



Registration No: 1998/009584/06

THE SOUTH AFRICAN NATIONAL ROADS AGENCY LIMITED

STANDARD SPECIFICATIONS FOR OPERATIONS AND MAINTENANCE OF CTROM PROJECTS: ETC INTEROPERABILITY - BUSINESS RULES

OCTOBER 2010

VOLUME 2 BOOK 8a

ISSUED BY:

THE CHIEF EXECUTIVE OFFICER
SOUTH AFRICAN NATIONAL ROADS AGENCY LIMITED
P O BOX 415
PRETORIA
0001



Registration No: 1998/009584/06

THE SOUTH AFRICAN NATIONAL ROADS AGENCY LIMITED

STANDARD SPECIFICATIONS FOR OPERATIONS AND MAINTENANCE OF CTROM PROJECTS: ETC INTEROPERABILITY - BUSINESS RULES

OCTOBER 2010

VOLUME 2 BOOK 8a

ISSUED BY:

**THE CHIEF EXECUTIVE OFFICER
SOUTH AFRICAN NATIONAL ROADS AGENCY LIMITED
P O BOX 415
PRETORIA
0001**

TABLE OF CONTENTS

SECTION 1.	INTRODUCTION	1-6
1.1	BUSINESS RULES	1-7
1.2	BUSINESS PROCESSES	1-8
1.3	LAYOUT OF THIS DOCUMENT	1-10
SECTION 2.	ENTITY AND SERVICE PROVIDER INTERACTION.....	2-12
2.1	INTER ENTITY RELATIONSHIPS	2-13
SECTION 3.	KEY BUSINESS RULES	3-17
3.1	INTRODUCTION	3-18
3.2	INTER ENTITY ACCOUNTING	3-18
3.3	GUARANTEED PAYMENT TO TOLL AGENCY FROM TCH	3-18
3.4	BUSINESS RULES AND PERFORMANCE REQUIREMENTS.....	3-24
3.5	EXPANDABILITY OF INTEROPERABILITY.....	3-25
3.6	MARKETING.....	3-25
SECTION 4.	BUSINESS RULES FOR TOLL AGENCY	4-27
4.1	TOLL AGENCY FUNCTIONS	4-28
4.2	GENERATION OF TRANSACTION RECORDS AND FORWARDING TO TCH	4-28
4.3	PROVISION OF POINT OF PRESENCE CUSTOMER SERVICE FACILITIES.....	4-33
4.4	DISTRIBUTION OF VALIDATION LISTS.....	4-34
SECTION 5.	BUSINESS RULES FOR THE TCH	5-36
5.1	INTERFACE TO THE TOLL AGENCY	5-37
5.2	INTERFACE TO CUSTOMER	5-39
5.3	INTERFACE TO VPC.....	5-43
5.4	INTERFACE TO ENATIS OWNER.....	5-44
5.5	INTERFACE TO BANKS.....	5-44

5.6	INTERFACE TO EXTERNAL COMMERCIAL AGENCIES / APPOINTED AGENTS.....	5-45
SECTION 6.	OPERATION OF THE VPC	6-46
6.1	INTERNAL BUSINESS RULES	6-47
6.2	INTERFACE TO TCH.....	6-51
6.3	INTERFACE TO OPT-IN TOLL AGENCY	6-51
6.4	INTERFACE TO ENATIS SYSTEM.....	6-51
6.5	VPC TO BANKS.....	6-52
SECTION 7.	CONDITIONS OF USE	7-53
7.1	CONDITIONS OF USE	7-54
7.2	DISCOUNTS	7-58

List of Figures

FIGURE 1-1:	INVOICING BETWEEN ENTITIES AND TO THE ROAD USER	1-7
FIGURE 1-2:	TRANSACTION FLOW BETWEEN ENTITIES AND TO THE ROAD USER.....	1-8
FIGURE 1-3:	GUARANTEED PAYMENT PRINCIPLE BETWEEN ENTITIES.....	1-9
FIGURE 1-4:	FLOW OF AN UNRECOVERED VIOLATION AND THE ADJUSTMENT OF THE ORIGINATING TOLL AGENCY'S PROCESSING FEE.....	1-10
FIGURE 2-1:	OUTLINE BUSINESS RELATIONSHIPS BETWEEN ENTITIES AND EXTERNAL ORGANISATIONS	2-14
FIGURE 3-1:	PAYMENT GUARANTEED BY TCH.....	3-21

SECTION 1. INTRODUCTION

1.1 BUSINESS RULES

1.1.1 For the purposes of these requirements, the Business Rules supplement the Operation Management Requirements / Concession Contract and consider primarily the 'commercial and operational relationships' between Entities and others involved in providing or using the overall ETC service. For the purpose of this document, ETC will only refer to transactions where vehicles are identified electronically by means of a Tag. This relates primarily to the conditions under which a service will be provided, the principles (rules) to ensure uniformity of the service and the charges that may be levied for that service.

1.1.2 In these requirements, three types of charges are considered. The flow of charges are indicated in Figure 1 below. The first is a processing fee which is a charge payable to the TCH (and VPC) for processing each Transaction Record, similar to a merchant fee paid to an Acquiring Bank to process credit card transactions. The second is a Service Charge which is payable by the Customer for any additional services that he requires related to his Customer Account. A Service Charge is also applicable to work undertaken by one Entity for another that is not Transaction Record specific or not part of the scope included in the Operation Management Requirements / Employer's Requirements / Concession Contract. The third is an administration fee that is charged specifically to a Violator by the VPC for administration of toll fees associated with his Violation. Although the fine applied by the AARTO process is not included in the scope of charges applied, it is included in the figure for purpose of completeness.

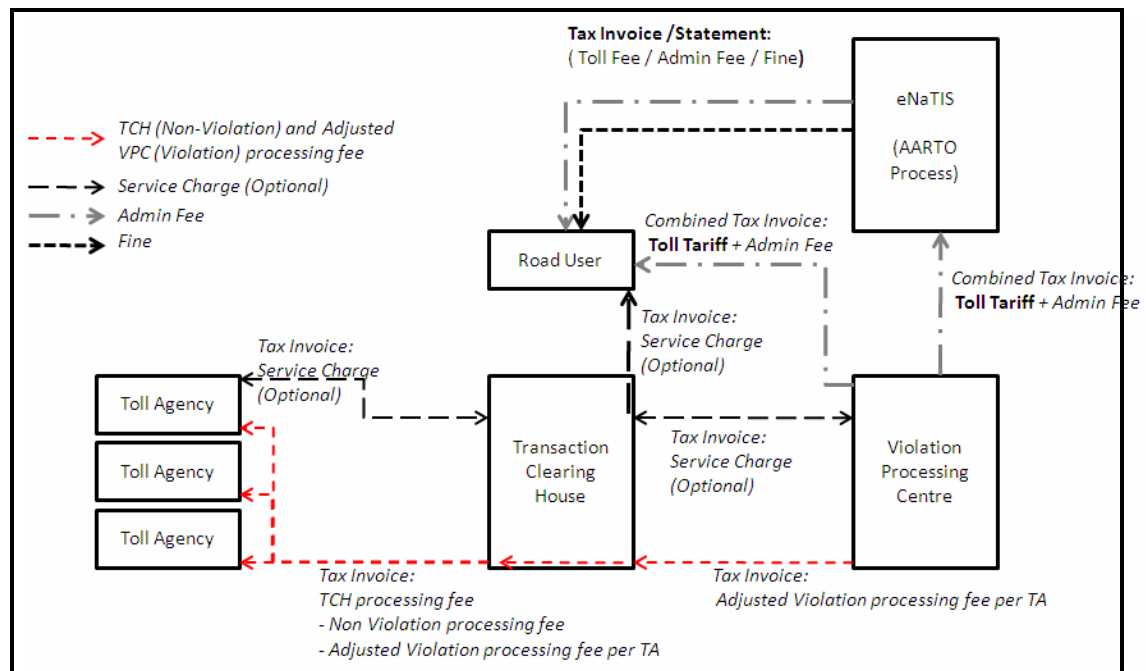


FIGURE 1-1: INVOICING BETWEEN ENTITIES AND TO THE ROAD USER

1.2 BUSINESS PROCESSES

- 1.2.1 Before discussing the Business Rules as such, it is desirable to consider the overall business process in which the Entities involved in toll collection will take part. The overall aim is to provide an interface, between the road user and the Toll Agency for collecting ETC tolls from the road user to pay to the Toll Agency.
- 1.2.2 There are two main Entities involved in this process – the Toll Agency that collects records of road use (Transaction Records) and the Transaction Clearing House that interfaces with the road user to collect the toll fees appropriate to that use. The Violation Processing Centre is a peripheral Entity, mainly necessary for free flow tolling to provide a deterrent to non-payment by means of enforcement. The general flow of the transaction from the tolling point (charge-able event) at the Toll Agency to the issue of the invoice to the road user is shown in Figure 1-2.

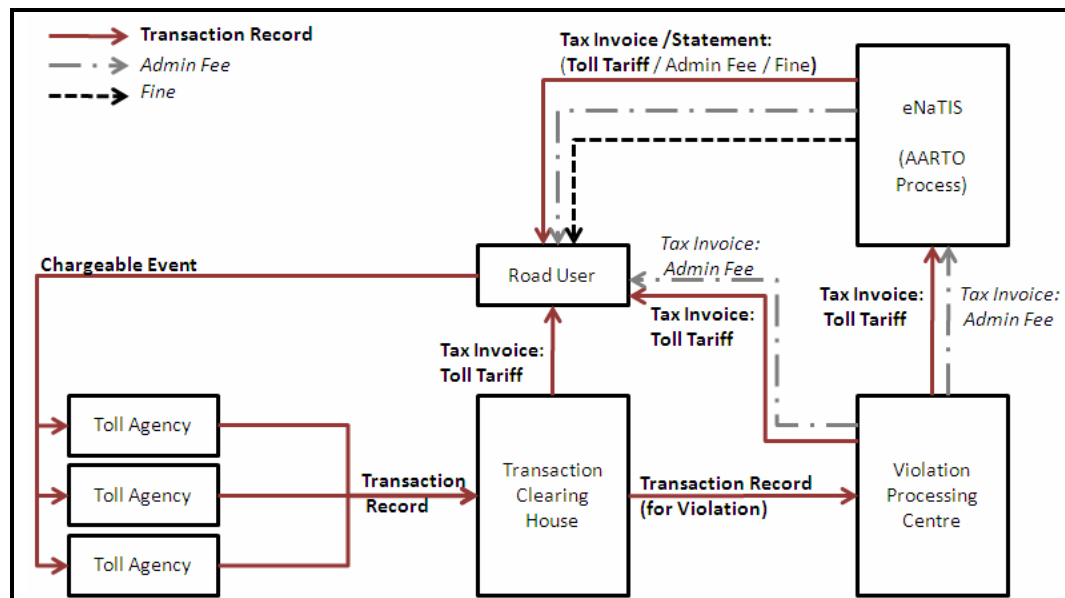
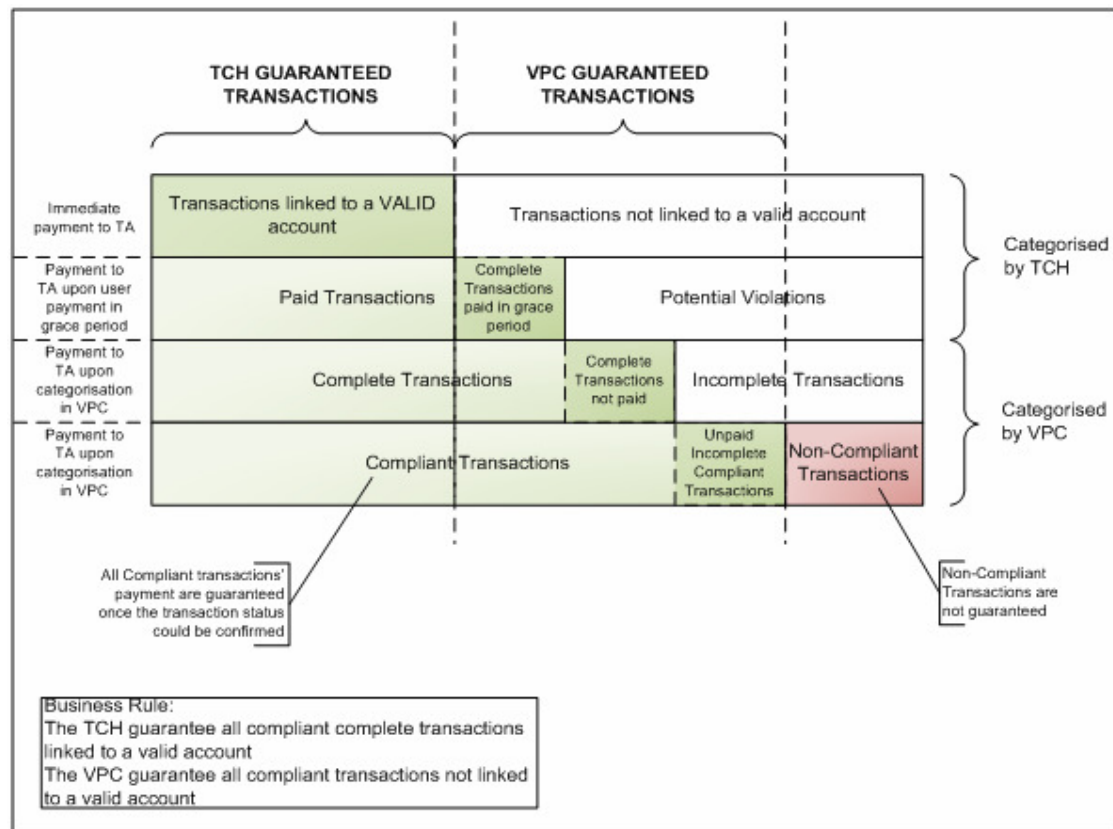


FIGURE 1-2: TRANSACTION FLOW BETWEEN ENTITIES AND TO THE ROAD USER

- 1.2.3 For an Opt-in Toll Agency, the TCH Guaranteed Payment covers all Compliant and Complete Transaction Records (as far as possible for the TCH to verify) and includes a guarantee from the TCH Entity itself for Transaction Records generated by vehicles associated with a Customer Account and a guarantee provided by the VPC under a 'back to back' arrangement with the TCH for all other Compliant Transaction Records. Refer to Figure 1-3.



