement ensures that tags cannot be transferred from one agency to another.
- 2) Guarantee of payment for valid tags - The Issuing Agency will honor all transactions on transponders that were deemed “valid” in the Tag Status File, as sent to the Acquiring Agency for the date associated with each toll event. The Acquiring Agency has the responsibility to validate such transactions.
- 3) Guarantee of payment for valid plates - The Issuing Agency will honor all transactions on license plates deemed “valid” in the License Plate File, as sent to the Acquiring Agency for the date associated with each toll event. The Acquiring Agency has the responsibility to validate these transactions.
- 4) Tag and Plate transactions are to be processed according to their status at the time of the transaction in the toll lane.
- 5) By convention all agencies accept that the reconciled toll charges will be available by 8:00 a.m. the following business day after processing with all reconciliation completed no longer than 14 calendar days after receipt. If reconciliation for a particular file is not received within 14 calendar days, the issuing agency shall honor all transactions within the original subject file.
- 6) The suggested time for the completion of the upload of all tag status (and plate status) files needed by an entity is set at 1:00 a.m.; the suggested time the lanes should be updated (with the tag status files) is no later than 5:00 a.m. This is to allow time for the loading of tag lists into lane controllers. This is a guideline. Some agencies may be able to load the tag lists to their lane controllers sooner. If a tag status (and/or plate status) file has not been received from an Issuing Agency, then the Receiving Agency should send an e-mail notification, by 10 a.m. of the same business day (or the next business day in the case of weekends and holidays), of non-receipt of the file(s). If a file (or files) is received past the recommended deadline, the receiving agency should make a best-effort to use the file(s) received.

Initialization files will be sent at least on a weekly basis on Saturdays at 1:00 a.m. for the plate and tag files.

5.0 Technical Specifications

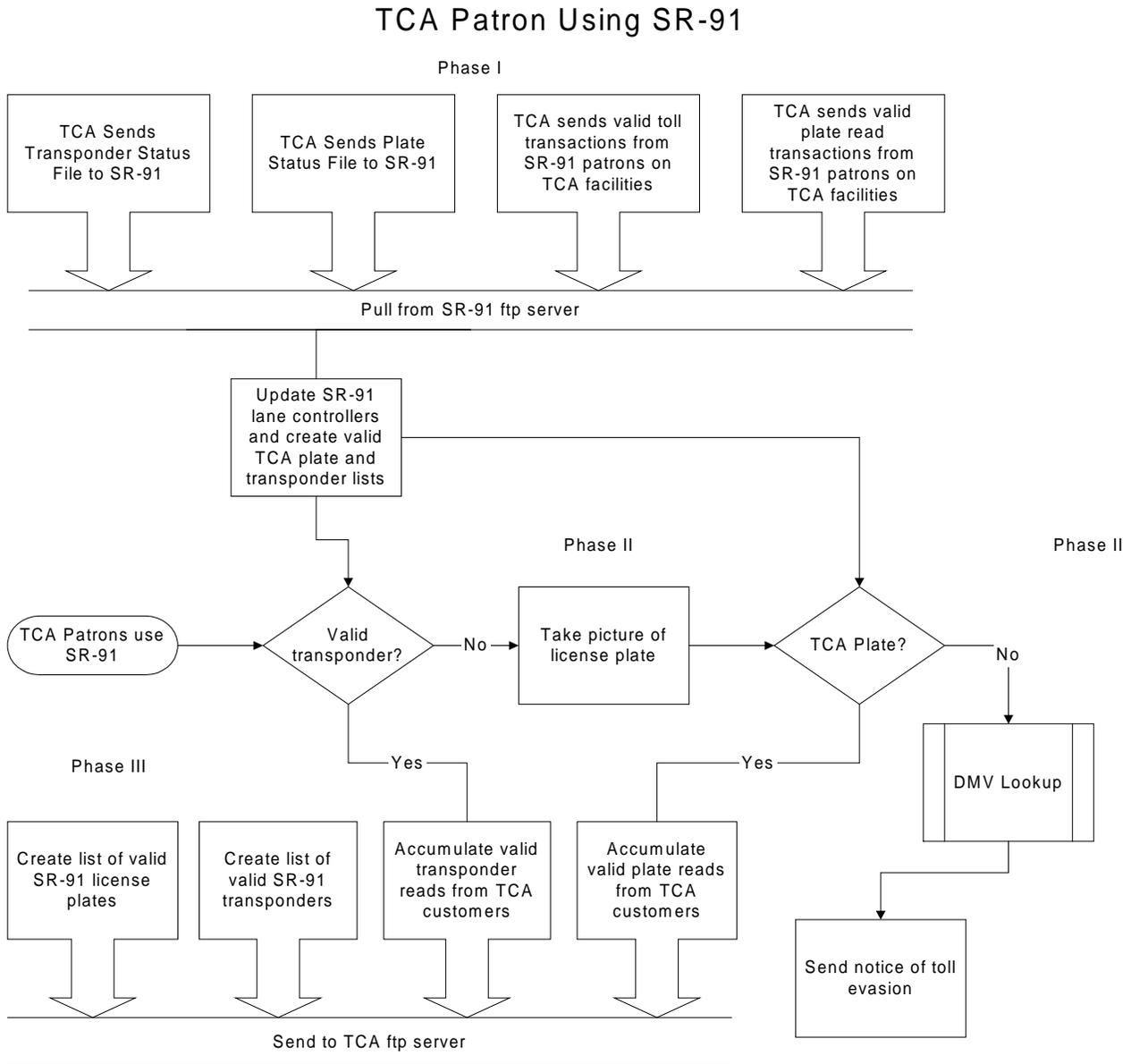
5.1 File Exchange Methodology

Currently the file transfer mechanism utilizes the ftp (file transfer) protocol over the Internet to exchange the data files to/from each agency's ftp server. The transfer files are created with an agency's proprietary software, but the files conform to the formats described in this document. The files are generated in an ASCII format, and then the sending agency encrypts the file using PGP (pretty good privacy) encryption tools, and the receiving agency's public key. This also has the effect of compressing the data. The sending agency then utilizes the ftp protocol to send the encrypted files to the receiving agency's ftp server. The receiving agency possesses its private key and can therefore decrypt the received files. After decryption, the receiving agency processes the data with their own proprietary software.

Requirements

- Each agency must have a publicly accessible ftp server, with or without a DNS entry on the Internet. An ftp exchange can be accomplished with only the IP address.
- The receiving agency will provide a special account and password to each agency that will transmit files to it. This is to prevent anonymous users from accessing the ftp site.
- Each agency shall install a PGP encryption package suitable for the platform they run on.
- Files will be encrypted before transmission to ensure the confidential data does not fall into unauthorized hands.

5.2 Process Flow Diagram (Example)



Phase I - occurs nightly before major traffic flow.

Phase II - occurs during the day while transactions are being logged by the AVI.

Phase III - occurs early the next day before major traffic flow.

6.0 File Naming Conventions

The file names (and extensions) are designed to be able to tell, at a glance, the information contained in the file, its source and its destination. All file names and extensions shall use lowercase characters.

The file extensions shall define the type of information contained in the file and shall be as shown in Table 1.

Table 1 - File Extensions

File Description	File Extension	Originate/Response
Tag Status File	tag	Originate
License Plate Status File	plt	Originate
Toll Charges File	tol	Originate
Pay by Plate File	pbp	Originate
Reconciled Toll Charges File	trc	Response
Reconciled Pay by Plate File	prc	Response

File names shall use two distinct formats depending on whether the file is an Originate file or a Response file.

