

SANRAL

SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LTD



Reg.No.1998/009584/30

**BUILDING SOUTH AFRICA
THROUGH BETTER ROADS**

**THE SOUTH AFRICAN NATIONAL
ROADS AGENCY SOC LIMITED**

CONTRACT SANRAL X.002-184-2023/1

**PROCUREMENT OF THE OPERATIONS AND MAINTENANCE OF AN OPEN
ROAD TOLLING SYSTEM IN THE GAUTENG PROVINCE, SOUTH AFRICA,
AND A NATIONAL TRANSACTION CLEARING HOUSE**

VOLUME 3

PART C3 EMPLOYER'S REQUIREMENTS

PART C3.3.2 OPEN ROAD TOLLING

OPERATIONS SPECIFICATIONS

CHIEF EXECUTIVE OFFICER

SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

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NAME OF TENDERER:

Set sequential number



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FOR

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PART C3 EMPLOYER'S REQUIREMENTS

**PART C3.3.2 OPEN ROAD TOLLING
OPERATIONS SPECIFICATIONS**

COMPILED UNDER THE DIRECTION OF THE REGIONAL MANAGER: NORTHERN REGION

SOUTH AFRICAN NATIONAL ROADS AGENCY SOC LIMITED

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LIST OF CONTRACT DOCUMENTS

The following documents form part of this Contract:

Volume 1: The FIDIC Conditions of Contract for Design, Build and Operate Projects (September 2008), issued by the International Federation of Consulting Engineers, which the Tenderer shall purchase himself.

Volume 2: Not applicable.

Volume 3: The Project Document, containing the tender notice, Conditions of Tender, Tender Data, Returnable Schedules, general and particular conditions of contract, project specifications, Pricing Schedule, Form of offer and Site Information is issued by the Employer. The Employer's Form of Acceptance and any correspondence from the selected tenderer, performance security-demand guarantee and all addenda issued during the period of tender will also form part of this volume once a successful tenderer has been appointed.

The conditions of tender are the standard conditions of tender as contained in the South African Bureau of Standards, SANS 10845-3:2015, Construction procurement – Part 3: Standard conditions of tender, document, which the tenderer shall purchase himself.

Volume 4: Not applicable.

Volume 5: Not applicable.

Volume 6: Not applicable.

Volume 7: Not applicable.

The following documents form part of this Contract:

<u>Volume 1</u>	<u>The FIDIC Conditions of Contract for Design, Build and Operate Projects, First Edition 2008</u>
<u>Volume 2</u>	<u>Not Applicable</u>
<u>Volume 3</u>	<u>Project Document (Parts T1, T2, C1, C2, C3 and C4)</u>
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SECTION 1. GENERAL REQUIREMENTS

1.1 PURPOSE OF THE DOCUMENT

- 1.1.1 The Employer has developed a project known as the Gauteng Freeway Improvement Project ("GFIP") to improve, upgrade and/or construct, in phases, approximately 560 kms of national roads in and around the metropolitan areas of Tshwane, Johannesburg and Ekurhuleni in the Gauteng Province, provide a safe and reliable strategic road network and optimize the movement of traffic, freight and road based public transport.
- 1.1.2 The first phase of approximately 185kms is complete and has been tolled utilising Open Road Tolling ("ORT") with electronic and automated methods of levying and collecting toll charges. The tolling solution comprises 43 Tolling Points (gantries) and generates in excess of 2.6 million Tolling Point vehicle passages per day (as an average).
- 1.1.3 In addition to the implementation of a Toll System to enable tolling, the provision of appropriate and efficient operational functions and procedures are of critical importance to operate and maintain a successful ORT Project.
- 1.1.4 The purpose of this document is therefore to describe the Gauteng ORT operations in terms of the required functions and responsibilities of the Contractor.

1.2 ORGANISATIONAL ARRANGEMENTS AND TERMINOLOGY

There are two (2) primary Contracts relevant to the Project:

- 1.2.1 The first is this Contract, the ORT Operations Contract, which is for (inter-alia):
- (a) All operations and maintenance related to the Gauteng ORT tolling system, the national TCH, VPC and VAS functions,
 - (b) The supply and maintenance of a replacement Roadside System, when triggered,
 - (c) The supply and maintenance of all Toll System hardware for the new Toll Back Office System, once said system procurement is triggered.
- 1.2.2 The second Contract is a Toll Back Office System supply and support Contract, when triggered by SANRAL, for the supply of a new toll back office and billing system for the Gauteng ORT, national account hosting and transaction processing, and Violations processing, excluding that of hardware supply, which is the responsibility of the ORT Operations Contract;
- 1.2.3 Also forming part of the structuring going forward is a nominated subcontract for transitional operations and maintenance support services to the ORT Operations Contract, which subcontract is termed the Transitional Subcontract. The Transitional Subcontractor is the Incumbent Contractor.
- 1.2.4 The following table clarifies the organisational arrangements versus the appropriate terminology as is used in the Employer' s Requirements:

TABLE 1-1-1: ORGANISATIONAL ARRANGEMENT VS TERMINOLOGY

Entity (vertical) / Contract (horizontal)	ORT Operations Contract	Transitional Subcontract	SI [New Toll Back Office System] Contract, if / when triggered by SANRAL
SANRAL	Employer	Principal Employer	Employer
ORT Contractor	Contractor	Employer	“Other contractor” * of Employer under FIDIC Sub-Clause 4.6(b)
Transitional Subcontractor	Nominated Subcontractor	Contractor	“Nominated subcontractor” * of ORT Contractor under FIDIC Sub-Clause 4.5
SI [New Toll Back Office System] Contractor	“Other contractor” * of Employer under FIDIC, Sub-Clause 4.6(b)	“Other contractor” * of Principal Employer under FIDIC, Sub-Clause 4.6(b)	Contractor

* Terminology as used by FIDIC

SECTION 2. ORT OPERATIONAL FRAMEWORK

2.1 GENERAL

2.1.1 The Gauteng Open Road Tolling (ORT) operational framework consists of three separate areas of toll operations, namely the:

- (a) Open Road Tolling (ORT) Operations
- (b) Transaction Clearing House (TCH) Operations
- (c) Violations Processing Centre (VPC) Operations

The VAS operations requirements are as provided under Part C3.5.4 – VAS Requirements.

2.1.1.1 Each of the above operational areas plays a specific role with their own functions and responsibilities and with defined interfaces with one another, to enable a successful and integrated Open Road Tolling Project.

2.1.1.2 The ORT Operations is concerned with the capturing of transactions at the Tolling Points along the road, the collating of data at the ORT Back Office, the validation thereof and the transmittal of the transactions to the TCH Back Office. The ORT shall further be responsible for all Customer Services for the GFIP network, as well as being responsible for all maintenance of Employer's Facilities, Employer's Equipment and those that were supplied by the Contractor under this Contract, namely the Plant.

2.1.1.3 The purpose of the TCH is multi-fold and includes account set-up, allocation of the toll transactions to individual accounts, to credit payments received from Customers and to identify transactions, which could not be paid and to be passed on to the VPC for further processing.

2.1.1.4 The VPC, inter-alia, is responsible for the processing of all transactions that were not paid and to attempt to collect the outstanding fees and to assist in the AARTO process and other legal processes to prosecute offenders.

2.1.2 For the purpose of this document, the ORT operations functions shall exclude those of the TCH, VPC and VAS operations, which shall be detailed in the following separate Parts of the Employer's Requirements, and which must be read in conjunction with each other:

2.1.2.1 Part C3.3.1 – General Operations Specifications. This document deals with operational aspects that are common to all three operations areas.

2.1.2.2 Part C3.3.3 – Transaction Clearing House Operations Specifications.

2.1.2.3 Part C3.3.4 – Violations Processing Centre Operations Specifications.

2.1.2.4 Part C3.5.4 – VAS Requirements.

SECTION 3. MOBILISATION REQUIREMENTS

3.1 INTRODUCTION

- 3.1.1 Mobilization of the ORT operations shall start at the Commencement Date and in parallel with the Transitional Period with preparatory actions to enable the Contractor to take over parts of the day to day operations and commence with the full Operations Service Period. Milestones and delivery expectations with regards to mobilisation are outlined in Part C3.3.1 – General Operations Specifications and should be read in conjunction with the Ramp-down/Ramp-Up Transitioning as outlined in Part C3.2.1 - Contract: Scope of Works.
- 3.1.2 The purpose of mobilisation is to prepare for the commencement of the Operations Service which includes but not limited to Customer Service operations to enable registering of accounts and to perform all required operations and maintenance activities.
- 3.1.3 For ORT Operations, the following mobilisation aspects are, amongst others, of importance as described further in this document and in Part C3.3.1 - General Operations Specifications:
- 3.1.3.1 Recruitment of suitably skilled personnel.
 - 3.1.3.2 Negotiating, implementing and managing of third-party agreements and interfaces.
 - 3.1.3.3 Procurement of equipment and furniture.
 - 3.1.3.4 Taking over and transfer of the lease agreements for the Customer Service Kiosks at centrally located shopping centres, the equipping of these Kiosks where required and the performance of all activities to be able to accommodate Customers to register accounts and to distribute Tags.
 - 3.1.3.5 Taking over of Mobile Payment Stations and the performance of all activities to be able to accommodate customers to register accounts and to distribute Tags at any identified location.
 - 3.1.3.6 Training
 - 3.1.3.7 The mobilisation requirements are contained in more detail in Part C3.3.1 – General Operations Specifications.

3.2 OPERATION AND MAINTENANCE PLAN - MOBILISATION

- 3.2.1 The Contractor is required to provide, for approval by the Employer, an Operation and Maintenance Plan (OMP) as described in Part C3.3.1- General Operations Specifications. This OMP shall indicate all the mobilisation requirements in accordance with the aforementioned specification.

SECTION 4. OPERATIONS DURING THE TRANSITIONAL PERIOD AND THE OPERATIONS SERVICE PERIOD

4.1 INTRODUCTION

- 4.1.1 This section describes the ORT responsibilities, functions and interfaces in terms of inter alia, the Customer interaction, transaction processing, maintenance and support, interaction, communication and interfacing with other Entities.
- 4.1.2 There are two distinct periods identified with regards to ORT Operations, as detailed in Part C3.2.1 – Contract: Scope of Works, namely:
 - 4.1.2.1 Transitional Period: In this period, the Contractor will perform his mobilisation activities to enable it to gradually take over parts of the operations in accordance with the Ramp-down/Ramp-up Transitioning as detailed in Part C3.2.1 – Contract: Scope of Works. The Transitional period will start at the Commencement Date for a period of 12 months.
 - 4.1.2.2 Operations Service Period: This period commences after the Transitional Period whereby the Contractor will commence with full toll operations.

4.2 OPERATIONS AND MAINTENANCE PLAN -TRANSITIONAL PERIOD AND OPERATIONS SERVICE PERIOD

- 4.2.1 The Contractor shall develop an Operations and Maintenance Plan (OMP) based on the requirements outlined in Part T2 (Returnable Schedules) as well as in Part C3.2.1 – Contract: Scope of Works.
- 4.2.2 The requirements for these Plans are contained in Part C3.3.1 – General Operations Specifications.

4.3 ASSET MANAGEMENT

4.3.1 Introduction

- 4.3.1.1 This section provides the requirements for asset management and it also includes the asset management requirements for the facilities that are to be provided by the Contractor. Also refer to Part C3.3.1 – General Operations Specifications, with regards to asset management.

4.3.2 Asset Management

- 4.3.2.1 An Asset Management System is an electronic system that manages the process of registering and the process of accounting for the different assets within the ORT Project. The current Asset Management System that has been implemented is Hardcat. It is envisaged that when the new Toll Back Office System is triggered a new Asset Management System will be implemented and should align and easily interface to the Employer's Asset Management System, currently SAP.
- 4.3.2.2 The Asset Management System shall entail the capturing and tracking of the various assets in an electronic database with the continuous updating of the change of status, the labelling of assets, replacement, addition of new assets or the removal of assets that were written off, disposed-off, etc.
- 4.3.2.3 The Asset Management System shall include a fully integrated Equipment Record System (ERS) for the tracking of spares and equipment during the complete maintenance cycle of the assets. The ERS is described in Part C3.4.2 – General System Specification.
- 4.3.2.4 Asset Classification
- 4.3.2.4.1 The attached Annexure 1 contains a description and categorisation of the various assets, the ownership thereof, the maintenance responsibility, replacement responsibility and the like.
- 4.3.2.4.2 Annexure 1, Table 1 (facility assets) and Table 2 (systems assets) contains a description and classification of the assets for the ORT Project.
- 4.3.2.4.3 These assets are divided into one of the following asset categories: Employer's Facilities, Employer's Equipment, Employer's documents, Plant, Contractor's Equipment and Contractor's Documentation as stated and defined in the Part C: The FIDIC Conditions of Contract and Part C3.1: Glossary of Terms, Definitions and Abbreviations.
- 4.3.2.4.4 The Contractor shall be responsible for the asset management and maintenance, in terms of the contractual provisions and Employer's Requirements, for all assets on the Site.
- 4.3.2.4.5 Annexure 1, Table 1 describes the "facility assets" (those assets related to the civil, structural, building and services infrastructure) and is broken down into general Facilities and electrical and mechanical facilities.

- 4.3.2.4.6 Annexure 1, Table 2 describes the “systems assets” and is broken down into “RSS (Road Side System) and Back Office Systems (ORT, TCH & VPC) Assets.

4.3.3 **Facilities provided by the Employer**

- 4.3.3.1 The facilities that will be provided by the Employer are the Central Operations Centre, the Dalpark Operations Centre, the Satellite Centres, the Toll Gantries and Technical Shelters, the Customer Services Kiosks, Mobile Payment Stations, Mobile Policing Vehicles and Enforcement Depots as shown in Part C3.2.1 – Contract: Scope of Works and in Part C4 – Site Information .

- 4.3.3.2 The Contractor shall not utilise the above facilities for its own head-office administration and corporate functions unless otherwise agreed with the Employer. The Contractor shall provide separately and on its own cost, facilities for the aforementioned administration and corporate functions.

4.3.4 **Customer Service Facilities provided by the Contractor**

- 4.3.4.1 As per Part C3.2.1 – Contract: Scope of Works, the Employer shall provide Customer Service Kiosks (including temporary Kiosks or information desks) and Mobile Payment Stations facilities. However, as and when required and approved by the Employer, the Contractor shall be responsible for the procurement of any new Customer Service Kiosks and Mobile Payment Stations.

- 4.3.4.2 The purpose of the above facilities to be provided by the Contractor, on the Employer’s approval, is to provide Services to Customers to register accounts, make payments and top-up’s of accounts, receive information, etc. The Contractor shall provide a procurement strategy within his Operations and Maintenance Plan (OMP) for the Customer Service Kiosks and the Mobile Payment Stations, for approval by the Employer. In this regard the Contractor should note that the Customer Services Kiosk footprint should be scalable and can be ramped up or down as applicable and when instructed by the Employer.

- 4.3.4.3 The procurement strategy shall provide the Contractor’s planning with regards to the procurement of these facilities, for approval by the Employer, which shall follow the requirements as indicated in Part C3.2.1 – Contract: Scope of Works. The procurement strategy for the Kiosks and Mobile Payment Stations shall also include aspects such as:

- 4.3.4.3.1 The preferred locations and final number over and above the current footprint requirement, which will arise out of the Employers Marketing Strategy and the OMP.
- 4.3.4.3.2 Procurement process of the Kiosks and Mobile Payment Stations, where applicable.
- 4.3.4.3.3 The management and rollout of any new Kiosks and Mobile Payment Stations, where applicable.

4.3.4.3.4 The operation of the Kiosks and Mobile Payment Stations.

4.3.4.4 The OMP shall further provide all the operational and maintenance procedures of these facilities that may include, amongst others, to maximise account registration and Tag distribution.

