

Advanced Toll Collection and Accounting System (ATCAS II)

System Design Document

External Interfaces

Version 1.5.1



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10 External Interfaces

The external interfaces operate as back end processes primarily written in Transact SQL, using assembly language built in C#, to communicate with non-SQL Server resources such as the file system and external interfaces.

The overall architecture of the back office is based on queue and work flow. Refer to Appendix J Job Scheduling for more details on when and how these jobs are scheduled to run.

The following external interfaces are documented in this chapter:

- **RCSC Interface** – This describes the Regional Customer Service Center (RCSC) External Interface
- **Bank Interface** – This describes the Bank External Interface
- **IFAS Interface** – This describes the Integrated Financial and Administrative Solution (IFAS) External Interface

10.1 Regional Customer Service Center Interface

The Regional Customer Service Center (RCSC) interface supports the exchange of Electronic Toll Collection (ETC) transponder statuses from the RCSC to the ATCAS II Host, and the exchange of ETC toll transactions, toll violation transactions, toll transaction cancellations and corrections, and violation images from the ATCAS II Host and the RCSC. Response files are sent by the RCSC to the ATCAS II Host for the ETC toll transactions and toll violation transactions to indicate the disposition of these transactions.

The transponder status, transaction, and response files are zipped before being transferred through BATA FTP server. The receiving system sends an acknowledgement file through the FTP servers indicating the status of each file received. A violation image data file is created by the Image Server at the plaza for each set of Violation Enforcement System (VES) images that can be associated with a lane transaction. The violation image data file and corresponding images are zipped into a violation package and sent to the Host Image Server (see Chapter 6 Section 6.6.2.4). All new violation packages that can be associated with violation transactions posted to the ATCAS II Host Database since the last transfer are sent to the RCSC through the BATA FTP server.

The following table indicates which files are sent to the ATCAS II Host and which are sent to the RCSC, the file extension identifies the type of file, and how the file is used. For zipped files, the period that precedes the file extension is replaced with an underscore (“_”) and a new .zip file extension is added to the file name. The table also indicates which files are zipped.

Table 10-1: RCSC Interface Files

FILE	FROM -> TO	FILE EXT	ZIP'D	FILE USAGE
Tag Status File	RCSC -> ATCAS II	AETC	Yes	Contains the status for each ETC Transponder at the RCSC and other CTOC agencies. The other CTOC agency tags are stored in separate files with file extension “.tag” and a prefix to the file name indicates which away agency tags are included as follows: “srat_” = SR-91 “tcat_” = TCA “sdat_” = SANDAG “cvat_” = SBX These away agency files are included in the same zip file as the local RCSC file (file extension “.AETC”).
ETC Transaction File	ATCAS II -> RCSC	AREQ	Yes	Contains ETC transactions with a valid tag status
Violation Transaction File	ATCAS II -> RCSC	AVIO	Yes	Contains violation transactions with or without a transponder
Correction File	ATCAS II -> RCSC	CTRE	Yes	Contains ETC and violation transaction reversals, late postings, and corrections

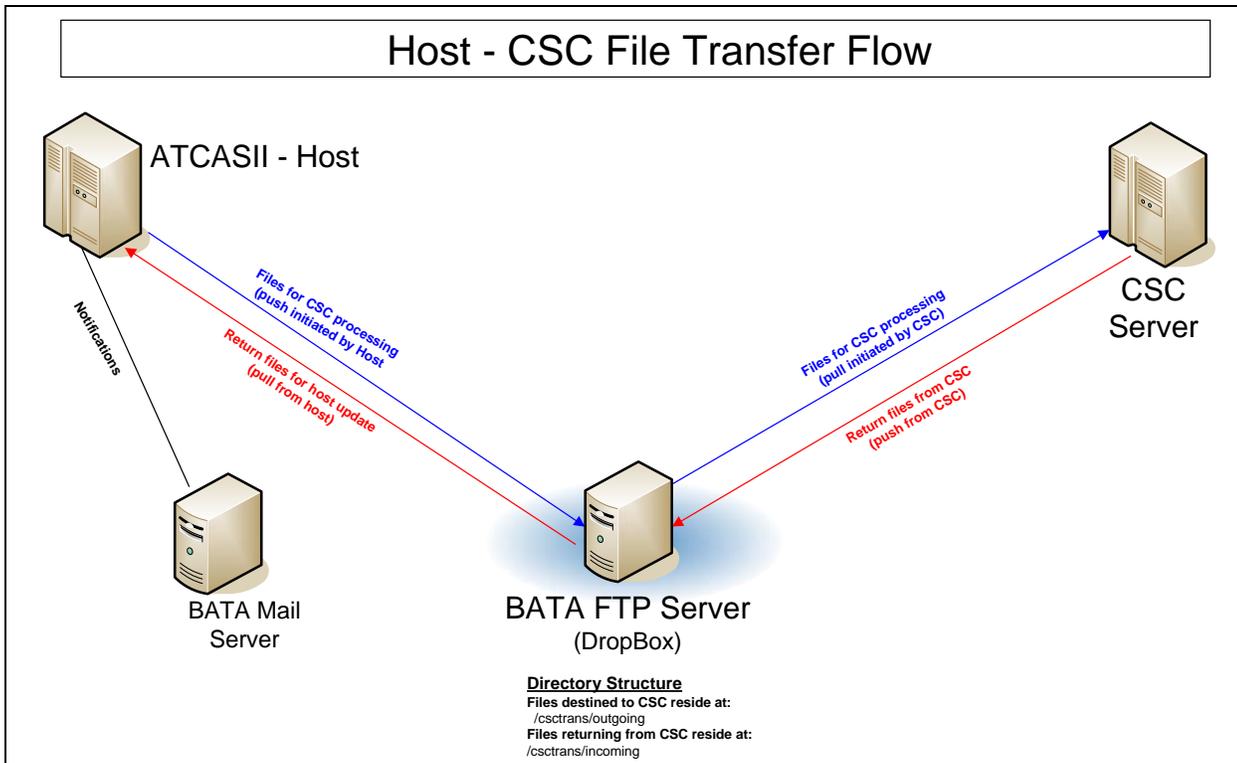
FILE	FROM -> TO	FILE EXT	ZIP'D	FILE USAGE
ETC Response File	RCSC -> ATCAS II	ARES	Yes	Contains the disposition for ETC transactions that were previously sent. Dispositions are posted to an account based on the tag status at the lane or rejected based on an error exception
Violation Response File	RCSC -> ATCAS II	AVRES	Yes	Contains the disposition for violation transactions that were previously sent. Dispositions are posted to an account based on a change in tag status or based on the violation image or rejected based on an error exception
Correction Response File	RCSC -> ATCAS II	RTRE	Yes	Contains the disposition for correction transactions that were previously sent. Dispositions are posted to an account based on the tag status at the lane or rejected based on an error exception
Acknowledgment File	Both Directions	ACK	No	Acknowledges the receipt of a file and indicates whether or not the file was valid
Violation Image Data File and Corresponding Image Files	ATCAS II -> RCSC	VDF and <IMAGE_TYPE>	Yes (as a group)	Zipped file containing the violation image data file and corresponding image files. The violation image data file name indicates the <AGENCY_ID><PLAZA_ID><LANE_ID><TRX_DATE><TRX_TIME><VEHICLE_SEQUENCE_NUMBER> so that it can be matched to the actual violation transaction.

10.1.1 Architecture Overview

The RCSC Interface system architecture is shown in Figure 10-1. Files are exchanged between the BATA FTP server and the RCSC via a dedicated WAN connection.

The access information for the FTP server is a configurable parameter in the tbAppiParam table.

Figure 10-1: RCSC Interface System Architecture



10.1.2 Business Rules

The following is a list of business rules for the RCSC interface:

- Data transferred between the RCSC interface processes and the RCSC are file-based.
- The RCSC interface provides transaction response files that give a disposition status for each of the ETC and violation transactions passed in the ETC transaction and violation transaction files.
- The RCSC interface process maintains a tbRcscLastTransProcessed table to keep track of the Host database posting date/time for the last ETC/violation transaction, the last business day approval, and the last images and violation data file passed to the RCSC for each plaza and lane. This is so the process knows at what posting date/time it should start picking up new data for the next run.
- Transactions assigned to different business days are not passed in the same transaction file. The file's header record indicates the business day associated with all transactions contained in the file.

- Transaction corrections are approved for the previous business day as part of the business day approval process. The business day field is updated and a record inserted into the tbBusinessDay table. A transaction correction file is created for each business day approval and contains any adjustments done during the corresponding business day. Transactions from earlier business days can be cancelled or corrected in the correction file but the adjustments are applied to the business day during which the adjustments were made. Please see Chapter 8 Host System Software Section 8.10.1 Business Day Complete for more details on the business day approval process.
- The RCSC interface process only sends violation data files and images corresponding to violation transactions that have also been sent.
- The tbTag table is used to maintain the tag status in the local ATCAS II Host database and the individual tag status values are compared to the values in the new tag status file. When the tag status values are different, the tbTag table is updated. A trigger is defined so that whenever a tag status is updated it is inserted into the tbSendLaneUpdate table. The File Creator (FC) task monitors the tbSendLaneUpdate table and sends the tag status updates to all the lane/zone controllers as non-guaranteed messages. A new tag status file with all current tag status values is created by FC and downloaded to all the lane/zone controllers nightly. Table 10-2 shows the mapping between the RCSC tag and account statuses to the ATCAS II tag status and tag attribute values. Please see Chapter 8 Host System Software for more details related to the FC task.

Table 10-2: Tag Status Mapping Between RCSC and ATCAS II

ITEM #	RCSC				ATCAS II	
	TAG STATUS	ACCOUNT STATUS	FINANCIAL STATUS	DISCOUNT PLAN	TAG STATUS	ATTRIBUTE
1	INVENTORY	N/A	N/A	N/A	4 = Invalid	0 = Standard
2	RETURNED	N/A	N/A	N/A	4 = Invalid	0 = Standard
3	DAMAGED	N/A	N/A	N/A	4 = Invalid	0 = Standard
4	RETURNEDEF	N/A	N/A	N/A	4 = Invalid	0 = Standard
5	SHIPVEND	N/A	N/A	N/A	4 = Invalid	0 = Standard
6	TESTED	N/A	N/A	N/A	4 = Invalid	0 = Standard
7	EXPIRED	N/A	N/A	N/A	4 = Invalid	0 = Standard
8	LOST	Active	N/A	N/A	5 = Lost/Stolen	0 = Standard
9	STOLEN	Active	N/A	N/A	5 = Lost/Stolen	0 = Standard
10	ACTIVE	Active	Good Balance	Standard	0 = Valid	0 = Standard
11	ACTIVE	Active	Low Balance	Standard	1 = Low Bal	0 = Standard
12	ACTIVE	Active	Zero Balance	Standard	4 = Invalid	0 = Standard
13	ACTIVE	Active	Pending Revoked	Standard	4 = Invalid	0 = Standard
14	ACTIVE	Active	Good Balance	Non Revenue	0 = Valid	1 = Non Rev

ITEM #	RCSC				ATCAS II	
	TAG STATUS	ACCOUNT STATUS	FINANCIAL STATUS	DISCOUNT PLAN	TAG STATUS	ATTRIBUTE
15	ACTIVE	Active	Low Balance	Non Revenue	0 = Valid	1 = Non Rev
16	ACTIVE	Active	Zero Balance	Non Revenue	0 = Valid	1 = Non Rev
17	ACTIVE	Active	Pending Revoked	Non Revenue	0 = Valid	1 = Non Rev
18	ACTIVE	Active	Good Balance	Standard with Hybrid Tag ¹	0 = Valid	8 = Hybrid
19	ACTIVE	Active	Low Balance	Standard with Hybrid Tag	1 = Low Bal	8 = Hybrid
20	ACTIVE	Active	Zero Balance	Standard with Hybrid Tag	4 = Invalid	8 = Hybrid
21	ACTIVE	Active	Pending Revoked	Standard with Hybrid Tag	4 = Invalid	8 = Hybrid
22	N/A	Closed	N/A	Standard	4 = Invalid	0=Standard
23	N/A	Closed	N/A	Non Revenue	4 = Invalid	1 = Non Rev
24	N/A	Closed	N/A	Standard with Hybrid Tag	4 = Invalid	8 = Hybrid

10.1.3 Process Activation

The following process activation configuration is used:

The RCSC interface process runs once every 3 hours and is configurable (see Appendix J Job Scheduling).

Generating and processing files is initiated by the Windows Scheduler as a .NET application on the External Interface Server running as a virtual machine on the Virtual Host (see Appendix J Job Scheduling).

10.1.4 Interface Logic Flow

The RCSC interface process starts by updating the table used to keep track of the next batch of data to be processed and then performs additional processing if new data is found in any of the following areas:

- New ETC or Violation Transaction data in the Database
- New Business Day Approval and Transaction Corrections in the Database
- New Violation Data File on the Image Server
- New Tag Status File on the BATA FTP Server – pushed there by the RCSC

¹ Hybrid is not a discount plan. It is determined by the RCSC based on the Hybrid attribute. Hybrid is only reported to ATCAS II for the Standard discount plan.

- New Transaction Response Files on the BATA FTP Server – pushed there by the RCSC
- New Acknowledgement File on the BATA FTP Server – pushed there by the RCSC

The following three figures illustrate the flow chart diagrams for the RCSC interface processes. Section 10.1.4.1 Logic Flow Example follows the flow chart diagrams and gives a detailed explanation of the logic flow.