Originate file names shall have the format:

aabb_yyyymmdd_hhmmss.xxx

Where the fields are defined as follows:

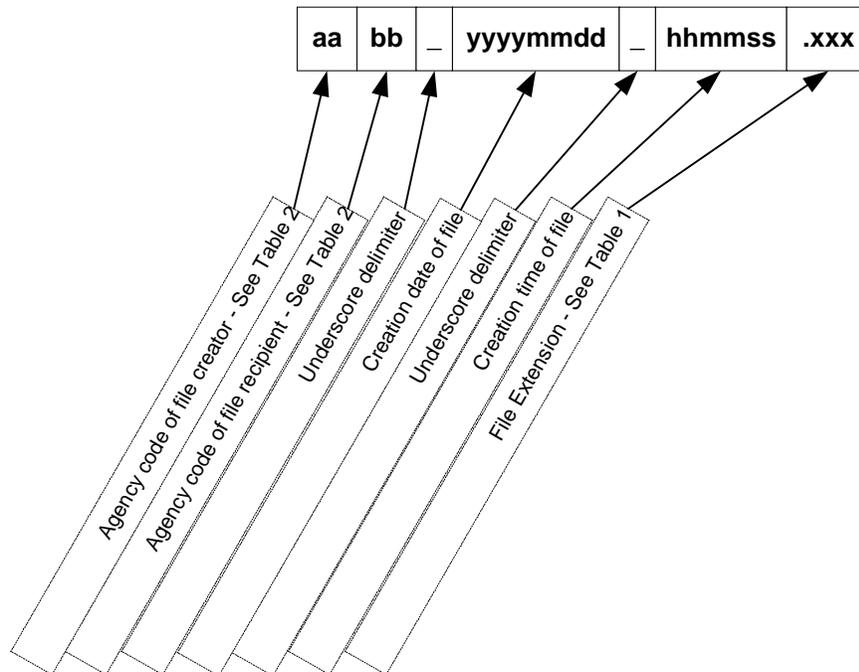


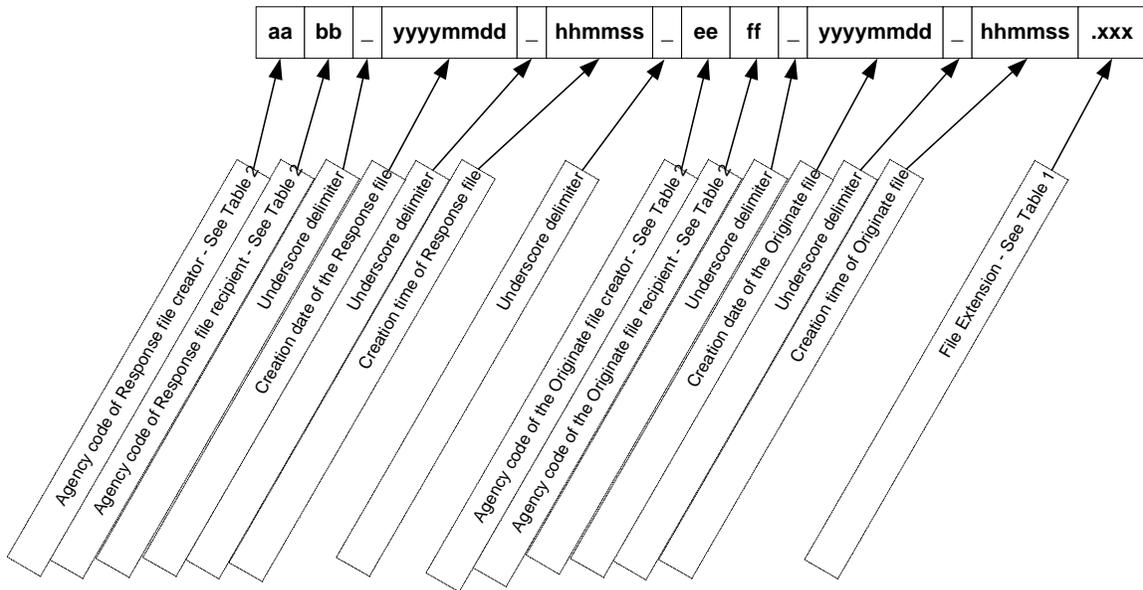
Table 2 - Agency Codes

Agency Name	Agency Code
BATA/CALTRANS (ATCAS)	at
Golden Gate Bridge	gg
SANDAG (I-15)	sd
SR-91	sr
TCA	tc
CTV	cv
LA Metro	la
All Agencies	xx

Response file names shall have the format:

aabb_yyyymmdd_hhmmss_eeff_yyyymmdd_hhmmss.xxx

Where the fields are defined as follows:



The format of the Response file name is such that one can tell, at a glance, not only the creator of the Response file, but also the Originate file to which this file is a response.

7.0 California’s Definition for Title 21’s 32-Bit Transponder Id Number Field¹

In the State of California, the 32-bit Transponder ID Number Field specified in the Title 21 standard has been further subdivided into three data fields to represent Tag Type, Facility Code, and Internal Tag ID. These fields are currently defined as follows:

32-bit Transponder ID Number Field		
<i>Tag Type</i>	<i>Facility Code</i>	<i>Internal Tag Id</i>
4 Bits	18 Bits	10 Bits
16 Possibilities	262,144 Possibilities	1,024 Possibilities
Most Significant Bit		Least Significant Bit

7.1 Tag Type

A 4-bit field currently established to uniquely differentiate California’s transponder from transponders that originate from agencies external to the state. In the future the unassigned bits could be used to recommend a unique North American agency numbering scheme, or to further describe the operational behavior of the transponder. The 4-bit field is defined in decimal notation as follows:

- 0- California SOV.
- 2- Existing Out of State
- 4- California HOV2
- 8- California HOV3+
- 1, 3, 9-15 - Unassigned. Available for a future use.

7.2 Facility Code

An 18-bit field used to identify the facility or entity conducting business. Facility Code ranges are assigned based upon the number of transponders that are projected to be utilized. The 18-bit field is defined in decimal notation as shown in the two tables below. Table 1 is for non-switchable transponder tags and Table 2 is for switchable transponder tags:

¹ California Department of Transportation , Ver. 17, October 07, 2011

Table 1

Non-Switchable Transponder Tags Facility Codes (Tag Type 0)		
<i>Agency</i>	<i>Facility Codes Assigned</i>	<i>No. of Transponders</i>
State of California	0 – 75,000	76,801,024
Sacramento County Dept. of Airports	125,001 – 125,020	20,480
TCA	130,047 – 132,092	2,095,104
SR-91	132,096 – 132,990	916,480
SANDAG I-15	132,992 – 133,001	10,240
Golden Gate Bridge	133,015 – 133,407	402,432
CTV	134,583 – 134,876	301,056
Port of Oakland	140,000 – 140,001	2,048
LA World Airports	141,000 – 141,012	13,312
BATA	145,000 – 146,974	2,022,400
SENTRI	184,876 – 185,022	150,528
SANDAG I-15	258,960 – 259,100	144,384
Caltrans ATCAS	260,096 – 262,136	2,089,948

Table 2

Switchable Transponder Tags Facility Codes (Tag Type 0, 4, 8)²		
<i>Agency</i>	<i>Facility Codes Assigned</i>	<i>No. of Transponders</i>
LA MTA	75,001 – 75,489	500,736
TCA	80,000 – 80,048	50,176

² Switchable transponder tags have Facility Code range from 75,001 to 125,000

7.3 Internal Tag Id

A 10-bit field used to refer to the unique identification numbers that belongs to an assigned Facility Code. For each Facility Code, a block of 1,024 Internal Tag IDs will be assigned within the Transponder ID Number Field. Assignment of the Internal Tag IDs is the responsibility of the Facility Code Agency.

7.4 Title 21 Agencies Out-of-state:

Since the Title 21 standard is an open specification there are other agencies outside of California that can also use interoperable transponders. These external agencies could inadvertently duplicate California's transponder ID number field assignments and render them non-unique.

Following is a listing of out-of-state Title 21 agencies that have contacted the California Department of Transportation to participate in California's unique definition for the 32-bit Transponder ID Number field. Please note that this listing does not ensure that the assignments are unique as they may have been duplicated by another agency outside of California.