*Payments indicated in the figure above for transactions to the TA by VPC are channelled and processed via the TCH

FIGURE 1-3: GUARANTEED PAYMENT PRINCIPLE BETWEEN ENTITIES

- 1.2.4 For an Opt Out Toll Agency the VPC element of the Guaranteed Payment would not apply.
- 1.2.5 The Business Rules considered in these requirements are based upon this arrangement. It is important that the Tolling System design and appropriate parts of its operation incorporate the Business Rules so that it is possible to arrange the operation based upon an Entity based service provision with payment by means of processing fees and Service Charges. In addition, as the TCH and VPC are national Entities there must be an acceptable way of calculating charges that they will apply to Toll Agencies from the commencement of operation.
- 1.2.6 Because Toll Agencies and their road user makeup will vary, income and expenses for TCH account holder Transaction Record processing and VPC Violation processing shall be maintained separately for each Toll Agency. Each Toll Agency's Transaction Records shall therefore be managed as individual Transaction Record streams. The cost of transaction recovery and the unrecovered transactions shall be calculated for each Toll Agency based on the costs incurred and the income received in processing their respective transactions.

The calculated cost shall be used to determine and adjust the processing fee charged to the Toll Agency.

- 1.2.7 As an example of above principle, the figure below indicates the flow of the processing of an unrecovered but Compliant Violation Transaction Record and the adjustment of the processing fee.

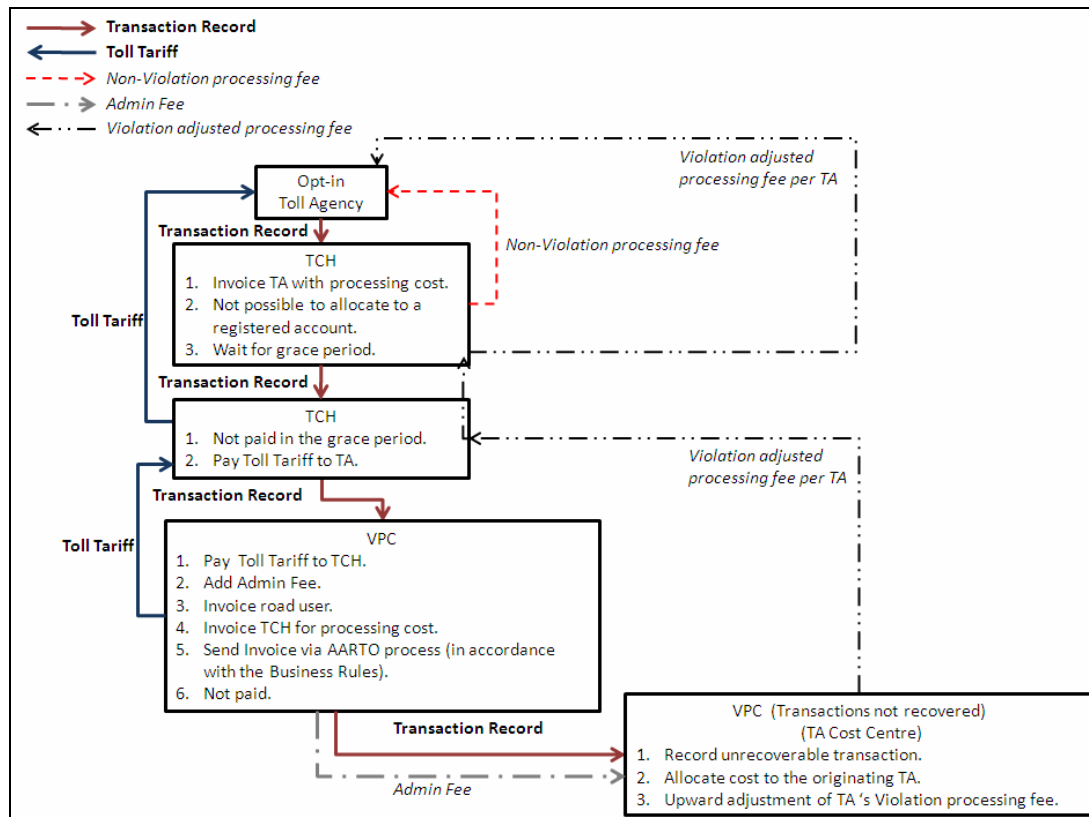


FIGURE 1-4: FLOW OF AN UNRECOVERED VIOLATION AND THE ADJUSTMENT OF THE ORIGINATING TOLL AGENCY'S PROCESSING FEE

- 1.2.8 In addition to the above, the processing fee will be upwardly adjusted for transactions received outside the guarantee period and the specification in TA Business Rule 103. The higher processing fee will be applied to all transactions which are received outside of the guarantee period but are still processed by the TCH at the Toll Agencies own risk.

1.3 LAYOUT OF THIS DOCUMENT

- 1.3.1 After this high level introduction, the next section of these requirements considers the operation of the Entities in more detail and identifies other service providers that each has a business relationship with.

- 1.3.2 Section 3 then includes some Key Business Rules that apply to all Entities. Sections 4 to 6 then consider each Entity in turn and define fairly precisely in terms of accepted Contract terminology and operation the conditions under which that Entity will interface to another Entity, render a service (including any guarantee) and charge a processing fee or Service Charge and the Business Rules that shall apply. For the TCH this will include its relationship with other Entities and with Customers and for the VPC with Violators and other Entities. Section 7 includes Business Rules and conditions of use for Customer accounts and other non-registered road users.

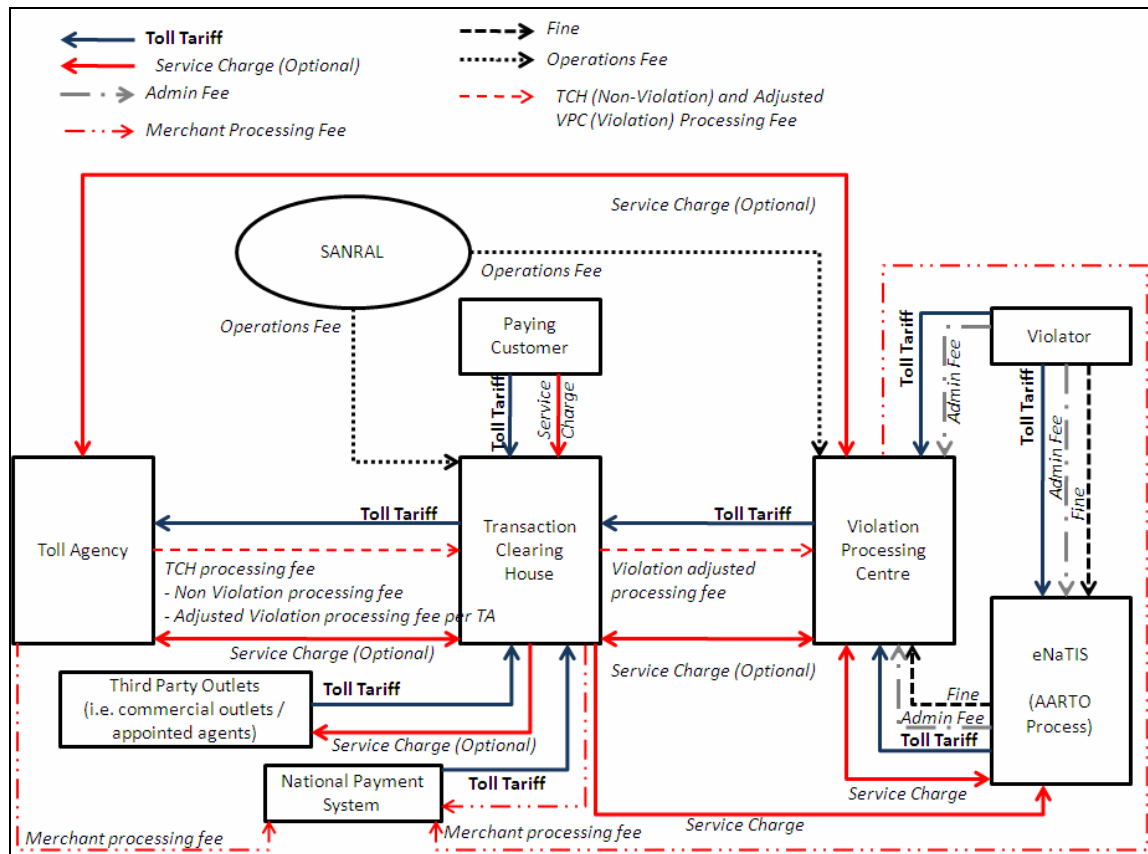
SECTION 2. ENTITY AND SERVICE PROVIDER INTERACTION

2.1 INTER ENTITY RELATIONSHIPS

- 2.1.1 The Employer will procure a national Electronic Toll Collection interoperability solution, which will allow a motorist to register an ETC toll account that shall be valid for use across all current and future ETC toll roads nationally.
- 2.1.2 There are three types of Entities involved – the Toll Agencies that collect records of road use (these include toll roads owned by the Employer but operated by other Parties on behalf of the Employer, and Concessionaires); the Transaction Clearing House that interfaces with the road user to collect the toll fees appropriate to that use and the Violation Processing Centre, mainly necessary for free flow tolling to provide a deterrent to non-payment by means of enforcement.
- 2.1.3 The Employer shall be the owner of the TCH and VPC Entities and will appoint other Parties to operate the TCH and the VPC on its behalf.
- 2.1.4 Where reference is made to “ORT Operator / Entity / ORT”, “TCH Operator / Entity / TCH” and / or “VPC Operator / Entity / VPC” in this book of the Employer’s Requirements, it is mainly for the purpose of clarifying boundaries. Any requirement, obligation or responsibility in relation to such a reference shall be deemed as a requirement, obligation or responsibility to be complied with by the Contractor, unless specifically stated or implied otherwise in the context thereof.
- 2.1.5 Where reference is made to “Toll Agency” in this book, it is mainly for the purpose of clarifying responsibilities. Any requirement, obligation or responsibility associated with such a reference shall also be deemed as a requirement, obligation or responsibility to be complied with by the Contractor (who shall perform the ORT Operations under the Contract), or Concessionaire, unless specifically stated or implied otherwise in the context thereof.
- 2.1.6 Although the TCH Entity will be owned by the Employer, the management committee of the Entity will include all Toll Agencies participating in the national interoperable ETC method of payment and sending transactions for processing to the TCH.
- 2.1.7 As discussed in the Introduction, the Business Rules have been developed on the assumption that the three main Entities involved in the processing of ETC transactions, will be operating as independent commercial entities and cover operation and other costs by means of charges and fees that they levy for services provided to other Entities. In turn they may pay charges and fees for services provided by others. The fee structure will be determined by the TCH Entity, based on the actual operating cost, plus the processing fee per type of transaction and the apportionment of costs based on the number of transactions processed, plus a risk factor.