4.3.4.5 Customer Service Kiosks:

- (a) As the Customer Service Kiosks represent a point of contact with the general public, they should have a professional appearance and adhere to a uniform branding, in accordance with Employers marketing plan, which will be provided, as to be easily recognised by the public. The design, layout and quality are to be approved by the Employer as proposed by the Contractor through the OMP. Branding will be determined through an Employer nominated architect based on the Employer's Requirements.
- (b) Number of workstations / Customer-points:
- (c) The Contractor shall supply a number of Customer Service workstations in each additional Kiosk in accordance with his approved OMP and as indicated in the Schedule of Payments within Part C2 – Pricing Data, together with one additional supervisor workstation per Kiosk. The workstations shall be linked to the TCH and VPC Systems.
- (d) Hours of Operation
- (e) The hours of operation shall be in accordance with Part C3.2.1 – Contract: Scope of Works.
- (f) Security

As a minimum, the following security measures are required:

- i. Secure lockable doors,
 - ii. Alarm system with a panic button for armed response
 - iii. A day-safe to accommodate for at least one operational day, the cash collected and float requirements.
 - iv. Security surveillance cameras
- (g) Kiosk size.
- i. The Kiosk size shall depend on the number of work stations that is to be provided. The OMP shall address the sizing of the Kiosks that should accommodate the personnel, required equipment, and a waiting and serving area for Customers in line with the current Customer Services Kiosks design and sizing.
- (h) System and other interface requirements

The following is required at the Kiosks:

- i. All necessary equipment, systems, interfaces and communications for Customer Services operations.
- ii. Point-of-Sale terminal devices linked to the Acquiring Bank to enable acceptance of Visa and MasterCard credit and debit payment cards.
- iii. The Tag Readers for Tag issuing and support purposes.

(i) Lighting requirements

The lighting requirements shall be as per the minimum requirements for office and public areas.

(j) UPS requirements

UPS power is required for at least 30 minutes of operation of 3 work stations to enable full Customer Services operations

(k) Standby generator / emergency power

If the Kiosk is situated within a shopping complex where emergency power is available, the Contractor shall utilize such emergency power. The OMP shall provide the requirements and procedures for the use of emergency power where emergency power is not available within shopping complexes for approval by the Employer.

(l) Data communication requirements

All necessary communications, including a back-up communications link, are required for effective Customer Services operations, with appropriate security measures.

(m) Branding

The branding shall be Project related in line with the current branding, as well as the Employer's required branding as approved by the Employer.

(n) Ablutions

The use of the shopping centre facility ablutions is acceptable should the Kiosk not have its own ablution services.

(o) Furniture

The Contractor shall provide all furniture, i.e. desks, counters, chairs, etc. to be able to perform his functions as part of Contractor's Equipment. Provision shall be made for a waiting area for the public, including chairs and tables. This is to be included in the OMP for approval by the Employer.

4.3.4.6 Mobile Payment Stations

- 4.3.4.6.1 As the Mobile Payment Stations represent a Point of Presence contact with the general public, they should have a professional appearance and adhere to a uniform branding as to be easily recognised by the public. The proposed design, layout and quality are to be approved by the Employer. Branding will be determined through an Employer nominated architect based on the Employers Requirements. The Mobile Payment Stations will be providing the same services to the Customers as the Kiosks that include account registration, Tag distribution, account payments and the like.

(a) Number of workstations and Customer-points:

As a minimum, one workstation for the TCH System and one for the VPC System is required. The workstations shall each be linked to the TCH and VPC Systems.

(b) Hours of Operation

The hours of operation shall be in accordance with Part C3.2.1 – Contract: Scope of Works.

(c) Security

As a minimum, the following security measures are required:

- i. Secure lockable vehicle that may be a trailer or caravan.
- ii. A safe for the cash collected as a minimum.
- iii. Panic button with armed reaction.
- iv. At least one un-armed guard
- v. Security surveillance cameras at the Mobile Payment Stations.

(d) Size of Mobile Payment Station.

The following is required in terms of sizing of the Mobile Payment Stations:

- i. Workstations for at least 2 personnel and equipment.
- ii. Mobile toilet.

(e) Portability

The Mobile Payment Station must be able to be relocated to any enforcement point or to any other location, such as a shopping centre, where the Contractor provides a “mobile” kiosk operation. To this end, the Mobile Payment Station may be a self-propelled vehicle or a special manufactured towed vehicle, such as furnished caravan / trailer. In the last mentioned option, the Contractor will still be responsible for the efficient movement of the caravan or trailer to any location and within the required time-frames.

(f) System and other interface requirements

The following is required at the Mobile Payment Stations:

- i. All necessary equipment, systems, interfaces and communications for Customer Service operations.

ii. Point-of-Sale terminal devices linked to the Acquiring Bank to enable acceptance of Visa and MasterCard credit and debit payment cards.

iii. The Tag Readers for Tag issuing and support purposes.

(g) Lighting requirements

The Contractor shall ensure that the Mobile Payment Station vehicle will have sufficient lighting as per the minimum requirements for office and public areas as well as with the necessary lighting outside should lighting not be available.

(h) UPS requirements

UPS power is required for at least 45 minutes of operation for 2 work stations to enable Point of Presence operations.

(i) Standby generator

A suitable standby generator shall be available for the operation of all equipment.

(j) Data communication requirements

All necessary communications, including a back-up communications link, are required for effective Customer Services operations as well as enforcement activities.

(k) Branding

The branding shall be Project related in line with the current branding and in accordance with the Employer's marketing Plan.

(l) Ablutions

The Mobile Payment Station shall have a toilet and a hand-wash basin available.

(m) HVAC.

The Mobile Payment Stations shall have facilities to provide heating, ventilation, air-conditioning and cooling.

(n) Furniture

The vehicle shall have all furniture, i.e. desks, counters, chairs, etc to be able to perform the functions as part of Contractor's Equipment. Provision shall be made for a basic waiting area for the public, including chairs and tables. This is to be included in the OMP for approval by the Employer.

4.4 QUALITY ASSURANCE SYSTEM

- 4.4.1 The Contractor shall provide and implement a Quality Assurance System as described in the Part C3.3.1 – General Operations Specifications, and which shall be approved by the Employer.

4.5 INTERFACES AND AGREEMENTS

- 4.5.1 There will be various interfaces between the different Systems (ORT, TCH, VPC and VAS) as well as between the aforementioned Systems and third party systems, for example interfaces with NaTIS, the banking and payments industry and the National Payment System (NPS). The purpose of this section is to indicate the responsibility of the Contractor, through interactions, communications and agreements, to ensure that these interfaces are executed and maintained. Thus, where reference is made with regards to interfaces in this document, it is meant to include all the actions from the Contractor to manage and maintain those interfaces.
- 4.5.2 In addition to the Agreement between the Employer and the Contractor, the following interfaces and agreements are foreseen for which some is the responsibility of the Contractor to negotiate, implement and to manage. The list below is not exhaustive and it is the Contractor's responsibility to identify, implement and conclude the negotiations with regards to any interface and/or agreement that may be necessary to perform his obligations and responsibilities.
- 4.5.3 Interfaces
- 4.5.3.1 ORT – TCH System interface: This interface, of which the detail is described in Part C3.3.3 – Transaction Clearing House Specification, to enable the transaction and account management shall include the following:
- 4.5.3.1.1 The ORT shall have access to the TCH System front-end to be able to provide all account services such as to register accounts, receive payments, terminate accounts, etc.
- 4.5.3.1.2 The ORT Back Office System shall interface to the TCH System to transfer all transactions (complete and incomplete) as captured by the Road Side System to the TCH System, except for a predefined nr (x) of free transactions at the beginning of the financial year, which shall only be sent to the TCH after transaction (x+1) is received.
- 4.5.3.1.3 The account validity lists shall be retrieved from the TCH System to the ORT Back Office System.
- 4.5.3.1.4 The facilitation of the daily cash-up of Revenue.
- 4.5.3.2 ORT – VPC interface: This interface for the deployment of Mobile Payment Stations during enforcement programs shall include the following:
- 4.5.3.2.1 The VPC shall manage, co-ordinate and schedule enforcement operations as to where the Contractor shall provide the Mobile Payment Stations for the Customer Services, allowing account registrations, account payments, etc.
- 4.5.3.3 The Contractor shall interface to NaTIS to process payments of AARTO issued Infringement Notices inclusive of any traffic fines.

- 4.5.3.4 The different Toll Plaza Kiosks are listed in Part C3.2.1 – Contract: Scope of Works and this interface shall entail the following:
- (a) At the Employer discretion, the Employer shall co-ordinate with the Toll Agency operators to provide facilities, similar in function to the Customer Service Kiosks, at those plazas which are to be used for Customer Service operations.
 - (b) The Contractor shall establish full Customer Service Facilities operations at the mentioned Toll Plazas as and when instructed by the Employer.
- 4.5.3.5 ORT – Traffic Analysis System (TAS) interface: The Contractor shall ensure that the Abbreviated Transaction Records, as specified in Part C3.4.4 – ORT Back Office Systems Specifications, from the ORT Back-Office are transferred on a continuous basis to the Traffic Analysis System (TAS) server.
- 4.5.4 Agreements
- 4.5.4.1 Contractor – Employer Agreement.
- 4.5.4.2 Contractor – Commercial entities agreements:
- 4.5.4.2.1 With regards to rental of space for Kiosks, the Contractor shall take over the current lease agreements and be responsible to negotiate a rental or space usage agreement with the landlord of identified locations on expiry of the current agreements as indicated in Part C3.2.1 – Contract: Scope of Works. These rentals shall be reported, managed and reported in accordance with the IFRS requirements.
- 4.5.4.3 Merchant Service Agreement with the Acquiring Bank
- 4.5.4.3.1 Although the merchant service transaction fee will be concluded by the Employer, a direct agreement between the Contractor and the Acquiring Bank will be required for the acceptance of credit and debit card payments.
- 4.5.4.4 Point-of-Sale (POS) Terminals
- 4.5.4.4.1 Although the cost of POS terminals will be concluded by the Employer, a direct agreement between the Contractor and the POS terminal supplier will be required for the procurement, installation, system support and maintenance of devices and related systems.
- 4.5.4.5 Bulk Cash Deposits
- 4.5.4.5.1 Relevant cash deposit banking fees will be concluded by the Employer. The provision of services relating to bulk cash deposits will require a direct agreement between the Contractor and a Cash in Transit security company.

4.6 UTILITIES, SERVICES AND LEVIES

- 4.6.1 It shall be the Contractor's responsibility to ensure that utility services such as electricity, water supply, refuse removal, etc. are obtained from and paid to the relevant local authorities and to ensure that all relevant levies to the local authorities are paid. For the Central Operations Centre, Dalpark Operations Centre, Mobile Operations Depots, Customer Service Kiosks, Technical Shelters and the Satellite Centres, payment shall be made from a Provisional Sum in the Schedule of Payments on a monthly basis. For all other facilities, the Contractor shall include these costs and fees in his monthly rates.
- 4.6.2 Part C3.3.1 -General Operations Specifications provides the requirements and descriptions of the utilities, services and levies. The Contractor shall make provision for the costs for the full Contract Period.

4.7 TRAINING

- 4.7.1 The Contractor shall ensure that all the personnel shall, at a minimum, undergo the following training:
- (a) Initial System and procedural training during the mobilisation period.
 - (b) Refresher training on a continuous basis
 - (c) Training on the new Toll Back Office System when triggered and implemented.
- 4.7.2 The Contractor, as part of his OMP, shall provide relevant and applicable training manuals for the personnel for the different job descriptions, taking into account specific sub-system and procedural requirements.
- 4.7.3 Part C3.3.1 – General Operations Specifications provides the specific requirements for Training.

4.8 MARKETING

- 4.8.1 The marketing responsibilities of both the Employer and the ORT Operator are contained in Part C3.2.1 - Contract: Scope of Works.

4.9 CUSTOMER SERVICE

4.9.1 Objectives of the Contractor's Customer's Services

The Contractor shall provide Customer Services that:

- (a) Conforms to the Key Operations Goals and Objectives from a Road User perspective and it conforms to the Employer objectives as indicated in Part C3.2.1 – Contract: Scope of Works,
- (b) Are effective in terms of time and quality of service,
- (c) Ensures security, confidentiality and privacy in terms of Customer's personal data and information,
- (d) Have integrity in reflecting toll transactions with accuracy and precision,
- (e) Are capable of producing historical and current records that are reliable, consistent and comprehensive,
- (f) Provide confidence manifested by low or non-existent error levels.

The Customer Services provided by the Contractor shall be measured in terms of performance criteria as indicated in Part C3.5.1 – Contract Performance Measurement.

4.9.2 Different levels of Customer interaction

4.9.2.1 The effectiveness of the Contractor's interaction can be measured as specified in Part C3.5.1 – Contract Performance Measurement. The Contractor shall interact with the Customers at different levels as shown below.

4.9.2.1.1 Call Centre service:

- (a) There is an existing Call Centre service, managed by the TCH, which will receive all calls, including TCH account and VPC Violation related queries on a national level. The Call Centre will direct calls to either the ORT or VPC for resolving specific queries that cannot be resolved by the Call Centre.
- (b) It is envisaged that over the medium and long term, it is the intent of the Employer to establish a National Call Centre, which Call Centre operations will focus on the Employer's business aspects wider than just the Gauteng ORT Project. As such, and whilst the Contractor will be required to perform said operations initially, said operations will in time be transferred to another Contract.

4.9.2.1.2 Central Operations Centre and Disaster Recovery centre

- (a) Although there is one Central Operations Centre, no Customer interaction shall take place at this centre.
- (b) The Disaster Recovery is available at Dalpark on the N17 for a redundancy and/or Disaster Recovery centre as indicated in Part C3.2.1 – Contract: Scope of Works. See also the section on Disaster Recovery.

4.9.2.1.3 Customer Service Facilities

- (a) These Customer Service Facilities, operated by the Contractor shall consist of the following types:
- (b) Satellite Centres at strategic locations on the route and which are provided by the Employer. The Location and quantities are indicated in Part C3.2.1 – Contract: Scope of Works and in Part C4 – Site Information .
- (c) Customer Service Kiosks, at selected high volume shopping centres, which shall be provided by the Contractor. The location and quantities shall be included within the OMP which are to be approved by the Employer. Part C3.2.1 – Contract: Scope of Works describes the strategy to be followed for the provision of the Kiosks and the current numbers.
- (d) Mobile Payment Stations, which facilities shall be provided by the Contractor. The quantities shall be included within the OMP which are to be approved by the Employer.
- (e) Toll Plaza Kiosks, which the facilities shall be provided by the Employer at his discretion. See specifically the section on Toll Plaza Kiosks in this document. The Toll Plazas Kiosks are listed in Part C3.2.1 – Contract: Scope of Works. The implementation and operation of Toll Plaza Kiosks, if and when decided by the Employer, shall be dealt through the updated OMP, as approved by the Employer.

4.9.2.2 Website interaction.

- 4.9.2.2.1 The Contractor shall be aware that the TCH hosts a national website where Customers can open accounts online, have access to their accounts and have queries resolved etc. This website shall either contain web-pages for the Contractor or provide a link to the Contractor's website, where information such as, amongst others, the locations of the Customer Service Centres, contact details, Tariffs, Discounts, application forms for opening of accounts, business hours, specific Customers Services that are available at the Customer Services Facilities and the like will be available. It shall be the responsibility of the Contractor to continuously update his part of the website and also implement a new website when triggered by the Employer.

4.9.2.3 Commercial retail outlets and Appointed Agents.

4.9.2.3.1 The Contractor shall be aware that these potential third party outlets will be procured and managed by the TCH to provide convenience outlets at locations such as major chain stores/franchises within shopping centres and other major commercial facilities.

4.9.2.4 Courier, mail or e-mail service.

4.9.2.4.1 The Contractor shall be aware that courier or mail services for delivering of statements, invoices, Tags etc will be managed by the TCH. The TCH will also be able to deliver statements and invoices by means of e-mail.

4.9.3 **General Customer Services**

The following general Customer Services shall be provided by the Contractor at the Customer Service Facilities, as described in more detail in other sections in this document. It is required that the Contractor shall provide sufficient logging capabilities to enable the Contractor's performance to be measured according to Part C3.5.1 – Contract Performance Measurement. The Contractor shall to this end provide proposals in his OMP.

4.9.3.1 Perform Tag management services: The Contractor shall perform full Tag management services as applicable to the Contractor's area of responsibility as described in a separate section in this document that includes aspects such as Tag ordering, inventory management, distribution to Customer Service Facilities and the like.

4.9.3.2 Perform Customer Account registration and support at Customer Service Facilities.

4.9.3.2.1 For Customer Account registration which may or may not include Tag issuing (e.g. VLN accounts), the Contractor shall follow the TCH procedures (refer to Part C3.2.1 – Contract: Scope of Works and Part C3.3.3 – TCH Operations Specifications) in order to, amongst others:

- (a) Verify the Customer's credentials on the TCH System.
- (b) Receive payments.
- (c) Register accounts as per the section "Accounts and Account Functionality".
- (d) Activate Tags and issue Tags where they are linked to accounts.
- (e) Tag management, as described further in this document, including assisting if required with installation of Tags, only at route based Customer Service Centres.

