NETC
Interface Control Document
[ICD] Manual

Version 2.5

Document Revision History

Version	Release Date	Author	Reviewed By	Approved By	Revision History
2.4	27.07.15	IHMCL	IHMCL	IHMCL	First Version
2.5	29.08.17	NPCI			Second Version
2.5	25.02.2019	NPCI			Second Version 1.1
2.5	13.06.2019	NPCI	NPCI		Second Version 1.2
2.5	28.02.2020	NPCI	NPCI		Second Version 1.3

Revision History

ICD 2.5 v1.0

Version No.	Paragraph No.	Paragraph Title	Change Made	Date
2.5 v1.0		NETC Transaction Flow	Illustration of transaction flow of the NETC system between a Toll Plaza Operator (TPO) and an Acquiring Bank	29.08.2017
2.5 v1.0		Business Rule	As a part of transaction process following are the rules laid down to be implemented by Toll Plaza Operator to help them to properly read the details	29.08.2017
2.5 v1.0		FASTag Memory Bifurcation	Memory bifurcation of FASTag is illustrated	29.08.2017
2.5 v1.0		Risk Management at Toll Plaza	Tag Authentication at Lane Controller	29.08.2017
2.5 v1.0		Roles & Responsibility	Toll Plaza Operator Roles & Responsibility defined	29.08.2017
2.5 v1.0		Compliance for Toll Plaza Operator & Audits	Defined Compliance for Toll Plaza Operator & Audits scenarios	29.08.2017
2.5 v1.0		Online API XML Messages	APIs use for exchanging data between Toll Plaza Operator and Acquirer is defined	29.08.2017
2.5 v1.0		Settlement & Dispute Handling Process for Toll Plaza & Acquirer Bank	Acquiring Host and Toll Plaza Operator need to exchange funds to complete settlement process based on the daily settlement reports provided by the Acquiring Host. The settlement service is the facility within which funds are exchange between toll plaza operator and acquirer bank	29.08.2017

ICD 2.5 v1.1

Version No.	Paragraph No.	Paragraph Title	Change Made	Date
2.5 v1.1	2	Technical Specifications	Toll Plaza and Acquiring Bank uses HTTPS instead of TCP/IP. In flow chart TCP/IP changed to HTTPS	25.02.2019
2.5 v1.1	12	Online API XML Message	All APIs are exposed over HTTPS instead of TCP/IP.	25.02.2019

ICD 2.5 v1.2

Version No.	Paragraph No.	Paragraph Title	Change Made	Date
2.5 V 1.2	3	Technical Specifications	Add Transaction Flow, Failure Scenarios and Liability	13.06.2019
2.5 V 1.2	4	SLA & Business Rules	Add Vehicle Authentication, Update Violation Matching, Blacklist Management, Log Standardization, Violation Audit by Toll Plaza	13.06.2019
2.5 V 1.2		EPC Memory- Tag Encoding Specification	Added EPC Memory details and Tag encoding details	13.06.2019
2.5 V 1.2	6	Transaction processing at toll plaza	Add Transaction processing at toll plaza	13.06.2019
2.5 V 1.2	7	Fraud Management at toll plaza	Defined Fraud Management at toll plaza	13.06.2019
2.5 V 1.2	8	Customer Support at Toll Plaza	Defined Customer Support at Toll Plaza	13.06.2019
2.5 V 1.2	12	Toll Plaza On-boarding and Off-boarding by Acquirer	Add Toll Plaza On-boarding and Off-boarding process by Acquirer	13.06.2019
2.5 V 1.2	14	Communication Channel	Add Channel Encryption Details, Encryption Description, Certificate Format, Sample Signed XML Message Format	13.06.2019
2.5 V 1.2	15	Online API XML Message	Definitions of Online API Specification, Data Type and workflow for set pass scheme	13.06.2019

2.5 V 1.2	16	Settlement and dispute handling Process for Toll Plaza & Acquirer bank	Added workflow of dispute handling.	13.06.2019
2.5 V 1.2	Annexure F	Online Error Codes	Defined Online Error Codes	13.06.2019
2.5 V 1.2	Annexure G	Image Rejection Error Codes	Defined Image Rejection Error codes	13.06.2019
2.5 V 1.2	Annexure H	Business Continuity Plan	Defined Business Continuity Plan	13.06.2019

ICD 2.5 v1.3

Version No.	Paragraph No.	Paragraph Title	Change Made	Date
2.5 v1.3	4.6	Violation Audit by Toll Plaza	Modified Violation Audit Process	28.02.2020
2.5 v1.3	15	Request Pay	Modified attributes in data table	28.02.2020
2.5 v1.3	15	Response Plaza Details	Modified Org Id definition	10.02.2020
2.5 v1.3	15	Request Tag Details	Modified Org Id definition	10.02.2020
2.5 v1.3	15	SyncTime Request	Modified Org Id definition	10.02.2020
2.5 v1.3	15	Toll Plaza Heart Beat Response	Modified Org Id definition	10.02.2020
2.5 v1.3	15	Check Transaction Status Request	Modified Org Id definition	10.02.2020

2.5 v1.3	15	Get Exception Request	Modified Org Id definition	10.02.2020
2.5 v1.3	15	Request Query Exception List	Modified Org Id definition	10.02.2020
2.5 v1.3	15	Set Pass Scheme Request	Modified Org Id definition	10.02.2020
2.5 v1.3	15	Set Pass Scheme Response	Modified Org Id definition	10.02.2020
2.5 v1.3	15	Notification	Modified Org Id definition	10.02.2020
2.5 v1.3	15	List Participants	Add List Participants API	10.02.2020
2.5 v1.3	4.6.2	Violation Audit by Toll Plaza	Modified Violation Audit Process	07.04.2020
2.5 v1.3	15	Request Pay	Modified Schema & attributes in data table	01.07.2020
2.5 v1.3	15	Response Pay	Modified attributes in data table	01.07.2020
2.5 v1.3	4.6.2	Violation Audit by Toll Plaza	Modified Violation Audit Process	01.07.2020
2.5 v1.3	4.6.2	Violation Audit Processing Result	Modified Schema & attributes in data table	01.07.2020
2.5 v1.3	15.12	Check Transaction Status Response	Modified Schema & attributes in data table	01.07.2020
2.5 v1.3	Annexure F	Online Error codes	New error codes added	01.07.2020
2.5 v1.3	All API Sections	All APIs	Decline schema is added	01.07.2020

Table of Contents

1 Introduction

1.1 Objective

The objective of this document is to outline the roles, responsibilities, compliances and business/technical rules defined between Acquiring Member Bank and Concessionaires/ Toll Plaza Operators (TPO) for NETC program.

1.2 Audience

The NETC Payment System Network consists of the following parties:

- Tag Holder
- Issuers
- NPCI
- Acquirer
- Toll Plaza Operator
- IHMCL/NHAI

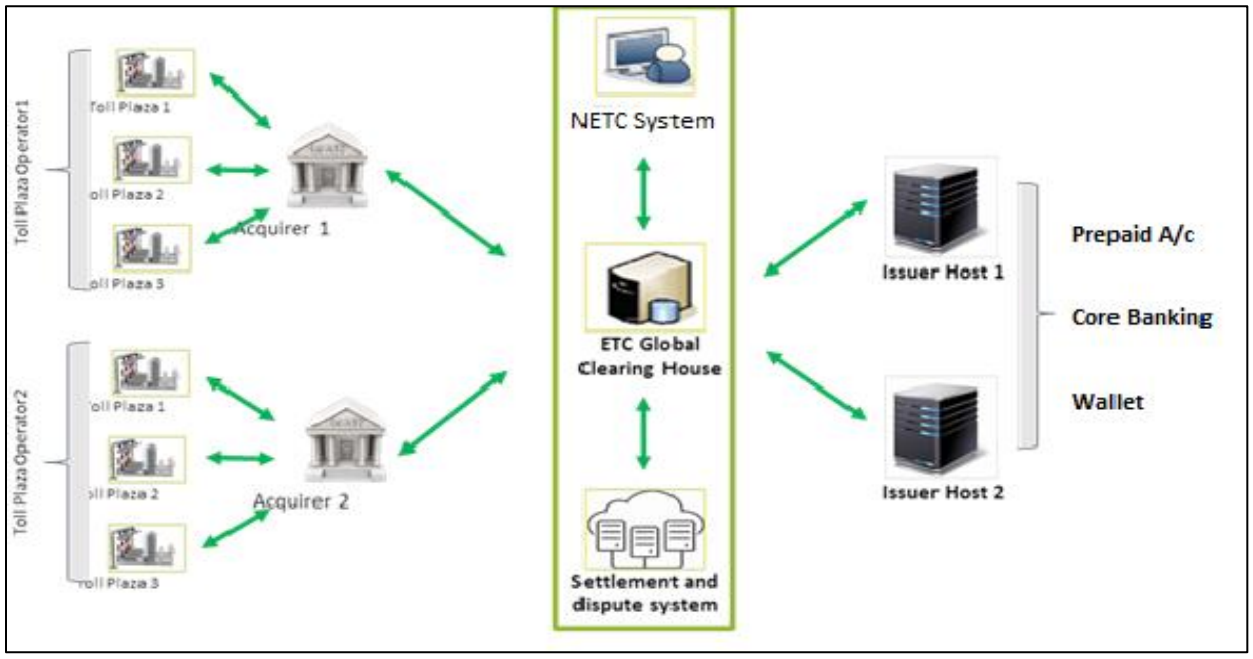


Figure 1 - NETC Payment System Model

1.2.1 Tag Holder

The customer enrolls for an NETC Tag with the issuing bank by providing bank account number (Saving, Current, Prepaid Account etc.) to be linked to NETC Tag ID for the deduction of toll fare.

1.2.2 Issuer Bank

The Issuer Bank is member of NPCI and issues the NETC Tag to vehicle owner for the payment through NETC System.

1.2.3 NPCI

NPCI will facilitate NETC Transactions among all member banks participating in 'NPCI network'. Further NPCI acts as centralized clearing and settlement body to settle the transactions and fee amount among the member banks.

1.2.4 Acquirer Bank

The Acquirer Bank is member of NPCI who acquires the Toll Plaza to facilitate the acceptance of NETC transaction for the payment through NETC Payment System.

1.2.5 Toll Plaza Operator

The Toll Plaza Operator provides infrastructure like NETC RFID Reader, Automatic Vehicle Classification and Weight in Motion, CCTV Cameras and Toll Plaza Server for the acceptance of NETC Tag for the payment through NETC Payment System.

The toll plaza operator will deploy a toll plaza server to process the NETC Lane transactions. The toll plaza server will receive information from various systems installed on the NETC Lane (i.e. NETC RFID Reader, Automatic Vehicle Classification (AVC), Weight in Motion (WIM), and image capturing camera) either directly or from lane controller. Using this information an NETC transaction is initiated. The toll plaza server will process the transactions and send it in the specified format (as per IHMCL ICD document) to the acquiring host system for toll fare calculation and transaction processing.

The communication between toll plaza server and the acquirer host can be either online or offline (preferably online) depending on the network connectivity available at the toll plaza.

A toll plaza can be acquired by a single bank at any point of time. The choice of selecting the bank will be with the toll plaza operator.

1.2.6 IHMCL/NHAI

Indian Highway Management Company Ltd and National Highway Authority of India would be responsible for providing business and toll collection rules. They will also lay down the rules and regulation for the management of concessioners and will also monitor the scheme for National Electronic Toll Collection Network. IHMCL/NHAI will have access daily/weekly/monthly MIS reports and mapper data.

2 NETC Lane

Toll Plaza consists of various lanes for passage of vehicles. NETC Lane is a lane supporting electronic processing of toll payments allowing collection of toll while vehicle is in motion. Each Toll Plaza can have more than one NETC Lane. The data captured from the NETC Lane is sent to the Toll Plaza Server for further processing. NETC Lane consists of fixed RFID antennas, NETC tag readers, automatic vehicle classification system, image capturing camera, weight in motion system and a computerized system (Toll Plaza Server) for uniquely identifying each vehicle.

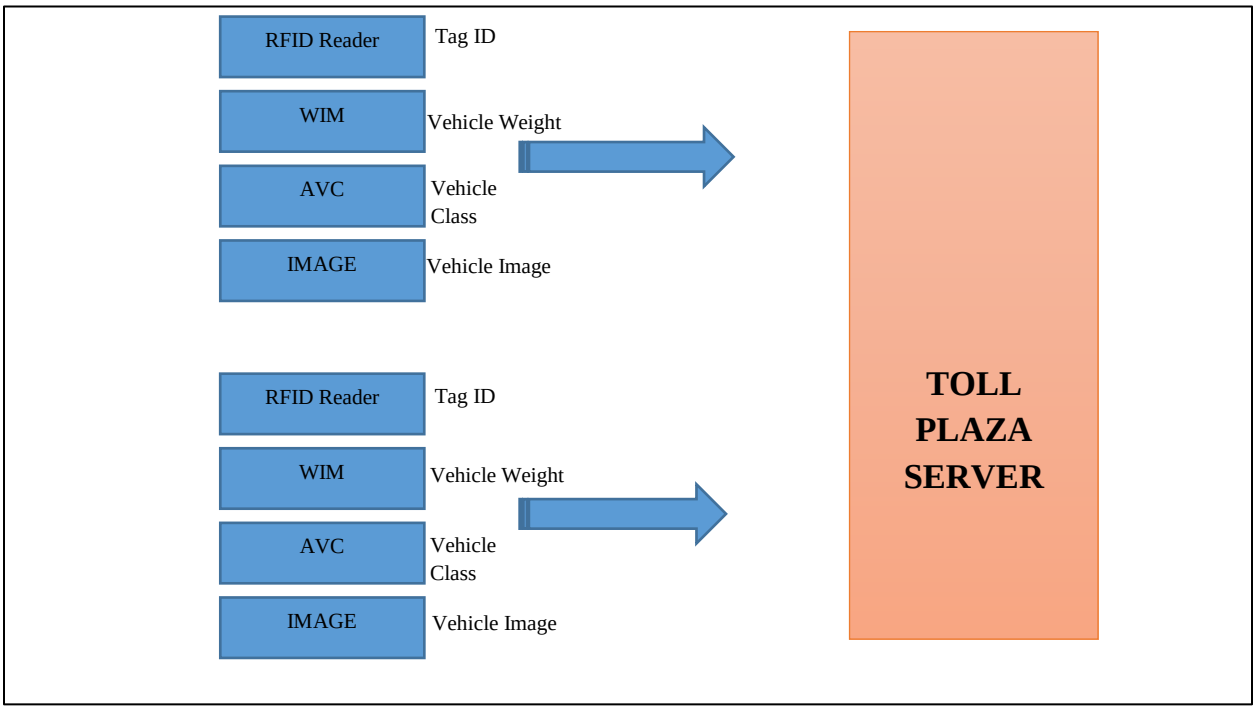


Figure 2 – NETC Lane

The above diagram illustrates various NETC lanes which are present on a Toll Plaza.

2.1 Various systems which are installed at the NETC lane are:

2.1.1 NETC tag Reader

It is a device installed at Toll Plaza that is used to read information from the NETC tag which is affixed on the vehicle. The RFID reader transmits a signal in the form of EM Electromagnetic waves (EM waves). An RFID tag within the field of the RFID reader receives the waves and transmits back the RF backscatter.

2.1.2 Automatic Vehicle Classification (AVC)

It is an alternative system which is used by toll plaza operator (TPO) to identify the vehicle class. Usually an infrared profiler is used to generate the vehicle profile which in turn is matched with the pre-defined or standard vehicle profiles.

2.1.3 Weight-in-motion (WIM)

These devices are designed to capture and record vehicle weight. Vehicle separators are used to distinguish between the automobiles aligned in queue. Unlike static scales, WIM systems are capable of measuring weight of the vehicle, traveling at a reduced or normal speed. The weight from WIM system will be used by acquiring banks to calculate the toll fare of overweight vehicles. WIM calculation will be not be consider in current phase of the project but may be applicable in future phases as per the instructions from IHMCL/NHAI.

2.1.4 Image Capturing Cameras

It is used to capture the image of vehicles passing through the NETC lane. These images will be used to resolve any disputes raised by the customers or toll plaza operator.

The input from all the above systems are required for proper functioning of NETC solution. All the information generated from these systems are synchronized and sent to the Toll Plaza Server for further processing.

Indian Highways Management Company LTD (IHMCL) will be implementing NETC system on the toll plazas of national highways of India.

3 Transaction Specification and Technical Specifications

The below diagram illustrates transaction flow of the NETC system between a Toll Plaza Operator (TPO) and an Acquiring Bank. As per the design of NETC solution, there can be multiple toll plazas which can be acquired by one Acquiring Bank in the eco system. Also, a toll plaza can be acquired by only one Acquiring Bank for the purpose of NETC transaction, at any given point of time. However, the choice of selecting an Acquiring Bank lies with Toll Plaza Operator/ NHAI/IHMCL.

A Toll Plaza needs to generate a transaction message for every authenticated FASTag vehicle passing through the NETC lane at the toll plaza. This transaction message needs to be routed to the acquirer host. The Acquiring Host calculates the toll fare and send the transaction to NPCI for further processing. NETC System is designed and deployed by NPCI which will be responsible for processing all transactions acquired from different acquirers and switching it to the respective issuer bank.

The transactions captured at the toll plazas are offline, i.e., vehicle are first allowed to pass through the NETC lane and later the transaction messages are processed in near real-time. The communication between the toll plaza and the Acquiring Bank is online and uses HTTPS protocol for the same. The communication between Acquiring Bank, NPCI and Issuing Bank is also on HTTPS protocol.

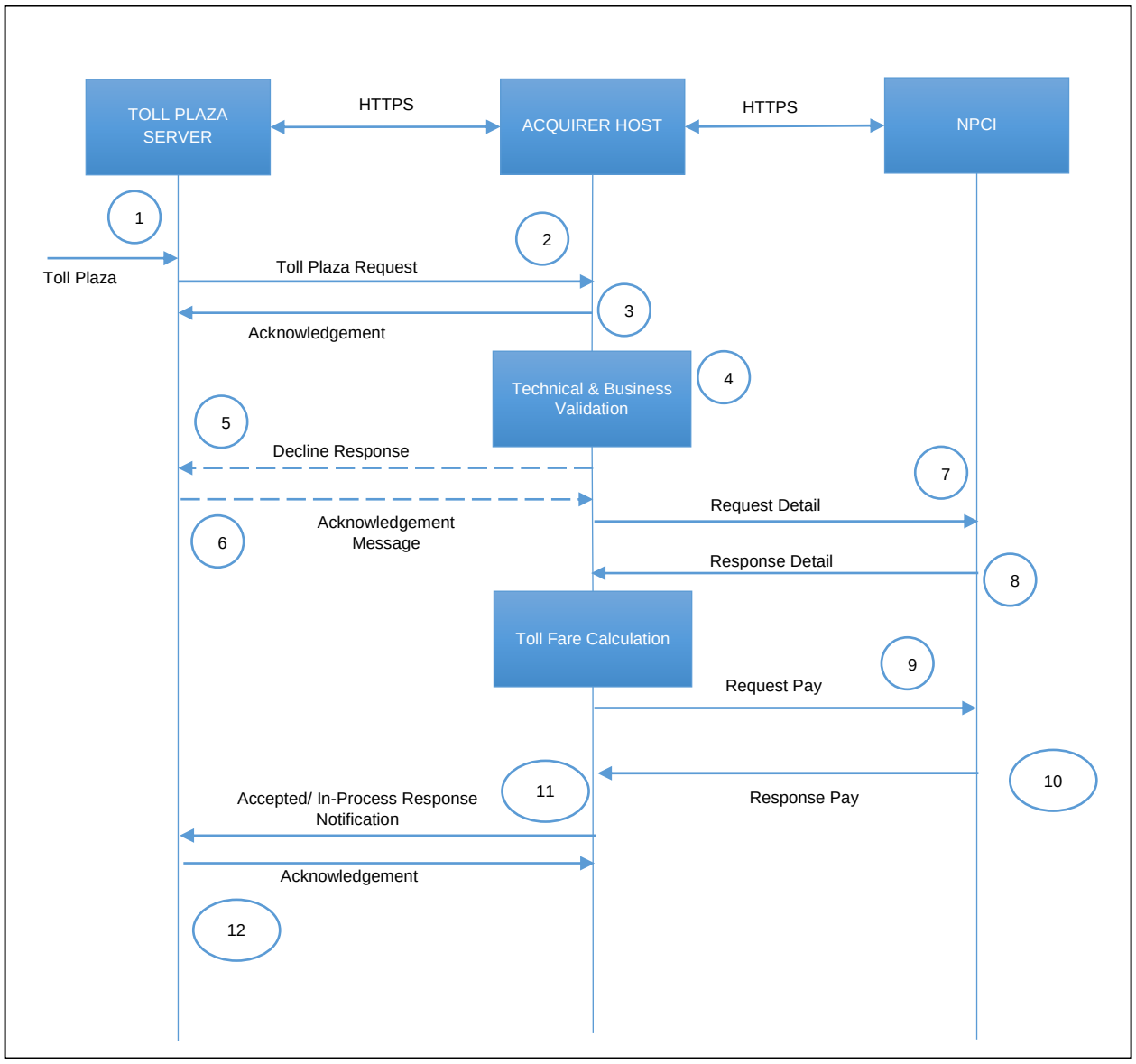


Figure 3 – Transaction Flow

3.1 Transaction Flow

1. All the data received from NETC Lane, i.e., Reader (TID and Tag ID), AVC (vehicle class), WIM (weight of vehicle) & Image capturing device (image of the vehicle) are pushed to the Toll Plaza Server (directly or through a lane controller).
2. Toll Plaza Server will validate the request coming from the lane controller and create a request pay transaction message. This transaction message is send to the Acquiring Host for further processing.

3. Acquiring Host will confirm the receipt of the request pay message to the toll plaza server via an acknowledgement message. In case, the acknowledgement message has not reached to the toll plaza server, the toll plaza server should retry to send the transaction message to the Acquiring Host until a successful acknowledgement message or a response message for the requested transaction is received.
4. The Acquiring Host will validate all technical and business rules applicable for the toll transaction.
5. In case, the technical and/or business validation fails in step (4) then the Acquiring Host will send a decline response pay message with valid error codes to the toll plaza server.
6. Toll Plaza server will confirm the receipt of the response pay message to the Acquiring Host via an acknowledgement message.
7. In case, the technical and business validation are successful in step (4), Acquirer host will request to the NETC mapper for Tag details. If Tag ID is present in the mapper, mapper will respond with valid Tag details like, vehicle class information, Vehicle registration number, TID etc. If Tag ID is absent in the mapper, mapper will respond that tag is not registered.
8. After receiving Tag details from NETC Mapper, Acquirer host will perform toll fare calculation using vehicle class received from the mapper. The mapper vehicle class will override the AVC/Tag vehicle class for toll fare calculation. Any mismatch or dispute need to be initiated using Acquiring Host dispute management system.
9. Acquirer host will initiate Request Pay API a debit request to NETC system. NETC System will forward the debit request to Issuer Bank for debiting the account of the customer. Issuer host will debit the linked tag holder account and send a SMS alert to the tag holder. The issuer host will send the response message to NETC System.
10. NETC system will notify the response to acquirer host.
11. In case the response from NETC system is Accepted or Deemed Accepted the Acquiring Host will send a response pay message to the Toll Plaza server with status Accepted. However, in case the response from the NETC system is declined or Acquiring Host is not able to process the Toll Plaza's request pay message, then the Acquiring Host will send the response pay message with status In-Process to the toll plaza server. The Acquiring Host system needs to execute the "In-Process" messages within 3 days of transaction initiation. Hence, these In-Process transactions will be finally updated to Accepted transaction status and on this final change in transaction status a notification message will be sent to the Toll Plaza server by the Acquiring Host within 3 days.

12. Toll Plaza server will confirm the receipt of the response pay message to the Acquiring Host via an acknowledgement message.

Note:

1. *In case, the Toll Plaza server has not received the response pay message within the defined timeout, the Toll Plaza system can validate the transaction status either through check transaction status API or through the settlement file.*
2. *The transaction processing between acquirer host, NETC switch and Issuer host is always online. The transaction settlement between the acquirer and toll plaza operator will be as per the agreed timelines between acquirer and toll plaza operator, not exceeding T+ 1 [transaction plus one] day.*
3. *If vehicle class captured from NETC Lane using Automatic Vehicle Classification (AVC) does not match with the NETC mapper vehicle class [registered vehicle class], in such scenarios the Toll Plaza server should send the violation process message to the Acquirer, post auditing of the transactions and vehicle images. The acquirer can raise the debit or credit adjustment in NETC system and send the violation processing response based on the audit performed by the Acquiring Bank.*
4. *For all transaction received by acquiring host, toll fare will be calculated based on the NETC mapper's vehicle class and the toll plaza operator will receive the toll fare for that vehicle as per the vehicle class defined on NETC mapper. Any debit/credit adjustment will be settled as per the defined TAT.*
5. *Toll Plaza operator should ensure TAT of transaction processing time from lane controller to TMS within 3 seconds from reader read time and from TMS to acquiring host within 5 seconds. A transaction should get processed from lane controller to issuer bank and back to toll plaza within 90 seconds per transaction.*

3.2 Failure Scenarios

This section explains how the various failure scenarios are handled during the online message processing. The transaction flow mentioned above will be considered while describing the failure scenarios.

3.2.1 Reader at NETC lane is not able to read NETC Tag details

In this scenario, where stationary RFID reader is not able to read the tag details, a mechanism has to be put by the Plaza operator; where the vehicle has to take exit path and the hand held portable RFID readers will be used to read the Tag Data to process the transaction.

3.2.2 Connection is lost between Lane controller and Toll Plaza Server

In this scenario, where connection is lost between lane controller and Toll Plaza Server, the lane controller should authenticate the tag data, check the blacklist and the discount list and allow the authenticated vehicle to pass through.

1. In case if the connection is resorted the lane controller should ensure to process the transaction online to Acquiring Host.
2. Toll plaza server can send the transaction to the NETC system (via Acquiring Host) within 3 days but in this scenario the liability of the transaction lies with toll plaza operator. In case there is insufficient balance in the customer account, for such transactions the issuer can raise the chargeback and Toll Plaza will not have any re-presentment rights. If the transaction is send after 3 days to the NPCI (through acquirer bank), toll plaza operator does not have the rights to present the transaction. The NETC system will decline all such transactions.

Liability- All the transactions which are raised post 10 minutes TAT but within 3 days of transaction initiation will have to be honored by the Acquiring Bank provided the tag id is not listed in the blacklist at the time of transaction initiation. If the tag id was present in the blacklist, acquiring bank is only liable for the transactions up to 10 minutes of adding the tag ids in the blacklist i.e. any transaction received on the Acquiring Host within 10 minutes of adding the tag id in the blacklist will be routed to NPCI switch for processing. After 10 minutes the Acquiring Host will decline the transaction and hence the liability of the transactions lies with toll plaza operator.

3.2.3 Connection is lost between Toll Plaza Server and Acquirer Host

In this scenario, when connection is lost between Toll Plaza Server and Acquirer Host, the transaction message can be shared with the acquirer host by mutually agreed process considering the below scenario's

1. In case if the connection is resorted the toll plaza operator/acquirer bank should ensure to process the transaction online to NETC System.
2. The toll plaza server/Acquiring Host can send the transaction to the NETC system within 3 days but in this scenario the liability of the transaction lies either toll plaza operator or Acquirer Bank (whoever is responsible for network failure between Toll plaza Server & Acquirer Host). In case there is insufficient balance in the customer account, for such transactions the issuer can raise the chargeback and Toll Plaza will not have any re-presentment rights. If the transaction is send beyond 3 days to NPCI (through acquirer bank), the toll plaza operator does not have the rights to present the transaction. The NETC system will decline all such transactions.

Liability- All such transactions which are raised post 10 minutes TAT but within 3 days of transaction initiation will have to be accepted by the Acquiring Bank provided the tag id is not listed in the blacklist at the time of transaction initiation. If the tag id was present in the blacklist, acquiring bank is only liable for the transactions up to 10 minutes of adding the tag ids in the blacklist i.e. any transaction received on the Acquiring Host within 10 minutes of adding the tag id in the blacklist will be routed to NPCI

switch for processing. After 10 minutes the Acquiring Host will decline the transaction and hence the liability of the transactions lies with toll plaza operator.

3.2.4 Tag id is not present in mapper

In this scenario, NETC system will validate the tag's digital signature/Tag ID and will switch the transaction to the respective issuer. In all such scenario the acquirer needs to calculate the toll fare basis the AVC vehicle class as the NETC mapper vehicle class does not exist and send the transaction to NPCI.

Liability- All such transactions which are raised within 3 days of transaction initiation will have to be honored by the Acquiring Bank provided the tag id is not listed in the blacklist at the time of transaction initiation. If the tag id was present in the blacklist, acquiring bank is only liable for the transactions up to 10 minutes of adding the tag ids in the blacklist, i.e., any transaction received on the Acquiring Host within 10 minutes of adding the tag id in the blacklist will be routed to NPCI switch for processing that means transaction needs to be honored by the acquirer bank. After 10 minutes the Acquiring Host will decline the transaction and hence the liability of the transactions lies with toll plaza operator.

In case of proved fraudulent transactions due to the cloned tags, NHAI/IHMCL will review and compensate the issuer on case to case basis. NHAI/IHMCL will create a separate fund to compensate such fraudulent transactions, here on referred as "NHAI/IHMCL compensation fund". The process for compensating such fraudulent transaction will be shared separately.

4 SLA & Business Rules

Whenever a vehicle crosses a Plaza, the Concessionaires need to record the transactions and share the same with the Acquiring Bank. The vehicle has a single passive RFID tag which contains the details as required by Concessionaires/ Toll Plaza operator to share with the Acquiring Member Banks for them to process the transactions.

As a part of transaction process following are the rules laid down to be implemented by Toll Plaza Operator to help them to properly read the details and share it with Banks in the required Format:

4.1 Vehicle Authentication

Vehicle Authentication is done at the lane controller of the toll management system using Tag Data Validation and Blacklist Validation.

a) **Tag Data validation** or **Tag identification** is an offline authentication method. This means that the Toll Plaza Server (TPS) or Lane Controller uses this method to authenticate the Tag and Tag Data. The system verifies static signature of Tag Data, in order to ensure that this Data has not been altered.

i. **EPC ID, Electronic Product Code** is a unique Vehicle identifier of length 96 bits, i.e., it is made up of 24 characters hexadecimal string. It is a unique serial number which is used to identify a vehicle in NETC ecosystem.

- **GS1 Code**: GS1 stands for Global Standards One. As the name suggests, the organization is considered primarily as the standards organization managing the assignment of various numbering schemes upon which global commerce has come to rely. They are used to encode information such as vehicle numbers, serial numbers and batch numbers.
    a. **IHMCL GS1 Code**: 8907272. IHMCL has purchased the GS1 code to maintain the unique EPC ID data format used for the FASTag program.
    b. **ICICI GS1 Code**: 8907046. ICICI Bank has purchased the GS1 code to operate the program initially. However, no new tags are being issued with ICICI GS1 code. ICICI Tags are made up of 20 characters hexadecimal string starting from 0x918907048.

ii. **User Memory** details should include the following:

- **Dummy VRN** (Vehicle Registration No): the first 96 bits of user memory specifies the dummy VRN. This is kept in the tag for backward compatibility of the toll plaza system and has no significance in payment processing.

- **Tag Vehicle Class** (TVC): is used for audit purposes by the toll plaza operator in offline mechanism of toll transaction processing. In the current specification where the online APIs are used for transaction processing, the use of TCV will be obsolete.
- **0x00**: is a separator in the memory
- **Signature Data**: Every tag issued by an Issuer Bank is signed. The signature data is written in the user memory of the tag. This signature data is validated on the toll plaza and only valid trusted tags are allowed to pass through the NETC lane.

b) Blacklist Validation

Blacklist Master Data is uploaded at a regular interval by toll plaza server from Acquiring Host. The toll plaza server has to check if the EPIC ID/ Tag ID is present in the Blacklist Master Data. If present, the vehicle should not be passed through the NETC lane.

c) Blacklist/Exception List Handling and their Priority

NETC mapper contains tag Blacklist /Exception lists data which get updated periodically. The Acquirer host/Toll Plaza Operator system has to synchronise the Blacklist/Exception list with the Toll Plaza Server/Lane Controller.

- The acquirer should periodically fetch the latest exception list from the NETC System every 10 minutes.
- The Toll plaza server should fetch the latest exception list from Acquirer host every 10 minutes and update this exception list to lane controllers within 10 minutes of its receipt.
- Consolidated list of tag exception status, i.e., INIT file should be share by Acquirer once a week (i.e., every Monday) to the toll plaza.
- If the tag is in multiple exception i.e. in Blacklist, Exempted & Low balance list, then acquirer should response to the Toll Plaza System as per the priority of exception list. For e.g. If the tag T-1 is in Blacklist and Low balance exception list, Acquirer should response as Tag T-1 is in Blacklist. In case Tag T-1 is removed from the blacklist and still in the low balance exception list, then acquirer should response as Tag T-1 is in low balance list to the Toll Plaza system. If the Tag T-1 is in Blacklist and Exempted list or monthly or local pass exemption list, as per the priority acquirer should response as Tag T-1 is in Blacklist. If the tag is removed from Blacklist, Acquirer host should response as Tag T-1 is in exempted list for the specific toll plaza. If the Tag T-1 is in Exempted list or monthly or local pass exemption list or in Low Balance list, basis on the priority the acquirer should response as Tag T-1 is in exempted list for the specific toll plaza and for all other toll plaza tag is in Low balance exempted list.

Note-

- For the cases where response received from Acquirer as Tag is in Blacklist or Low balance list, Toll plaza system should add the tag in Blacklist file & for the cases where response received from Acquirer host as Tag is in exempted list, Toll plaza system should add the tag in Discount file.
- Exception code description
    - 01- Blacklist
    - 02 – Exemption List
    - 03- Low Balance
- Priority of Exception List
    - 01- Blacklist – Priority 1
    - 02 – Exemption List – Priority 2
    - 03- Low Balance – Priority 3

4.2 Transaction Processing:

In first phase of ICD 2.5 implementation, transaction will be processed using either of the methods, i.e., SFTP or API. In first phase of ICD 2.5 implementation, transaction will be processed using either of the mediums, i.e., SFTP or API. This is to ensure backward compatibility of system. The Toll Plaza operator must ensure there is no duplicate transaction processing happen using either SFTP or API request. Acquirer bank must decline duplicate transaction.

Note: Transaction ID should be unique for per plaza and transaction ID generation logic should be combination of ***Plaza ID <6digits> + Lane Id <Last three digits>+Transaction Date & Time <DDMMYYHHMMSS>,*** *e.g., 316001001280022012102*2

4.3 Violation Matching:

- The toll plaza system receives Mapper Vehicle Class (MVC) in the response pay message and AVC input will be obtained from NETC lane.
- Any transaction where Mapper Vehicle Class is not equal to the Automated Vehicle Class (AVC) then such transactions are referred as violation transactions.
- The toll plaza auditor should validate the vehicle image and AVC profile for the violation transactions.
- If the violation is proved to be a valid violation after the audit then, the toll plaza can raise debit or credit adjustment with the Acquiring Bank. As per the process defined in violation audit section.

4.4 Blacklist Management (BL):

Online APIs are defined in the document to pull the consolidated and incremental blacklist from the Acquiring Host.

Incremental blacklist data should be used for updating the toll plaza system and the consolidated blacklist should only be used to match/ audit the net blacklist data in the toll plaza system.

4.5 Log Standardization

Logs for all the operations performed at toll plaza must be stored. These logs should be provided for audit and dispute purpose. The plaza should maintain these logs for 3 years and should be retrieve easily for future reference or dispute. The sample format of log is attached for reference. The plaza and acquirer bank can use format or any other standard format applicable for their respective system.

Log Format.7z

4.6 Violation Audit by Toll Plaza

1. The Concessionaire system should raise the violation through violation API only after verifying Mapper class received Response Pay Message API with the AVC class for the said transactions. If they observe any discrepancy in MVC Vs AVC then only violation should be raised.
2. Toll plaza operator should upload minimum 2 and maximum 5 images of vehicle for violation processing. This should be automated process, whenever they are raising violation images of those transactions should be stored on SFTP. The size of the image should not be more that 2 MB.
3. The Acquirer Bank should provide the acknowledgment for all the successful images received to the toll plaza on SFTP. The acquirer bank and plaza should use the existing logic of ACK/NACK of toll file for images as well.
4. Reference to the point number 4.2 File transfer of ICD 2.4 CCH document, as per the existing process the Acquirer banks should create additional new folder in the name of ‘Image Ack Status’ under the respective Concessionaire Outbound folder in the SFTP for sharing the status of Image acknowledgment for accepted or decline violation transactions.

5. If the Image is accepted by the acquirer for particular violation transaction, Acquirer will share Imagename.ack in the folder and in case if the acquirer have not received the image acquirer will share imagename.nack status with concessionaire.
6. The acquirer banks shall audit the images uploaded on the SFTP & for audited transactions they will raise debit adjustment in EGCS system.
7. In case there is a mismatch between audited vehicle class by bank and AVC provided by the plaza, the acquiring bank should not decline the violation request. All such violation cases should be processed with audited vehicle class derived after the audit by the bank. The bank should provide the response for all such violation request post accepting the violation in their system and raise the debit adjustment with NPCI.
8. The acquirer banks should provide detail of violation raised by the toll plaza through a response violation message with defined response code with detailed description and also provide same information on concessionaire portal.

The XML file format for sending the violation transactions is defined below:

4.6.1 Request Violation Audit Details

This API is called by toll plaza to raise violation to acquirer bank.