Figure 10-2: RCSC Interface Flow Diagram (Part 1)

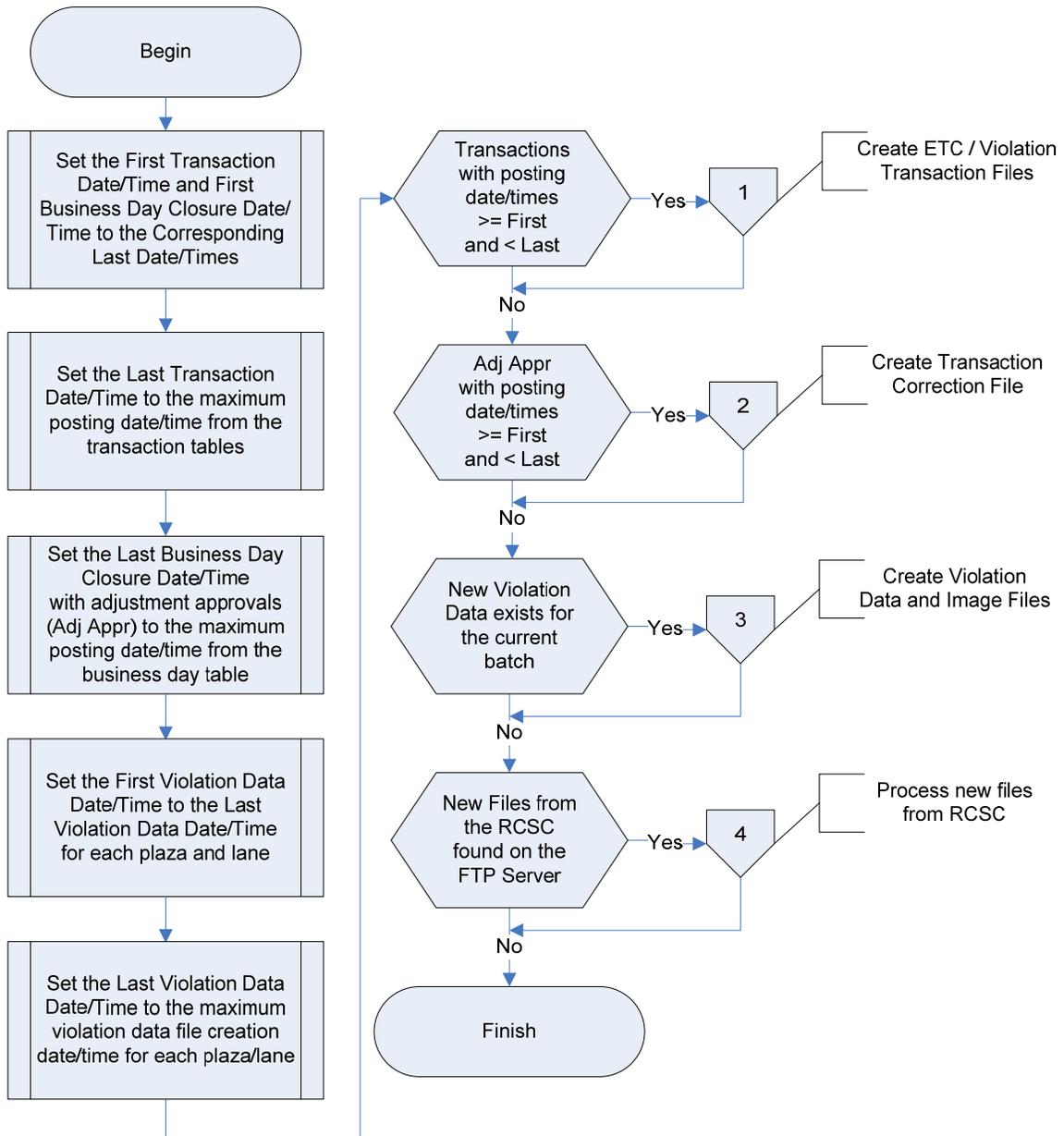


Figure 10-3: RCSC Interface Flow Diagram (Part 2)

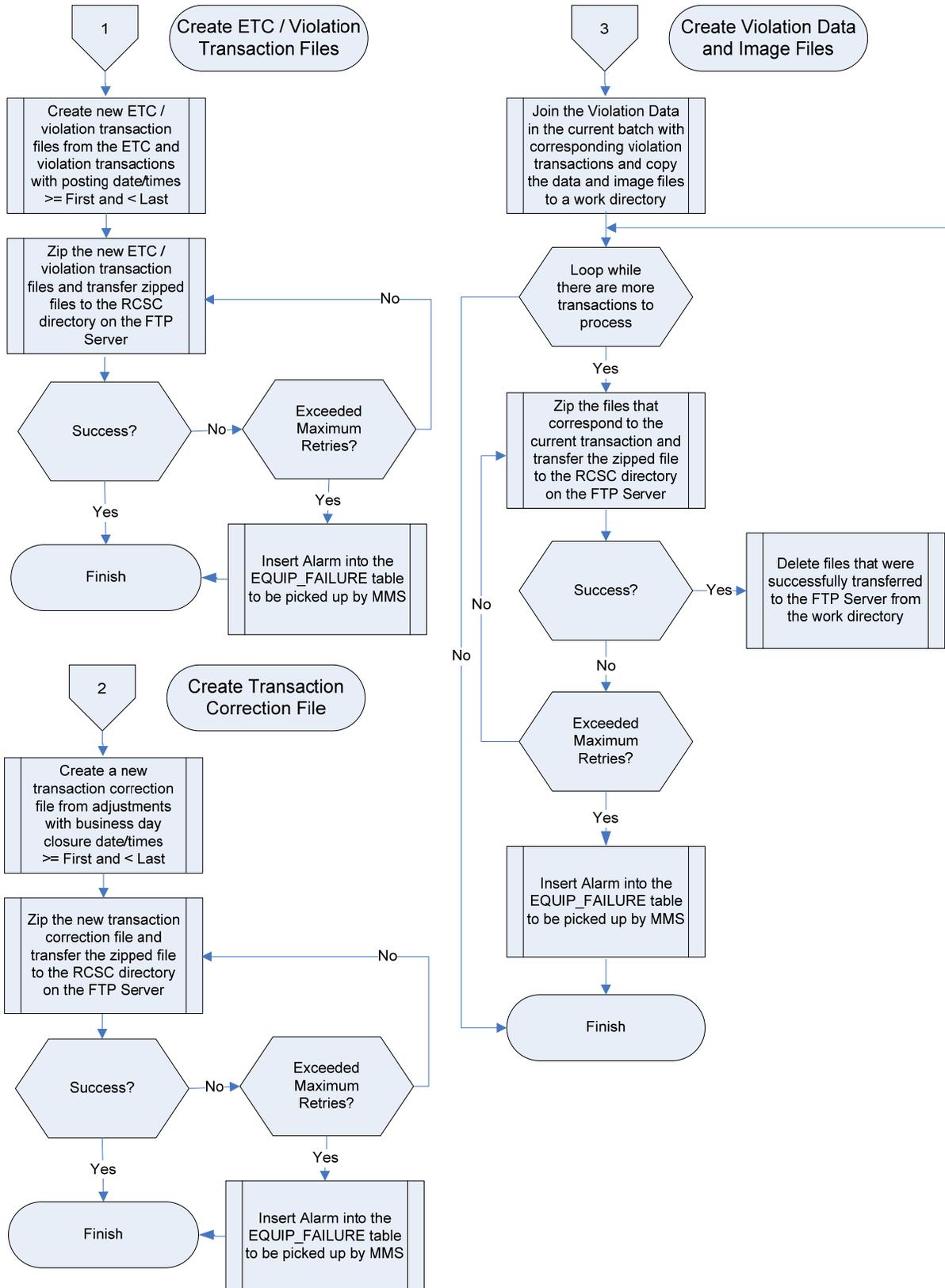
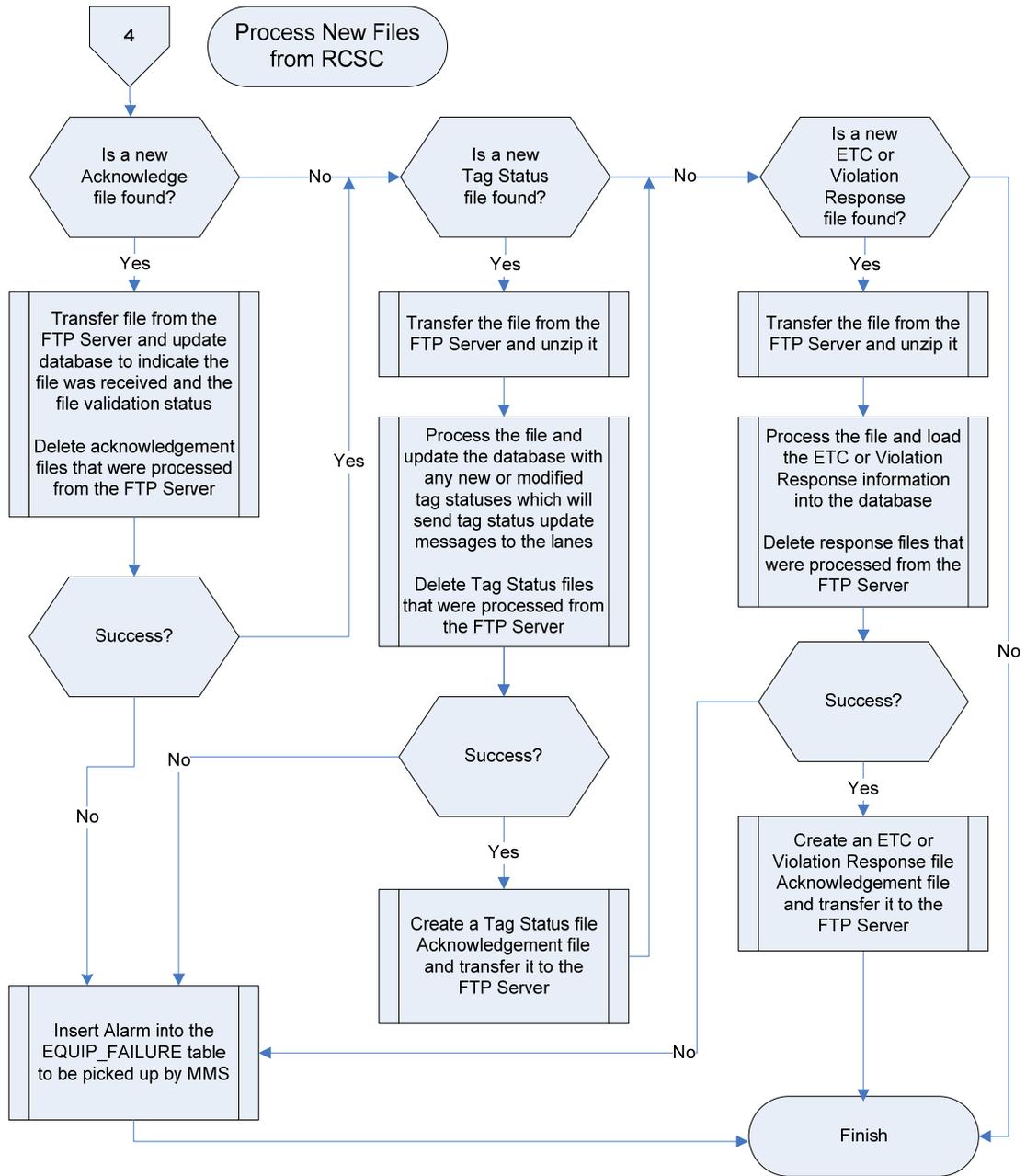


Figure 10-4: RCSC Interface Flow Diagram (Part 3)



10.1.4.1 Logic Flow Example

The RCSC interface process runs on a configurable schedule to generate ETC Transaction and Violation Transaction files to be sent to the RCSC. At the same time the Violation Data and Image Files are sent to the RCSC that correspond to the violations being sent in the Violation Transaction File. The RCSC interface process then checks for File Acknowledgment, AVI Status, and Transaction Response files and processes them accordingly.

The RCSC interface process maintains a `tbRcscLastTransProcessed` table to keep track of the database posting date time of the ETC/violation transaction, business day closure, and image data transaction that was last picked up for processing from the host database. The next time the process runs, the “LastPostTime” is set to the “NextPostTime” for each type of selection and the “NextPostTime” is set to the maximum posting date time currently available in the database for each type of selection as follows:

- `MAX(dtPostingDate) FROM tbFullFormatTrans`
- `MAX(dtBusinessDayClosed) FROM tbBusinessDay`
- `MAX(dtPostingDate) FROM tbImageTrans`

The RCSC interface then selects data that is greater than the “LastPostTime” and greater than or equal to the “NextPostTime” for the next batch of transactions to be processed.

The RCSC interface process is scheduled to run as indicated in Appendix J Job Scheduling. Using the example where the RCSC interface process is scheduled to run on a 3 hour cycle, it runs at 12:00 midnight, 3:00 am, 6:00 am, 9:00 am, 12:00 noon, 3:00 pm, 6:00 pm, 9:00 pm. When the process runs at midnight, for example, it performs the steps outlined in Table 10-3.

Table 10-3: RCSC Interface Processing

STEP #	RCSC INTERFACE PROCESSING
1	<p>Creates an ETC Transaction File with all ETC transactions in the <code>tbFullFormatTrans</code> table that have the same business day and were posted to the database after the latest ETC transaction previously sent to the RCSC for each plaza and lane. Late posting adjustments in the <code>tbAdjustmentTrans</code> table that have the same business day and were approved after the latest ETC transaction are also included.</p> <p>A separate ETC Transaction file is created for each business day if transactions for more than one business day are selected.</p> <p>Records the new file(s) in the <code>tbRcscSendFile</code> and <code>tbRcscSendTrans</code> tables.</p>
2	<p>Zips each ETC Transaction File and transfers it to the RCSC through the BATA FTP Server.</p>

STEP #	RCSC INTERFACE PROCESSING
3	<p>Creates a Violation Transaction File with all of violation transactions in the tbFullFormatTrans and tbAdjustmentTrans tables that can be joined with violation data in the tbImageTrans table, have the same business day and were posted to the database after the latest violation transaction and violation data previously sent to the RCSC for each plaza and lane.</p> <p>A separate Violation Transaction file is created for each business day if transactions for more than one business day are selected.</p> <p>Violations that can be joined with a tbImageTrans record are stored in the tbRcscWaitForVioImage table. When the violation image data file is uploaded to RCSC, the related record in the tbRcscWaitForVioImage table is removed and the violation reported. If a violation resides in the tbRcscWaitForVioImage table over a configurable length of time (initially set for 4 hours), an alarm is generated as indicated in Section 10.1.8 Error Processing. These transactions can be sent to the RCSC once the missing data becomes available at the ATCAS II host.</p> <p>Any record in the tbRcscWaitForVioImage table older than 60 days is deleted.</p> <p>Variations between the violations reported by the lane and the violations reported to the RCSC are shown as violation variances in the Audit Violation Variances pages described in Chapter 8 Section 8.10.4 and in the Violation Registration to VES and RCSC Acknowledgement Reconciliation report (see Chapter 12 Reports).</p> <p>Records the new file(s) in the tbRcscSendFile and tbRcscSendTrans tables.</p>
4	<p>Zips each Violation Transaction File and transfers it to the RCSC through the BATA FTP Server.</p>
5	<p>Creates a Correction File with approved adjustments in the tbAdjustmentTrans table. Adjustments are selected for the Correction File as follows:</p> <p>The RCSC interface keeps track of the latest business day closure date/time previously sent to the RCSC for each plaza</p> <p>The RCSC interface finds the approved correction and reversal adjustments for a business day that closed after the latest business day closure date/time previously sent to the RCSC for each plaza</p> <p>A separate Correction file is created for each business day selected with approved correction and reversal adjustments and is sent to the RCSC.</p> <p>Adjustments are considered “approved” after being flagged using the Review Adjustment page described in Chapter 8 Section 8.10.5 Adjustment. Adjustments are only sent to the RCSC after the corresponding business day has closed (see Chapter 8 Section 8.10.1 Business Day Complete).</p> <p>For example, consider the case where the business days for Monday and Tuesday were left open. Adjustments were then made and approved on Wednesday for transactions that occurred on both Monday and Tuesday and for the previous Friday (which is closed). After making and approving the adjustments, the Revenue Manager closes the business days for Monday and Tuesday. The next time the RCSC interface process runs, two Correction files are created, one each for Monday and Tuesday. After the business day for Wednesday is closed, a Correction file is created with the adjustments made for the previous Friday because they are assigned a business day of Wednesday.</p> <p>Late posting Adjustments are sent in the ETC Transaction File or Violation Transaction File without any corresponding record in the Correction File (see steps 1 and 3).</p> <p>The new corrections are recorded in the tbRcscSendFile and tbRcscSendCorrections tables.</p>
6	<p>Zips each Correction File and transfers it to the RCSC through the BATA FTP Server.</p>