4.9.3.3 Perform Customer Account registration at TCH Call Centre and web interface.

4.9.3.3.1 For Customer Account registration and Tag issuing through the above interfaces, the Contractor shall follow the TCH procedures in order to, amongst others:

- (a) Receive automated notifications from the TCH System.

- (b) Activate and issue the Tag upon Customer collection (if the account is linked to a Tag).
 - (c) Register the activation and issuing of the Tag on the TCH System in accordance with the TCH procedures.
- 4.9.3.4 Perform account top-ups.
- 4.9.3.4.1 The Contractor shall in accordance with the section on “Accounts and Account Functionality”:
 - (a) Receive payments from Customers and issue Receipts.
 - (b) Register payments on the TCH System.
 - (c) Perform cash-up functions at the end of each operational day, i.e. reconciling all Revenue received with Revenue registered on the TCH System to determine if there was any surplus or shortfall of Revenue that was declared. This will include the reconciliation of all transactions to the appropriate bank account at the Employer’s appointed bank.
- 4.9.3.5 Process unregistered Road User payments.
 - (a) The Contractor shall follow the normal registration process as provided for on the TCH System if an unregistered Road User pays for Toll Road usage afterwards. Should a Road User prefer not to register for an account, but to settle his outstanding amount, the Contractor shall provide the Road User with a Tax Invoice, on request, from the TCH System on Receipt of the payment.
- 4.9.3.6 Provide account updates (incl. account closing, change of details, etc)
- 4.9.3.6.1 The Contractor shall:
 - (a) Receive requests from Customers to update their details on the TCH System.
 - (b) Register such updates on the TCH System.
- 4.9.3.7 Accept payments for Violations, administration fees and fines.
- 4.9.3.8 Accept payments for VAS related transaction which include, amongst others, driver’s licences, licence discs, etc, as and when these are implemented.
- 4.9.3.8.1 The Contractor shall, at the Customer Service Facilities, be able to accept payment for fines and administration charges as follows:
 - (a) The payment by Customers of notices that were issued by the VPC shall be possible at any of the Customer Service Facilities (Kiosks, Satellite Centres etc) by means of the interface to the VPC System.

- (b) The payment of fines by Customers, including fines that are non-toll related (i.e. through the AARTO process), shall be possible at the Satellite Centres only by means of a link to the AARTO system.

4.9.3.9 Issue of usage statements, copy Tax Invoices, etc.

4.9.3.9.1 The Contractor shall:

- (a) Receive and process ad hoc requests from Customers.
- (b) Print and issue information from the TCH System.

4.9.3.10 Process queries and complaints

4.9.3.10.1 The Contractor shall:

- (a) Log or register complaints including for VAS related queries.
- (b) Assist with system (account) information where possible.
- (c) Action a “follow-up” on the system.
- (d) Provide information on toll fees, Discounts and exempts.
- (e) Perform vehicle inspections on adapted vehicles for disabled Road Users at selected Satellite Centres.

4.9.3.11 Provide Tag maintenance and support

4.9.3.11.1 The Contractor shall, as per the section on Tag management, provide after sales support and maintenance.

4.9.4 **Call Centre, SANRAL App & website services**

4.9.4.1 The Contractor shall:

- (a) Attend to requests that were directed from the TCH Call Centre.
- (b) Resolve Customer issues that are applicable to the ORT , which cannot be solved by the TCH Call Centre, such as route based Discount applications, applications for toll fee exemption, reporting of damage of road side equipment by motorists, e.g. in the case of a vehicle accident and the like.
- (c) Advertise contact numbers and the website address along the route to inform non-frequent Road Users of possible procedures and mechanisms to pay for their trip. The total amount due, reference number and banking details for a specific vehicle number

plate, together with Payment Options, must be obtainable through the Customer Service Centre and the website. Customers will be informed via their preferred communication mechanism of their negative and low balance.

- (d) The Contractor shall maintain his part of the website that were developed and provided by the TCH, and continuously update it with the latest information, such as, but not limited to the toll Tariffs, various applicable Discounts, where and how to register for an account at the Customer Service Facilities, and the like.

4.9.5 **Responsibilities of the Contractor at the Central Operations Centre and the Customer Services Facilities.**

This section deals with responsibilities at the Central Operations Centre, the Customer Service Centres, (i.e. the Satellite Centres, Kiosks, Mobile Payment Stations and Toll Plaza Kiosks.)

4.9.5.1 ORT Central Operations Centre

4.9.5.1.1 The following Contractor's operations and maintenance responsibilities are applicable at this facility:

- (a) All high level and Project related operations and maintenance management, excluding any corporate management functions, which functions are envisaged to be executed at the Contractor's head office.
- (b) All ORT Back Office management and operations which includes monitoring of all the Back Office processes (including image processing) and Manual Validation, initiation of corrective actions and control of the entire ORT toll function.
- (c) Centralised and area-based Customer Service management for the ORT Project.
- (d) Centralised Toll System and Facilities Maintenance management.
- (e) Area based maintenance (Toll System and facilities) for all Customer Service related and toll point facilities located within a specifically demarcated zone around the Central Operations Centre;
- (f) All furniture and consumables, which are Contractor's Equipment, shall be provided by the Contractor as part of his Contractor's Equipment. (The relevant equipment and Systems are provided under the Transitional Sub-contract scope of the Project).

4.9.5.1.2 The TCH and VPC operations as well as the ITS Network Management Centre will also take place at this central facility.

4.9.5.2 Customer Service Facilities

4.9.5.2.1 The following are common Contractor's responsibilities and requirements at all the different types of Customer Service Facilities:

- (a) The office hours of the above service centres are provided in Part C3.2.1 – Contract: Scope of Works.
- (b) The main functions and responsibilities of these Customer Services Facilities are contained in Part C3.2.1 – Contract: Scope of Works and are further described in this document.
- (c) An efficient, courteous and high Service Level experience at all the Customer Service facilities is expected when a Customer opens an account and obtains a tag, as specified in Part C3.5.1 – Contract Performance Measurement.
- (d) Electronic capturing of all data during the account registering process shall take place, including electronic signing, unless as otherwise approved by the Employer. The objective is that the use and filing of paper hard-copies be limited.
- (e) Effective and efficient payment processing as part of the Customer Services.
- (f) A one-stop service, one visit experience is required.

4.9.5.3 Satellite Centres

The Contractor's responsibilities in terms of operations and maintenance activities at these facilities are:

- 4.9.5.3.1 Route based Customer Service operations as indicated in Part C3.2.1 – Contract: Scope of Works.
- 4.9.5.3.2 Maintenance of Toll System and Facilities Maintenance. Part C3.2.1 – Contract: Scope of Works indicates the locations and provides a description of these facilities.
- 4.9.5.3.3 At the Satellite Centres along the route, provision must be made for Customer Services for dealing with the public, and where the physical infrastructure is provided, also to provide drive-through services.
- 4.9.5.3.4 Self-help terminals will also be provided at the Satellite Centres and the Contractor shall ensure that these facilities are available and assist Customer with the use of it.
- 4.9.5.3.5 All furniture and consumables shall be provided by the Contractor as part of his Contractor's Equipment. (The equipment and Systems are provided under the Transitional Subcontract).
- 4.9.5.4 Customer Service Kiosks.

The Contractor's responsibilities in terms of operations and maintenance activities at these facilities are:

- 4.9.5.4.1 These facilities, including the equipment, communications, furniture, etc. as elsewhere described in this document, shall be provided by the Contractor.
- 4.9.5.4.2 For the provision and operations of these facilities, the Contractor shall provide to the Employer an OMP. The provision of the Kiosks and commencement of operation shall also be indicated in the Project programme. The programme shall contain the mobilisation requirements as indicated in Part C3.3.1 – General Operations Specifications.
- 4.9.5.4.3 The Contractor's OMP shall take into consideration that during mobilisation, additional (or temporary) Kiosks or a reduction in the current numbers may be required, as agreed with and approved by the Employer.
- 4.9.5.4.4 The Contractor will use these facilities to register Customer Accounts and / or distribute Tags as well as for interaction with the public regarding queries as well as VAS related operations.
- 4.9.5.4.5 When required, the locations will be decided by the Contractor as to maximise Customer contact and Customer convenience. The chosen locations, in the feeding area of the GFIP road network, should be proposed to the Employer as part of the OMP for approval by the Employer and shall also be discussed and agreed in the regular Change Management Committee meetings.
- 4.9.5.5 Mobile Payment Stations
- 4.9.5.5.1 The Contractor's responsibilities in terms of operations and maintenance activities at these facilities are:
- 4.9.5.5.2 When instructed by the Employer, the Contractor shall provide additional Mobile Payment Stations as part of his Scope of Work . In this regard, refer to Part C3.2.1 – Contract: Scope of Works as well as to the separate section in this document on the specific requirements of the Mobile Payment Stations.
- 4.9.5.5.3 The provision of the Mobile Payment Stations shall also be indicated in the Project programme. The programme shall further contain the mobilisation actions as indicated in Part C3.3.1 – General Operations Specifications. The OMP should deal with, amongst others, the strategy in terms of mobilisation and operations. It should further take into account all aspects indicated below for approval by the Employer.
- 4.9.5.5.4 The Mobile Payment Stations shall be used mainly at enforcement stations as part of the enforcement strategy as managed and co-ordinated by the VPC. The Contractor shall provide full assistance to supplement this strategy as to provide the Customer Services, payment operations and administrative processing component, when such an enforcement strategy is implemented;
- 4.9.5.5.5 The Mobile Payment Stations shall be used at any of the enforcement stations in accordance with the enforcement strategy of the VPC.

- 4.9.5.5.6 Should the VPC after , for any reason, indicate that assistance of a Mobile Payment Station/s is not required for a period, it shall be the Contractor's responsibility to deploy these stations as supplementary stations to the Kiosk operations.
- 4.9.5.5.7 The Contractor shall be responsible for the maintenance, operations costs, equipment and communications, staffing costs as well as all related costs in relation to the Mobile Payment Stations.
- 4.9.5.6 Toll Plaza Kiosks
- 4.9.5.6.1 The Employer shall when triggered, as indicated already, provide Toll Plaza Kiosks. These Kiosks may either be located within the plaza building or in an open area as to erect a Kiosk facility. See specifically Part C3.2.1 – Contract: Scope of Works on the operation of these Kiosks.
- 4.9.5.6.2 These Toll Plaza Kiosks will primarily serve motorists outside the Gauteng ORT network, i.e. at Toll Agencies.
- 4.9.5.6.3 The Contractor may negotiate, on a commercial basis, with the current Toll Operators at the above plazas to perform the functions on his behalf.
- 4.9.5.6.4 The Contractor shall provide all equipment, communications, staffing, maintenance and all that is required to perform the Customer Services operations at the Toll Plazas.

4.10 MANAGEMENT OF ROAD USER ACCOUNTS

4.10.1 Introduction

4.10.1.1 It shall be the responsibility of the Contractor to register, at the Customer Service Facilities, each Customer on the TCH System, taking into account all the Payment Options (inclusive of bank issued cards, bank debit cards, etc) as described further in this document.

4.10.1.2 Insofar as the Contractor's responsibilities with the Customers, the ORT will be acting as an "agent" of the TCH in accordance with Part C3.5.2 – Project Business Rules. The registration of accounts, all payment and account updates will be performed by the ORT directly onto the TCH System. The ORT will therefore provide the Customer Services function to the TCH.

4.10.2 Account services:

4.10.2.1 The services to be provided by the Contractor at the Customer Service Facilities shall include, taking into account the applicable TCH procedures, the following:

- (a) The opening and closing of an account at any of the Customer Service Facilities, including at the Kiosks and Mobile Payment Stations.
- (b) Allowing account top-ups or settlement.
- (c) Receiving applications for Discounts and exempted vehicles and submitting the applications to the Contractor's team responsible for Public Entities.
- (d) Attending to account queries, including account balances.
- (e) Providing original and copy Tax Invoices.
- (f) Returning of reported failed Tags to the TCH and interchanging to the Customer with a new or repaired Tag as and when a Customer reports at a Customer Service Centre.
- (g) Registering accounts for Tag and Vehicle Licence Number (VLN) Road Users.
- (h) Accepting all types of Payment Options as specified in Part C3.3.1 – General Operations Specification.
- (i) Ensuring that each Tag that is issued, shall be linked to a single valid account and vehicle.

4.10.2.2 The Contractor shall ensure that Customers shall, upon request, be able to obtain a statement of their account and any Discount awarded in respect of the requested period. For Pre-Paid Accounts, the starting and ending balances shall also be shown.

4.10.2.3 The Contractor shall issue consolidated statements on request.

4.10.3 The Contractor's general responsibilities for registering accounts:

4.10.3.1.1 Accounts can be registered on-line through the TCH website and Call Centre or at any of the Customer Service Facilities. Where accounts are registered on-line, there will be an option that Tags can be mailed to the Customer or collected by the Customer at any of the Customer Service Facilities. The Contractor shall therefore facilitate the activation and issuing of these Tags to the applicable account.

4.10.3.1.2 The Contractor shall ensure that any Road User or potential Road User approaching any Customer Service Facilities, wishing to avail themselves for a regular account to use the GFIP road network, shall enter into a contract with the TCH. The contract (which contents shall be consented by the Employer) shall be supplied by the TCH, and the Contractor shall be responsible to have this contract signed by prospective Customers at the respective Customer Service Facilities.

4.10.3.1.3 The Contractor shall use an electronic signature device to capture a Customer's signature, which device and method shall be approved by the Employer. The Customer shall be issued with a proof of registration and a Receipt for payment. The Contractor shall be aware that ISO or barcode type identification cards may be issued by him to the Customers for the purpose of future identification during account payments.

4.10.3.1.4 The Contractor shall explain the use and conditions, including benefits of the contract to the Customer and amongst others, highlight the rights and the obligations of the parties, Tag ownership, toll fees, top-up's, statements, renewals, validity period and the like.

4.10.3.1.5 The Contractor shall ensure that when accounts are registered, the minimum pre-payment is received before activated as detailed in Part C3.3.3 – TCH Operations Specifications and in the TCH Business Rules as contained in Part C3.5.2.

4.10.3.1.6 The input data required from the Road User to ensure a user-friendly and courteous account registration process as facilitated by the ORT, shall be guided by and provided on the TCH System.

4.10.4 **Account Termination**

4.10.4.1 The Contractor shall adhere to the procedures of the TCH as to when and how accounts will be terminated.

4.10.4.2 Upon a Customer request, the Contractor may terminate an account on the TCH System. The Contractor shall adhere to the TCH procedures for when receiving a request for termination from a Customer, inclusive of the refunding of the balance, if any.

4.10.5 **Account Top-up**

4.10.5.1 The Customer will regularly be required to deposit funds into the pre-paid account, the level of which shall be prescribed by the TCH Business Rules as indicated within Part C3.5.2 to ensure that account balances remains above a minimum specified threshold.

- 4.10.5.2 The Contractor shall ensure that account top-up should be possible at all the Customer Service Facilities.
- 4.10.5.3 The TCH Business Rules as specified in Part C3.5.2 provides the requirements of the registration of Pre-Paid and Post-Paid accounts. Although the use of Pre-Paid accounts is the preferred option, the use of bank credit cards in both Pre- and Post-paid accounts are accepted in accordance with the mentioned Business Rules. In general, the following are the Contractor's responsibilities in terms of Pre-paid and Post-paid Account Types:
- 4.10.5.4 Pre-paid accounts
- 4.10.5.4.1 The Contractor shall register Customers on a pre-paid account system on the TCH System to process individual Customers, Key Account Holders and/or Corporate Users for whom several ETC Tags (or any other Payment Mechanism such as Number plate transactions) can be linked to one account enabling a single recharge for all such accounts in respect of such clients.
- 4.10.5.4.2 The Contractor shall ensure that the top-up's of the pre-paid accounts whether by monthly debit orders or any other mechanism, shall be in accordance with the TCH Business Rules.
- 4.10.5.4.3 The Contractor shall provide all Pre-Paid Customers their account balance upon request at any Customer Service Facility. (A Customer may also contact the Call Centre to obtain account information.)
- 4.10.5.4.4 All deposits made by Customers shall be deposited directly into the TCH's nominated transmission account.
- 4.10.5.5 Post-Paid accounts:
- 4.10.5.5.1 The Contractor shall ensure that the registering of a Customer post-paid account will be in accordance with the Business Rules of the TCH as indicated in Part C3.5.2.
- 4.10.5.5.2 The registering of Post-Paid Accounts (except accounts linked to valid bank credit cards) shall be subject to the delivery by a Customer of an Employer approved guarantee.
- 4.10.5.5.3 These accounts are more complex, and the account information requirements shall be prescribed by the TCH.
- 4.10.6 **Corporate Accounts & Key Accounts Holders**
- 4.10.6.1 Refer to Part C3.3.3 for registering of Corporate Accounts and Key Accounts Holders
- 4.10.7 **Road User types: accounts, payment mechanisms and Payment Options**
- The Payment Options allowed for the different Road User types are specified in Part C3.3.1 – General Operations Specification.