API type: Asynchronous API

Privilege to initiated API: Toll Plaza Operator

```
<etc:ViolationAuditDetails xmlns:etc="http://npci.org/etc/schema/">
<Head msgId="1" orgId="IRBL" ts="2017-01-30T06:29:10" ver="1.0" />
<Meta />
<Violations>
<Violation>
<Detail name="AuditTime" value=""/>
<Detail name="AuditResult" value="" />
</Detail>
<Detail name="AVCProfile" value="Inline">
<Item name="ProfileData" value=""/>
<Item name="NumberAxles" value=""/>
<Item name="INterAxleDistance" value=""/>
<Item name="VehicleHeight" value=""/>
```

<Item name="DoubleWheelDetected" value=""/>
<Item name="VehicleLength" value=""/>
</Detail>
<Detail name="TransactionDetails" value="Inline">
<Item name="PlazaId" value=""/>
<Item name="ReaderReadTime" value=""/>
<Item name="TransactionTime" value=""/>
<Item name="TrasactionId" value=""/>
<Item name="LaneId" value=""/>
</Detail>
<ImageDetails>
<Image1 name="" refPath=""/>
<Image2 name="" refPath=""/>
</ImageDetails>
<AVCProfile>
<Image1 name="" refPath=""/>
<Image2 name="" refPath=""/>
</AVCProfile>
</Violation>
</Violations>
<Signature ….>
..
..
</Signature>
</etc:ViolationAuditDetails >

Response Violation Audit Details

If SUCCESS: HTTP response -202

If FAILURE: HTTP codes

HTTP Code	HTTP description	Validation
400	Bad Request	Validate Head element of message
401	Unauthorized	Issue with org id
405	Method Not allowed	Other than POST method are used in message
408	Request Timeout	Late response/Response after SLA
417	Expectation Failed	Issue with signature/Certificate
404	Not Found	Destination not live

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)	<etc:ViolationAuditDetails xmlns:etc="http://npci.org/etc/schema/">		M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Organization id that created the message Each organization will be identified with a unique ID. The member has to request NPCI with a required organisation ID. Based on availability NPCI will register and assign the same. Basically it should be a short code of the bank.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Meta		The data provided in the Meta element will be used for MIS and analysis purpose			O
Meta.Tag		The tag is defined in name value pairs to accommodate the MIS related parameters. The tag itself is optional and if the tag is present it is mandatory to have the two attributes with two codes mentioned below			O

	name	The name attribute will have the values as defined in the code table	STRING	1-50 PAYREQUEST START PAYREQUEST END	1..n
	value	The data provided will have the details of transaction initiated time and end time in the device/medium	STRING	1-100	1..n
Violations		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
Violation		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
Violations. Violation Details		This element contains Information of the vehicle that passes through the NETC Lane.			M
	name="AuditTime"	This attribute provides time of audit request raised by plaza	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	name="AuditResult"	This attributes provides audit result: "VIOLATION"	ALPHANUM	1-20	M
Violations. Violation Details		This element contains Information of violation raised against the vehicle that passes through the NETC Lane.			M
	name="AVCProfile"	This attributes provides information of AVC profile in "INLINE" format	ALPHANUM	1-1024	O
	name="ProfileData"	This attribute provides vehicle class on basis of AVC	ALPHANUM	4	M
	name="NumberAxles"	This attribute provides number of axles captured through AVC	NUMERIC	2	M
	name="INterAxleDistance"	This attribute provides inter axle distance captured through AVC	FLOAT	2,2	O
	name="VehicleHeight"	This attribute provides number of axles captured through AVC	FLOAT	2,2	M
	name="DoubleWheelDetected"	This attribute provides double wheel detected captured through AVC: "T|F"	BOOLEAN	1	O

	name="VehicleLEngth"	This attribute provides vehicle length captured through AVC	FLOAT	2,2	M
Violations. Violation Details		This element contains Information of violation raised against the vehicle that passes through the NETC Lane.			M
	name="TransactionDetails"	This attributes provide information of transcation details in "INLINE" format	ALPHANUM	1-1024	M
	name="PlazaId"	Plaza ID from original transaction against which violation is raised	NUMERIC	6	M
	name="ReaderReadTime"	Reader Read Time from original transaction against which violation is raised	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	name="TransactionTime"	Transaction time from original transaction against which violation is raised	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	name="TrasactionId"	Unique Identifier for the transaction from original transaction against which violation is raised.	ALPHANUM	1-22	M
	name="LaneId"	Lane ID from original transaction against which violation is raised	ALPHANUM	1-6	M
Violations. Violation ImageDetails		This element contains Information of stored image for violation raised against the vehicle that passes through the NETC Lane.			M
	name	This attribute provides the name of image stored at bank's SFTP by plaza	ALPHANUM	1-50	M
	refPath	This attribute provides URL of file where image is stored at bank's SFTP by plaza	ALPHANUM with special characters	1-50	M
Violations. Violation AVCProfile		This element contains Information of stored AVC for violation raised against the vehicle that passes through the NETC Lane.			M
	name	This attribute provides the name of AVC profiler image stored at bank's SFTP by plaza	ALPHANUM	1-50	M
	refPath	This attribute provides URL of file where AVC profiler image stored at bank's SFTP by plaza	ALPHANUM	1-50	M

4.6.2 Request Violation Processing Result:

Once validation of violation request is completed, this API is initiated by acquirer bank to provide result of violation raised by toll plaza.

API type: Asynchronous API

Privilege to initiated API: Acquirer Bank

```
<ViolationProcessingResult>
<Head msgId="1" orgId="ICIC" ts="2017-01-30T06:29:10" ver="1.0" />
<AuditResults>
<Detail name="TransactionDetails" value="Inline">
        <Item name="PlazaId" value=""/>
        <Item name="ReaderReadTime" value=""/>
        <Item name="TransactionTime" value=""/>
        <Item name="TrasactionId" value=""/>
        <Item name="LaneId" value=""/>
        <Item name="AVC" value=""/>
        <Item name="MVC" value=""/>
        <Item name="AuditedVC" value=""/>
        <Item name="ViolationAmount" value=""/> <!--ViolItaionAmount = Claim Amount-->
        <Item name="ProcessedAmount" value=""/>  <!--ProcessedAmount = Violation Accepted Amount-->
        <Item name="ProcessedDate" value=""/>  <!--ProcessedDate = Violtaion Accepted Date-->
</Detail>
<Detail name="ImageReviewResult" value=" " />
<Detail name="RespCode" value=" " />
</AuditResults>
<Signature ….>
..
..
</Signature>
</ViolationProcessingResult>
```

Response Violation Audit Processing Result

If SUCCESS: HTTP response -202
If FAILURE: HTTP codes

HTTP Code	HTTP description	Validation
400	Bad Request	Validate Head element of message
401	Unauthorized	Issue with org id
405	Method Not allowed	Other than POST method are used in message
408	Request Timeout	Late response/Response after SLA
417	Expectation Failed	Issue with signature/Certificate
404	Not Found	Destination not live

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)	<etc:VioaltionAuditDetails xmlns:etc="http://npci.org/etc/schema/">		M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Organization id that created the message Each organization will be identified with a unique ID. The member has to request NPCI with a required organisation ID. Based on availability NPCI will register and assign the same. Basically it should be a short code of the bank.	Alphanumeric only Alphabets	4	M

	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Meta		The data provided in the Meta element will be used for MIS and analysis purpose			O
Meta.Tag		The tag is defined in name value pairs to accommodate the MIS related parameters. The tag itself is optional and if the tag is present it is mandatory to have the two attributes with two codes mentioned below			O
	name	The name attribute will have the values as defined in the code table	STRING	1-50 PAYREQUESTSTART PAYREQUESTEND	1..n
	value	The data provided will have the details of transaction initiated time and end time in the device/medium	STRING	1-100	1..n
AuditResults		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	name="TransactionDetails"	This attributes provide information of transcation details in "INLINE" format	ALPHANUM	1-1024	M
	name="PlazaId"	Plaza ID from original transaction against which violation is raised	NUMERIC	6	M
	name="ReaderReadTime"	Reader Read Time from original transaction against which violation is raised	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	name="TransactionTime"	Transaction time from original transaction against which violation is raised	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M

	name="TrasactionId"	Unique Identifier for the transaction from original transaction against which violation is raised.	ALPHANUM	1-22	M
	name="LaneId"	Lane ID from original transaction against which violation is raised	ALPHANUM	1-6	M
	name="AVC "	The attribute provides AVC captured at toll plaza	ALPHANUM	0-5	M
	name="MVC"	The attribute provides mapper vehicle class	ALPHANUM	0-5	M
	name="AuditedVC"	The attribute provides audited vehicle class	ALPHANUM	0-5	M
	name="ViolationAmount"	The amount of transaction as per the currency given 5.12.2.	Numeric	fractionDigits: 2 0-18	M
	name="ProcessedAmount"	The amount of transaction as per the currency given 5.12.2.	Numeric	fractionDigits: 2 0-18	M
	name="ProcessedDate "	This attribute provides violation processing date	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	name="ImageReviewResult"	This attribute provides contains the final result of the audit: ACCEPTED|DECLINED	ALPHANUM	1-20	M
	name="RespCode"	This attribute provides helps to identify the result of audit in case of decline of violation request. [For Accepted violations default: RespCode="000"]	NUMERIC	4	M

5 Security and Risk Management

5.1 Risk management at Toll Plaza

1. Blacklist validations/verifications.
2. Anti-pass rule check.
3. Fraud check.
4. Population of correct values in the financial message request.
5. Any other limit checks applicable for the members mandated by regulatory guidelines.

5.2 NETC Tag Authentication Method by Lane Controller

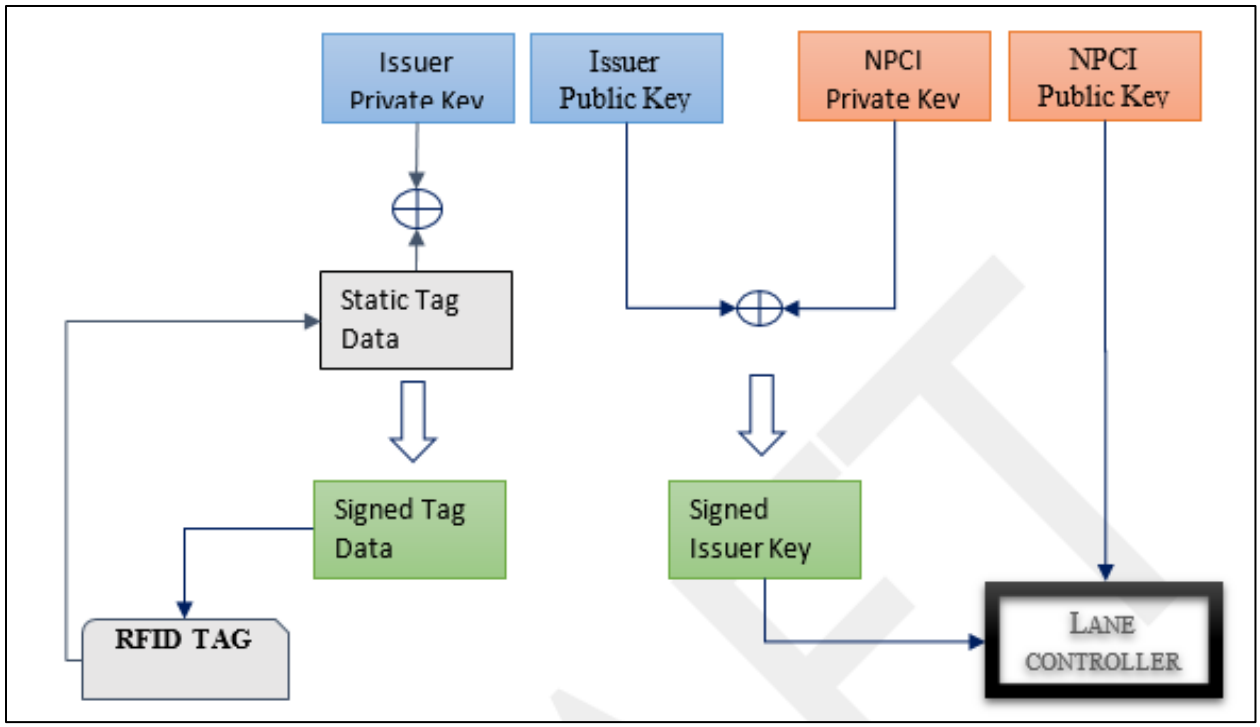


Figure 4– Tag Static Data Authentication at Lane Controller/Toll Plaza Server

Tag Static Data Authentication (TSDA) is the offline authentication method. This means that the Toll Plaza Server (TPS) or Lane controller or issuer host uses this method to authenticate the tag and tag data. The system verifies static signature of tag data, in order to assure that this data has not been altered.

TSDA is a mechanism where the host system uses a digital signature based on public key techniques to confirm the legitimacy of critical tag-resident static data. The relationship between the data and the cryptographic keys is shown above. It should be noted that the issuer host should support signature validation to authenticate the tag data.

The Issuer host will also validate the tag signature with the tag's TID, Tag ID [EPC ID] and User memory data received in the transaction message. Issuer Host will Blacklist any tag with an invalid signature.

Note: Current CCH Specification defined by IHMCL/NHAI doesn't contain fields for TID and entire user memory block in the message definition. The Attribute_7 and Attribute_9 fields in CCH transaction message definition should be used by Toll plaza operator to pass TID and 512 bits of user memory from toll plaza server to Acquiring Host.

5.3 FASTag – Memory Bifurcation

5.3.1 TID Memory- Tag Encoding Specification

Transducer ID (TID) is defined, written and locked by RFID chip manufacturer. TID provides information about the tag itself, as opposed to the vehicle to which the tag is affixed. To conform to this specification, the Tag Identification memory bank (bank 10) SHALL contain an 8 bit ISO/IEC 15963 allocation class identifier of E2h at memory locations 00h to 07h. TID memory locations 08h to 13h SHALL contain a 12-bit Tag mask designer identifier (MDID) obtainable from EPC global. TID memory locations 14h to 1Fh SHALL contain a 12-bit vendor-defined Tag model number (TMN). NETC project supports RFID chips with extended TID and serialisation support. Unique 96 bits of TID is defined in below table:

Section	Memory Address	Usage	Owner	Remarks
Serial Number	0x30 to 0x5F	Unique Serial Number	Chip Manufacturer	48-bit serial number, hence each chip manufacturer can manufacture "248" i.e. appx. 2.8 x 1014 chips [48 bits]
TID Header	0x20 to 0x2F	Header information	Chip Manufacturer & EPC standards	Used to define the data in memory locations starting from 0x30

				[16bits]
Tag Model Number (TMN)	0x14 to 0x1F	To support multiple models for each chip manufacturer type	Chip Manufacturer	4096 models can be supported by one MDID assigned to manufacturer [12 bits]
Tag Mask Designer Identifier (MDID)	0x08 to0x13	Chip manufacturer ID	EPCGlobal	Each chip manufacturer will have two codes to identify extended TID or normal TID [12 bits]
Allocation Class Identifier	0x00 to 0x07	ISO Class identifier	ISO/IEC 15963	8 bits

5.3.2 User Memory- Tag Encoding Specification

NETC tag user memory is encoded as per the fields defined in below table. During NETC Tag personalization the tag perso vendor shall lock each bit of user memory after personalization to ensure that the data is not erased or re-written once the tags are signed.

Section	Data Size	Remark
RFU	152 bits	Fixed to zero
Signature Data	256 bits	Signature generated using P-128 ECC curve and SHA 256 hash
Vehicle Class	8 bits	Pre-defined toll able vehicle class
Vehicle Registration	96 bits	Dummy registration number

Once all the necessary changes are undertaken at the toll plaza at the lane controller and toll plaza server level, there won't be a need for encoding vehicle class & vehicle registration number on the tag. Then P-256 ECC curve along with SHA 256 cryptographic hash will be used to generate the digital signatures and perform TSDA. The user memory shall be encoded with 512 bits of signature data. The RFID reader affixed on the lane controller shall read all the 3 memory banks i.e. TID bank, EPC ID bank and User memory bank.

5.3.3 Reserved Memory- Tag Encoding Specification

Reserved memory contains Kill Password and Access Password of 4 bytes each. The passwords must be changed from the default value to a secured password specified by the issuer bank.

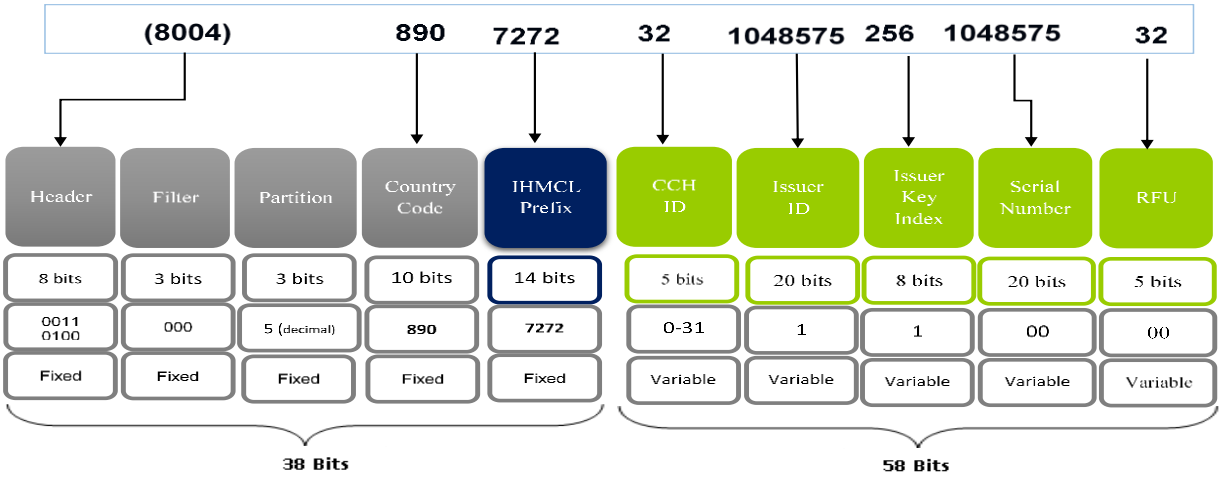
Bits	Field	Description
0x00 to 0x1F	Kill Password	A 32-bit password that must be presented to the tag in order to complete the Gen 2 “kill” command
0x20 to 0x2F	Access Password	A 32-bit password that must be presented to the tag in order to perform privileged operations

2.1.1 EPC Memory- Tag Encoding Specification

FASTag is the brand name for the passive RFID tags used in the NETC program. FASTag are passive RFID tags affixed on the windshield of the vehicle and are used to identify the vehicle uniquely. The data encoded in the FASTag is defined as per the GS1 standards detailed below.

EPC Memory - Tag Encoding Specification

IHMCL - GS1 Code = 8907272



Segment	Bits	Remarks
CCH ID	5	Fixed to 01
Issuer ID	20	Up to 1048575 issuer ids
Issuer Key Index	8	256 keys per Issuer ID
Serial Number	20	1048575 vehicles per key per Issuer ID
RFU	5	Reserved for future use

6 Transaction processing at toll plaza

This program aims to establish a non-stop toll regime in which a vehicle with a single passive RFID tag can pass through toll plazas on Indian highways and pay toll without actually stopping. The system envisaged by the program is complex, encompassing the function of a nation-wide clearing house in which all the related Concessionaires (operating the toll plazas) participate.

The Plaza setup for processing FASTag transactions [i.e. NETC Lane and any other infrastructure required at toll plaza] is the responsibility of the toll plaza operator as per the guidelines issued by IHMCL/NHAI. The transaction processing rules are defined by IHMCL in CCH document latest version document issued by IHMCL/NHAI/NPCI. The toll plaza operator and acquiring bank has to adhere to the CCH specifications for processing and acquiring the toll transaction.

There is no separate KYC requirement from NHAI/IHMCL for the issuance of FASTag. The issuer member will only adhere to the KYC requirements for the underlying payment instrument while linking it to FASTag.

Note: If the TId share by plaza in reqPay is not matching with said tag in NPCI system, the acquiring bank should process the transaction with TID in NPCI system. The acquireing bank should generate exception report for where TID is not matching with register TID in NPCI system. Bank should also generate report for transaction id plaza is sharing TID filed blank.

7 Fraud Management at toll plaza

Toll plaza operator is responsible for the NETC lane as per the details mentioned. In case the toll plaza operator has not adhered to the security guidelines and any transaction proved to be fraudulent due to non-adherence of security guidelines leading to cloning of tags, will be reviewed and compensated by IHMCL/NHAI on case to case basis. IHMCL/NHAI will create separate funds to compensate such fraudulent transactions, referred as “NHAI/IHMCL compensation fund”.

Any transaction initiated from unsigned NETC tags will not be compensated from the “NHAI/IHMCL compensation fund” [effective once the signature validation process is implemented at the toll plaza]

Identified Risk	Risk Analysis	Risk Handling
Hardware/Software Malfunction and Data theft	1. Remote access of hardware 2. Improper working of hardware [Reader/Lane Controller/Toll Plaza Server/AVC/CCTV Camera] 3. Data loss in event of malfunction or mishap 4. Ensure correct authentication of tags and securing of public keys 5. Server Time synchronisation for all the stakeholders	1. **All the servers, computers etc. at the toll plaza must he hardened as per the process outlined in the document. 2. IHMCL/NHAI has provided mandatory guidelines and procedures for operation of NETC Lanes. The toll plaza operator shall adhere to these guidelines. 3. Data backup and disaster management procedures are defined in the document. These shall be followed to mitigate the risk. 4. **Correct key management procedures as per the document to be followed to mitigate the risk. 5. All the servers and computers at toll plaza which are participating in the NETC program must have time synchronised with the NETC system via Acquiring host.
Network Connectivity	1. Delayed reporting of transaction for processing in NETC system 2. Eavesdropping during data transmission 3. Message integrity and authenticity	1. The toll plaza operator shall ensure the uninterrupted network connectivity so that transactions can be processed within defined TAT. 2. **All the data transfer between toll plaza server and Acquirer host shall be performed in an encrypted channel as per NETC network security guidelines. 3. **All the messages shall be digitally signed considering correct key size as per the NETC security guidelines.
Data backup	The transaction data not available for the dispute processing	The data backup guidelines must be followed and the data archives must be kept. The transaction data retention period shall be as per RBI guidelines.

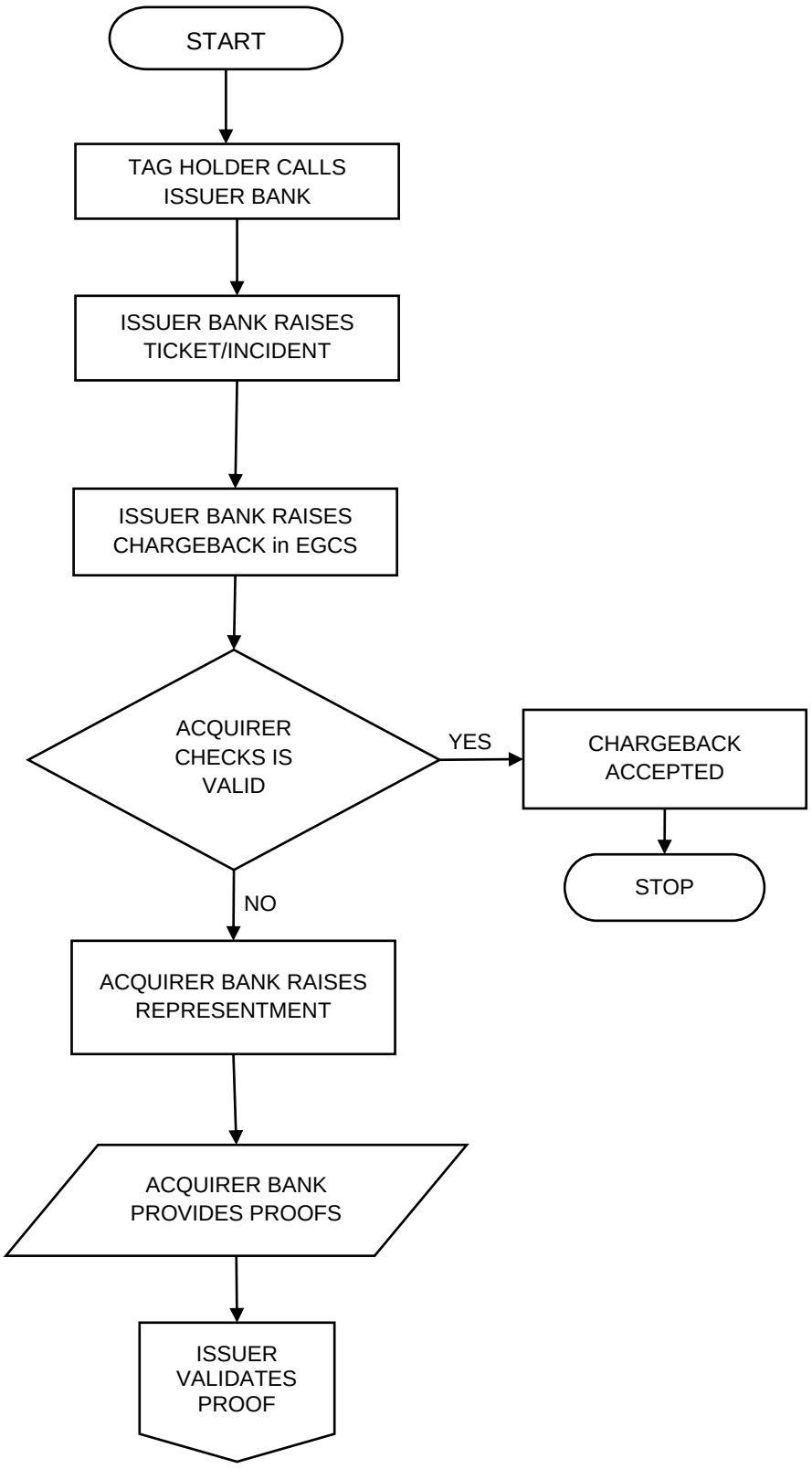
***In case the toll plaza systems are not as per the defined security guidelines which leads to fraudulent cloned tag transaction. The liability of such proved fraudulent transactions will be compensated from "NHAI/IHMCL compensation fund" to the appropriate stakeholder.*

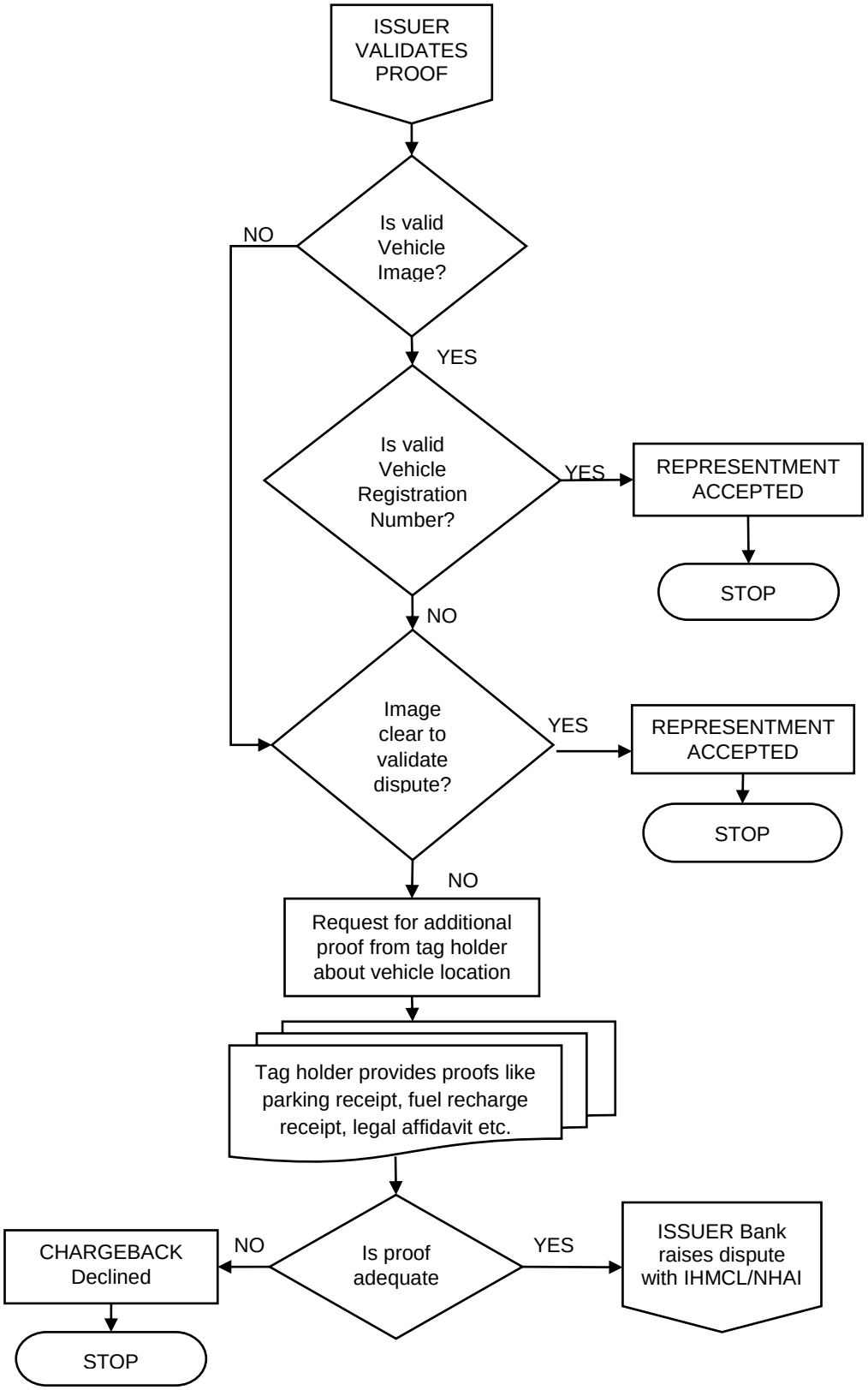
2.1 Cloned Tag transactions

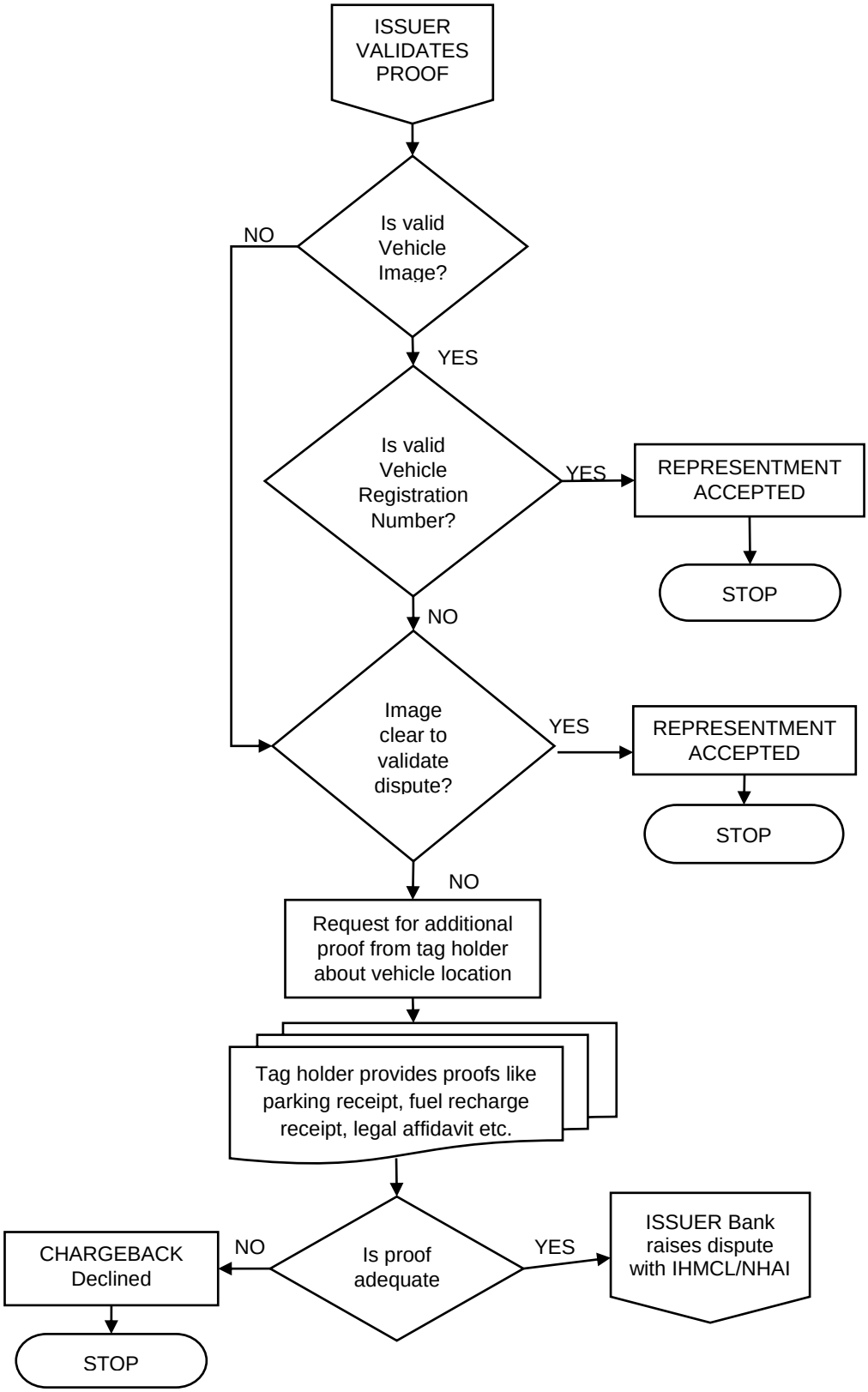
The transactions are said to be initiated from a cloned tag if

1. Multiple transactions processed for same tag at two different toll plazas in near time.
    a. Time taken by the vehicle to travel from one toll plaza to another is called "Near Time" if the speed at which the distance covered between the toll plazas is greater than 120 km/hr.
2. Speed = Distance between two different toll plazas / Time taken by vehicle to travel the distance
   Let 'd' be the distance between two toll plazas and t be the time taken by the vehicle to travel d.
   Therefore, Speed = d/t;
   If Speed is greater than 120 km/hr then t is near time.
3. Service not rendered i.e. vehicle is proved to be located at different location as per defined near time rather than the toll plaza at which the transaction has been initiated for the vehicle.
    a. Any government organizations receipt/documentation which contains the vehicle registration number on the receipt/documentation.
    b. Any video/image of the vehicle with valid timestamp.

To safeguard the risk, IHMCL/NHAI has made provisions for the fraud fund and the claims of these fraudulent transactions will be performed by IHMCL/NHAI on case to case basis as per the process defined in flowchart below.


START
TAG HOLDER CALLS ISSUER BANK
ISSUER BANK RAISES TICKET/INCIDENT
ISSUER BANK RAISES CHARGEBACK in EGCS
ACQUIRER CHECKS IS VALID
YES
CHARGEBACK ACCEPTED
STOP
NO
ACQUIRER BANK RAISES REPRESENTMENT
ACQUIRER BANK PROVIDES PROOFS
ISSUER VALIDATES PROOF


ISSUER VALIDATES PROOF
Is valid Vehicle Image?
NO
YES
Is valid Vehicle Registration Number?
YES
REPRESENTMENT ACCEPTED
STOP
NO
Image clear to validate dispute?
YES
REPRESENTMENT ACCEPTED
STOP
NO
Request for additional proof from tag holder about vehicle location
Tag holder provides proofs like parking receipt, fuel recharge receipt, legal affidavit etc.
Is proof adequate
NO
CHARGEBACK Declined
STOP
YES
ISSUER Bank raises dispute with IHMCL/NHAI


ISSUER VALIDATES PROOF
Is valid Vehicle Image?
NO
YES
Is valid Vehicle Registration Number?
YES
REPRESENTMENT ACCEPTED
STOP
NO
Image clear to validate dispute?
YES
REPRESENTMENT ACCEPTED
STOP
NO
Request for additional proof from tag holder about vehicle location
Tag holder provides proofs like parking receipt, fuel recharge receipt, legal affidavit etc.
Is proof adequate
NO
CHARGEBACK Declined
STOP
YES
ISSUER Bank raises dispute with IHMCL/NHAI

8 Customer support at Toll Plaza

In case the tag holder's tag is not read at the toll plaza and vehicle is not allowed to pass through the NETC lane, the toll plaza operator has to abide to the following process to support the end customer.