2.1.8 This chapter considers in more detail the operating relationships between the various Entities and between Entities and other service providers. It also identifies those relationships where an inter-Entity payment may be involved.

2.1.9 Figure 2-1 includes the relationship between the Entities and interaction with external service providers. It should be noted that the Employer is included in this for the sake of completeness. As indicated previously it is not an Entity within the scope of these Business Rules as it is not directly involved in the business process.



*The above figure excludes the internal debt collection process in the VPC

FIGURE 2-1: OUTLINE BUSINESS RELATIONSHIPS BETWEEN ENTITIES AND EXTERNAL ORGANISATIONS

2.1.10 The TCH and VPC are being set up as national Entities. All ETC Accounts (Tag and Vehicle Licence Number) will be held at the TCH and the use of the TCH will be mandatory for this type of toll collection on all the Employer toll roads, including roads operated by Concessionaires. The use of the VPC will not be mandatory and a Toll Agency may decide not to Opt-In and undertake its own violation processing. This is particularly likely to be required for Toll Agencies that operate barrier / boom based systems that are effectively self-enforcing.

- 2.1.11 The Toll Agencies are the Entities that are due to receive the tolls collected and they must each pay the TCH and the VPC (if Opt-In Toll Agencies) a processing fee for processing the Transaction Records. This fee will be on a Transaction Record basis.
- 2.1.12 The TCH Entity will 'guarantee' to a Toll Agency payment of the Toll for each Transaction Record received providing that it meets defined criteria, including being generated from a Chargeable Event performed by a vehicle linked to a Customer Account. The TCH will pay the amounts for a vehicle not linked to a Customer Account where payment is made during the Grace period. The TCH will charge a processing fee.
- 2.1.13 For Opt-In Toll Agencies, the TCH will also pass on a VPC guarantee for Compliant Transaction Records sent to it, but will reject Non-compliant Transactions. The VPC will levy a processing fee to the TCH for each Transaction Record it processes, including those rejected, to help fund its operation and supplement other income that will come from fines and admin fees.
- 2.1.14 The VPC Entity will pay a Service Charge to a Toll Agency and the TCH when invoiced for any activities that they perform on its behalf (which is outside the scope of activities included in the Business Rules as part of the normal activities of operations).
- 2.1.15 The VPC will, as a first phase, perform an internal debt collection process. If the debt collection process fails, the Violation will be passed on to AARTO. When a Violation passes to the AARTO process and is dealt with by the eNaTIS operator and attracts a fine, additional payments will be made to the VPC by the eNaTIS operator when the fine is paid.
- 2.1.16 A Toll Agency will also act on behalf of the TCH and VPC by provision of Point of Presence Customer Service Facilities to set up Customer Accounts on the TCH System, issue Tags, collect payments for TCH and VPC and answer queries. The Toll Agency will be paid a fee by the TCH or the VPC for these activities.
- 2.1.17 Both TCH and VPC will have links to the eNaTIS database, to obtain details of vehicles and if necessary, vehicle owners. The associated systems shall allow for the possible payment of a charge for this access and this will be included in the Business Rules.
- 2.1.18 The TCH and VPC will also have links to the National Payment System, and will receive and make payments. Each of these will incur a charge and there may be other charges that have to be borne.
- 2.1.19 It is required that each Entity will determine its actual cost for processing fees and Service Charges (based upon Business Rules) and that the Tolling System will provide facilities for setting and accounting for these in each Entity in an independent way. In effect, each Entity will set up an inter Entity account to record its business dealings with other Entities. This will

provide full flexibility for any future changes or additions to the Entities or other organisations included within the system.

- 2.1.20 The quality of the data that flows between the Entities and the standards to which they perform their various activities will be covered either by a Performance Monitoring process that is defined in a separate specification (refer to the Standard Specification for Operations and Maintenance of CTROM Projects: Performance Measurement (Volume 2 Book 6)) or in the agreement between the Employer and the Toll Agencies. Although the Performance Monitoring is a key part of the business relationships between the Entities, it is not covered here and it is assumed that each Entity performs in accordance with its defined performance requirements. Where this is not the case and as a result another Entity must undertake more work to make up for the failure or loss of revenue, the cost allocation should be adjusted to reflect additional work to be undertaken by the affected Entity.

SECTION 3. KEY BUSINESS RULES

3.1 INTRODUCTION

- 3.1.1 Before detailing the Business Rules that will apply to each main Entity, there are Business Rules that are fundamental to the business relationships between the three main Entities and their operation in the future. These are so important that they are discussed separately before the individual Entity rules are specified.

3.2 INTER ENTITY ACCOUNTING

- 3.2.1 As described in previous chapters, it is assumed that each Entity is operating as a separate business Entity. In addition some Entities may have business relationships with external service providers. It is important that, as with any other business, each Entity keeps a proper record of its dealings with other Entities and external service providers. This leads to the first Key Business Rule:

Key Business Rule 1. Each Entity will set up and operate a system of inter- Entity accounting whereby each business related exchange between the Entity and others is recorded and can be reconciled. Where an Entity has a business relationship with other service providers, it shall set up a similar accounting arrangement with them.

- 3.2.2 Apart from allowing a proper accounting arrangement within the Entity, the accounting system will allow an easy means for external supervision, auditing and monitoring of activities and of comparison of records between Entities.

3.3 GUARANTEED PAYMENT TO TOLL AGENCY FROM TCH

- 3.3.1 A key principle on which the overall operation of the National ETC system is based is the concept of Guaranteed Payment. A Toll Agency is being asked to delegate its ability to collect ETC based tolls itself and to use a National ETC system over which it has little direct control, although it may be a management participant in the TCH Entity. It agrees to do this because the TCH Entity and for Opt-In Toll Agencies, the VPC Entity, provides a guarantee that it will pay the appropriate toll to the Toll Agency for each Compliant and Complete Transaction Record that it sends to the TCH within the agreed time period after the initial generation of the Transaction Record.
- 3.3.2 Although there will be performance requirements that relate to the operation of each Entity as discussed later, because of the Guaranteed Payment there will be a natural tendency for the Toll Agency to seek to send as many Transaction Records as it has generated, even where the quality may be suspect in the hope that it is accepted. A disincentive to do this will be that it will be required to pay an additional processing fee to the TCH or VPC if the Transaction Record does not meet the compliance requirements. However, the TCH System will generally apply only automatic checks to Transaction Records which will not detect

some errors that they could contain. The VPC on the other hand will undertake manual checks on applicable Transaction Records that it receives and hence should be better able to reject those that are non-compliant.

3.3.3 Should the Toll Agency opt-in and therefore send up all ETC transactions (regardless of compliancy), the Toll Agency should not be penalised for Non-Compliant Transactions. The Toll Agency shall include a non-compliancy indicator in the Transaction Record for the TCH to automatically identify the Transaction Record as non-compliant and therefore not to be processed at TCH level. If the Transaction Record can be automatically identified as non-compliant, the Toll Agency shall not be penalised with an additional processing fee by the TCH and the TCH shall forward the Transaction Record to the VPC.

3.3.4 It is necessary to define fairly specifically the terms under which the TCH Entity will provide Guaranteed Payment and this must be considered in the light of the checks that the TCH System can reasonably conduct. The Guaranteed Payment is incorporated into the following Key Business Rule:

Key Business Rule 2.

- (a) For open road toll collection, the TCH Entity shall guarantee payment to Toll Agencies for each Transaction Record received that conforms to prescribed conditions incorporated in the agreement between the TCH Entity and the Toll Agencies. For an Opt-In Toll Agency the Guaranteed Payment will be extended as defined in Key Business Rule 3. The TCH Entity will modify and update the prescribed conditions from time to time to reflect changing circumstances but shall not implement such changes without the agreement of all Toll Agencies that they will apply to. The prescribed conditions are indicated below and illustrated in Figure 3-1:

The Transaction Record received by the TCH is a Valid Transaction Record (i.e. obeys requirements for interface to TCH including authenticity and timeliness) otherwise it will be rejected and the Toll Agency informed. In addition it must satisfy one of the following sets of conditions:

- a)
 - i) *Transaction Record is associated with a Customer Account that was on the Green List that was current at the time of the vehicle passage; and*
 - ii) *Transaction Record is not associated with a Customer Account that was on the Red List that was current at the time of the vehicle passage;*

or

- b)
 - i) *Transaction Record is associated with a Customer Account that was on the Green List that was current at the time of the vehicle passage; and*

ii) *Transaction Record is associated with a Customer Account that was on the Red List at the time of the vehicle passage*; and*

iii) *A payment was received into the Customer Account during the Grace period that was either sufficient to result in the removal of the Customer Account from the Red List or was sufficient to cover the values of Transaction Records from the time when the account was placed on the Red List consecutively up to and including the Transaction Record under consideration;*

**This condition would be applicable to a system solution where the green list is a comprehensive list of all the registered accounts regardless of the account status and the red-list is used to identify invalid accounts. This condition would not be applicable if only one list is used and the account status is indicated on the list.*

- (b) For conventional electronic toll collection, the TCH Entity shall guarantee payment to Toll Agencies for each Transaction Record received that conforms to prescribed conditions incorporated in the agreement between the TCH Entity and the Toll Agencies. For an Opt-In Toll Agency the Guaranteed Payment will be extended as defined in Key Business Rule 3. The TCH Entity will modify and update the prescribed conditions from time to time to reflect changing circumstances but shall not implement such changes without the agreement of all Toll Agencies that they will apply to. The prescribed conditions are indicated below and illustrated in Figure 3-1:

The Transaction Record received by the TCH is a Valid Transaction Record (i.e. obeys requirements for interface to TCH including authenticity and timeliness) otherwise it will be processed but not be guaranteed. In addition it must satisfy one of the following sets of conditions:

a) i) *Transaction Record is associated with a Customer Account that was on the Green List that was current at the time of the vehicle passage; and*

ii) *Transaction Record is not associated with a Customer Account that was on the Red List that was current at the time of the vehicle passage;*

or

b) i) *Transaction Record is associated with a Customer Account that was on the Green List that was current at the time of the vehicle passage: and*

ii) *Transaction Record is associated with a Customer Account that was on the Red List at the time of the vehicle passage*; and*

- iii) A payment was received into the Customer Account during the Grace period that was either sufficient to result in the removal of the Customer Account from the Red List or was sufficient to cover the values of Transaction Records from the time when the account was placed on the Red List consecutively up to and including the Transaction Record under consideration;

**This condition would be applicable to a system solution where the green list is a comprehensive list of all the registered accounts regardless of the account status and the red-list is used to identify invalid accounts. This condition would not be applicable if only one list is used and the account status is indicated on the list.*

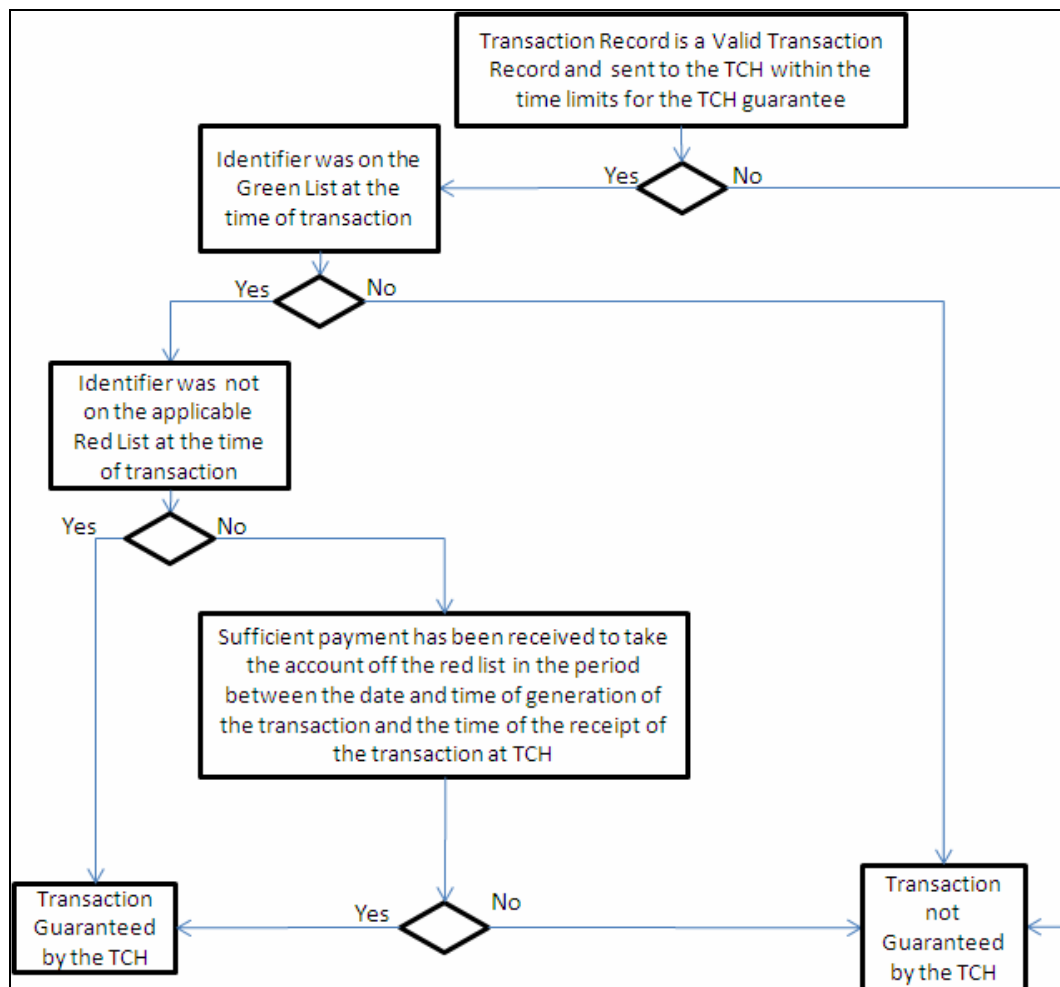


FIGURE 3-1: PAYMENT GUARANTEED BY TCH

3.3.5 Where it is indicated above that the Customer Account was on the Green List, this effectively means that the Identifiers (Tag Personal Account Number and Vehicle Licence Number)

were on the Green List and the Vehicle Class was the same as that indicated on the Green List. Where there is a Class Discrepancy that has been confirmed by the Toll Agency, the TCH Entity will guarantee payment for the tariff based on the Actual Class.