4.11 TAG MANAGEMENT

4.11.1 Introduction

4.11.1.1 Tag Management, in summary, is a process that commences from where the Tags are procured (through the Tag supply subcontract), tested and stored by the TCH, where after the ORT orders the Tags from the TCH, takes charge of the entire management and distribution process to the Customer, inclusive of the support services. Part C3.3.1 – General Operations Specifications provides an overview of the full Tag Management process.

4.11.1.2 It flows from the above that both the ORT and the TCH will have a specific role in the Tag Management process. This section primarily deals with the role of the Contractor (ORT specifically) which includes aspects such as Customer information, education, advertising, and distribution of the Tags to the Customer Service Facilities, handing of the Tag to the Customer and the ongoing support of the tag.

4.11.2 Tag ordering

4.11.2.1 The Contractor's obligations are to order and collect the Tags in accordance with the TCH lead times in order to be able to hold sufficient stock at any time at the Customer Service Facilities.

4.11.2.2 Tag forecasts shall be developed with input from both the ORT and TCH with approval by the Employer. Forecasts should extend in accordance with the period as required by the TCH.

4.11.2.3 The initial minimum Tag stock at Commencement Date and thereafter shall be proposed by the Contractor and approved by the Employer during mobilization of the toll operations. The minimum Tag stock levels will be agreed during the regular Change Management Committee meetings.

4.11.2.4 The Contractor shall be responsible to collect the Tags at the TCH's warehouse door, and from there, for the delivery of the Tags to their points of distribution. (This shall include virtual warehousing for Tags distributed directly from TCH to ORT). The Contractor shall ensure that the Tags are shielded during transport.

4.11.2.5 The Contractor shall note that references to Tags include Tag mounting brackets, installation instructions, packaging, labelling, etc.

4.11.3 Ownership of the Tags

- 4.11.3.1 Tag ownership shall remain the property of the Employer and the responsibilities associated with Tag management and control will vest with the TCH and ORT Operations as applicable.

4.11.4 TAG status

- 4.11.4.1 The Contractor shall be responsible to change the Tag status on the TCH System after registering an account and when a Tag is reported as stolen, vandalised, damaged etc as indicated below, and in accordance with the TCH Business Rules contained in Part C3.5.2.

- 4.11.4.2 The TCH shall, within its Tag inventory system, monitor the status of the Tag during its life cycle, and the Contractor shall update any change in the status in accordance with the TCH Business Rules contained in Part C3.5.2.

4.11.5 Tag distribution to Customers

- 4.11.5.1 As a matter of a Customer care service, the Tags shall, upon request by a Customer, be fitted by the Contractor at any one of the Satellite Centres.

- 4.11.5.2 As it may affect the Contractor's Customer Service Kiosk distribution (or footprint), the Contractor shall be aware that the TCH, (or the Employer) may in addition negotiate with and appoint additional Tag distribution agents, as secondary distributors for local and/or national Tag distribution. These Tag distribution agents, such as some of the prominent retail outlets (which may also include a network of service stations), shall be managed by the TCH Entity. These Tag distribution agents shall be utilized as long as they are effective for the roll out of the Tags, after which they might be continued as convenience outlets for account recharges and Tag distribution.

- 4.11.5.3 The Contractor shall ensure that each Tag that is issued shall be linked to one specific and unique vehicle and linked to one specific account.

- 4.11.5.4 The Contractor shall ensure that Customers are provided with the correct Tag brackets and that the Customers are appropriately advised on the fixing thereof.

4.11.6 Customer Service & Tag support

- 4.11.6.1 The Contractor's responsibility, in the case where a Customer presents a defective Tag that is linked to a Customer's Account, is to accept and to verify that that the Tag is defective by using the Tag Reader. If defective, the Tag shall be registered as defective on the System and be sent to the TCH for further testing and repairs. (The TCH shall either perform the repairs; return it to the supplier or write-off the Tag). The Customer shall be issued on the spot with a new activated Tag that is registered on the Customer's Account in exchange of the defective Tag by the Contractor at no charge.

- 4.11.6.2 The Contractor shall accept at the Customer Service Facilities any Tag that was either issued by the Contractor or any other Toll Agency, Tag distribution agent, etc.

- 4.11.6.3 If the Tag was found by the Contractor to be misused and/or vandalised, or lost or stolen, the Customer's account shall be debited with the value of the Tag in accordance with Part C3.5.2: Project Business Rules. If the Tag was defective and not due to the action or cause of the Customer's (such as normal wear and tear), there shall be no charge to the Customer's Account, in accordance with Part C3.5.2 – Project Business Rules
- 4.11.6.4 The Contractor may add a Service Fee, over and above the charge as levied by the TCH for the cost of a new Tag, as specified in the Business Rules of the TCH within Part C3.5.2, for, inter alia:
- (a) In the case of a vandalised and/or misused Tag or broken mountings (Tag holders), a Service Fee for replacement, checking, activation and/or issuing of a new tag.
 - (b) Replacement of the battery (if applicable).
- 4.11.6.5 The Contractor shall provide a consistently high level of service in Tag support.
- 4.11.7 **Tag monitoring & reporting**
- 4.11.7.1 As the TCH shall be monitoring the Tag supply and distribution, the ORT shall be informed on all appropriate parameters such as orders placed, Tags received, Tag performance characteristics, Tag failure patterns, Tag cloning, incidents of fraud etc. to enable the Contractor to react upon. Examples could be to investigate fraud at specific Customer Service Facilities, recalling batches of Tags that are still in stock with the ORT, etc.
- 4.11.7.2 The Tag monitoring shall comply with the Asset Management requirements within a separate section of this document.
- 4.11.7.3 The Contractor shall regularly review Tag related statistics in order to:
- (a) Increase Tag penetration.
 - (b) Improve Contractor's inventory efficiencies.
 - (c) Mitigate Tag performance risks.
 - (d) Mitigate Tag fraud risks.
- 4.11.7.4 The Contractor shall be aware that the TCH System shall monitor the use of the Tag and before the life-time has been reached, the TCH System shall notify the Customer that the Tag needs to be exchanged. The Contractor shall then provide the replacement Tag once the Customer has returned the Tag to any one Customer Service Facilities, in accordance with the TCH Business Rules.
- 4.11.7.5 The Contractor shall generate suitable reports for Tag inventory purposes and in accordance with the above requirements.

4.12 TRANSACTION PROCESSING (ORT BACK OFFICE OPERATIONS)

4.12.1 Introduction

4.12.1.1 The Contractor shall ensure that transaction processing, from where the transactions are captured at the Road Side Systems, transmitted to and processed by the ORT Back Office and transmitted to the TCH Back Office System, is performed in such a manner that the Employer shall receive all toll fees associated with the passages made by the Customers and other Users at the different Tolling Points.

4.12.1.2 The Contractor shall be aware and be fully familiarised with the proposed Vehicle Classes as shown in C3.2.1 – Contract: Scope of Works together with the applicable Tariffs for each Vehicle Class and which shall be published in the Government Gazette from time to time.

4.12.1.3 It shall be the responsibility of the Contractor to ensure that the Toll System provides accurate classification of vehicles in accordance with the Vehicle Classes. In this regard refer to Part C3.5.1 – Contract Performance Measurement.

4.12.1.4 The Contractor shall be responsible for the capturing of Compliant and Complete Transaction Records for all vehicles processed at each Tolling Point in accordance with the above mentioned Vehicle Classes and Tariffs. Refer to Part C3.5.1 – Contract Performance Measurement.

4.12.2 Key operations functions: ORT Back Office System.

4.12.2.1 The Contractor shall ensure that the ORT Back Office receives all transactions and all associated data from the Road Side Systems. To this end, the Contractor shall ensure that the required automatic electronic processes and data communication systems are functional and fully operational to achieve this. The key operational functions are:

- (a) Roadside data collection.
- (b) Transaction management.
- (c) Database management.
- (d) Financial management.
- (e) Equipment monitoring, diagnostics and maintenance.
- (f) Record keeping.
- (g) Disaster Recovery.
- (h) Security key management, and
- (i) Reporting.

4.12.3 **Operations facilities**

4.12.3.1 The ORT Back Office operations will take place at the Central Operations Centre or at other locations as determined by demand. The Contractor may use the Dalpark operation centre as well, on Employer's approval or during Disaster Recovery. The Contractor shall be aware that the TCH System and the VPC System shall also be located at the Central Operations Centre

4.12.3.2 The route based Customer Service Facilities (located within the Satellite Centres), Kiosks and Mobile Payment Stations will be linked to the Central Operations Centre.

4.12.4 **Roadside Data Collection**

4.12.4.1 In the event of communication failures, the responsibilities of the Contractor shall be to collect transaction data from roadside by means of back-up communications procedures. The back-up procedures shall be contained in sufficient detail in the Contractor's OMP, and will be approved by the Employer. Performance with regards to data communication shall be measured as indicated in Part C3.5.1– Contract Performance Measurement.

4.12.5 **Transaction Management**

The Contractor shall be responsible for transaction management that shall include:

4.12.5.1 Monitoring and managing transaction flow from the roadside to the ORT Back Office and between the ORT Back Office and the TCH System in accordance with Part C3.5.1 – Contract Performance Measurement. The following, amongst others, should be specifically managed and controlled at each Tolling Point:

- (a) To maximise the percentage of vehicles at each Tolling Point generating a Transaction Record.
- (b) To maximise the percentage of vehicles at each Tolling Point generating a Compliant Transaction Record.
- (c) To conform to the required AVC accuracy at each Tolling Point.
- (d) To conform to the required ANPR capture, trigger and correct read rate at each Tolling Point.
- (e) To conform to the required DSRC (or Tag) capture rate at each Tolling Point.
- (f) To conform to the required vehicle framing accuracy at each Tolling Point.

4.12.5.2 Ensuring all transactions shall be Compliant in accordance with Part C3.4.2 – General System Specifications. The Contractor shall specifically adhere to the transaction auditing requirements as indicated in Clause 2.1.23 of the aforementioned Specification.

4.12.5.3 Performance of Manual Validation, including in the events where:

- (a) ANPR processing of images for which the Vehicle Licence Number cannot be automatically detected, or did not meet minimum confidence requirements in accordance with Part C3.5.1 – Contract Performance Management.
 - (b) Class Discrepancies were detected.
 - (c) Discrepancies occurred between the Vehicle Licence Number as registered on the Tag account and the Vehicle Licence Number as determined by the ANPR process.
 - (d) Discrepancies between the front and rear Vehicle Licence Number of a vehicle.
- 4.12.5.4 Ensuring Manual Validation Accuracy, including, but not limited to, audits to be performed to determine the Manual Validation accuracy. These audit results shall for example be used as a basis to determine the accuracy of the Transaction Records validated as “Technical loss” and “undefined (No VLN)” Transaction Records. The audit results may facilitate the automatic write-off of “No VLNs” in the VPC. The Manual Validation and MNPR audit requirements are as detailed in Part C3.3.4 – VPC Operations Specifications.
- 4.12.5.5 Ensuring quality of images:
- 4.12.5.5.1 Images shall be stored in a central location (Central Image Repository (CIR)) from where it can be accessed from either the ORT, TCH and/or the VPC.
- 4.12.5.5.2 The Employer shall select random locations from which images shall be quality assured on a daily basis. The full set of manual validation records shall be made available to the Employer in order to enable the Employer to maintain quality of image-based transactions across the ORT/TCH interface. The Contractor shall include this quality procedure in his OMP for approval by the Employer.
- 4.12.5.5.3 A statistically significant proportion of all image events, which were captured, shall be checked and verified to determine if the quality of the images that were captured, are acceptable to perform manual validation. In the event that it is found that particular cameras do not provide acceptable images, the Contractor shall replace those cameras and the Contractor remains liable for associated lost transactions, if any, due to cameras that do not provide legible readings of Vehicle Licence Numbers.
- 4.12.5.5.4 The above quality procedure shall contain aspects including sample size, validation criteria, reporting and the like. Performance measurement will be performed as indicated in Part C3.5.1 – Contract Performance Measurement.
- 4.12.5.6 Controlling Vehicle Class Discrepancies:
- 4.12.5.6.1 In the event of a Vehicle Class Discrepancy between the AVC and the Registered Vehicle Class on a Customer Account, the Contractor shall follow the Business Rules (Toll Agency 1 and 2) in Part C3.5.2. For heavy vehicles, specifically where different trailers are used, the Contractor shall default to the AVC class.

- 4.12.5.6.2 If a Vehicle Class for classes 1 and 2 cannot be verified, the Registered Vehicle Class shall be used. It is further required that positive discrepancies shall be manually verified, i.e. when a vehicle with a higher Vehicle Class is being detected as the one that is registered.
- 4.12.5.7 Discrepancies between the front and rear VLN:
- 4.12.5.7.1 Should the front and rear number plates of the same vehicle differ, the Manual Validation Operator shall confirm the VLN of the Transaction Records
- 4.12.5.8 Controlling registered VLN (Tag VLN) and detected VLN discrepancies:
- 4.12.5.8.1 The Vehicle Licence Number derived from the ANPR process will be compared with the Vehicle Licence Number in the Validation List(s), also known as the Registered Vehicle Licence Number.
- 4.12.5.8.2 The ORT Back Office System shall automatically keep track of the number of mismatches between the registered VLN and the VLN determined through the ANPR process.
- 4.12.5.8.3 Once the number of mismatches that were automatically detected by the ORT Back Office System reaches a configurable number, e.g. 8 times per month, the Contractor shall verify the mismatches using Manual Validation. If the mismatches can be verified, the Transaction Record shall be flagged as a Vehicle Licence Number Discrepancy. The Contractor shall then take further action, such as to inform the Road User about the mismatch. This is extremely important in case of Exempt and Free Passage accounts, where Tags allocated to an exempted vehicle can be misused in ordinary vehicles.
- 4.12.5.8.4 The Manual Validation Operator shall have the option to allocate the Transaction Record to the Tag owner or to the owner of the Vehicle Licence number, as agreed between the Parties.
- 4.12.5.8.5 The number of VLN mismatches that the Toll System automatically detects after which Manual Validation will be invoked, shall be a configurable parameter.
- 4.12.5.8.6 If a Road User continues to misuse the system, as verified by means of Manual Validation, it shall be an option to terminate the Discount of the transactions linked to the Tag Identifier.
- 4.12.6 **Potential Duplicate/Cloned VLNs**
- 4.12.6.1 Potential Duplicated/Cloned VLNs shall be identified by various sources and added to the illegal Vehicle List:
- 4.12.6.1.1 The ORT BO System shall identify potential Duplicate or Cloned VLNs (e.g. if the same VLN passes two remote gantries within a predefined time).
- 4.12.6.1.2 Duplicate/Cloned VLNs reported by Road Users at the Call Centre, Customer Services Centres or via the TCH BackOffice

- 4.12.6.1.3 Duplicate/Cloned VLN reported by the Mobile Police.
- 4.12.6.2 The Manual Validation Operator shall validate the potential Duplicate or Cloned VLN. The confirmed Duplicate/Cloned VLN shall be flagged as such to ensure that these transactions do not appear on the Customer's Account.
- 4.12.6.3 Should a transaction of a Duplicate/Cloned VLN incorrectly appear on a Customer's Account, an adjustment shall be made to the relevant Account.
- 4.12.6.4 If a Customer submits a valid complaint and the Customer's VLN was cloned or duplicated, the Account shall be adjusted with the value of all historic Duplicate/Cloned VLN for a predefined period.
- 4.12.6.5 Controlling detection accuracy:
- 4.12.6.5.1 The Contractor shall provide an OMP together with detailed procedures to verify the detection accuracy of the Toll System, for approval by the Employer. The Contractor, in accordance with his OMP, shall select random periods during each week, or otherwise as instructed by the Employer, at each Tolling Point to obtain continuous video streams from the audit cameras to perform manual traffic counts at each Tolling Point.
- 4.12.6.5.2 A statistically significant proportion of vehicles shall be captured by means of the audit cameras to compare the number of vehicles as captured on the Toll System. The detection accuracy shall be determined on a monthly basis for each Tolling Point in accordance with Part C3.5.1 – Contract Performance Measurement.
- 4.12.6.6 Responding to Customer queries on transactions:
- 4.12.6.6.1 In the case of a query by a Customer with respect to the applied Vehicle Class, the image of the transaction shall be checked and if necessary, the relevant Adjustments shall be made to the Customer's Account.
- 4.12.6.7 Application and management of any applicable Discounts;
- 4.12.6.8 Monitoring and ensuring that the Validation Lists that are transmitted from TCH to the ORT Back office are downloaded to the Road Side Systems at the Gantries. In this regard, performance measurement will be done in accordance with Part C3.5.1 – Contract Performance Measurement.
- 4.12.6.9 Monitoring and ensuring that the transfer of packaged transactions from the ORT Back Office to the TCH takes place;
- 4.12.6.10 Performing transaction reconciliations to update transaction status in terms of paid transactions, Violations, exempted Road Users, missing data or Identifiers, etc;

- 4.12.6.11 Ensuring that Evidential Records are processed by the Road Side System and the ORT Back Office System and stored as per Part C3.3.1 – General Operations Specification, Part C3.4.3 – Road Side System Specification and Part C3.4.4 – ORT Back Office System Specification.
- 4.12.6.12 Ensuring the ongoing certification of the ORT Road Side Systems and ORT Back Office System as required for law enforcement as described in Part C3.3.1 – General Operations Specification.
- 4.12.6.13 Monitoring and verifying possible status of transactions.
- 4.12.6.13.1 The Contractor shall ensure that all transactions are captured at the Road Side Systems for processing at the ORT Back Office in order to be sent from the ORT Back Office to the TCH System.
- 4.12.7 The following status of captured transactions is possible together with the required actions and/or outcomes. This list is not comprehensive but provides an overview of the Contractor's role in ensuring that Complete and Compliant Transaction Records are transmitted to the TCH System. Table 4.1 below indicates the possible status of transactions as well as possible actions by the Contractor.