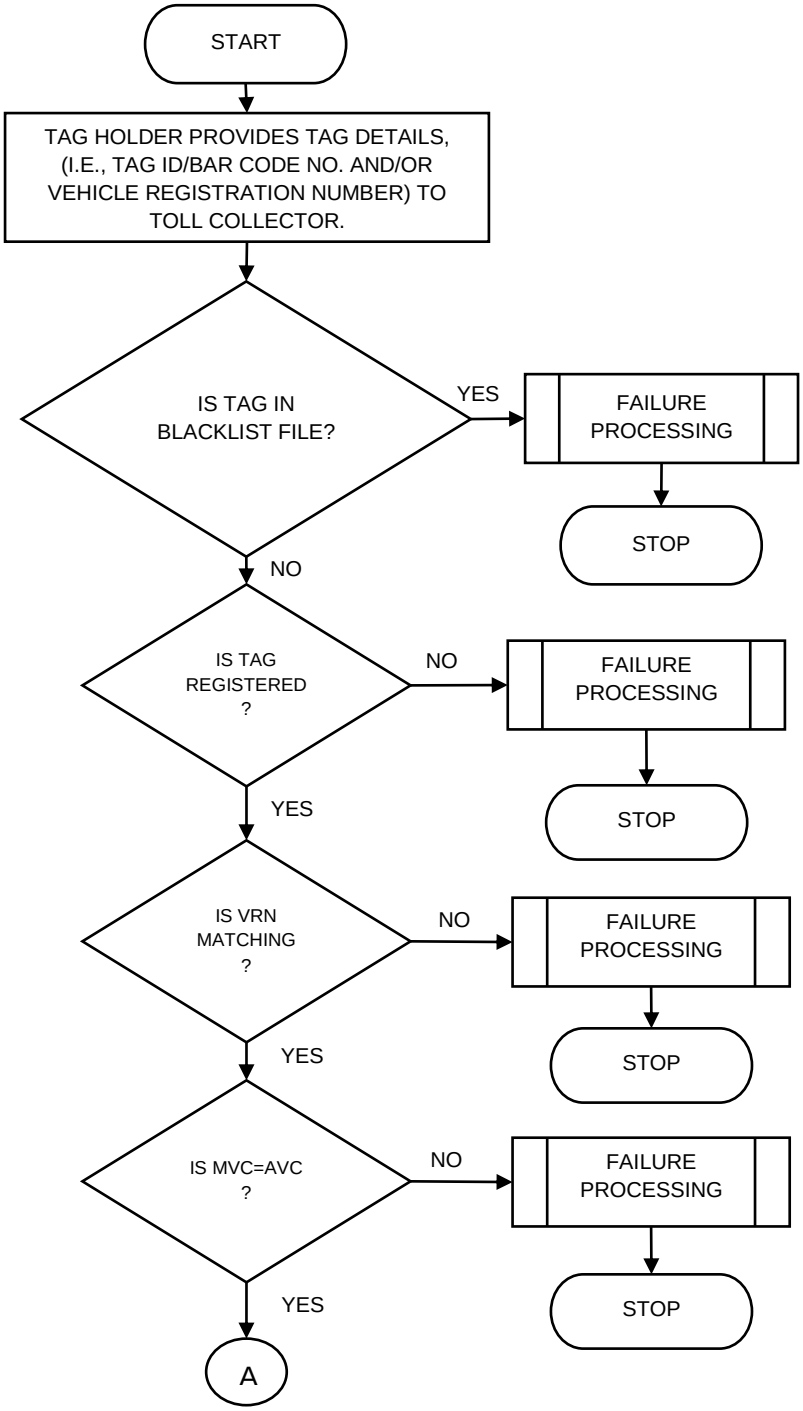
8.1 Pre-requisite

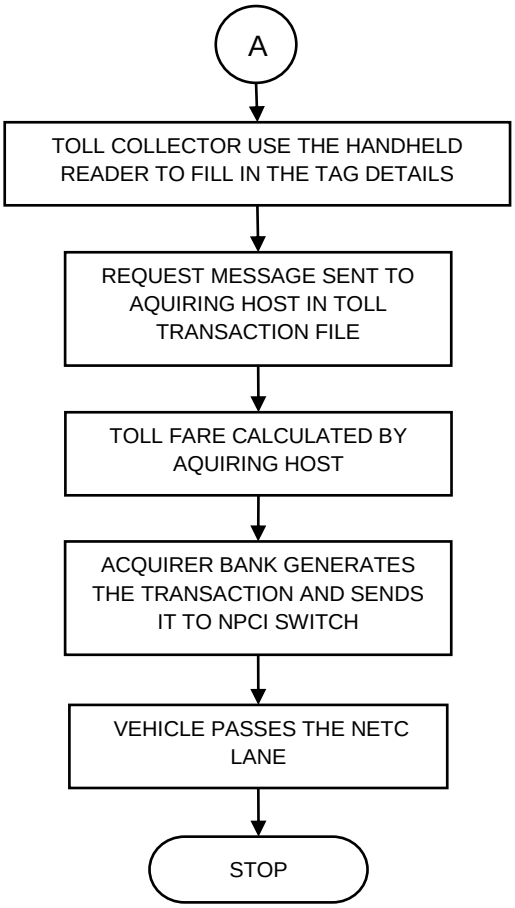
8.1.1 Tag Holder is registered on NETC mapper with following provisions in place

a. The tag affixed on the windshield of the vehicle issued by a valid issuer bank must be used for the transaction
b. Correct vehicle registration number should be mapped to the tag id on NETC Mapper

8.2 Tag Holder Complaint and Transaction processing

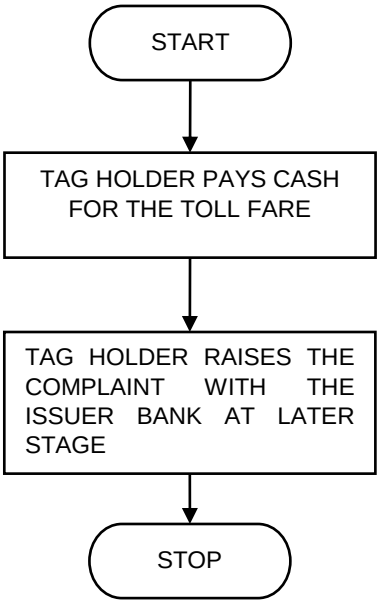
i. Customer complaint can be processed at the toll plaza as per the flowchart described below.
ii. Both Issuer and Acquirer bank should authenticate the root cause of the failure
    a. In case the tag was not valid or correctly personalized the issuer bank should replace the tag at no additional cost to tag holder within 48 hours of reporting such issue.
    b. In case the acquiring host system is not functioning, the acquiring host should rectify the issues within 7 working days of identification of the issue. In case the toll plaza system has the issue, then the toll plaza operator should rectify the issues within 7 working days of identification of the issue. Acquiring bank should report the same to IHMCL/ NHAI/NPCI.


START
TAG HOLDER PROVIDES TAG DETAILS, (I.E., TAG ID/BAR CODE NO. AND/OR VEHICLE REGISTRATION NUMBER) TO TOLL COLLECTOR.
IS TAG IN BLACKLIST FILE?
YES
FAILURE PROCESSING
STOP
NO
IS TAG REGISTERED ?
NO
FAILURE PROCESSING
STOP
YES
IS VRN MATCHING ?
NO
FAILURE PROCESSING
STOP
YES
IS MVC=AVC ?
NO
FAILURE PROCESSING
STOP
YES
A


A
TOLL COLLECTOR USE THE HANDHELD READER TO FILL IN THE TAG DETAILS
REQUEST MESSAGE SENT TO AQUIRING HOST IN TOLL TRANSACTION FILE
TOLL FARE CALCULATED BY AQUIRING HOST
ACQUIRER BANK GENERATES THE TRANSACTION AND SENDS IT TO NPCI SWITCH
VEHICLE PASSES THE NETC LANE
STOP

8.3 FAILURE PROCESSING

FAILURE PROCESSING



9 Roles and responsibilities of Toll Plaza Operator

1. Toll plaza operator has to enter into an agreement with an acquirer.
2. Toll Plaza Operator has to ensure the infrastructure required for providing the necessary transaction information as defined in section 2 “NETC Lane”
3. The Toll Plaza Operator has to abide by rules outlined by NHAI and IHMCL to participate in NETC system for toll collection, including that of PG and circulars issued by NPCI time to time.
4. The toll plaza operator must ensure the connectivity between the acquiring host and toll plaza server is maintained as per the TAT.
5. To send all the transactions which are executed at the lane controller to NETC system i.e. successful, fail, decline etc.
6. The toll plaza operator should support primary and secondary systems to ensure multiple connectivity with the acquirer host.
7. The toll plaza operator must adhere to the security standards outlined in the “Security and Risk management” section 5.0.
8. Toll Plaza Operator must ensure 24 x 7 working of toll plaza server with proper disaster recovery. Toll Plaza Operator must maintain the backup of transactional data, images, audit trails etc. for a period of one year. Ensure the generation of transactional messages as per specified format and transmit the payment transaction details to the acquirer.
9. Toll plaza operators should provide evidence [i.e. AVC profile, Vehicle Image etc.] as and when required by acquiring bank.
10. The Toll Plaza Operator must ensure that the toll plaza server has the updated exception list and same needs to be updated to lane controller defined SLA in the deed of adherence.
11. The toll plaza operator should provide at least one NETC lane in each direction.
12. The toll plaza operator should also provide the handheld readers as back up option in case the stationery reader in the NETC lane is not operational.
13. The toll plaza operators will have to accept new as well as existing tags issued by the issuer bank for the period of 90 days from the date of project gone live.

Note:

- *Toll plaza operator may opt for a monitoring application which will notify real time status of all the components involved in the NETC process.*
- *Closed loop circuit: Electromagnetic Induction Circuit may be used at the NETC Lane to identify incoming & outgoing of a vehicle. This may also help the reader in reading the tags on the vehicles in queue.*

10 Compliance for Toll Plaza Operator

i. Toll Plaza Operator should ensure to transmit securely all the transaction processed records to the acquirer within specified TAT as per the SLA mentioned in Deed of Adherence (DOA)/Supplementary Agreement.

ii. The toll plaza operator should provide minimum one dedicated lane in each direction for NETC.

iii. Toll Plaza Operator should have backup portable readers in case the NETC tag is not read by the fixed readers.

iv. Maintaining the updated exception list at toll plaza server.

v. Lane controller/toll plaza server should have the ability to detect multiple tag affixed on the same vehicle.

vi. The toll plaza operator should ensure all the NETC transactions which are received from lane controller should reach to NETC system through its acquirer within

   a. Ten minutes for online transaction processing and 3 days with limited liability as explained in the chapter 3, section 3.2 Failure scenarios.

   (NETC system will decline the transactions which are received after the defined TAT)

vii. Toll Plaza Operator should ensure that non tag vehicles are not allowed to pass through the NETC lanes. They should enforce the provision for laying a fine/penalty on such vehicles.

viii. Toll plaza operator should provide the required infrastructure for functioning of NETC lane.

ix. Toll Plaza Operator should ensure the availability of NETC lane as per the IHMCL/NHAI guidelines.

x. Toll plaza operator must maintain back up of transaction data, images, audit trails and any other information related to NETC transactions for the period of one year.

xi. Toll Plaza operator has to abide by the policies and guidelines outlined by the NHAI/IHMCL.

xii. Toll plaza operator should ensure the periodic audit of NETC infrastructure.

xiii. The image captured for NETC transaction should be clear as per the specification.

xiv. Any fraud detected at toll plaza for NETC transactions should be immediately reported to acquiring bank for blacklisting.

xv. If it is found that valid NETC tag is not read at the NETC lane and issuer bank provides evidence of precedence/subsequent transaction, then the Toll Plaza has to pay the penalty per instance as decided by IHMCL/NHAI.

(*IHMCL/NHAI should ensure the compliance of toll plaza operators)*

11 Audits

NPCI/IHMCL/NHAI or any designated agency appointed by NPCI/IHMCL/NHAI may conduct one or more regular or periodic procedural audits of the Toll Plaza Operator and its Third Party or both, at any time and from time to time for the purpose of determining compliance with the NETC guidelines and rules. The Toll Plaza Operator and its Third Party must fully cooperate with and promptly supply with all information and material upon request.

The Toll Plaza Operator should ensure: -

- The toll plaza operator may conduct their internal audit on periodic basis.
- The Toll Plaza Operator should retain audit reports that states when, who, what audited.
- Issues report of all non-compliance, to be share with the acquiring bank responsible for area audited.
- The acquiring bank will review regularly to all non-compliance issues raised during both internal & external audits.
- Audit logs should be produced & maintained for all activities, backed up regularly, secured, & retained at least for one year by the Toll Plaza Operator.

12 Toll Plaza On-boarding and Off-boarding by Acquirer

NETC transactions on the Toll plazas are sent to Acquirer bank for the purpose to transaction processing. In order to acquirer the toll plaza the banks and the toll plaza operators/concessioners needs to adhere to following process.

The NHAI toll plaza acquiring is categorized into two sections i.e.

1. Acquiring of new toll plaza
2. Re-acquiring of toll plazas

12.1 Pre-requisite for acquiring toll plazas

- Toll plaza must be authorized by NHAI/IHMCL to operate the NETC lane.
- Acquiring bank must be certified by NPCI for the NETC program.
- Toll plaza must have operational NETC lane as per the guidelines provided by the NHAI/IHMCL.
- Acquiring bank and Toll plaza operator/concessioner must adhere to CCH latest version of ICD document for processing the NETC transactions issued by NPCI/IHMCL/NHAI.
- Toll plaza operator/concessions must provide a consent letter to the acquiring bank for acquiring the toll plaza.
- Acquiring bank must self-certify them based on the toll plaza PoC test cases shared by NPCI.
- Provide the toll plaza ids to NPCI for on-boarding of toll plaza on NPCI system

12.2 Acquiring of new toll plazas

Any toll plaza which has not initiated any NETC transaction using FASTag is said to be a new toll plaza i.e. cash lane might be operative but the NETC lane was not operative.

- The acquiring banks must confirm that the NETC lane is operative as per the guidelines of NHAI/IHMCL.
- The connection to the NPCI system and the toll plaza server must be established.
- The acquiring bank must configure the toll fare calculation business rules, AVC mapping and pass fare rules on the acquiring host system.
- Acquiring host must do the one round of UAT testing as per the test cases defined by NPCI.

On successful completion of above activities, the acquiring banks can plan the go-live schedule with NPCI and on the agreed date, NETC lane on the plaza can be effectively made to go-live.

12.3 Re- Acquiring of toll plazas

A bank willing to acquire a toll plaza which is already processing transaction from NETC lane through other acquiring bank has to adhere to the process outlined in this sub-section.

- The acquiring bank should have approval from the IHMCL or consent letter from the Concessionaire to change the existing acquiring bank.
- The new acquiring banks must provide written confirmation on the start date. The obligations of the new acquirer will be in effect from the start date specified
- To facilitate the smooth roll over of the acquiring system one hour of downtime will be allowed at the NETC lanes of the toll plaza on an agreed date-time between existing acquirer, new acquirer, NPCI and toll plaza operator. It will be the responsibility of the new acquirer to inform the switch-over to all the stakeholders.
- Acquiring host must do the one round of UAT/POC testing as per the test cases defined by NPCI and share the logs and result with NPCI for validation.
- Toll plaza operator/concessionaire must ensure that all the transactions initiated at the NETC lane before the switchover must be processed by the existing acquiring bank. If toll plaza operator/concessionaire has failed to process the transaction with the existing acquirer, then these unprocessed transactions will not be settled. It is the responsibility of the new acquirer to ensure the compliance and also get a confirmation from toll plaza operator on the same.
- The new acquiring bank must configure the toll fare calculation business rules, AVC mapping and pass fare rules on the acquiring host system.
- The connection to the NPCI system and the toll plaza server must be established by the new acquirer.
- The new acquiring bank must configure the details of existing pass schemes in the new acquiring host.
- The existing acquiring bank must support all the stakeholders in settlement of the disputes raised by tag holder in the settled transaction for the period of 6 months
- The existing acquiring bank must obtain a no objection certificate from the toll plaza operators/ concessionaire and shall settle any pending amount within two months of the termination of the current contract

On successful completion of above activities, the acquiring banks can plan the go-live schedule with NPCI and on the agreed date NETC lane on the plaza can be effectively made to go-live.

13 Dispute Management process after roll over

Any disputes raised for the transactions processed before the roll over date should be honored by the previous acquirer and the toll plaza operator as per the TAT defined in the NETC PG.

Examples 1: Transaction details [Before Rollover]

Toll Plaza ID: 1234

Issuer Bank ID: 111111

Existing Acquirer ID: 222222

New Acquirer ID: 333333

Transaction ID/RRN: NETCNOV00001234

Transaction Amount: Rs. 100/-

CHARGEBACK [After Rollover]

Issuer bank "111111" raised a chargeback of Rs.25/- on acquirer "222222" for RRN "NETCNOV00001234"

Acquirer "222222" will process the chargeback raised by the issuer with toll plaza "1234" as per guidelines defined NETC PG

Note: The new acquiring bank "333333" will not be party to this disputed transaction. As mentioned above the previous acquirer will be liable to resolve the dispute and have to support the entire dispute lifecycle defined in NETC PG

Examples 2: Transaction details [Before Rollover]

Toll Plaza ID: 1234

Issuer Bank ID: 111111

Existing Acquirer ID: 222222

New Acquirer ID: 333333

Transaction ID/RRN: NETCNOV00001234

Transaction Amount: Rs. 100/-

DEBIT ADJUSTMENT [After Rollover]

Toll plaza operator has found vehicle class mismatch and is running short of money for transaction id "NETCNOV00001234". The toll plaza operator raises the debit adjustment with Acquirer bank "222222" of Rs.25/- The issuer "111111" account gets debited for said debit adjustment transaction.

Note: The new acquiring bank "333333" will not be party to this disputed transaction. As mentioned above the previous acquirer will be liable to resolve the dispute and have to support the entire dispute lifecycle defined in NETC PG.

14 Communication Channel

14.1 Channel Encryption Details

NETC network communication channel should be encrypted and secured to maintain the secrecy, integrity and eligibility of the data travelling through the medium.

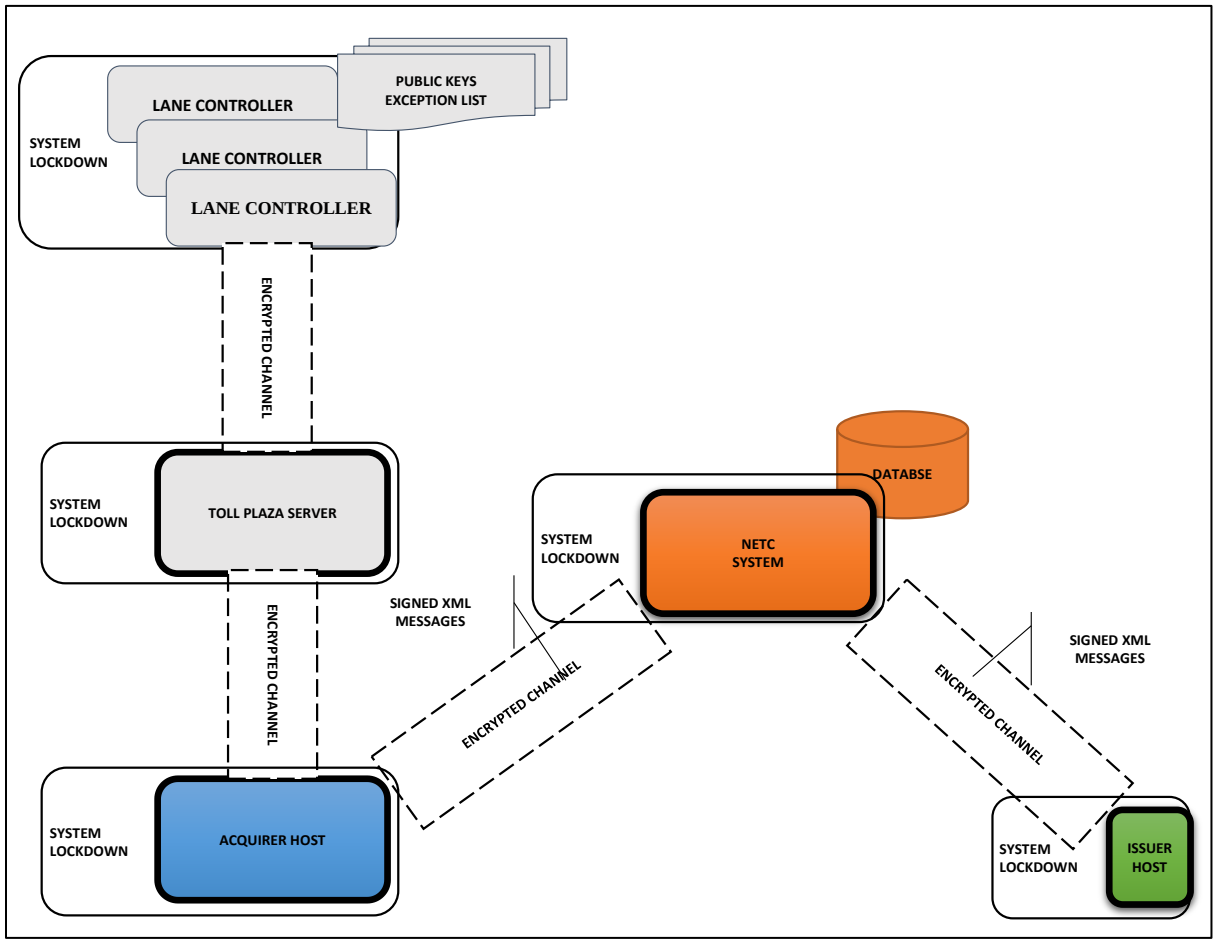


Figure 5 Network Encryption Channel

Acquiring and Toll Plaza Operator need to exchange the RSA public as demonstrated in below figure.

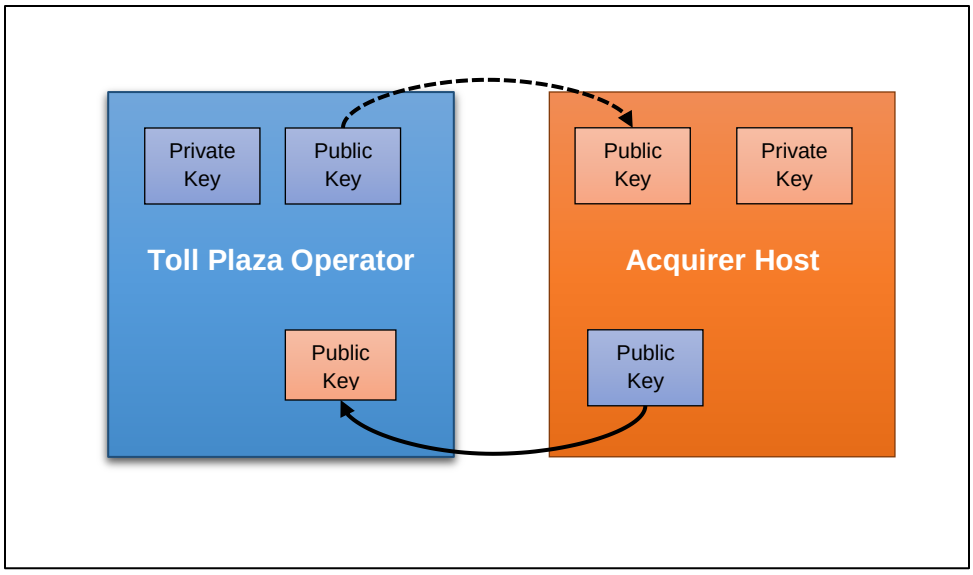


Figure 6- Key Exchange

14.2 Encryption Description:

- Toll Plaza Operator compresses the message to send over the Acquirer Host system network. (null compression method)
- Toll Plaza Operator signs the message using Toll Plaza Operator private key.
- When Toll Plaza Operator message received at Acquirer Host System, Acquirer Host System trusts message using Toll Plaza Operator Public Key.
- Handshake protocol will exchange public key certificate to authenticate server (i.e., Toll Plaza Operator) & client to each other.
- In case of RSA key exchange,
- Toll Plaza Operator generate pre-master secret.
- Pre-master secret is encrypted using Acquirer Host Public Key.
- Acquirer Host can decrypt the PMK (Pre Master Key) using Private Key.
- Client authentication by server is mandatory.

14.3 Certificate Format

1. Certificate formats
    a. 509 certificates v3: (etc.npci.org.in)
        i. We need fully qualified name
        ii. No wildcards in certificate
    b. TLS_RSA_WITH_AES_256_CBC_SHA
2. Cipher Suites
    a. Key exchange- RSA
        i. Authentication- RSA 2048
        ii. Block Cipher AES 256
    b. Hash –SHA 256 (HMAC & PRF)

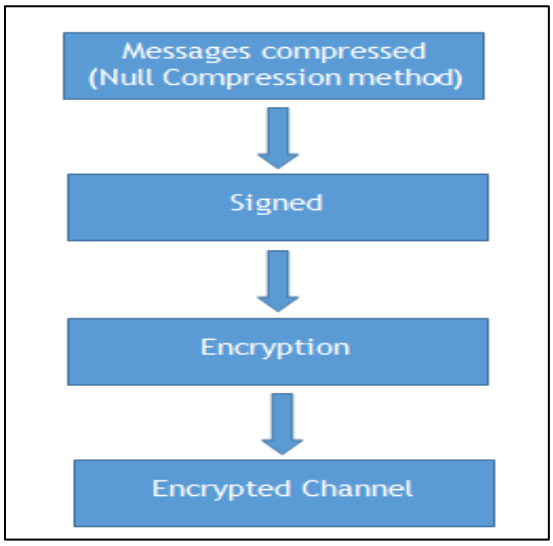


Figure 7 Flow Chart

3. Modes of Key Exchange between Acquirer-Toll Plaza:
    1. API based
    2. File based (with dedicated SFTP)
    3. Web host developed for acquirer-toll plaza

14.4 Sample Signed XML Message Format

XML Format

<etc:ReqDetails xmlns:etc="http://npci.org/etc/schema/">

<Head msgId="1234" orgId="SBIN" ts="2016-04-18T12:30:30" ver="1.0"/>

<Txn ts="2016-04-18T12:30:30" orgTxnId="" type="FETCH" refUrl="" refId="" note="" id="480E5361A1BE4392B2F9EFD5FAD606C3">

<Vehicle avc="" epc="ABCEF00000310" tagId="ABCEF00000309"></Vehicle>

</Txn>

<MessageSignature

…

…></MessageSignature>

<licensekey></licensekey>

</etc:ReqDetails>

15 Online API XML Message

API Protocol

All APIs are exposed over HTTPS protocol. Usage of open data format in XML and widely used protocol such as HTTP allows easy adoption by toll plazas and acquiring bank. API input data should be sent to a URL as XML document using Content-Type “application/xml” or “text/xml”. Following is the URL format for all API’s:

Actual production server address will be provided to members at the time of rollout and all API clients should ensure that actual URL is configurable.

https://<host>/etc/<api>/<ver>

host – API server address

etc – static value denoting the root of all API URL paths under the Electronic Toll Collection

api – name of the API URL endpoint.

ver – version of the API. Multiple versions of the same API may be available for supporting gradual migration. As of this specification, default version is "1.0".

15.1 Request Pay

This API called by toll plaza operator to either perform debit or credit leg of a transaction. Toll plaza operator pass this request to Acquirer bank. Acquirer bank will validate this request pay message and if valid, then, Acquirer bank will process this request pay message with Issuer bank via NPCI to get the toll fee requested by toll plaza. All the transaction which is processed by Lane Controller [both successful and failed] will be passed to Acquirer bank. The transaction id should be unique for particular toll plaza for last 3 days.

Transaction ID should be unique for per plaza and transaction ID generation logic should be combination of ***Plaza ID + Lane Id (Last three digits) +Transaction Date & Time.***

API type: Asynchronous API

Privilege to initiated API: Toll Plaza Operator

Sample Schema:

```
<etc:ReqPay xmlns:etc="http://npci.org/etc/schema/">
<Head msgId="0000000000000AB1002" orgId="IRBL" ts="2016-08-10T12:25:00" ver="1.0" />
<Meta>
</Meta>
<Txn id="0000000000000AB1002" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T12:25:00"
type="DEBIT/CREDIT/NON_FIN">
<EntryTxn id="0000000000000AB1002" tsRead="2016-08-10T12:25:00" ts="2016-08-10T12:25:00"
type="DEBIT/CREDIT/NON_FIN">
</EntryTxn>
</Txn>
  <!-- geocode: latitude, longitude in radians/decimals-->
<Plaza geoCode="11.00,11.00" id="1234" name="" subtype="State" type="Toll">
<EntryPlaza geoCode="11" id="1234" name="" subtype="State" type="Toll"/>
<Lane direction="N" id="a" readerId="12" Status="OPEN/CLOSE" Mode="Maintenance/Normal"
laneType="Dedicated/Hybrid/Handheld" ExitGate="" Floor=""/>
    <EntryLane direction="N" id="a" readerId="12" Status="OPEN/CLOSE" Mode="Maintenance/Normal"
laneType="Dedicated/Hybrid/Handheld" EntryGate="" Floor=""></EntryLane>
  <ReaderVerificationResult publicKeyCVV="" procRestrictionResult="" signAuth="NOT_VERIFIED"
tagVerified="NETC TAG" ts="2016-08-10T12:25:00" txnCounter="1234" txnStatus="SUCCESS"
vehicleAuth="UNKNOWN"  >
   <TagUserMemory>
    <Detail name="TagSignature" value="" />
    <Detail name="TagVRN" value="XXXXXXXXXXX" />
    <Detail name="TagVC" value="04" />
   </TagUserMemory>
</ReaderVerificationResult>
</Plaza>
 <!--TagID is same as EPCID-->
```

<Vehicle TID="34161FA82032D698020078E0" tagId="34161FA82032D698020078E0" wim="" staticweight="">
<VehicleDetails>
<Detail name="AVC" value="1001" />
<!-- Toll plaza should continue using existing AVC code at toll plaza and
Acq should do the mapping of AVC codes with NPCI Mapper VC-->
<Detail name="LPNumber" value="MH04BY13" />
</VehicleDetails>
</Vehicle>
<Payment>
<!-- ADD <tagid>@<IIN>.iin.npci-->
<Amount curr="INR" value="100" PriceMode="DISTANCE/POINT/CUSTOM" IsOverWeightCharged="TRUE/FALSE" PaymentMode="Tag/Cash/Card/QRCode/Other">
<OverwightAmount curr="INR" value="100" PaymentMode="Tag/Cash/Card/QRCode/Other"/>
</Amount>
</Payment>
<Signature …>
..
..
</Signature>
</etc:ReqPay>

Note: - When plaza type is "Parking" only then field entry gate, exit gate & floor is mandatory.

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:ReqPay xmlns:etc="http://<Host>/etc/schema/">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M

	ver	Version of the API. This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be "1.0"	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organization ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Meta		The data provided in the Meta element will be used for MIS and analysis purpose			M
Meta.Tag		The tag is defined in name value pairs to accommodate the MIS related parameters. The tag itself is optional and if the tag is present it is mandatory to have the two attributes with two codes mentioned below			M
	name	The name attribute will have the values as defined in the code table	STRING	1-50	O
	value	The data provided will have the details of transaction initiated time and end time in the device/medium	STRING	1-100	O
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the			M

		transaction and the same must be passed across all the entities.			
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment like Loan number, invoice number, etc.	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Enum	1-20 CREDIT DEBIT NON_FIN	C
	orgTxnId	Original transaction ID to be used for reversal/Refund transaction.	Alphanumeric	1-36	C
EntryTxn					M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M

	tsRead	Reader Read time is the time at which the tag is read by the RFID reader on NETC Lane. This attribute provides the time at which the tag was read by the reader.	ISODateTime	1-25	M
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Code length check is not there as it should be in the list of prescribed types	1-20 CREDIT DEBIT NON_FIN	C
Plaza		This element contains Information related to the **Plaza**			M
	ID	This attribute provides the unique ID mapped to the Plaza	Alphanumeric	1-6	M
	name	This attribute provides the name of the Plaza	Alphanumeric	1-50	O
	geoCode	This attribute provides the location in Latitude and Longitude of the Plaza.It will allow special characters like comma(,).dot(.)	Alphanumeric	1-99	M
	subtype	Sub type of the plaza	Alpha	1-20	M
	Type	This attribute provides the type of the Plaza based upon its location	Alphanumeric	1-20	M
EntryPlaza		This element contains Information related to the Plaza			M
	ID	This attribute provides the unique ID mapped to the Plaza	Alphanumeric	1-6	M
	name	This attribute provides the name of the Plaza	Alphanumeric	1-50	O
	geoCode	This attribute provides the location in Latitude and Longitude of the Plaza.It will allow special characters like comma(,).dot(.)	Alphanumeric	1-99	M
	subtype	Sub type of the plaza	Alpha	1-20	M
	Type	This attribute provides the type of the Plaza based upon its location	Alphanumeric	1-20	M

Lane		This element contains Information related to the NETC Lane. Lane details are mandatory if the Merchant Type is Toll			M
	ID	This attribute provides the unique NETC Lane ID present in the Plaza	Alphanumeric	1-6	M
	Direction	This attribute provides the direction of the lane	Alphanumeric	1-2	M
	reader ID	This attribute contains Information of the device reader present at the NETC Lane	Alphanumeric	0-20	M
	Status	Status of lane	Enums	Open or Close	M
	Mode	Mode of lane i.e. if lane status is Close Mode should be shown as Maintenance or else it will be shown as Normal	Enums	Maintenance or Normal	M
	laneType	Type of Lane in Paza	Enums	Dedicated/Hybrid/Handheld	M
	ExitGate	This attribute contains Information of EXIT GATE (Mandatory only for Parking)	Alphanumeric	1-3	C
	Floor	This attribute contains Information of Floor (Mandatory only for Parking)	Alphanumeric	1-3	C
EntryLane		This element contains Information related to the NETC Lane. Lane details are mandatory if the Merchant Type is Toll			M
	ID	This attribute provides the unique NETC Lane ID present in the Plaza	Alphanumeric	1-6	M
	Direction	This attribute provides the direction of the lane	Alphanumeric	1-2	M
	reader ID	This attribute contains Information of the device reader present at the NETC Lane	Alphanumeric	0-20	M
	Status	Status of lane	Enums	Open or Close	M
	Mode	Mode of lane i.e. if lane status is Close Mode should be shown as Maintenance or else it will be shown as Normal	Enums	Maintenance or Normal	M
	laneType	Type of Lane in Paza	Enums	Dedicated/Hybrid/Handheld	M
	EntryGate	This attribute contains Information of ENTRY GATE (Mandatory only for Parking)	Alphanumeric	1-3	C
	Floor	This attribute contains Information of Floor (Mandatory only for Parking)	Alphanumeric	1-3	C
ReaderV		This element contains Information related to			M

erificatio nResult		the verification done at the Reader.			
	ts	This attribute provides the time at which the tag was read by the reader.	ISODateTime	1-25	M
	signAuth	This attribute provides signature authentication details	Enums	VALID INVALID NOT_VERIFIED	M
	tagVerified	This attribute provides tag Verification Result	Enums	NETC TAG NON NETC TAG	M
	procRestri ctionResul t	This attribute provides details of the pass schemes to which the tag is mapped(if mapped)	Alphanumeric	1-256	O
	vehicleAut h	This attribute provides authentication details of the vehicle	Enums	YES NO UNKNOWN	M
	txnCounte r	This attribute provides transaction counter for the lane controller.	Numeric	1-4	M
	txnStatus	This attribute provides transaction status for the lane controller.	Enums	SUCCESS FAILED	M
	publicKey CVV	This attribute is used to verify public keys of issuer. Optional Field	Alphanumeric	16-32	O
TagUser Memory		This attribute provides details of the signature data present on the tag.			M
Detail		It contains detail of tag user memory			M
	name="Ta gSignatur e"	This attribute is used to know the TagSignature details of tag user memory	Alpha	TagSignature	M
	Value	Value of specific tag user memory	Hexadecimal	1-256	M
	name="Ta gVRN"	This attribute is used to know the TagVRN details of tag user memory	Alpha	TagVRN	M
	Value	Value of specific tag user memory	Alphanumeric	4-20	M
	name="Ta gVC"	This attribute is used to know the TagVC details of tag user memory	Alpha	TagVC	M
	Value	Value of specific tag user memory	Alphanumeric	1-5	M
Vehicle		This element contains Information related to the Vehicle			M
	TagID	This attribute provides the unique Tag ID mapped to the RFID Tag that is assigned to individual.	HexaDecimal	20-32	M

	TID	This attribute provides the unique TID mapped to the RFID Tag that is assigned to individual.	HexaDecimal	24-32	M
	staticweight	This attribute provides initial weight of the vehicle	Numeric	0-5	O
	wim	This attribute provides weight in motion of the vehicle captured by the reader while vehicle passing the toll plaza.	Alphanumeric		O
VehicleDetails		This element contains Information related to the Vehicle			M
Details		This element contains Information related to the Vehicle			M
	name="AVC"	This attribute provides Vehicle Class that is captured by the AVC present at the mapper.	Alpha	AVC	M
	Value	Value of avc	Alphanumeric	0-5	M
	name="LPNumber"	This attribute is used to know the license plate number	Alpha	LPNumber	M
	Value	Value of specific tag user memory	Alphanumeric	4-20	M
Payment		This element contains the information related to the payments in the transaction.			M
Amount		This element contains the information related to the amount in the transaction.			M
	curr	This attribute describes the currency of the transaction.	ALPHA	1-3	M
	value	The amount of transaction as per the currency given 5.12.2.	Numeric	fractionDigits: 2 0-18	M
	PriceMode	This attribute describes price mode of the transaction	Enum	DISTANCE/POINT/CUSTOM	M
	IsOverWeightCharged	This attribute decribes if over weight is applicable	Boolean	TRUE/FALSE	M
	PaymentMode	This attribute describes the payment mode of the transaction	Enum	Tag/Cash/Card/QRCode/Other	M
OverweightAmount		This element contains the information related to the overweight amount in the transaction.			C
	curr	This attribute describes the currency of the transaction.	ALPHA	1-3	M
	value	The amount of transaction as per the	Numeric	fractionDigits: 2	O

		currency given 5.12.2.		0-18	
	PaymentMode	This attribute describes the payment mode of the transaction	Enum	Tag/Cash/Card/QRCode/Other	M

15.2 Response Pay

The Response Pay API is initiated by Acquirer Bank to provide response for Request Pay. The transaction id should be same for entire leg of the transaction. Acquirer bank will pass the response to toll plaza server based on the success, failure and/or in-process transaction. The Acquirer bank will generate Response Pay for In-Process transactions in case toll plaza is not reachable/responded (Connect Timeout/Read Timeout) or Acquirer bank has accepted the transaction from toll plaza but not yet processed transaction with NPCI.