STEP #	RCSC INTERFACE PROCESSING
7	<p>For each violation sent in the Violation Transaction File, validates the violation data file, zips up the corresponding images and violation data file, and transfers the zipped file to the RCSC through the BATA FTP Server.</p> <p>Records each new file in the tbRcscSendFile table. For details on the validation of the violation data file, refer to Section 10.1.6.10.</p>
8	<p>Processes each Acknowledgment File found on the BATA FTP Server and records it in the tbRcscReceiveFile table. For details on the validation of the Acknowledgment File, refer to Section 10.1.6.10 Incoming File Validation.</p>
9	<p>Deletes the Acknowledgment Files processed from the BATA FTP Server.</p>
10	<p>Processes each Tag Status File found on the FTP Server in the order they were created. There should be only one zip file containing a Tag Status File for the local RCSC and separate Tag Status Files for each of the away CTOC agencies. The process then records the file in the tbRcscReceiveFile and tbRcscReceiveTagStatus tables. The tbTag table is updated with the latest tag statuses. This causes a record to be inserted in the tbSendLaneUpdate table so that the new status is distributed to all the lane/zone controllers.</p> <p>If a new CTOC facility code is received that is not already covered in the stbIOPAgencyFacilityRange table, the RCSC interface process automatically adds the new code to the stbIOPAgencyFacilityRange table and associates it with the appropriate CTOC agency based on the SOURCE value passed in the file's header record.</p> <p>For details on the validation of the Tag Status File, refer to Section 10.1.6.10 Incoming File Validation.</p>
11	<p>Creates an Acknowledge File for each Tag Status File processed and transfers it to the RCSC through the BATA FTP Server.</p>
12	<p>Deletes the Tag Status Files processed from the BATA FTP Server.</p>
13	<p>Processes each ETC Response File and Violation Response File found on the BATA FTP Server and records it in the tbRcscReceiveFile table. ETC and violation response records are inserted into the tbRcscReceiveResponse table for each valid ETC and violation response received.</p> <p>For details on the validation of the ETC Response File and Violation Response File, refer to Section 10.1.6.10 Incoming File Validation.</p>
14	<p>Creates an Acknowledge File for each ETC Response File and Violation Response File processed and transfers it to the RCSC through the BATA FTP Server.</p>
15	<p>Deletes the ETC Response Files and Violation Response Files processed from the BATA FTP Server.</p>
16	<p>Performs the error processing outlined in Section 10.1.8 Error Processing.</p>

10.1.5 Exchanging Data to and from the RCSC

The RCSC interface process runs on a configurable schedule to check for new ETC toll transactions, toll violation transactions, adjustments made for a closed business day, and violation images to be sent to the RCSC via the BATA FTP Server as well as for new incoming files on the BATA FTP Server from the RCSC. This section defines the file transfer, the outgoing and incoming file directory structure and file naming conventions.

10.1.5.1 File Transfer

ATCAS II Host is responsible for picking up files from the BATA FTP Server and dropping off files on the BATA FTP Server. This is the same FTP server used for ATCAS I. There is a dedicated WAN between the BATA and RCSC server and there is a firewall on both sides to prevent intrusions into the respective networks. An FTP user, password, and folder is provided for the FTP server so that the RCSC interface can be configured to access necessary directories on the FTP server.

The file transfer is accomplished using FTP.

Outgoing files are transferred from where they are created in the Outgoing directory on the ATCAS II Host to the csctrans/outgoing directory on the BATA FTP server. It is the responsibility of the RCSC to clean up outgoing files on the FTP server once the transfer is complete.

Incoming files are transferred from the csctrans/incoming directory on the BATA FTP server to the Incoming directory on the ATCAS II Host. Files with a file type of “zip” are extracted from the zip file. The extracted file is then deleted after processed and the zip file is archived in the Archive directory.

Transferred incoming files are deleted from the BATA FTP server and the file type is used to determine how each incoming file is processed. The name of the FTP server and the names of outgoing and incoming directories on the ATCAS II host and on the FTP server are configurable in the ATCAS II Host database.

10.1.5.2 Directory and File Naming Conventions

Below is the directory structures used by the RCSC interface process:

Table 10-4: RCSC Interface Directory Structure on the FTP Server

FTP SERVER	DIRECTORY	DESCRIPTION
BATA FTP Server	/csctrans/incoming	All files received from the RCSC
BATA FTP Server	/csctrans/outgoing	All files sent to the RCSC

The RCSC interface process pushes files to the outgoing drop box folder on the BATA FTP server and pulls files from the incoming drop box folder on the BATA FTP server.

The table below indicates the file naming conventions agreed upon with the RCSC and the initial configuration for the file location. The location of these files is configurable.

Table 10-5: RCSC Interface Files and Naming Conventions

FILE NAME	DESCRIPTION	LOCATION
TAG STATUS FILE		
YYYYMMDDHHMM.aetc, srat_YYYYMMDDHHMM.tag, tcat_YYYYMMDDHHMM.tag, sdat_YYYYMMDDHHMM.tag, cvat_YYYYMMDDHHMM.tag, and YYYYMMDDHHMM_aetc.zip after being zipped	ETC transponder statuses for all RCSC accounts and CTOC away agencies as an incoming file. YYYYMMDDHHMM represents the year, month, day, hour, and minute the file was created.	BATA FTP Server /csctrans/incoming Directory
ETC TRANSACTION FILE		
YYYYMMDDHHMMSS.areq and YYYYMMDDHHMMSS_areq.zip after being zipped	ETC transactions since the last ETC Transaction File generation. YYYYMMDDHHMMSS represents the year, month, day, hour, minute, and second at which the file was created.	BATA FTP Server /csctrans/outgoing Directory
VIOLATION TRANSACTION FILE		
YYYYMMDDHHMMSS.avio and YYYYMMDDHHMMSS_avio.zip after being zipped	Violation transactions since the last Violation Transaction File generation. YYYYMMDDHHMMSS represents the year, month, day, hour, minute, and second at which the file was created.	BATA FTP Server /csctrans/outgoing Directory
TRANSACTION CORRECTION FILE		
YYYYMMDDHHMMSS.ctre and YYYYMMDDHHMMSS_ctre.zip after being zipped	ETC and violation transaction corrections since the last Transaction Correction File. YYYYMMDDHHMMSS represents the year, month, day, hour, minute, and second at which the file was created.	BATA FTP Server /csctrans/outgoing Directory
ETC RESPONSE FILE		
YYYYMMDDHHMMSS.ares and YYYYMMDDHHMMSS_ares.zip after being zipped	ETC response records generated by the RCSC since the last ETC Response File. YYYYMMDDHHMMSS represents the year, month, day, hour, minute, and second at which the file was created.	BATA FTP Server /csctrans/incoming Directory
VIOLATION RESPONSE FILE		
YYYYMMDDHHMMSS.avres and YYYYMMDDHHMMSS_avres.zip after being zipped	Violation response records generated by the RCSC since the last Violation Response File. YYYYMMDDHHMMSS represents the year, month, day, hour, minute, and second at which the file was	BATA FTP Server /csctrans/incoming Directory

FILE NAME	DESCRIPTION	LOCATION
	created.	
CORRECTION RESPONSE FILE		
YYYYMMDDHHMMSS.rtre and YYYYMMDDHHMMSS_rtre.zip after being zipped	Correction response records generated by the RCSC since the last Correction Response File. YYYYMMDDHHMMSS represents the year, month, day, hour, minute, and second at which the file was created.	BATA FTP Server /csctrans/incoming Directory
ACKNOWLEDGEMENT FILE		
{FROM_AGENCY}_{FILE_NAME}_{FI LE_TYPE}.ack	File transfer acknowledgement. {FROM_AGENCY} represents the name of the acknowledging agency (i.e. "AT2" or "CSC"), {FILE_NAME} represents the name of the file being acknowledged, and {FILE_TYPE} represents the type of file being acknowledged.	BATA FTP Server /csctrans/incoming and BATA FTP Server /csctrans/outgoing Directories
VIOLATION DATA FILES AND IMAGES		
{AGENCY_ID}00{PLAZA_ID}{LANE_I D}_{DATE}{TIME}{SEQ_NO}.vdf, {AGENCY_ID}{PLAZA_ID}{LANE_ID }{SEQ_NO}{DATE}{IMAGE_NO}.{IM AGE_TYPE}, and {AGENCY_ID}{PLAZA_ID}{LANE_ID }_{DATE}{TIME}{SEQ_NO}_vdf.zip after violation data file and the corresponding images are zipped Refer to Chapter 6 Section 6.6.2.3 Figure 6-17 Example Violation Data Package for an example of this file naming convention: {AGENCY_ID} is 3 characters long in vdf - or 4 characters long in image files {PLAZA_ID} is 2 characters long {LANE_ID} is 2 characters long {DATE} is 8 characters long {TIME} is 8 characters long {SEQ_NO} is 10 characters long in vdf - or 6 characters long in image files {IMAGE_NO} is 2 characters long {IMAGE_TYPE} is 3 characters long	Violation data captured by the LPR with corresponding images. {AGENCY_ID} represents the name of the agency (i.e. "CAL" for vdf and zip and "CALT" for image files), {PLAZA_ID} represents the plaza ID where the transaction occurred, {LANE_ID} represents the lane where the transaction occurred, {DATE}{TIME} represents the year, month, day, hour, minute, second, and tick at which transaction occurred, {SEQ_NO} represents the vehicle sequence number, and {IMAGE_NO} represents the image number for jpg and "91" for bmp files. {IMAGE_TYPE} represents type of the image file (i.e. "bmp" or "jpg").	BATA FTP Server /csctrans/outgoing Directory

10.1.6 File Layouts and Validation

The files to be sent to and from the RCSC are flat files with fixed length records. The file layouts and validation steps are presented in the sections that follow.

10.1.6.1 Tag Status File Received from the RCSC

The tag status file received from the RCSC at configurable intervals consists of a header record, followed by a detail record for each transponder (tag), then by a trailer record. The record formats are shown in the following tables.

Table 10-6: Local Tag Status File Received from the RCSC (Header Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 7	RECORD_TYPE	7	“#HEADER”
2	8	FILLER_1	1	<comma> separator (“,”)
3	9 – 12	FILE_TYPE	4	”AETC“
4	13	FILLER_2	1	<comma> separator (“,”)
5	14 – 19	SEQUENCE_NO	6	Unique sequence number for the ETC Tag Status File. Incremented with the creation of each file. (000000 – 999999)
6	20	FILLER_3	1	<comma> separator (“,”)
7	21 – 30	BUSINESS_DATE	10	Business Date (MM/DD/YYYY) – same as File Creation Date
8	31	FILLER_4	1	<comma> separator (“,”)
9	32 – 33	SOURCE	2	“RC” if from the local RCSC
10	34	FILLER_5	1	<comma> separator (“,”)
11	35 – 36	DESTINATION	2	“AT”
12	37	FILLER_6	1	<comma> separator (“,”)
13	38 – 47	CREATE_DATE	10	File Creation Date (MM/DD/YYYY)
14	48	FILLER_7	1	<comma> separator (“,”)
15	49 – 56	CREATE_TIME	8	File Creation Time (HH:MM:SS)
16	57	LINEFEED	1	<line feed>

Table 10-7: Away Tag Status File Received from the RCSC (Header Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 7	RECORD_TYPE	7	“#HEADER”
2	8	FILLER_1	1	<comma> separator (“,”)
3	9 – 12	FILE_TYPE	4	”TAGS“
4	13	FILLER_2	1	<comma> separator (“,”)
5	14 – 17	ACTION_CODE	4	“INIT”

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
6	18	FILLER_2	1	<comma> separator (“,”)
7	19 – 24	SEQUENCE_NO	6	Unique sequence number for the ETC Tag Status File. Incremented with the creation of each file. (000000 – 999999)
8	25	FILLER_3	1	<comma> separator (“,”)
9	26 – 35	BUSINESS_DATE	10	Business Date (MM/DD/YYYY) – same as File Creation Date
10	36	FILLER_4	1	<comma> separator (“,”)
11	37 – 38	SOURCE	2	“SR” if from SR-91 “TC” if from TCA “SD” if from SANDAG “CV” if from SBX
12	39	FILLER_5	1	<comma> separator (“,”)
13	40 – 41	DESTINATION	2	“AT”
14	42	FILLER_6	1	<comma> separator (“,”)
15	43 – 52	CREATE_DATE	10	File Creation Date (MM/DD/YYYY)
16	53	FILLER_7	1	<comma> separator (“,”)
17	54 – 61	CREATE_TIME	8	File Creation Time (HH:MM:SS)
18	62	LINEFEED	1	<line feed>

Table 10-8: Local Tag Status File Received from the RCSC (Detail Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 4	ETC_TAG_ID	4	CTOC Tag ID (0000 – 1023)
2	5	FILLER_1	1	< comma> separator (“,”)
3	6 – 11	ETC_TAG_FAC_CODE	6	CTOC Facility Code (000000 – 262143)
4	12	FILLER_2	1	< comma > separator (“,”)
5	13	TOL_TAG_TYPE	1	Four Bit Tag Type read from the ETC transponder in hexadecimal (0 – F): “0” = CTOC transponder Possible future use for switchable transponders: “4” = HOV2 “8” = HOV3

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
6	14	FILLER_3	1	<comma> separator (“,”)
7	15	ETC_TAG_STATUS	1	ATCAS II Tag Status (“0” indicates valid, “1” indicates low balance, “4” indicates invalid, and “5” indicates lost/stolen)
8	16	FILLER_4	1	< comma> separator (“,”)
9	17	ETC_TAG_ATTRIBUTE	1	ATCAS II Tag Attribute (“0” indicates standard, “1” indicates non-revenue, and “8” indicates hybrid)
11	18	LINEFEED	1	<line feed>

Table 10-9: Away Tag Status File Received from the RCSC (Detail Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 8	ETC_TAG_ID	8	Tag Number in Hexadecimal (00000000 – 0FEFF3FF)
2	9	FILLER_1	1	< comma> separator (“,”)
3	10	ACTION_CODE	1	“A”
4	11	FILLER_2	1	< comma > separator (“,”)
5	12	TAG_TYPE	1	“N” = Non-Revenue “V” = Valid “I” = Invalid
6	13	FILLER_3	1	<comma> separator (“,”)
7	14	SUBTYPE_1	1	“N” indicates valid “L” indicates lost “S” indicates stolen “B” indicates low balance “R” indicates not used
8	15	FILLER_4	1	< comma> separator (“,”)
9	16	SUBTYPE_2	1	“N” indicates not used
10	17	FILLER_5	1	< comma> separator (“,”)
11	18	SUBTYPE_3	1	“N” indicates not used
12	19	LINEFEED	1	<line feed>

Table 10-10: Tag Status File Received from the RCSC (Trailer Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 8	RECORD_TYPE	8	“#TRAILER”
2	9	FILLER_1	1	<comma> separator (“,”)
3	10 – 15	SEQUENCE_NO	6	Same as Header Record SEQUENCE_NO
4	16	FILLER_2	1	<comma> separator (“,”)
5	17 – 26	FILE_DATE	10	Same as Header Record CREATE_DATE
6	27	FILLER_3	1	<comma> separator (“,”)
7	28 – 35	DETAIL_COUNT	8	Count of all tag statues contained in the detail records (00000000 – 99999999)
8	36	LINEFEED	1	<line feed>

10.1.6.1.1 RCSC Processing Requirements

The first comprehensive tag download file is pushed to the drop box folder on the BATA FTP server no later than 04:00. All subsequent comprehensive tag download files are sent in 6 hour intervals (i.e., the first tag file no later than 04:00, then 10:00, 16:00, and 22:00).

In the event that an invalid detail record is encountered (e.g., invalid ETC_TAG_STATUS or ETC_TAG_ATTRIBUTE value), the ATCAS II Host skips the file completely and notifies the RCSC via the Acknowledgement File. See Section 10.1.6.10 Incoming File Validation.