TABLE 4-1: STATUS OF CAPTURED TRANSACTIONS

TAG READING	NUMBER PLATE READING (ANPR OR REGISTRATION)	NUMBER PLATE AND TAG INFO CORRESPONDS (NO N-PLATE)	AVC READING	AVC - AND REG. TAG CLASS CORRESPONDS	STATUS	ACTION
Yes	Yes	Yes	Yes	Yes	Compliant Transaction Record	System sends Transaction to TCH. No specific action from ORT apart from monitoring.
Yes	Yes	Yes	Yes	No	Compliant Transaction Record	If queried by Customer, ORT to view image, add Actual Class to transaction. System to send Transaction to TCH. ORT to react on class discr through maintenance.
Yes	Yes	No	Yes	Yes	Compliant Transaction Record	User has exchanged Tag to other vehicle. ORT to verify by means of Manual Validation and add actual number plate. ORT incurred additional costs. System sends transaction to TCH. TCH to action further. (e.g. additional admin cost, if applicable)
No	Yes	N/a: if un-reg. Yes: if reg**	Yes	N/a: if un-reg. Yes: if reg**	Compliant Transaction Record	System sends transaction to TCH. TCH assume Tag failure – notify User. ORT to test Tag if returned by Customer.

TAG READING	NUMBER PLATE READING (ANPR OR N-PLATE)	NUMBER PLATE AND TAG INFO CORRESPONDS (No N-PLATE)	AVC READING	AVC - AND REG. TAG CLASS CORRESPONDS	STATUS	ACTION
No	Yes	N/a: if un-reg. Yes: if reg**	No	N/a: if un-reg. Yes: if reg**	Compliant Transaction Record	System sends transaction to TCH. TCH assume Tag failure – notify User. ORT to test Tag if returned by Customer. ORT react to AVC not reading.
No	No	N/a	Yes	N/a	Non-Compliant Transaction Record	Equipment failure. ORT to attend. System send transaction to TCH
Yes	No	N/a	Yes	Yes	Compliant Transaction Record	Possibly number plate missing or obscured. No action.

** Can obtain account registration detail from number plate

4.12.8 Database Management & Monitoring

The responsibilities of the Contractor shall include:

- 4.12.8.1.1 Managing the automated process of Validation List transfers between TCH and ORT Back Office and the ORT Back Office and Road Side System which includes the monitoring and acting on failure.
- 4.12.8.1.2 Managing of the Validation List by ensuring that it will include all Identifiers e.g. (TAG, Registration, or other), Registered Vehicle Classes, low balance information, Tag validity information, exempt user information, etc.
- 4.12.8.1.3 Monitoring of image and data capture, storage triggering, as well as to facilitate account based information to the motorists (using the Tag-beep system).
- 4.12.8.1.4 Performing full database functions such as back-up and restore, database mirroring, upgrading the version of the database as needed to keep it current, etc.
- 4.12.8.1.5 Managing and monitoring of transaction transmission to ensure that each transaction that is sent from the Road Side System to the ORT Back Office and from the ORT Back Office to the TCH Back Office is sent once and only once. No transactions should be lost or duplicated.

4.12.8.2 Financial Management

The responsibilities of the Contractor, as indicated in more detail in Part C3.5.3 – Financial Management and the financial management section herein, shall be to:

4.12.8.2.1 Reconcile all transactions that were transferred to TCH against the actual transaction status as received back from the TCH in terms of paid transactions, Violations, exempts, Discounts, etc.

4.12.8.2.2 Reconcile all traffic against Income and Revenue

4.12.9 Equipment monitoring and diagnostics

4.12.9.1 The Contractor shall monitor the Road Side System and ORT Back Office equipment, and to initiate corrective measures with the Transitional Subcontractor (as indicated in detail in the section dealing with maintenance) where required, for:

- (a) Measuring specified performance levels.
- (b) Measuring Toll System uptime.
- (c) Ensuring Toll System redundancy.
- (d) Measuring storage and operating capacity.
- (e) Performing maintenance diagnostics.
- (f) Performing reporting.

4.12.10 The procedures, proposed scheduling and process to be followed for archiving, back-up and Disaster Recovery is to be submitted to the Employer for his approval.

4.12.11 No data shall be deleted without the data being archived.

4.12.12 Disaster Recovery

4.12.12.1 The Contractor shall be responsible for Disaster Recovery as indicated in Part C3.4.2 – General System Specifications and Part C3.4.4 – ORT Back Office System Specification.

4.12.13 Security Key management

4.12.13.1 The Contractor shall be responsible for security key management as indicated in Part C3.4.2 – General System Specifications and he should include the procedures surrounding the handling, safe storing and possible updating of Security Keys in the OMP. The Contractor shall ensure to load and activate the Security Keys in accordance with the approved OMP.

- 4.12.14 The Contractor shall ensure that all transactions, whether Compliant or Non-Compliant, which are captured by the Road Side System and processed in the ORT Back office, are continuously sent to the TCH.
- 4.12.15 All transactions (including those that require manual validation) shall be processed by the Contractor's staff within the time as specified in Part C3.5.1 – Contract Performance Measurement.
- 4.12.16 With regards to record keeping on the ORT Back Office and the Road Side Systems, the Contractor shall ensure that all data is recorded on the Toll System in accordance with the Business Rules in Part C3.5.2. In addition, the Contractor shall ensure that images are to be stored for a maximum of 3 months at the Tolling Points. These images of Tag transactions exclude the images where exceptions are involved, as those are sent to the ORT Back Office. See specifically Clause 2.1.24.1 in Part C3.4.3 – Road Side Systems Specifications. The option exists where additional hardware can be installed upon instruction from the Employer to increase storage capacity. The Contractor shall ensure that the Back-up of all the triggered Incidents and transaction-linked images shall be performed on a continuous basis.
- 4.12.17 The Contractor shall comply with SANS requirements on all images as well as on the applicable equipment used to capture, process and store the images.
- 4.12.18 All transactions and Evidential Records provided by the Toll System to the TCH must be quality assured, in accordance with the approved QA plan as required in Part C3.3.1 – General Operations Specification.

4.13 SAFETY AND SECURITY

- 4.13.1 With regards to the access control and security, fire detection and fire suppression systems, the Contractor should refer to the philosophy as indicated in Part C3.2.1 - Contract: Scope of Works. In essence the Contractor may choose whether to provide an upgraded or alternative solution in lieu to the design of the Employer. Should the Contractor decide to provide his own solution, the following should be considered.
- 4.13.2 All safety and security as addressed under this section, whether the above mentioned systems are supplied by the Employer or by the Contractor, it remains entirely the Contractor's responsibility, and should it be necessary, adjustments on safety and security levels shall be effected by the Contractor.
- 4.13.3 The access control and security, fire detection and fire suppression systems shall be installed at the following locations:
- 4.13.3.1 All Customer Service Facilities (i.e. Route based Customer Service Facilities, Kiosks, Mobile Payment stations, Toll Plaza Kiosks, where applicable).
 - 4.13.3.2 Technical Shelters and Gantries
 - 4.13.3.3 Central Operations Centre and Dalpark
 - 4.13.3.4 Enforcement Depots.
- 4.13.4 **Security system.**
- 4.13.4.1 The Contractor shall train their personnel to use and keep the environment secure at all times for their own safety and to protect the loss of equipment.
 - 4.13.4.2 Specifically, with regards to the Technical Shelters that are located alongside the GFIP network and the facilities that are provided by the Contractor (Kiosks, Mobile Payment Stations), the Contractor shall provide a comprehensive proposal for implementation of the security procedures for the approval of the Employer.
 - 4.13.4.3 The minimum requirements for a security system are the following:
 - 4.13.4.3.1 Area surveillance on a 24 hour basis
 - 4.13.4.3.2 CCTV cameras dedicated to Customer Service areas to enable the viewing of all Customers being served as well as Customers entering and leaving the buildings.
 - 4.13.4.3.3 Continuous digital video recording
 - 4.13.4.3.4 Off-site storage of recorded video material

4.13.5 Access control system

All facilities to be provided by the Employer currently have the Gallagher access control system installed. For future installations and maintenance, the following should be noted:

- 4.13.5.1 The Contractor shall provide a comprehensive design proposal on the access control system installation to the approval of the Employer.
- 4.13.5.2 The Contractor shall be responsible to supply, install and maintain the access control system and ensure the system records all access to the toll facility at all times.
- 4.13.5.3 The access control system will have a database capturing the date and time for all authorised and un-authorised Persons that enters or exits the toll facility. The access control system shall also provide a record of access to high-security zones within the facility. The Contractor may propose and implement additional technology to form part of the access control, i.e. CCTV, finger print reader, etc.
- 4.13.5.4 The Contractor shall be responsible for maintaining (and upgrading where necessary) all facilities for Site security, including fencing, intercom systems, access control systems, alarm systems, etc.

4.13.6 Fire Detection System

- 4.13.6.1 The Contractor shall train their personnel to use and keep the environment secure at all times for their own safety and to protect the loss of equipment.
- 4.13.6.2 The fire detection systems at the various facilities shall be monitored at a central location, as proposed by the Contractor and approved by the Employer.
- 4.13.7 System enclosure keys and locks: Refer to Part C3.3.1 – General Operations Specifications.
- 4.13.8 As cash payments will be received from Customers at the Mobile Payment Stations, the Contractor shall be responsible for all security, which may include aspects such as area lighting, provision of a guard/s and the like.
- 4.13.9 The Contractor shall, as part of his Operations and Management Plan, address the prevention and management of all emergency situations.

4.14 FINANCIAL MANAGEMENT

4.14.1 General

The following provides the general requirement with regards to financial management and should be read in conjunction with Part C3.5.3 – Financial Management.

4.14.1.1 All toll deposits and top-ups collected at the Customer Service Facilities shall be and remain the sole property of the Customer and no right whatsoever to such payments and top-ups shall be vested in the Contractor.

4.14.1.2 The Contractor shall under no circumstances employ such payments and top-up's, whether temporarily or permanently, for its own gain or return or for the gain or return of any other Person.

4.14.2 Main functions

The Contractor's main functions pertaining to Financial Management include:

4.14.2.1 Drafting and implementing procedures to maximize the efficiency of the payment and top-up's process and to minimise financial risk to the Customer, Contractor and the Employer;

4.14.2.2 Ensuring the capturing of all toll transaction data and providing Compliant and Complete Transaction Records from the ORT Back Office to the TCH;

4.14.2.3 Ensuring the processing of all Payment Options tendered by the Customers e.g. cash, credit cards, etc;

4.14.2.4 Ensuring that the correct Discount and exempt allocation is being done for the applicable transactions.

4.14.2.5 Ensuring the control and reconciliation of payments collected and maintaining of records;

4.14.2.6 Provision of Tax Invoices if requested by the Customers and provision of responses with regards to account queries;

4.14.2.7 The accounting, stock control, reporting and distribution of Tags collected or distributed by Customer Service Facilities when applicable;

4.14.2.8 Operating and Maintaining the Toll System with, as a minimum requirement, data completeness, the audit trails, the interfaces, formats, data communication protocols and read-only access to the Employer as specified in Part C3.4.3 – Road Side System Specification and Part C3.4.4 – ORT Back Office Systems Specification.

4.14.2.9 Transporting and depositing of cash into the TCH or VPC transmission account;

4.14.2.10 Collecting and settling of all cashier debts, i.e. cashier shortfalls. This excludes the collection of Customer Account debts such as Violations which is the responsibility of the VPC.

4.14.2.11 Maintaining an accounting system for reconciling, as described in more detail below:

4.14.3 **Toll Revenue management**

4.14.3.1 The Contractor shall perform, inter alia, the following management functions:

- (a) Bank all Revenues collected from Road Users into the applicable transmission account.
- (b) Reconcile Revenue banked vs. Revenue registered on the TCH System.
- (c) Reconcile transactions transferred to TCH vs. payment that was received by TCH.
- (d) Reconcile AARTO Infringement payments received and banked.

4.14.4 **Procedures, records and accounting of toll collected**

4.14.4.1 The Contractor shall establish procedures and keep records to ensure that it accounts for every transaction involving any passage through the Tolling Points, all payments received at the Customer Service Facilities, including possible short payment and excess payment received at the Customer Service Facilities.

4.14.5 **Accounting at the ORT Back Office**

4.14.5.1 The Contractor shall initiate, introduce and maintain an accounting process in order to manage, control and reconcile Income and Revenue.

4.14.5.2 The ongoing reconciliation shall be for management, accounting and auditing purposes (per Route and for the entire Project that consist of more than one route), as further specified in Part C3.4.4 – ORT Back Office System Specification to reflect the financial status of the Project on a daily and monthly basis.

4.14.5.3 The Contractor shall record all cash deposits, shortages and surpluses, Bank Card deposits, commissions, fees, rejections, charge-backs, non-cash transactions, collector debts, Tax Invoices and credit notes.

4.14.5.4 The accounting process shall enable reporting functions for management and operations as indicated in the Reporting section of this document.

4.14.5.5 The Contractor shall control and store all account applications in respect of Exempt User's and Discounts.

4.14.5.6 The Contractor shall ensure that the updating of transactions with regards to payments, late payments, Violations as received from the TCH shall be done, as a minimum, on a daily basis.

4.14.5.7 The accounting process on the ORT Back Office shall not be required for invoicing, delivering of statements and Tax Invoices.

4.14.6 **Filing and Storage of Accounting Records**

4.14.6.1 Notwithstanding that the Contractor shall adhere to all Acts of South Africa, the Contractor shall file and store all accounting records in accordance with the Public Finance Management Act of 1999 as amended and the National Archives Act of South Africa.

4.14.7 **Cash-up of payments received**

4.14.7.1 The Contractor shall provide cash-up procedures for daily cash-up and deposit on the TCH and VPC Systems of all Revenue received at the Customer Service facilities, to be approved by the Employer.