API type: Asynchronous API

Privilege to initiated API: Acquirer Bank

Sample Schema Success:

```
<?xml version="1.0" encoding="UTF-8"?>
 <etc:RespPay xmlns:etc="http://npci.org/etc/schema/">
 <Head msgId="0000000000000AB1002" orgId="DCBX" ts="2016-08-10T12:25:00" ver="1.0"/>
 <Meta>
 </Meta>
<Txn id="0000000000000AB1002" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T12:25:00" type="DEBIT" txnLiability="">
  <EntryTxn id="0000000000000AB1002" tsRead="2016-08-10T12:25:00" ts="2016-08-10T12:25:00" type="DEBIT">
  </EntryTxn>
</Txn>
<Resp plazaId="1234" respCode="00" result="ACCEPTED/DECLINED/INPROCESS" ts="2016-08-10T19:16:37" FareType="DISCOUNTED/EXEMPTED/FULL/RETURN">
  <Ref TollFare="" approvalNum="1234" errCode="000" settCurrency="INR"/>
 <!-- from NPCI Mapper-->
<Vehicle TID="34161FA82032D698020078E0" tagId="34161FA82032D698020078E0">
    <VehicleDetails>
     <Detail name="VEHICLECLASS" value="VC4" />
     <Detail name="REGNUMBER" value="MH04BY13" />
```

```
      <Detail name="COMVEHICLE" value="F" />
    </VehicleDetails>
  </Vehicle>
</Resp>
<Signature ……>
..
..
..
</Signature>
</etc:RespPay>
```

Sample Schema Failure:

1. Failure due to below response

HTTP Code	HTTP description	Validation
400	Bad Request	Validate Head element of message
401	Unauthorized	Issue with org id
405	Method Not allowed	Other than POST method are used in message
408	Request Timeout	Late response/Response after SLA
417	Expectation Failed	Issue with signature/Certificate
404	Not Found	Destination not live

2. Failure in Head or Txn element

```
<etc:RespPay xmlns:etc="http://npci.org/etc/schema/">
 <Head msgId="0000000000000AB1002" orgId="DCBX" ts="2016-08-10T12:25:00" ver="1.0"/>
 <Meta>
 </Meta>
  <Txn id="0000000000000AB1002" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T12:25:00"
type="DEBIT" txnLiability="">
  <EntryTxn id="0000000000000AB1002" tsRead="2016-08-10T12:25:00" ts="2016-08-10T12:25:00"
type="DEBIT">
  </EntryTxn>
 </Txn>
 <Resp plazaId="123456" respCode="102" result=" DECLINED" ts="2016-08-10T19:16:37" FareType=" ">
```

```
  <Ref />
  <Vehicle />
 </Resp>
 <Signature ……>
..
..
 </Signature>
</etc:RespPay>
```

3. Failure in message except Head & Txn element

```
<etc:RespPay xmlns:etc="http://npci.org/etc/schema/">
 <Head msgId="0000000000000AB1002" orgId="DCBX" ts="2016-08-10T12:25:00" ver="1.0"/>
 <Meta>
 </Meta>
  <Txn id="0000000000000AB1002" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T12:25:00"
type="DEBIT" txnLiability="">
  <EntryTxn id="0000000000000AB1002" tsRead="2016-08-10T12:25:00" ts="2016-08-10T12:25:00"
type="DEBIT">
  </EntryTxn>
 </Txn>
 <Resp plazaId="123456" respCode="000" result=" DECLINED" ts="2016-08-10T19:16:37" FareType=" ">
<Ref TollFare="" approvalNum="1234" errCode="172" settCurrency="INR"/>
  <Vehicle />
 </Resp>
 <Signature ……>
..
..
 </Signature>
</etc:RespPay>
```

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:RespPay xmlns:etc="http://<Host>/etc/schema/">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API. This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Organization id that created the message Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability NPCI will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Meta		The data provided in the Meta element will be used for MIS and analysis			M

		purpose			
Meta.Tag		The tag is defined in name value pairs to accommodate the MIS related parameters. The tag itself is optional and if the tag is present it is mandatory to have the two attributes with two codes mentioned below			M
	name	The name attribute will have the values as defined in the code table	STRING	1-50	O
	value	The data provided will have the details of transaction initiated time and end time in the device/medium	STRING	1-100	O
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format.	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment like Loan number, invoice number, etc.	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M

	type	This attribute describes the type of the transaction (For In-Process transactions this field will be optional)	Enum	1-20 CREDIT DEBIT NON_FIN	C
	orgTxnId	Original transaction ID when reversal/Refund has to be done. (Mandatory for transaction type credit)	Alphanumeric	1-36	C
	txnLiability	This attribute describes liability of toll plaza operator	Alphanumeric	1-36	O
EntryTxn					M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	tsRead	Reader Read time is the time at which the tag is read by the RFID reader on NETC Lane. This attribute provides the time at which the tag was read by the reader.	ISODateTime	1-25	M
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction (For In-Process transactions this field will be optional)	Code length check is not there as it should be in the list of prescribed types	1-20 CREDIT DEBIT NON_FIN	C
Resp		This element contains response of request pay message			M
	plazaId	This attribute provides the unique ID mapped to the Plaza	Alphanumeric	1-6	M
	respCode	This attribute provides helps us to identify the request for which	Numeric	3	M

		particular response change is generated			
	result	This attribute provides contains the final result of the transaction	Enum	ACCEPTED/DECLINED /INPROCESS	M
	ts	Timestamp to be filled by the acquirer	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	FareType	This attribute describes the fare type of the transaction (For In-Process transactions this field will be optional)	Enum	DISCOUNTED/EXEMPTED/FULL/RETURN	C
Ref		This element contains reference details within the transaction			M
	TollFare	This attribute describes the toll fare of the transaction (For In-Process transactions this field will be optional)	Decimal upto 2	1-18	C
	approval Num	This attribute describes approval Reference number generated by the authorized system	Alphanumeric	1-4	O
	errCode	This attribute provides helps us to identify the request for which particular error is generated (For In-Process transactions this field will be optional)	Numeric	3	M
	settCurrency	This attribute describes settlement currency	Aplha	1-3	M
Vehicle		This element contains Information related to the Vehicle			M
	TagID	This attribute provides the unique Tag ID mapped to the RFID Tag that is assigned to individual.	HexaDecimal	20-32	M
	TID	This attribute provides the unique TID mapped to the RFID Tag that is assigned to individual.	HexaDecimal	24-32	M
VehicleDetails		This element contains Information related to the Vehicle			M
Details		This element contains Information related to the Vehicle			M

	name="VEHICLECLASS"	This attribute provides Vehicle Class fetched by acquirer bank from the NPCI mapper	Alpha	VEHICLECLASS	M
	Value	Value of VEHICLECLASS	Alphanumeric	0-5	M
	name="REGNUMBER"	This attribute is used to know the register number	Alpha	REGNUMBER	M
	Value	Value of specific tag user memory	Alphanumeric	4-20	M
	name="COMVEHICLE"	This attribute is used to know if the vehicle is a commercial vehicle or non-commercial vehicle	Alpha	COMVEHICLE	M
	Value	Providing value to know if it's a commercial vehicle	Boolean	F/T	M

15.3 Request Plaza Details

This API is called by Acquiring Bank to get latest plaza details (i.e., lane details, plaza vehicle class, toll fare rules & pass schemes) from toll plaza operator.

API type: Synchronous API

Privilege to initiated API: Acquirer Bank

Sample Schema:

```
<etc:RequestPlazaDetails xmlns:etc="http://npci.org/etc/schema/">
 <Head msgId="0000000000000AB1002" orgId="DCBX" ts="2016-08-10T12:25:00" ver="1.0" />
 <Txn id="0000000000000AB1002" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T12:25:00" type="FETCH"></Txn>
 <PLaza id="">
  <RequestType>
   <Item name=" BankDetails"></Item>
   <Item name="LaneDetails"></Item>
   <Item name="PlazaVehicleClass"></Item>
   <Item name="TollFareRules"></Item>
   <Item name="PassSchemes"></Item>
  </RequestType>
 </PLaza>
<Signature ……>
..
..
..
</Signature>
</etc:RequestPlazaDetails>
```

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:RequestPlazaDetails xmlns:etc="http://<Host>/etc/schema/">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API. This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The member has to request NPCI with a required organisation ID. Based on availability NPCI will register and assign the same. Basically it should be a short code of the bank.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the			M

		originator of the transaction and the same must be passed across all the entities.			
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format (which will be printed on Pass book).	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment like Loan number, invoice number, etc.	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Enum	1-20 FETCH	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done. It is mandatory in case of CREDIT transactions.	Alphanumeric	1-36	O
Plaza		This element contains Information related to the **Plaza**			M
	ID	This attribute provides the unique ID mapped to the Plaza	Alphanumeric	1-6	M
RequestType		This element contains the list of details which are requested by acquirer bank			M
Item		This element contains list of details			

	name	This attribute describes the list of item names which are requested by acquirer bank	Enum	LaneDetails ,PlazaVehicleClass, TollFareRules and PassSchemes	M

15.4 Response Plaza Details

This is API the response of the request plaza details API and is always issued by toll plaza operator. Toll Plaza Operator will share latest lane details, plaza vehicle class, toll fare rules & pass schemes.

API type: Synchronous API

Privilege to initiated API: Toll Plaza Operator

Sample Schema Success:

```
<etc:RespPlazaDetails xmlns:etc="http://npci.org/etc/schema/">
  <Head msgId="0000000000000AB1002" orgId="DCBX" ts="2016-08-10T12:25:00" ver="1.0" />
  <Txn id="0000000000000AB1002" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T12:25:00" type="FETCH"></Txn>
 <PLaza geoCode="11.00,11.00" id="1234" name="Test Plaza" subtype="State" type="Toll" address="" fromDistrict="" toDistrict="" agencyCode="">
   <BankDetails>
         <Detail name="BankName" value=" " />
         <Detail name="ACnumber" value=" " />
         <Detail name="IFSC" value=" " />
         <Detail name="CustomerName" value=" " />
  <BankDetails />
    <LaneDetails>
   <Lane  id="1234">   <!—All Lane details will be shared -->
    <Detail name="Direction" value="N" />
    <Detail name="ReaderID" value="1234" />
```

```
    <Detail name="LaneStatus" value="OPEN/CLOSE" />
    <Detail name="Mode" value="Maintenance/Normal" />
    <Detail type="LaneType" value="Dedicated/Hybrid/Handheld"/>
   </Lane>
   <Lane  id="4567">
    <Detail name="Direction" value="N" />
    <Detail name="ReaderID" value="1234" />
    <Detail name="LaneStatus" value="OPEN/CLOSE" />
    <Detail name="Mode" value="Maintenance/Normal" />
    <Detail type="LaneType" value="Dedicated/Hybrid/Handheld"/>
   </Lane>
  </LaneDetails>

  <PlazaVehicleClass>   <! -- Plaza VC mapping will be shared-->
   <VehicleClass id="VC4" name="Car/Jeep/Van">
    <Detail name="Description" value="Multi Axle Vehicle" />
   </VehicleClass>
   <VehicleCLass id="VC5" name="LCV">
    <Detail name="Description" value="Multi Axle Vehicle" />
   </VehicleCLass>
  </PlazaVehicleClass>

  <TollFareRules>         <!-- Latest toll fare rules will be shared-->
   <FareType id="1" name="Single">
    <VehicleClass id="VC4" name="Car/Jeep/Van" >
     <Detail name="COMVEHICLE" value="T/F" />
     <Detail name="amount" value="30.00" />
     <Detail name="Currency" value="INR"/>
    </VehicleClass>
   </FareType>
   <FareType id="2" name="Return">
```

```
    <VehicleClass id="VC4" name="Car/Jeep/Van" >
     <Detail name="COMVEHICLE" value="T/F" />
     <Detail name="amount" value="30.00" />
     <Detail name="Currency" value="INR"/>
    </VehicleClass>
   </FareType>
   <FareType id="2" name="Daily">
    <VehicleClass id="VC4" name="Car/Jeep/Van" >
     <Detail name="COMVEHICLE" value="T/F" />
     <Detail name="Amount" value="30.00" />
     <Detail name="Currency" value="INR"/>
    </VehicleClass>
   </FareType>
  </TollFareRules>

  <PassSchemes>        <!-- Latest Pass scheme rules at toll plaza will be shared -->
   <Pass id="1" name="Scheme1">
    <Detail name="VehicleClassId" value="VC4"/>
    <Detail name="COMVEHICLE" value="T/F" />
    <Detail name="PassType" value="Monthly/Local/CalanderMonthly" />
    <Detail name="ALLOWEDTRIPS" value="30" />
    <Detail name="ENTRYPLAZAID" value="123456" />
    <Detail name="EXITPLAZAID" value="123456" />
    <Detail name="Description" value="Inline" >Concessional fee for the multiple trips within a day and monthly pass for use of section continuously and frequently will be @1.5 times and 30 Times of single journey rates respectively</Detail>
    <Detail name="Amount" value="1000.00" />
    <Detail name="Currency" value="INR"/>
   </Pass>
   <Pass id="1" name="Scheme1">
    <Detail name="VehicleClassId" value="VC5"/>
```

<Detail name="COMVEHICLE" value="T/F" />

<Detail name="PassType" value="Monthly/Local/CalanderMonthly" />

<Detail name="ALLOWEDTRIPS" value="30" />

<Detail name="ENTRYPLAZAID" value="123456" />

<Detail name="EXITPLAZAID" value="123456" />

<Detail name="Description" value="Inline" >Concessional fee for the multiple trips within a day and monthly pass for use of section continuously and frequently will be @1.5 times and 30 Times of single journey rates respectively</Detail>

<Detail name="Amount" value="1500.00" />

<Detail name="Currency" value="INR"/>

</Pass>

</PassSchemes>

</PLaza>

<Signature ……>

..

..

..

</Signature>

</etc:RespPlazaDetails>

Response for Failure:

If Failure: HTTP codes

HTTP Code	HTTP description	Validation
400	Bad Request	Validate Head element of message
401	Unauthorized	Issue with org id
405	Method Not allowed	Other than POST method are used in message
408	Request Timeout	Late response/Response after SLA
417	Expectation Failed	Issue with signature/Certificate
404	Not Found	Destination not live

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:RespPlaza Details xmlns:etc="http://<Host>/etc/schema/">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API. This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M

Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	Id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	Note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment like Loan number, invoice number, etc.	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	Ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	Type	This attribute describes the type of the transaction	Enum	1-20 [FETCH]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
Plaza		This element contains Information related to the **Plaza**			M
	ID	This attribute provides the unique ID mapped to the Plaza	Alphanumeric	1-6	M

	name	This attribute provides the name of the Plaza	Alphanumeric	1-50	O
	geoCode	This attribute provides the location in Latitude and Longitude of the Plaza.It will allow special characters like comma(,).dot(.)	Alphanumeric	1-99	M
	subtype	Sub type of the plaza	Alpha	1-20	M
	Type	This attribute provides the type of the Plaza based upon its location	Alphanumeric	1-20	M
	address	This attribute provides the address of the plaza	Alphanumeric with special characters	1-50	O
	fromDistrict	This attribute provides the from district plaza detail	Alpha	1-50	O
	toDistrict	This attribute provides the to district plaza detail	Alpha	1-50	O
	agencyCode	This attribute provides the unique ID of plaza which is generated by NPCI/IHMCL	Alpha	5	M
BankDetails		This elements describes the bank details of plaza			O
LaneDetails		This elements describes the lane details			M
Lane		This elements provides details of lane			
	ID	This attribute provides the unique NETC Lane ID present in the Plaza	Alphanumeric	1-3	M
Details		This element contains Information related to the Lane			M
	name="Direction"	This attribute provides details of Lane direction	Alpha	Direction	M
	Value	Value of Direction	Alpha	1-2	M
	name="ReaderID"	This attribute provides details of Reader ID	Alpha	ReaderID	M
	Value	This attribute contains Information of the device reader present at the NETC Lane	Alphanumeric	0-20	M
	name="LaneStatus"	This attribute provides details of Lane Status	Alpha	LaneStatus	M

	Value	Status of lane	Enums	Open or Close	M
	name="Mode"	This attribute provides details of lane mode	Alpha	Mode	M
	Value	Mode of lane i.e. if lane status is Close Mode should be shown as Maintenance or else it will be shown as Normal	Enums	Maintenance or Normal	M
	name="LaneType"	This attribute provides details of Lane type	Alpha	LaneType	M
	Value	Type of Lane in Paza	Enums	Dedicated/Hybrid/Handheld	M
PlazaVehicleClass		This elements provides details of plaza vehicle class			M
VehicleClass		This elements describes details of vehicle class			M
	ID	This attribute describes the vehicle class ID	Alphanumeric	1-4	M
	name	This attribute describes the name of vehicle class	Alpha	1-20	M
Detail		This elements provides details of vehicle class			
	name	This attribute provides description of vehicle class	Alpha	1-20	M
	value	This attribute provides the value for the description	Alpha	1-20	M
TollFareRules		This element provides details of toll fare			M
FareType		This element provides the type of fare			M
	ID	This attribute provides the Fare type ID	Numeric	1-2	M
	name	This attribute describes the type of fare	Alpha	1-10	M
VehicleClass		This elements describes details of vehicle class			M
	ID	This attribute describes the vehicle class ID	Alphanumeric	1-4	M
	name	This attribute describes the name of vehicle class	Alpha	1-20	M

Detail		This elements provides details of vehicle class			
	name="COMVEHICLE"	This attribute provides detail of Commercial vehicle	Alpha	COMVEHICLE	M
	value	This attribute provides the value for the commercial vehicle	Boolean	T/F	M
	name="Amount"	This attribute provides the final settlement Amount	Alpha	Amount	M
	value	This attribute provides the value for the amount	Decimal upto 2	1-18	M
	name="Currency"	This attribute provides description of vehicle class	Alpha	Currency	M
	value	This attribute provides the value for the currency	Alpha	1-3	M
PassSchemes		This element descibes the details of pass scheme provided by toll plaza			
Pass		This elements provides pass details			
	ID	This attribute describes the pass ID	Alphanumeric	1-4	M
	name	This attribute describes the name of schemes	Alpha	1-20	M
Detail		This elements provides details of pass schemes			
	name="VehicleClassId"	This attribute provides detail of vehicle class id	Alpha	VehicleClassId	M
	value	This attribute provides the value for the vehicle class id	Alphanumeric	1-4	M
	name="COMVEHICLE"	This attribute provides detail of Commercial vehicle	Alpha	COMVEHICLE	M
	value	This attribute provides the value for the commercial vehicle	Boolean	T/F	M
	name="PassType"	This attribute provides detail type of pass	Alpha	PassType	M
	value	This attribute provides the value for pass type	Enum	Monthly/Local/CalanderMonthly	M
	name="ALLOWEDTRIPS"	This attribute provides detail of trips allowed	Alpha	ALLOWEDTRIPS	M
	value	This attribute provides the value	Numeric	1-2	M

		for allowed trips			
	name="ENTRY PLAZAID"	This attribute provide entry plaza id	Alpha	ENTRYPLAZAID	M
	value	This attribute provides the value for enry plaza id	Numeric	1-10	M
	name="EXITPL AZAID"	This attribute provide exit plaza id	Alpha	EXITPLAZAID	M
	value	This attribute provides the value for exit plaza id	Numeric	1-10	M
	name="Descri ption"	This attribute provides detail of pass description	Alpha	Description	M
	value	This attribute provides the value for pass description	Inline Alpha	Inline	M
	name="Amoun t"	This attribute provides detail of amount	Alpha	Amount	M
	value	This attribute provides the value for pass amount	Decimal upto 2	1-18	M
	name="Curren cy"	This attribute provides detail of Currency	Alpha	Currency	M
	value	This attribute provides the value for currency	Alpha	1-3	M

15.5 Request Tag Details

This API called by toll plaza operator to get details of vehicle passed through its toll plaza from the acquirer bank. The details can be fetched by providing either TID or vehicle registration number or Tag ID.

API type: Synchronous API

Privilege to initiated API: Toll Plaza Operator

Sample Schema:

<etc:ReqTagDetails xmlns:etc="http://npci.org/etc/schema/">
<Head ver="1.0" ts="2016-08-10T14:28:22" orgId="IRBL" msgId="00000000000000000314" />
<Txn id="00000000000000000314" note="" refId="" refUrl="" ts="2016-08-10T14:28:22" type="FETCH" orgTxnId="">
<Vehicle TID="" vehicleRegNo="" tagId="34161FA82032D69802008A60" />
</Txn>
<Signature ….>
..
..
</Signature>
</etc:ReqTagDetails>

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:ReqTagDetails xmlns:etc="https://<host>/etc/schema">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production	Alphanumeric	length is not checked as version should be “1.0”	M

		version is "1.0".			
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The member has to request NPCI with a required organisation ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the bank.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M

	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Enum	1-20 [FETCH]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
Vehicle		This element contains Information related to the Vehicle			M
	tagID	This attribute provides the unique Tag ID mapped to the RFID Tag that is assigned to individual.	HexaDecimal	20-32	C
	TID	This attribute provides the unique TID mapped to the RFID Tag that is assigned to individual.	HexaDecimal	24-32	C
	vehicleRegNo	Registration Number of the vehicle			C

15.6 Response Tag Details

This API is response of ReqTagDetails API and is always issued by Acquirer Bank. Vehicle Element will change according to the input provided. If request is initiated with TagId, in response Tag ID, TID and vehicle registration number will be part of Vehicle Element. If request is initiated with TID, in response TID, Tag ID and vehicle registration number will be part of Vehicle Element and if request is initiated with and vehicle registration number, in response vehicle detail, Tag ID and TID will be part of Vehicle Element. If request is initiated with Tag ID and TID both, then in response only vehicle registration number will be part of Vehicle Element. Multiple Vehicle Element will be available if same vehicle has 2 Tag IDs.

API type: Synchronous API

Privilege to initiated API: Acquirer Bank

Sample Schema Success:

```
<etc:RespTagDetails xmlns:etc="http://npci.org/etc/schema/">
 <Head msgId="00000000000000000314" orgId="DCBX" ts="2016-08-10T14:28:22" ver="1.0"/>
 <Txn id="00000000000000000314" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T14:28:22"
type="FETCH">
  <Resp respCode="000" result="SUCCESS" successReqCnt="1" totReqCnt="1" ts="2016-08-10T19:57:02">
   <Vehicle errCode="000">
    <VehicleDetails>
        <!-- details from NPCI mapper-->
     <Detail name="TAGID" value="34161FA82032D69802008A60"/>
     <Detail name="REGNUMBER" value="ZZ00BB007"/>
     <Detail name="TID" value="34161FA82032D69802008A60"/>
     <Detail name="VEHICLECLASS" value="VC4"/>
     <Detail name="TAGSTATUS" value="A"/>
     <Detail name="EXCCODE" value="01"/>
     <Detail name="COMVEHICLE" value="F"/>
    </VehicleDetails>
   </Vehicle>
  </Resp>
 </Txn>
 <Signature ……>
..
..
 </Signature>
</etc:RespTagDetails>
```

Sample Schema Failure:

1. Failure in Head or Txn element

<etc:RespTagDetails xmlns:etc="http://npci.org/etc/schema/">

<Head msgId="00000000000000000314" orgId="DCBX" ts="2016-08-10T14:28:22" ver="1.0"/>

<Txn id="00000000000000000314" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T14:28:22" type="FETCH">

<Resp respCode="103" result="FAILURE" successReqCnt="1" totReqCnt="1" ts="2016-08-10T19:57:02" />

</Txn>

<Signature ……>

..

..

</Signature>

</etc:RespTagDetails>

2. Failure in message except Head & Txn element

<etc:RespTagDetails xmlns:etc="http://npci.org/etc/schema/">

<Head msgId="00000000000000000314" orgId="DCBX" ts="2016-08-10T14:28:22" ver="1.0"/>

<Txn id="00000000000000000314" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T14:28:22" type="FETCH">

<Resp respCode="000" result="FAILURE" successReqCnt="1" totReqCnt="1" ts="2016-08-10T19:57:02">

<Vehicle errCode="125"/>

</Resp>

</Txn>

<Signature ……>

..

..

</Signature>

</etc:RespTagDetails>

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:RespTagDetails xmlns:etc="https://<host>/etc/schema">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The member has to request NPCI with a required organisation ID. Based on availability NPCI will register and assign the same. Basically it should be a short code of the bank.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M

Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Enum	1-20 [FETCH]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
Resp		This element contains the response details of the transaction.			M
	respCode	The response code helps us identify the request for which particular response change is generated.	Numeric	3	M
	result	This attribute contains the final result of the transaction.	Enum	ACCEPTED /DECLINED	M
	success	This attribute contains Success	Numeric	1-2	M

	ReqCnt	count			
	totReqCnt	This attribute contains Total count	Numeric	1-2	M
	ts	The attribute timestamp to be filled by acquirer bank	ISODateTime	25 (It should be 10 as format is YYYY-MM-DD)	M
Vehicle		This element contains Information related to the Vehicle			M
	tagID	This attribute provides the unique Tag ID mapped to the RFID Tag that is assigned to individual.	HexaDecimal	20-32	C
	TID	This attribute provides the unique TID mapped to the RFID Tag that is assigned to individual.	HexaDecimal	24-32	C
	vehicleRegNo	Registration Number of the vehicle	Alphanumeric	4-20	C
	VEHICLECLASS	This attribute provides value of VEHICLECLASS	Alphanumeric	0-5	C
	TAGSTATUS	This attribute provides value of Tag Status	Alphabet	1	C
	EXCCODE	This attribute provides value of exception code	Numeric	2	C
	COMVEHICLE	This attribute provides value of commercial vehicle flag	Boolean	T/F	C

15.7 SyncTime Request

This API is initiated by toll plaza operator to sync its system's time with the Acquiring bank host or through NTP server.

API type: Synchronous API

Privilege to initiated API: Toll Plaza Operator

Sample Schema:

```
<etc:ReqSyncTime xmlns:etc="http://npci.org/etc/schema/">
 <Head ver="1.0" ts="2016-08-10T19:08:37" orgId="IRBL" msgId="0001" />
        <Signature ……>
         ..
         ..
        ..
        </Signature>
</etc:ReqSyncTime>
```

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:ReqSyncTime xmlns:etc="http://<Host>/etc/schema/">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be "1.0"	M

	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M

15.8 SyncTime Response

This response is generated by Acquirer bank in request to sync time request API.

API type: Synchronous API

Privilege to initiated API: Acquirer Bank

Sample Schema Success:

```
<etc:RespSyncTime xmlns:etc="http://npci.org/etc/schema/">
  <Head msgId="0001" orgId="DCBX" ts="2016-08-10T19:08:37" ver="1.0"/>
  <Resp respCode="000" result="SUCCESS" ts="2016-08-10T19:56:23">
    <Time serverTime="2016-08-10T19:56:23"/>
  </Resp>
 <Signature …….>
```

..

..

</Signature>

</etc:RespSyncTime>

Sample Schema Failure:

<etc:RespSyncTime xmlns:etc="http://npci.org/etc/schema/">

<Head msgId="@0001" orgId="DCBX" ts="2016-08-10T19:08:37" ver="1.0"/>

<Resp respCode="104" result="FAILURE" ts="2016-08-10T19:56:23">

<Time />

</Resp>

<Signature …….>

..

</Signature>

</etc:RespSyncTime>

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:RespSyncTime xmlns:etc="http://<Host>/etc/schema/">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M

	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability NPCI will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Resp		This element contains response of sync time message			M
	respCode	This attribute provides helps us to identify the request for which particular response change is generated	Numeric	3	M
	result	This attribute provides contains the final result of the transaction	Enum	SUCCESS / FAILURE	M
	ts	Timestamp to be filled by the acquirer	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
Time		This element contains timestamp of server			
	serverTime	This attribute provides helps us to identify the server time	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M

15.9 Toll Plaza Heart Beat

A heartbeat message in signal processing is a message sent from an originator to a destination that enables the destination to identify if and when the originator fails or is no longer available. Heartbeat messages are typically sent non-stop on a periodic or recurring basis from the originator's start-up until the originator's shutdown.

This API will be initiated by Toll plaza to report the availability status of each lane of the plaza & the acquiring bank will consume the API & store it in their database.

API type: Asynchronous API

Privilege to initiated API: Toll Plaza

Sample Schema:

```
<etc:TollplazaHbeatReq xmlns:etc="http://npci.org/etc/schema/">
 <Head msgId="0000000000000AB1002" orgId="IRBL" ts="2016-08-10T12:25:00" ver="1.0" />
 <Txn id="0000000000000AB1002" note="" refId="" refUrl="" ts="2016-08-10T12:25:00" type="Hbt" orgTxnId="">
  <Meta>
   <Meta1 name="" value=""/>
   <Meta2 name="" value=""/>
  </Meta>
  <HbtMsg type="ALIVE" acquirerId=""/>
  <Plaza geoCode="11.00,11.00" id="1234" name="Test Plaza" subtype="State" type="Toll" address="" fromDistrict="" toDistrict="" agencyCode="">
   <Lane id="1234" direction="E|W|N|S" readerId="" Status="OPEN/CLOSE" Mode="Maintenance/Normal" laneType="Dedicated/Hybrid/Handheld"/>
   <Lane id="5678" direction="E|W|N|S" readerId="" Status="OPEN/CLOSE" Mode="Maintenance/Normal" laneType="Dedicated/Hybrid/Handheld"/>
  </Plaza>
 </Txn>
 <Signature ……>
..
```

..

</Signature>

</etc:TollplazaHbeatReq>

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:ReqQueryExceptionList xmlns:etc="https://<host>/etc/schema">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability NPCI will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M

	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Enum	1-20 [FETCHEXCEPTION]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O

Meta		The data provided in the Meta element will be used for MIS and analysis purpose			O
Meta.Tag		The tag is defined in name value pairs to accommodate the MIS related parameters. The tag itself is optional and if the tag is present it is mandatory to have the two attributes with two codes mentioned below			O
	name	The name attribute will have the values as defined in the code table	STRING	1-50	
	value	The data provided will have the details of transaction initiated time and end time in the device/medium	STRING	1-100	
HbtMsg		This element contains transaction status request list which contains the status list			M
	type	The attribute contains the type of the Heart beat Request.	Code	ALIVE	M
	acquirerId	The attribute contains the id of the acquirer.	Numeric	6	
Plaza		This element contains Information related to the **Plaza**			M
Lane		This elements provides details of lane			
	ID	This attribute provides the unique NETC Lane ID present in the Plaza	Alphanumeric	1-3	M
	Direction	This attribute provides the direction of the lane	Alphanumeric	1-2	M
	reader ID	This attribute contains Information of the device reader present at the NETC Lane	Alphanumeric	0-20	M
	Status	Status of lane	Enums	Open or Close	M
	Mode	Mode of lane i.e. if lane status is Close Mode should be shown as Maintenance or else it will be shown as Normal	Enums	Maintenance or Normal	M
	laneType	Type of Lane in Paza	Enums	Dedicated/Hybrid/Handheld	M

15.10 Toll Plaza Heart Beat Response

This response is generated by toll plaza operator in request to toll plaza heart beat API.

Note: In case request message is accepted by Acquirer then it will responsed with result= "SUCCESS", if there is any technical or business validation failure then acquirer will send response with result="FAILURE".

API type: Asynchronous API

Privilege to initiated API: Acquirer

Sample Schema Success:

```
<etc:TollplazaHbeatResp xmlns:etc="http://npci.org/etc/schema/">
 <Head ver="1.0" ts="2016-08-10T12:25:00" orgId="PATH" msgId="0000000000000AB1002"/>
 <Txn id="0000000000000AB1002" note="" refId="" refUrl="" ts="2016-08-10T12:25:00" type="Hbt" orgTxnId="">
  <Resp errCode="" result="SUCCESS|FAILURE" ts="2016-08-10T12:25:00"/>
 </Txn>
 <Signature ……>
  ..
  ..
  ..
 </Signature>
</etc:TollplazaHbeatResp>
```

Sample Schema Failure:

1. Failure due to below reasons

HTTP Code	HTTP description	Validation
400	Bad Request	Validate Head element of message
401	Unauthorized	Issue with org id
405	Method Not allowed	Other than POST method are used in message
408	Request Timeout	Late response/Response after SLA
417	Expectation Failed	Issue with signature/Certificate
404	Not Found	Destination not live

2. Failure except above reasons

<etc:TollplazaHbeatResp xmlns:etc="http://npci.org/etc/schema/">

<Head ver="1.0" ts="2016-08-10T12:25:00" orgId="DCBX" msgId="0000000000000AB1002"/>

<Txn id="0000000000000AB1002" note="" refId="" refUrl="" ts="2016-08-10T12:25:00" type="Hbt" orgTxnId="">

<Resp errCode="102" result="FAILURE" ts="2016-08-10T12:25:00"/>

</Txn>

<Signature ……>

..

..

..

</Signature>

</etc:TollplazaHbeatResp>

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:ReqQueryExceptionList xmlns:etc="https://<host>/etc/schema">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M

		time synchronized with a time server.			
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special	0-35	O

			characters		
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Enum	1-20 [FETCHEXCEPTION]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
Resp		This element contains response of sync time message			M
	result	This attribute provides contains the final result of the transaction	Enum	SUCCESS / FAILURE	M
	ts	Timestamp to be filled by the acquirer	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	errCode	This attribute provides helps us to identify the request for which particular error is generated	Numeric	3	M

15.11 Check Transaction Status Request

This API is called by toll plaza operator to get status of transaction from Acquirer bank. Toll plaza operator can use this API to check transaction status before reconciliation which are “In-process” or for which no response is received by the toll plaza operator.

API type: Synchronous API

Privilege to initiated API: Toll Plaza Operator

Sample Schema:

```
<etc:ReqChkTxn xmlns:etc="http://npci.org/etc/schema/">
 <Head ver="1.0" ts="" orgId="IRBL" msgId=""/>
 <Txn id="" note="" refId="" refUrl="" ts="" type="ChkTxn" orgTxnId="">
  <TxnStatusReqList>
```

```
    <Status txnId="" txnDate="" plazaId="" laneId="" />
    <Status txnId="" txnDate="" plazaId="" laneId=""/>
  </TxnStatusReqList>
 </Txn>
 <Signature ……>
..
..
..
 </Signature>
</etc:ReqChkTxn>
```

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:ReqQueryExceptionList xmlns:etc="https://<host>/etc/schema">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M

	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O

	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Enum	1-20 [FETCHEXCEPTION]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
TxnStatus ReqList		This element contains transaction status request list which contains the status list			M
Status		This element contains list of attributes required to fetch status of a trsanction			M
	txnId	Unique Identifier of the transaction across all entities. This attribute will contain txn ID for which toll plaza operator wants to check transaction status.	Alphanumeric	1-22	M
	txnDate	This attribute provides date on which the transaction happened	ISODateTime	25 (It should be 10 as format is YYYY-MM-DD)	M
	plazaId	This attribute provides the unique ID mapped to the Plaza	Alphanumeric	1-6	M
	laneId	This attribute provides the unique NETC Lane ID present in the Plaza	Alphanumeric	1-3	M

15.12 Check Transaction Status Response

This API is response of check transaction status API issued by Acquirer bank. Toll plaza operator will receive status of requested transaction before reconciliation which are “In-process” or for which no response is received by the toll plaza operator.

API type: Synchronous API

Privilege to initiated API: Acquirer Bank

Sample Schema Success:

<etc:RespChkTxn xmlns:etc="http://npci.org/etc/schema/">
<Head ver="1.0" ts=""orgId="" msgId=""/>
<Txn id="" note="" refId="" refUrl="" ts="" type="ChkTxn" orgTxnId="">
<Resp ts="" result="SUCCESS|FAILURE|PARTIAL" respCode="" totReqCnt="" sucessReqCnt="">
<TxnStatusReqList>
<Status txnId="" txnDate="" plazaId="" laneId="" result="SUCCESS|FAILURE" errCode="" settleDate="">
<TxnList txnStatus="" txnReaderTime="" txnType="" txnReceivedTime="" TollFare="" FareType="DISCOUNTED/EXEMPTED/FULL/RETURN" VehicleClass=" RegNumber="" errCode="" />
<TxnList txnStatus="" txnReaderTime="" txnType="" txnReceivedTime="" TollFare="" FareType="DISCOUNTED/EXEMPTED/FULL/RETURN" VehicleClass="" RegNumber="" errCode=""/>
</Status>
</TxnStatusReqList>
</Resp>
</Txn>
<Signature ……>
..
..
..
</Signature>
</etc:RespChkTxn>

Sample Schema Failure:

1. Failure in Head or Txn element

<etc:RespChkTxn xmlns:etc="http://npci.org/etc/schema/">
<Head ver="1.0" ts="2016-08-10T12:25:00" orgId="DCBX" msgId="CTS1"/>
<Txn id="101011" note="" refId="" refUrl="" ts="" type="ChkTxn" orgTxnId="">
<Resp ts="2016-08-10T12:25:00" result="FAILURE" respCode="102" totReqCnt="1" sucessReqCnt="1">

```
</Resp>
</Txn>
<Signature ……>
..
..
</Signature>
</etc:RespChkTxn>
```

2. Failure in message except Head or Txn element

```
<etc:RespChkTxn xmlns:etc="http://npci.org/etc/schema/">
<Head ver="1.0" ts="2016-08-10T12:25:00" orgId="ICIC" msgId="CTS1"/>
<Txn id="101011" note="" refId="" refUrl="" ts="" type="ChkTxn" orgTxnId="">
<Resp ts="2016-08-10T12:25:00" result="FAILURE" respCode="000" totReqCnt="1" sucessReqCnt="1">
<TxnStatusReqList>
<Status txnId="9199" txnDate="2016-08-10T10:25:00" plazaId="111111" laneId="LANE09" result="FAILURE"
errCode="307" settleDate="2016-08-10T12:00:00">
</Status>
</TxnStatusReqList>
</Resp>
</Txn>
<Signature ……>
..
..
</Signature>
</etc:RespChkTxn>
```

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:ReqQueryExceptionList xmlns:etc="https://<host>/etc/schema">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability NPCI will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M

Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Enum	1-20 [FETCHEXCEPTION]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
Resp		This element contains the response details of the transaction.			M
	respCode	The response code helps us identify the request for which particular response change is generated.	Numeric		M
	result	This attribute contains the final result of the transaction.	Numeric		M

	successReqCnt	The attribute contains success count of request	Numeric		M
	totReqCnt	The attribute contains total count of request initiated	Numeric		M
	ts	The attribute timestamp to be filled by acquirer bank	ISODateTime	25 (It should be 10 as format is YYYY-MM-DD)	M
TxnStatusReqList		This element contains transaction status request list which contains the status list			M
Status		This element contains list of attributes required to fetch status of a transaction			M
	txnId	Unique Identifier of the transaction across all entities. This attribute will contain txn ID for which toll plaza operator wants to check transaction status.	Alphanumeric	1-22	M
	txnDate	This attribute provides date on which the transaction happened	ISODateTime	25 (It should be 10 as format is YYYY-MM-DD)	M
	plazaId	This attribute provides the unique ID mapped to the Plaza	Alphanumeric	1-6	M
	laneId	This attribute provides the unique NETC Lane ID present in the Plaza	Alphanumeric	1-3	M
	result	This attribute contains the final result of the transaction.	Alphabets	It should be 'SUCCESS|FAILURE	M
	errCode	This attribute contains error code of the message request by toll plaza operator	Numeric	3	M
	settleDate	This attribute contains settlement date of transaction by acquirer	ISODateTime	25 (It should be 10 as format is YYYY-MM-DD)	O
TxnList		This element contains transaction details list			M
	txnStatus	This attribute contains Status of the transaction	Alphanumeric	It should be 'SUCCESS|IN-PROCESS|FAILURE	M

	txnReaderTime	This attribute contains time at which the tag was read by the reader at toll plaza	ISODateTime	25 (It should be 10 as format is YYYY-MM-DD)	M
	txnType	This attribute contains type of the transaction	Enum	1-20 CREDIT DEBIT DEBIT_ADV CREDIT_ADV NON_FIN NON_FIN_ADV	M
	txnReceivedTime	This attribute contains time at which the transaction has happened	ISODateTime	25 (It should be 10 as format is YYYY-MM-DD)	M
	TollFare	This attribute describes the toll fare of the transaction	Decimal upto 2	1-18	C
	FareType	This attribute describes the fare type of the transaction	Enum	DISCOUNTED/ EXEMPTED/FULL/RETURN	C
	VehicleClass	This attribute provides value of Mapper vehicle class	Alphanumeric	0-5	M
	RegNumber	This attribute provides value of vehicle registration number	Alphanumeric	4-20	M
	errCode	This attribute contains reject Reason code by NETC	Numeric	3	M

15.13 Get Exception Request

This API is called by toll plaza operator to get the consolidated exception list, at the time request is raised to Acquirer bank. The exception list will contain the latest status of the Tag ids requested for an exception type.