The ETC_TAG_STATUS and ETC_TAG_ATTRIBUTE values are downloaded to the lane/zone controllers at the BATA bridges by the ATCAS II Host via ATCAS II plaza computers so that customers can be notified of the tag’s status and charged the correct toll amount based on the tag’s attributes. The tag status messages displayed on the Patron Fare Display (PFD) and the amount charged are configurable at the ATCAS II Host and can be modified by authorized BATA employees.

Should the RCSC fail to send a tag download file as required, the previous tag status and attribute values continue to be used and an alarm is issued. See Section 10.1.8

Error Processing.

The ATCAS II Host performs appropriate sanity checks on the Tag Status File prior to its transmission to the lanes; such as checking for an unusual increase or decrease in the number of tags from the previous version.

Section 10.1.6.10 Incoming File Validation provides more details.

10.1.6.2 ETC Transaction File Sent to the RCSC

The ETC transaction file generated at configurable intervals and sent to the RCSC consists of a header record, followed by a detail record for each ETC transaction in the batch, then by a trailer record. ETC transactions are reported for the Business Day equal to the date the ETC transponder was read in the toll zone. The only exception is in cases of buffered and flushed tag reads and other late posting adjustments to revenue which are reported for the Business Day equal to the day the adjustments were made. The record formats are shown in the following tables.

Table 10-11: ETC Transaction File Sent to the RCSC (Header Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 7	RECORD_TYPE	7	“#HEADER”
2	8	FILLER_1	1	<comma> separator (“,”)
3	9 – 12	FILE_TYPE	4	”REQ “
4	13	FILLER_2	1	<comma> separator (“,”)
5	14 – 19	SEQUENCE_NO	6	Unique sequence number for the ETC Transaction File. Incremented with the creation of each file. (000000 – 999999)
6	20	FILLER_3	1	<comma> separator (“,”)
7	21 – 30	BUSINESS_DATE	10	Business Date – midnight to midnight (MM/DD/YYYY)
8	31	FILLER_4	1	<comma> separator (“,”)
9	32 – 33	SOURCE	2	“AT”
10	34	FILLER_5	1	<comma> separator (“,”)
11	35 – 36	DESTINATION	2	“RC”
12	37	FILLER_6	1	<comma> separator (“,”)
13	38 – 47	CREATE_DATE	10	File Creation Date (MM/DD/YYYY)
14	48	FILLER_7	1	<comma> separator (“,”)
15	49 – 56	CREATE_TIME	8	File Creation Time (HH:MM:SS)
16	57	LINEFEED	1	<line feed>

Table 10-12: ETC Transaction File Sent to the RCSC (Detail Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 10	TRANSACTION_NUMBER	10	Unique transaction number assigned to the transaction being sent from the iSentTransId identity field in the tbRcscSendTrans table and used to identify the transaction in the ETC response file (0000000000 – 9999999999)
2	11	FILLER_1	1	<comma> separator (“,”)
3	12	TOL_TRX_TYPE	1	Type of transaction. “1” = ETC “3” = Carpool “4” = Non-Revenue “5” = Hybrid “6” = HOV2 “7” = HOV3
4	13	FILLER_2	1	<comma> separator (“,”)
5	14 – 17	TOL_TAG_ID	4	Tag ID in accordance with the Title-21 specs (0000 – 1023)
6	18	FILLER_3	1	<comma> separator (“,”)
7	19 – 24	TOL_TAG_FACILITY_ID	6	Facility Code assigned to issuing agency in accordance with the Title-21 specs (000000 – 262143)
8	25	FILLER_4	1	<comma> separator (“,”)
9	26	TOL_TAG_TYPE	1	Four Bit Tag Type read from the ETC transponder in hexadecimal (0 – F): “0” = CTOC transponder Possible future use for switchable transponders: “4” = HOV2 “8” = HOV3
10	27	FILLER_5	1	<comma> separator (“,”)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
11	28 – 30	TOL_PLAZA_ID	3	Plaza ID where the transaction occurred that is part of the unique key needed to identify the transaction. Needs to be converted to the name of the corresponding bridge by the RCSC on the customer statement as follows: “002” = “ANTIOCH” “003” = “RICHMOND” “004” = “BAY BRIDGE” “005” = “SAN MATEO” “006” = “DUMBARTON” “007” = “CARQUINEZ” “008” = “BENICIA”
12	31	FILLER_6	1	<comma> separator (“,”)
13	32 – 33	TOL_LANE_ID	2	Lane number where the transaction occurred that is part of the unique key needed to identify the transaction (00 – 99) and is shown on the customer’s statement
14	34	FILLER_7	1	<comma> separator (“,”)
15	35 – 44	TOL_TRX_DATE	10	Date portion of the timestamp for the transaction that shows when the transaction occurred on the customer’s statement (MM/DD/YYYY)
16	45	FILLER_8	1	<comma> separator (“,”)
17	46 – 53	TOL_TRX_TIME	8	Time portion of the timestamp for the transaction that shows when the transaction occurred on the customer’s statement (HH:MM:SS)
18	54	FILLER_9	1	<comma> separator (“,”)
19	55 – 59	TOL_FARE_ETC_AMT	5	ETC fare amount to charge in number of cents (00000 – 99999). This is the amount passed from the lane as revenue collected in the vehicle transaction or the revenue amount calculated based on the fare schedule and carpool schedule at the time of the transaction for late posting adjustments.
20	60	FILLER_10	1	<comma> separator (“,”)
21	61 – 65	TOL_FARE_CASH_AMT	5	Cash fare amount to charge in number of cents (always 00000)
22	66	FILLER_11	1	<comma> separator (“,”)
23	67 – 74	TOL_FARE_ID	8	Fare Definition ID that was used in the toll lookup followed by a 5 digit number of seconds from the beginning of the day when the time of day pricing interval started (00100000 – 99999999)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
24	75	FILLER_12	1	<comma> separator (“,”)
25	76 – 77	TOL_MSG_FLAG	2	Indicates whether or not the transaction was a buffered tag read (“1” = not a buffered tag read, “2” = buffered tag read)
26	78	FILLER_13	1	<comma> separator (“,”)
27	79 – 80	AVC_CLASS_ID	2	Class based on the axles counted by the AVC (“02” = 2 axle vehicle, “03” = 3 axle vehicle, “04” = 4 axle vehicle “05” = 5 axle vehicle, “06” = 6 axle vehicle, “07” = 7 axle vehicle, and “08” = 8 or more axle vehicle)
28	81	FILLER_14	1	<comma> separator (“,”)
29	82 – 89	LANE_TX_SEQUENCE_NUMBER	8	Unique vehicle sequence number assigned to the vehicle transaction by the lane/zone controller (VEH_SEQUENCE_NO) which can be combined with the plaza id and lane number to uniquely identify the transaction (00000000 – 99999999)
30	90	FILLER_15	1	<comma> separator (“,”)
31	91	TOL_TAG_STATUS	1	ATCAS II Tag Status at the lane at the time of the tag read (“0” indicates valid and “1” indicates low balance)
32	92	FILLER_16	1	<comma> separator (“,”)
33	93	TOL_DST_FLAG	1	Indicates daylight saving time (“0” = standard time and “1” = daylight savings time)
34	94	FILLER_17	1	<comma> separator (“,”)
35	95 – 97	TOL_TRX_SPEED	3	Transaction speed as reported by the lane (Default 000)
36	98	FILLER_18	1	<comma> separator (“,”)
37	99 – 100	RESOLV_CODE	2	00
38	101	LINEFEED	1	<line feed>

Table 10-13: ETC Transaction File Sent to the RCSC (Trailer Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 8	RECORD_TYPE	8	“#TRAILER”
2	9	FILLER_1	1	<comma> separator (“,”)
3	10 – 15	SEQUENCE_NO	6	Same as Header Record SEQUENCE_NO
4	16	FILLER_2	1	<comma> separator (“,”)
5	17 – 26	FILE_DATE	10	Same as Header Record CREATE_DATE
6	27	FILLER_3	1	<comma> separator (“,”)
7	28 – 35	DETAIL_COUNT	8	Count of all transactions contained in the detail records (00000000 – 99999999)
8	36	FILLER_4	1	<comma> separator (“,”)
9	37 - 46	DETAIL_TRANS_AMOUNT	10	Total amount for all records in the file (Sum of TOL_FARE_ETC_AMT in cents)
10	47	LINEFEED	1	<line feed>

10.1.6.2.1 RCSC Processing Requirements

The RCSC receives and processes ETC Transaction Files from the ATCAS II Host multiple times a day at predetermined intervals (i.e., the ATCAS II host is configured to send an ETC Transaction File every 3 hours at 00:00, 03:00, 06:00, 09:00, 12:00, 15:00, 18:00, and 21:00).

ETC transactions in this file have a unique transaction number for each record.

All transactions coming in through this interface are processed and resolve code values are ignored.

RCSC can process multiple transaction type (TOL_TRX_TYPE) values in a single file. All transaction types are processed as ETC transactions but the transaction type value is saved for future summarization data in reports.

The tag type (TOL_TAG_TYPE), fare id (TOL_FARE_ID), and transaction class (AVC_CLASS_ID) values are also saved for future summarization data in reports.

The RCSC ensures, upon processing, that the ETC Transaction File does not contain two or more transactions for the same TOL_TAG_ID/TOL_TAG_AGENCY_ID combination at the same TOL_PLAZA_ID/TOL_LANE_ID within a one (1) minute period. However, this parameter is configurable at the RCSC based on business rule decisions between the RCSC and ATCAS II Host.

The RCSC performs sanity checks on the ETC Transaction File to look for formatting errors, record count mismatches between header and detail records, etc. In the event the file fails, the RCSC notifies the ATCAS II Host of the anomaly by means of the acknowledgment file. See Section 10.1.6.8, the RETURN_CODE value.

If the RCSC uncovers an error in a detail record, the RCSC rejects that record and processes the remainder of the transaction file. ATCAS II Host is notified of the error using corresponding error and reason codes in the ETC response file. See Sections 10.1.6.5 and 10.1.6.11.

The RCSC always charges the ETC toll amount received from the ATCAS II Host. The toll amount calculated at the ATCAS II Host as supplied in the TOL_FARE_ETC_AMT field of the transaction file is used to debit the BATA RCSC accounts. This includes the toll amount due for non-revenue customers (ATCAS II sends 00000 in the TOL_FARE_ETC_AMT field for non-revenue customers).

The RCSC has the capability of rejecting a transaction based on the age. This is a configurable value and set to 365 days for all incoming transactions from the ATCAS II Host. This value can be changed as requested by BATA.

The business date (BUSINESS_DATE) is set to the calendar day in which the transaction occurred at the lane. The only exception is when transactions are sent as the result of an adjustment made at the ATCAS II Host after the business day has been closed. In this case, the business date is set to the calendar day in which the adjustment occurred.

All transactions contained in the ETC transaction file have the same transaction date (TOL_TRX_DATE) value. A business date that does not match the transaction date indicates the transaction is from an adjustment made at the ATCAS II host. The mismatched business date reflects the day the adjustment was made.

10.1.6.3 Violation Transaction File Sent to the RCSC

The violation transaction file generated at configurable intervals and sent to the RCSC consists of a header record, followed by a detail record for each violation transaction in the batch, and then by a trailer record. Violation transactions are reported for the Business Day equal to the date the vehicle exited the toll zone. The record formats are shown in the following tables.

Table 10-14: Violation Transaction File Sent to the RCSC (Header Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 7	RECORD_TYPE	7	“#HEADER”
2	8	FILLER_1	1	<comma> separator (“,”)
3	9 – 12	FILE_TYPE	4	”VIO “
4	13	FILLER_2	1	<comma> separator (“,”)
5	14 – 19	SEQUENCE_NO	6	Unique sequence number for the Violation Transaction File. Incremented with the creation of each file. (000000 – 999999)
6	20	FILLER_3	1	<comma> separator (“,”)
7	21 – 30	BUSINESS_DATE	10	Business Date – midnight to midnight (MM/DD/YYYY)
8	31	FILLER_4	1	<comma> separator (“,”)
9	32 – 33	SOURCE	2	“AT”
10	34	FILLER_5	1	<comma> separator (“,”)
11	35 – 36	DESTINATION	2	“RC”
12	37	FILLER_6	1	<comma> separator (“,”)
13	38 – 47	CREATE_DATE	10	File Creation Date (MM/DD/YYYY)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
14	48	FILLER_7	1	<comma> separator (“,”)
15	49 – 56	CREATE_TIME	8	File Creation Time (HH:MM:SS)
16	57	LINEFEED	1	<line feed>

Table 10-15: Violation Transaction File Sent to the RCSC (Detail Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 10	TRANSACTION_NUMBER	10	Unique transaction number assigned to the transaction being sent from the iSentTransId identity field in the tbRcscSendTrans table and used to identify the transaction in the violation response file (0000000000 – 9999999999)
2	11	FILLER_1	1	<comma> separator (“,”)
3	12	TOL_TRX_TYPE	1	Type of transaction. “2” = Violation
4	13	FILLER_2	1	<comma> separator (“,”)
5	14 – 17	TOL_TAG_ID	4	Tag ID in accordance with the Title-21 specs (0000 – 1023) or <blank> if no tag was read
6	18	FILLER_3	1	<comma> separator (“,”)
7	19 – 24	TOL_TAG_FACILITY_ID	6	Facility Code assigned to issuing agency in accordance with the Title-21 specs (000000 – 262143) or <blank> if no tag was read
8	25	FILLER_4	1	<comma> separator (“,”)
9	26	TOL_TAG_TYPE	1	Four Bit Tag Type read from the ETC transponder in hexadecimal (0 – F): “0” = CTOC transponder Possible future use for switchable transponders: “4” = HOV2 “8” = HOV3
10	27	FILLER_5	1	<comma> separator (“,”)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
11	28 – 30	TOL_PLAZA_ID	3	Plaza ID where the transaction occurred that is part of the unique key needed to identify the transaction. Needs to be converted to the name of the corresponding bridge by the RCSC on the customer statement as follows: “002” = “ANTIOCH” “003” = “RICHMOND” “004” = “BAY BRIDGE” “005” = “SAN MATEO” “006” = “DUMBARTON” “007” = “CARQUINEZ” “008” = “BENICIA”
12	31	FILLER_6	1	<comma> separator (“,”)
13	32 – 33	TOL_LANE_ID	2	Lane number where the transaction occurred that is part of the unique key needed to identify the transaction (00 – 99) and is shown on the customer statement
14	34	FILLER_7	1	<comma> separator (“,”)
15	35 – 44	TOL_TRX_DATE	10	Date portion of the timestamp for the transaction that shows when the transaction occurred on the customers statement (MM/DD/YYYY)
16	45	FILLER_8	1	<comma> separator (“,”)
17	46 – 53	TOL_TRX_TIME	8	Time portion of the timestamp for the transaction that shows when the transaction occurred on the customers statement (HH:MM:SS)
18	54	FILLER_9	1	<comma> separator (“,”)
19	55 – 59	TOL_FARE_ETC_AMT	5	ETC fare amount to charge in number of cents (00000 – 99999). The ETC fare amount is looked up from the database based on the fare definition that was active at the time of the transaction as indicated in the fare_id value passed from the lane in the vehicle transaction. If the transaction is part of a tour that was in a dedicated carpool mode then the ETC_CARPOOL fare amount is used. This is the amount posted to the ETC account when the violation is converted to an ETC transaction by the RCSC.
20	60	FILLER_10	1	<comma> separator (“,”)
21	61 – 65	TOL_FARE_CASH_AMT	5	Cash fare amount to charge in number of cents (00000 – 99999). This is the amount passed from the lane as revenue expected in the vehicle transaction.