4.14.8 **Exempt Users management**

4.14.8.1 Applications for an Exempt User status

- (a) In terms of various Acts, the Employer shall grant toll exemption to certain Exempt Vehicles, as described in the applicable legislation.
- (b) An Exempt User shall electronically submit a list of vehicles to the Contractor's team responsible for Public Entities. An account shall be opened, the vehicles shall be registered and Tags shall be issued by the Contractor on approval of a valid Exempt User application. An authority may have one account for a multiple number of vehicles and bulk registrations, as for Corporate Users, shall apply.
- (c) The Contractor shall only accept Exempt User applications for an Exempted vehicle that complies with the criteria of the applicable legislation.
- (d) The Contractor shall, in collaboration with the Employer Representative, follow the procedures for the application, approval, monitoring, reconciling and reporting of Exempt Users.
- (e) The Contractor shall allow Free Passages as instructed by the Employer, or as published in the Government Gazette, such as to the relevant emergency services. The Contractor shall implement similar procedures as in the case of exempt Users for the control and management of Free Passages. In this regard refer to Part C3.4.4 – ORT Back Office System Specifications.

4.14.8.2 **Exempt procedures**

- (a) The Contractor shall ensure that when the Toll System detects an Exempt Transaction, the transaction shall be recorded on the ORT Back Office and transmitted to the TCH.

- (b) Should the VPC detect an Exempt User that is not registered as an Exempt, the information shall be passed to the ORT via the TCH System. The Contractor shall contact that Authority to encourage the Authority for registering as an Exempt user.
- (c) The Contractor shall, in collaboration with the Employer's Representative, ensure that the Exempt Transactions be monitored and a process of incident management be implemented as to manage the possible misuse of Exempt Transactions. The results from the incident management, where possible misuse is expected, is to be communicated to the Employer and the applicable Authority.
- (d) The Contractor shall handle and reconcile Exempts returned by the VPC.

4.14.9 **Discounts**

- 4.14.9.1 The Contractor shall apply the Gauteng ORT Project Discounts on the effective dates as published by the Government Gazette or instructed by the Employer from time to time. The various types of Discounts envisaged for this Project are shown in Part C3.2.1 – Contract: Scope of Works and also in Part C3.3.1 – General Operations Specifications.
- 4.14.9.2 With regards to loyalty and/or incentive programs, the Contractor may only on the instruction from the Employer, implement other additional Discounts. The amount of the Discount or the qualifying conditions of such Discount shall be at the discretion of the Employer.
- 4.14.9.3 The Nominal Tariff is the Tariff that applies before any Discounts are granted. The Contractor shall ensure that all Discount Tariffs are calculated from the nominal VLN Tariff.
- 4.14.9.4 **Management of Discounts**
 - 4.14.9.4.1 For all Discounts that require formal applications from the Customers in accordance with the most current edition of the relevant Government Gazette, the Contractor shall draft the necessary application forms that include the Tariffs and applicable Discounts, in accordance with the stipulations of the Government Gazette, and for the approval by the Employer.
 - 4.14.9.4.2 The Employer's Representative shall approve Discount applications and the Contractor shall register the eligible Road Users in terms of the Government Gazette or as instructed by the Toll Agency for the various Discounts.
 - 4.14.9.4.3 It should be noted that Free Passage and other gazetted (special) Discounts are Project specific and regulated by the SANRAL Regulations whilst Exempt vehicles are determined by the applicable SAPS or SANDF legislation. Free Passage and other vehicles shall therefore not qualify for Discount at conventional plazas, unless it is granted by the specific Toll Agency.
 - 4.14.9.4.4 Should the Road User however prefer to use the Tag at the Toll Agencies, a Pre- or Post-paid Account may be created for the Road User and 100% Discount shall be allocated at all GFIP Tolling Points.

4.14.9.4.5 The Contractor generated application forms for these Discounts shall contain all necessary information to enable verification of eligibility, including, but not limited to, the Customer's name, telephone number, identity number and residential address, Vehicle Licence Number, colour, make and model, and reason for Discount.

4.14.9.4.6 Due to the huge fraud potential associated with Discount applications, the Contractor shall manage and control non-eligible applications. The Contractor shall, in collaboration with the Employer Representative, prevent illegal use of Discounted transactions and Tags and shall ensure that the Vehicle Licence Number, or any other relevant details as on the original application, corresponds to that of the actual vehicle.

4.14.10 **Card Payment Reconciliations**

4.14.10.1 The Contractor shall perform all reconciliations relating to card payments on a daily basis at Customer Service Facilities and shall perform reporting as indicated in the section dealing with reporting.

4.14.10.2 The Contractor shall only accept on-line card transactions that are authorised by the bank. If the Contractor accepts transactions without bank authorisation, the Contractor shall be liable for the associated risks and possible losses.

4.14.11 **Customer's Account charges**

4.14.11.1 The Contractor shall levy Customer's Account charges, in accordance to the Business Rules as indicated in Part C3.5.2 as approved by the Employer.

4.14.11.2 All User charges and fees relating to Tags and other account charges shall be recorded on the TCH System and Receipts and Tax Invoices shall be issued by the TCH.

4.14.12 **Tariff setting**

4.14.12.1 It is the sole responsibility of the Employer for determining the Tariffs and which shall be published in the Government Gazette from time to time.

4.14.12.2 Tariffs will be adjusted by the Contractor generally on an annual basis or other times as instructed by the Employer in accordance with the provisions of the Government Gazette. The Contractor shall thereafter, inter alia:

- (a) Populate the Tariff and Discount tables.
- (b) Set the activation date.
- (c) Implement an approved QA Process.

4.14.12.3 The Contractor shall ensure that Tariff Table, as populated by him, shall be sent to the TCH Back Office.

- 4.14.12.4 The Contractor shall ensure that the Tariff Table is activated at the Tolling Points on the effective date and time, and that the prevailing Tariff Tables are at all times loaded and active at the Tolling Points.
- 4.14.12.5 Regarding the updating and maintenance of all the Tariff boards along the route, the Contractor should note that this will be for the Employer through another Contract.
- 4.14.12.6 The Contractor shall draft operational procedures, to be approved by the Employer, for the management of the entire process of changing any Tariff in order to ensure full compliance with the provisions of the Government Gazette and to address all possible risk factors. The Contractor shall accept all risks associated with the Tariff setting procedures and process.
- 4.14.13 **Determine Average Speed over Distance (ASOD)**
- 4.14.13.1 In addition to the collection of Toll Fees, the Transaction Record information shall be used for Average Speed over Distance calculations to determine the speed Infringements of the transactions performed between two consecutive Tolling Points (i.e. road trip). Refer to Part C3.5.4 for the detailed requirements with regards to ASOD.
- 4.14.14 **Incidents / alarms**
- 4.14.14.1 The Contractor shall act in a responsible manner to the incidents (System Generated Alarms) as provided and reported by the Toll System. The Contractor shall investigate and where required, react to all incidents and record all possible information to provide a comprehensive financial and operational audit trail.
- 4.14.14.2 The Contractor shall ensure that all incidents be recorded by the Toll System as specified in Parts C3.4.3 and C3.4.4 for the Road Side System Specification and ORT Back Office System Specification, respectively.
- 4.14.14.3 The Contractor shall distinguish between the following types of Incidents and report on the frequency of the incidents as indicated in the Reporting section of this document:
- (a) Financial
 - (b) Operational
 - (c) Equipment and maintenance
- 4.14.15 **Payments and transfer of payments**
- 4.14.15.1 The VPC and TCH will hold transmission accounts at a banking institution nominated by the Employer for the deposit of all payments as received by the Contractor.
- 4.14.15.2 The Contractor shall deposit all payments received from all the Customer Service Facilities into the transmission accounts at least once per business-day, and in accordance with the OMP as approved by the Employer and in accordance with the Business Rules as contained

in Part C3.5.2, that shall take into consideration the amount of cash, security, insurance and the like.

4.14.15.3 The Contractor shall be responsible for the safe cash transfer from the Customer Service Facilities to the Banks.

4.14.15.4 The Contractor shall ensure that all monies collected by it are protected, and, where necessary, insured.

4.14.15.5 The Contractor shall remain fully liable in respect of all monies that may be collected until such time as the said monies have been received and accepted into the above mentioned nominated transmission account.

4.14.15.6 All bank issued card payments shall be deposited directly into the nominated transmission accounts. The Contractor shall be liable for the payment of interest in respect of late payments in accordance with Part C3.5.1 – Contract Performance Measurement. The Contractor shall further be liable for the payment of interest on any shortfall on deposits made into the transmission account in accordance with Part C3.5.1 – Contract Performance Measurement.

4.14.16 **Money float**

4.14.16.1 The Contractor shall ensure that an adequate money float and coinage is available at the various Customer Services Facilities to ensure that a Customer will at all times obtain the correct change if any valid South African currency note or coin is offered as cash payment during an account registration or top-up.

4.15 ENFORCEMENT AND MOBILE PAYMENT STATIONS

- 4.15.1 The role of the Contractor and the deployment of the Mobile Payment Stations and Mobile Policing Vehicles are indicated in Part C3.3.4 - VPC Operations Specifications.

4.16 SPECIAL INVESTIGATION QUERIES

4.16.1 Overview

4.16.1.1 The Employer has agreed with the South African Police Service (SAPS) to provide video footage, as well as information and images on vehicle passages through the gantries. Video footage is provided by the I-Traffic department, but vehicle passage information is available from the ORT Back Office and/or VPC.

4.16.1.2 In addition to the above, information may be provided to other parties, as approved by the Employer. Furthermore, the Employer has the right to obtain data from the Contractor and does not need any formal approval to request data.

4.16.1.3 A register shall be kept of all authorized enquirers and their contact details.

4.16.1.4 It shall be ensured that requests are not misused by any party.

4.16.2 Resources

4.16.2.1 The Contractor shall appoint dedicated special investigation officers to assist with the queries.

4.16.2.2 A security clearance check shall be done on the dedicated resources. These checks shall be repeated from time to time, as agreed with the Employer or his Representative.

4.16.2.3 The CVs for the special investigation's officers shall be presented and approved by the Employer.

4.16.2.4 The investigating officer shall have the power to sign affidavits.

4.16.2.5 The resource shall have a comprehensive System and operational knowledge and must be able to interpret the data.

4.16.2.6 Should it be required, the special investigating officer shall testify in court.

4.16.2.7 A special investigation officer shall be available after hours, during weekends or on public holidays on an ad hoc basis, in case of emergency requests.

4.16.2.8 The Employer may elect to appoint their own investigating officers; however, the Contractor shall assist in providing the information.

4.16.3 Queries

4.16.3.1 SAPS (or other authorized parties) shall request transaction data from the special investigation officer and provide the relevant case/reference number, as agreed between the parties.

- 4.16.3.2 For security purposes requests will be directed to the special investigation officers only. It shall not be directed to general email addresses.
- 4.16.3.3 The Special Investigation Queries may for example be for the movement of a specific vehicle(s), but there may also be a request for the VLN of a specific vehicle with an unknown VLN which went through the same gantry/gantries more or less at the same time as a known VLN. For the latter, the images of the vehicles before and after the known VLN shall be checked.
- 4.16.3.4 The SAPS may add VLNs to the VOSI list to be notified by the System whenever a VOSI passes a Tolling Point.
- 4.16.3.5 If the data is no longer available at the ORT Back Office, the special investigating officer shall request the information from a dedicated operator at the VPC BO.
- 4.16.3.6 No personal information will be supplied, e.g. Vehicle Owner, registered address and contact details, without a Section 205.
- 4.16.3.7 A procedure between the Employer's Representative, special investigation officers and SAPS (or other authorized parties) shall be agreed upon as to respond to queries, extract and analyse data, complete affidavits and testify in courts, should it be necessary.
- 4.16.4 **Section 205 (Subpoena)**
- 4.16.4.1 Should SAPS (or the authorized party) require information to use as evidence in a court case or need personal information of a Road User, a Section 205 (Subpoena) shall be served to the special investigating officer.
- 4.16.4.2 The special investigating officer shall request the data and prepare the affidavit within the period as indicated on the Section 205 and submit the signed affidavit to SAPS.
- 4.16.4.3 In case of an affidavit, raw data shall be kept should there be further enquiries in this regard.
- 4.16.4.4 A register shall be kept of all affidavits issued.
- 4.16.4.5 The Contractor shall report monthly, or as agreed between the Parties, to the Employer or his Representative on the number of queries and Section 205's received,

4.17 MAINTENANCE AND SUPPORT**4.17.1 Context**

4.17.1.1 This maintenance and support specification forms an integral part of the Employer's Requirements and must be read together with Part C3.2.1 – Contract: Scope of Works and Part C3.2.2 – Transitional Subcontract: Scope of Works Allocation, and with specific reference to Part C3.4 – Technical Requirements.

4.17.1.2 This maintenance and support specification contain specific requirements to be executed by the Contractor and/or by the Transitional Subcontractor for maintenance and support of the Toll System, including the VAS, which is referred to as the System Maintenance. This maintenance and support specification are therefore applicable to both the Parties, unless it explicitly addresses only one of the Parties.

4.17.1.3 The maintenance and support of the facilities, including electrical installations, mechanical structures and buildings, security, etc are not included in the scope of the System Maintenance, but resorts under the Facilities Maintenance. This Facilities Maintenance is the responsibility of the Contractor until such time that the Employer triggers the takeover of some parts of the facility maintenance obligations. The Contractor will make use of specialists from time to time for the Specialised Facility Maintenance services.

4.17.2 Applicable / Referenced standards

4.17.2.1 The maintenance and support shall be based on suitable industry standards like:

4.17.2.1.1 ITIL 2011 (framework of best practice in IT service management)

4.17.2.1.2 ISO/IEC 20000 (standard for IT service management)

4.17.3 Maintenance scope

4.17.3.1 The overall maintenance approach, responsibilities and general activities are to be contained in the OMP taking into account the requirements as indicated in this section. The OMP will indicate the applicable operations and maintenance manuals which will be provided.

4.17.3.2 The attached Annexure 1 (facility assets) and 2 (equipment or Plant assets) contains a description and categorisation of the different Assets whilst Part C4 – Site Information contains as-builds layouts and basic sections related to Employer facilities, and an overview of Employer's Equipment to be provided per facility, including power demands. The Annexure 1 and 2 indicates the following:

- (a) Description of the asset.
- (b) The Party that initially provided the assts (i.e. the Employer or Contractor).
- (c) The Party that is responsible for the asset management.

- (d) The Party responsible for breakdown or special maintenance payments.
- (e) The Party that is responsible for the insurance.
- (f) The classification of the assets in terms of Part C1 – Conditions of Contract.

4.17.3.3 The Contractor (through the Transitional Subcontractor for the duration of the Transitional Subcontract and through the New Toll Back Office supplier thereafter) shall be responsible for all the maintenance that consists of the monitoring, routine and breakdown maintenance and the reporting thereof, of the following:

4.17.3.3.1 Plant: All maintenance of the Toll System (hardware and software), Value Added Services (VAS) and other facilities consisting of:

- (a) Road Side Systems and equipment.
- (b) ORT Back Office systems and equipment.
- (c) TCH Back Office systems and equipment.
- (d) VPC Back Office systems and equipment.
- (e) Communications systems and equipment, excluding the communications backbone that has been provided by the Employer and which will be maintained by others.
- (f) Some shared services or systems are applicable to more than one (1) system, for example, the Call Centre resorts under the ORT, TCH and VPC Systems.

4.17.3.3.2 Facilities: All maintenance of the buildings and structures consisting of:

- (a) Central Operations Centre facility that houses the ORT, TCH and VPC Back Office functions.
- (b) Satellite Centres
- (c) The Technical Shelters
- (d) The Tolling Point gantry structures
- (e) Kiosk Customer Service Facilities
- (f) Dalpark Operations Centre
- (g) Mobile Operations Depots including the Mobile Payment Stations and Mobile Policing Vehicles.

4.17.3.3.3 Facilities: All maintenance of the Electrical and Mechanical Installations, consisting of:

- (a) Generator installations at the Central Operations Centre, Dalpark Operations Centre, Satellite Centres and the Technical Shelters.
- (b) UPS installations at the Central Operations Centre, Dalpark Operations Centre, Satellite Centres and the Technical Shelters.
- (c) Lightning protection installations.
- (d) All Distribution Boards.
- (e) All high mast and security lighting installations and HVAC (heating, ventilation, air-conditioning, cooling), installations at the ORT facilities.
- (f) All other Electrical and Mechanical installations such as high-tension equipment, SCADA systems, electrical reticulation and the like.

4.17.3.3.4 All handyman works

- (a) This includes any non-specialised maintenance work that may be required on a day to day basis, such as replacement of glazing and/or broken doors, painting touch-up's, blocked drains etc, until taken over by the Employer in accordance with Part C3.2.1.