32-bit Transponder ID Number Field Definition for Title 21 Agencies Out-of-state			
<i>Agency</i>	<i>Tag Type</i>	<i>Facility Codes Assigned</i>	<i>No. of Transponders</i>
Colorado E-470 Public Highway Authority	2	0 – 9,766	10,001,408
Denver International Airport	2	10,000 – 10,029	30,720
Golden Ears Bridge Group Vancouver, Canada	2	15,000 – 16,000	1,025,024

8.0 General File Format Rules

The following rules apply to all files used in interoperability:

1. All files will be in ASCII format.
2. All files will use the comma “,” as the field delimiter.
3. All files will use the line feed “LF” (hex 0A) as the record delimiter.
4. Each file will contain:
 - a. A header record
 - b. Detail records
 - c. A trailer record
5. All numeric fields will be fixed size and with leading zeros.
6. All date fields will be delimited with a forward slash “/”.
7. All time fields will be delimited with a colon “:”.
8. The Plaza/Lane combination will be pre-defined for validation and printing on patron statements (see Appendix A for Plaza/Lane designations).
9. Date fields will have the following format: MM/DD/YYYY
10. Time fields will have the following format: HH:MM:SS
11. The BUSINESS DAY field will be implemented by each agency according to that agencies’ own requirements.
12. For files that are exchanged under a comprehensive/differential update, the comprehensive update will occur on Saturday morning at 1:00 a.m. of any given week, and the differentials will take place on the remaining days of the week.
13. By mutual consent, file transfer times can be adjusted.
14. Processing and file transfer take place 365/366 days per year.
15.
 - a) Transaction Number and Date must be a unique combination.
 - b) Tag#, Plaza, Lane, Date, and Time must be a unique combination for tolls.
 - c) Plate#, Plaza, Lane, Date, and Time must be a unique combination for paid-by-plates.
 - d) Also, the transaction number cannot be 0.
16. A unique sequence numbering scheme is required for each .plt, .pbp, .tol, .tag file going to each agency. For example, when TCA is sending files to SR-91, the .tol files, the .plt files, the .tag files, and the .pbp files would be numbered 1,2,3, etc. in sequence, within each file type. So you would have a .tol with a sequence of #1, a .plt with a sequence # of 1, etc. This would be repeated for TCA sending to CALTRANS, TCA sending to Golden Gate Bridge, and TCA sending to SANDAG. So you would have 4 sets (one set for each receiving agency) of 4 unique sequence numbers for outgoing files. You would also have to track the same information for incoming files from each agency. This would bring the total to 32 unique sequences (4 agencies times 4 file types times 2 – incoming and outgoing). If the systems are designed to incorporate CTV now, then the number goes to 40 (4 more outgoing and 4 more incoming). An e-mail should be sent to the sending agency by the receiving agency, by 10AM, when a file is detected as missing. This will probably occur on the day the NEXT file is received (sequence #1 is received on Monday, then sequence #3 is received on Wednesday – you can conclude that sequence #2 was missed and report it on Wednesday. You can’t report it on Tuesday because if you haven’t received anything, you don’t know if it has been missed.)

8.1 Toll Charges Processing

8.1.1 Narrative

Interoperability requires that certain static information be exchanged by the issuing and reciprocating agencies on a daily basis. Each agency integrates the information from the other agency's *Tag Status File* into their own lane controllers at the beginning of each day, prior to any significant traffic flow on their own facility. This allows the lane controllers to differentiate between Valid and Invalid transponders. Each agency can then take such action, based on their own requirements, to handle invalid transponders, such as taking violation photographs of the issuing patron's license plates, thereby reducing the load on the acquiring agency's image processing center.

The transponder data is also stored in an electronic database and is deemed to be a valid and definitive record of the Issuing Agency's active customer transponder list until a subsequent file is received from the Issuing Agency. At the end of the Acquiring Agency's processing day, the trips that were recorded by its system are compared to the list of active transponders from the Issuing Agency. Those trips that have a transponder identified with them and whose transponder number matches a number on the Issuing Agency's most recent list are segregated and assembled into an electronic file. This is transmitted to the Issuing Agency as described under the *Technical Specifications* section.

The Issuing Agency, upon receipt of the acquiring agency's *Toll Charges File*, integrates it into their database so that their own patrons can be charged for the trip the patron took on the acquiring agency's facility. At an agreed upon time interval, the Acquiring Agency totals the trips taken by issuing agency patrons and invoices the Issuing Agency for the aggregate total of those trips. Pursuant to the User Fee Processing Agreement, the Issuing Agency guarantees payment of transactions recorded by the Acquiring Agency of issuing agency transponders until a new transponder list is received from the Issuing Agency. Therefore, there should be no transactions that would be rejected by the Issuing Agency that were sent by the Acquiring Agency.

After a Toll Charges file is processed by the Issuing Agency, the Issuing Agency will create a *Reconciled Toll Charges File* and send it to the Acquiring Agency. This file will contain a detail record for each and every transaction received by the Issuing Agency from the Acquiring Agency in the corresponding Toll Charges file.

8.2 Toll Charges File

8.2.1 Toll Charges Header Record Format

Field #	Field Name	Field Type	Length	Notes
1	RECORD TYPE	#HEADER	7	Indicates this is a header record (#HEADER)
2	FILE TYPE	TOLL	4	Indicates this is a toll charges file (TOLL)
3	SEQUENCE #	Integer	6	Sequence # generated by sending agency, has matching entry in the trailer record
4	BUSINESS DAY	Date	10	Business day
5	SOURCE	Alpha	2	Two letter code of source entity
6	DESTINATION	Alpha	2	Two letter code of destination entity
7	CREATE DATE	Date	10	Transmission file create day
8	CREATE TIME	Time	8	Transmission file create time in 24 hr clock

8.2.2 Toll Charges Detail Record Format

Field #	Field Name	Field Type	Length	Notes
1	TAG ID	Hex	8	Tag ID in hex format. Tag ID will be sent with switch mode as read in lane (0, 4, 8)
2	TRAN #	Integer	10	Transaction # generated by sending agency
3	TRAN DATE	Date	10	Transaction date
4	TRAN TIME	Time	8	Transaction time in 24 hour format
5	TRAN AMOUNT	Money	8	Amount charged for transaction
6	PLAZA	Integer	4	Location/Plaza Site
7	LANE	Integer	2	Lane identifier

8.2.3 Toll Charges Trailer Record Format

Field #	Field Name	Field Type	Length	Notes
1	RECORD TYPE	#TRAILER	8	Trailer record indicator
2	SEQUENCE #	Integer	6	Sequence # matching entry in header
3	BUSINESS DATE	Date	10	Business day
4	RECORD COUNT	Integer	6	Number of detail records
5	TRAN SUM	Money	10	Total amount of all transactions in file

8.2.4 Toll Charges Sample File

```
#HEADER , TOLL , 000123 , 06/23/1997 , SR , TC , 06/24/1997 , 02:02:19
081000FA , 0000403986 , 06/23/1997 , 20:14:50 , 00000.25 , 2216 , 02
0810012C , 0004279389 , 06/22/1997 , 11:09:20 , 00001.00 , 1163 , 03
0810012C , 0004310215 , 06/23/1997 , 06:40:09 , 00001.00 , 1162 , 03
08D9A3FF , 0000403986 , 06/23/2011 , 13:20:50 , 00001.25 , 2216 , 02
48D9A3FF , 0000403987 , 06/23/2011 , 16:14:50 , 00002.25 , 1163 , 03
```

```
#TRAILER , 000123 , 06/23/1997 , 000003 , 0000002.25
```

8.3 Reconciled Toll Charges File

8.3.1 Reconciled Toll Charges Header Record Format

Field #	Field Name	Field Type	Length	Notes
1	RECORD TYPE	#HEADER	7	Indicates this is a header record (#HEADER)
2	FILE TYPE	RECONCILE	9	Indicates this is a reconciled toll charges file (RECONCILE)
3	SEQUENCE #	Integer	6	Sequence # from the originating toll charges file, duplicated in trailer record
4	BUSINESS DATE	Date	10	Business day
5	SOURCE	Alpha	2	Two letter code of source entity
6	DESTINATION	Alpha	2	Two letter code of destination entity
7	CREATE DATE	Date	10	Transmission file create day
8	CREATE TIME	Time	8	Transmission file create time in 24 hr clock

8.3.2 Reconciled Toll Charges Detail Record Format

Field #	Field Name	Field Type	Length	Notes
1	TAG ID	Hex	8	Tag ID in hex format. Tag ID tag type must match sent transaction
2	TRAN #	Integer	10	Transaction # generated by sending agency
3	TRAN DATE	Date	10	Transaction date
4	TRAN TIME	Time	8	Transaction time in 24 hour format
5	TRAN AMOUNT	Money	8	Amount charged for transaction
6	PLAZA	Integer	4	Location/Plaza Site
7	LANE	Integer	2	Lane identifier
8	RESPONSE CODE	Alpha	1	A – Accepted O – Over 30 days old D – Duplicate F – Invalid format (does not conform to CTOC format) I – Invalid (not found in tag file, etc) Note: Only A indicates Paid. All other codes are reasons for rejection.