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
22	66	FILLER_11	1	<comma> separator (“,”)
23	67 – 74	TOL_FARE_ID	8	Fare Definition ID that was used in the toll lookup followed by a 5 digit number of seconds from the beginning of the day when the time of day pricing interval started (00100000 – 99999999)
24	75	FILLER_12	1	<comma> separator (“,”)
25	76 – 77	TOL_MSG_FLAG	2	Indicates whether or not the transaction was a buffered tag read (“1” = not a buffered tag read, “2” = buffered tag read)
26	78	FILLER_13	1	<comma> separator (“,”)
27	79 – 80	AVC_CLASS_ID	2	Class based on the axles counted by the AVC (“02” = 2 axle vehicle, “03” = 3 axle vehicle, “04” = 4 axle vehicle “05” = 5 axle vehicle, “06” = 6 axle vehicle, “07” = 7 axle vehicle, and “08” = 8 or more axle vehicle)
28	81	FILLER_14	1	<comma> separator (“,”)
29	82 – 89	LANE_TX_SEQUENCE_NUMBER	8	Unique vehicle sequence number assigned to the vehicle transaction (VEH_SEQUENCE_NO) which can be combined with the plaza id and lane number to uniquely identify the transaction (00000000 – 99999999)
30	90	FILLER_15	1	<comma> separator (“,”)
31	91	TOL_TAG_STATUS	1	ATCAS II Tag Status at the lane at the time of the tag read (“4” indicates invalid and “5” indicates lost/stolen) or <blank> if no tag was read
32	92	FILLER_16	1	<comma> separator (“,”)
33	93	TOL_DST_FLAG	1	Indicates daylight saving time (“0” = standard time and “1” = daylight savings time)
34	94	FILLER_17	1	<comma> separator (“,”)
35	95 – 97	TOL_TRX_SPEED	3	Transaction speed as reported by the lane (Default 000)
36	98	FILLER_18	1	<comma> separator (“,”)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
37	99 – 100	RESOLV_CODE	2	02
38	101	LINEFEED	1	<line feed>

Table 10-16: Violation Transaction File Sent to the RCSC (Trailer Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 8	RECORD_TYPE	8	“#TRAILER”
2	9	FILLER_1	1	<comma> separator (“,”)
3	10 – 15	SEQUENCE_NO	6	Same as Header Record SEQUENCE_NO
4	16	FILLER_2	1	<comma> separator (“,”)
5	17 – 26	FILE_DATE	10	Same as Header Record CREATE_DATE
6	27	FILLER_3	1	<comma> separator (“,”)
7	28 – 35	DETAIL_COUNT	8	Count of all transactions contained in the detail records (00000000 – 99999999)
8	36	FILLER_4	1	<comma> separator (“,”)
9	37 - 46	DETAIL_TRANS_AMOUNT	10	Total amount for all records in the file (Sum of TOL_FARE_ETC_AMT in cents)
10	47	LINEFEED	1	<line feed>

10.1.6.3.1 RCSC Processing Requirements

The RCSC is capable of receiving and processing Violation Transaction Files from the ATCAS II Host multiple times a day (i.e., the ATCAS II host is configured to send a Violation Transaction File every 3 hours at 00:00, 03:00, 06:00, 09:00, 12:00, 15:00, 18:00, and 21:00).

Violation transactions in this file have a unique transaction number for each record.

The transaction type (TOL_TRX_TYPE), tag type (TOL_TAG_TYPE), fare ID (TOL_FARE_ID), and transaction class (AVC_CLASS_ID) values are saved for future summarization data in reports.

The RCSC performs sanity checks on the Violation Transaction File to look for formatting errors, record count mismatches between header and detail records, etc. In the event the file fails, the RCSC notifies the ATCAS II Host of the anomaly by means of the acknowledgment file. See Section 10.1.6.8, the RETURN_CODE value.

If the RCSC uncovers an error in a detail record, the RCSC rejects the transaction record with the error and processes the remainder of the transaction file. ATCAS II Host is notified of the error using corresponding error and reason codes in the Violation response file. See Sections 10.1.6.6 and 10.1.6.11.

The RCSC uses the toll amount as supplied in the TOL_FARE_CASH_AMT field to process violations. All postable transactions use the amount in the TOL_FARE_ETC_AMT field, while transactions eligible for Notice Escalation use the amount in the TOL_FARE_CASH_AMT field.

The RCSC has the capability of rejecting a transaction based on the age of the transaction. This is a configurable value and is set to 365 days for all incoming transactions from the ATCAS II Host. This value can be changed as requested by BATA.

The business date (BUSINESS_DATE) is set to the calendar day in which the transaction occurred at the lane. The only exception is when transactions are sent as the result of an adjustment made at the ATCAS II host after the business day closed. In this case, the business date is set to the date in which the adjustment occurred.

All transactions contained in the Violation Transaction File have the same transaction date (TOL_TRX_DATE) value. A business date that does not match the transaction date indicates the transaction is from an adjustment made at the ATCAS II host. The mismatched business date reflects the day the adjustment was made.

10.1.6.4 Transaction Correction File Sent to the RCSC

The transaction correction file is generated and sent to the RCSC once following the end of each business day closure when there are corrections or reversals associated with that day. This file consists of a header record followed by a detail record for each transaction adjustment in the batch, and then by a trailer record. Transactions are only sent when there is a change in the ETC fare amount. Refer to Chapter 8 Section 8.10 Financial Management for details related to closing out the business day and Section 8.10.5 Adjustment for details regarding how adjustments are made. The record formats are shown in the following tables.

Table 10-17: Transaction Correction File Sent to the RCSC (Header Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 7	RECORD_TYPE	7	“#HEADER”
2	8	FILLER_1	1	<comma> separator (“,”)
3	9 – 12	FILE_TYPE	4	”CTRE“
4	13	FILLER_2	1	<comma> separator (“,”)
5	14 – 19	SEQUENCE_NO	6	Unique sequence number for the Transaction Correction File. Incremented with the creation of each file. (000000 – 999999)
6	20	FILLER_3	1	<comma> separator (“,”)
7	21 – 30	BUSINESS_DATE	10	Business Date – midnight to midnight (MM/DD/YYYY)
8	31	FILLER_4	1	<comma> separator (“,”)
9	32 – 33	SOURCE	2	“AT”
10	34	FILLER_5	1	<comma> separator (“,”)
11	35 – 36	DESTINATION	2	“RC”
12	37	FILLER_6	1	<comma> separator (“,”)
13	38 – 47	CREATE_DATE	10	File Creation Date (MM/DD/YYYY)
14	48	FILLER_7	1	<comma> separator (“,”)
15	49 – 56	CREATE_TIME	8	File Creation Time (HH:MM:SS)
16	57	LINEFEED	1	<line feed>

Table 10-18: Transaction Correction File Sent to the RCSC (Detail Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 10	TRANSACTION_NUMBER	10	Unique transaction number assigned to the transaction being sent from the iSentTransId identity field in the tbRcscSendTrans table used to identify the correction transaction (0000000000 – 9999999999)
2	11	FILLER_1	1	<comma> separator (“,”)
3	12	TOL_TRX_TYPE	1	Type of transaction being corrected. “1” = ETC “2” = Violation “3” = Carpool “4” = Non-Revenue “5” = Hybrid “6” = HOV2 “7” = HOV3
4	13	FILLER_2	1	<comma> separator (“,”)
5	14	TOL_TRX_TYPE_CORR	1	New corrected type of transaction (when different than TOL_TRX_TYPE). “1” = ETC “2” = Violation “3” = Carpool “4” = Non-Revenue “5” = Hybrid “6” = HOV2 “7” = HOV3
6	15	FILLER_3	1	<comma> separator (“,”)
7	16	TOL_CORRECTION_FLAG	1	Type of correction. “A” = Amount only “T” = Transaction Type, Fare ID, or AVC Class ID correction
8	17	FILLER_4	1	<comma> separator (“,”)
9	18 – 21	TOL_TAG_ID	4	Tag ID in accordance with the Title-21 specs (0000 – 1023) or <blank> if no tag was read
10	22	FILLER_5	1	<comma> separator (“,”)
11	23 – 28	TOL_TAG_FACILITY_ID	6	Facility Code assigned to issuing agency in accordance with the Title-21 specs (000000 – 262143) or <blank> if no tag was read
12	29	FILLER_6	1	<comma> separator (“,”)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
13	30	TOL_TAG_TYPE	1	Four Bit Tag Type read from the ETC transponder in hexadecimal (0 – F): “0” = CTOC transponder Possible future use for switchable transponders: “4” = HOV2 “8” = HOV3
14	31	FILLER_7	1	<comma> separator (“,”)
15	32 – 34	TOL_PLAZA_ID	3	Plaza ID where the transaction being cancelled or corrected occurred that is part of the unique key needed to identify the transaction “002” = “ANTIOCH” “003” = “RICHMOND” “004” = “BAY BRIDGE” “005” = “SAN MATEO” “006” = “DUMBARTON” “007” = “CARQUINEZ” “008” = “BENICIA”
16	35	FILLER_8	1	<comma> separator (“,”)
17	36 – 37	TOL_LANE_ID	2	Lane number where the transaction being cancelled or corrected occurred that is part of the unique key needed to identify the transaction
18	38	FILLER_9	1	<comma> separator (“,”)
19	39 – 48	TOL_TRX_DATE	10	Date portion of the timestamp for the transaction that shows when the transaction being cancelled or corrected occurred (MM/DD/YYYY)
20	49	FILLER_10	1	<comma> separator (“,”)
21	50 – 57	TOL_TRX_TIME	8	Time portion of the timestamp for the transaction that shows when the transaction being cancelled or corrected occurred (HH:MM:SS)
22	58	FILLER_11	1	<comma> separator (“,”)
23	59 – 63	TOL_FARE_ETC_AMT	5	ETC fare amount to reverse in the transaction being corrected in number of cents (00000 – 99999).
24	64	FILLER_12	1	<comma> separator (“,”)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
25	65 – 69	TOL_FARE_CORR_ETC _AMT	5	New ETC fare amount to charge in number of cents (00000 – 99999). A new ETC fare amount = 00000 indicates the original transaction is being reversed.
26	70	FILLER_13	1	<comma> separator (“;”)
27	71 – 75	TOL_FARE_CASH_ AMT	5	Cash fare amount to reverse in the transaction being corrected in number of cents (always 00000)
28	76	FILLER_14	1	<comma> separator (“;”)
29	77 – 81	TOL_FARE_CORR_CA SH_ AMT	5	New cash fare amount to charge in number of cents (00000 – 99999). A new cash fare amount = 00000 indicates the original transaction is being reversed or is an ETC transaction being corrected.
30	82	FILLER_15	1	<comma> separator (“;”)
31	83 – 90	TOL_FARE_ID	8	Fare Definition ID that was used in the toll lookup charge in the transaction being corrected followed by a 5 digit number of seconds from the beginning of the day when the time of day pricing interval started (00100000 – 99999999)
32	91	FILLER_16	1	<comma> separator (“;”)
33	92 – 99	TOL_FARE_CORR_ID	8	New Fare Definition ID (when different than TOL_FARE_ID) that was used in the toll lookup followed by a 5 digit number of seconds from the beginning of the day when the time of day pricing interval started (00100000 – 99999999)
34	100	FILLER_17	1	<comma> separator (“;”)
35	101 – 102	TOL_MSG_FLAG	2	Indicates whether or not the transaction was a buffered tag read (“1” = not a buffered tag read, “2” = buffered tag read)
36	103	FILLER_18	1	<comma> separator (“;”)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
37	104 – 105	AVC_CLASS_ID	2	Class based on the axles counted by the AVC charge in the transaction being corrected (“02” = 2 axle vehicle, “03” = 3 axle vehicle, “04” = 4 axle vehicle “05” = 5 axle vehicle, “06” = 6 axle vehicle, “07” = 7 axle vehicle, and “08” = 8 or more axle vehicle)
38	106	FILLER_19	1	<comma> separator (“,“)
39	107 – 108	AVC_CLASS_ID_ CORR	2	New Class based on the axles counted by the AVC (when different than TOL_CLASS_ID). (“02” = 2 axle vehicle, “03” = 3 axle vehicle, “04” = 4 axle vehicle “05” = 5 axle vehicle, “06” = 6 axle vehicle, “07” = 7 axle vehicle, and “08” = 8 or more axle vehicle)
40	109	FILLER_20	1	<comma> separator (“,“)
41	110 – 117	LANE_TX_ SEQUENCE_ NUMBER	8	Unique vehicle sequence number assigned to the vehicle transaction by the lane/zone controller (VEH_SEQUENCE_NO) which can be combined with the plaza id and lane number to uniquely identify the transaction (00000000 – 99999999)
42	118	FILLER_21	1	<comma> separator (“,“)
43	119	TOL_TAG_STATUS	1	ATCAS II Tag Status at the lane at the time of the tag read (“0” indicates valid and “1” indicates low balance “4” indicates invalid and “5” indicates lost/stolen) or <blank> if no tag was read
44	120	FILLER_22	1	<comma> separator (“,“)
45	121	TOL_DST_FLAG	1	Indicates daylight saving time (“0” = standard time and “1” = daylight savings time)
46	122	FILLER_23	1	<comma> separator (“,“)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
47	123 – 125	TOL_TRX_SPEED	3	Transaction speed as reported by the lane (Default 000)
48	126	FILLER_24	1	<comma> separator (“,”)
49	127 – 136	ORIG_TRX_NUMBER	10	Transaction number assigned to the original transaction being corrected (0000000000 – 9999999999)
50	137	FILLER_25	1	<comma> separator (“,”)
51	138 – 139	RESOLV_CODE	2	00
52	140	LINEFEED	1	<line feed>

Table 10-19: Transaction Correction File Sent to the RCSC (Trailer Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 8	RECORD_TYPE	8	“#TRAILER”
2	9	FILLER_1	1	<comma> separator (“,”)
3	10 – 15	SEQUENCE_NO	6	Same as Header Record SEQUENCE_NO
4	16	FILLER_2	1	<comma> separator (“,”)
5	17 – 26	FILE_DATE	10	Same as Header Record CREATE_DATE
6	27	FILLER_3	1	<comma> separator (“,”)
7	28 – 35	DETAIL_COUNT	8	Count of all cancellations and corrections contained in the detail records (00000000 – 99999999)
8	36	FILLER_4	1	<comma> separator (“,”)
9	37 - 46	DETAIL_TRANS_AMOUNT	10	Total new amount for all records in the file (Sum of TOL_FARE_CORR_ETC_AMT in cents)
10	47	LINEFEED	1	<line feed>

10.1.6.4.1 RCSC Processing Requirements

This interface is primarily for ETC toll amount (TOL_FARE_CORR_ETC_AMT) corrections. The transaction type (TOL_TRX_TYPE_CORR), fare ID (TOL_FARE_CORR_ID), and transaction class (AVC_CLASS_ID_CORR) can also be modified so that the reason for the change can be saved. Corrections are only sent when there is a change in the ETC fare amount.