- 3.3.6 Where the Vehicle Class on the Green List (referred to as the contract class) differ from the AVC class (as determined by the Road Side System or toll lane equipment i.e. the AVC at the time of transaction), the Toll Agency will include an actual Vehicle Class (based on business rules described later in this document). The TCH will be able to identify class discrepancies based on the information added by the Toll Agency. The TCH System will have a process for monitoring consistently mismatched classes, updating the Registered Vehicle Class on the TCH System and notifying the Customer for correction of the contract class.
- 3.3.7 Where the Green List provides two Identifiers for the vehicle (i.e. Tag Personal Account Number and Vehicle License Number or any other Identifier added later in the project), it will not be necessary for more than one to be present in the Transaction Record. The Vehicle Licence Number, the Tag Personal Account Number or any other Identifier will be sufficient to uniquely identify the vehicle. (The TCH will have a process for monitoring consistently missing Identifiers and contacting the Customer after a manual check).
- 3.3.8 As indicated in Key Business Rule 2, the TCH Entity's Guaranteed Payment will be extended for an Opt-In Toll Agency to include a guarantee from the VPC Entity. This leads to Key Business Rule 3:

Key Business Rule 3. For an Opt-In Toll Agency, in addition to the Guaranteed Payment defined in Business Rule 2, the TCH Entity will also pass on to the Toll Agency the guarantee from the VPC Entity. This additional guarantee shall guarantee payment to the TCH Entity for each Transaction Record received that conforms to prescribed conditions incorporated in the agreement between the TCH Entity and the VPC Entity. The VPC Entity will modify and update these conditions from time to time to reflect changing circumstances but shall not implement such changes without the agreement of the TCH. The prescribed conditions are:

The VPC Entity will guarantee payment for Opt-in Toll Agencies:

- a) A Transaction Record that is a Compliant Transaction Record but is for an Identifier that was on the Red List at the time of the vehicle passage;
- b) A Transaction Record that is a Compliant Transaction Record but is for an Identifier that was not on the valid Green List at the time of the vehicle passage and cannot be identified as distributed as a Tag-in-a-Bag;
- c) A Compliant Transaction Record where one Identifier (e.g. the TAG number) is in accordance with the Green List but the other (e.g. the VLN) is not (Transaction

Record received from TCH after TCH has attempted to reconcile with Customer according to its internal business process);

- d) A Compliant Transaction Record remaining unpaid and associated with a Customer Account where payment has not been received normally or during the Grace period and the TCH has followed its internal business process (initial contact/reminder/warning to Customer);
- e) A Compliant Transaction Record associated with an Identifier that was included on the Green List but where the Tag or vehicle has been reported stolen (to Toll Agency, TCH or VPC and where Toll Agency and VPC have undertaken steps as defined in business processes to inform TCH and the TCH has added the Identifier to the Red List).

Notwithstanding the above, the VPC Entity will not guarantee payment where:

- a) A Transaction Record received by the VPC is not a Valid Transaction Record (i.e. does not obey requirements for interface to VPC System, including timeliness of transmission)(TCH erroneously sent transaction to TCH, not Toll Agency);
- b) The Transaction Record is incorrectly sent by the TCH as it satisfies the criteria above for a Guaranteed Payment from the TCH Entity (TCH erroneously sent transaction to TCH, not Toll Agency);
- c) The Transaction Record does not originate from an Opt-In Toll Agency(TCH erroneously sent transaction to TCH, not Toll Agency);
- d) The Transaction Record is still in the Grace period (TCH erroneously sent transaction to TCH, not Toll Agency);
- e) The Transaction Record is for an Exempt Vehicle (where the exempt vehicle is only identified at the VPC level during the debt collection or manual viewing stage);
- f) The Transaction Record is non-compliant (i.e. it is affected by a system/equipment fault and each element required for enforcement is either not present or it does not meet the specified performance or SANS certification requirement).

3.3.9 In each of these cases, the VPC Entity will charge a processing fee to the TCH Entity that, in cases (e) and (f) will be passed on to the Toll Agency (unless the non-compliance in case (f) was caused by the TCH).

3.3.10 Related to Guaranteed Payments is the frequency of inter- Entity payment and this is covered by another Business Rule:

Key Business Rule 4. *The normal cycle for invoicing and inter Entity account settlement in relation to Guaranteed Payment shall be one working day.*

3.4 BUSINESS RULES AND PERFORMANCE REQUIREMENTS

3.4.1 The establishment and conduct of business relationships between different Entities relies upon a certain agreed standard of performance by each Entity. In order to try to manage performance and ensure that each Entity meets defined standards, a set of Key Performance Indicators has been defined as well as means of measuring and 'policing' them. The 'policing' is largely external to the Entities involved although there may be some cross checking that is possible. This is particularly the case with the VPC Entity that will provide a manual check of each Transaction Record that it deals with and will reject any that does not meet the specified standard. This is, in effect, an inter Entity policing mechanism and the adjustment of the processing fee imposed by the VPC Entity will tend to ensure that each Toll Agency meets the performance requirements.

3.4.2 The TCH Entity will have a particularly exposed position in that it will have an automatic process of checking Transaction Records and applying them to Customer Accounts. It will have an onerous performance requirement in relation to overcharging (and possibly undercharging) to ensure a reliable Customer Service and minimisation of complaints. On the other hand, it will be completely reliant upon the content of the Transaction Records that it receives from Toll Agencies to ensure that overcharging is monitored. If there are external checks it will again be reliant upon the rigorousness with which the checks are applied. Its operating rules may dictate that, in order to ensure that standards are met, it conducts its own checks probably on a sample basis and imposes its own penalty (in the form of an increased processing fee) if quality is not maintained.

3.4.3 A Business Rule covering this is given below:

Key Business Rule 5. *Each Entity shall undertake to meet the performance requirements specified that are relevant to its operation and shall include such an undertaking in relevant inter- Entity agreements. Where an Entity determines that another Entity is not meeting the Operation Management Requirements and such non-conformance is impacting its operation, it will be resolved in terms of the provisions of the relevant contractual agreements.*

3.4.4 The period required for the retention of data shall be determined by:

- a) operational requirements including the period to allow for queries between Entities, from the road users and from the external organisations; and
- b) reconciliation and reporting requirements; and
- c) audit requirements.

Due to the difference in the operational requirements of the Entities, a minimum requirement will be specified for all the Entities and any additional requirements will be specified per Entity.

The Business Rule covering this is given below:

Key Business Rule 6. *The Entity's system and operations shall allow for the retention of Transaction Records and Evidential Records for as long as specified in the Employer's Requirements or Concession Contract.*

- 3.4.5 The period allowed for internal audit and queries as well as the response time for queries between Entities, from road users or external organisations should be standardised to ensure efficiency, effectiveness and the same quality of service from the Entities.

The Business Rule covering this is given below:

Key Business Rule 7. *Unless otherwise specified in the Employer's Requirements or Concession Contract, Evidential and Transaction Records shall be requested within a 3 month period after the date and time of the Chargeable Event and the response shall be within 2 working days after a request has been received.*

3.5 EXPANDABILITY OF INTEROPERABILITY

- 3.5.1 Into the future, the operation of ETC may extend and additional Toll Agencies may seek to be included in the interoperability framework. Although such expansion may be accompanied by additional payment negotiations, the Business Rules that apply are:

Key Business Rule 8. *Each Entity shall provide all reasonable assistance to other Toll Agencies wishing to join and shall apply similar standards of service with similar Service Charges to those Toll Agencies as to existing members.*

Key Business Rule 9. *Each Toll Agency wishing to join shall ensure interoperability in all respects with the existing Toll Agencies.*

3.6 MARKETING

- 3.6.1 The objectives of the Employer's marketing strategy is to build awareness; educate all stakeholders; to promote a mind as well as behavioural shift and finally, to ensure compliance.
- 3.6.2 Communication to the road users through the various marketing channels will be implemented and adjusted according to the phases of the marketing strategy. The Entity operators will play a critical role in providing feed-back obtained from being "on-the-ground".

New knowledge and understanding needs to be channelled through to the Employer in order to refine communications and make the necessary adjustments to incentives, offers, segmentation, etc. A formal reporting process will need to be implemented.

- 3.6.3 The Contractor or Concessionaire will be responsible for the staffing and the requisite training of staff at the Point of Presence Customer Service Facilities and Call Centres (if applicable). Communications to all Point of Presence Customer Service Facility operators by way of encouraging exceptional service, raising morale, incentivizing etc., shall be the Contractor's or Concessionaire's responsibility.

- 3.6.4 Business Rules covering this is given below:

Key Business Rule 10. *The responsibility for branding (including the naming and packaging of Tags) will be developed by the Employer. The responsibility for all branded application forms and transactional material / stationary as well as the transactional website will rest with the TCH Operator.*

Key Business Rule 11. *Each TA shall ensure that all marketing communication functions will be performed in accordance with the Employer's communication marketing and public relations policies. Should the Contractor or Concessionaire wish to do any additional communication, this process shall be approved by the Employer.*

Key Business Rule 12. *Each TA shall ensure that staff is trained to understand the communication and marketing strategy of the Project. Marketing training to staff will be sufficient to ensure a positive, conclusive, efficient and complete engagement which enhances the road users' experience of the Project. The TCH shall provide high-level training to the training personnel of each Entity and shall perform skills assessments to ensure the quality and sufficiency of the training done by the entities to their staff.*

Key Business Rule 13. *Each TA set up and operates a system to gather intelligence in order to measure the success of the marketing strategy and to provide formal feed-back to the Employer in order to refine communications and make the necessary adjustments to incentives, offers, segmentation, etc.*

SECTION 4. BUSINESS RULES FOR TOLL AGENCY

4.1 TOLL AGENCY FUNCTIONS

4.1.1 A Toll Agency performs three basic functions namely:

- a) To set Nominal Tariff and Discount levels via a tariff configuration table that it applies and sends to the TCH (who consolidates from all Toll Agencies and sends to the VPC);
- b) To generate Transaction Records related to Chargeable Events and send them to the TCH in an agreed format and to an agreed performance requirement;
- c) To provide Customer Service on behalf of the TCH and VPC in terms of Point of Presence Customer Service Facilities. The Toll Agency is the only organisation that can agree a scheme based Discount with a Customer and hence it must provide a Customer Service for these Customers.

4.1.2 Toll and Discount levels are determined by the Toll Agency who is responsible for their application. No checking will be undertaken by other Entities (except that the TCH will reject a Transaction Record if it does not conform to required format and timeliness requirements).

4.1.3 The performance of the Toll Agency is assumed to be determined as part of the Performance Monitoring and is not considered further in relation to Business Rules.

4.2 GENERATION OF TRANSACTION RECORDS AND FORWARDING TO TCH

4.2.1 The Toll Agency is responsible for the inclusion of the correct toll tariff in the Transaction Record. The nominal Tariff is based on the Actual Class.