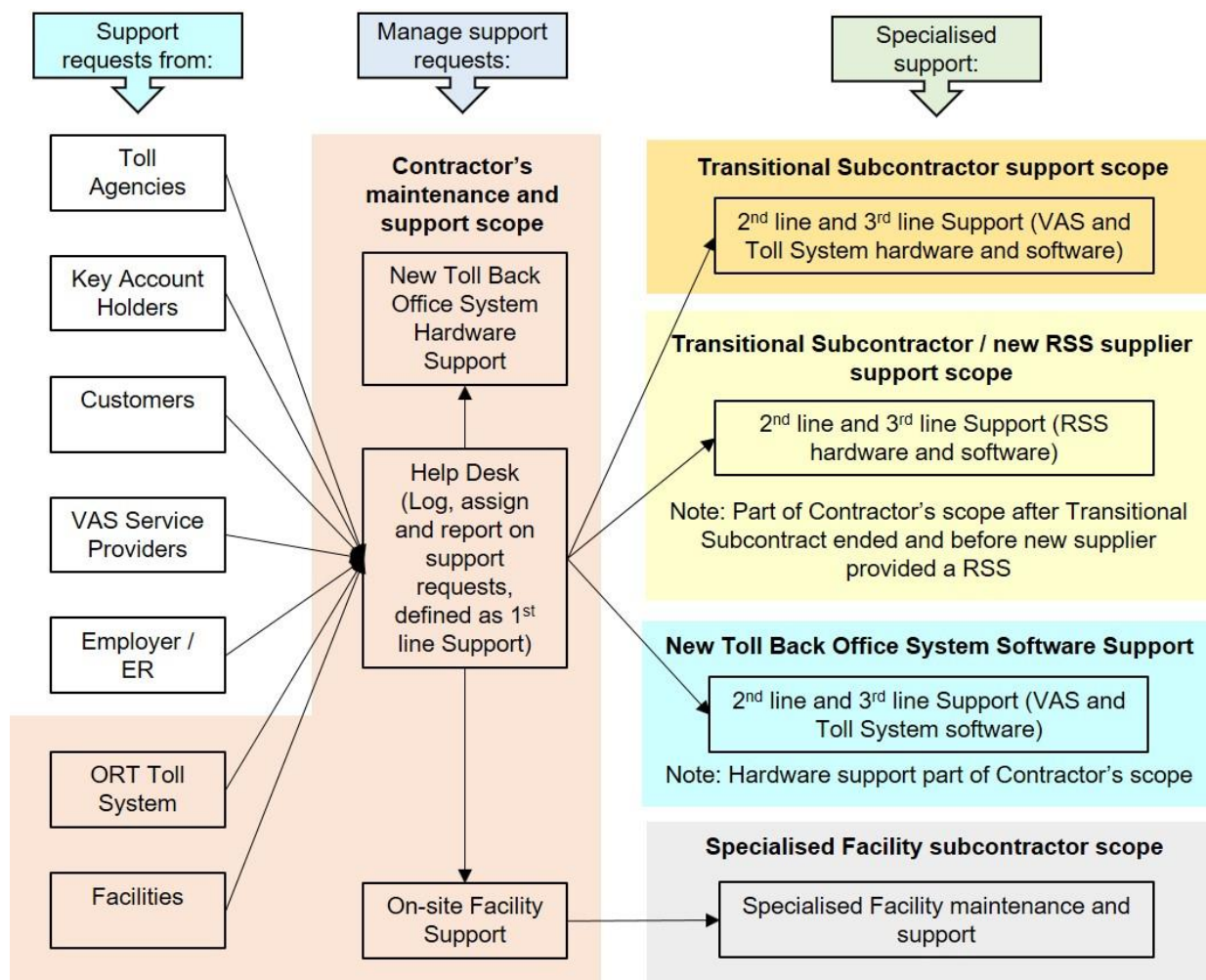
4.17.3.4 Section B6.12 of Part C3.2.1 – Contract: Scope of Works provides an overview of responsibilities in terms of Facilities Maintenance, and should be read together with this section. The Contractor shall also take into consideration his responsibilities with regards to the provision of canteen services to all staff and users of the Central Operations Centre as described in the referenced Scope of Works section.

4.17.4 **System Maintenance responsibility**

4.17.4.1 The System Maintenance, inclusive of the VAS and Toll System, will typically be allocated between the Contractor as General System Maintenance and the Transitional Subcontractor or New Toll Back Office System as Specialised System Maintenance, in accordance with the following structure and summarised in Figure 4-1.

4.17.4.2 The Contactor shall be responsible for the RSS maintenance and support after the conclusion of the Transitional Subcontract and before a new RSS is provided (if triggered by the Employer). During this period, the Contractor may be required to take over the maintenance personnel of the RSS in order to perform this maintenance.

4.17.4.3 The Contactor shall be responsible for the New Toll Back Office System hardware maintenance and support after the conclusion of the Transitional Subcontract. The New Toll Back Office System supplier will only be responsible for the software support.

**FIGURE 4-1: MAINTENANCE AND SUPPORT ALLOCATION****4.17.5 General System Maintenance**

- 4.17.5.1 1st line Support will be undertaken by the Contractor, and the Contractor shall ensure that all maintenance and support incidents are captured on the service desk (Help Desk) by the Contractor's Personnel. The criticality of the incident must be assessed and captured within the service desk.
- 4.17.5.2 The Contractor shall ensure that all maintenance and support incidents are investigated and diagnosed by the Transitional Subcontractor's maintenance technicians / personnel during the Transitional Subcontract and by the New Toll Back Office System supplier after the conclusion of the Transitional Subcontract.
- 4.17.5.3 The General System Maintenance, inclusive of the VAS and Toll System, shall as a typical requirement include the following:
- (a) Manage the maintenance and support function for the complete Toll System.

- (b) Capture and manage all maintenance and support incidents on the Help Desk, and update the Help Desk with the required information for incident reporting.
- (c) Assign maintenance and support incidents / tasks to the Transitional Subcontractor and ensure that incidents are rectified within the required timelines.
- (d) Ensure that the maintenance personnel and/or maintenance parties are capable to perform maintenance and support to the satisfaction of the Employer.
- (e) Ensure that support and maintenance personnel is on standby to ensure a 24-hour service capability.
- (f) Ensure the replacement and/repair all hardware and equipment to keep the system and assets operating as is intended.
- (g) Replace and/or repair all hardware and equipment to keep the system and assets operating as is intended, where the asset is under control of the Contractor.
- (h) Keep the asset register up to date with all repairs, movements and replacements.
- (i) Ensure configuration changes to the software are made when needed, for example, when the toll Tariffs need to be adjusted every year.
- (j) Provide frequent and regular maintenance reporting.
- (k) Manage and ensure all software upgrades, changes and patches are deployed in a responsible and proactive way.
- (l) Coordinate maintenance activities, deployments and changes.
- (m) Ensure all Toll System data are kept secure and available, through daily, weekly and monthly back-ups, archives and restores, as is required.
- (n) Ensure that the Transitional Subcontractor performs database monitoring, security and database administration functions.
- (o) Replace and/or repair all hardware and equipment to keep the system and assets operating as is intended, where the asset is under control of the Contractor.
- (p) Manage spares and/or service level agreements and the equipment dispatched to suppliers for repair.
- (q) Provide software support to all personnel, the Employer, Employer's Representative, auditors and other Third Parties that utilises or monitors the Toll System software.
- (r) Manage the physical and software access control to the Toll System and Toll System infrastructure (server rooms).

- (s) Ensure all Toll System documentation is kept up to date with the latest changes.
- (t) Utilise system monitoring to determine the hardware or server resource utilisation (for example, memory, CPU and storage utilisation), this to ensure that the performance of the Toll System and databases are not impacted by inadequate or over utilised resources.
- (u) Manage the general support and maintenance of data centres / server rooms.
- (v) Manage the general support and maintenance of Communication systems and WAN, excluding the fibre Communications Backbone provided by the Employer.
- (w) Attend to automatic incidents created out of the system monitoring software tools.
- (x) Manage incidents reported by RSS, ORT, TCH, VPC and VAS users, as well as external parties like other Toll Agencies.
- (y) Manage, update and monitor preventive maintenance schedules.
- (z) Strive to constantly maintain and improve maintenance service quality, through a constant cycle of monitoring and reporting.

4.17.5.4 Specialised System Maintenance

4.17.5.4.1 2nd line Support and 3rd line Support of hardware and software, inclusive of the VAS and Toll System, will be undertaken by the Transitional Subcontractor during the Transitional Subcontract.

4.17.5.4.2 The 2nd line Support and 3rd line Support of software, inclusive of the VAS and Toll System, will be performed by the New Toll Back Office System supplier after the conclusion of the Transitional Subcontract.

4.17.5.4.3 The Transitional Subcontractor and/or New Toll Back Office System supplier shall ensure that all incidents, maintenance and support tasks are planned and executed in accordance with the criticality. The Transitional Subcontractor and/or New Toll Back Office System supplier will have to report on every incident and the planned duration for resolving the incident.

4.17.5.4.4 The Specialised System Maintenance shall as a general requirement include the following:

- (a) Software and/or database modifications and changes.
- (b) Upgrades and/or deployments of patches to Operating Systems and Databases.
- (c) Assistance with software deployments and software changes.
- (d) Assist the Contractor with all hardware upgrades and replacements to ensure that the software is functioning correctly.

- (e) Replace and/or repair all hardware and equipment to keep the system and assets operating as is intended, where the asset is under control of the Transitional Subcontractor.
- (f) Assistance with all software support where the Contractor cannot successfully implement the configuration changes or rectify the defects/failures.
- (g) Ensure each release or upgrade is thoroughly tested and under strict configuration control and released via proper channels.
- (h) Keeping ESCROW, the recovery packs, etc up to date with all the deployed changes.
- (i) The resolution of all latent and patent VAS and Toll System defects within a reasonable time frame.
- (j) Keep all software manuals, release notes, specifications, etc up to date.
- (k) Provide and keep all infrastructure in place to execute remote support.
- (l) Provide for asset replacements.
- (m) Ensure that the maintenance personnel are capable to perform maintenance and support to the satisfaction of the Employer and that they receive adequate training.
- (n) Provide for workarounds when the incident or software problem cannot be rectified speedily.
- (o) Ensure that support and maintenance personnel is on standby to ensure a 24-hour service capability.
- (p) Execute preventive maintenance to ensure that the VAS and Toll System is functioning correctly
- (q) Strive to constantly maintain and improve maintenance service quality, through a constant cycle of monitoring and reporting.

4.17.6 **Facilities Maintenance responsibility**

4.17.6.1 The Facilities Maintenance will typically be allocated between the Contractor and the Specialised Facilities Maintenance Subcontractor, in accordance with the following structure.

4.17.6.2 The Facilities Maintenance will include day-to-day and ad hoc support services by the Contractor, this to maintain the overall health and effective operation of the facilities, by using the notifications on the Help Desk.

4.17.6.3 Facilities Maintenance

4.17.6.3.1 All Facilities Maintenance will be performed by the Contractor until all non-system touching aspects have been taken over by the Employer as and when triggered in accordance with Part C3.2.1 – Contract Scope of Works. The taking over of the various parts of the Facilities Maintenance by the Contractor will be in accordance with the Ramp-down/Ramp-up Transitioning. The Contractor shall ensure that all maintenance and support incidents are captured on the service desk (Help Desk) by the Contractor's Personnel. The criticality of the incident must be assessed and captured within the service desk. The Contractor shall ensure that all maintenance and support incidents are investigated and diagnosed by the Contractor's maintenance technicians / personnel. In case the Contractor's personnel cannot resolve the incident, then the Contractor shall hand over the incident to the Specialised Facility Maintenance Subcontractor through the service desk / ticketing system.

4.17.6.4 **Specialised Facility Maintenance**

4.17.6.4.1 2nd line and 3rd line Support duties will be undertaken by the Specialised Facilities Maintenance Subcontractor. The Specialised Facilities Maintenance Subcontractor shall ensure that all incidents, maintenance and support tasks are planned and executed in accordance with the criticality. The Specialised Facilities Maintenance Subcontractor will have to report on every incident and the planned duration for resolving the incident. These Specialised Facilities Maintenance Subcontractors will be paid through Provisional Sums allocated to Specialised Facilities Maintenance.

4.17.6.4.2 Specialised Facilities Maintenance includes the maintenance on generators, UPS systems, cooling and air conditioning systems, fire detection and suppression systems, SCADA and access control systems, irrigation systems, corrosion protection on structures, etc, where the Employer will approve or instruct the Contractor to undertake the work.

4.17.6.5 **VAS Maintenance**

4.17.6.5.1 The VAS Maintenance will form part of the Toll System maintenance.

4.17.6.6 **Specialised VAS Maintenance**

4.17.6.6.1 2nd line and 3rd line Support for the VAS will form part of the 2nd line and 3rd line Support for the Toll System.

4.17.7 **Response and Repair Times**

4.17.7.1 The Contractor, Specialised Facility, Transitional Subcontractor and New Toll System Back Office supplier will have to collectively ensure that the Response and Repair Times are adhered to, specifically when a repair activity is undertaken by more than one Party.

4.17.8 **Asset Replacement**

- 4.17.8.1 The Contractor shall ensure that the assets shall be replaced after the serviceable life of the equipment or hardware has expired, this in accordance with the replacement schedule provided by the Contractor and approved by the Employer. These replacements will be procured through the use of Provisional Sums.
- 4.17.8.2 Road Side System (RSS)
- 4.17.8.2.1 The RSS controllers have been replaced, but the RSS sensors and other devices are due for replacement within 1 year after the Commencement Date, however this may be extended at the Employer's discretion.
- 4.17.8.3 ORT, TCH and VPC systems
- 4.17.8.3.1 The server equipment was replaced in 2016, and the next replacement cycle should occur in 2021, although the Employer can at his own discretion extend this until 2022, should the server hardware still be functioning adequately.
- 4.17.8.3.2 The network equipment was replaced in 2018, and the next replacement should occur in 2024 (based on a 6-year replacement cycle), although the Employer can at his own discretion extend this until 2025, should the server hardware still be functioning adequately.
- 4.17.8.3.3 The workstations have not been replaced since the start. The Contractor shall make provision for the replacement of all workstations and the Transitional Subcontractor shall be responsible for the installation of all the necessary software on the new workstations.
- 4.17.8.3.4 The list of all the assets, the age of the assets as well as the initial asset value are available within the asset register.
- 4.17.8.4 Facilities
- 4.17.8.4.1 The facility equipment will not be subject to Asset Replacements, but will be replaced as and when needed, this through the use of Provisional Sums and as approved by the Employer.
- 4.17.9 **Maintenance overview**
- 4.17.9.1 The maintenance of all the Assets covers a wide area consisting of maintenance of the Employer's Assets as well as the Systems and equipment maintenance (generally defined as Plant) that the Contractor is providing through the Design-Build Sections of the Contract. The table below shows the different maintenance areas and indicates how it will be dealt with in the Contract.