The transaction type (TOL_TRX_TYPE_CORR), tag type (TOL_TAG_TYPE), fare ID (TOL_FARE_CORR_ID), and transaction class (AVC_CLASS_ID_CORR) values are saved for future summarization in reports.

ATCAS II Host sends a maximum of one (1) correction file per day. The correction file is generated and sent after the business day is closed at the ATCAS II Host.

Correction transactions in this file have a unique transaction number for each record.

Correction transactions contain the original transaction number (ORIG_TRX_NUMBER).

The ATCAS II host waits for a response that the original transaction was posted before sending the request to correct it.

The ATCAS II host sends the file with a corrected ETC fare amount (TOL_FARE_CORR_ETC_AMT) of 00000 to reverse the original transaction.

Violation transactions (TOL_TRX_TYPE = 2) can only be reversed for the ITOL or VTOL transactions by setting the ETC and cash fare amount (TOL_FARE_CORR_ETC_AMT and TOL_FARE_CORR_CASH_AMT) values to 00000. Modifying the transaction type, fare ID, and transaction class, or setting the fare amount to something other than 00000 causes the RCSC to reject the transaction correction record. The remainder of the transaction file is processed. The ATCAS II Host is notified of the error using corresponding error and reason codes in the Correction response file. See Sections 10.1.6.7 and 10.1.6.11.

All other violation adjustments are recorded in ATCAS II but are not reversed at the RCSC (they need to be manually cancelled out at the RCSC). The auditor should only cancel the ITOL/VTOL violations in ATCAS II after the RCSC has responded that they have posted.

Non-violation transactions (TOL_TRX_TYPE not = 2) cannot be converted to violation transactions since there are no corresponding images. Changing the transaction type to violation (TOL_TRX_TYPE_CORR = 2) causes the RCSC to reject the transaction correction record and continue processing the remainder of the file. The ATCAS II Host is notified of the error using corresponding error and reason codes in the Correction response file. See Sections 10.1.6.7 and 10.1.6.11.

This interface is for BATA/Home customers only. In case any CTOC transactions are included in this file, the RCSC rejects the entire file with an ack file status of 01.

There is only one (1) adjustment per posted transaction. See Chapter 8 Section 8.10.5 regarding how a second adjustment is handled.

The RCSC creates 2 new transactions for each correction transaction.

- a. Transaction #1 is posted to the customer account as a reversal for the same amount as the original amount.
- b. Transaction #2 is the new amount received from ATCAS II in the correction file.

The RCSC performs sanity checks on the Transaction Correction File to look for formatting errors, record count mismatches between header and detail records, etc. In the event the file fails, the RCSC notifies the ATCAS II Host of the anomaly by means of the acknowledgment file. See Section 10.1.6.8, the RETURN_CODE value.

If the RCSC determines an error in a detail record, the RCSC rejects the transaction record with the error and processes the remainder of the transaction file. The ATCAS II Host is notified of the error using corresponding error and reason codes in the Correction response file. See Sections 10.1.6.7 and 10.1.6.11.

The RCSC always charges the ETC toll amount received from the ATCAS II Host. The toll amount is calculated at the ATCAS II Host and supplied in the TOL_FARE_CORR_ETC_AMT field of the transaction file. This amount is used to debit the BATA RCSC accounts and includes toll amounts due for non-revenue customers (ATCAS II sends 00000 in the TOL_FARE_CORR_ETC_AMT field for non-revenue customers).

The RCSC has the capability of rejecting a transaction based on the age of the transaction. This is a configurable value and is set to 365 days for all incoming transactions from the ATCAS II Host. This value can be changed as requested by BATA.

The business date (BUSINESS_DATE) is set to the calendar day in which the transaction occurred at the lane. A business date that does not match the transaction date indicates the transaction is from an adjustment made at the ATCAS II host. The mismatched business date reflects the day the adjustment was made.

10.1.6.5 ETC Response File Received from the RCSC

The ETC response file is generated by the RCSC after the ETC transaction file is processed and provides the final disposition of the transactions. This file consists of a header record, followed by a detail record for each transaction disposition in the batch, and then by a trailer record. Refer to Chapter 8 Host System Software Section 8.10.1 Business Day Complete and Section 8.10.3 Audit ETC Variances for details on how to reconcile discrepancies in the ETC response file. The record formats for the ETC response file are shown in the following tables.

Table 10-20: ETC Response File Received from the RCSC (Header Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 7	RECORD_TYPE	7	“#HEADER”
2	8	FILLER_1	1	<comma> separator (“,”)
3	9 – 12	FILE_TYPE	4	”RES “
4	13	FILLER_2	1	<comma> separator (“,”)
5	14 – 19	SEQUENCE_NO	6	Unique sequence number for the ETC Transaction File that corresponds to this response (000000 – 999999)
6	20	FILLER_3	1	<comma> separator (“,”)
7	21 – 30	BUSINESS_DATE	10	Business Date for the ETC Transaction File that corresponds to this response (MM/DD/YYYY)
8	31	FILLER_4	1	<comma> separator (“,”)
9	32 – 33	SOURCE	2	“RC”
10	34	FILLER_5	1	<comma> separator (“,”)
11	35 – 36	DESTINATION	2	“AT”
12	37	FILLER_6	1	<comma> separator (“,”)
13	38 – 47	CREATE_DATE	10	File Creation Date (MM/DD/YYYY)
14	48	FILLER_7	1	<comma> separator (“,”)
15	49 – 56	CREATE_TIME	8	File Creation Time (HH:MM:SS)
16	57	LINEFEED	1	<line feed>

Table 10-21: ETC Response File Received from the RCSC (Detail Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 10	TRANSACTION_NUMBER	10	Unique transaction number to identify the transaction that corresponds to this response (0000000000 – 9999999999)
2	11	FILLER_1	1	<comma> separator (“,”)
3	12	TOL_TRX_TYPE	1	Type of transaction. “1” = ETC “3” = Carpool “4” = Non-Revenue “5” = Hybrid “6” = HOV2 “7” = HOV3
4	13	FILLER_2	1	<comma> separator (“,”)
5	14 – 17	TOL_TAG_ID	4	Tag ID in accordance with the Title-21 specs (0000 – 1023)
6	18	FILLER_3	1	<comma> separator (“,”)
7	19 – 24	TOL_TAG_FACILITY_ID	6	Facility Code assigned to issuing agency in accordance with the Title-21 specs (000000 – 262143)
8	25	FILLER_4	1	<comma> separator (“,”)
9	26	TOL_TAG_TYPE	1	Four Bit Tag Type read from the ETC transponder in hexadecimal (0 – F): “0” = CTOC transponder Possible future use for switchable transponders: “4” = HOV2 “8” = HOV3
10	27	FILLER_5	1	<comma> separator (“,”)
11	28 – 37	POSTED_DATE	10	Date the transaction was posted to a patron’s account, posted at an away agency, or was rejected (MM/DD/YYYY)
12	38	FILLER_6	1	<comma> separator (“,”)
13	39 – 41	TOL_PLAZA_ID	3	Plaza ID where the transaction occurred that is part of the unique key needed to identify the transaction that corresponds to this response “002” = “ANTIOCH” “003” = “RICHMOND” “004” = “BAY BRIDGE” “005” = “SAN MATEO” “006” = “DUMBARTON” “007” = “CARQUINEZ” “008” = “BENICIA”
14	42	FILLER_7	1	<comma> separator (“,”)
15	43 – 44	TOL_LANE_ID	2	Lane number where the transaction occurred that is part of the unique key needed to identify the transaction that corresponds to this response (00 – 99)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
16	45	FILLER_8	1	<comma> separator (“,”)
17	46 – 50	TOL_FARE_ POSTED_AMT	5	Posted amount in cents (00000 – 99999)
18	51	FILLER_9	1	<comma> separator (“,”)
19	52 – 53	NON_REVENUE_ FLAG	2	Indicates if transaction was posted to a non-revenue account (“00” indicates a revenue account and “01” indicates a non-revenue account)
20	54	FILLER_10	1	<comma> separator (“,”)
21	55	PAYMENT_TYPE	1	Type of payment posted (“A” indicates the transaction was an ETOL posted to an ETC account based on the tag status at the lane, “V” indicates the transaction was posted as a violation based on a failure to pay at the lane, and “E” indicates that the transaction was not posted due to an error exception at the RCSC) (See Table 10-35 below)
22	56	FILLER_11	1	<comma> separator (“,”)
23	57 – 59	CSC_REASON_ CODE	3	Reason toll amount was posted to an account or was rejected by the RCSC (see Section 10.1.6.11 RCSC Reason Codes)
24	60	FILLER_12	1	<comma> separator (“,”)
25	61 – 70	BUSINESS_DATE	10	The business day assigned to the transaction that corresponds to this response and used to identify the revenue date for the original transaction (MM/DD/YYYY)
26	71	FILLER_13	1	<comma> separator (“,”)
27	72 – 77	CSC_BATCH	6	Sequence number assigned by the RCSC to the ETC Transaction File that contained the transaction that corresponds to this response (000000 – 999999)
28	78	FILLER_14	1	<comma> separator (“,”)
29	79 – 94	CSC_ACCT_NO	16	RCSC account number assigned to the BATA RCSC customer account. (Default for Home accounts 0000000000000000) (For other CTOC agencies the CSC_ACCT_NO are set as follows: 0000000000000098 – SR 91 0000000000000097 – SANDAG 0000000000000096 – TCA 0000000000000095 – CTV 0000000000000094 – SENTRY)
30	95	LINEFEED	1	<line feed>

Table 10-22: ETC Response File Received from the RCSC (Trailer Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 8	RECORD_TYPE	8	“#TRAILER”
2	9	FILLER_1	1	<comma> separator (“,”)
3	10 – 15	SEQUENCE_NO	6	Same as Header Record SEQUENCE_NO
4	16	FILLER_2	1	<comma> separator (“,”)
5	17 – 26	FILE_DATE	10	Same as Header Record CREATE_DATE
6	27	FILLER_3	1	<comma> separator (“,”)
7	28 – 35	DETAIL_COUNT	8	Count of all ETC responses contained in the detail records (00000000 – 99999999)
8	36	LINEFEED	1	<line feed>

10.1.6.5.1 RCSC Processing Requirements

All transactions received at the RCSC, via the ETC Transaction File, are sent back to the ATCAS II Host in the response file.

All transactions received at the RCSC, via the ETC Transaction File, can be reconciled back at the ATCAS II Host with final status code passed in the ETC Response File. The reconciliation takes place at file level. For example, if the RCSC receives 100 transactions in file 123, then the same 100 transactions are reconciled back to the ATCAS II Host in one file.

The RCSC produces a response file within 9 hours of receipt of a transaction file and by 10AM the next day.

The RCSC performs transaction reconciliation at a detail transaction level (i.e., the response file contains details at the transaction level instead of a reconciliation summary).

The RCSC reconciles all Away CTOC Agency transactions with Expected Revenue and does not wait for response files from an Away Agency. However, in the event the transactions are later rejected by the Away agency, the variance between the Expected Revenue and revenue posted by the Away agency is reflected through RCSC Reports.

In cases when a transaction cannot be posted at the RCSC, the RCSC indicates the reason the transaction was not posted in the CSC_REASON_CODE field. The possible reason codes and descriptions are provided in Section 10.1.6.11 RCSC Reason Codes.

The RCSC receives a unique integer value (SEQUENCE_NO) in the header record of an incoming transaction file. This identifier is sent back as part of the header record in the response file in order to associate it to the correct transaction file.

The RCSC receives a unique transaction number (TRANSACTION_NUMBER) in each of the transaction detail record. This identifier is sent back as the transaction number in the response detail record in order to associate it to the correct transaction.

At configurable intervals, the ATCAS II Host checks for response files transferred to the Host by the RCSC. When a new file is received, ATCAS II loads the file and performs certain validations. In all cases the ATCAS II Host generates an acknowledgement file and transmits this back to the RCSC. The

acknowledgment file contains a SUCCESS code (value “00”) if the response file passed validation or a FAILURE code (value “01”) if the file failed validation. See Section 10.1.6.10 Incoming File Validation.

10.1.6.6 Violation Response File Received from the RCSC

The violation response file is generated by the RCSC after the violation transaction file is processed to give the final disposition of the transactions. This file consists of a header record, followed by a detail record for each transaction that was posted to a customer account based on the license plate image (ITOL) or based on a change in the tag status (VTOL) in the batch, and then by a trailer record. The record formats are shown in the following tables.

Table 10-23: Violation Response File Received from the RCSC (Header Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 7	RECORD_TYPE	7	“#HEADER”
2	8	FILLER_1	1	<comma> separator (“,”)
3	9 – 12	FILE_TYPE	4	“VRES”
4	13	FILLER_2	1	<comma> separator (“,”)
5	14 – 19	SEQUENCE_NO	6	Unique sequence number for the Violation Transaction File that corresponds to this response (000000 – 999999)
6	20	FILLER_3	1	<comma> separator (“,”)
7	21 – 30	BUSINESS_DATE	10	Business Date passed in the Violation Transaction File that corresponds to this response (MM/DD/YYYY)
8	31	FILLER_4	1	<comma> separator (“,”)
9	32 – 33	SOURCE	2	“RC”
10	34	FILLER_5	1	<comma> separator (“,”)
11	35 – 36	DESTINATION	2	“AT”
12	37	FILLER_6	1	<comma> separator (“,”)
13	38 – 47	CREATE_DATE	10	File Creation Date (MM/DD/YYYY)
14	48	FILLER_7	1	<comma> separator (“,”)
15	49 – 56	CREATE_TIME	8	File Creation Time (HH:MM:SS)
16	57	LINEFEED	1	<line feed>