4.2.2 The Vehicle Class is registered against a Tag or VLN for all vehicles including articulated vehicles (vehicle with a trailer) where the Actual Class will be dependent on the trailer used. This Registered Vehicle Class will be included in the Green List sent to the Toll Agency. The Road Side System or tolling points include an automatic vehicle identification system that will also classify the vehicle and insert the AVC classification into the Transaction Record at the time of the charge-able event.

4.2.3 The Toll Agency will ensure that the AVC class is automatically compared to the Registered Vehicle Class and if they are not the same, the transaction will be flagged for manual inspection where the Actual Class will be added (updated) in the Transaction Record. This will be done for all vehicles except for the transport vehicles where the AVC class will be accepted as the Actual Class.

The Business Rules for determination of the Nominal Tariff based on the classification includes:

TA Business Rule 101. *The Actual Class will default either to the AVC class or the Registered Vehicle Class, according to the Toll System configuration. The configuration shall allow the application of different Business Rules for different Vehicle Classes. The default class can only be overruled if it can be verified through inspection of the corresponding image.*

TA Business Rule 102. *The Nominal Tariff will be determined by the Actual Class.*

4.2.4 The following three activities of the Toll Agency are associated with payment and hence Business Rules:

- a) Forward each ETC Transaction Record to the TCH for processing;
- b) Receive notification of any 'rejected' Transaction Records (from TCH and from VPC via TCH);
- c) Receive notification of Transaction Records determined by VPC to be for an Exempt Vehicle (that was not picked up by the Toll Agency).

4.2.5 Activity 4.2.4a) is associated with a potential Guaranteed Payment from the TCH or VPC and hence clearly it is important to maximise the number of Compliant Transaction Records sent. There are performance requirements in terms of quality of Transaction Records that must be met and 4.2.4b) and 4.2.4c) will result in non-payment of the Guaranteed Payment and the imposition of an increased processing fee.

4.2.6 In order to meet reasonable standards for Customer Service the Toll Agency should send Transaction Records at the frequency indicated by the Business Rules (intended to achieve sending the Transaction Records as soon as possible after they have been generated) so that a Customer Account can always be kept up to date. An expiry date for a Transaction Record will be specified and agreed between the Toll Agency and the Employer. In some cases where manual processing is required, there will be a delay in sending the records but this must be limited and within the agreed time period. In the case of a Disastrous Event, special permission for processing transactions after the expiry date will be required. The Business Rules proposed are:

TA Business Rule 103.

- a) For open road toll collection, the Toll Agency will ensure that Transaction Records and the applicable images (if required) are received in near real time from the Toll Agency's Toll System.
- b) For conventional electronic toll collection, the Toll Agency will ensure that Transaction Records and the applicable images (if required) are received from the Toll Agency's Tolling System according to the timelines below:

- *85% of the Transaction Records within 2 hours after the date and time of the Chargeable Event that generated them;*
- *90% of the Transaction Records within 24 hours after the date and time of the Chargeable Event that generated them; and*
- *The remaining 10% of the Transaction Records not later than 5 days after the date and time of the Chargeable Event that generated them. (Although payment for these transactions will not be guaranteed, the TCH will endeavour to process them).*

TA Business Rule 104.

- a) For open road toll collection, the Toll Agency shall always transmit Transaction Records to the TCH within the specified time after they are generated at the roadside and under no circumstances shall they be sent later than 24 hours after the date and time of the Chargeable Event that generated them. Transaction Records that do not require further processing at the Toll Agency back office level will be sent to the TCH within 1 hour after the Chargeable Event that generated them. Transaction Records that require further manual processing at the Toll Agency back office level, e.g. Class Discrepancy adjudication or Manual Vehicle Licence Number Recognition will be sent to the TCH within 2 hours after the Chargeable Event that generated them.
- b) For conventional electronic toll collection, the Toll Agency shall always transmit Transaction Records to the TCH within the specified time after they are generated at the tolling point and under no circumstances shall they be sent later than 5 days after the date and time of the Chargeable Event that generated them.

TA Business Rule 105.

- a) For open road toll collection, the payment for Transaction Records sent to the TCH outside the specified time after they are generated at the roadside (as indicated in TA Business Rule 103) but not later than 24 hours after the date and time of the Chargeable Event that generated them, shall be guaranteed.
- b) For conventional electronic toll collection, the payment for Transaction Records sent to the TCH outside the specified time after they are generated at the roadside (as indicated in TA Business Rule 103) but not later than 24 hours after the date and time of the Chargeable Event that generated them, shall be guaranteed.

The payment for Transaction Records sent to the TCH later than 24 hours after the date and time of the Chargeable Event shall not be guaranteed but the TCH shall endeavour to recover the amount from the road user by processing the transaction or keeping the transaction for the grace period to allow a road user to pay the transaction in the grace period.

Transactions records received after 24 hours of the date and time of the chargeable event and not paid by the road user during the grace period will be rejected (returned to the TA) and the TA will be charged with the service fee for this transaction record.

Transaction records linked to a post-paid account where the payment means specified as "credit card" and received after 24 hours but not later than the period specified in the Acquiring Bank agreement, will be processed but not guaranteed.

TA Business Rule 106.

- a) For open road toll collection, the payment for Transaction Records sent to the TCH after 24 hours after the date and time of the Chargeable Event that generated them shall not be processed unless approved as being included in a Disastrous Event that prevented the Toll Agency from sending the transaction to the TCH. The TCH shall record and report on Transaction Records not processed and Transaction Records processed after expiry due to a Disastrous Event.
- b) For conventional electronic toll collection, the payment for Transaction Records sent to the TCH after 5 days after the date and time of the Chargeable Event that generated them and not linked to a card payment, shall not be processed unless approved as being included in a Disastrous Event that prevented the Toll Agency from sending the transaction to the TCH. The TCH shall record and report on Transaction Records not processed and Transaction Records processed after expiry due to a Disastrous Event.

A Disastrous Event for this rule means an event or occurrence causing a loss or delay of transactions in one or more Lanes at one or more tolling points, where such a loss or delay continues for more than 30 minutes, or where a complete interruption of system functions occurs at any of the Toll Agency Systems. Application for processing of transactions due to a disastrous event should be submitted within 5 days after the start of the disastrous event. The time allowed for the process of evaluating the validity of the claim of a disastrous event should not exceed 2 working days after receipt of the application.

- 4.2.7 Clause 4.2.7 and Business Rules TA 107 is not applicable to the conventional electronic toll collection where ANPR functionality is not implemented.

The Toll Agency must ensure that the Customer use the TAG in the registered vehicle as specified on the Green List. The TA Back Office System shall provide a configurable function to identify Vehicle Licence Number discrepancies in case of:

- (a) Transaction Records with class discrepancies; and/or
- (b) Transaction Records of special road users, such as Exempt Vehicles or public transport; and/or

- (c) Differences between front and rear number plates on the same vehicle; and/or
 - (d) Transaction Records for all registered Tag Identifiers eligible for Discount.
- 4.2.7.1.1 If a particular Tag is not eligible for discount, the Vehicle Licence Number need not be verified, unless these transactions are queried by the Road user later on (keeping in mind that images shall be stored at the RSS and that image verification is a possibility within the storage period).
- 4.2.7.1.2 The Vehicle Licence Number derived from the ANPR or MNPR process will be compared with the Vehicle Licence Number in the Validation List(s), also known as the registered Vehicle Licence Number.
- 4.2.7.1.3 The TA Back Office system shall automatically keep track of the number of mismatches between the registered VLN and the VLN determined through the ANPR process, for all Tag Identifiers where such Tag Identifiers determines if a Discount is applicable. A mismatch shall only be counted as a mismatch if the ANPR process was accomplished within the agreed confidence level and conclusively indicates the occurrence of such a mismatch. (The TA shall ensure that the VLN of a trailer for example, does not count as a mismatch).
- 4.2.7.1.4 Once the number of mismatches automatically detected by the TA Back Office System reaches a configurable number, for example, 8 per month, the TA Back Office Operator shall verify the mismatches manually. If the mismatches can be verified, the Transaction Record shall be flagged as a Vehicle Licence Number discrepancy to inform the TCH that the road user is abusing the discount rules, so that the TCH System can take further action, such as to inform the road user about the mismatch.
- 4.2.7.2 If only some of the mismatches can be verified, then the count shall be adjusted with the verified number of mismatches. The number of mismatches which the TA Back Office must determine automatically shall be a configurable parameter.
- 4.2.7.3 If a road user continues to misuse the system, the Discount of a road user may be terminated. The TA Back Office system shall no longer apply the Discount to Transaction Records linked to the Tag Identifier.
- 4.2.7.4 The TA Back Office System shall in turn reset the count of mismatches after notifying the TCH and/or at the beginning of the month.

TA Business Rule 107. *Where a Toll Agency or the TCH determines that the Tag issued to a Customer is frequently (or continuously) not being used correctly in association with the Vehicle Licence Number included in the Customer Account (based on a variable number of mismatches per month, per Toll Agency), the TA shall charge the Customer based upon the Nominal Tariff for the Vehicle Class and Tag Discount will not be applied.*

- 4.2.8 Clause 4.2.8 and Business Rules TA 108 is not applicable the conventional electronic toll collection where ANPR functionality is not implemented.

The Toll Agency must also ensure that the Evidential Record is sent with the Transaction Record when it is likely to be required by either the TCH or the VPC. This leads to:

TA Business Rule 108. *The Toll Agency shall ensure that a copy of the Evidential Record is sent to the TCH with the Transaction Record when.*

- (a) *The Transaction Record includes an Identifier on the Green List and there is a Class Discrepancy; or*
- (b) *Either of the Identifiers is not in accordance with the Green List; or*
- (c) *The Identifier is also on the Red List; or*
- (d) *An Incident with financial or operational risk occurs as specified in the Employer's Requirements or Concession Contract; or*
- (e) *In addition, for an Opt-In Toll Agency, the Evidential Record shall be sent in all cases when the Transaction Record is not associated with an Identifier on the Green List*

- 4.2.9 Clause 4.2.9 and Business Rules TA 109 is not applicable to the conventional electronic toll collection where ANPR functionality is not implemented.

The Toll Agency must retain Evidential Records for sufficient time to ensure that any need for them by either the TCH or VPC is adequately allowed for. This leads to:

TA Business Rule 109. *Where a Toll Agency sends a copy of an Evidential Record to the TCH with a Transaction Record or where the TCH subsequently requests a copy, the Toll Agency shall retain the Evidential Record for as long as it retains the Transaction Record.*

4.3 PROVISION OF POINT OF PRESENCE CUSTOMER SERVICE FACILITIES

- 4.3.1 If applicable, this function has the following activities that relate to a payment or have other business implications:

- a) Grant Discount rights for toll roads under their control to Customers and include the Discount information in the Transaction Record sent to the TCH to apply to Customer Account;

- b) Set up (using the TCH System) Customer Accounts, issue Tags and accept payments;
- c) Provide a Service to Customers to accept payments to accounts, to answer Customer Account queries and to change Customer Account details, to test Tags and replace as necessary;
- d) Collect Tags and holders required for issue from TCH and return to TCH any Tags taken back from Customers due to a fault or closed account;
- e) Provide customer service for VPC for Violators to view evidential data and make payments for Violations;
- f) Provide and operate Mobile Payment Stations to be used in association with Mobile Enforcement (if applicable);
- g) Liaise with the TCH over the migration of its Legacy Customer Accounts.

4.3.2 Except for item 4.3.1a) in the list of customer service centre activities listed above, all other activities are optional, depending upon the particular arrangements with a Toll Agency. They will also be considered here from a Business Rules perspective, accepting that some of the Business Rules will not be applicable to all Toll Agencies.

TA Business Rule 110. *The Toll Agency may offer project specific Discounts as incentive to road users to set up a Customer Account or as part of a rewards programme. The Discounts (or the value of the Discount) shall not be assigned as a monetary value to the Customer's Account but shall be separately associated with the account. Project specific Discounts shall be fully utilised as payment for Transaction Records before the Customer Account is debited. Reduced income due to the Toll Agencies for Transaction Records for which the Toll Agency project specific Discounts were utilised shall be to account of the Toll Agency.*

TA Business Rule 111. *If applicable, the Toll Agency shall ensure that stock levels at all Point of Presence Customer Service Centres and other distribution points of Tags are efficiently managed to ensure that demand is met within the required period.*

4.4 DISTRIBUTION OF VALIDATION LISTS

4.4.1 The Toll Agency will collect / receive and distribute the Validation Lists received from the TCH at intervals determined by the Business Rules. The Toll Agency shall ensure that Validation Lists are updated at Back Office and tolling point level. The Opt-in Toll Agency will also collect / receive the VOSI list and a list of vehicles that has exceeded the allowed height.