API type: Asynchronous API

Privilege to initiated API: Toll Plaza Operator

Sample Schema:

```
<etc:ReqGetExceptionList xmlns:etc="http://npci.org/etc/schema/">
 <Head ver="1.0" ts="2016-08-10T18:53:12" orgId="irbl" msgId="00000000001324576804" />
 <Txn id="00000000001324576804" note="" refId="" refUrl="" ts="2016-08-10T18:53:12"
type="FETCHEXCEPTION" orgTxnId="">
  <ExceptionList>
   <Exception excCode="01" />
   <Exception excCode="02" />
  </ExceptionList>
 </Txn>
 <Signature …….>
..
..
 </Signature>
</etc:ReqGetExceptionList>
```

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:ReqQueryExceptionList xmlns:etc="https://<host>/etc/schema">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M

Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique	Alphanumeric	1-22	M

		identifiers are used.			
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Enum	1-20 [FETCHEXCEPTION]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
ExceptionList		The element contains the list of tags present in the exception list.			M
Exception					M
	excCode	Code defined for Exception List	Num	2	M

15.14 Get Exception Response

This API is initiated by Acquirer bank to provide the consolidated exception list on request raised by toll plaza operator. The exception list will contain the latest status of the Tag ids requested for an exception type.

API type: Asynchronous API

Privilege to initiated API: Acquirer Bank

Sample Schema for blacklist:

```
<etc:RespGetExceptionList xmlns:etc="http://npci.org/etc/schema/">
 <Head msgId="00000000001324576801" orgId="DCBX" ts="2016-08-10T18:53:12" ver="1.0"/>
 <Txn id="00000000001324576801" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T18:53:12" type="FETCHEXCEPTION">
<Resp msgNum="1" respCode="000" result="SUCCESS" successReqCnt="1" totReqCnt="1" totalMsg="7" totalTagsInMsg="100" totalTagsInResponse="628" ts="2016-08-10T18:57:08">
 <Exception desc="BLACKLIST" errCode="000" excCode="01" lastupdatedTime="2016-04-29T18:53:40" priority="1" result="SUCCESS" totalTag="100">
    <Tag tagId="ABC1000002111"/>
    <Tag tagId="ABC1000003111"/>
    <Tag tagId="ABC1000004111"/>
  </Exception>
 </Resp>
</Txn>
<Signature ……>
 ..
 ..
 ..
</Signature>
</etc:RespGetExceptionList>
```

Sample Schema for exempted:

```
<etc:RespGetExceptionList xmlns:etc="http://npci.org/etc/schema/">
 <Head msgId="00000000001324576802" orgId="DCBX" ts="2016-08-10T18:53:12" ver="1.0"/>
 <Txn id="00000000001324576802" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T18:53:12" type="FETCHEXCEPTION">
  <Resp msgNum="1" respCode="000" result="SUCCESS" successReqCnt="1" totReqCnt="1" totalMsg="2" totalTagsInMsg="100" totalTagsInResponse="191" ts="2016-08-10T18:57:12">
```

<Exception desc="EXEMPTED_VEHICLE_CLASS" errCode="000" excCode="02" lastupdatedTime="2016-04-29T18:53:43" priority="2" result="SUCCESS" totalTag="100">
<Tag tagId="123456789ABCDEF000000459"/>
<Tag tagId="123456789ABCDEF000000457"/>
<Tag tagId="34161FA82032D6980200A380"/>
</Exception>
</Resp>
</Txn>
<Signature ……>
..
..
..
</Signature>
</etc:RespGetExceptionList>

Sample Schema Failure:

1. Failure due to below response

HTTP Code	HTTP description	Validation
400	Bad Request	Validate Head element of message
401	Unauthorized	Issue with org id
405	Method Not allowed	Other than POST method are used in message
408	Request Timeout	Late response/Response after SLA
417	Expectation Failed	Issue with signature/Certificate
404	Not Found	Destination not live

2. Failure in Head or Txn element

<etc:RespGetExceptionList xmlns:etc="http://npci.org/etc/schema/">
<Head msgId="00000000001324576801" orgId="DCBX" ts="2016-08-10T18:53:12" ver="1.0"/>
<Txn id="00000000001324576801" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T18:53:12" type="FETCHEXCEPTION">
<Resp msgNum="1" respCode="102" result="FAILURE" successReqCnt="0" totReqCnt="0" totalMsg="1" totalTagsInMsg="0" totalTagsInResponse="0" ts="2016-08-10T18:57:08">

</Resp>

</Txn>

<Signature ……>

..

..

</Signature>

</etc:RespGetExceptionList>

3. Failure in message except Head & Txn element

<etc:RespGetExceptionList xmlns:etc="http://npci.org/etc/schema/">

<Head msgId="00000000001324576801" orgId="DCBX" ts="2016-08-10T18:53:12" ver="1.0"/>

<Txn id="00000000001324576801" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T18:53:12" type="FETCHEXCEPTION">

<Resp msgNum="1" respCode="000" result="FAILURE" successReqCnt="1" totReqCnt="1" totalMsg="1" totalTagsInMsg="0" totalTagsInResponse="0" ts="2016-08-10T18:57:08">

<Exception desc=" " errCode="119" excCode="08" lastupdatedTime="2016-04-29T18:53:40" priority="" result="FAILURE" totalTag="" />

</Resp>

</Txn>

<Signature ……>

..

</Signature>

</etc:RespGetExceptionList>

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:ReqTagDetails xmlns:etc="https://<host>/etc/schema">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M

Head					M
	Ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability NPCI will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	Id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to	Alphanumeric	1-22	M

		identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.			
	Note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	Ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	Type	This attribute describes the type of the transaction	Enum	1-20 [QUERY]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
Resp		Response message is generated for each operation specified in the request and each operation can be identified by unique sequence number specified in the request.			M
	msgNum	Message number of that message out of totalMsg	Numeric	1-6	M
	respCode	The response code helps us identify the request for which particular response change is generated.	Numeric	3	M
	result	The attribute contains the result of the exception	Alphabets	It should be SUCCESS|FAILURE|PARTIAL	M
	successReqCnt	The attribute contains success count of request	Numeric	1-3	M
	totReqCnt	The attribute contains total count of request initiated	Numeric	1-3	M

	totalMsg	The attribute contains total number of messages for request	Numeric	1-6	M
	totalTagsInMsg	The attribute contains total tags in that particular message of a response	Numeric	1-10	M
	totalTagsInResponse	The attribute contains total tags in the response	Numeric	1-10	M
	ts	The attribute contains timestamp to be filled by acquirer bank	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
Exception		The element contains the list of tags present in the exception list.			M
	desc	The attribute contains the description of exception code	Alphabets	BLACKLIST/ LOW_BALANCE/ EXEMPTED_VEHICLE_CLASS/ INVALID_CARRIAGE/ HOT_LIST	M
	errCode	The attribute contains error code of the request	Numeric	3	M
	excCode	The attribute contains Code defined for Exception List	Numeric	2	M
	lastupdatedTime	The attribute contains the last updated time of the exception master for requested exception code.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	priority	The attribute contains the priority of the exception code.	Code	1	M
	result	The attribute contains the result of the exception	Alphabets	It should be SUCCESS|FAILURE|PARTIAL	M
	totalTag	The attribute contains the total tags for that particular exception code	Numeric	1-10	M
Tag		This tag consists of list of tagIds			M
	tagId	This attribute provides the unique Tag ID mapped to the RFID Tag that is assigned to individual.	HexaDecimal	20-32	M

15.15 Request Query Exception List

This API called by toll plaza operator to get incremental exception list from the acquirer bank. The exception list will contain the latest status of the Tag IDs requested for an exception type.

API type: Asynchronous API

Privilege to initiated API: Toll Plaza Operator

Sample Schema:

```
<etc:ReqQueryExceptionList xmlns:etc="http://npci.org/etc/schema/">
 <Head ver="1.0" ts="2016-08-10T18:45:00" orgId="DCBX" msgId="00000000000013003504" />
 <Txn id="00000000000013003504" note="" refId="" refUrl="" ts="2016-08-10T18:45:00" type="Query" orgTxnId="">
  <ExceptionList>
   <Exception excCode="01" lastFetchTime="2016-08-10T18:30:00" />
   <Exception excCode="02" lastFetchTime="2016-08-10T18:30:00" />
  </ExceptionList>
 </Txn>
 <Signature ….>
..
..
..
 </Signature>
</etc:ReqQueryExceptionList>
```

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay,		<etc:ReqQueryExceptionList xmlns:etc="https://<hos	M

		ReqMngTag)		t>/etc/schema">	
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be "1.0"	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M

Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Enum	1-20 [QUERY]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
ExceptionList		The element contains the list of tags present in the exception list.			M
Exception					M

	excCode	This attribute contains code defined for Exception List	Num	2	M
	lastFetchTime	The attribute contains the time when the details were fetched by the bank.	ISO Date Format (YYYY-MM-DDThh:mm:ss)	19-25	M

15.16 Response Query Exception List

This is the response of Request Query Exception List API to provide the incremental exception list on request by toll plaza operator, i.e., from the last exception list fetch time.

API type: Asynchronous API

Privilege to initiated API: Acquirer Bank

Sample Schema Success:

```
<etc:RespQueryExceptionList xmlns:etc="http://npci.org/etc/schema/">
 <Head msgId="Q13221" orgId="DCBX" ts="2016-11-25T20:24:59" ver="1.0"/>
<Txn id="00000000000000000027" note="" orgTxnId="orgABC101" refId="" refUrl="" ts="2016-11-25T20:24:59" type="Query">
  <Resp msgNum="1" respCode="000" result="SUCCESS" successReqCnt="1" totReqCnt="1" totalMsg="1" totalTagsInMsg="0" totalTagsInResponse="0" ts="2016-11-25T20:26:15">
      <Exception desc="BLACKLIST" errCode="000" excCode="01" priority="1" result="SUCCESS" totalTag="0">
<Tag tagId="" op="ADD|REMOVE" updatedTime=""/>
<Tag tagId="" op="ADD|REMOVE" updatedTime=""/>
</Exception>
  </Resp>
</Txn>
<Signature ….>
..
..
</Signature>
```

</etc:RespQueryExceptionList>

Sample Schema for NPCI blacklisted, low balanced & exempted tags:

<etc:RespQueryExceptionList xmlns:etc="http://npci.org/etc/schema/">
<Head msgId="Q13221" orgId="DCBX" ts="2020-06-27T14:48:52" ver="1.0"/>
<Txn id="TxnID0000000000000027" note="" orgTxnId="orgABC101" refId="" refUrl="" ts="2020-06-27T14:48:52" type="Query">
<Resp msgNum="1" respCode="000" result="SUCCESS" successReqCnt="2" totReqCnt="2" totalMsg="1" totalTagsInMsg="6" totalTagsInResponse="6" ts="2020-06-27T14:51:35">
<Exception desc="BLACKLIST" errCode="000" excCode="01" priority="1" result="SUCCESS" totalTag="2">
<!--These TAGs are present in exception code ’01’ at NPCI end-->
<Tag tagId="34161FA820328A5203537180" op="ADD" updatedTime="2020-06-27T14:14:32"/>
<Tag tagId="34161FA820328972131C0C00" op="REMOVE" updatedTime="2020-06-27T14:31:30"/>
</Exception>

<Exception desc="LOW_BALANCE" errCode="000" excCode="01" priority="1" result="SUCCESS" totalTag="2">
<!--These TAGs are present in exception code ’03’ at NPCI end-->
<Tag tagId="34161FA8203289720B6E4B00" op="ADD" updatedTime="2020-06-27T14:14:32"/>
<Tag tagId="34161FA820328972131C0C00" op="REMOVE" updatedTime="2020-06-27T14:31:30"/>
</Exception>

<Exception desc="EXEMPTED_VEHICLE_CLASS" errCode="000" excCode="02" priority="2" result="SUCCESS" totalTag="2">
<!--These TAGs are present in exception code ’02’ at NPCI end-->
<Tag tagId="34161FA8203289720B6E4B00" op="ADD" updatedTime="2020-06-27T14:14:32"/>
<Tag tagId="34161FA820328972122CF920" op="REMOVE" updatedTime="2020-06-27T14:31:30"/>
</Exception>

</Resp>

</Txn>

<Signature ….>

..

..

</Signature>

</etc:RespQueryExceptionList>

Sample Schema Failure:

1. Failure due to below response

HTTP Code	HTTP description	Validation
400	Bad Request	Validate Head element of message
401	Unauthorized	Issue with org id
405	Method Not allowed	Other than POST method are used in message
408	Request Timeout	Late response/Response after SLA
417	Expectation Failed	Issue with signature/Certificate
404	Not Found	Destination not live

2. Failure in Head or Txn element

<etc:RespQueryExceptionList xmlns:etc="http://npci.org/etc/schema/">

<Head msgId="Q13221" orgId="DCBX" ts="2016-11-25T20:24:59" ver="1.0"/>

<Txn id="00000000000000000027" note="" orgTxnId="orgABC101" refId="" refUrl="" ts="2016-11-25T20:24:59" type="Query">

<Resp msgNum="1" respCode="102" result="FAILURE" successReqCnt="0" totReqCnt="0" totalMsg="1" totalTagsInMsg="0" totalTagsInResponse="0" ts="2016-11-25T20:26:15">

</Resp>

</Txn>

<Signature ….>

..

..

</Signature>

</etc:RespQueryExceptionList>

3. Failure in message except Head & Txn element

<etc:RespQueryExceptionList xmlns:etc="http://npci.org/etc/schema/">

<Head msgId="Q13221" orgId="DCBX" ts="2016-11-25T20:24:59" ver="1.0"/>

<Txn id="00000000000000000000027" note="" orgTxnId="orgABC101" refId="" refUrl="" ts="2016-11-25T20:24:59" type="Query">

<Resp msgNum="1" respCode="000" result="FAILURE" successReqCnt="0" totReqCnt="1" totalMsg="1" totalTagsInMsg="0" totalTagsInResponse="0" ts="2016-11-25T20:26:15">

<Exception desc=" " errCode="119" excCode="08" priority="" result="FAILURE" totalTag="">

</Resp>

</Txn>

<Signature ….>

..

..

</Signature>

</etc:RespQueryExceptionList>

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:ReqTagDetails xmlns:etc="https://<host>/etc/schema">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M

	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability NPCI will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O

	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Enum	1-20 [QUERY]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
Resp		Response message is generated for each operation specified in the request and each operation can be identified by unique sequence number specified in the request.			M
	msgNum	Message number of that message out of totalMsg	Numeric	1-6	M
	respCode	The response code helps us identify the request for which particular response change is generated.	Numeric	3	M
	result	The attribute contains the result of the exception	Alphabets	It should be SUCCESS|FAILURE|PARTIAL	M
	successReqCnt	Success count of request	Numeric	1-3	M
	totReqCnt	Total count of request initiated	Numeric	1-3	M
	totalMsg	Total number of messages for request	Numeric	1-6	M
	totalTagsInMsg	Total tags in that particular message of a response	Numeric	1-10	M
	totalTagsInResponse	Total tags in the response	Numeric	1-10	M
	ts	timestamp to be filled by acquirer bank	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
Exception		The element contains the list of tags present in the exception list.			M

	desc	The attribute contains the description of exception code	Alphabets	BLACKLIST/LOW_BALANCE/EXEMPTED_VEHICLE_CLASS/INVALID_CARRIAGE/HOT_LIST	M
	errCode	The attribute contains Error code of the request	Numeric	3	M
	excCode	The attribute contains Code defined for Exception List	Numeric	2	M
	priority	The attribute contains the priority of the exception code.	Code	1	M
	result	The attribute contains the result of the exception	Alphabets	It should be SUCCESS|FAILURE|PARTIAL	M
	totalTag	The attribute contains the total tags for that particular exception code	Numeric	1-10	M
Tag		This tag consists of list of tagIds			M
	tagId	This attribute provides the unique Tag ID mapped to the RFID Tag that is assigned to individual.	HexaDecimal	20-32	M
	op	This attribute describes the operation of the transaction	Enum	ADD|REMOVE	M
	updatedTime	The attribute contains the last updated time of the tag	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M

15.17 Set Pass Scheme Request

This API called by toll plaza operator to set pass schemes against vehicle/ tag IDs purchased pass from toll plaza. In single request message, maximum “X” number of pass requests can be send to acquirer.

API type: Asynchronous API

Privilege to initiated API: Toll Plaza Operator

Sample Schema:

```
<etc:ExecuteCommand xmlns:etc="http://npci.org/etc/schema/">
 <Head msgId="1" orgId="ICIC" ts="2017-01-30T06:29:10" ver="1.0" />
 <Meta />
 <Txn id="123456789" note="" orgTxnId="" refId="" refUrl="" ts="2017-01-30T06:29:10" type="Request">
  <RiskScores>
   <Score provider="" type="" value="" />
  </RiskScores>
 </Txn>
 <Command name="SET_PASS_SCHEMES" type="ASYNC" id="1" NumParams="5" callback="">
  <Param name="TAG_ID" type="HEXSTRING" value="3416A8FA0101234567890123" length="24" />
  <Param name="Vehicle_Class" type="ALPHA" value="VC4" length="3"></Param>
  <Param name="PLAZA_ID" type="ALPHA" value="001001" length="6"></Param>
  <Param name="COMMERCIAL_VEHICLE" type="BOOLEAN" value="TRUE" length="4"></Param>
  <Param name="PASS_SCHEMES" type="XML" value="" length=""></Param>
  <ObjectList numObject="1">
   <Object name="SCHEME1" type="ARRAY" numItems="10">
    <Item name="SCHEME_VEHICLE_CLASS" type="ALPHA" length="3" value="VC4"/>
    <Item name="PASS_TYPE" type="ALPHA" length="7" value="MONTHLY"/>
    <Item name="PASS_AMOUNT" type="UNSIGNED_NUMBER" length="4" value="2000"/>
    <Item name="VEHICLE_VISITS" type="UNSIGNED_NUMBER" length="2" value="50"/>
    <Item name="PASS_START_DATE”" type="DATE" length="10" value="2017-01-30"/>
    <Item name="PASS_END_DATE”" type="DATE" length="10" value="2017-02-28"/>
```

<Item name="ENTRY_PLAZA_ID" type="ALPHANUM" length="6" value="123456"/>

<Item name=" EXIT_PLAZA_ID" type="ALPHANUM" length="6" value="123456"/>

<Item name="COMVEHICLE_FARE_INCLUDED" type="BOOLEAN" length="5" value="FALSE"/>

<Item name="PASS_DESCRIPTION" type="INLINEALPHA" length="186" value="">Concessional fee for the multiple trips within a day and monthly pass for use of section continuously and frequently will be @1.5 times and 30 Times of single journey rates respectively. </Item>

</Object>

</ObjectList>

</Command>

<Source addr="604717@npci.orgin" name="ICIC" type="IIN" />

<Destination addr="123456@npci.org.in" name="DCBX" type="AID" />

<Signature ……>

..

..

..

</Signature>

</etc:ExecuteCommand>

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:ReqQueryExceptionList xmlns:etc="https://<host>/etc/schema">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M

	Ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be "1.0"	M
	Ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	Id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should	Alphanumeric	1-22	M

		use UUID scheme to ensure globally unique identifiers are used.			
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Enum	1-20 [FETCHEXCEPTION]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
Meta		The data provided in the Meta element will be used for MIS and analysis purpose			O
Meta.Tag		The tag is defined in name value pairs to accommodate the MIS related parameters. The tag itself is optional and if the tag is present it is mandatory to have the two attributes with two codes mentioned below			O
	name	The name attribute will have the values as defined in the code table	STRING	1-50	
	value	The data provided will have the details of transaction initiated time and end time in the device/medium	STRING	1-100	

Txn.Risk Scores		This element defines the risk evaluation associated with the transaction and the interested parties in the transaction.			O
Txn.Risk Scores.Score					O
	provider	Entity providing the risk score. This is the entity which evaluates the risk associated with the transaction.	Code	1-20	O
	type	This attribute describes the type of risk	Code	1-20	O
	value	Value of risk score ranging from 0 (No Risk) to 99.99 (Maximum Risk**)**	Integer	1-5	O
Command		The Element contains the details of the command to be executed by NETC and destination system			M
	name	The attribute contains the name of the command.	Alpha	1-30 [SET_PASS_SCHEMES]	M
	type	The attribute contains the type of the command. This attribute indicates where the command actually to be executed.	Alpha	1-10 SYNC|ASYNC	M
	Id	The unique ID allocated to the command by NETC	Numeric	1-5	M
	NumParams	The no.of parameters passed / associated with the command	Numeric	1-3	M
	callback	The callback url to be used to send the response to source system by NETC in case of ASYNC services	Alphaspecial	0-35	O
Param		The Element contains the parameter details of the command			M
	name	The attribute contains the name of the parameter.	Alpha	1-20	M
	type	The attribute contains the type of the parameter.	Alpha	1-20	M
	value	The attribute contains the value of the parameter.	Alpha	1-50	M

	length	The attribute contains the length of the value of the parameter.	Numeric	1-3	M
ObjectList		The Element contains the details of the object list associated with parameter XML value.			M
	numObject	The attribute contains the number of objects are available for the XML parameter value	Numeric	1-3	M
Object		The Element contains the details the each object.			M
	name	The attribute contains the name of the object/record	Alpha	1-20	M
	type	The attribute contains the type of the object/record	Alpha	1-20	M
	numItems	The attribute contains the no.of items associated with the objects	Alpha	1-3	M
Item		The Element contains the details the each item of an object			M
	name	The attribute contains the name of an item	Alpha	1-30	M
	type	The attribute contains the type of the item	Alpha	0-20	M
	value	The attribute contains the value of the item	Alpha	1-30	M
	length	The attribute contains the length of the value of the item	Numeric	1-3	M
Source		The Element contains the information about the source system			M
	addr	The attribute contains the address of the source system. The value can be either <AID|IIN>@npci.org.in	ALPHANUM with special characters	1-19	M
	name	The attribute contains the name of the source system.	Alpha	0-150	O
	type	The attribute contains the type of the address	ENUM	Plaza ID or AID	M
Destination		The Element contains the information about the destination system			M
	addr	The attribute contains the address of the destination system. The value	Alphaspecial	1-19	M

		can be either <AID|IIN>@npci.org.in			
	name	The attribute contains the name of the destination system.	Alpha	0-150	M
	type	The attribute contains the type of the address	ENUM	Plaza ID or AID	M

15.18 Set Pass Scheme Response

This API is response of Set Pass Scheme Request. Acquirer bank will confirm request to set pass scheme.

API type: Asynchronous API

Privilege to initiated API: Toll Plaza Operator

Sample Schema Success:

```
<etc:ExecuteCommand xmlns:etc="http://npci.org/etc/schema/">
 <Head msgId="1" orgId="ICIC" ts="2017-01-30T06:29:10" ver="1.0" />
 <Meta />
<Txn id="123456789" note="" orgTxnId="" refId="" refUrl="" ts="2017-01-30T06:29:10" type="Request">
  <RiskScores>
       <Score provider="" type="" value="" />
  </RiskScores>
</Txn>
<Command name="SET_PASS_SCHEMES" type="ASYNC" id="1" NumParams="5" callback="">
  <Param name="TAG_ID" type="HEXSTRING" value="3416A8FA0101234567890123" length="24" />
  <Param name="Vehicle_Class" type="ALPHA" value="VC4" length="3"></Param>
  <Param name="MERCHANT_ID" type="ALPHA" value="001001" length="6"></Param>
  <Param name="COMMERCIAL_VEHICLE" type="BOOLEAN" value="TRUE" length="4"></Param>
  <Param name="PASS_SCHEMES" type="XML" value="" length=""></Param>
  <ObjectList numObject="1">
    <Object name="SCHEME1" type="ARRAY" numItems="10">
      <Item name="SCHEME_VEHICLE_CLASS" type="ALPHA" length="3" value="VC4"/>
      <Item name="PASS_TYPE" type="ALPHA" length="7" value="MONTHLY"/>
```

<Item name="PASS_AMOUNT" type="UNSIGNED_NUMBER" length="4" value="2000"/>

<Item name="VEHICLE_VISITS" type="UNSIGNED_NUMBER" length="2" value="50"/>

<Item name="PASS_START_DATE”" type="DATE" length="10" value="2017-01-30"/>

<Item name="PASS_END_DATE”" type="DATE" length="10" value="2017-02-28"/>

<Item name="ENTRY_PLAZA_ID" type="ALPHANUM" length="6" value="123456"/>

<Item name=" EXIT_PLAZA_ID" type="ALPHANUM" length="6" value="123456"/>

<Item name="COMVEHICLE_FARE_INCLUDED" type="BOOLEAN" length="5" value="FALSE"/>

<Item name="PASS_DESCRIPTION" type="INLINEALPHA" length="186" value="">Concessional fee for the multiple trips within a day and monthly pass for use of section continuously and frequently will be @1.5 times and 30 Times of single journey rates respectively. </Item>

</Object>

</ObjectList>

</Command>

<Result ts="2017-01-30T06:29:10" status="SUCCESS" code="00" />

<Destination addr="604717@npci.orgin" name="ICIC" type="IIN" />

<Source addr="123456@npci.org.in" name="DCBX" type="AID" />

<Signature ……>

..

..

</Signature>

</etc:ExecuteCommand>

Sample Schema Failure:

<etc:ExecuteCommand xmlns:etc="http://npci.org/etc/schema/">

<Head msgId="1" orgId="ICIC" ts="2017-01-30T06:29:10" ver="1.0" />

<Meta />

<Txn id="123456789" note="" orgTxnId="" refId="" refUrl="" ts="2017-01-30T06:29:10" type="Response">

<RiskScores>

<Score provider="" type="" value="" />

</RiskScores>

</Txn>

<Command name="SET_PASS_SCHEMES" type="ASYNC" id="1" NumParams="0" callback="" />

<Result ts="2017-01-30T06:29:10" status="FAILURE" code="104" />

<Destination addr="604717@npci.orgin" name="ICIC" type="IIN" />

<Source addr="123456@npci.org.in" name="DCBX" type="AID" />

<Signature ……>

..

..

</Signature>

</etc:ExecuteCommand>

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:ReqQueryExceptionList xmlns:etc="https://<host>/etc/schema">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	Ver	Version of the API This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	Ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M

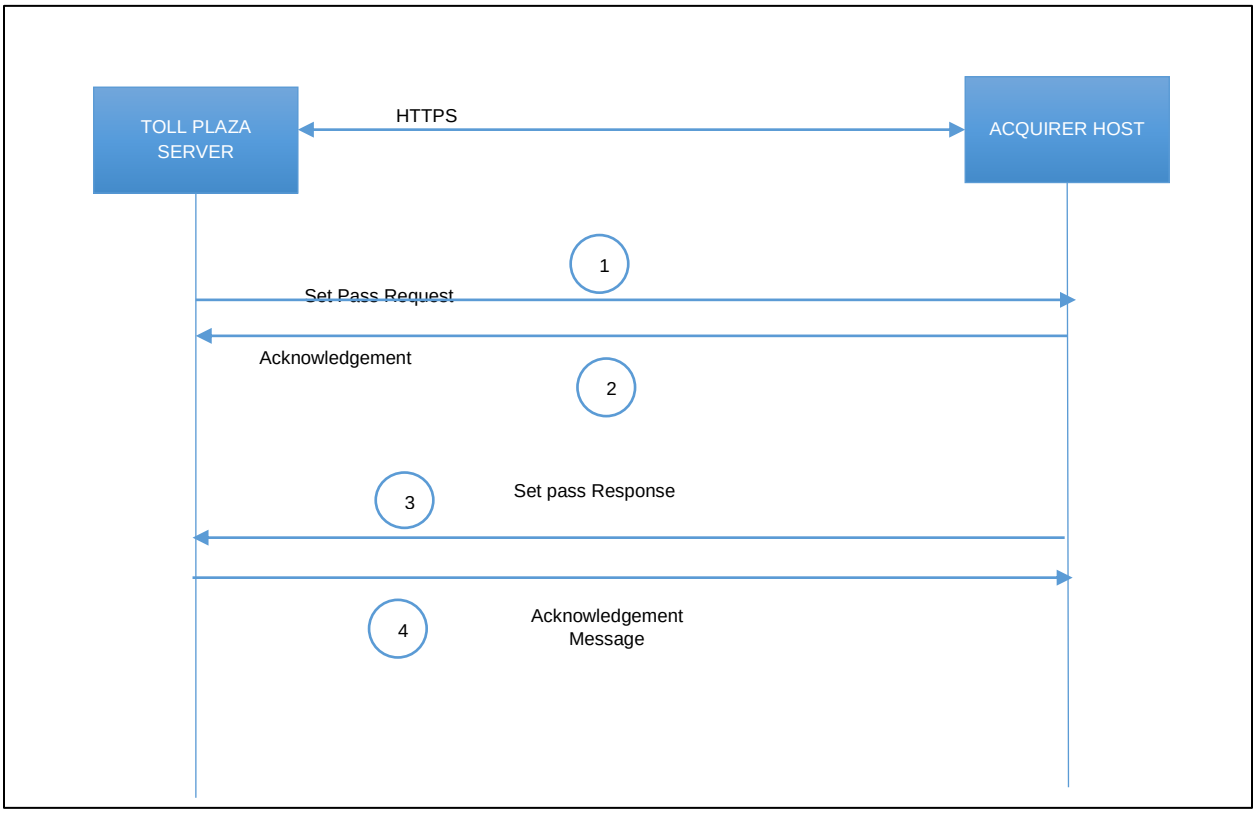
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	Id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M

	type	This attribute describes the type of the transaction	Enum	1-20 [FETCHEXCEPTION]	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
Meta		The data provided in the Meta element will be used for MIS and analysis purpose			O
Meta.Tag		The tag is defined in name value pairs to accommodate the MIS related parameters. The tag itself is optional and if the tag is present it is mandatory to have the two attributes with two codes mentioned below			O
	name	The name attribute will have the values as defined in the code table	STRING	1-50	
	value	The data provided will have the details of transaction initiated time and end time in the device/medium	STRING	1-100	
Txn.Risk Scores		This element defines the risk evaluation associated with the transaction and the interested parties in the transaction.			M
Txn.Risk Scores. Score					O
	provider	Entity providing the risk score. This is the entity which evaluates the risk associated with the transaction.	Code	1-20	O
	type	This attribute describes the type of risk	Code	1-20	O
	value	Value of risk score ranging from 0 (No Risk) to 99.99 (Maximum Risk**)**	Integer	1-5	O
Command		The Element contains the details of the command to be executed by NETC and destination system			M
	name	The attribute contains the name of the command.	Alpha	1-30 [SET_PASS_SCHEMES]	M
	type	The attribute contains the type of the command. This attribute indicates	Alpha	1-10 SYNC|ASYNC	M

		where the command actually to be executed.			
	Id	The unique ID allocated to the command by NETC	Numeric	1-5	M
	NumParams	The no.of parameters passed / associated with the command	Numeric	1-3	M
	callback	The callback url to be used to send the response to source system by NETC in case of ASYNC services	Alphaspecial	0-35	O
Param		The Element contains the parameter details of the command			M
	name	The attribute contains the name of the parameter.	Alpha	1-20	M
	type	The attribute contains the type of the parameter.	Alpha	1-20	M
	value	The attribute contains the value of the parameter.	Alpha	1-50	M
	length	The attribute contains the length of the value of the parameter.	Numeric	1-3	M
ObjectList		The Element contains the details of the object list associated with parameter XML value.			M
	numObject	The attribute contains the number of objects are available for the XML parameter value	Numeric	1-3	M
Object		The Element contains the details the each object.			M
	name	The attribute contains the name of the object/record	Alpha	1-20	M
	type	The attribute contains the type of the object/record	Alpha	1-20	M
	numItems	The attribute contains the no.of items associated with the objects	Alpha	1-3	M
Item		The Element contains the details the each item of an object			M
	name	The attribute contains the name of an item	Alpha	1-30	M
	type	The attribute contains the type of the item	Alpha	0-20	M
	value	The attribute contains the value of the	Alpha	1-30	M

		item			
	length	The attribute contains the length of the value of the item	Numeric	1-3	M
Result		The Element contains the details the result of the command executed.			M
	ts	The attribute contains the timestamp at which the response is generated and sent	ISOTIME	19	M
	status	The attribute contains the status of the command executed. Ie success or failure and partial.	ENUM	SUCEESS|FAILURE	M
	code	The attribute contains the reason code/error code of the command executed (Multiple error codes will be separated by delimiter comma;)	NUM & COMMA(,)	0-50	M
Source		The Element contains the information about the source system			M
	addr	The attribute contains the address of the source system. The value can be either <AID|IIN>@npci.org.in	ALPHANUM with special characters	1-19	M
	name	The attribute contains the name of the source system.	Alpha	0-150	O
	type	The attribute contains the type of the address	ENUM	IIN or AID	M
Destination		The Element contains the information about the destination system			M
	addr	The attribute contains the address of the destination system. The value can be either <AID|IIN>@npci.org.in	Alphaspecial	1-19	M
	name	The attribute contains the name of the destination system.	Alpha	0-150	M
	type	The attribute contains the type of the address	ENUM	IIN or AID	M

15.18.1 Set Pass Issuance Transactional Flow



Transaction Flow

1. Toll Plaza Server will initiate Set Pass request to Acquirer Host. The request contains details such as TAG ID, Vehicle Class, Toll Plaza ID and PASS SCHEMA.
2. Acquirer host will conform request to set pass schema with Pass set or request decline.

Note:

Toll Plaza Server will initiate ReqPay as NON-FIN transaction only if he received successful Set PASS response from the acquirer at step 2.

15.18.2 Failure Scenarios

This section explains how the various failure scenarios are handled during the Set Pass Issuance transaction. The transaction flow mentioned above will be considered while describing the failure scenarios.

SET_PASS_SCHEME Leg:

a) To set a desired pass scheme, the Toll Plaza Server will initiate SET_PASS_SCHEME request to Acquiring host. If Acquiring host is not available, the Toll Plaza operator will re-initiate the SET_PASS_SCHEME request to Acquirer once the Acquiring host is available.

b) When Toll Plaza Server is not available to receive the response from the Acquiring host, after 30 seconds the request is timeout & the message expires. Toll Plaza Server will re-initiate the request to Acquiring host.

15.19 Notification

The Notification API is initiated by Acquirer Bank to provide detailed status of “In-Process” transactions which were generated by acquirer bank in Response Pay message. Acknowledgement for Notification API will be generated by Toll Plaza.

The acquirer bank should also use this notification API for the transactions where they have not received any successful acknowledgement against the response pay message sent to toll plaza. , The acquirer bank should send such notification till the next settlement cycle. After settlement cycle plaza can check the transactions from settlement reports.

API type: Synchronous API

Privilege to initiated API: Acquirer Bank

Sample Schema:

```
<etc:Notification xmlns:etc="http://npci.org/etc/schema/">
 <Head msgId="0000000000000AB1002" orgId="DCBX" ts="2016-08-10T12:25:00" ver="1.0"/>
 <Meta>
 </Meta>
        <Txn id="0000000000000AB1002" note="" orgTxnId="" refId="" refUrl="" ts="2016-08-10T12:25:00" type="DEBIT">
        </Txn>
 <Notify plazaId="1234" result="ACCEPTED/DECLINED" ts="2016-08-10T19:16:37" NPCIErrCode="000">
<Vehicle TID="34161FA82032D698020078E0" tagId="34161FA82032D698020078E0" >
        <VehicleDetails>
        <Detail name="VEHICLECLASS" value="VC4" />
        <Detail name="REGNUMBER" value="MH04BY13" />
        <Detail name="COMVEHICLE" value="F" />
        <Detail name="TOLLFARE" value="" />
        <Detail name="FARETYPE" value="" />
        </VehicleDetails>
   </Vehicle>
```

</Notify>

<Signature ……>

..

..