8.3.3 Reconciled Toll Charges Trailer Record Format

Field #	Field Name	Field Type	Length	Notes
1	RECORD TYPE	#TRAILER	8	Trailer record indicator (#TRAILER)
2	SEQUENCE #	Integer	6	Sequence # matching entry in header
3	BUSINESS DATE	Date	10	Business day
4	DETAIL COUNT	Integer	6	Total count of all detail records
5	DETAIL AMOUNT	Money	10	Total amount of all detail records
6	ACCEPTED CNT	Integer	6	Count of accepted detail records
7	ACCEPTED SUM	Money	10	Total amount of accepted detail records

8.3.4 Reconciled Toll Charges Sample File

```
#HEADER,RECONCILE,000123,06/23/1997,TC,SR,06/24/1997,02:02:19
081000FA,0000403986,06/23/1997,20:14:50,00000.25,2216,02,I
0810012C,0004279389,06/22/1997,11:09:20,00001.00,1163,03,A
0810012C,0004310215,06/23/1997,06:40:09,00001.00,1162,03,A
08D9A3FF,0000403986,06/23/2011,13:20:50,00001.25,2216,02,I
48D9A3FF,0000403987,06/23/2011,16:14:50,00002.25,1163,03,A

#TRAILER,000123,06/23/1997,000003,0000002.25,000002,0000002.00
```

8.4 Tag Status File

8.4.1 Tag Status Header Record Format

Field #	Field Name	Field Type	Length	Notes
1	RECORD TYPE	#HEADER	7	Indicates this is a header record (#HEADER)
2	FILE TYPE	TAGS	4	Indicates this is a tag status file (TAGS)
3	ACTION CODE	Alpha	4	Update code: INIT – means and initial load
4	SEQUENCE #	Integer	6	Sequence # generated by sending agency, has matching entry in the trailer record
5	BUSINESS DATE	Date	10	Business Day
6	SOURCE	Alpha	2	Two letter code of source entity
7	DESTINATION	Alpha	2	Two letter code of destination entity
8	CREATE DATE	Date	10	Transmission file create day
9	CREATE TIME	Time	8	Transmission file create time in 24 hr clock

8.4.2 Tag Status Detail Record Format

Field #	Field Name	Field Type	Length	Notes
1	TAG ID	Hex	8	Tag ID in hex format. Only SOV tag numbers beginning with 0 will be sent.
2	ACTION CODE	Alpha	1	A – Add tag as valid (all “A” for INIT load) D – deactivate tag (invalid)
3	TAG TYPE	Alpha	1	Tag Type: N – Non revenue (universal to all entities) V – Valid I – Invalid
4	SUBTYPE	Alpha	1	First info field: H – Switchable HOV tag. Agencies issuing switchable tags must include this indicator in tag status file. Receiving agency may use this info at their discretion. N – No information See Appendix C for subtypes used by local agencies for regional use
5	SUBTYPE	Alpha	1	Second info field N – No information See Appendix C for subtypes used by local agencies for regional use
6	SUBTYPE	Alpha	1	Third info field N – No information See Appendix C for subtypes used by local agencies for regional use

8.4.3 Tag Status Trailer Record Format

Field #	Field Name	Field Type	Length	Notes
1	RECORD TYPE	#TRAILER	8	Trailer record indicator (#TRAILER)
2	SEQUENCE #	Integer	6	Sequence # matching entry in header
3	BUSINESS DATE	Date	10	Business day
4	DETAIL COUNT	Integer	8	Total count of all detail records

8.4.4 Tag Status Sample File

```
#HEADER,TAGS,INIT,000123,06/24/1997,SR,TC,06/23/1997,02:02:19  
081000FA,A,N,N,N,N  
0810012C,A,V,N,N,N  
0810012C,A,I,N,N,N  
08D9A3FF,A,V,H,N,N  
  
#TRAILER,000123,06/23/1997,00000003
```

8.5 Pay by Plate Processing

8.5.1 Narrative

The individual agencies may require a patron (according to each agency's policies) to supply a description of the vehicles the patron intends to use on the agency's facility, along with the license plate number. The purpose of this is to allow the Issuing Agency to identify the patron via the Acquiring Agency's video enforcement system should the patron's transponder not register with the Automatic Vehicle Identification equipment of the Acquiring Agency. In this way the patron can be positively identified and the toll properly credited to the patron's account. If the license plate is not identified in the acquiring agency's license plate list, it is forwarded to DMV for further identification. The name and address returned by the DMV is used to send a notice of toll evasion or a payment request to the motorist. However, some of the license plates recorded by the Acquiring Agency's video enforcement system may be license plates of reciprocating agency patrons. If the Acquiring Agency possesses a license plate list of the Issuing Agency's active patrons, the Acquiring Agency can use this list to extract the toll information and forward it to the Issuing Agency for recording those trips taken on the Acquiring Agency's Toll Facility by the Issuing Agency's patrons. The Acquiring Agency shall then invoice the issuing agency for the aggregate toll for the agreed upon time period of these license plate reads.

The initial exchange of license plate information provides for a complete transfer of active customer's license plate information from the Issuing Agency to the Reciprocating Agencies using the *License Plate Status File*. This initial data contains the license plate, license state and the effective date of the license plate only. The reciprocating agency stores this in their database. Subsequent exchanges of license plate data will be Full (*Init*) or Updates (*Diff*) depending on the delivery date. If this data is received by the reciprocating agency from the issuing agency, the code tells what action the reciprocating agency should take with respect to the license plate data the reciprocating agency has on file. If the code tells the reciprocating agency that the license plate is no longer valid, the date that accompanies the information is considered an end effective date, and subsequent violations by a vehicle with that license plate are no longer forwarded to the Issuing Agency, but routed to the normal violation enforcement system.

Should the owner of the vehicle again become a patron of the Issuing Agency, another record will be received by the reciprocating agency with the license plate, a re-activation code and a date. The reciprocating agency shall interpret the date as a new start effective date, and would remove any reference to an end effective date. Subsequent plate reads by the reciprocating agency shall therefore properly identify the vehicle as belonging to a customer of the Issuing Agency, and the toll information will be extracted, formatted and forwarded to the Issuing Agency as described in these *Technical Specifications*. As with the Transponder status data, the plate data received by the reciprocating agency from the Issuing Agency is considered valid and binding until a subsequent transmission is received from the Issuing Agency.

Pay-By-Plate Files (.pbp) should be sent on a daily basis, when transactions are available. At a minimum, Pay-By-Plate Files (.pbp) shall be sent at least every 14 calendar days.

GENERAL GUIDELINE: When using license plate information, an agency's customer plate list should be checked first before checking the plate lists received from other agencies. An active plate on an agency's customer list always has precedence.

When checking other agency plate lists, in case of duplicate active plates, the ACTIVE plate with the nearest effective start date prior to the violation should have precedence.

Note: Agencies agree by convention not to send plate information for their own designated non-revenue account holders.