4.4.2 The Toll Agency shall also include verification procedures to ensure that the Validation Lists and the VOSI list (if applicable) were updated by the TCH at the frequency that is in accordance with the Business Rules. The Toll Agency will implement a sufficient audit trail to allow for verification of the process and determination of the time of the update of the lists at Back Office and tolling point level. The Toll Agency shall ensure that sufficient Evidential Records are kept of failure and success of the collection / receive / update and distribution of the lists.

4.4.3 The following Business Rule will apply:

TA Business Rule 112.

(a) For open road toll collection, the Toll Agency will ensure that the Validation Lists and the VOSI list are updated at the frequency as specified in the Employer's Requirements or Concession Contract. The lists will be made available by the TCH as follows:

i. The Red List shall be updated by the TCH every 30 minutes;

ii. The VOSI lists will be updated in near real time; and

iii. The Green List will be updated every 60 minutes.

(b) For conventional electronic toll collection, the Toll Agency will ensure that the Validation Lists and the VOSI list (if applicable) are updated in 4 hours or as determined by the TA based on the risk associated with the updates. The lists will be made available by the TCH as described in TCH Business Rule 201, *i.e.:*

i. The Red List shall be updated by the TCH every 30 minutes; and

ii. The Green List will be updated every 60 minutes.

SECTION 5. BUSINESS RULES FOR THE TCH

5.1 INTERFACE TO THE TOLL AGENCY

- 5.1.1 In formulating the rules for the Toll Agency and for Guaranteed Payment, it has been assumed that the Green List will be updated by the TCH regularly and is the reference by which the association of an Identifier with a Customer Account is judged by other Entities. Failure to update the Green List will be a TCH Operator cost unless that failure resulted from the failure of a Toll Agency Point of Presence Customer Service Facility to supply the relevant information in a timely manner on the TCH System (in which case the operator of the errant facility will bear the cost).
- 5.1.2 From a practical point of view it is necessary to allow for the time between a Customer setting up an account and the issue of a new Green List (and implementation by Toll Agencies). The TCH will have completely up to date records and shall be able to associate the Transaction Records with the Customer Account, even if it is not on the Green List.
- 5.1.3 For the 'Tag in a Bag', initially the Tag will be on the Green List but the Vehicle Licence Number and the Vehicle class will be unknown. The Toll Agency will add the Vehicle Licence Number (if Opt-in TA with required ANPR equipment) and class when it is first detected. This will enable the TCH to add the additional information on to the Green List and the Customer will have the Grace period (or until the incentive Discounts are used up) to arrange a top up.
- 5.1.4 These considerations lead to the following Business Rules:

TCH Business Rule 201. The TCH Operator shall ensure that the Green List is updated in accordance with the frequency specified below:

- (a) The Red List shall be updated by the TCH every 30 minutes;
- (b) The VOSI lists will be updated in near real time; and
- (a) The Green List will be updated every 60 minutes.

and ensure that these lists are available for use by the other Entities. The TCH Operator shall ensure that the Green List is always an accurate reflection of the current Customer Accounts. Where a Customer Account is set up (or modified) the TCH Entity shall accept responsibility in relation to its Guaranteed Payment for the period until the Green List is updated. A time stamp indicating the time of update will be used to establish an audit trail and to determine the validity of the green list used to validate a transaction.

TCH Business Rule 202. The TCH shall ensure that, during the Grace period, any Transaction Records associated with a Customer Account that was not on the Green List at

the time that the Transaction Record was generated but was subsequently set up, are allocated to that account, if that was agreed with the Customer.

- 5.1.5 The Red List will, of necessity, be updated more frequently than the Green List, but again, by the time it becomes active in the toll lanes some transactions for the Identifier on the Red List may have taken place. This leads to the following Business Rules:

TCH Business Rule 203. *The TCH Operator shall ensure that the Red List is updated in accordance with the frequency specified in TCH Business Rule 201 and shall make this available to all Toll Agencies;*

TCH Business Rule 204. *The TCH Operator shall take responsibility for the business implications of its management of the Red List. Where appropriate it shall send Transaction Records associated with a vehicle placed on the Red List to the VPC.*

- 5.1.6 In order to meet its Operations Management Requirements in relation to over and undercharging and ensure a high level of Customer Service, the TCH must ensure that, in so far as it is able, all Transaction Records it applies to a Customer Account are correct and applicable to that account. This leads to Business Rule:

TCH Business Rule 205. *The TCH shall ensure that such checks are performed as are necessary to ensure that the Transaction Record is a Valid Transaction Record before allocation to a Customer Account.*

- 5.1.7 Certainly the TCH must apply automatic checks that are appropriate to ensure that each Transaction Record meets the requirements for a Guaranteed Payment. It may also be considered necessary to conduct some more detailed sample checks in addition to any that may be undertaken externally to ensure that the Operations Management Requirements are maintained. Sample checks should not impact on the time-stamp for the receiving of the transaction at TCH or the processing of the transaction against the account and the subsequent payment to the Toll Agency.

- 5.1.8 The TCH is required to ensure that a high quality and distribution of Customer Service is provided in the most cost effective way. The applicable Business Rules are:

TCH Business Rule 206. *The TCH Entity shall plan and execute a strategy for Customer Service that ensures that a high standard is provided consistent with anticipated demand.*

TCH Business Rule 207. *The TCH Entity shall consistently monitor the levels of service and the cost effectiveness of provision of face to face Customer Service provided by Toll Agencies in order to meet the required performance levels.*

In this context the term cost-effectiveness means that the cost expended is appropriate for the level of service provided. As a minimum, the 'cost drivers' of the services offered (such as the number of customers serviced every day, the spread of times to handle enquiries, the duration for which there were no customers, etc.) should be monitored to allow the cost of the service to be assessed. These simple records should also allow optimisation of enquiry-handling, perhaps to identify customer contacts that could be automated without compromising perceived service quality.

TCH Business Rule 208. *The TCH Entity shall ensure that stock levels of any Tags that are supplied to Toll Agencies are efficiently managed to ensure that demand is met within the required period.*

5.2 INTERFACE TO CUSTOMER

- 5.2.1 The physical interface to the Customer is provided directly by the TCH through a Web Site and a Call Centre and indirectly by the Toll Agency Point of Presence Customer Service Facilities and external commercial agencies. The last two channels are covered elsewhere in this chapter and the first two will be covered here. Before considering the actual interfaces themselves, it is necessary to define the 'product' that is being offered to the Customer and Business Rules associated with that.
- 5.2.2 The basic 'product' is a Customer Account, linked to ETC that is a mandatory payment means for some Toll Agencies and currently optional for others where other payment means are provided.
- 5.2.3 There are some important Business Rules that relate to the details of the 'product' that is offered and these are considered before considering Customer Service.
- 5.2.4 It has been decided that both Pre-Paid and "guaranteed" Post-Paid Accounts will be available for Customers. The general operational objective is to maximise the use of accounts and to optimise the use of Tags. The application of this must take into account the improved accuracy of operation brought about by the use of a Tag. However, some Toll Agencies may provide for the use of a Vehicle Licence Number based account for infrequent users, possibly in the form of a Day Pass. Incentive Discounts or other incentives may be offered either by the TCH or the Toll Agency to encourage account penetration. Business Rules arising from this are:

TCH Business Rule 209. *The TCH shall make available both Pre-Paid and "guaranteed" Post-Paid Accounts to Customers with the basic account available at no charge to the Customer. A basic account shall generally be self-service using internet and automatic payment means.*

TCH Business Rule 210. The TCH may apply a Service Charge for the provision of additional facilities not provided on basic Customer Accounts to reflect the costs involved to, for example, send paper statements and Tax Invoices or send low balance reminders via SMS.

TCH Business Rule 211. The TCH shall ensure that the issue of guaranteed Post-Paid Accounts is restricted to Customers with a reasonable credit history (including using a Credit Card issued by a bank), who provide full address and contact details and who provide a means for direct debit of funds to pay for Transaction Records generated.

TCH Business Rule 212. For a guaranteed Post-Paid Account linked to a credit card, the TCH shall seek to minimise risk by obtaining frequent payments from the Customer, at least daily but potentially more frequently as per a pre-determined amount or period.

TCH Business Rule 213. For large fleet accounts, the TCH shall allow post payment subject to provision of an acceptable payment guarantee or cash deposit that shall cover the value of typically three months transactions invoiced on a monthly basis and subject to the approval by the Employer.

TCH Business Rule 214. The TCH shall provide a Day Pass facility for use on defined Toll Agency toll roads where the Customer specifies a specific period on which he will use the Day Pass or where the first Transaction Record generated by the vehicle named on the Day Pass after application will define the 24 hour period for which the pass will be valid.

TCH Business Rule 215. A Day Pass can be purchased after the charge-able event, i.e. during the Grace period after the first transaction was registered.

TCH Business Rule 216. The usage of a Day Pass shall be limited to a specific project (or Toll Agency) and light vehicles.

TCH Business Rule 217. The Day Pass shall only be valid for a period up to 30 days after purchase date. A Day Pass shall not be refundable.

TCH Business Rule 218. The TCH shall monitor the issue of Day Passes to ensure that the number issued for one vehicle does not exceed a pre-determined level in any period (typically a year).

TCH Business Rule 219. For a Pre-Paid Account, the TCH shall set minimum requirements for the initial payment, the top up amount and the threshold level when a reminder will be sent to the Customer. This shall be based upon anticipated usage. The

TCH shall continually monitor operation and shall adjust the levels on all or frequent user accounts based upon experience to ensure that the account is always kept in credit. The TCH shall also set a maximum amount for initial payment and top-ups to mitigate the risk of money laundering.

TCH Business Rule 220. *The TCH shall ensure that the balance on a Pre-Paid Customer Account can never fall below zero and shall allocate any Transaction Records that may cause that to a suspense account while the TCH seeks to obtain an account top up from the Customer.*

TCH Business Rule 221. *The TCH shall adopt a flexible approach to the application of the Grace period for Pre-Paid Customer Account holders to ensure good Customer relations while at the same time not substantially increasing risk of non-payment. This shall recognise the potential for two types of Grace period – one where the period applies to each Transaction Record and another where it applies only once in relation to the first Violation for a particular vehicle.*

TCH Business Rule 222. *For Transaction Records generated for vehicles not linked to a Customer Account, the TCH shall also operate a Grace period as in TCH Business Rule 17 to allow a period for payment of toll fees before the Transaction Record is passed on to the VPC Entity.*

TCH Business Rule 223. *When operating the Grace period, the TCH Operator shall ensure that any Transaction Records that remain unpaid and originate from an Opt-In Toll Agency are sent to the VPC Entity within the Grace period plus 24 hours of the date when they were generated to allow time for VPC processing.*

TCH Business Rule 224. *During the Customer Account set up process, the TCH will check details of the vehicle and possibly the owner with any data available from eNaTIS and / or other third party database. Should the information registered by the Customer not agree to the eNaTIS and / or other third party database, the system shall display an appropriate message to inform the user and to allow the user to correct information entered (if applicable.) Should the road user indicate that the information entered during registration is correct, the system shall continue with the registration process and accept the information entered by the Customer.*

TCH Business Rule 225. *The TCH shall accept all risk associated with non-payment of guaranteed Post-Paid Accounts, but where Transaction Records are still within the period that allows VPC debt collection to commence, will pass the associated Transaction Records to the VPC for processing as though they had not been associated with a Customer Account.*

TCH Business Rule 226. Where the TCH handles accounts that are migrating from another Toll Agency, it shall seek to ensure that the overall Customer Service provided by the TCH is at least as good as that experienced by the Customer before migration.

TCH Business Rule 227. The TCH shall make a charge as determined by the Employer to the Customer to cover the cost of a replacement Tag or Tag holder when the issued one is lost or damaged. Where the issued Tag or holder becomes defective, it shall be replaced free of charge by the TCH Entity.

TCH Business Rule 228. Where a Customer notifies the TCH of a change of vehicle, he shall be instructed to transfer the Tag to the new vehicle and to advise the TCH to associate the new vehicle with the Tag and the Customer Account.

TCH Business Rule 229. The Customer shall be responsible for any tolls applicable to a vehicle associated with a Customer Account until a change of ownership is notified to the TCH and any Tag has been removed from the vehicle.

TCH Business Rule 230. Where the TCH determines that the Tag issued to a Customer is not transacting reliably, it shall advise the Customer to seek to check the Tag and mounting at a Point of Presence Customer Service Facility at no charge to the Customer (unless it is found that the Tag or holder has been damaged).