</Signature>

Response Notification

If Success: HTTP response -202

If Failure: HTTP codes

HTTP Code	HTTP description	Validation
400	Bad Request	Validate Head element of message
401	Unauthorized	Issue with org id
405	Method Not allowed	Other than POST method are used in message
408	Request Timeout	Late response/Response after SLA
417	Expectation Failed	Issue with signature/Certificate
404	Not Found	Destination not live

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API (ReqDetails, RespDetails, ReqPay, RespPay, ReqMngTag)		<etc:Notification xmlns:etc="http://<Host>/etc/schema/">	M
	Xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	Ver	Version of the API. This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	Ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M

	orgId	Organization id that created the message Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organisation ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Meta		The data provided in the Meta element will be used for MIS and analysis purpose			M
Meta.Tag		The tag is defined in name value pairs to accommodate the MIS related parameters. The tag itself is optional and if the tag is present it is mandatory to have the two attributes with two codes mentioned below			M
	Name	The name attribute will have the values as defined in the code table	STRING	1-50	O
	Value	The data provided will have the details of transaction initiated time and end time in the device/medium	STRING	1-100	O
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	Id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	Note	Description of the transaction which is in free text format.	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment like Loan number, invoice number, etc.	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M

	type	This attribute describes the type of the transaction	Enum	1-20 CREDIT DEBIT NON_FIN	M
	orgTxnId	Original transaction ID when reversal/Refund has to be done.	Alphanumeric	1-36	O
Notify		This element contains detailed status of In-Process transaction.			M
	plazaId	This attribute provides the unique ID mapped to the Plaza	Alphanumeric	1-6	M
	NPCIErrCode	This attribute provides helps us to identify the request for which particular NPCI error code is generated	Numeric	3	O
	result	This attribute provides contains the final result of the transaction	Enum	ACCEPTED/DECLINED	M
	ts	Timestamp to be filled by the acquirer	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
Vehicle		This element contains Information related to the Vehicle			M
	TagID	This attribute provides the unique Tag ID mapped to the RFID Tag that is assigned to individual.	HexaDecimal	20-32	M
	TID	This attribute provides the unique TID mapped to the RFID Tag that is assigned to individual.	HexaDecimal	24-32	M
VehicleDetails		This element contains Information related to the Vehicle			M
Details		This element contains Information related to the Vehicle			M
	name="VEHICLECLASS"	This attribute provides Vehicle Class fetched by acquirer bank from the NPCI mapper	Alpha	VEHICLECLASS	M
	Value	Value of VEHICLECLASS	Alphanumeric	0-5	M
	name="REGNUMBER"	This attribute is used to know the register number	Alpha	REGNUMBER	M
	Value	Value of specific tag user memory	Alphanumeric	4-20	M
	name="COMVEHICLE"	This attribute is used to know if the vehicle is a commercial vehicle or non-commercial vehicle	Alpha	COMVEHICLE	M
	Value	Providing value to know if it's a commercial vehicle	Boolean	F/T	M
	name="TOLLFARE"	This attribute describes the fare type of the transaction	Alpha	TOLLFARE	M
	Value	Providing value of Toll fare	Decimal upto 2	1-18	M
	name="FARETYPE"	This attribute describes the toll fare of the transaction	Alpha	FARETYPE	M
	Value	Providing value of Fare type	Enum	DISCOUNTED/EXEMPTED/FULL/RETURN	M

15.20 List Participants

This API will be used to fetch the Participants Details by the toll plaza.

API type: Synchronous API

Privilege to initiated API: Toll Plaza

Sample Schema:

```
<etc:ReqListParticipant xmlns:etc="http://npci.org/etc/schema/">
  <Head ver="1.0" ts="" orgId="" msgId=""/>
  <Txn id="" note="" refId="" refUrl="" ts="" type="ListParticipant" orgTxnId="">
   <ParticipantList>
    <Participant BankCode="ALL|<Bank IIN>"/>
   </ParticipantList>
  </Txn>
</etc:ReqListParticipant>
```

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API		<etc:ReqListParticipant xmlns:etc="http://npci.org/etc/schema/">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API. This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be "1.0"	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M

	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organization ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response. The unique identifier created by the originator of the message and will be used to correlate the response with the original request.	Alphanumeric	1-35	M
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment like Loan number, invoice number, etc.	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M

	type	This attribute describes the type of the transaction	Enum	1-20 ListParticipant	M
	orgTxnId	Original transaction ID to be used for reversal/Refund transaction.	Alphanumeric	1-36	O
ParticipantList		This element contains Information related to the Plaza			M
	BankCode	The attribute contains the unique codes assigned for the banks.	Alphanumeric	1-4 ALL <specific Bank IIN>	M

15.21 Participants List Response

This API is response of participants list API issued by Acquirer bank.

API type: Synchronous API

Privilege to initiated API: Acquirer Bank

Sample Schema Success:

```
<etc:RespListParticipant xmlns:etc="http://npci.org/etc/schema/">
  <Head ver="1.0" ts="" orgId="" msgId=""/>
  <Txn id="" note="" refId="" refUrl="" ts="" type="ListParticipant" orgTxnId=””/>
   <Resp ts="" result="SUCCESS|FAILURE|PARTIAL" respCode="" NoOfParticipant=””>
    <ParticipantList>
          <Participant name=""  errCode=""  issuerIin=""  />
    </ParticipantList>
   </Resp>
  </Txn></etc:RespListParticipant>
```

Sample Schema Failure:

```
<etc:RespListParticipant xmlns:etc="http://npci.org/etc/schema/">
<Head ver="1.0" ts="2016-08-10T12:25:00" orgId="IRBL" msgId="11ABC"/>
<Txn id="1010110" note="" refId="" refUrl="" ts="2016-08-10T12:25:00" type="ListParticipant" orgTxnId=””/>
```

<Resp ts="2016-08-10T12:25:00" result="FAILURE" respCode="104" NoOfParticipant=”0” />

</Txn>

<Signature ……>

..

..

</Signature>

</etc:RespListParticipant>

Element	Attribute	Definition	Datatype	Format	Mandatory (M) Optional (O)
Root		XML root element representing each API		<etc:ReqListParticipant xmlns:etc="http://npci.org/etc/schema/">	M
	xmlns	API Schema Namespace.	Alphanumeric	1-255	M
Head					M
	ver	Version of the API. This is the API version. NPCI may host multiple versions for supporting gradual migration. As of this specification, default production version is "1.0".	Alphanumeric	length is not checked as version should be “1.0”	M
	ts	Time of request from the creator of the message (Transmission time). API request time stamp. Since timestamp plays a critical role, it is highly recommended that devices are time synchronized with a time server.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	orgId	Each organization will be identified with a unique ID. The toll plaza has to request its acquirer with a required organization ID. Based on availability Acquirer will register and assign the same. Basically it should be a short code of the toll plaza operator.	Alphanumeric only Alphabets	4	M
	msgId	Message identifier-used to correlate between the request and response.	Alphanumeric	1-35	M

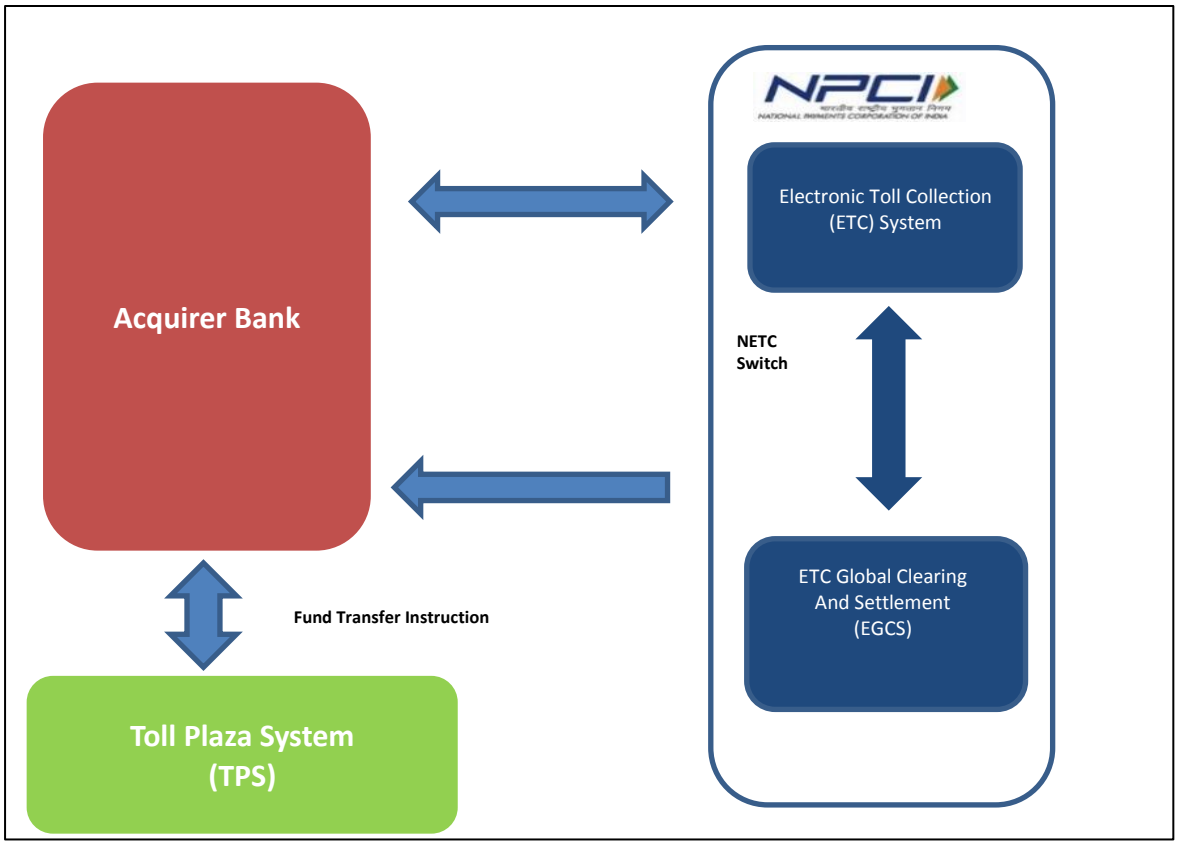
		The unique identifier created by the originator of the message and will be used to correlate the response with the original request.			
Txn		This element contains the Transaction details and is visible to all parties involved in the transaction processing. This element is populated by the originator of the transaction and the same must be passed across all the entities.			M
	id	Unique Identifier for the transaction across all entities. This will be created by the originator. This will be used to identify each transaction uniquely across all the entities. PSP should use UUID scheme to ensure globally unique identifiers are used.	Alphanumeric	1-22	M
	note	Description of the transaction which is in free text format	Alphanumeric with special characters	0-50	O
	refId	External reference number to identify the payment like Loan number, invoice number, etc.	Alphanumeric	0-35	O
	refUrl	URL for the transaction	Alphanumeric with special characters	0-35	O
	ts	Transaction origination time by the creator of the transaction. This same value to be passed across all the entities	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	type	This attribute describes the type of the transaction	Code length check is not there as it should be in the list of prescribed types	1-20 ListParticipant	M
	orgTxnId	Original transaction ID to be used for reversal/Refund transaction.	Alphanumeric	1-36	O

Resp		Response message is generated for each operation specified in the request and each operation can be identified by unique sequence number specified in the request.			M
	ts	The attribute contains Timestamp to be filled by Acquirer bank.	ISODateTime	25 (It should be 19 as format is YYYY-MM-DDThh:mm:ss)	M
	result	This attribute provides contains the final result of the transaction	Alphanumeric	SUCCESS|PARTIAL|FAILURE	M
	respCode	This attribute provides helps us to identify the request for which particular response change is generated	Numeric	3	M
	NoOfParticipant	The attribute contains total no of participants	Numeric	1-3	M
ParticipantList		This element contains Information related to the Plaza			M
ParticipantList. Participant					
	name	The attribute contains the name of issuer bank.	Alphanumeric	1-4 ALL <specific Bank IIN>	M
	errCode	The attribute contains Error code for the participant tag.	Alphanumeric	1-4 ALL <specific Bank IIN>	M
	issuerIin	The attribute contains the unique codes assigned for the issuer bank.	Alphanumeric	1-4 ALL <specific Bank IIN>	M

16 Settlement and dispute handling Process for Toll Plaza & Acquirer bank

All the transactions received from Toll Plaza Server to be validated by Acquirer bank and to be forwarded to NPCI switch, which further processes the data to arrive on the net settlement amount for each Toll Plaza. Acquiring Host and Toll Plaza Operator need to exchange funds to complete settlement process based on the daily settlement reports provided by the Acquiring Host. The settlement service is the facility within which funds are exchange between toll plaza operator and acquirer bank.

The net settlement information will be sent by the acquirer bank to the Toll Plaza, which performs the physical transfers of funds. Acquiring system provides the response files to the toll plaza operator which will indicate the transactions that have been processed to arrive at the net settlement amount.



Acquiring Host Clearing & Settlement System is explained in below diagram

Figure-8: Acquiring Host Clearing & Settlement System

Settlement and dispute handling refers to all the activities that take place after the processing of transaction that aid in the final transfer of funds between toll plaza operator and acquirer bank. Settlement is the process of generation of records indicating the net funds to be transferred to the Toll Plaza Operator at the end of every settlement cycle.

Acquirer bank system to mainly perform following tasks:

- To provide a mechanism to validate & upload the successful transaction in the NPCI switch.
- To process all valid transactions and provide an acknowledgment to the Toll Plaza Operator.
- To provide the clear status of transactions (Accepted, Decline & In-process) and calculate the settlement fund value at end of each settlement cycle.
- To share reject reason to the Toll Plaza Operator for the declined transactions.
- To provide a mechanism for dispute management on violation cases.
- To calculate the correct vehicle class fare as per the defined business rule.
- Produce reports or MIS for Toll Plaza Operators. To transfer the funds to the toll plaza operator as per the defined SLA.

17 Dispute Handling

17.1 Dispute Cycle Definitions

The various disputes supported by Acquirer bank are defined as follows:

17.2 Credit adjustment:

Credit adjustment would be raised for reversing the excess funds received to the tag holder. It can be raised on settled transactions only.

17.3 Debit adjustment:

Debit adjustment would be raised for violation cases along with the valid proofs/ evidences for receiving the difference amount from tag holder. It can be raised on settled transactions only.

17.4 Chargeback:

It is a message through which the issuer/ tag holder demands a full or partial reversal of an amount earlier charged on NETC transactions. A chargeback is always accompanied by a reason and evidences due to which it is being demanded.

17.5 Chargeback acceptance / Chargeback deemed acceptance:

It is notification message generated by the acquirer/ toll plaza operator to indicate an acceptance of the chargeback raised by the issuer/ tag holder.

17.6 Credit Chargeback:

It is a message generated by issuer/ tag holder to raise a reversal (partial or full) of the NETC transaction to acquirer/ toll plaza operator.

17.7 Credit chargeback acceptance / Credit chargeback deemed acceptance:

It is notification message generated by the acquirer/ toll plaza operator to indicate an acceptance of the chargeback raised by the issuer/ tag holder.

17.8 Re-Presentment:

It is a message by which the acquirer bank/ toll plaza operator rejects the chargeback claimed by issuer/ tag holder with valid proof/ evidences.

17.9 Re-Presentment acceptance / Re presentment deemed acceptance:

It is a message initiated by the issuer in consent with tag holder to indicate acceptance of the re-presentment message transmitted by the acquirer/ toll plaza operator.

17.10 Good Faith:

The good faith message would be generated by either of the party i.e. Issuer/ tag holder or by Acquirer bank/ toll plaza operator for the transactions where dispute TAT is expired. It is the last cycle of dispute handling where the dispute is settled with mutual consent from both the parties.

17.11 Good faith acceptance:

This message is generated by a receiving party to indicate its acceptance of a good faith case raised by initiating party. Good faith acceptance can be full/partial.

17.12 Good faith declined/ Good Faith deemed declined:

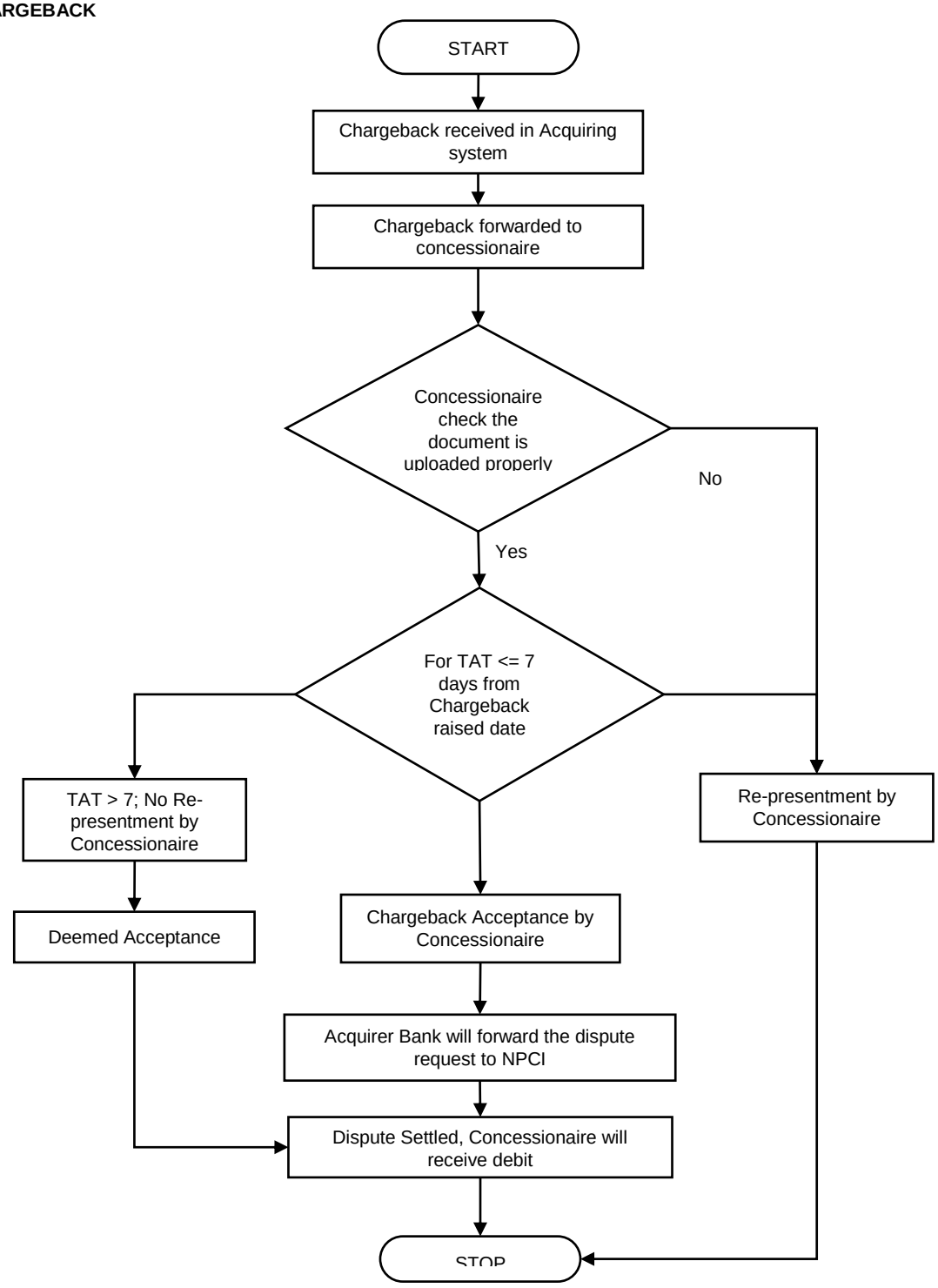
This message is generated by a receiving party to indicate that it rejects the good faith case concerning it raised by initiating party.

Note:

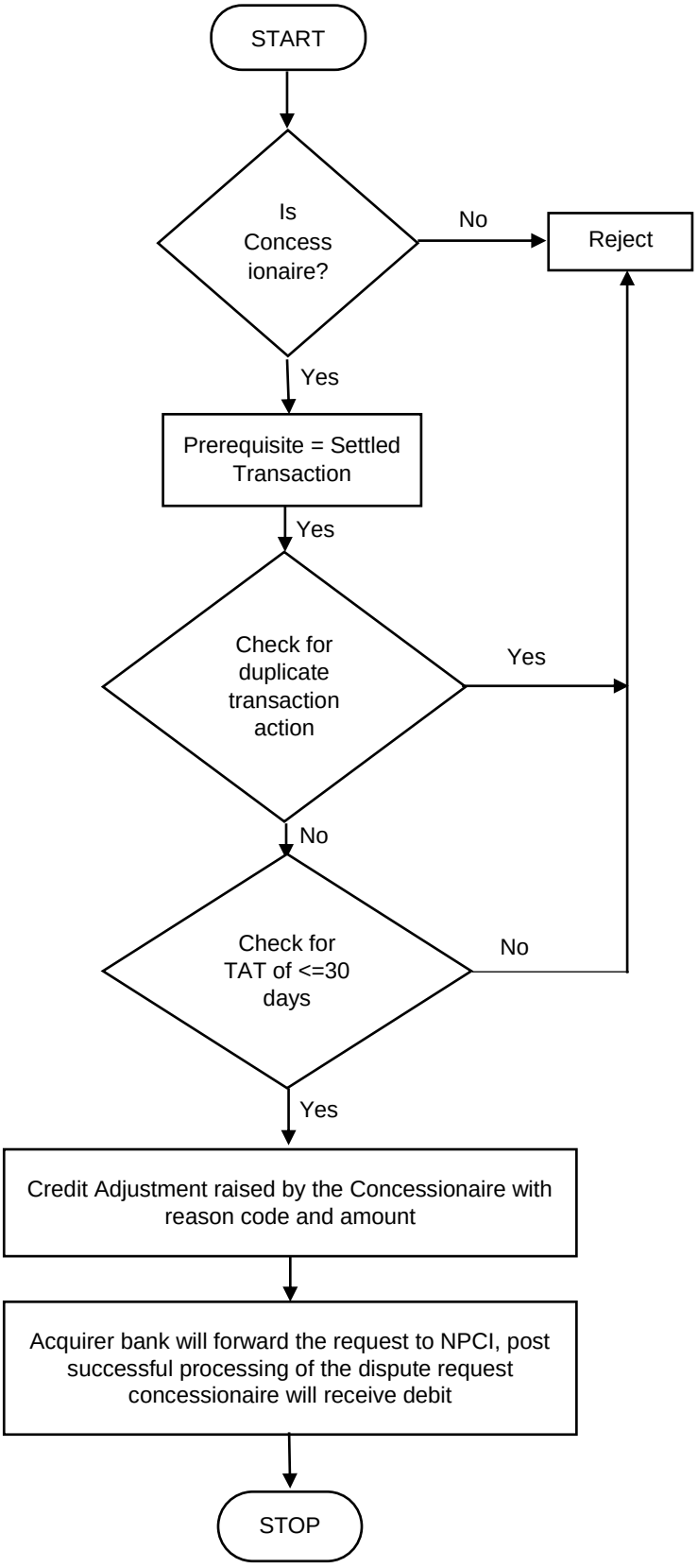
1. *All the above disputes are deemed accepted post expiry of their respective TAT except Good faith. In deemed accepted case, the funds will be settled between member banks on the expiry of the TAT for respective dispute cycle.*
2. *Good faith with no response within TAT will be deemed declined. In deemed declined case, there is no fund movement.*