8.6 Pay By Plate File

8.6.1 Pay by Plate Header Record Format

Field #	Field Name	Field Type	Length	Notes
1	RECORD TYPE	#HEADER	7	Indicates this is a header record (#HEADER)
2	FILE TYPE	PAYBYPLATE	10	Indicates this is a pay by plate file (PAYBYPLATE)
3	SEQUENCE #	Integer	6	Sequence # generated by sending agency, has matching entry in the trailer record
4	BUSINESS DATE	Date	10	Business day
5	SOURCE	Alpha	2	Two letter code of source entity
6	DESTINATION	Alpha	2	Two letter code of destination entity
7	CREATE DATE	Date	10	Transmission file create day
8	CREATE TIME	Time	8	Transmission file create time in 24 hr clock

8.6.2 Pay by Plate Detail Record Format

Field #	Field Name	Field Type	Length	Notes
1	LICENSE PLATE	Alphanumeric	10	License plate of patron (left justified with trailing spaces)
2	TRAN #	Numeric	10	Transaction #
3	STATE	Alpha	2	State code
4	TRAN DATE	Date	10	Transaction date
5	TRAN TIME	Time	8	Transaction time
6	TRAN AMT	Money	8	Amount charged
7	PLAZA	Alpha	4	Location/Plaza site
8	LANE	Alpha	2	Lane identifier

8.6.3 Pay by Plate Trailer Record Format

Field #	Field Name	Field Type	Length	Notes
1	RECORD TYPE	#TRAILER	8	Trailer record indicator (#TRAILER)
2	SEQUENCE #	Integer	6	Sequence # matching entry in header
3	BUSINESS DATE	Date	10	Business day
4	DETAIL CNT	Integer	6	Total count of all detail records
5	DETAIL SUM	Money	10	Total amount of detail records

8.6.4 Pay by Plate Sample File

```
#HEADER , PAYBYPLATE , 000123 , 06/23/1997 , SR , TC , 06/24/1997 , 02:02:19  
1ABC234 , 0000403986 , CA , 06/23/1997 , 20:14:50 , 00000.25 , 2216 , 02  
#TRAILER , 000123 , 06/23/1997 , 000001 , 0000000.25
```

8.7 License Plate Status File

8.7.1 Plate Status Header Record Format

Field #	Field Name	Field Type	Length	Notes
1	RECORD TYPE	#HEADER	7	Indicates this is a header record (#HEADER)
2	FILE TYPE	PLATES	6	Indicates this is a patron plate update file (PLATES)
3	UPDATE CODE	Alpha	4	Update code: INIT – means and initial load DIFF – means a differential update
4	SEQUENCE #	Integer	6	Sequence # generated by sending agency, has matching entry in the trailer record
5	SOURCE	Alpha	2	Two letter code of source entity
6	DESTINATION	Alpha	2	Two letter code of destination entity
7	CREATE DATE	Date	10	Transmission file create day
8	CREATE TIME	Time	8	Transmission file create time in 24 hr clock

8.7.2 Plate Status Detail Record Format

Field #	Field Name	Field Type	Length	Notes
1	LICENSE PLATE	Alphanumeric	10	License plate of patron (left justified, space filled to right). Format conforming to DMV Parking Manual
2	STATE	Alpha	2	License state of patron
3	ACTION CODE	Alpha	1	A – Add plate as valid (Use “A” for the INIT code) D – deactivate plate (invalid)
4	EFFECTIVE DATE	Date	10	Effective date of change per code in field #3

8.7.3 Plate Status Trailer Record Format

Field #	Field Name	Field Type	Length	Notes
1	RECORD TYPE	#TRAILER	8	Trailer record indicator (#TRAILER)
2	SEQUENCE #	Integer	6	Sequence # matching entry in header
3	BUSINESS DATE	Date	10	Business day
4	DETAIL COUNT	Integer	8	Total count of all detail records

8.7.4 Plate Status Sample File

```
#HEADER,PLATES,DIFF,000123,SR,TC,06/23/1997,02:02:19  
1ABC234,CA,A,04/16/2000
```

```
#TRAILER,000123,06/23/1997,000001
```

8.8 Reconciled Pay-By-Plate Charges File

8.8.1 Reconciled Pay-By-Plate Header Record Format

Field #	Field Name	Field Type	Length	Notes
1	RECORD TYPE	#HEADER	7	Indicates this is a header record (#HEADER)
2	FILE TYPE	PLATERECON	10	Indicates this is a pay by plate reconciliation file (PLATERECON)
3	SEQUENCE #	Integer	6	Sequence # generated by sending agency, has matching entry in the trailer record
4	BUSINESS DATE	Date	10	Business day
5	SOURCE	Alpha	2	Two letter code of source entity
6	DESTINATION	Alpha	2	Two letter code of destination entity
7	CREATE DATE	Date	10	Transmission file create day
8	CREATE TIME	Time	8	Transmission file create time in 24 hr clock

8.8.2 Reconciled Pay-By-Plate Detail Record Format

Field #	Field Name	Field Type	Length	Notes
1	LICENSE PLATE	Alphanumeric	10	License plate of patron (left justified with trailing spaces)
2	TRAN #	Numeric	10	Transaction #
3	STATE	Alpha	2	State code
4	TRAN DATE	Date	10	Transaction date
5	TRAN TIME	Time	8	Transaction time
6	TRAN AMT	Money	8	Amount charged
7	PLAZA	Alpha	4	Location/Plaza site
8	LANE	Alpha	2	Lane identifier
9	RECON CODE	Alpha	1	Reconcile code: A – Accepted O – Over 30 days old (Note 1 below) D – Duplicate F – Invalid CTOC format I – Invalid (not found on plate file) Note: Only A indicates Paid. All other codes are reasons for rejection.

Note 1: As a general guideline, each agency should make a “good faith” effort to process pay-by-plate transactions over 30 days old when the account is in good standing.

8.8.3 Reconciled Pay-By-Plate Trailer Record Format

Field #	Field Name	Field Type	Length	Notes
1	RECORD TYPE	#TRAILER	8	Trailer record indicator (#TRAILER)
2	SEQUENCE #	Numeric	6	Sequence # matching entry in header
3	BUSINESS DATE	Date	10	Business day
4	DETAIL CNT	Numeric	6	Total count of all detail records
5	DETAIL AMOUNT	Money	10	Total amount of all detail records
5	ACCEPT CNT	Numeric	6	Total count of all accepted detail records
6	ACCEPT SUM	Money	10	Total amount of all accepted detail records

8.8.4 Reconciled Pay-By-Plate Sample File

#HEADER, PLATERECON, 000123, 06/23/1997, TC, SR, 06/24/1997, 02:02:19
1ABC234 , 0000403986, CA, 06/23/1997, 20:14:50, 00000.25, 2216, 02, A

#TRAILER, 000123, 06/23/1997, 000001, 0000000.25, 000001, 0000000.25

APPENDIX A: Plaza/Lane Descriptions

Plaza	Lane	Statement Description (22 character limit)
0002	01	Antioch-Lane 1
0002	02	Antioch-Lane 2
0002	03	Antioch-Lane 3
0003	01	Richmond-Lane 1
0003	02	Richmond-Lane 2
0003	03	Richmond-Lane 3
0003	04	Richmond-Lane 4
0003	05	Richmond-Lane 5
0003	06	Richmond-Lane 6
0003	07	Richmond-Lane 7
0004	01	Bay Bridge-Lane 1
0004	02	Bay Bridge-Lane 2
0004	03	Bay Bridge-Lane 3
0004	04	Bay Bridge-Lane 4
0004	05	Bay Bridge-Lane 5
0004	06	Bay Bridge-Lane 6
0004	07	Bay Bridge-Lane 7
0004	08	Bay Bridge-Lane 8
0004	09	Bay Bridge-Lane 9
0004	10	Bay Bridge-Lane 10
0004	11	Bay Bridge-Lane 11
0004	12	Bay Bridge-Lane 12
0004	13	Bay Bridge-Lane 13
0004	14	Bay Bridge-Lane 14
0004	15	Bay Bridge-Lane 15
0004	16	Bay Bridge-Lane 16
0004	17	Bay Bridge-Lane 17
0004	18	Bay Bridge-Lane 18
0004	19	Bay Bridge-Lane 19
0004	20	Bay Bridge-Lane 20
0004	21	Bay Bridge-Lane 21
0004	22	Bay Bridge-Lane 22
0005	01	San Mateo-Lane 1
0005	02	San Mateo-Lane 2
0005	03	San Mateo-Lane 3
0005	04	San Mateo-Lane 4
0005	05	San Mateo-Lane 5
0005	06	San Mateo-Lane 6
0005	07	San Mateo-Lane 7
0005	08	San Mateo-Lane 8
0005	09	San Mateo-Lane 9
0005	10	San Mateo-Lane 10
0006	01	Dumbarton-Lane 1
0006	02	Dumbarton-Lane 2
0006	03	Dumbarton-Lane 3
0006	04	Dumbarton-Lane 4
0006	05	Dumbarton-Lane 5
0006	06	Dumbarton-Lane 6
0006	07	Dumbarton-Lane 7