TCH Business Rule 231. Where a Customer has an unusual vehicle type that poses specific Tag mounting problems, the TCH shall provide advice and possibly a specialised Tag holder to the Customer free of charge. This advice shall normally be provided via a Point of Presence Customer Service Facility.

TCH Business Rule 232. Where a Customer informs the TCH that a Tag has been lost or stolen or that a vehicle (or Vehicle Licence Number) has been stolen, the TCH shall take responsibility for any Transaction Records received after the time of notification and shall not charge the Customer. This responsibility may be taken over by the VPC. The Customer shall be responsible for Transaction Records generated prior to notification.

TCH Business Rule 233. The TCH shall advise the Customer of misuse of the TAG, i.e. using the TAG in a vehicle other than the registered vehicle and if the misuse continues, may, depending upon the nature of the misuse, apply a TCH charge to the VLN associated with the Customer Account and notify the Customer that this has been done and may apply a Service Charge.

TCH Business Rule 234. Where the Toll Agency or the TCH determines that the Tag issued to a Customer or the VLN registered by the Customer is not associated with a vehicle of the Class registered by the Customer, the TA shall charge the Customer based

upon the Nominal Tariff for the Actual Class indicated on the Transaction Record. The tariff included in the transaction Records posted to the Customer account before the detection of the misuse shall not be changed.

TCH Business Rule 235. *The TCH shall notify the Customer of the misuse of the Tag or incorrect registration of the Vehicle Class. Where the misuse continues, the TCH may, depending upon the nature of the misuse, apply a TCH change to the Vehicle Class associated with the Customer Account and notify the Customer that this has been done and may apply a Service Charge.*

TCH Business Rule 236. *The TCH may offer Discounts as incentive to road users to set up a Customer Account or as part of a rewards programme. The Discounts (or the value of the Discount) shall not be assigned as a monetary value to the Customer's Account but shall be separately associated with the account. Incentive Discounts shall be fully utilised as payment for Transaction Records before the Customer Account is debited. Payment to the Toll Agencies for Transaction Records for which the TCH incentive Discounts were utilised shall be at a cost to the TCH.*

TCH Business Rule 237. *When a Customer wishes to close a Customer Account, the TCH shall ensure that all Transaction Records that may be associated with that account have been fully processed before finally processing the account closure and refunding any balance due to the Customer. The TCH will take into account the time period allowed for transactions from all Toll Agencies and monthly discount calculations (if applicable) before closing an account.*

5.3 INTERFACE TO VPC

5.3.1 The business arrangements between the TCH and the VPC are primarily dictated by the payment guarantee that is provided by the VPC. The appropriate Business Rules are:

TCH Business Rule 238. *When a Transaction Record meets the agreed criteria to be sold to the VPC for a Guaranteed Payment, the TCH shall send the Transaction Record and the service charges charged within the defined timescales and shall pay the processing fee invoiced by the VPC.*

TCH Business Rule 239. *The TCH shall receive from the VPC, notification of Transaction Records that are rejected and shall consider the cause of such rejection and whether this is the responsibility of the TCH or the originating Toll Agency. The TCH shall pay any processing fee due and, depending upon the determined responsibility, shall either reflect the processing fee in a similar charge applied to the responsible Toll Agency or shall allocate the charge to its own operating account.*

TCH Business Rule 240. The TCH shall receive from the VPC notification of acceptance of Transaction Records covered by the Guaranteed Payment and advice of the appropriate payment into the TCH bank account. The TCH will also receive notification of processing fees due and will allocate those to the appropriate account.

TCH Business Rule 241. The TCH shall respond to requests for information from the VPC associated with its debt collection or the AARTO process and shall invoice any processing fees or Service Charges due for undertaking this work.

TCH Business Rule 242. The Toll Agency in collaboration with the TCH Entity may notify the VPC that it will offer an incentive to a Violator that sets up a Customer Account. The VPC shall offer this to Violators and shall ensure that the TCH is made aware of vehicles associated with Violations where this offer has been made and accepted by the road user so that the TCH can ensure that the incentive is applied to the account, when opened.

5.4 INTERFACE TO ENATIS OWNER

- 5.4.1 The interface to the eNaTIS owner is limited in terms of requirements, but there may be a Service Charge associated with each request sent. The Business Rule is:

TCH Business Rule 243. The TCH shall record each request for data responded to by the eNaTIS owner and any agreed Service Charge. The TCH shall pay Service Charges when invoiced.

5.5 INTERFACE TO BANKS

- 5.5.1 The interface to the TCH bank will be limited to instructing payments to be made to others and checking payments received and made by means of statements. The bank will levy charges for its services and these must also be checked. Business Rules will be:

TCH Business Rule 244. The TCH shall operate its bank accounts and payment regime in a manner that seeks to minimise bank charges consistent with ensuring efficient operation.

TCH Business Rule 245. The TCH shall manage its accounts to maximise any interest receivable consistent with ensuring sufficient liquidity to meet its operational requirements.

TCH Business Rule 246. The TCH shall manage the Pre-Paid Float Account in a manner consistent with the requirements of applicable legislation bearing in mind that, until

utilised for payments in relation to Transaction Records or Service Charges, the funds are owned by the Customer rather than the TCH.

5.6 INTERFACE TO EXTERNAL COMMERCIAL AGENCIES / APPOINTED AGENTS

5.6.1 The TCH is required to enter into arrangements with external commercial agencies (such as retail outlets), either directly or through intermediaries so as to ensure that a high quality and distribution of Customer Service is provided in the most cost effective way. The applicable Business Rules are:

TCH Business Rule 247. *The TCH Entity shall plan and execute a strategy for Customer Service that ensures that a high standard is provided consistent with anticipated demand.*

TCH Business Rule 248. *The TCH Entity shall consistently monitor the levels of service and the cost effectiveness of provision of face to face Customer Service provided by external commercial agencies/ appointed agents in order to meet the required performance levels. The TCH shall adjust the use of the available service channels to optimise cost effectiveness.*

TCH Business Rule 249. *The TCH Entity shall ensure that stock levels of any Tags that are supplied to external commercial agencies / appointed agents are efficiently managed to ensure that demand is met within the required period.*

SECTION 6. OPERATION OF THE VPC

6.1 INTERNAL BUSINESS RULES

- 6.1.1 The operation of the VPC is unlike the other two Entities in that, although it will receive Transaction Records from the TCH and must provide a Guaranteed Payment, the approach that it adopts in handling the Transaction Records shall be based, at least in part, upon the experience that it gathers during operation as there are no existing South African business models that can be used to define a particular strategy. The VPC must develop a strategy that achieves the overall aims of improving compliance in the payment of Transaction Records through active Customer Accounts while at the same time balancing the effort expended and the success rate achieved (and hence the fines and fees received). The strategy should be kept under constant review and be updated and modified as necessary based upon operational experience. The first Business Rules are:

VPC Business Rule 301. *The VPC shall ensure that it achieves optimal payment for Transaction Records by potential and confirmed Violators consistent with an efficient operation. It shall constantly review its operation to ensure that this is achieved.*

VPC Business Rule 302. *The VPC shall keep in mind in developing and pursuing its enforcement strategy that the ultimate aim is to ensure that the maximum number of road users pay for their use by means of active Customer Accounts. The VPC shall ensure that all potential and confirmed Violators that it contacts are encouraged to set up a Customer Account and should advertise any incentives that may be available from the TCH.*

- 6.1.2 The overall requirement should be to obtain 100% payment for Chargeable Events, but accepting that will not be achieved except for a barrier based operation, the aim should be modified to balance the enforcement effort to ensure that the overall benefit achieved in extra revenue generated is, in the medium to long term, adequately in excess of the cost of the enforcement effort. It might be expected that during the initial period of operation, the enforcement activity would be high – both because the number of infringements would be expected to be high but also because it will be necessary to demonstrate a high level of enforcement to encourage a high level of Customer Account take up.
- 6.1.3 As a business Entity, the VPC is paying out guaranteed tolls and covering its operating costs. It may also be paying a fee to eNaTIS operator, RTIA and possibly other costs associated with the AARTO process. It is receiving a Service Charge (assumed per Transaction Record) from the 'Opt-In' Toll Agencies, tolls plus fees from Violators during the debt collection process and the same, plus an additional fee and a portion of the Infringement Notice fine during the AARTO process. Overall, there should be a balance of expenses and income. If nobody pays as a result of the enforcement process, the Service Charge to the Toll Agencies will be greater than the guaranteed tolls paid to them, to cover the VPC costs. The more that is re-covered by the VPC, the lower the service charge. It seems that the aim should be to reduce this to zero if possible and then the VPC is self-

sustaining and the Toll Agencies receive all of the tolls due to them. This leads to a Business Rule:

VPC Business Rule 303. The VPC shall seek to adjust its debt collection and AARTO processing activity such that the processing fee to Toll Agencies in relation to provision of the Guaranteed Payment for Compliant Transaction Records is reduced to as low a level as possible, with the aim of reduction to zero.

- 6.1.4 An important requirement for VPC operation is to apply enforcement in as fair and even handed a way as possible such that all categories of Violators receive a uniform treatment. This would normally be based upon the number of infringements outstanding, although there are special circumstances, discussed below. This should ensure that the perception of the public is that enforcement is being operated fairly and not unfairly penalising certain categories of people, such as those who seek to keep their information at eNaTIS up to date. This leads to a Business Rule:

VPC Business Rule 304. The VPC shall seek to apply its enforcement activity fairly across all categories of Violators, generally based upon the number, value or age of Violations outstanding, but taking into account special situations covered by other Business Rules.

- 6.1.5 An exception to this rule will be where Violations of a particular vehicle is causing an adverse impact upon a Customer Account (use of a duplicate/stolen number plate or stolen Tag) or where it is causing failure to identify a vehicle (no number plates or damaged or unreadable number plates). This leads to a Business Rule:

VPC Business Rule 305. The VPC shall give priority in its enforcement activity to vehicles where there is impact of their Violations upon genuine Customer Accounts such as the use of a duplicate or stolen number plate or stolen Tag or where there is a consistent failure to identify the vehicle due to lack of a usable Identifier.

- 6.1.6 It should be noted that where there is no usable Identifier, there will be no Transaction Records that can be used for enforcement purposes and hence Mobile Policing will have to be based upon a different approach. This will also partly apply where the Vehicle Licence Number is not on the eNaTIS database and hence the AARTO debt collection process cannot be started. These cases should also be afforded priority for Mobile Policing and this leads to a Business Rule:

VPC Business Rule 306. When assigning priority for Mobile Policing activity for vehicles with number plates not registered on the eNaTIS database it shall take into account the fact that Transaction Records older than 30 days cannot be used and hence no tolls, charges and fines can be recovered. This should result in allocation of higher priority.

6.1.7 Vehicles with a foreign number plate pose a particular problem and will clearly not be on the eNaTIS database. The enforcement strategy adopted by the VPC should treat them in the same way as other vehicles with number plates not on the eNaTIS database and this is covered by Business Rule 5.

6.1.8 The remaining categories of infringements can be grouped as follows:

- a) Vehicles where the Owner details are known to be different to those shown on the eNaTIS database;
- b) Vehicles where the Owner details on the eNaTIS database are correct;
- c) Vehicles that were associated with a Customer Account but where payments have ceased.

6.1.9 Vehicles in Category a) can have invoices sent to the address on the eNaTIS database so that the Violation is registered, but there is little point in sending further correspondence to that address, unless it is decided to start the AARTO process. The VPC should aim to try to obtain the correct address of the violator so that he can be notified directly of the Violations and given the opportunity to pay. The appropriate Business Rule is:

VPC Business Rule 307. Where it is known that the Vehicle Owner address is different to that held on eNaTIS or where the owner consistently fails to respond to correspondence, the VPC shall seek to find the correct address of the owner, employing efforts consistent with the number of Violations outstanding.

6.1.10 Vehicles in category b) above are probably the easiest to deal with and it is important that the VPC does not expend a relatively greater effort and achieve a greater success rate with these than in the more difficult categories as it will result in bad public relations and offer a dis-incentive for a Vehicle Owner to keep his records up to date. Vehicles in category c) will be similar as it is likely that an up to date address is available for the Customer. The Business Rule is:

VPC Business Rule 308. In accordance with VPC Business Rule 4, the VPC shall not unduly emphasise enforcement activity on Transaction Records where it is known that the Vehicle Owner address on the eNaTIS database is correct, or another valid contact address is known. The enforcement action taken shall be consistent with the number, value or age of Violations compared to those of vehicles in other categories.