17.13 Flow Charts

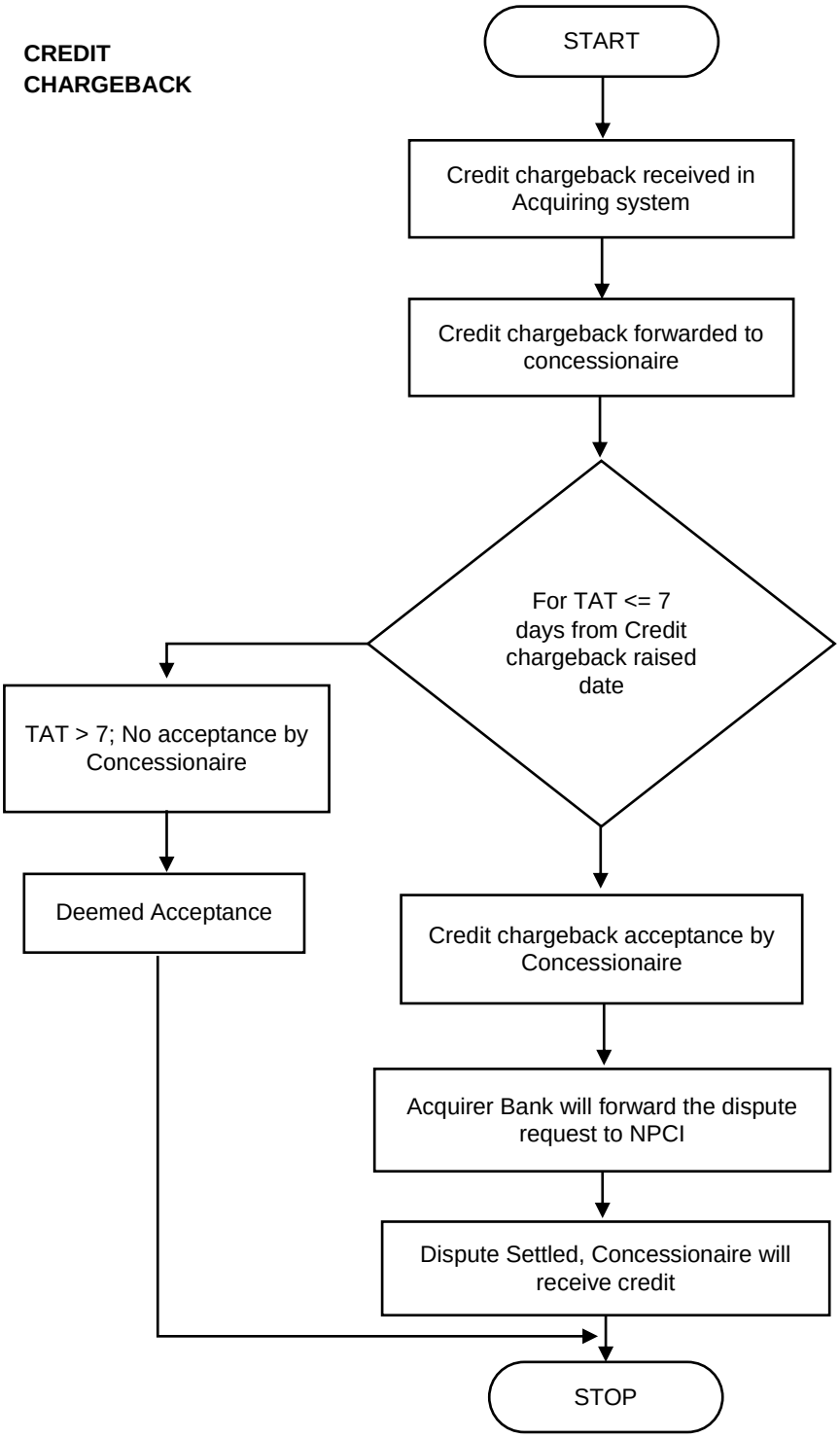
CHARGEBACK



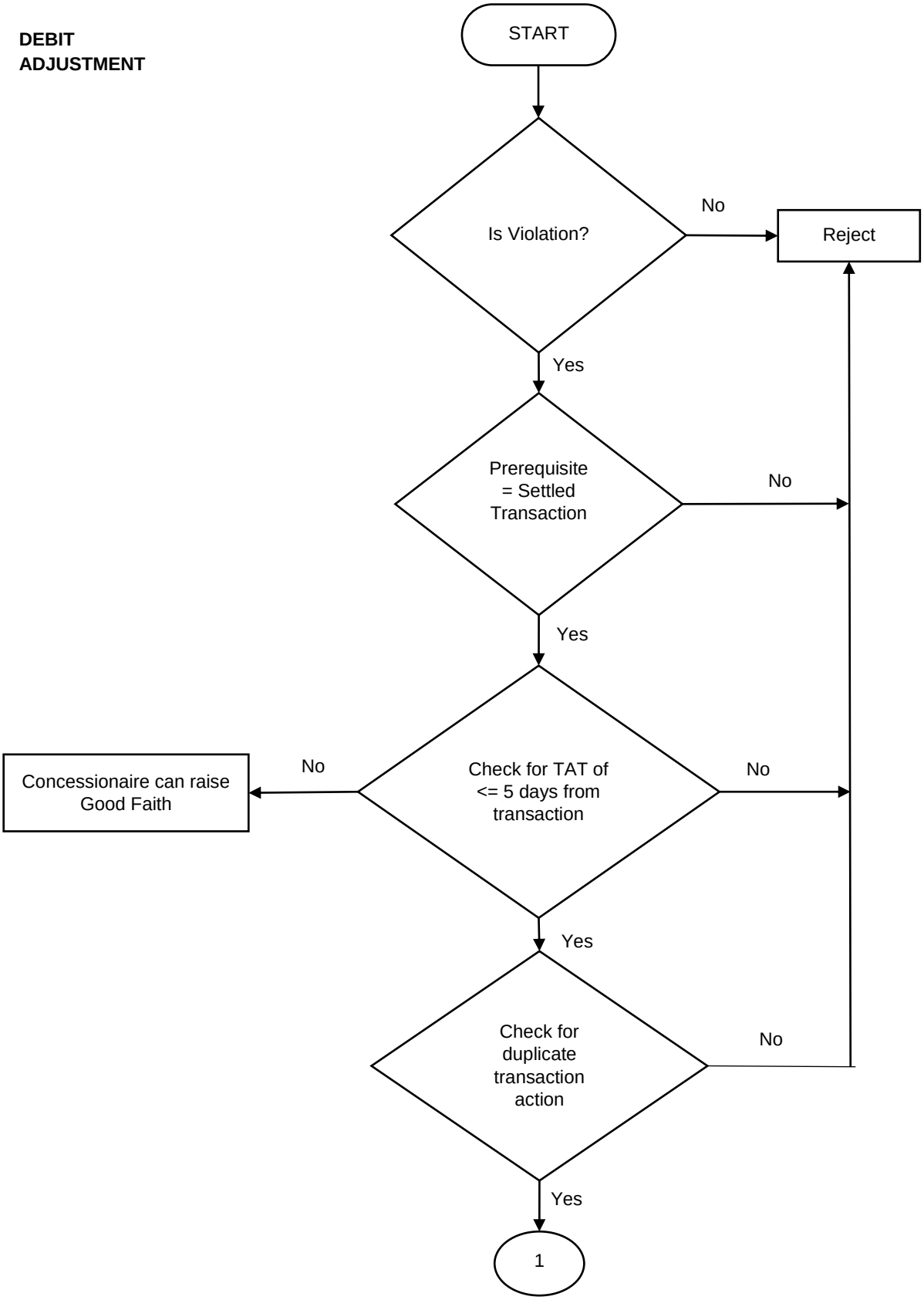
CREDIT ADJUSTMENT



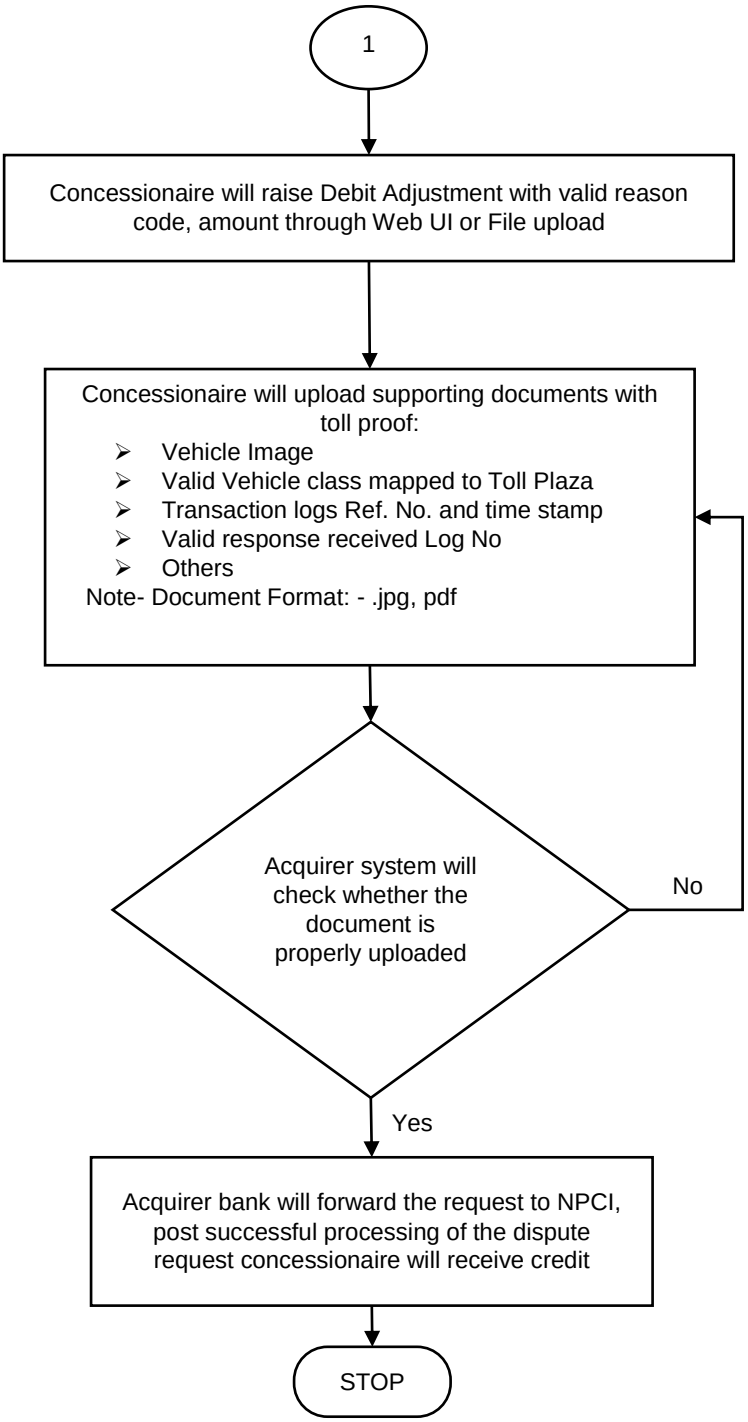
CREDIT CHARGEBACK



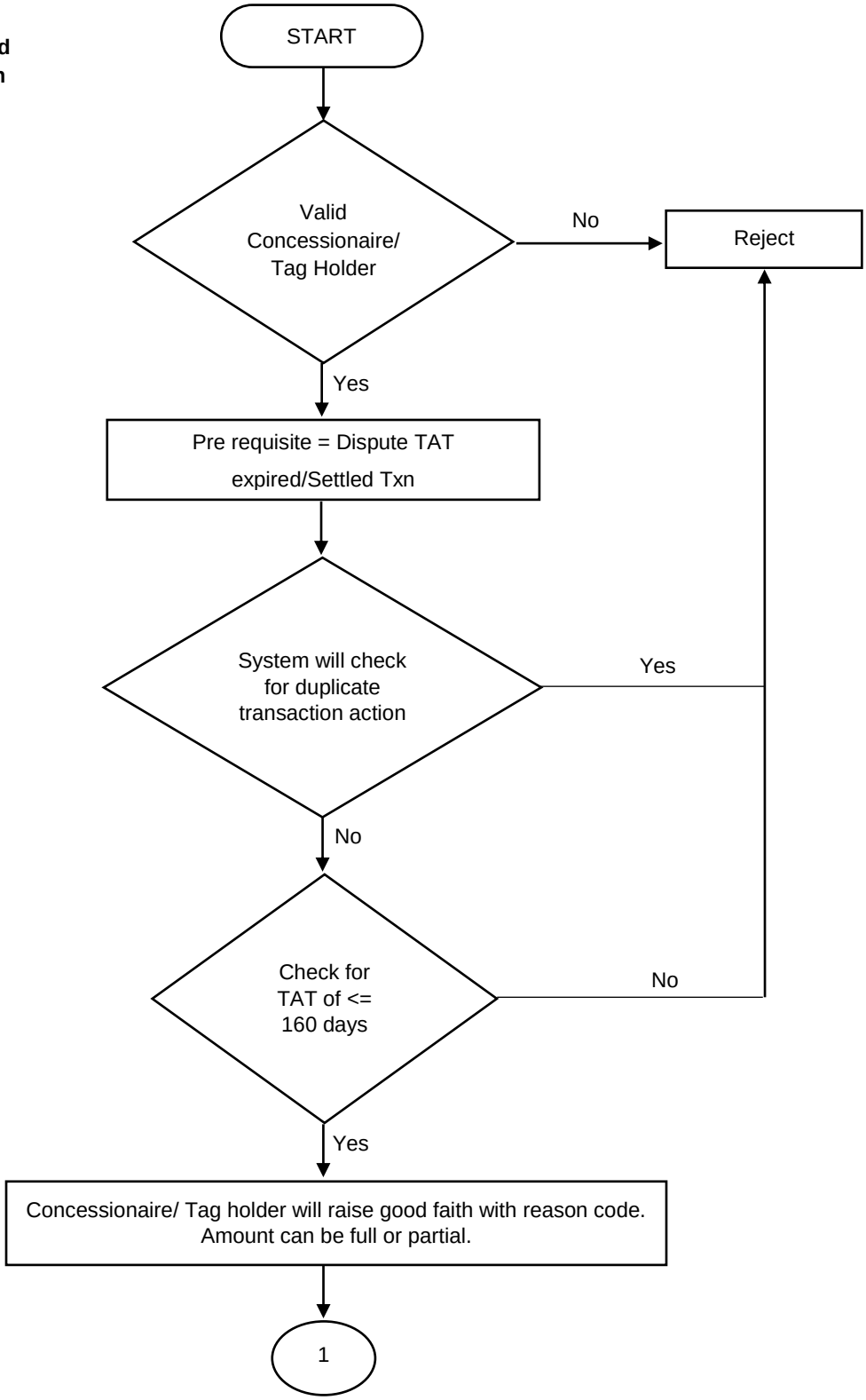
DEBIT ADJUSTMENT



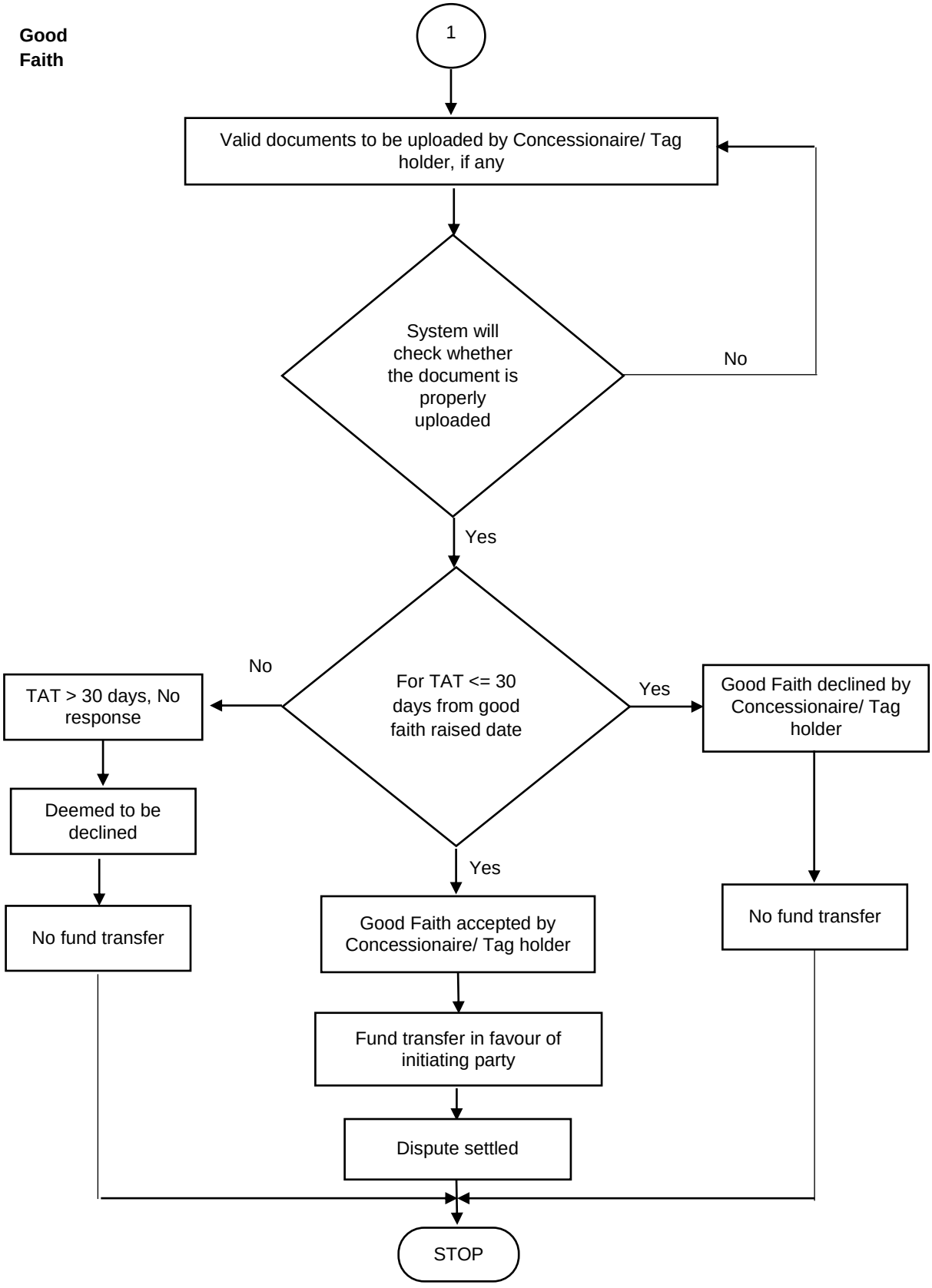
DEBIT ADJUSTMENT



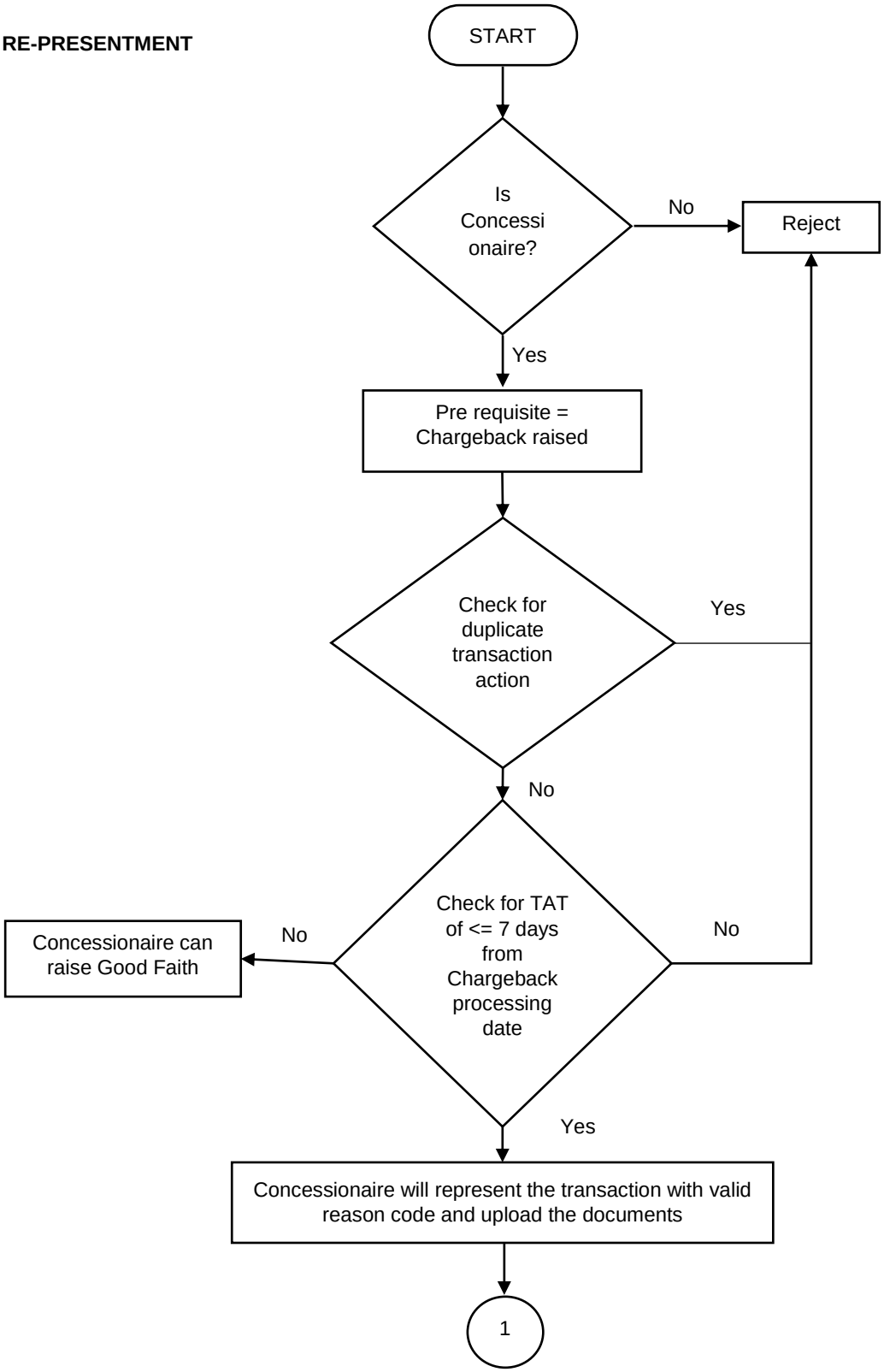
Good Faith


START
Valid Concessionaire/ Tag Holder
No
Reject
Yes
Pre requisite = Dispute TAT expired/Settled Txn
System will check for duplicate transaction action
Yes
No
Check for TAT of <= 160 days
No
Yes
Concessionaire/ Tag holder will raise good faith with reason code. Amount can be full or partial.
1

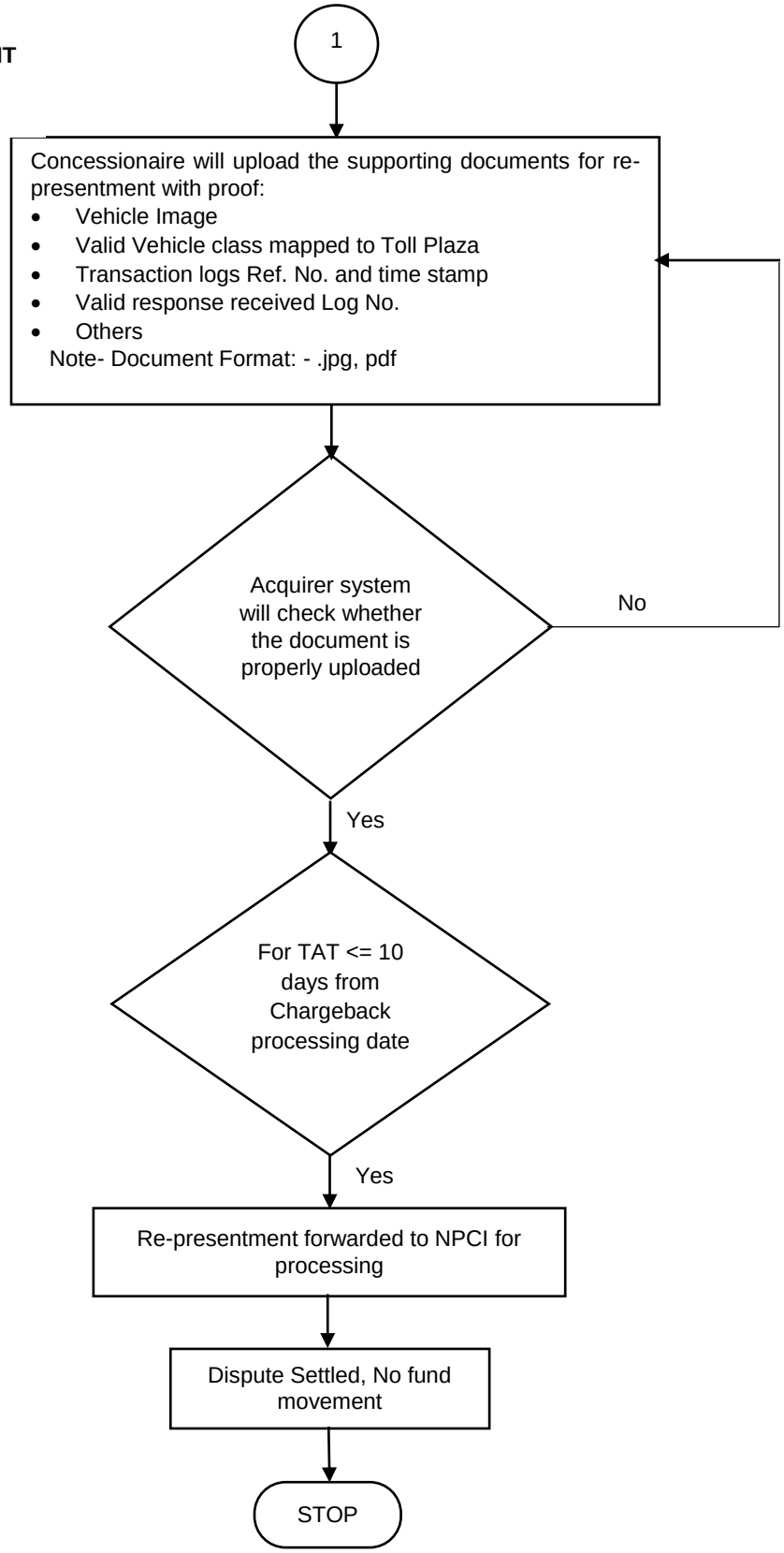
Good Faith


1
Valid documents to be uploaded by Concessionaire/ Tag holder, if any
System will check whether the document is properly uploaded
No
Yes
For TAT <= 30 days from good faith raised date
No
TAT > 30 days, No response
Deemed to be declined
No fund transfer
Yes
Good Faith declined by Concessionaire/ Tag holder
No fund transfer
Yes
Good Faith accepted by Concessionaire/ Tag holder
Fund transfer in favour of initiating party
Dispute settled
STOP

RE-PRESENTMENT



RE-PRESENTMENT



17.14 Dispute TAT Cycle

Sr. No.	Dispute Cycle & Function Code	Raised By	Pre-Requisite	TAT	Financial / Non-Financial	Documents Required
1	Debit Adjustment (DA) (Function Code-763)	Acquirer/ toll plaza operator	Settled Txn (Txn Type Debit)	2 days from Settled Txn Date	F	Vehicle Image, AVC, Vehicle Number, Date of transactions details and Description of raising the DA to mentioned in the Member Message Text Field (MMT)
2	Credit Adjustment (CA) (Function Code-762)	Acquirer/ toll plaza operator	Settled Txn (Txn Type Debit)	30 days from Settled Txn Date	F	Original transactions ID to be mentioned in MMT Field
3	Chargeback Raised (Function Code-450)	Issuer/ Tag holder	1. Settled Txn (Txn Type Debit) 2. Debit Adjustment 3. Credit Adjustment	40 days from Settled Txn Date	N	Statement of Account, Customer Grievance letter, Proof of Multiple Debit, Proof of Vehicle Class Mapped
4	Chargeback Acceptance (Function Code-470)	Acquirer/ toll plaza operator	Chargeback Raised	5 days from Chargeback Raised Date	F	No Document Required
5	Deemed Chargeback Acceptance (Function Code-500)	System	Chargeback Raised	After 10 days from Chargeback Raised Date	F	No Document Required
6	Credit Chargeback Raised (Function Code- 451)	Issuer/ Tag holder	1. Settled Txn (Txn Type Credit) 2. Credit Adjustment	40 days from Settled Txn Date	N	Statement of Account, Customer mentioning the credit received to account.
7	Credit Chargeback Acceptance (Function Code-452)	Acquirer/ toll plaza operator	Credit Chargeback Raised	10 days from Credit Chargeback Raised Date	F	No Document Required

8	Deemed Credit Chargeback Acceptance (Function Code-502)	System	Credit Chargeback Raised	After 10 days from Credit Chargeback Raised Date	F	No Document Required
9	Re-Presentment Raised (Function Code-205)	Acquirer/ toll plaza operator	Chargeback Raised	10 days from Chargeback Raised Date	N	Valid proof to claim the Re-presentment against charge back to be attached
10	Re-Presentment Acceptance (Function Code-261)	Issuer/ Tag holder	Re-presentment Raised	10 days from Re-Presentment Raised Date	N	No Document Required
11	Deemed Re-Presentment Acceptance (Function Code-501)	System	Re-presentment Raised	After 10 days from Re-Presentment Raised Date	N	No Document Required
12	Good Faith Raised (Function Code – 680)	Issuer / Tag holder Acquirer/ toll plaza operator	Dispute closure, TAT expired	160 days from dispute closure date	N	Valid proof required for raising good faith
13	Good faith Acceptance (Function Code – 681)	Issuer/ / Tag holder Acquirer/ toll plaza operator	Good-faith raised	30 days from Good faith raised date	F	No Document Required
14	Good faith Decline (Function Code – 682)	Issuer/ Tag holder Acquirer/ toll plaza operator	Good-faith raised	30 days from Good faith raised date	N	No Document Required
15	Deemed Good Faith Declined (Function Code – 505)	EGCS System	Good-faith raised	30 days from Good faith raised date	N	No Document Required

Note: - Reason code wise document required for raising the charge back & Re-presentment is mentioned in section 14.4 (3)

17.15 Movement of Fund for Disputes

Sr. No.	Message Type	Financial / Non-Financial	Fund Flow Direction	
			Debit	Credit
1	Settled Transaction DEBIT	Financial	Issuer/ Tag Holder	Acquirer/ Toll plaza operator
2	Settled Transaction CREDIT	Financial	Acquirer/ Toll plaza operator	Issuer/ Tag Holder
3	Credit Adjustment	Financial	Acquirer/ Toll plaza operator	Issuer/ Tag Holder
4	Debit Adjustment	Financial	Issuer/ Tag Holder	Acquirer/ Toll plaza operator
5	Chargeback Raise	Non-Financial	----	----
6	Chargeback Acceptance	Financial	Acquirer/ Toll plaza operator	Issuer/ Tag Holder
7	Deemed Chargeback Acceptance	Financial	Acquirer/ Toll plaza operator	Issuer/ Tag Holder
8	Credit Chargeback	Non-Financial	----	----
9	Credit Chargeback Acceptance	Financial	Issuer / Tag Holder	Acquirer/ Toll plaza operator
10	Deemed Credit Chargeback Acceptance	Financial	Issuer / Tag Holder	Acquirer/ Toll plaza operator
11	Re- Presentment Raise	Non-Financial	----	----
12	Re-Presentment Acceptance	Non-Financial	----	-----
13	Good Faith Raise	Non-Financial	----	----
14	Good Faith Acceptance	Financial	Accepting Party	Initiating Party
15	Good Faith Decline	Non-Financial	----	----
16	Deemed Good Faith Declined	Non-Financial	----	----

18 Dispute Reason Codes

Dispute can be raised by the Toll plaza operator based on the following reason defined by NPCI.

18.1 Debit Adjustment

Reason Code	Description
1001	Toll fare calculation error
1002	Vehicle class mismatch
1003	Unregistered Tag in the mapper
1004	Vehicle is not in exempted list
1005	Vehicle is not in black list
1006	Vehicle is not in low balance list
1007	Other Specify

18.2 Credit Adjustment

Reason Code	Description
2001	Toll fare calculation error
2002	Duplicate transaction done at Toll Plaza
2003	Tag holder was charged for unsuccessful transaction
2005	Paid by other means
2006	Vehicle is in exempted list
2007	Other Specify

18.3 Chargeback

Reason	Description	Documents as per Reason Code	Member Message Text

Code			
3001	NETC Toll services not availed/ Tag holder does not recognise the transaction	Statement of Account Customer Grievance letter/Mail (Clearly specifying the transaction details – Transaction ID, Transaction Date & time, Tag ID for which CB is being raised)	Customer Not avail the NETC Service
3002	Duplicate transaction done at Toll Plaza	Statement of Account Customer Grievance letter/mail (Clearly specifying the transaction details – Transaction ID, Transaction Date & time, Tag ID for which CB is being raised) Proof of Multiple Debit	Transaction Debited two times Txn. Reference Number XXXXXXX1 XXXXXXX2
3003	Vehicle was in exempted list	Proof taken of Vehicle coming under Exempted category as per MORT Letter received from Govt. Authority Identity proof of VIP etc.	Description of Vehicle i.e. Ambulance Vehicle or VIP etc. Date and time of tag added in the exempted exception list in NPCI Mapper
3004	Vehicle was in black list	Customer Grievance letter/Mail (No proof needs to be attached by Issuer)	Date and time of adding the Tag in Black list in NPCI Mapper.
3005	Vehicle was in low balance list	If insufficient balance in customer account Issuer Bank can raise the CB (No proof needs to be attached by Issuer) If the complaint is initiated by customer Grievance letter/Mail	Date and time of adding the Tag in Low balance list in NPCI Mapper
3006	Toll fare calculation error	Customer Grievance letter/Mail	Clear reference of wrong fare charged to customer account. e.g. 250/- is changed instead of 200/-
3007	Vehicle class mismatch	Image of Vehicle RTO RC Copy	Details of vehicle with Registration Number. e.g.
3008	Signature not validated	Technical chargeback. Issuer bank needs to verify post Signature is	NA

		implemented at toll plaza.	
3009	Wrong Debit Adjustment raised	Image of Vehicle RTO RC Copy	Details of vehicle with Registration Number. e.g.
3010	Credit posted as Debit	Customer Grievance letter/Mail	Details of dispute.
3011	Paid by other means	Customer Grievance letter/Mail Proof of payment made by other means	Detail description of payment made
3012	Fraudulent Tag holder not present transaction	Customer Grievance letter/Mail	Details description of dispute
3013	Fraudulent multiple transaction	Customer Grievance letter/Mail Customer Account Statement with multiple debit transaction	Details of multiple debit transactions. Txn Reference Number. e.g. XXXXXXX1
3014	Other Specify	Customer Grievance letter/Mail Proof to justify the dispute	This is depend on the dispute

18.4 Credit Chargeback

Reason Code	Description
3015	NETC Toll services not availed/ Tag holder does not recognize the transaction
3016	Toll fare calculation error
3017	Vehicle class mismatch
3018	Wrong Credit Adjustment raised
3019	Debit posted as Credit
3020	Paid by other means
3021	Fraudulent multiple transaction
3022	Other Specify

18.5 Re-Presentment

Reason Code	Description
4001	Supporting Documents for services availed/valid transactions
4002	Supporting Documents for multiple passing

4003	Proof of Vehicle is not in exempted List
4004	Proof of Vehicle is not in black list
4005	Proof of Vehicle is not in low balance list
4006	Proof of valid Toll Fare calculation
4007	Proof of valid Vehicle class
4008	Proof of successful response
4009	Proof of successful signature validation
4010	Other Specify

Note: - For all above dispute reason code, it is mandatory to provide detailed description while raising dispute. Like all other payment products dispute options, NETC also have Compliance and Arbitration dispute cycle in addition to above defined disputes. This option is only used by the respective issuer and acquirer banks if the disputes doesn't get resolved in above dispute cycle.

19 Message Specification

19.1 Message Definitions

Acquirer bank routes and processes all transactions and dispute messages. A message generated by any Toll Plaza Operator shall first be transmitted to acquirer bank. Acquirer bank routes the message to the NPCI and takes other requisite actions such as sending of acknowledgment files to the Toll Plaza Operator who has initiated the message.

19.2 Message Initiation

Acquirer bank to provide the Toll plaza operators with two methods to transmit and exchange dispute messages:

- Web User Interface
- File Upload

19.3 Web User Interface

To use the web application for uploading dispute transactions, a toll plaza operator has to perform the following steps -

a) Access the web page provided by Acquirer bank by using the unique user ID and password. The access has to be role based and Maker/Checker/viewer rules are to be defined for each user of Toll Plaza Operator.
b) Toll Plaza has to use the search field available for the transactions on which dispute needs to be raise.
c) The values of the requisite data fields like disputed amount, toll plaza operator remarks etc. is mandatory for raising the dispute based on the dispute table defined in the document.

19.4 File Upload

In case a toll plaza operator wants to upload bulk disputes, dispute can be uploaded by using file upload option which will have defined format. The workflow for raising bulk disputes is as follows:

a) The Toll Plaza Operator needs to generate the file for raising the dispute as per the defined format. The specifications of the file format are given below in this document.
b) The file need to be a comma separated flat file (.csv).
c) The file should be encrypted using the encryption logic shared by acquirer bank.
d) The file upload will be done using web interface provided by acquirer bank.
e) The acquirer bank may reject or accept the file(s). Rejection could be on the basis of business rule violation/technical rule violation defined later in this document. The validated files are forwarded for staging.

f) Acquiring Host validates the uploaded disputed transactions and display the status of the disputed transactions to the Toll Plaza Operator. Once the disputed transactions are accepted, they go directly for processing.

19.5 Message Structure

The messages exchanged via files shall follow the comma separated flat file format. Acquirer bank will share the file based on Plaza ID. These are the following files generated by Acquirer bank.

- **Post Settlement Data file (83):** This file will contain the details of transactions which are successfully settled by Acquirer bank. This file will be shared with the Toll plaza operator.
- **Incoming Files (01):** Files which are received by Toll plaza operators and generated by Acquirer bank are termed as Incoming files. These files will contain all the disputes raised against the Toll Plaza Operator.
- **Acknowledgement Files (02):** Files which are generated by acquirer bank to acknowledge the outgoing files submitted by Toll plaza operator are termed as acknowledgment files. These files will contain all the disputes raised through bulk file upload.
- **Web Acknowledgement Files (03):** Files which are generated by acquirer bank to acknowledge the outgoing files submitted by Toll plaza operator are termed as web acknowledgment files. These files will contain all the disputes raised through web.
- **Raw Data Files (85):** The raw data files will contain the details of transactions which are received by Acquirer bank for processing. This file will contain the transactions which are accepted, declined & in-process. The raw data file will contain all the transactions to allow the Toll Plaza operator to reconcile the transactions sent for processing.

20 File Naming Convention

Each incoming/outgoing file from/to the Acquirer bank system possesses a unique name. This unique name can be formed by following the below defined file naming conventions.

A file name is basically made up of five different elements which are: File type, dispute cycle indicator, Plaza ID, Julian date & file sequence.

Description and Possible values for each of the 5 elements are as follows:

Sr. No	Element	Format	Description and Possible values
1	File Type	N2	It defines the file type. Possible values 00 – Toll plaza operator generated outgoing file. 01 – Acquirer bank generated incoming file. 02– Acquirer bank generated acknowledgement (File upload) 03 – Acquirer bank generated web acknowledgement (For the transactions performed by Toll plaza operator on the Web UI. Selected message will be reflected in the file) 83 – Settlement file (Settled Transaction) to Toll plaza operator 85 – Raw data file to Toll plaza operator
2	Settlement Cycle indicator	N1	It represents the settlement cycle number in which the transactions were processed by Acquiring Host. Possible values: 0 – Default N – Integer representing the settlement cycle number in which the transaction was processed The Toll plaza operator outgoing file will have settlement cycle indicator set to the default value 0. Acquirer bank generated files (with file types 01, 02, 03 etc.) will have settlement cycle indicator as per the settlement cycle in which the Toll plaza operators' outgoing files are processed/settled.
3	Plaza ID	N6	It represents the Plaza ID allotted to the toll plaza operator by NPCI. It comprises of the below mentioned components 6 digit numeric value of Plaza ID E.g. For ABC Toll Plaza 123456 (Plaza ID of the toll plaza operator)
4	Julian Date	YYDDD	Julian date will be the file processed/generated date (Settlement date).

		YY-Year DDD-Julian date	
5	File Sequence	N2	It defines the file sequence number for a particular date. The range can be from 00 to 99. e.g. 00 – 1st file 01 – 2nd file

The following examples shall aid in a better understanding of the file naming convention

A. Toll plaza operator outgoing File (Bulk Upload File)

The outgoing file processed or generated by Toll plaza operator (Plaza ID- 123456) on 01-08-2017 and uploaded on the Web on the same day would have the following file name 0001234561721300

Description	Value	Interpretation
File Type	00	00 – signifies that this file is a Toll plaza operator generated outgoing message
Settlement Cycle Number	0	0 – signifies the default settlement cycle
Plaza ID	123456	This is the Plaza ID assigned by NPCI to the toll plaza operator generating this file
Julian Date	17213	Format = YYDDD, i.e. year = 2017 & Julian date = 213 i.e. 1st August
Sequence Number	00	00 – signifies that this is the first outgoing file that this particular Toll plaza operator has generated for the specified Julian date

B. Acquirer bank generated Incoming File (Dispute raised against Toll Plaza Operator)

The incoming file for a Toll plaza operator (plaza ID- 567890) generated by the acquirer bank in the settlement cycle on 01-08-2017 would have the following name 0115678901721301

Description	Value	Interpretation
File Type	01	01 – signifies that this file is an acquirer bank generated incoming file

Settlement Cycle Number	1	1 – signifies the first settlement cycle
Plaza ID	567890	This is the plaza ID assigned by NPCI to the toll plaza operator. It identifies the Toll plaza operator who will be receiving this file
Julian Date	17213	Format = YYDDD, i.e. year = 2017 & Julian date = 213 i.e. 1st August
Sequence Number	01	01 – signifies that this is the second incoming file that has been generated for this particular Toll plaza operator for the specified Julian date

C. Acquirer Generated Acknowledgement File (Acknowledgment for Dispute raised by Toll Plaza operator)

The acquirer will send acknowledgement file for each of the outgoing files received from its Toll plaza operators. For e.g. the first acknowledgement for Toll plaza operator outgoing file (0001234561721300) as mentioned in the example 1 above processed in Cycle 01 will be 0211234561721300 i.e. 02-1-123456-17213-00

Description	Value	Interpretation
File Type	02	02 – signifies that this file is an acquirer bank generated acknowledgement message
Settlement Cycle Number	1	1 – signifies the first settlement cycle
Plaza ID	123456	This is the Plaza ID assigned by NPCI to the toll plaza operator. It identifies the Toll plaza operator who will be receiving this file
Julian Date	17213	Format = YYDDD, i.e. year = 2017 & Julian date = 213 i.e. 1st August
Sequence Number	00	00 – signifies that this is the first file that has been generated for this particular Toll plaza operator for the specified Julian date

1. MIS & Reports

Acquiring host will generate reports for the Toll plaza operators as per the below given format.

All reports will be available in the following formats for download to the Toll plaza operator

XLS, CSV & TXT

- Clearing and Settlement reports
  - Daily Settlement summary (DSR)
  - Incoming, Acknowledgment & Web Acknowledgement File
    - 01 - Incoming,
    - 02 - File Acknowledgment
    - 03 – Web Acknowledgement
  - Raw Data File (85)
  - Post Settlement File (83)
  - Rejection Summary Report
- Disputes Report for Toll plaza operator
- Monthly Pass Report
- Violation Processing Report
- Active Pass Details
- Black List Rejection Report
- File Level Summary Report
- Monthly Pass Settlement Reconciliation
- Record Level Transaction Report
- Settlement Reconciliation Report
- Traffic Count Report
- Transaction Reconciliation And Settlements Report
- Violation Reconciliation And Settlements Report
- Violation Summary Report

2. Dispute Initiation Point through Web UI or File

Sr. No.	Clearing Message Type	Web UI	File
1	Debit Adjustment	Y	Y
2	Credit Adjustment	Y	Y
3	Chargeback	Y	Y
4	Chargeback Acceptance	Y	Y
5	Credit Chargeback	Y	Y
6	Credit Chargeback Acceptance	Y	Y
7	Re-presentment	Y	Y
8	Re-presentment acceptance	Y	Y
9	Good Faith	Y	Y
10	Good Faith Acceptance	Y	Y
11	Good Faith Declined	Y	Y

Below given is the message structure of various messages which will be uploaded by Toll plaza operator in Acquirer bank system. Toll plaza operator should upload file.

3. Settlement Message Formats

20.1 Post Settlement Data file (83)

SL No	Field Name	Incoming [Toll Plaza Operator]	Outgoing [Acquire]
1	Transaction Sequence Number	M	M
2	Tag ID	M	M
3	Function Code	M	M
4	Transaction Date and time	M	M
5	RRN	M	M
6	Issuer ID	M	M
7	Acquirer ID	M	M
8	Transaction Amount	M	M
9	Settlement Amount	M	M
10	Settlement indicator DR/CR	M	M
11	Settlement Currency	M	M
12	Financial/Non-Financial Indicator	M	M
13	Settlement Date	M	M
14	Fee Type Code 1	O	O
15	Interchange Category 1	C	C
16	Fee amount 1	C	C
17	Fee DR/CR Indicator 1	C	C
18	Fee Currency 1	C	C
19	Fee Type Code 2	O	O
20	Interchange Category 2	C	C
21	Fee amount 2	C	C
22	Fee DR/CR Indicator 2	C	C
23	Fee Currency 2	C	C
24	Fee Type Code 3	O	O
25	Interchange Category 3	C	C
26	Fee amount 3	C	C
27	Fee DR/CR Indicator 3	C	C
28	Fee Currency 3	C	C

SL No	Field Name	Incoming [Toll Plaza Operator]	Outgoing [Acquire]
29	Transaction Type	M	M
30	Plaza ID	M	M
31	TID	M	M
32	Transaction Status	M	M
33	CBS unique transaction number	M	M
34	CBS Batch number	M	M

20.2 Raw Data file (85)

SL No	Field Name	Length	Datatype	Possible Values
1	Transaction Sequence Number	36	UUID	
2	Transaction ID	22	Varchar	
3	Message ID	35	Varchar	
4	Note	50	Varchar	
5	Reference ID	35	Varchar	
6	Reference URL	35	Varchar	
7	Transaction Date and Time	29	dd-mm-yyyy hh:mm:ss	
8	Transaction Type	15	Varchar	CREDIT DEBIT NON_FIN
9	Original Transaction ID	36	Varchar	
10	Tag ID	32	Varchar	
11	TID	32	Varchar	
12	AVC	5	Varchar	
13	WIM	5	Varchar	
14	Plaza ID	6	Varchar	
15	Plaza Type	10	Varchar	
16	Sub Plaza Type	20	Varchar	
17	Lane ID	6	Varchar	

18	Lane Direction	1	Char	
19	Lane Reader ID	20	Varchar	
20	Parking Floor	3	Varchar	
21	Parking Zone	3	Varchar	
22	Parking Slot	3	Varchar	
23	Parking Reader ID	20	Varchar	
24	Reader Read Date and Time	29	dd-mm-yyyy hh:mm:ss	
25	Signature Data	256	Varchar	
26	Signature Authentication	15	Varchar	
27	EPC Verified	15	Varchar	
28	Proc Restriction Res	256	Varchar	
29	Vehicle Auth	10	Varchar	
30	Public Key CVV	32	Varchar	
31	Reader Transaction Counter	4	Numeric	
32	Reader Transaction Status	10	Varchar	
33	Payer Address	70	Varchar	
34	Issuer ID	6	Numeric	
35	Payer Code	4	Varchar	
36	Payer name	50	Varchar	
37	Payer Type	10	Varchar	
38	Transaction Amount	18,2	Double	
39	Currency Code	3	Varchar	
40	Payee Address	70	Varchar	
41	Acquirer ID	6	Numeric	
42	Payee Code	4	Char	
43	Payee name	50	Varchar	
44	Payee Type	10	Varchar	
45	Response Code	100	Varchar	
46	Transaction Status	2	Numeric	
47	Approval Number	20	Varchar	
48	Payee Error Code	4	Varchar	
49	Settled Amount	18,2	Double	
50	Settled Currency	3	Varchar	
51	Account Type	10	Varchar	

52	Available Balance	18,2	Double	
53	Ledger Balance	18,2	Double	
54	Account Number	35	Varchar	
55	Customer Name	50	Varchar	
56	Initiated By	10	Varchar	
57	Initiated Time	29	dd-mm-yyyy hh:mm:ss	
58	Last Updated By	10	Varchar	
59	Last Updated Time	29	dd-mm-yyyy hh:mm:ss	
60	Vehicle registration number	20	Varchar	
61	Vehicle Class	5	Varchar	
62	Vehicle Type	1	Char	
63	Tag Status	1	Varchar	
64	Tag issue date	13	yyyy-mm-dd	

20.3 Debit/Credit Adjustment

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO[ACK]**	**Incoming [TPO]**
1	Tag ID		M	
2	Internal Tracking Number		O	
3	Function Code		M	
4	Transaction Date and time		M	
5	RRN		M	
6	Issuer ID		M	
7	Acquirer ID		M	
8	Transaction Amount		M	
9	Settlement Amount	-	M	
10	Settlement indicator Dr/Cr	-	M	
11	Settlement Currency	-	M	

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO[ACK]**	**Incoming [TPO]**
12	Message Reason Code		M	
13	Document Indicator	-	M	
14	Member Message Text		O	
15	Full/Partial Indicator		M	
16	Financial/Non-Financial Indicator	-	M	
17	Case Number	-	M	
18	Date, Settlement	-	M	
19	Fee Type Code 1	-	O	
20	Interchange Category 1	-	C	
21	Fee amount 1	-	C	
22	Fee DR/CR Indicator 1	-	C	
23	Fee Currency 1	-	C	
24	Fee Type Code 2	-	O	
25	Interchange Category 2	-	C	
26	Fee amount 2	-	C	
27	Fee DR/CR Indicator 2	-	C	
28	Fee Currency 2	-	C	
29	Fee Type Code 2	-	O	
30	Interchange Category 3	-	C	
31	Fee amount 3	-	C	
32	Fee DR/CR Indicator 3	-	C	
33	Fee Currency 3	-	C	
34	Processing Status	-	M	
35	EGCS Record Reject Reason Code	-	C	
36	Plaza ID		M	
37	TID		M	
38	Vehicle Registration Number	-	M	

20.4 Chargeback

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
1	Tag ID			M
2	Internal Tracking Number			-
3	Function Code			M
4	Transaction Date and time			M
5	RRN			M
6	Issuer ID			M
7	Acquirer ID			M
8	Transaction Amount			M
9	Settlement Amount			-
10	Settlement indicator Dr/Cr			-
11	Settlement Currency			
12	Message Reason Code			M
13	Document Indicator			M
14	Member Message Text			O
15	Full/Partial Indicator			M
16	Financial/Non-Financial Indicator			M
17	Case Number			M
18	Date, Settlement			M
19	Fee Type Code 1			O
20	Interchange Category 1			C
21	Fee amount 1			C
22	Fee DR/CR Indicator 1			C
23	Fee Currency 1			C
24	Fee Type Code 2			O
25	Interchange Category 2			C
26	Fee amount 2			C
27	Fee DR/CR Indicator 2			C
28	Fee Currency 2			C
29	Fee Type Code 3			O

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
30	Interchange Category 3			C
31	Fee amount 3			C
32	Fee DR/CR Indicator 3			C
33	Fee Currency 3			C
34	Processing Status			M
35	EGCS Record Reject Reason Code			-
36	Plaza ID			M
37	TID			M
38	Vehicle Registration Number			M

20.5 Chargeback Acceptance

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
1	Tag ID		M	
2	Internal Tracking Number		O	
3	Function Code		M	
4	Transaction Date and time		M	
5	RRN		M	
6	Issuer ID		M	
7	Acquirer ID		M	
8	Transaction Amount	-	M	
9	Settlement Amount	-	M	
10	Settlement indicator Dr/Cr	-	M	
11	Settlement Currency	-	M	
12	Message Reason Code	-	M	
13	Document Indicator	-	M	
14	Member Message Text		O	
15	Full/Partial Indicator		M	
16	Financial/Non-Financial Indicator	-	M	
17	Case Number	-	M	
18	Date, Settlement	-	M	
19	Fee Type Code 1	-	O	
20	Interchange Category 1	-	C	
21	Fee amount 1	-	C	
22	Fee DR/CR Indicator 1	-	C	
23	Fee Currency 1	-	C	
24	Fee Type Code 2	-	O	
25	Interchange Category 2	-	C	
26	Fee amount 2	-	C	
27	Fee DR/CR Indicator 2	-	C	
28	Fee Currency 2	-	C	
29	Fee Type Code 2	-	O	