Plaza	Lane	Statement Description (22 character limit)
0007	01	Carquinez-Lane 1
0007	02	Carquinez-Lane 2
0007	03	Carquinez-Lane 3
0007	04	Carquinez-Lane 4
0007	05	Carquinez-Lane 5
0007	06	Carquinez-Lane 6
0007	07	Carquinez-Lane 7
0007	08	Carquinez-Lane 8
0007	09	Carquinez-Lane 9
0007	10	Carquinez-Lane 10
0007	11	Carquinez-Lane 11
0007	12	Carquinez-Lane 12
0008	01	Benicia-Lane 1
0008	02	Benicia-Lane 2
0008	03	Benicia-Lane 3
0008	04	Benicia-Lane 4
0008	05	Benicia-Lane 5
0008	06	Benicia-Lane 6
0008	07	Benicia-Lane 7
0008	08	Benicia-Lane 8
0008	09	Benicia-Lane 9
0008	10	Benicia-Lane 10
0008	11	Benicia-Lane 11
0008	12	Benicia-Lane 12
0008	13	Benicia-Lane 13
0008	14	Benicia-Lane 14
0008	15	Benicia-Lane 15
0008	16	Benicia-Lane 16
0008	17	Benicia-Lane 17
0015	01	I-15 Legacy Toll Zone
0201	01	SFO Long Term Garage
0204	01	SFO Long Term Lot
0821	01	SFO INTL G LV 1
0825	01	SFO INTL LV 3
0828	01	SFO INTL A LV 1
0831	01	SFO INTL A LV 3
0843	01	SFO Domestic LV 1
0844	01	SFO Domestic LV 2
0847	01	SFO Domestic LV 3
0850	01	SFO Domestic LV 46
0854	01	SFO Domestic LV 5
1131	01	La Paz On-Lane 1
1131	02	La Paz On-Lane 2
1133	01	La Paz Off-Lane 1
1133	02	La Paz Off-Lane 2
1141	01	Aliso Creek Off -Lane 1
1141	02	Aliso Creek Off-lane 2
1143	01	Aliso Creek On-Lane 1
1143	02	Aliso Creek On-Lane 2
1162	01	El Toro Off-Lane 1
1162	02	El Toro Off-Lane 2
1162	03	El Toro Off-Lane 3
1163	01	El Toro On-Lane 1

Plaza	Lane	Statement Description (22 character limit)
1163	02	El Toro On-Lane 2
1163	03	El Toro On-Lane 3
1190	01	Catalina View South-Lane 1
1190	02	Catalina View South-Lane 2
1190	03	Catalina View South-Lane 3
1190	04	Catalina View South-Lane 4
1190	05	Catalina View South-Lane 5
1190	06	Catalina View South-Lane 6
1190	07	Catalina View South-Lane 7
1190	11	Catalina View South-Lane 11
1190	12	Catalina View South-Lane 12
1190	13	Catalina View South-Lane 13
1191	01	Catalina View North-Lane 1
1191	02	Catalina View North-Lane 2
1191	03	Catalina View North-Lane 3
1191	04	Catalina View North-Lane 4
1191	05	Catalina View North-Lane 5
1191	06	Catalina View North-Lane 6
1191	07	Catalina View North-Lane 7
1191	11	Catalina View North-Lane 11
1191	12	Catalina View North-Lane 12
1191	13	Catalina View North-Lane 13
1215	01	Newport Coast Off-Lane 1
1215	02	Newport Coast Off-Lane 2
1217	01	Newport Coast On-Lane 1
1217	02	Newport Coast On-Lane 2
1226	01	Ford Road Off-Lane 1
1226	02	Ford Road Off-Lane 2
1227	01	Bonita Canyon On-Lane 1
1227	02	Bonita Canyon On-Lane 2
2144	01	Oso Parkway On-Lane 1
2144	02	Oso Parkway On-Lane 2
2145	01	Oso Parkway Off-Lane 1
2145	02	Oso Parkway Off-Lane 2
2177	01	Antonio Parkway Off-Lane 1
2177	02	Antonio Parkway Off-Lane 2
2178	01	Antonio Parkway On-Lane 1
2178	02	Antonio Parkway On-Lane 2
2199	01	Los Alisos Blvd Off-Lane 1
2199	02	Los Alisos Blvd Off-Lane 2
2200	01	Los Alisos Blvd On-Lane 1
2200	02	Los Alisos Blvd On-Lane 2
2216	01	Portola Parkway South Off - Lane 1
2216	02	Portola Parkway South Off - Lane 2
2217	01	Portola Parkway South On - Lane 1
2217	02	Portola Parkway South On - Lane 2
2234	01	Alton Parkway Off - Lane 1
2234	02	Alton Parkway Off - Lane 2
2235	01	Alton Parkway On - Lane 1
2235	02	Alton Parkway On - Lane 2
2248	01	Portola Parkway North Off - Lane 1
2248	02	Portola Parkway North Off - Lane 2
2249	01	Portola Parkway North On - Lane 1
2249	02	Portola Parkway North On - Lane 2

Plaza	Lane	Statement Description (22 character limit)
2257	01	Tomato Springs – North Lane 1
2257	02	Tomato Springs – North Lane 2
2257	03	Tomato Springs – North Lane 3
2257	04	Tomato Springs – North Lane 4
2257	05	Tomato Springs – North Lane 5
2257	11	Tomato Springs – North Lane 11
2257	12	Tomato Springs – North Lane 12
2257	13	Tomato Springs – North Lane 13
2260	01	Tomato Springs – South Lane 1
2260	02	Tomato Springs – South Lane 2
2260	03	Tomato Springs – South Lane 3
2260	04	Tomato Springs – South Lane 4
2260	05	Tomato Springs – South Lane 5
2260	11	Tomato Springs – South Lane 11
2260	12	Tomato Springs – South Lane 12
2260	13	Tomato Springs – South Lane 13
3042	01	Irvine Blvd. - East Off Lane 1
3042	02	Irvine Blvd. - East Off Lane 2
3043	01	Irvine Blvd. - East On Lane 1
3043	02	Irvine Blvd. - East On Lane 2
3057	01	Orange Grove South Lane 1
3057	02	Orange Grove South Lane 2
3057	11	Orange Grove South Lane 11
3057	12	Orange Grove South Lane 12
3058	01	Orange Grove North Lane 1
3058	02	Orange Grove North Lane 2
3058	11	Orange Grove North Lane 11
3058	12	Orange Grove North Lane 12
3145	01	Windy Ridge South Lane 1
3145	02	Windy Ridge South Lane 2
3145	03	Windy Ridge South Lane 3
3145	04	Windy Ridge South Lane 4
3145	05	Windy Ridge South Lane 5
3145	06	Windy Ridge South Lane 6
3145	11	Windy Ridge South Lane 11
3145	12	Windy Ridge South Lane 12
3145	13	Windy Ridge South Lane 13
3150	01	Windy Ridge North Lane 1
3150	02	Windy Ridge North Lane 2
3150	03	Windy Ridge North Lane 3
3150	04	Windy Ridge North Lane 4
3150	05	Windy Ridge North Lane 5
3150	06	Windy Ridge North Lane 6
3150	11	Windy Ridge North Lane 11
3150	12	Windy Ridge North Lane 12
3150	13	Windy Ridge North Lane 13
3482	01	Irvine Blvd. - West On Lane 1
3482	02	Irvine Blvd. - West On Lane 2
3486	01	Irvine Blvd. - West Off Lane 1
3486	02	Irvine Blvd. - West Off Lane 2
3490	01	Irvine Ranch North Lane 1
3490	02	Irvine Ranch North Lane 2
3490	03	Irvine Ranch North Lane 3
3490	11	Irvine Ranch North Lane 11