Table 10-24: Violation Response File Received from the RCSC (Detail Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 10	TRANSACTION_NUMBER	10	Unique transaction number used to identify the transaction that corresponds to this response (0000000000 – 9999999999)
2	11	FILLER_1	1	<comma> separator (“,”)
3	12	TOL_TRX_TYPE	1	Type of transaction. “2” = Violation
4	13	FILLER_2	1	<comma> separator (“,”)
5	14 – 17	TOL_TAG_ID	4	Tag ID in accordance with the Title-21 specs (0000 – 1023)
6	18	FILLER_3	1	<comma> separator (“,”)
7	19 – 24	TOL_TAG_FACILITY_ID	6	Facility Code assigned to issuing agency in accordance with the Title-21 specs (000000 – 262143)
8	25	FILLER_4	1	<comma> separator (“,”)
9	26	TOL_TAG_TYPE	1	Four Bit Tag Type read from the ETC transponder in hexadecimal (0 – F): “0” = CTOC transponder Possible future use for switchable transponders: “4” = HOV2 “8” = HOV3
10	27	FILLER_5	1	<comma> separator (“,”)
11	28 – 37	POSTED_DATE	10	Date the transaction was posted to a patron’s account, posted at an away agency, or was rejected (MM/DD/YYYY)
12	38	FILLER_6	1	<comma> separator (“,”)
13	39 – 41	TOL_PLAZA_ID	3	Plaza ID where the transaction occurred that is part of the unique key needed to identify the transaction that corresponds to this response “002” = “ANTIOCH” “003” = “RICHMOND” “004” = “BAY BRIDGE” “005” = “SAN MATEO” “006” = “DUMBARTON” “007” = “CARQUINEZ” “008” = “BENICIA”
14	42	FILLER_7	1	<comma> separator (“,”)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
15	43 – 44	TOL_LANE_ID	2	Lane number where the transaction occurred that is part of the unique key needed to identify the transaction that corresponds to this response (00 – 99)
16	45	FILLER_8	1	<comma> separator (“,”)
17	46 – 50	TOL_FARE_POSTED_AMT	5	Posted amount in cents (00000 – 99999)
18	51	FILLER_9	1	<comma> separator (“,”)
19	52 – 53	NON_REVENUE_FLAG	2	Indicates if transaction was posted to a non-revenue account (“00” indicates a revenue account and “01” indicates a non-revenue account) or <blank> if no tag was read
20	54	FILLER_10	1	<comma> separator (“,”)
21	55	PAYMENT_TYPE	1	Type of payment posted (“B” indicates the transaction was a VTOL posted to an ETC account based on a change in the tag status, “I” indicates the transaction was an ITOL posted to an ETC account based on the license plate number extracted from the violation image, “E” indicates that the transaction was not posted due to an error exception at the RCSC with reason codes between 12 – 31, “F” indicate the final disposition of the violation if other than “B”, “I”, or “E” with final reason codes between 102 – 117) (See Table 10-35)
22	56	FILLER_11	1	<comma> separator (“,”)
23	57 – 59	CSC_REASON_CODE	3	Reason toll amount was posted to an account or was rejected by the RCSC (see Section 10.1.6.11 RCSC Reason Codes)
24	60	FILLER_12	1	<comma> separator (“,”)
25	61 – 70	BUSINESS_DATE	10	The business day assigned to the transaction that corresponds to this response and used to identify the revenue date for the transaction (MM/DD/YYYY)
26	71	FILLER_13	1	<comma> separator (“,”)
27	72 – 77	CSC_BATCH	6	Sequence number assigned to the Violation Transaction File that contained the transaction that corresponds to this response (000000 – 999999)
28	78	FILLER_14	1	<comma> separator (“,”)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
29	79 – 94	CSC_ACCT_NO	16	RCSC account number assigned to the BATA RCSC customer account. (Default for Home accounts 0000000000000000) (For other CTOC agencies the CSC_ACCT_NO are set as follows: 0000000000000098 – SR 91 0000000000000097 – SANDAG 0000000000000096 – TCA 0000000000000095 – CTV 0000000000000094 – SENTRY)
30	95	LINEFEED	1	<line feed>

Table 10-25: Violation Response File Received from the RCSC (Trailer Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 8	RECORD_TYPE	8	“#TRAILER”
2	9	FILLER_1	1	<comma> separator (“,”)
3	10 – 15	SEQUENCE_NO	6	Same as Header Record SEQUENCE_NO
4	16	FILLER_2	1	<comma> separator (“,”)
5	17 – 26	FILE_DATE	10	Same as Header Record CREATE_DATE
6	27	FILLER_3	1	<comma> separator (“,”)
7	28 – 35	DETAIL_COUNT	8	Count of all ETC responses contained in the detail records (00000000 – 99999999)
8	36	LINEFEED	1	<line feed>

10.1.6.6.1 RCSC Processing Requirements

The RCSC sends back response codes for all violations indicating the final state of the violation, including ITOL, VTOL, rejected, paid, and dismissed violations, as shown in the Reason Codes in Table 10-35. There can be multiple response files for one violation request file. The acknowledgement file is used as an indication that the violation transaction file was valid and that the transactions made it to the RCSC.

The RCSC produces violation response files within 9 hours of receipt of a transaction file for rejected transactions and as it becomes aware of new ITOL, VTOL, paid, and dismissed violation transactions to be reported. Violation response files with ITOL, VTOL, paid, and dismissed violation transactions can be sent many days later than the receipt of corresponding violation transaction files. ITOL and VTOL transactions can no longer be posted after the violation is written off at the RCSC (must be posted within 365 days).

The RCSC performs transaction reconciliation at a detail transaction level (i.e., the response file contains details at the transaction level instead of a reconciliation summary).

The RCSC indicates if the transaction was an ITOL, VTOL, or was rejected in the PAYMENT_TYPE field.

In cases when a transaction is rejected, the RCSC indicates the reason in the CSC_REASON_CODE field. The possible reason codes and descriptions are provided in Section 10.1.6.11 RCSC Reason Codes.

The RCSC receives a unique integer value (SEQUENCE_NO) contained in the header record in the incoming transaction file. This identifier is sent back as part of the header record in the response file so that it can be associated to the correct transaction file.

The RCSC receives a unique transaction number (TRANSACTION_NUMBER) in the transaction detail record. This identifier is sent back as the transaction number in the response detail record so that it can be associated to the correct individual transaction.

At configurable intervals, the ATCAS II Host checks for response files transferred to the Host by the RCSC. When a new file is received, ATCAS II loads the file and performs certain validations. In all cases the ATCAS II Host generates an acknowledgement file and transmits this back to the RCSC. The acknowledgment file contains a SUCCESS code (value "00") if the response file passed validation or a FAILURE code (value "01") if the reconciliation file failed validation. See Section 10.1.6.10 Incoming File Validation.

The RCSC attempts to match all violation transactions to the corresponding image files and if unsuccessful, continues to retry the matching periodically. All transactions which are pending image review and in a "waiting for image" status for more than 5 days are researched at the ATCAS II Host.

10.1.6.7 Correction Response File Received from the RCSC

The correction response file is generated by the RCSC after the transaction correction file is processed to give the final disposition of the transactions. This file consists of a header record, followed by a detail record for each transaction disposition in the batch, and then by a trailer record. The record formats for the correction response file are shown in the following tables.

Table 10-26: Correction Response File Received from the RCSC (Header Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 7	RECORD_TYPE	7	"#HEADER"
2	8	FILLER_1	1	<comma> separator (" , ")
3	9 – 12	FILE_TYPE	4	"RTRE"
4	13	FILLER_2	1	<comma> separator (" , ")
5	14 – 19	SEQUENCE_NO	6	Unique sequence number for the Transaction Correction File that corresponds to this response (000000 – 999999)
6	20	FILLER_3	1	<comma> separator (" , ")
7	21 – 30	BUSINESS_DATE	10	Business Date for the ETC Transaction File that corresponds to this response (MM/DD/YYYY)
8	31	FILLER_4	1	<comma> separator (" , ")
9	32 – 33	SOURCE	2	"RC"

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
10	34	FILLER_5	1	<comma> separator (“,”)
11	35 – 36	DESTINATION	2	“AT”
12	37	FILLER_6	1	<comma> separator (“,”)
13	38 – 47	CREATE_DATE	10	File Creation Date (MM/DD/YYYY)
14	48	FILLER_7	1	<comma> separator (“,”)
15	49 – 56	CREATE_TIME	8	File Creation Time (HH:MM:SS)
16	57	LINEFEED	1	<line feed>

Table 10-27: Correction Response File Received from the RCSC (Detail Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 10	TRANSACTION_NUMBER	10	Unique transaction number to identify the transaction that corresponds to this response (0000000000 – 9999999999)
2	11	FILLER_1	1	<comma> separator (“,”)
3	12	TOL_TRX_TYPE	1	Type of transaction from the TOL_TRX_TYPE_CORR contained the transaction that corresponds to this response “1” = ETC “2” = Violation “3” = Carpool “4” = Non-Revenue “5” = Hybrid “6” = HOV2 “7” = HOV3
4	13	FILLER_2	1	<comma> separator (“,”)
5	14 – 17	TOL_TAG_ID	4	Tag ID in accordance with the Title-21 specs (0000 – 1023)
6	18	FILLER_3	1	<comma> separator (“,”)
7	19 – 24	TOL_TAG_FACILITY_ID	6	Facility Code assigned to issuing agency in accordance with the Title-21 specs (000000 – 262143)
8	25	FILLER_4	1	<comma> separator (“,”)
9	26	TOL_TAG_TYPE	1	Four Bit Tag Type read from the ETC transponder in hexadecimal (0 – F): “0” = CTOC transponder Possible future use for switchable transponders: “4” = HOV2 “8” = HOV3
10	27	FILLER_5	1	<comma> separator (“,”)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
11	28 – 37	POSTED_DATE	10	Date the transaction correction was posted or was rejected (MM/DD/YYYY)
12	38	FILLER_6	1	<comma> separator (“,”)
13	39 – 41	TOL_PLAZA_ID	3	Plaza ID where the transaction occurred that is part of the unique key needed to identify the transaction that corresponds to this response “002” = “ANTIOCH” “003” = “RICHMOND” “004” = “BAY BRIDGE” “005” = “SAN MATEO” “006” = “DUMBARTON” “007” = “CARQUINEZ” “008” = “BENICIA”
14	42	FILLER_7	1	<comma> separator (“,”)
15	43 – 44	TOL_LANE_ID	2	Lane number where the transaction occurred that is part of the unique key needed to identify the transaction that corresponds to this response (00 – 99)
16	45	FILLER_8	1	<comma> separator (“,”)
17	46 – 50	TOL_FARE_POSTED_AMT	5	Posted amount from the TOL_FARE_CORR_ETC_AMT contained the transaction that corresponds to this response in cents (00000 – 99999)
18	51	FILLER_9	1	<comma> separator (“,”)
19	52 – 53	NON_REVENUE_FLAG	2	Indicates if transaction was posted to a non-revenue account (“00” indicates a revenue account and “01” indicates a non-revenue account)
20	54	FILLER_10	1	<comma> separator (“,”)
21	55	PAYMENT_TYPE	1	Type of payment posted (“A” indicates the transaction was an ETOL posted to an ETC account based on the tag status at the lane, “V” indicates the transaction was posted as a violation based on a failure to pay at the lane, and “E” indicates that the transaction was not posted due to an error exception at the RCSC) (See Table 10-35 below)
22	56	FILLER_11	1	<comma> separator (“,”)
23	57 – 59	CSC_REASON_CODE	3	Reason toll amount was posted to an account or was rejected by the RCSC (see Section 10.1.6.11 RCSC Reason Codes)
24	60	FILLER_12	1	<comma> separator (“,”)
25	61 – 70	BUSINESS_DATE	10	The business day assigned to the transaction that corresponds to this response and used to identify the revenue date for the original transaction (MM/DD/YYYY)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
26	71	FILLER_13	1	<comma> separator (“,”)
27	72 – 77	CSC_BATCH	6	Sequence number assigned to the Transaction Correction File that contained the transaction that corresponds to this response (000000 – 999999)
28	78	FILLER_14	1	<comma> separator (“,”)
29	79 – 94	CSC_ACCT_NO	16	RCSC account number assigned to the BATA RCSC customer account. (Default for Home accounts 0000000000000000) (For other CTOC agencies the CSC_ACCT_NO are set as follows: 0000000000000098 – SR 91 0000000000000097 – SANDAG 0000000000000096 – TCA 0000000000000095 – CTV 0000000000000094 – SENTRY)
30	95	LINEFEED	1	<line feed>

Table 10-28: Correction Response File Received from the RCSC (Trailer Record)

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 8	RECORD_TYPE	8	“#TRAILER”
2	9	FILLER_1	1	<comma> separator (“,”)
3	10 – 15	SEQUENCE_NO	6	Same as Header Record SEQUENCE_NO
4	16	FILLER_2	1	<comma> separator (“,”)
5	17 – 26	FILE_DATE	10	Same as Header Record CREATE_DATE
6	27	FILLER_3	1	<comma> separator (“,”)
7	28 – 35	DETAIL_COUNT	8	Count of all correction responses contained in the detail records (00000000 – 99999999)
8	36	LINEFEED	1	<line feed>

10.1.6.7.1 RCSC Processing Requirements

All transaction corrections received at the RCSC, via the Transaction Correction File, are sent back to the ATCAS II Host in the response file.

All transactions received at the RCSC, via the Transaction Correction File, can be reconciled back at the ATCAS II Host with final status code that is passed in the Correction Response File. The reconciliation takes place at file level. For example, if the RCSC receives 100 transactions in file 123, then the same 100 transactions are reconciled back to the ATCAS II Host in one file.

The RCSC produces a response file within 9 hours of receipt of transaction correction file and by 10AM the next day.

The RCSC performs transaction reconciliation at a detail transaction level (i.e., the response file contains details at the transaction level instead of a reconciliation summary).

In cases when a transaction cannot be posted at the RCSC, the RCSC indicates the reason the transaction was not posted in the CSC_REASON_CODE field. The possible reason codes and descriptions are provided in Section 10.1.6.11 RCSC Reason Codes.

The RCSC receives a unique integer value (SEQUENCE_NO) contained in the header record in the incoming transaction file. This identifier is sent back as part of the header record in the response file so that it can be associated to the correct transaction file.

The RCSC receives a unique transaction number (TRANSACTION_NUMBER) in each transaction detail record. This identifier is sent back as the transaction number in each response detail record so that it can be associated to the correct transaction.

At configurable intervals, the ATCAS II Host checks for response files transferred to the Host by the RCSC. When a new file is received, ATCAS II loads the file and performs certain validations. In all cases the ATCAS II Host generates an acknowledgement file and transmits this back to the RCSC. The acknowledgment file contains a SUCCESS code (value "00") if the response file passed validation or a FAILURE code (value "01") if the response file failed validation. See Section 10.1.6.10 Incoming File Validation.

10.1.6.8 Acknowledgement File Sent to and Received from the RCSC

The acknowledgement file sent to the RCSC in response to incoming files and received from the RCSC in response to outgoing files does not have header or trailer records. The record format is shown in the following table.

Table 10-29: Acknowledgement File Sent to and Received from the RCSC

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 4	FILE_TYPE	4	File type (“ACK “)
2	5 – 7	FROM_AGENCY_ID	3	Agency that received the file referenced in the ORIG_FILE_NAME_TYPE field and is sending this acknowledgment (“AT2” for ATCAS II and “CSC” for RCSC)
3	8 – 10	TO_AGENCY_ID	3	Agency that transmitted the file referenced in the ORIG_FILE_NAME_TYPE field and is receiving this acknowledgment (“AT2” for ATCAS II and “CSC” for RCSC)
4	11 – 60	ORIG_FILE_NAME_TYPE	50	File name and type of the file being acknowledged (this is the file name and type before the file was zipped separated by a period)
5	61 – 68	FILE_DATE	8	Date the acknowledgment file was created (YYYYMMDD)
6	69 – 74	FILE_TIME	6	Time the acknowledgment file was created (HHMMSS)
7	75 – 76	RETURN_CODE	2	Code indicating the status of the file being acknowledged (“00” indicates that the file use successfully received and verified and “01” indicates that the file was received but contained invalid data)
13	77	LINEFEED	1	<line feed>

10.1.6.8.1 RCSC Processing Requirements

This file contains a single record only. For each file received by ATCAS II or RCSC, an Acknowledgement File is generated and transmitted back to the sender. An Acknowledgement File is generated for every file documented in Section 10.1 with the exception of the Violation Data Files and of other Acknowledgement Files.

The RCSC saves the acknowledgements for use in researching and resolving problems via the ATCAS II RCSC interface.

The ACK file indicates a file was successfully received by the receiving agency. The ACK provides an audit trail for research and can be used as a future key event in the RCSC. The RCSC is not designed to recognize the receipt of an ACK file for the continuation of an operation (i.e. CTOC Invoicing).

All incoming files that fail sanity checks (for example, the header record count does not match the trailer record or the record length in file) are rejected with reject code 01.

Records received in transaction files where data elements are inconsistent with the field definitions in this document (for example, invalid date, invalid plaza_id, or invalid lane id) are acknowledged with a code of 00 if the file passed the sanity check. The individual records have reject codes in the response file going back to the sender.