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
30	Interchange Category 3	-	C	
31	Fee amount 3	-	C	
32	Fee DR/CR Indicator 3	-	C	
33	Fee Currency 3	-	C	
34	Processing Status	-	M	
35	EGCS Record Reject Reason Code	-	M	
36	Plaza ID		M	
37	TID		M	
38	Vehicle Registration Number	-	M	

20.6 Credit Chargeback

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
1	Tag ID			M
2	Internal Tracking Number			-
3	Function Code			M
4	Transaction Date and time			M
5	RRN			M
6	Issuer ID			M
7	Acquirer ID			M
8	Transaction Amount			M
9	Settlement Amount			-
10	Settlement indicator Dr/Cr			-
11	Settlement Currency			
12	Message Reason Code			M
13	Document Indicator			M

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
14	Member Message Text			O
15	Full/Partial Indicator			M
16	Financial/Non-Financial Indicator			M
17	Case Number			M
18	Date, Settlement			M
19	Fee Type Code 1			O
20	Interchange Category 1			C
21	Fee amount 1			C
22	Fee DR/CR Indicator 1			C
23	Fee Currency 1			C
24	Fee Type Code 2			O
25	Interchange Category 2			C
26	Fee amount 2			C
27	Fee DR/CR Indicator 2			C
28	Fee Currency 2			C
29	Fee Type Code 3			O
30	Interchange Category 3			C
31	Fee amount 3			C
32	Fee DR/CR Indicator 3			C
33	Fee Currency 3			C
34	Processing Status			M
35	EGCS Record Reject Reason Code			-
36	Plaza ID			M
37	TID			M
38	Vehicle Registration Number			M

20.7 Credit Chargeback Acceptance

		Toll Plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
1	Tag ID		M	
2	Internal Tracking Number		O	
3	Function Code		M	
4	Transaction Date and time		M	
5	RRN		M	
6	Issuer ID		M	
7	Acquirer ID		M	
8	Transaction Amount	-	M	
9	Settlement Amount	-	M	
10	Settlement indicator Dr/Cr	-	M	
11	Settlement Currency	-	M	
12	Message Reason Code	-	M	
13	Document Indicator	-	M	
14	Member Message Text		O	
15	Full/Partial Indicator		M	
16	Financial/Non-Financial Indicator	-	M	
17	Case Number	-	M	
18	Date, Settlement	-	M	
19	Fee Type Code 1	-	O	
20	Interchange Category 1	-	C	
21	Fee amount 1	-	C	
22	Fee DR/CR Indicator 1	-	C	
23	Fee Currency 1	-	C	
24	Fee Type Code 2	-	O	
25	Interchange Category 2	-	C	
26	Fee amount 2	-	C	
27	Fee DR/CR Indicator 2	-	C	
28	Fee Currency 2	-	C	
29	Fee Type Code 2	-	O	

		Toll Plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
30	Interchange Category 3	-	C	
31	Fee amount 3	-	C	
32	Fee DR/CR Indicator 3	-	C	
33	Fee Currency 3	-	C	
34	Processing Status	-	M	
35	EGCS Record Reject Reason Code	-	M	
36	Plaza ID		M	
37	TID		M	
38	Vehicle Registration Number	-	M	

20.8 Re-Presentment Deemed Acceptance

		Toll Plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
1	Tag ID			M
2	Internal Tracking Number			O
3	Function Code			M
4	Transaction Date and time			M
5	RRN			M
6	Issuer ID			M
7	Acquirer ID			M
8	Transaction Amount			M
9	Settlement Amount			M
10	Settlement indicator Dr/Cr			M
11	Settlement Currency			M
12	Message Reason Code			M
13	Document Indicator			M
14	Member Message Text			O
15	Full/Partial Indicator			M

		Toll Plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
16	Financial/Non-Financial Indicator			M
17	Case Number			M
18	Date, Settlement			M
19	Fee Type Code 1			O
20	Interchange Category 1			C
21	Fee amount 1			C
22	Fee DR/CR Indicator 1			C
23	Fee Currency 1			C
24	Fee Type Code 2			O
25	Interchange Category 2			C
26	Fee amount 2			C
27	Fee DR/CR Indicator 2			C
28	Fee Currency 2			C
29	Fee Type Code 3			O
30	Interchange Category 3			C
31	Fee amount 3			C
32	Fee DR/CR Indicator 3			C
33	Fee Currency 3			C
34	Processing Status			M
35	EGCS Record Reject Reason Code			-
36	Plaza ID			M
37	TID			M
38	Vehicle Registration Number			M

20.9 Re- Presentment

		Toll plaza operator

SL No	Field Name		ACQ to TPO [ACK]	Incoming [TPO]
1	Tag ID		M	
2	Internal Tracking Number		O	
3	Function Code		M	
4	Transaction Date and time		M	
5	RRN		M	
6	Issuer ID		M	
7	Acquirer ID		M	
8	Transaction Amount		M	
9	Settlement Amount	-	-	
10	Settlement indicator Dr/Cr	-	-	
11	Settlement Currency	-		
12	Message Reason Code		M	
13	Document Indicator	-	M	
14	Member Message Text		O	
15	Full/Partial Indicator		M	
16	Financial/Non-Financial Indicator	-	M	
17	Case Number	-	M	
18	Date, Settlement	-	M	
19	Fee Type Code 1	-	O	
20	Interchange Category 1	-	C	
21	Fee amount 1	-	C	
22	Fee DR/CR Indicator 1	-	C	
23	Fee Currency 1	-	C	
24	Fee Type Code 2	-	O	
25	Interchange Category 2	-	C	
26	Fee amount 2	-	C	
27	Fee DR/CR Indicator 2	-	C	
28	Fee Currency 2	-	C	
29	Fee Type Code 2	-	O	
30	Interchange Category 3	-	C	

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
31	Fee amount 3	-	C	
32	Fee DR/CR Indicator 3	-	C	
33	Fee Currency 3	-	C	
34	Processing Status	-	M	
35	EGCS Record Reject Reason Code	-	C	
36	Plaza ID		M	
37	TID		M	
38	Vehicle Registration Number	-	M	

20.10 Re-Presentment Acceptance

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
1	Tag ID			M
2	Internal Tracking Number			-
3	Function Code			M
4	Transaction Date and time			M
5	RRN			M
6	Issuer ID			M
7	Acquirer ID			M
8	Transaction Amount			M
9	Settlement Amount			-
10	Settlement indicator Dr/Cr			-
11	Settlement Currency			
12	Message Reason Code			M
13	Document Indicator			M

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
14	Member Message Text			O
15	Full/Partial Indicator			M
16	Financial/Non-Financial Indicator			M
17	Case Number			M
18	Date, Settlement			M
19	Fee Type Code 1			O
20	Interchange Category 1			C
21	Fee amount 1			C
22	Fee DR/CR Indicator 1			C
23	Fee Currency 1			C
24	Fee Type Code 2			O
25	Interchange Category 2			C
26	Fee amount 2			C
27	Fee DR/CR Indicator 2			C
28	Fee Currency 2			C
29	Fee Type Code 3			O
30	Interchange Category 3			C
31	Fee amount 3			C
32	Fee DR/CR Indicator 3			C
33	Fee Currency 3			C
34	Processing Status			M
35	EGCS Record Reject Reason Code			-
36	Plaza ID			M
37	TID			M
38	Vehicle Registration Number			M

20.11 Good faith Raise

		Toll plaza operator

SL No	Field Name		ACQ to TPO [ACK]	Incoming [TPO]
1	Tag ID		M	
2	Internal Tracking Number		O	
3	Function Code		M	
4	Transaction Date and time		M	
5	RRN		M	
6	Issuer ID		M	
7	Acquirer ID		M	
8	Transaction Amount	-	M	
9	Settlement Amount	-	-	
10	Settlement indicator Dr/Cr	-	-	
11	Settlement Currency	-	-	
12	Message Reason Code	-	-	
13	Document Indicator	-	M	
14	Member Message Text		M	
15	Full/Partial Indicator		M	
16	Financial/Non-Financial Indicator	-	M	
17	Case Number	-	M	
18	Date, Settlement	-	M	
19	Fee Type Code 1	-	O	
20	Interchange Category 1	-	C	
21	Fee amount 1	-	C	
22	Fee DR/CR Indicator 1	-	C	
23	Fee Currency 1	-	C	
24	Fee Type Code 2	-	O	
25	Interchange Category 2	-	C	
26	Fee amount 2	-	C	
27	Fee DR/CR Indicator 2	-	C	
28	Fee Currency 2	-	C	
29	Fee Type Code 2	-	O	
30	Interchange Category 3	-	C	
31	Fee amount 3	-	C	
32	Fee DR/CR Indicator 3	-	C	

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
33	Fee Currency 3	-	C	
34	Processing Status	-	M	
35	EGCS Record Reject Reason Code	-	M	
36	Plaza ID		M	
37	TID		M	
38	Vehicle Registration Number	-	M	

20.12 Good faith Acceptance

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [ACQ]**
1	Tag ID		M	
2	Internal Tracking Number		O	
3	Function Code		M	
4	Transaction Date and time		M	
5	RRN		M	
6	Issuer ID		M	
7	Acquirer ID		M	
8	Transaction Amount	-	M	
9	Settlement Amount	-	M	
10	Settlement indicator Dr/Cr	-	M	
11	Settlement Currency	-	M	
12	Message Reason Code	-	O	
13	Document Indicator	-	O	
14	Member Message Text		O	
15	Full/Partial Indicator		M	
16	Financial/Non-Financial Indicator	-	M	

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [ACQ]**
17	Case Number	-	M	
18	Date, Settlement	-	M	
19	Fee Type Code 1	-	O	
20	Interchange Category 1	-	C	
21	Fee amount 1	-	C	
22	Fee DR/CR Indicator 1	-	C	
23	Fee Currency 1	-	M	
24	Fee Type Code 2	-	O	
25	Interchange Category 2	-	C	
26	Fee amount 2	-	C	
27	Fee DR/CR Indicator 2	-	C	
28	Fee Currency 2	-	C	
29	Fee Type Code 2	-	O	
30	Interchange Category 3	-	C	
31	Fee amount 3	-	C	
32	Fee DR/CR Indicator 3	-	C	
33	Fee Currency 3	-	C	
34	Processing Status	-	M	
35	EGCS Record Reject Reason Code	-	O	
36	Plaza ID		M	
37	TID		M	
38	Vehicle Registration Number	-	M	

20.13 Good Faith Declined

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
1	Tag ID		M	

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
2	Internal Tracking Number		O	
3	Function Code		M	
4	Transaction Date and time		M	
5	RRN		M	
6	Issuer ID		M	
7	Acquirer ID		M	
8	Transaction Amount	-	M	
9	Settlement Amount	-		
10	Settlement indicator Dr/Cr	-		
11	Settlement Currency	-		
12	Message Reason Code	-		
13	Document Indicator	-	M	
14	Member Message Text		O	
15	Full/Partial Indicator		M	
16	Financial/Non-Financial Indicator	-	M	
17	Case Number	-	M	
18	Date, Settlement	-	M	
19	Fee Type Code 1	-	O	
20	Interchange Category 1	-	C	
21	Fee amount 1	-	C	
22	Fee DR/CR Indicator 1	-	C	
23	Fee Currency 1	-	C	
24	Fee Type Code 2	-	O	
25	Interchange Category 2	-	C	
26	Fee amount 2	-	C	
27	Fee DR/CR Indicator 2	-	C	
28	Fee Currency 2	-	C	
29	Fee Type Code 2	-	O	
30	Interchange Category 3	-	C	
31	Fee amount 3	-	C	
32	Fee DR/CR Indicator 3	-	C	

		Toll plaza operator		
SL No	**Field Name**		**ACQ to TPO [ACK]**	**Incoming [TPO]**
33	Fee Currency 3	-	C	
34	Processing Status	-	M	
35	EGCS Record Reject Reason Code	-	O	
36	Plaza ID		M	
37	TID		M	
38	Vehicle Registration Number	-	M	

4. Bulk upload file sample

Below format is same for the all dispute raise from the Toll plaza operator side

Tag_ID	M
Function_Code	M
Txn_Time	M
Txn_Id	M
Issuer_ID	M
Acquirer_ID	M
Txn_Amount	C
Reason_Code	C
Full_Partial_Indicator	M
Toll_Plaza_Id	M
TID	M
MMT	M
Internal Tracking Number	O
Attribute 1	O
Attribute 2	O
Attribute 3	O
Attribute 4	O
Attribute 5	O

Note: In cases, where the dispute is accepted through bulk file the Txn_Amount by default will be the dispute raise amount and the same will be settled by NPCI.

The file naming convention used for bulk upload file is described in section 19, point A.

21 Data Fields

21.1 Tag Id

Component	Description
Type	AN32
Format	Fixed
Source	User Input
Description	Identifies the customers' tag Id.
Constraints	Mandatory for all the transactions. Toll plaza operator has to provide this data in outgoing message and Acquirer bank provides the same in acknowledgement and in incoming transaction to Toll Plaza Operator.
Possible Values	-
Compliance	Value Validation: Yes; Additional Compliance: No

21.2 Internal Tracking Number

Component	Description
Type	AN.20
Format	Variable
Source	User Input
Description	Toll Plaza Operator generate this number for each new outgoing transaction initiated by them and keep it for reference. This reference number remains the same for the entire life cycle of the transaction and may be used to track it internally.
Constraints	Optional. Toll Plaza Operator may provide this data in outgoing message for chargeback, Chargeback Acceptance, Re-presentment and Re-presentment Acceptance messages. Acquirer bank provides the field with the same value in the acknowledgement message.
Possible Values	--
Compliance	Value Validation: Yes; Additional Compliance: No

21.3 Function Code

Component	Description
Type	N3
Format	Fixed
Source	User Input
Description	This element indicates the purpose of the different types of clearing messages.
Constraints	Mandatory for all clearing messages except NPCI fee collection and NPCI fee disbursement. Toll Plaza Operator has to provide this data in outgoing messages and Acquirer bank provides the same function code in acknowledgement and in incoming transaction to Toll Plaza Operator.
Possible Values	Refer Appendix C for list of Function Codes.
Compliance	Value Validation: Yes; Additional Compliance: No

21.4 Date Time, Local Transaction

Component	Description
Type	N12
Format	YYMMDDhhmmss
Source	User input. This has to be taken from the online transaction.
Description	This element contains the actual date and time at which the transaction takes place at the TAG acceptor location
Constraints	Mandatory for all transactions. Toll Plaza Operator has to provide this data in outgoing message. Acquirer bank provides the same in acknowledgement and incoming transaction.
Possible Values	-
Compliance	Value Validation: Yes; Additional Compliance: No

21.5 Retrieval Reference Number

Component	Description
Type	AN.42
Format	Variable (minimum 10 and maximum 42)
Source	User input. This has to be taken from the online transaction.
Description	It is used to identify and track all messages related to a given TAG holder transaction.
Constraints	This field is mandatory for all the transactions. RRN = Transaction ID
Possible Values	--
Compliance	Value Validation: Yes Additional Compliance: No

21.6 Issuer Id

Component	Description
Type	N6
Format	Fixed
Source	User input. This has to be taken from the online transaction.
Description	This element Identifies the transaction issuer. For clearing transactions, it identifies the financial institution that owns the TAG.
Constraints	Mandatory for all the transactions available in file. Toll Plaza Operator has to provide this data in outgoing file and Acquirer bank provides the same in acknowledgement and incoming transaction to the Toll Plaza Operator. Acquirer bank also provides this data in web-acknowledgement and incoming file for the messages initiated though web.
Possible Values	--
Compliance	Value Validation: Yes Additional Compliance: No

21.7 Acquirer Institution ID Code

Component	Description
Type	N6
Format	Fixed
Source	User input. This has to be taken from the online transaction.
Description	This element Identifies the transaction acquirer. For clearing transactions, it identifies the financial institution that owns the Toll owner / Toll Plaza Operator agreement.
Constraints	Mandatory for all the transactions available in file. Toll Plaza Operator has to provide this data in outgoing file and Acquirer bank provides the same in acknowledgement and incoming transaction to the Toll Plaza Operator. Acquirer bank also provides this data in web-acknowledgement and incoming file for the messages initiated though web.
Possible Values	--
Compliance	Value Validation: Yes; Additional Compliance: No

21.8 Amount, Transaction

Component	Description
Type	N12
Format	AMT 12, Two decimal places to be maintained irrespective of transaction currency
Source	User Input
Description	It carries the amount in the transaction currency. Amount can be different than the online transaction amount.
Constraints	Transaction amount is provided by maker. Toll Plaza Operator has to provide amount, transaction for all the transactions except Chargeback Acceptance, and Re-Presentment Acceptance. For these transactions, amount, transaction will be populated by Acquirer bank from previous cycle transaction and provided in incoming and acknowledgement message. For web initiated financial transactions, Acquirer bank provides amount, transaction in web-acknowledgement and incoming file.
Possible Values	E.g.: 1000 represents 10.00 30050 represent 300.50
Compliance	Value Validation: No; Additional Compliance: No

21.9 Amount, Settlement

Component	Description
Type	N12
Format	AMT
Source	Acquirer bank calculated
Description	It carries the settlement amount in the settlement currency.
Constraints	Acquirer bank computes the values applicable for all the financial transactions. Acquirer bank provides this data in acknowledgement and incoming transactions for Credit Adjustment, Debit Adjustment, Chargeback and Good faith Acceptance.
Possible Values	--
Compliance	Value Validation: No; Additional Compliance: No

21.10 Settlement CR / DR Indicator

Component	Description
Type	A1
Format	Fixed
Source	Acquirer bank calculated
Description	This element carries an indicator which defines whether the settlement amount is credited or debited to the Toll Plaza Operator.
Constraints	Acquirer bank computes the values applicable for all the transactions whenever amount, settlement is present. Acquirer bank provides this data in acknowledgement and incoming transaction.
Possible Values	C – Credit, D – Debit
Compliance	Value Validation: No; Additional Compliance: No

21.11 Currency Code, Settlement

Component	Description
Type	N3

Format	Fixed
Source	Acquirer bank calculated
Description	This element defines the currency code of the settlement amount.
Constraints	Acquirer bank computes the values applicable for all the transactions whenever amount, settlement is present. Acquirer bank provides this data in acknowledgement and incoming transaction.
Possible Values	Value should be from the standard Currency Code list.
Compliance	Value Validation: No; Additional Compliance: No

21.12 Document Indicator

Component	Description
Type	A1
Format	Fixed
Source	User Input
Description	This field indicates the presence or absence of supporting transaction documentation.
Constraints	Mandatory. Toll Plaza Operator has to provide this data in outgoing message of debit adjustment, chargeback and Re-presentment transactions and Acquirer bank provides the same in doc indicator in incoming and acknowledgement message. Acquirer bank also provides this data in good-faith acceptance transaction. Not applicable for remaining all the transaction
Possible Values	Y = Yes; N=No
Compliance	Value Validation: Yes; Additional Compliance: No

21.13 Member Message Text

Component	Description
Type	ANS.256
Format	Variable.
Source	User Input
Description	It's a free text and member can enter short text description here.
Constraints	Mandatory. Toll Plaza Operator has to provide this data in outgoing message for

	chargeback, Re-presentment messages and Acquirer bank provides the same data in acknowledgement and incoming messages. Acquirer bank also provides this data in acknowledgement and incoming messages for chargeback acceptance, Re-presentment acceptance. Optional. Acquirer bank provides MMT in acknowledgement and incoming messages for good faith acceptance messages. Not applicable for any of the remaining messages not mentioned above.
Possible Values	--
Compliance	Value Validation: No; Additional Compliance: No

21.14 Full / Partial Indicator

Component	Description
Type	A1
Format	Fixed
Source	User Input
Description	This field carries an indicator which defines whether the amount is full or partial.
Constraints	Mandatory for Debit/Credit Adjustment, chargeback, Re-presentment transaction. Toll Plaza Operator has to provide full/partial indicator in this field and Acquirer bank provides the same in acknowledgement and incoming message. Acquirer bank also provides this data in incoming and acknowledgement message for chargeback acceptance and good faith acceptance message. Not applicable for any of the remaining messages.
Possible Values	F = Full , P = partial
Compliance	Value Validation: Yes; Additional Compliance: No

21.15 Financial / Non-Financial

Component	Description
Type	A1
Format	Fixed
Source	Acquirer bank Generated
Description	This field carries an indicator which defines whether the transaction is financial or non-

	financial	
Constraints	Mandatory for chargeback, Re-presentment transaction. Acquirer bank also provides this data in incoming and acknowledgement message for chargeback acceptance, good-faith acceptance message.	
Possible Values	F = Financial , N = Non-Financial	
Compliance	Value Validation	Additional Compliance
	No	No

21.16 Case Number

Component	Description	
Type	AN14	
Format	Fixed	
Source	Acquirer bank Generated	
Description	This element carries the case number for all dispute related transactions. Whenever any dispute cycle transaction initiates for the first time, Acquirer bank generates this number and it remains same for entire life cycle of that transaction.	
Constraints	Acquirer bank provides the case number in Incoming and Acknowledgement message for all dispute related transactions. Acquirer bank also provides this data in Incoming and Acknowledgement message of debit and Credit adjustment transaction.	
Possible Values	Refer annexure D for case number format.	
Compliance	Value Validation	Additional Compliance
	Yes	No

21.17 Date, Settlement

Component	Description	
Type	N6	
Format	YYMMDD	
Source	Acquirer bank calculated	
Description	This field contains the date on which the transaction is processed for clearing.	
Constraints	It is generated by Acquirer bank and is applicable to all the transactions present in incoming and acknowledgement message in which amount, transaction is present.	
Possible Values	--	
Compliance	Value Validation	Additional Compliance

	Yes	No

21.18 Toll Plaza Operator ID

Component	Description	
Type	AN20	
Format	Fixed;	
Source	User Input	
Description	This element identifies the Toll Plaza Operator ID.	
Constraints	NA	
Possible Values	--	
Compliance	Value Validation	Additional Compliance
	No	No

21.19 TID

Component	Description	
Type	AN32	
Format	Fixed;	
Source	User Input	
Description	This element identifies the TID.	
Constraints	NA	
Possible Values	--	
Compliance	Value Validation	Additional Compliance
	No	No

21.20 Vehicle Registration

Component	Description
Type	AN20
Format	Fixed;
Source	User Input
Description	This element identifies the Vehicle Registration Number.
Constraints	NA
Possible Values	--

Compliance	Value Validation	Additional Compliance
	No	No

21.21 Processing Status

Component	Description
Type	A1
Format	Fixed
Source	Derived in Clearing & Settlement
Description	This element in the acknowledgement file record depicts if the processing of the record in the file has been a success, reject or error in message format.
Constraints	Mandatory. Acquirer bank provides this data acknowledgement file.
Possible Values	S = Successfully processed F = Failed at Clearing & Settlement E = Error in transaction (Uploading)
Compliance	Value Validation: No; Additional Compliance: No

21.22 Rejection Reason Code

Component	Description
Type	AN20
Format	Fixed;
Source	System generated
Description	This element in the acknowledgement file defines the reason code. It is available record-wise for unprocessed and reject records
Constraints	Optional. Acquirer bank provides this data for all records in an acknowledgement file for which the value of 'processing status' is 'F' or 'E'.
Possible Values	Refer Appendix E
Compliance	Value Validation: No; Additional Compliance: No

21.23 Transaction Status

Component	Description

Type	N2
Format	Fixed;
Source	System generated
Description	This element in the raw data and post settlement file indicates the status of the online transaction
Constraints	Mandatory.
Possible Values	01 – Accepted 02 – In process 03 - Declined
Compliance	Value Validation: Yes Additional Compliance: No

Appendix A

Matching Criteria

- For dispute

Transaction ID + Tag ID + TID + Issuer ID + Acquirer ID + Plaza ID + Transaction Date & Time

Appendix B

Function Codes

The following table defines Function Codes used in Acquirer bank/ NPCI. Function code is used for providing details of category and specific function of message.

Function Code	Description	Indicator
200	NETC Settled Transaction	
205	Re-presentment (Full/Partial)	F – Full P – Partial
261	Re-presentment Acceptance	
501	Deemed Re-presentment Acceptance	
450	Chargeback (Full/Partial)	F – Full P – Partial
470	Chargeback Acceptance	
500	Deemed Chargeback Acceptance	
451	Credit Chargeback	
452	Credit Chargeback Acceptance	
502	Deemed Credit Chargeback Acceptance	
762	Credit Adjustment	F – Full P – Partial
763	Debit Adjustment	
680	Good Faith (Single/ Bulk)	F – Full P – Partial
681	Good Faith Acceptance (Full/Partial)	
682	Good Faith Declined	
505	Deemed Good Faith Declined	

Annexure C

Case Number Format

Field Value	Description
4 digit Alphabets	First four digit of the Plaza ID of the initiator Toll plaza operator e.g.: 1234 – for 123456 Plaza ID 5678 – for 567890 Plaza ID
5 digit number	Julian date, e.g.: YY – Year, DDD – Date of the year
4 digit number	A running serial number

Annexure D

Reject & Other Reason Code

Sr	Reason Code	Reason Code Description
1	4011	Invalid Tag_ID
2	4012	Invalid Function Code
3	4013	Invalid Date and time, Local Transaction
4	4014	Invalid Txn_Id
5	4015	Invalid Issuer_ID
6	4016	Invalid Acquirer_ID
7	4017	Invalid Amount, Transaction
8	4018	Invalid Message Reason Code
9	4019	Invalid Full/Partial Indicator
10	4020	Invalid Toll_Plaza_Id
11	4021	Invalid TID
12	4022	Invalid Member Message Text
13	5153*	Unknown Error Occur Please contact Acquirer Bank
14	9202*	Unknown Error Occur Please contact Acquirer Bank
15	5017	Incorrect Unique File Name
16	4023	Invalid Internal Tracking Number
17	5158	Unable to decrypt
18	3202	Invalid dispute reason code for given function code

19	3203	Business rule violation
20	3204	Invalid life cycle for function code & originator
21	3206*	Unknown Error Occur Please contact Acquirer
22	3207	The TAT for the Dispute Cycle / Adjustment, you are trying to raise, has expired
23	3401	Action not allowed on account of business rule(s) violation
24	3404	Invalid Data Input
25	5205	Transaction Amount is not matching with previous lifecycle transaction amount
26	5207	Transaction Amount Partial is not matching with previous lifecycle transaction amount
27	5209	Previous lifecycle transaction is missing for given function code
28	5210	Duplicate transaction
29	5211	Base function code is not present for current transaction
30	5212	Insufficient fund with acquirer for current acquirer initiated transaction
31	5213	Insufficient fund with issuer for current acquirer initiated transaction
32	5214	Insufficient fund with issuer for current issuer initiated transaction
33	5215	Insufficient fund with acquirer for current issuer initiated transaction
34	5216*	Unknown Error Occur Please contact Acquirer
35	5217*	Unknown Error Occur Please contact Acquirer
36	5218	Amount cannot be less than or equal to Zero
37	5275	Transaction Not matched
38	5276*	Unknown Error Occur Please contact Acquirer
39	5277	Action not allowed on decline transaction(transaction status 03)
40	5278*	Unknown Error Occur Please contact Acquirer
41	4024	Invalid Length
42	5289	Amount does not match with previous lifecycle transaction amount or allowable amount
43	9999*	Unknown Error Occur Please contact Acquirer

Annexure E

NETC Security Document Version 1.1

Annexure F

Online Error Codes

Error Code	Description
101	Version Empty or not 1.0
102	Timestamp empty or not in ISO Format
103	orgId is not available in Database
104	msgId is not in correct format or empty
105	Txn Id is empty or not in correct format
106	TagId is not in correct format or empty
108	Org Id is empty or not in correct format
112	TID is empty or not in correct format
113	Vehicle Class is empty or not in correct format
114	Vehicle class not available in Database
115	RegNo empty or not in correct format
118	Exception code is empty or not in correct format
119	Exception code not in Database
124	OrgId is Inactive
125	TagId is not present in Database
126	Amount empty or not in correct format
127	Plaza code empty or not in correct format
133	Counter is empty or not in correct format
138	Empty Request
139	Head Element is not available
140	Transaction Element is not available
141	Note is not in correct format
142	RefId is not in correct format
143	RefUrl is not in correct format
144	Txn Type is empty or not in the list of types
145	Vehicle Tag is null
147	Request is not in correct format
150	Lane Reader ID is empty or not in correct format
159	Last Fetch Time is greater than 24 hours or future time
160	Last fetch time is empty or not in correct format
161	Risk Score Provider is empty or is not in correct format
162	risk score type is empty or not in correct format
163	risk score value is empty is not in correct format
164	TID ID not mapped with given tagId
165	AVC not in correct format

166	Plaza name not in correct format
167	Plaza geocode is empty or not in correct format
168	Plaza type is empty or not in correct format
169	Lane Id is empty or not in correct format
170	Lane Directon is empty ot not in correct format
171	Reader Read time is empty or not in correct format
172	Reader Read Time cannot be more than txn time
173	Maximum days to push older transactions exceeds(defaulf-Current Time is more than 3 days from reader read time)
174	orgTxnId is not in correct format
175	Amount should be zero as tagId is in exemption Code
176	Cannot initiate TXN as Tag is in Black List or Low Balance List
178	Plaza not available in Database
179	Lane ID not associated with plaza ID
180	Plaza type is not same as available in DB
181	Lane attributes should be empty in case of Plaza type as Parking
185	Reader Id is empty or not in correct format
186	VEHICLE DETAILS are not in correct format
187	Vehicle Class is not associated with tagId
188	Reg no. is not associated with tagId
191	ExcCode is not associated with tagId
196	Currency is empty or not in correct f11ormat
198	Avc Not in DB
201	Transaction ID+Merchant ID+Lane ID should be unique for a transaction
202	Meta Element is missing
203	Amount should be zero if txn type is ZERO_TXN
205	Future Timestamp should not be acceptable
206	Not allowed to use particular service
207	Exception Code is already added by other bank
208	No privledges to add exception Code
209	tag Verified is empty or not in correct format
210	Public Key CVV is mandatory if TID verified is netc tag
212	Public Key CVV is not in correct format
213	Sign Auth is not valid
214	procRestrictionResult is not in correct format
215	Vehicle Auth is not valid
216	Txn Counter is empty or not in correct format
217	Txn Status is empty or not in correct format
218	Txn Amount should be zero if txn status is FAILED
221	Heart Beat Msg Type is not in predefined types
222	Heart Beat msg Acquirer Id is not matched with OrgId's acquirer Id

225	Lane status is empty or not in correct format
231	Comvehicle is Empty or not in correct format
232	TID is not in DB
233	Vehicle Reg No not in DB
234	Any one input either tagid or TID or vehicleRegNo should be present for Request Tag Details
235	Plaza Subtype is empty or not in correct format
236	Plaza Subtype is not same as available in DB
237	Commercial Vehicle Flag is not same in DB
239	Only one input is allowed either tagid or TID or vehicleRegNo
241	One or more attribute is missing in Head Element
242	One or more attribute is missing in Txn Element
243	One or more attribute is missing in TagList
244	One or more attribute is missing in Meta Element
245	One or more attribute is missing in Merchant Element
246	One or more attribute is missing in Vehicle Element
250	One or more attribute is missing in Exception tag
261	Signature is not found in request
262	Plaza certificate is not found
263	Signature is invalid
264	TagID not registered with participant
265	Invalid IIN
266	Merchant Element not available
267	Lane Element is not available
269	Reader Verification Result Element is not available
272	Amount Element is not available
273	Riskscores Element is not available
274	Score Element is not available
275	Vehicle Element is not available
276	Vehicle Details Element is not available
277	TagList Element is not available
278	Tag Element is not available
279	ExceptionList Element is not available
280	Exception Element is not available
281	Amount should not be zero if txn Type is Credit or Debit
284	Signature algorithm is not correct
285	Digest algorithm is not correct
287	Unreadable XML
288	OrgTxnId cannot be null in case txn type is CREDIT
290	Credit Happened Already for Specified TxnId.
291	Credit amount should not be greater than or equal to debit amount.

292	Credit Reader read time should not be less than Debit Reader read time
293	No Txn happened for debit in last three days
294	SignData is empty or not in correct format
295	No Matching ECC PublicKey found for Issuer IIN and Key Index
296	Tag Signature Verification Failed
297	PublicKey CVV of Input Message NOT matched with DB value
299	Txn Status Should Not Be Failed
301	One or more attribute is missing in Status Element
302	Status Element is not available
303	Incorrect format for Transaction Date
304	Transaction Date is of future date
305	The given combination for a particular transaction doesn't exist
306	Transaction ID doesn't exist in Transaction Master table
307	TxnId in Status element is empty or not in correct format
308	Acquirer ID is empty or not in correct format
309	Transaction Status Request List element is missing
310	Duplicate Status element
311	Status tag size exceeds that of system parameter value
333	Destination does not send response within SLA
335	Invalid Meta Name
336	Invalid Meta Value
337	Meta TagSize Exceeds That Of SystemParamValue
339	Risk TagSize Exceeds That Of SystemParamValue
340	One or more attribute is missing in Score Element
346	Inactive Vehicle Class
500	Amount is more than maximum amount for vehicle class
500	Transaction amount is more than the defined threshold limit for the VC
501	Command Name is empty or incorrect
502	Command Type is empty or incorrect
503	Command Id is empty or incorrect
504	NumParams is empty or incorrect
505	Callback is incorrect
506	Param Name is empty or incorrect
507	Param Type is empty or incorrect
508	Param Value is empty or incorrect
509	Param Length is empty or incorrect
510	NumObject is empty or incorrect
511	Object Name is empty or incorrect
512	Object Type is incorrect
513	NumItems is empty or incorrect

514	Item Name is empty or incorrect
515	Item Value is empty or incorrect
516	Item Type is incorrect
517	Item Length is incorrect
518	Result TimeStamp is empty or incorrect
519	Result Status is empty or incorrect
520	Result Code is incorrect
521	Source Address is empty or incorrect
522	Source Name is incorrect
523	Source Type is empty or incorrect
524	Destination Address is empty or incorrect
525	Destination Name is incorrect
526	Destination Type is empty or incorrect
527	Command Tag is missing
528	Param Tag is missing
529	ObjectList Tag is missing
530	Object Tag is missing
531	Item Tag is missing
532	Result Tag is missing
533	Source Tag is missing
534	Destination Tag is missing
535	One or more attribute is missing in Command Tag
536	One or more attribute is missing in Param Tag
537	One or more attribute is missing in Object List Tag
538	One or more attribute is missing in Object Tag
539	One or more attribute is missing in Item Tag
540	One or more attribute is missing in Result Tag
541	One or more attribute is missing in Source Tag
542	One or more attribute is missing in Destination Tag
544	Source Address IIN/AID is not matching with Source Type
546	Destination Error Code is empty or incorrect
562	Source id (Plaza ID/AID) + Destination id (Plaza ID/AID) + Txn id should be unique for the request
563	Txn Id in the Response is not Matching with Txn Id of NetcRefId in DB
565	Given Command Id is Not in DB
566	Command Name is Not Matched with DB value for the given Command Id
567	Command Type is Not Matched with DB value for the given Command Id
568	NumParams is not matching with Param Count for the combination (Command Id + Txn Type)
569	Param Name mismatch with the given command id in DB
573	Object Type is not ARRAY
578	For Txn Type RQST, both source & destination are matching

579	For Txn Type RQST, Destination address is not matching with Type
582	For Txn Type RESP, Source details are not matching with DB Destination details
583	For Txn Type RESP, Destination details are not matching with DB Source details
584	No. of Items mapped in DB for (Param + Txn Type) is not same to the Items List in the message
585	No Items are mapped for the given (Param + Txn type)
589	Param Value pattern is not matching with Param Type
590	Param Type is not matching with corresponding Param Name in the DB
591	Param Length value is not matching with its Value length
592	Item Value pattern is not matching with Item Type
593	Item Length value is not matching with its Value length
594	Item Name is not matching with any of the DB values or duplicate item names
596	Txn time is ahead of transmission time
600	DestSentInvalidResponse
601	DestinationIsNotReachable
189	Lane Mode empty or not incorrect format
190	Price Mode empty or not incorrect format
192	Payment Mode empty or not incorrect format
193	LaneType empty or not incorrect format
194	IsOverWeightCharged empty or not incorrect format
195	One or more attribute is missing TagUserMemory
199	ReaderreadTime is within 15mins of previous successful transaction ID for same tag ID and same to plaza in same direction
200	ReaderreadTime is within 10mins of previous successful transaction ID for same tag ID and same to plaza in different direction

Note: - Defined Error code is for existing API. It may be updated whenever there is any change.

Annexure G

Image Rejection Error codes

Error Code	Rejected Remarks
8001	Image is Conclusive but license Number is not matching with system license Number
8002	Difference between Image & trip timing is more than -90 secs
8003	Image is Inconclusive also Timing is Not mention in image
8004	image is not proper though timing is matching
8005	No image available or No vehicle available in image
8006	Multiple Vehicle in Image
8007	NPCI Vehicle class(MVC) is Correct as per Image /AVC
8008	Violation is raised for AVC is equal to TVC
8009	Wrong vehicle image
8010	Image Inconclusive
8011	incorrect image format
8012	Vehicle axles are not visible
8013	2 timestamp's are present on the vehicle image

Annexure H

Business Continuity Plan for Toll Plaza & Acquirer: -

In case failure of connectivity between toll plaza and acquirer, for business continuity both participant should switch to existing SFTP base file transfer mechanism as defined in ICD 2.4 document and acquirer should support file processing of the same.

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