Plaza	Lane	Statement Description (22 character limit)
3490	12	Irvine Ranch North- Lane 12
3491	01	Irvine Ranch South- Lane 1
3491	02	Irvine Ranch South- Lane 2
3491	03	Irvine Ranch South- Lane 3
3491	11	Irvine Ranch South- Lane 11
3491	12	Irvine Ranch South- Lane 12
3497	01	Portola Parkway West On - Lane 1
3497	02	Portola Parkway West On - Lane 2
3498	01	Portola Parkway West Off - Lane 1
3498	02	Portola Parkway West Off - Lane 2
4001	01	SR91 Eastbound – Lane 1
4001	02	SR91 Eastbound – Lane 2
4001	03	SR91 Eastbound – Lane 3
4002	01	SR91 Westbound – Lane 1
4002	02	SR91 Westbound – Lane 2
4002	03	SR91 Westbound – Lane 3
4010	01	GG Bridge - Lane 1
4010	02	GG Bridge - Lane 2
4010	03	GGBridge - Lane 3
4010	04	GG Bridge - Lane 4
4010	05	GG Bridge - Lane 5
4010	06	GG Bridge - Lane 6
4010	07	GG Bridge - Lane 7
4010	08	GG Bridge - Lane 8
4010	09	GGBridge - Lane 9
4010	10	GG Bridge - Lane 10
4010	11	GG Bridge - Lane 11
4010	12	GG Bridge – Lane 12
5010	01	I-680 South Andrade
5011	01	I-680 South Washington
5012	01	I-680 South Mission
5013	01	I-680 South Calaveras
5110	01	SR 237/I-880 Connector WB
5111	01	SR 237 First WB
5118	01	SR 237 First EB
5119	01	SR 237/I-880 Connector EB
6000	01	110NB HGTC To Rosecrans
6001	01	110NB HGTC To I-105
6002	01	110NB HGTC To Slauson
6003	01	110NB HGTC To 39th
6004	01	110NB HGTC To Adams
6005	01	110NB Rosecrans To I-105
6006	01	110NB Rosecrans To Slauson
6007	01	110NB Rosecrans To 39th
6008	01	110NB Rosecrans To Adams
6009	01	110NB I-105 To Slauson
6010	01	110NB I-105 To 39th
6011	01	110NB I-105 to Adams
6012	01	110NB 39th to Adams

Plaza	Lane	Statement Description (22 character limit)
6100	01	110SB Adams to Jefferson
6101	01	110SB Adams to Manchester
6102	01	110SB Adams to Century
6103	01	110SB Adams to I-105
6104	01	110SB Adams to El Segundo
6105	01	110SB Adams to HGTC
6106	01	110SB Jefferson to Manchester
6107	01	110SB Jefferson to Century
6108	01	110SB Jefferson to I-105
6109	01	110SB Jefferson to El Segundo
6110	01	110SB Jefferson to HGTC
6111	01	110SB 39th to Manchester
6112	01	110SB 39th to Century
6113	01	110SB 39th to I-105
6114	01	110SB 39th to El Segundo
6115	01	110SB 39th to HGTC
6116	01	110SB Manchester to Century
6117	01	110SB Manchester to I-105
6118	01	110SB Manchester to El Segundo
6119	01	110SB Manchester to HGTC
6120	01	110SB Century to I-105
6121	01	110SB Century to El Segundo
6122	01	110SB Century to HGTC
6123	01	110SB I-105 to El Segundo
6124	01	110SB I-105 to HGTC
6125	01	110SB El Segundo to HGTC
6200	01	10EB Alameda to I-710
6201	01	10EB Alameda to Atlantic
6202	01	10EB Alameda to Del Mar
6203	01	10EB Alameda to Baldwin
6204	01	10EB Alameda to I-605
6205	01	10EB I-710 to Atlantic
6206	01	10EB I-710 to Del Mar
6207	01	10EB I-710 to Baldwin
6208	01	10EB I-710 to I-605
6209	01	10EB Atlantic to Del Mar
6210	01	10EB Atlantic to Baldwin
6211	01	10EB Atlantic to I-605
6212	01	10EB Del Mar to Baldwin
6213	01	10EB Del Mar to I-605
6214	01	10EB Baldwin to I-605
6301	01	10WB I-605 to Atlantic
6302	01	10WB I-605 to I-710
6303	01	10WB I-605 to Alameda
6304	01	10WB Del Mar to Atlantic
6305	01	10WB Del Mar to I-710
6306	01	10WB Del Mar to Alameda
6307	01	10WB Atlantic to I-710
6308	01	10WB Atlantic to Alameda
6309	01	10WB I-710 to Alameda
8016	01	SR 163 NB Entrance
8017	01	I-15 NB Entrance
8018	01	Ammo Rd NB Entry
8019	01	Miramar Way NB

Plaza	Lane	Statement Description (22 character limit)
8019	02	Miramar Way NB
8019	03	Miramar Way NB
8019	98	Miramar Way NB
8020	01	Miramar Rd NB Entry
8021	01	Mira Mesa Bl NB Entry
8022	01	Mira Mesa Bl NB
8022	02	Mira Mesa Bl NB
8022	03	Mira Mesa Bl NB
8022	98	Mira Mesa Bl NB
8023	01	Poway Rd NB
8023	02	Poway Rd NB
8023	03	Poway Rd NB
8023	98	Poway Rd NB
8024	01	SR 56 NB Exit
8024	02	SR 56 NB Exit
8024	98	SR 56 NB Exit
8025	01	Sabre Springs Transit
8025	02	Sabre Springs Transit
8026	01	SR 56 NB Entry
8027	01	Carmel Mountain Rd NB
8027	02	Carmel Mountain Rd NB
8027	03	Carmel Mountain Rd NB
8027	98	Carmel Mountain Rd NB
8028	01	Camino del Norte NB
8029	01	Bernardo Center Dr NB
8029	02	Bernardo Center Dr NB
8029	03	Bernardo Center Dr NB
8029	04	Bernardo Center Dr NB
8029	98	Bernardo Center Dr NB
8030	01	Duenda Rd NB Entry
8031	01	Via Rancho Pkwy NB
8031	02	Via Rancho Pkwy NB
8031	03	Via Rancho Pkwy NB
8031	98	Via Rancho Pkwy NB
8032	01	Del Lago NB Exit
8033	01	Del Lago NB Entry
8034	01	Centre City NB Entry
8035	01	Centre City Pkwy NB
8035	02	Centre City Pkwy NB
8035	98	Centre City Pkwy NB
8036	01	Felicita Rd NB
8036	02	Felicita Rd NB
8036	98	Felicita Rd NB
8037	01	Hale Ave NB Exit
8039	01	SR 78 SB Entrance
8040	01	Hale Ave SB Entry
8041	01	Felicita Rd SB
8041	02	Felicita Rd SB
8041	99	Felicita Rd SB
8042	01	9th Ave SB Entry
8043	01	Centre City Pkwy SB
8044	01	Del Lago SB Exit
8045	01	Del Lago SB Entry
8046	01	Via Rancho Pkwy SB

Plaza	Lane	Statement Description (22 character limit)
8046	02	Via Rancho Pkwy SB
8046	03	Via Rancho Pkwy SB
8046	99	Via Rancho Pkwy SB
8047	01	Duenda Rd SB Entry
8048	01	Rncho Bernardo Transit
8048	02	Rncho Bernardo Transit
8048	03	Rncho Bernardo Transit
8048	04	Rncho Bernardo Transit
8048	05	Rncho Bernardo Transit
8049	01	Bernardo Center Dr SB
8049	02	Bernardo Center Dr SB
8049	03	Bernardo Center Dr SB
8049	99	Bernardo Center Dr SB
8050	01	Camino del Norte SB
8051	01	Carmel Mountain Rd SB
8051	02	Carmel Mountain Rd SB
8051	03	Carmel Mountain Rd SB
8051	99	Carmel Mountain Rd SB
8052	01	SR 56 SB Entry
8052	02	SR 56 SB Entry
8052	03	SR 56 SB Entry
8053	01	Poway Rd SB
8053	02	Poway Rd SB
8053	03	Poway Rd SB
8053	99	Poway Rd SB
8054	01	Poway Rd SB Entry
8055	01	Mercy Rd SB
8055	02	Mercy Rd SB
8055	03	Mercy Rd SB
8055	99	Mercy Rd SB
8056	01	Mercy Rd – 1 SB Entry
8057	01	Mercy Rd – 2 SB Entry
8058	01	Mira Mesa Transit
8058	02	Mira Mesa Transit
8058	03	Mira Mesa Transit
8059	01	Miramar Rd SB
8059	02	Miramar Rd SB
8059	03	Miramar Rd SB
8059	99	Miramar Rd SB
8060	01	Miramar Rd SB Entry
8061	01	Miramar Way SB
8061	02	Miramar Way SB
8061	03	Miramar Way SB
8061	99	Miramar Way SB
9001	01	SR-54 NB Exit
9001	02	SR-54 NB Exit
9001	98	SR-54 NB Exit
9002	01	San Miguel Rch NB On
9002	02	San Miguel Rch NB On
9003	01	East H NB On
9003	02	East H NB On