10.1.6.9 Violation Data Files and Images Sent to the RCSC

The violation data file that sent to the RCSC does not have header or trailer record. This file contains the license plate number and state and associated image processing information performed by the LPR Server. The record format was taken from Section 20 of the VECTOR Regional BATA Interface Control Document Rev. 1.6.8 Final dated April 28, 2006 and is shown in the following table.

Table 10-30: Violation Data File Sent to the RCSC

FIELD	POSITION	NAME	LENGTH	DESCRIPTION / CONTENTS
1	1 – 3	AGENCY_ID	3	Agency where the violation transaction occurred (“CAL”)
2	4 – 7	PLAZA_ID	4	Plaza ID where the violation transaction occurred (2 leading spaces followed by 2 digit plaza ID)
3	8 – 10	LANE_ID	3	Lane number where the violation transaction occurred (1 leading space followed by 2 digit lane number)
4	11 – 18	TRX_DATE	8	Date the violation transaction occurred (YYYYMMDD)
5	19 – 26	TRX_TIME	8	Time the violation transaction occurred (HHMMSSTT where TT is 1/100 th of a second)
6	27 – 32	VEHICLE_SEQUENCE_NUM	6	Unique vehicle sequence number assigned to the violation transaction by the lane/zone controller (000000 – 999999)
7	33 – 35	OCR_READ_CONFIDENCE	3	Overall license plate recognition confidence from the LPR Server as a percentage (1 leading space followed by 2 digit percentage)
8	36 – 45	PLATE_NUMBER	10	License plate number from the LPR Server (left justified with trailing spaces)
9	46 – 49	PLATE_STATE	4	License plate state from the LPR Server (right justified with leading spaces)
10	50	NUMBER_OF_IMAGES_TRX	1	Number of violation images associated with the violation transaction from the LPR Server
11	51	IMAGE_INDEX_NUMBER	1	Image index number of the image that was used by the LPR Server to determine the license plate number and state
12	52 – 61	FILLER	10	<blanks>
13	62	LINEFEED	1	<line feed>

10.1.6.9.1 RCSC Processing Requirements

All images (four color images in JPEG format and one black and white image in BMP format) and the corresponding Violation Data File are zipped into a single file (one per violation).

The PLAZA_ID, LANE_ID, and VEHICLE_SEQUENCE_NUM in the Violation Data File is matched with the violation transaction's TOL_PLAZA_ID, TOL_LANE_ID, and LANE_TX_SEQUENCE_NUMBER in the Violation Transaction File in order to match images with the correct violation.

Images are processed based on the overall image confidence level passed in the Violation Data File.

Violation Data Files are not passed to the RCSC without the corresponding images.

10.1.6.10 Incoming File Validation

Data is validated in the following files; tag status file, ETC and violation response files, acknowledgement file, and violation data file. If any part of the file is determined to be invalid, the entire processing of the file is rolled back. This section describes the steps of validation for incoming files.

Table 10-31: Tag Status File Validation

STEP	DETAILS
Examine the filename	Extract the DateTime from the file name. Verify the DateTime is in the valid format and is greater than the Tag Status File DateTime previously processed.
Read file trailer record	Ensure that the RECORD_COUNT is numeric and matches the number of detail records contained in the file. Ensure that the RECORD_COUNT is not more than 10% greater or more than 2% less than the RECORD_COUNT in the previous tag status file. The percentage values are configurable in the tbGenPurpParms table.
Read and examine all detail records in the file	Ensure all the numeric fields contained in each record contain numeric data within the range of values defined in the record description.

Table 10-32: ETC and Violation Response File Validation

STEP	DETAILS
Examine the filename	Extract the DateTime from the file name. Verify the DateTime is in the valid format and is greater than either the ETC Response DateTime or Violation Response DateTime (as appropriate) previously processed.
Read file header record	Ensure the RECORD_TYPE, FILE_TYPE, SOURCE, and DESTINATION fields contain required values, the CREATE_DATE has a valid date value and the CREATE_TIME has a valid time value Ensure the SEQUENCE_NO and BUSINESS_DATE match the ETC Response or the Violation Response (as appropriate) previously sent.

STEP	DETAILS
Read file footer record	Ensure the RECORD_TYPE contains the required value. Ensure the SEQUENCE_NO and FILE_DATE match the SEQUENCE_NO and CREATE_DATE values in the header. Ensure the RECORD_COUNT is numeric and matches the number of detail records contained in the file.
Read and examine all detail records in the file	Ensure all numeric fields contained in each record contain numeric data within the range of values defined in the record description. Ensure the POSTING_DATE, NON_REVENUE_FLAG, and PAYMENT_TYPE values match the format and values defined in the record description. Ensure the TRANSACTION_NUMBER, TOL_TRX_TYPE, TOL_TAG_ID, ETC_TAG_FACILITY_ID, TOL_PLAZA_ID, TOL_LANE_ID, BUSINESS_DATE, and CSC_BATCH match a transaction in the corresponding ETC or violation transaction file (as appropriate).

Table 10-33: Acknowledgement File Validation

STEP	DETAILS
Examine the filename	Extract the From_Agency, File_Name, and File_Type. Verify From_Agency is “CSC”. Verify File_Name and File_Type match a file previously sent to the RCSC.
Read the file	Ensure there is only a single record in the file. Ensure the FILE_TYPE is “ACK”, the FROM_AGENCY_ID is “CSC”, the TO_AGENCY_ID is “CAL”, and the ORIG_FILE_NAME_TYPE matches the File_Name and File_Type values contained in the filename (i.e. File_Name.File_Type). Ensure the FILE_DATE, FILE_TIME, and RETURN_CODE values match the format and values defined in the record description.

Table 10-34: Violation Data File Validation

STEP	DETAILS
Examine the filename	Extract the AGENCY_ID, PLAZA_ID, LANE_ID, DATE, TIME, and SEQ_NO. Verify AGENCY_ID is “CAL”. Verify PLAZA_ID, LANE_ID, DATE, TIME, and SEQ_NO correspond to a vehicle transaction in the database.
Read the file	Ensure there is only a single record in the file. Ensure all the numeric fields contained in each record contain numeric data. Ensure the AGENCY_ID, PLAZA_ID, LANE_ID, TRX_DATE, TRX_TIME, and VEHICLE_SEQUENCE_NUM match the values contained in the filename. Ensure the OCR_READ_CONFIDENCE value is a percentage. Ensure there are violation image files corresponding to the number of images indicated in NUMBER_OF_IMAGES_TRX. Ensure IMAGE_INDEX_NUMBER is less than or equal to NUMBER_OF_IMAGES_TRX.

10.1.6.11 RCSC Reason Codes

The following table contains a list of RCSC Reason Codes returned by the RCSC. The Pay Type column shows the PAYMENT_TYPE values passed in the response files from the RCSC for each of the Reason Code values (see Sections 10.1.6.5, 10.1.6.6, and 10.1.6.7).

Table 10-35: RCSC Reason Codes

REASON CODE	STATUS	PAY TYPE	DESCRIPTION
LIST OF CODES APPLICABLE TO HOME AGENCY TRANSACTIONS			
01	TOLL	A	Home Agency toll posted successfully as a normal ETC transaction
02	VTOL	B	Home Agency toll posted successfully as a ETC violation transaction
11	TAGINV	V	Tag Inventory - Tag is currently in the Vector's Inventory status. This status indicates the Tag is in the CSC. Any transactions received on a tag are violation transactions and go through the violation processing system
12	TAGLOST	V	Tag Lost
13	TAGSTOLEN	V	Tag Stolen
14	TAGRETURNED	V	Tag in shipping, Returned Defective, Tag Returned
15	TAGDAMAGED	V	Tag Damaged
16	INVTAG	V	Invalid tag
22	DUPL	E	Duplicate transaction – transaction occurred on the same plaza/lane for a given device at the same date/time.
24	INVACC	V	Invalid Account
25	INVACCLSP	V	Invalid Account Closing Pending
26	INVACPEND	V	Invalid Account Pending
27	INVACRVKF	V	Invalid Account Revoked Final
28	INVACCLOS	V	Invalid Account Closed
29	POACHING	E	Poaching transaction – transaction occurred on same tag and date and time within 5 minutes on the same lane.
31	XLANE	E	Cross Lane transaction – transaction occurred on same tag and date and time on the same plaza but a different lane.
51	QINVPLAZA	E	Transaction rejected as invalid due to an invalid plaza
52	QINVDATA	E	Transaction rejected as invalid due to invalid date
53	QINVAGENCY	E	Transaction rejected as invalid due to invalid agency code

REASON CODE	STATUS	PAY TYPE	DESCRIPTION
54	QNONVTRX	V	Unpostable ETC txn - Invalid tag/account status
CSC REASON CODES FOR CTOC AGENCY TRANSACTIONS			
06	POST	A	Transaction posted successfully to a CTOC Agency account due to a tag read at the lanes.
07	PPST	I	Transaction posted successfully to a CTOC Agency account as a pay-by-plate transaction by manual review.
43	TAGB	V	Transaction happened on a tag with a bad status
45	RJDP	E	Transaction rejected as duplicate – CTOC transaction occurred on the same plaza/lane for a given device at the same date/time.
46	OLD1	E	Transaction rejected – Attempt to post the transaction to a closed account after the specified posting limit – 30 days or 60 days (configurable)
48	RINV	E	Transaction rejected as invalid due to invalid detail data – i.e. if the tag in the transaction is out of range etc.
CSC REASON CODES FOR VIOLATION TRANSACTIONS			
09	ITOL	I	Home Agency toll posted successfully to a valid account by manual review of license plate information.
102	VIMGREVRJT	F	Violation transaction rejected after image review
109	VDMVRJT	F	Violation transaction rejected after DMV request
112	VDMVPAY	F	Violation transaction paid at DMV Payment
113	VDMVREL	F	Violation transaction paid at DMV Release
114	VPFULL	F	Violation transaction paid full
116	VCOLLECT	F	Violation transaction sent to collection
117	VDISS	F	Violation transaction dismissed
206	OCRITOLAWAY	I	Toll posted successfully to a valid away agency account using license plate information
209	OCRITOLHOME	I	Toll posted successfully to a valid home agency account using license plate information
999	VNONTRANRJT	E	Violation correction rejected because of non posted transaction

10.1.7 Business Day Tracking

The RCSC interface process sends ETC and Violation transactions to the RCSC in batches at configurable intervals, waits for an acknowledgment and a response file for each batch, and stores the file

transfer information in the tbRCSCSendFile and tbRCSCReceiveFile tables. The RCSC interface uses the tbBusinessDay table to track the status of the RCSC interface process in relation to the business day.

Each batch of transactions sent to the RCSC is sent for a specific business day (see Section 10.1.4.1 Logic Flow Example). As files are sent and acknowledgement and response files received, the RCSC interface updates the tbBusinessDay table for the business day and plaza.

Each time the RCSC interface runs, it builds the transactions to be sent to the RCSC in the tbRCSCSendTrans and tbRCSCSendCorrections tables and then groups them into batches based on business day to be linked to the records inserted into the tbRCSCSendFile table using the iSendFileID field. A file is then created for each record inserted into the tbRCSCSendFile table and sent to the RCSC.

As acknowledgment files are received from the RCSC, a record is inserted in the tbRCSCReceiveFile table and the corresponding tbRCSCSendFile record is updated with the acknowledgment data. As response files are received from the RCSC, a record is inserted in the tbRCSCReceiveFile table. The iSendFileId in the tbRCSCReceiveFile record associates it to the corresponding tbRCSCSendFile record.

The following fields in the tbBusinessDay table are used to track the RCSC interface process in relation to the business day.

tiVioSentStatus – indicates the current status of the violation transfer to the RCSC for a given plaza and business day (0 = not started, 1 = started, 2 = completed for entire business day, 3 = errors encountered)

tiETCSentStatus – indicates the current status of the ETC transaction transfer to the RCSC for a given plaza and business day (0 = not started, 1 = started, 2 = completed for entire business day, 3 = errors encountered)

tiETCPostedStatus – indicates the current status of the ETC transaction transfer to the RCSC for a given plaza and business day (0 = not started, 1 = response file received, 2 = response file received for entire business day, 3 = errors encountered, 4 = response file received for entire business day and not all transactions were posted)

At the end of the RCSC interface process the data inserted is checked and the tbBusinessDay table is updated accordingly. The following table shows conditions causing the RCSC interface to set the indicated values.

Table 10-36: tbBusinessDay RCSC Interface Field Values

Field Value	Conditions That Cause Field to be Set
tiVioSentStatus = 1	Some of the violations for the business day and plaza have been sent and acknowledged.
tiVioSentStatus = 2	All of the violations for the business day and plaza have been sent and acknowledged.
tiVioSentStatus = 3	An error status was received in at least one of the violation transaction file acknowledgments.
tiETCSentStatus = 1	Some of the ETC transactions for the business day and plaza have been sent and acknowledged.
tiETCSentStatus = 2	All of the ETC transactions for the business day and plaza have been sent and acknowledged.
tiETCSentStatus = 3	An error status was received in at least one of the ETC transaction file acknowledgments.
tiETCPostedStatus = 1	Some of the ETC transactions for the business day and plaza have been sent and a response has been received.
tiETCPostedStatus = 2	All of the ETC transactions for the business day and plaza have been sent and a response

Field Value	Conditions That Cause Field to be Set
	has been received and all of the transactions were successfully posted to accounts.
tiETCPostedStatus = 3	A valid ETC response file has not been received and the required time limit for receiving the ETC response file has passed.
tiETCPostedStatus = 4	All of the ETC transactions for the business day and plaza have been sent and a response has been received but not all of the transactions were successfully posted to accounts.

10.1.8 Error Processing

The RCSC interface process may fail if it detects an error due to FTP Server unavailability or transmission data protocol error, or by exceeding the number of transmission retry attempts. In this case the RCSC interface process uses the event code 20010 (External Interface Failure – RCSC FTP Server) and stores a record in the tbEquipFailure table.

Data is also validated for the tag status file, transaction response file, acknowledgement file, and violation data file. When invalid data is found in the tag status, transaction reconciliation, and acknowledgement files, event code 20011 (External Interface Failure – RCSC Invalid File) is generated.

If a tag status file or a transaction response file is not received within a configurable amount of time after received the previous file, event code 20012 (External Interface Failure – RCSC Missing File) is generated. If an acknowledgement file is not received within a configurable amount of time after the transfer of a file to the RCSC, event code 20013 (External Interface Failure – RCSC Missing ACK) is generated. If violation images are not available within a configurable amount of time after receiving a violation transaction, event code 20017 (External Interface Failure – VES Missing Images) is generated.

The MOMS Alarm Loader software processes the event code, generates a work order and notifies the assigned staff on call to resolve the problem.

The detailed trace is stored in the process log file and available to the system administrator and database administrator for further analysis.

The MOMS application reports the failure via the Event History report.

All files sent and received are saved in the archive subfolder. They serve as both an audit of the process, and a source for re-transmittal in the case of an error on either the RCSC or the ATCAS II Host. If the file is not successfully transferred or processed, MOMS interface notifies the maintenance staff. Once the problem area is determined and resolved, the file is re-transmitted to the Outgoing directory and normal processing resumes. An independent cleanup process is scheduled to clean up files from the archive subfolder that are older than two (2) months (configurable).

10.1.9 RCSC Interface Database Schema

The RCSC interface process database schema is shown in Figure 10-5.