6.1.11 On receipt of an invoice issued as part of the enforcement process (or an Infringement Notice), the recipient can make a Representation for consideration by the VPC (or the RTIA if in the AARTO process). During consideration of this Representation, the VPC shall seek to act fairly and impartially. Where the Representation is based upon a declaration that

payment was previously made, the VPC shall seek evidence from the Vehicle Owner and shall then ask the TCH to investigate the claim. The appropriate Business Rule is:

VPC Business Rule 309. When a Vehicle Owner makes a Representation to the VPC, the VPC shall endeavour to treat this fairly and impartially and where necessary shall obtain the assistance of the TCH to investigate any claims of payment made. In all cases, the VPC shall send a response to the Vehicle Owner within the time prescribed in the Employer's Requirements or Concession Contract.

- 6.1.12 When the processes available to the VPC have failed to elicit a payment from the Vehicle Owner, the VPC must determine whether to issue the Final Invoice and then start the AARTO process. The decision should take into account the additional costs involved, the expected chance of success and the overall benefit to ETC operation if the Infringer does set up a Customer Account. The Business Rule is:

VPC Business Rule 310. In considering whether to pass a set of Violations for a vehicle to the Final Invoice stage and then to the AARTO process, the VPC shall consider the number of Violations outstanding and the rate of increase of that number, the costs involved compared to the additional income that may be received and the estimated likelihood of success. These rules should adhere to the applicable legislation and the Concession Contract. The VPC shall also consider the benefits that may be achieved if the violator sets up a Customer Account and starts to pay for road use.

- 6.1.13 Where the VPC has been unsuccessful in seeking payments for Violations and it is considered not worthwhile or not possible due to lack of identification data to start the AARTO process, the VPC shall develop a set of criteria to be used to determine when to put on hold a set of Transaction Records and to take no further action. The Business Rule is:

VPC Business Rule 311. In considering when to put on hold enforcement activity on Transaction Records received, the VPC shall balance the likelihood of further enforcement effort achieving success, the age of the Transaction Records and the rate of receipt of new Transaction Records for the same vehicle and the value proposed to be put on hold. Where appropriate the VPC shall maintain Transaction Records that were "put on hold" in a dormant account that may be re-activated providing the Transaction Records are still valid, if the situation changes. The VPC shall consult with the Toll Agency on decision to put Transaction Records on hold and to re-activate the Transaction Records.

6.2 INTERFACE TO TCH

- 6.2.1 The business arrangements between the VPC and the TCH are effectively a mirror image of those identified in Chapter 5 for the TCH interface to the VPC. Where appropriate those Business Rules are repeated below in amended form to be applicable from VPC to TCH.

VPC Business Rule 312. *The VPC shall examine all Transaction Records sent to it by the TCH and shall reject, within the agreed period, any that meet the agreed criteria for rejection as in Key Business Rule 3, and shall not provide a Payment Guarantee. The VPC shall apply the appropriate processing fee for each Transaction Record rejected.*

VPC Business Rule 313. *The VPC shall send to the TCH, within the agreed period, notification of acceptance of Transaction Records covered by the Guaranteed Payment and shall make the appropriate payment into the TCH bank account. The VPC shall also send notification of processing fees due and check for payment.*

VPC Business Rule 314. *The VPC may request the TCH to provide information associated with its debt collection or the AARTO process and shall pay any invoices from the TCH for processing fees for undertaking this work.*

6.3 INTERFACE TO OPT-IN TOLL AGENCY

- 6.3.1 No Business Rules are included for this interface.

6.4 INTERFACE TO ENATIS SYSTEM

- 6.4.1 The VPC will have two main uses for the interface to the **eNaTIS system**. (The first is to seek to obtain details of the registered owner of a vehicle and associated data about the vehicle so that it can conduct its investigations and issue an invoice. The appropriate Business Rule is:

VPC Business Rule 315. *The VPC shall record each request for data responded to by the eNaTIS system and any agreed Service Charge. The VPC shall pay Service Charges when invoiced.*

- 6.4.2 The second use for the interface is to pass details of Infringement Notices sent to Violators together with associated Transaction Records and evidential information at the start of the AARTO process. The appropriate Business Rules are:

VPC Business Rule 316. *The VPC shall send Infringement Notices and associated information to the eNaTIS owner at the start of the AARTO process for further processing and shall pay any Service Charges due.*

6.5 VPC TO BANKS

- 6.5.1 The interface to the VPC bank (and Acquiring Bank) will be limited to instructing payments to be made to others and checking payments received and made by means of statements. The bank will levy charges for its services and these must also be checked. Business Rules will be:

VPC Business Rule 317. The VPC shall operate its bank accounts and payment regime in a manner that seeks to minimise bank charges consistent with ensuring efficient operation.

VPC Business Rule 318. The VPC shall manage its accounts to maximise any interest payable consistent with ensuring sufficient liquidity to meet its operational requirements.

SECTION 7. CONDITIONS OF USE

7.1 CONDITIONS OF USE

7.1.1 Road users shall be informed of the general Business Rules during the marketing and education phases of the project. As soon as facilities are implemented for the registration of Customer accounts, Business Rules and conditions of use should be made available to Road Users at all specified outlets and via all specified communication channels including but not limited to the Point of Presence Customer Service Centres, the website and call centres.

7.1.2 Description of User Types

There are two defined user types, namely Customers (registered Road Users) and unregistered Road Users which are described below.

7.1.2.1 Customers

- a) Customers are defined as individuals or companies that applied and registered their details with the TCH Entity. All Road Users requesting to use the ORT road network shall be required to provide basic information which shall automatically be used to open an account for them. The intention is that this account shall be used for life by that Road User for all ETC-enabled Toll Roads in South Africa.
- b) The following types of Customers should be provided for:
 - i. Tag – users;
 - ii. VLN – users;
 - iii. Day Pass – users;
 - iv. Exempt and Free Passage – users, and
 - v. Anonymous – users (the use of this type is not intended, but provision should be made for it).
- c) Tag – users
 - i. The Contractor shall actively promote Tag usage to frequent users of the ORT road network. These users shall be registered with their details in full and shall receive a discount based on the applicable discount requirements. Tag – users with high frequency of usage shall automatically qualify for an additional discount in accordance with the applicable requirements.
 - ii. If for any reason, a Tag fails or is not read successfully during a passage, the Contractor shall use ANPR or MNPR to identify the Vehicle Licence Number (VLN). If this number corresponds with a number registered against an existing Tag-user, then the passage will be allocated to that specific account and the

charge for a Tag-user shall apply. These passages shall trigger a mechanism (alarm) that informs the user of a faulty Tag.

- iii. The Contractor shall ensure that Tag users are aware of the additional onus on them to assure that the Tag functions properly in order to qualify for the associated discount.
- d) VLN – users
 - iv. These are Customers who have not installed a Tag. These vehicles shall be identified by means of their Vehicle Licence Number that shall be processed by means of ANPR or MNPR.
- e) Day Pass – users
 - i. This scheme shall be recommended for occasional users to declare and pay for usage in advance or within the Grace Period, in multiples of days. A limit may be imposed by the Employer on the use of Day passes and provision shall be made by the Contractor to monitor this.
- f) Exempt and Free Passage users
 - i. The Contractor shall accept applications for all Exempt Users as specified in the Government Gazette or other legislation and where applicable from time to time. Any new additions to the Exempt Users as Gazetted in future, during the Contract Period, will also be for the Employer's account. The current Exempt User's according to the Government Gazette are The South African Police Services (SAPS) and the South African National Defence Force (SANDF).
 - ii. Institutions that qualify for free passages and any other institution not included in the Government Gazette (such as Emergency Response Units, Fire Brigade, Metro Police, etc. shall apply at the route's Toll Agency to be registered as a "Free Passage" user following the approval process defined by the Employer.
 - iii. Exempt vehicles without a Tag shall be identified with ANPR or MNPR or other acceptable means.
- g) Anonymous users
 - i. The need for this type of user has emerged from users' that need privacy of personal travel information. When instructed, the Contractor shall implement this User Type together with a customised application procedure approved by the Employer.

7.1.2.2 Unregistered users

- (a) Unregistered users are those Road Users using the ORT road network without opening an account with the TCH.
- (b) All first transactions from identifiable vehicles that cannot be associated with an account shall be considered to be that of an unregistered user and shall be allocated to an unregistered user.

- (c) An unregistered user account shall be automatically opened for an identifiable vehicle and all transactions associated with that particular vehicle shall be allocated to that specific user account.
- (d) All transactions of unregistered users shall be kept for a Grace period, as set by the Employer, at the TCH. The whole batch of transactions accumulated until then, plus each transaction received after the Grace period shall be transferred to the VPC for processing as potential Violations.
- (e) Unregistered users may consist, amongst others, of private vehicle owners, commercial vehicle owners and Government owned vehicles. Some of these vehicle owners may not have opened an account, have not linked the vehicle in question to an account or may qualify as Exempt or Free Passage users but have not followed the set application procedure.

7.1.3 Customers registering a pre-payment or post-payment option at the Point of Presence Customer Service Centre shall be able to choose the following payment options and payment schemes:

Account Type	Payment Scheme	Payment Options
Pre-paid Accounts	Automatic replenishment	<ul style="list-style-type: none"> • Visa / Master credit cards • Debit Order
	Discretionary payments	<ul style="list-style-type: none"> • Cash • Debit Cards • Visa / Master credit cards • Fleet cards • EFT
Post-paid Accounts	Automatic payment	<ul style="list-style-type: none"> • Visa / Master credit cards • Debit Order
	Discretionary payments	<ul style="list-style-type: none"> • Cash • Debit Cards • Visa / Master credit cards • Fleet cards • EFT (via in-store terminal)

7.1.4 Customers registering a pre-payment or post-payment option at the TCH Call Centre and via the TCH website payment gateway shall be able to choose the following payment options and payment schemes:

Account Type	Payment Scheme	Payment Options
Pre-paid Accounts	Automatic replenishment	<ul style="list-style-type: none"> • Visa / Master credit cards • Debit Order
	Discretionary payments	<ul style="list-style-type: none"> • Visa / Master credit cards
Post-paid Accounts	Automatic payment	<ul style="list-style-type: none"> • Visa / Master credit cards • Debit Order
	Discretionary payments	<ul style="list-style-type: none"> • Visa / Master credit cards

7.1.5 The following payment options shall be available for payment of Violations at the Point of Presence Customer Service Centre and via the VPC website payment gateway:

Payment Channel	Payment Options
Point of Presence Customer Service Centre	<ul style="list-style-type: none"> • Cash • Debit Cards • Visa / Master credit cards
VPC website	<ul style="list-style-type: none"> • Visa / Master credit cards

7.1.6 Service Channels available to the road users shall include:

- (a) Point of Presence Customer Service Centres;
- (b) Service Centres along the route;
- (c) Customer Service Kiosks which shall typically be located at shopping centres;
- (d) Mobile Payment Stations;
- (e) Call centres;
- (f) Websites; and
- (g) Commercial outlets or appointed agents.

7.2 DISCOUNTS

7.2.1 The Tolling System shall be flexible in order to accommodate various discounts and differential toll pricing schemes. Initially, the following discounts for the following user-type profiles are envisaged:

7.2.2 Frequent users discounts

- (a) Frequent user discount shall be based on the frequency of the toll road.
- (b) Frequent user discount shall be applicable to pre-paid account holders as well as post-paid account holders with payments linked to their approved credit cards.
- (c) Frequent user discount shall be calculated and applied per identifier and not on the aggregate of the account usage.

7.2.3 Public Transport discounts

- (a) Public Transport discount shall be applied to registered Public Transport vehicles, including taxi's and buses.
- (b) Public Transport discount shall be allocated to Public Transport vehicle transactions and at specific Tolling Points.
- (c) Public Transport discount shall only be applicable to Tag transactions.

7.2.4 Time and Traffic density discounts

- (a) The TA Back Office and associated operations and maintenance shall allow for a discounted tariff for all Customers travelling on the road during low congestion periods (off-peak tariffs) in order to attract traffic in these periods.
- (b) Tariff period discounts shall be based on the timestamp of the transaction.
- (c) The TA Back Office system and associated operations and maintenance shall make provision for more than one tariff period for any calendar day.
- (d) All discounts shall be applied at local level before transmitting the transaction to the TCH for processing.

7.2.5 Identifier Mechanism Discounts

Customers shall receive discount based on the type of identifier used, for example, a Tag discount to encourage users to obtain a Tag as identifier.

7.2.5.1.1 Route Based Discounts

Discount shall be applied to the accumulated Toll Fee applicable to the route for vehicles passing the relevant route/sections of the network within a predefined period of time, or within a time calculated in accordance with traffic speeds.