Plaza	Lane	Statement Description (22 character limit)
9003	03	East H NB On
9003	04	East H NB On
9003	05	East H NB Off
9003	98	East H NB Off
9004	01	Otay Lks Rd NB On
9004	02	Otay Lks Rd NB On
9004	03	Otay Lks Rd NB On
9004	04	Otay Lks Rd NB On
9004	05	Otay Lks Rd NB Off
9004	98	Otay Lks Rd NB Off
9005	01	Olymp Pkwy NB On
9005	02	Olymp Pkwy NB On
9005	03	Olymp Pkwy NB On
9005	04	Olymp Pkwy NB On
9005	05	Olymp Pkwy NB Off
9005	98	Olymp Pkwy NB Off
9006	01	Birch Rd NB On
9006	02	Birch Rd NB On
9006	03	Birch Rd NB On
9006	04	Birch Rd NB On
9006	05	Birch Rd NB Off
9006	98	Birch Rd NB Off
9010	01	Otay Toll Plz NB Entry
9010	02	Otay Toll Plz NB Entry
9010	03	Otay Toll Plz NB Entry
9010	04	Otay Toll Plz NB Entry
9010	05	Otay Toll Plz NB Entry
9011	01	SR-54 SB Entry
9011	02	SR-54 SB Entry
9011	99	SR-54 SB Entry
9012	01	San Miguel Rch SB Off
9012	02	San Miguel Rch SB Off
9013	01	East H SB Off
9013	02	East H SB Off
9013	03	East H SB On
9013	04	East H SB On
9013	99	East H SB On
9014	01	Otay Lks Rd SB Off
9014	02	Otay Lks Rd SB Off
9014	03	Otay Lks Rd SB On

Plaza	Lane	Statement Description (22 character limit)
9014	04	Otay Lks Rd SB On
9014	99	Otay Lks Rd SB On
9015	01	Olymp Pkwy SB Off
9015	02	Olymp Pkwy SB Off
9015	03	Olymp Pkwy SB On
9015	04	Olymp Pkwy SB On
9015	99	Olymp Pkwy SB On
9016	01	Birch Rd SB Off
9016	02	Birch Rd SB Off
9016	03	Birch Rd SB On
9016	04	Birch Rd SB On
9016	99	Birch Rd SB On
9020	01	Otay Toll Plz SB Exit
9020	02	Otay Toll Plz SB Exit
9020	03	Otay Toll Plz SB Exit
9020	04	Otay Toll Plz SB Exit
9020	05	Otay Toll Plz SB Exit

Note: 5000-5999 Reserved for Bay Area Express Lane Network
6000-6999 Reserved for LA Metro

APPENDIX B: Title 21 Definition

B.1 Narrative

In 1990 the California State legislature directed the California Department of Transportation (Caltrans) to develop specifications for an Automatic Vehicle Identification (AVI) system such that a vehicle owner would not have to install more than one device to use toll facilities statewide.

Caltrans developed open compatibility specifications for a two way communications protocol for AVI including an initial set of Transaction Record Type codes which were mandated for statewide Electronic Toll Collection (ETC) use. This standard was Chaptered into the California Code of Regulations in 1992 as Title 21, Chapter 16, Articles 1 through 4, and is commonly referred to as "Title 21".

The Title 21 standard envisioned more complex Transaction Record Type codes being developed for both ETC and other new applications. To maintain the growth of Title 21 it was specified that Caltrans shall function as the standards monitoring authority to authorize the use of new record types and to assign record type numbers to newly authorized records.

After Title 21 was Chaptered the 32-bit Transponder ID field within the specification was further defined, primarily to identify the facility and patron that was conducting the electronic transaction. Numerous additional Transaction Record Type Codes were also approved involving lane specific, data transfer and manufacturer specific information.

Both of these Caltrans documents are considered "living" because as the system expands and evolves changes to them will be required.

Contact Caltrans' Traffic Operations office in Sacramento for the latest version of either of these documents, or to request new Transaction Record Type codes.

APPENDIX C: SubType Definitions for Tag Record File

C.1 Subtype - A

Field Character	Description	Used By
N	Subtype Not Used	All Agencies
L	Lost Tag	GG; AT
S	Stolen Tag	GG; AT
B	Low Balance	GG; AT
R	Non Revenue between agencies	GG; AT

(For a low balance tag (B), the type must be set to (V) for valid. For a lost (L) or stolen (S) tag, the tag type must be set to invalid (I))

C.2 Subtype - B

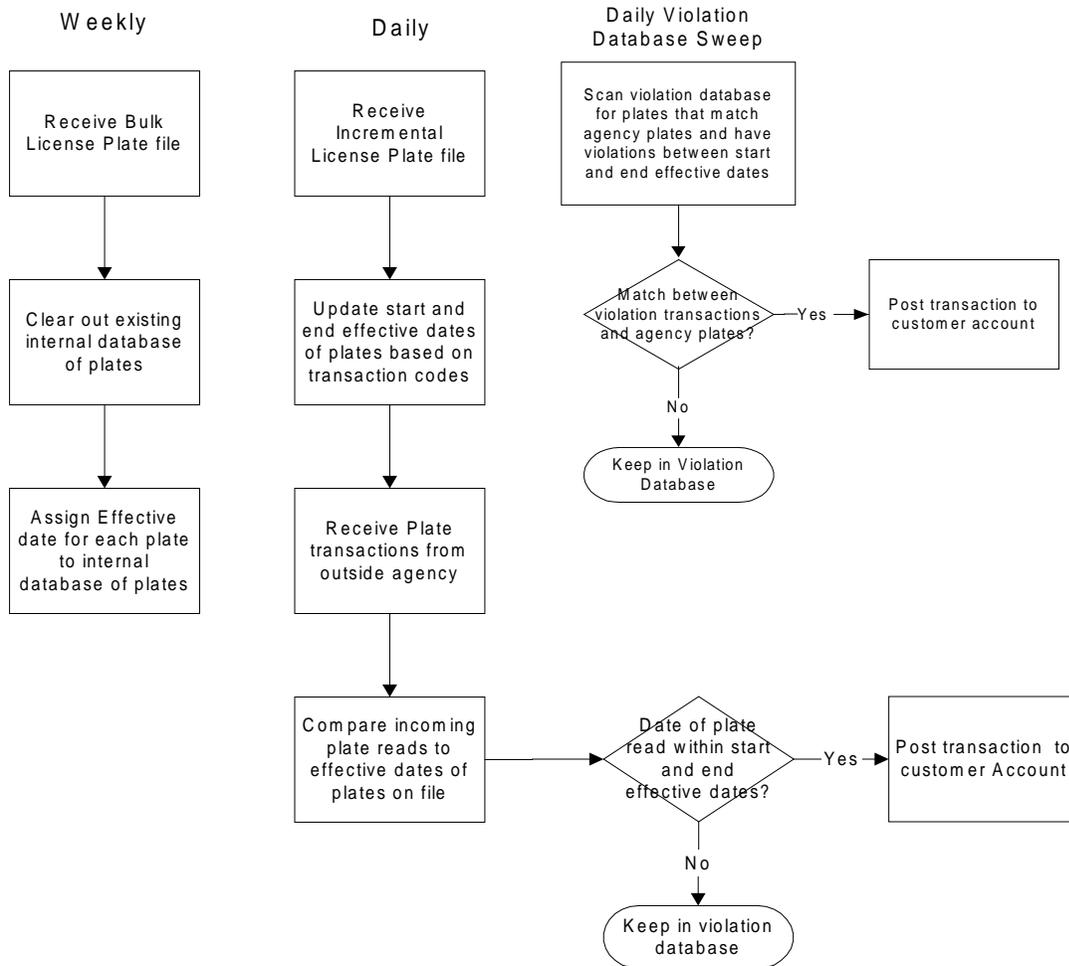
Field Character	Description	Used By
N	Subtype Not Used	All Agencies

C.3 Subtype - C

Field Character	Description	Used By
N	Subtype Not Used	All Agencies

APPENDIX D: License Plate Date Logic

License Plate Date Logic



APPENDIX E: Violation Enforcement via Plate Reads

Violation Enforcement via Plate Reads