TABLE 4-2: MAINTENANCE OVERVIEW – RESPONSIBILITY

MAINTENANCE ASPECT	EMPLOYERS FACILITIES and EQUIPMENT	ASSETS PROVIDED BY CONTRACTOR DURING DESIGN-BUILD (E.g. Plant, Contractor's Documents)
Maintenance: All routine, corrective, breakdown and handyman maintenance (excl. corrosion control and complete repainting of buildings).	Contractor, until Employer takes over when triggered	Contractor
Maintenance: Corrosion control of structures and complete repainting of building facilities	Contractor through Provisional Sum and instruction by Employer	N/A
Specialist maintenance of Employers Facility Equipment. (e.g. generators, UPS, air-conditioning etc) as listed in Annexure 1.	a) During Transitional Period: Contractor to manage required maintenance through Transitional Subcontractor and current specialist maintenance sub-contracts in place. b) After Transitional Period: Contractor through Provisional Sum, appoint specialist contractor and manage required maintenance.	N/A
Specialist maintenance of Employers VAS and Toll System Equipment, as listed in Annexure 1.	a) During Transitional Period: Contractor to manage required maintenance through Transitional Subcontractor. b) After Transitional Period: Contractor for RSS maintenance, before new RSS is provided (if triggered). c) After Transitional Period: Contractor through New Toll Back Office System supplier and new RSS supplier (if triggered).	a) N/A b) N/A c) Hardware assets by Contractor through Provisional Sum
Variations (expansions, changes and upgrades) requested by Employer	Contractor through Variation.	Contractor through Variation, with assistance from Transitional Subcontractor as applicable

MAINTENANCE ASPECT	EMPLOYERS FACILITIES and EQUIPMENT	ASSETS PROVIDED BY CONTRACTOR DURING DESIGN-BUILD (E.g. Plant, Contractor's Documents)
Insurance	Contractor, except where specifically shown as Employer	Contractor
Replacement of Assets	Contractor through Provisional Sum	Contractor
Disaster Recovery	Contractor. (Where Contractor has an insurance responsibility).	Contractor

- 4.17.9.2 The Contractor shall, as part of his OMP indicate the procedural manuals that will be provided for the ongoing maintenance, for approval by the Employer. The manuals shall contain a list of the minimum spares levels and tools that shall be available at any time on-site in order to maintain the complete Toll System.
- 4.17.9.3 The Contractor shall, if it wants to utilise Service Level Agreements with OEMs and equipment suppliers for spares and tools, obtain approval from the Employer for such Service Level Agreements. These Service Level Agreements shall ensure adequate spare levels to comply with the specified Response and Repair Times.
- 4.17.9.4 The Contractor shall perform all maintenance including, without limitation, routine, corrective and breakdown maintenance, and keep all assets in a good working condition in a manner sufficient to ensure the required performance of such assets in terms of this Agreement. The Contractor shall further ensure that the Employer's Assets are appropriately managed and maintained. The maintenance shall be of such a standard to enhance the desired public image of the Employer.
- 4.17.9.5 The Contractor shall carry out all maintenance work as described herein as from the Commencement Date in accordance with the Ramp-down/Ramp-up Transitioning under Part C3.2.1.
- 4.17.9.6 Routine Maintenance shall include, without limitation, the systematic inspection, cleaning, making of minor adjustments, lubricating, testing, measuring and recording, replacing of minor components or consumables and other similar measures necessary to prevent wear and/or to assure reliability of the assets.
- 4.17.9.7 The Contractor shall provide a detailed hardware maintenance and software support manual describing the preventative and breakdown strategy of all equipment constituting the Plant. This shall include, but not be limited to the daily, weekly, monthly, six-monthly and annual maintenance tasks.
- 4.17.9.8 Corrective maintenance shall include, without limitation, scheduled overhauls, replacement of worn or failed components, correction of problems found during Routine Maintenance of the assets and any other similar procedures necessary to prolong economic life and/or assure

reliability. This includes the subsequent repair or replacement of any defective components or major spares.

4.17.9.9 Breakdown maintenance shall include, without limitation, the unscheduled restoration of assets to a condition equal to original or design capacity in the event of a random asset (including Equipment) fault and includes the subsequent repair or replacement of any components or major spares found to be defective during breakdown maintenance.

4.17.9.10 In accordance with Part C1 and the FIDIC Conditions of Contract, Clause 7, the Employer may at any time during the Works Period inspect and test any asset. Should any replacement or repair be required, the Contractor shall act in terms of the aforementioned Contract clause. The Contractor shall specifically take note of the performance requirements as indicated in Part C3.5.1 – Contract Performance Measurement with regards to maintenance.

4.17.9.11 All electrical and mechanical maintenance shall be supervised and managed by a registered Person in terms of the Occupational Health and Safety Act, 1993, Electrical Installations Regulations. The registered person shall provide a technical report on the electrical and mechanical installations as required in the applicable legislation and the report shall include a Certificate of Compliance.

4.17.10 **Plant: ORT Equipment and Systems**

4.17.10.1 This section deals with the maintenance of the Plant, i.e. ORT Back Office System, VPC Back Office System and TCH Back Office System, Mobile Payment Stations.

4.17.10.2 Specific maintenance requirements of the ORT equipment and Systems are contained in Part C3.4.2 – General System Specification.

4.17.10.3 The Contractor shall react on all the maintenance related incidents as automatically generated by the Toll System in order to notify the maintenance manager of such incidents.

4.17.10.4 The Contractor shall draft, for the use and implementation of the ORT operations, a maintenance manual that shall contain the procedures to be followed in case of system generated incidents and / or breakdowns that occur.

4.17.10.5 The Contractor shall also be responsible for the maintenance and support of the TAS server, database and software to ensure that the relevant data, as specified in Part C3.4.4 – Open Road Tolling Back Office System Specifications, is continuously transferred from the ORT Back Office to the TAS server.

4.17.11 **General Maintenance Objectives**

4.17.11.1 The high-level maintenance objectives for the successful operation of the facilities and Toll System are, inter alia:

4.17.11.1.1 The Contractor shall comply with the Response and Repair Time, but also incorporate an acceptable level of work quality;

4.17.11.1.2 The resolution of all latent and patent facilities and Toll System defects within a reasonable time frame, this with the support of the Transitional Subcontractor;

4.17.11.1.3 Facilities and Toll System to perform at toll industry accepted performance and processing rates and as specified in Part C3.5.1 – Contract Performance Measurement;

4.17.11.1.4 The efficient cooperation between the ORT, TCH and VPC, the Transitional Subcontractor, New Toll Back Office System supplier, specialists, and the maintenance teams in pro-actively and efficiently identifying and addressing problems with the facilities, Toll System, Software and/or system Interfaces;

4.17.11.1.5 The availability of suitably skilled experts, within the ranks of the Contractor to ensure that Facilities, VAS and the Toll System, inclusive of Software and/or System Interfaces remain operationally available at all times.

4.17.12 **Support Services**

4.17.12.1 The Contractor shall provide, inter alia, the following support Services:

4.17.12.1.1 A Help Desk service to receive, log and administer all support requests and system failures relating to the Toll System, Toll System Interfaces or any facility;

4.17.12.1.2 Specialist technical support services relating to the VAS, Toll System and all Toll System Interfaces or any facility;

4.17.12.1.3 Technical assistance, support and cooperation to the maintenance manager/(s) so as to ensure that the source of all facility, VAS and Toll System errors and/or faults is identified and timeously remedied;

4.17.12.2 Disaster Recovery Services;

4.17.12.3 Data Base Management services.

4.17.13 **Support Service Levels (Repair Times)**

4.17.13.1 In providing the Support Services, the Contractor shall be measured against the repair (fixing) times detailed in Part C3.5.1 – Contract Performance Measurement.

4.17.13.2 The Contractor shall make available sufficient resources to assist with the timeous resolution of all maintenance and support requests within the required Repair Times.

4.17.13.3 With regards to response and Repair Times the Contractor shall conform to the performance requirements in Part C3.5.1 – Contract Performance Measurement.

4.17.14 **Help Desk**

- 4.17.14.1 The Help Desk shall record and track all system failures, incidents and support requests logged by the ORT, TCH and VPC operations, including VAS.
- 4.17.14.2 The Help Desk shall provide Help Desk Services on a 24 hour, 7 (seven) day a week, basis, which services shall include, amongst others: assistance on day-to-day Toll System and Toll System Interface issues, non-System issues such as electrical and mechanical issues, facility maintenance, user errors, providing end user training, trouble-shooting, repetitive tasks and other traditional end-user support services and the like.
- 4.17.14.3 The Help Desk shall allow for support requests to be logged and tracked electronically. The Contractor will ensure that the Help Desk is capable of providing a real-time status on each problem logged, including the appropriate Response and Repair Times. For the sake of clarity, the Help Desk shall maintain a full audit report of all support actions and requests, which records it shall store for at least 3 years. The Help Desk shall be able to accommodate ad-hoc requests as well as filtering of data for trend analysis.
- 4.17.14.4 Once a fault is reported, the Help Desk shall verify the type of fault (Category 1, 2 or 3) and shall forward the support request directly to the Contractor's support staff for action and resolution. The Help Desk shall ensure that the Contractor's Support staff receive and acknowledge all support requests and this fact will also be recorded and logged in the Help Desk system.
- 4.17.14.5 The Contractor shall provide first line technical and/or remote assistance in identifying and resolving problems relating to the facility, VAS, Toll System and Toll System Interfaces.
- 4.17.14.6 The Contractor will provide monthly reports on the performance of the Help Desk. This will include information such as:
- (a) Number of calls received;
 - (b) Type of support requests received, problems that occurred and support provided;
 - (c) Actual Response Times versus minimum Response Times, including any relevant explanations;
 - (d) Actual Repair Times versus minimum Repair Times;
 - (e) Support calls resolved and closed on the Help Desk, including any relevant explanations;
 - (f) Number of outstanding support calls;
 - (g) Time spent on all support requests and other tasks.

4.17.15 **Disaster Recovery**

- 4.17.15.1 The Contractor shall provide Disaster Recovery services in the event of a Disastrous Event.

- 4.17.15.2 Disaster Recovery shall be in accordance with international ISO standards and SA Banking Industry Standards.
- 4.17.15.3 Suitable spares and replacement parts and the management thereof relating to any equipment shall be available for Disaster Recovery.
- 4.17.15.4 The Contractor shall perform at least 1 (one) Disaster Recovery event per year, or as is required from the auditing scope, this to verify that the systems can fail-over and that the Operations can operate from an alternative location.
- 4.17.15.5 Specific responsibilities of the Contractor shall also include, amongst others:
- (a) Recovery of Data and Toll System configuration, in relation to the Toll System should a Disastrous Event occur.
 - (b) Ensuring that an updated system recovery pack is made available within 7 days of a new software release or patch becoming available, and installed and tested within another 7 days.
 - (c) After a Disastrous Event, conducting a post event meeting to understand the cause of the event, to develop plans to eliminate or mitigate its future occurrence, to facilitate the revival of the performance of services and to discuss plans for resolution of any performance problems.
 - (d) As part of the OMP, the Contractor shall provide a full Disaster Recovery Plan, inclusive of the Disaster Recovery organisation plan, procedures indicating specific drills, procedures aimed at prevention of data loss, etc.
- 4.17.16 **Spares and Replacement Parts**
- 4.17.16.1 The Contractor shall provide and keep in stock all necessary spares and/or replacement parts or suitable OEM service level agreements and tools to ensure full compliance with the maximum Response and Repair Time requirements.
- 4.17.17 **Routine Maintenance Services**
- 4.17.17.1 The Contractor shall provide the following Routine Maintenance services in accordance with the relevant performance requirements:
- 4.17.17.1.1 The planning and scheduling of all Routine Maintenance on the VAS and Toll System, consisting of daily, weekly, monthly, bi-monthly, 6-monthly and annual maintenance tasks.
- 4.17.17.1.2 The ongoing identification and correction of latent defects and errors in the VAS and Toll System;

4.17.17.1.3 The provision, installation and configuration of updates, patches and bug fixes relating to the VAS and Toll System as these become available from time-to-time;

4.17.17.1.4 The ongoing identification and analysis of problems and inefficiencies in the VAS and Toll System with the view of developing and introducing ongoing upgrades and enhancements to the VAS and Toll System so as to increase efficiencies and eliminate or minimise the occurrence of problems and errors;

4.17.18 **Management of Defects, Upgrades, and Changes**

4.17.18.1 The Contractor shall provide for system change control, which includes the control and management of changes to the VAS and Toll System, to the environment in which the Toll System is provided, to telecommunication services, telecommunication facilities, hardware and/or network facilities, etc;

4.17.18.2 The Contractor shall maintain and administer a schedule of all known defects in the VAS and Toll System, together with a status report on the progress of addressing and repairing each defect, and will make this schedule available to the Employer once a month.

4.17.18.3 The Contractor warrants that it shall use its best endeavours to ensure that the delivery, installation or configuration of upgrades and/or enhancements to the VAS and Toll System will not interfere with the day-to-day running of the Toll System as a whole, and that the planning and execution of such work, if it has a traffic impact, it shall be done outside any peak periods and as approved by the Employer.

4.17.18.4 Should the Contractor foresee that the delivery, installation or configuration of upgrades and/or enhancements to the Toll System is likely to interfere with the ordinary use of the Toll System, the Contractor shall duly inform the Employer by way of Notice.

4.17.18.5 The delivery, installation and configuration of upgrades and/or enhancements to the VAS and Toll System (a "system change") will be co-ordinated with the Employer and in this regard the Contractor shall conduct technical assessments, together with the Employer on any proposed system change, including any change that may be necessary to 3rd party software;

4.17.18.6 Prior to implementing a system change, conduct fully integrated tests to be signed off by the Employer in a controlled manner and also provide the Employer with a comprehensive assessment of risks associated with the changes;

4.17.18.7 The Contractor shall maintain a full suite of development software and test equipment and machines so that all testing can be done in a non-production environment before it is migrated to the production system. For any major upgrade require a test plan and Employer approval.

4.17.18.8 The Contractor shall coordinate as necessary with the other Toll Agencies who use the same Tags on their routes in order to ensure that any system change shall not adversely affect those agencies.

4.17.18.9 Record all configuration setting changes that may occur as a result of a system change;

4.17.18.10 Updating the software documentation to keep it current and accurate with any system changes, including the incorporation of all new functionality;

4.17.19 **Third-Party Software Management**

4.17.19.1 Any new or upgraded third-party software shall be logged on the Asset Management System.

4.17.19.2 The Contractor shall at all times for the duration of the Contract maintain a schedule of all 3rd party Software necessary for the proper and effective operation of the Toll System and ensure that all licences remains valid, legal and paid-up.

4.17.19.3 The Contractor shall ensure that the schedule of all 3rd party software include the following information:

- (a) The identity and contact details of the official licensee of the software;
- (b) The identity and contact details of the official licensor and/or vendor of the 3rd party software;
- (c) The Commencement Date of the software license and Service Level Agreement, if applicable;
- (d) The expiry date of the software license and Service Level Agreement;
- (e) The projected cost for renewing the software license and Service Level Agreement;
- (f) The standard operating environment (SOE) in which the software is installed and operates, including what components or modules of the VAS and Toll System is reliant on the 3rd party software; and
- (g) The Contractor shall ensure that appropriate back-to-back Service Levels Agreements are in place with the vendor/licensor of the 3rd party software, so as to ensure that the Contractor is able to meet its obligations in terms of this Agreement.
- (h) The Contractor shall ensure that all 3rd party software licenses are fully paid up a year in advance. At the end of the Contract Period as part of Hand-Back, proof to this effect is to be provided.
- (i) The Contractor shall ensure that the current versions of the software are fully warranted and supported by the vendor and the user licence is current.
- (j) The Contractor shall schedule software version updates required to maintain the vendor warranty and support services.

4.17.20 **Skilled staff**

4.17.20.1 The Contractor shall at all time use adequate numbers of suitably trained, experienced and skilled staff to provide the maintenance and support work and to meet the required Service Levels.

4.17.21 **Maintenance and support meetings**

4.17.21.1 As from the Commencement Date the following meetings shall take place

4.17.21.1.1 Ad-hoc meetings with the Employer as reasonably required to ensure that the Services are performed effectively;

4.17.21.1.2 Monthly maintenance and support meetings together with the Transitional Subcontractor to ensure that the Services are performed effectively;

4.17.21.1.3 A quarterly Executive/Senior management meeting held at the Employers offices to review relevant relationship, Contract management and performance issues.

4.17.22 **VAS and Toll System Availability**

4.17.22.1 The VAS and Toll System Availability shall be measured as indicated in Part C3.5.1 – Contract Performance Measurement.

4.17.23 **Facility maintenance: buildings and structures**

4.17.23.1 Maintenance of the following aspects shall be done by the Contractor on a daily basis. The Contractor shall ensure that:

4.17.23.2 Buildings are kept in a clean, litter-free, hygienic, safe and tidy condition, internally and externally. Without limitation, the Contractor shall ensure that, inter alia, all doors (hinges, handles and locking mechanisms) and windows (hinges, handles and locking mechanisms) toilets, showers, basins, urinals and geysers are maintained in Good Working Condition.

4.17.23.3 Parking areas, paving and access roads are kept in a clean, litter-free, hygienic, safe and tidy condition, free of weeds, vegetation and debris; and

4.17.23.4 All drainage structures and channels are kept clean of debris and litter to ensure that they function properly and in the manner intended.

4.17.23.5 All perimeters and security fencing and all access gates are maintained in good working order and condition.

4.17.23.6 All activities that are necessary to ensure that all the assets are clean, tidy and generally in good working order and condition.

4.17.24 **Painting and Corrosion Protection**

- 4.17.24.1 The Contractor shall maintain all paintwork of all Assets in a good condition and shall treat and/or remove any flaking paint and/or rust from such structures, such as at but not limited to the Gantries and Technical Shelters. Painting shall be performed as specified in the Part C3.4.1 – Standard Specification for Operations and Maintenance: E&M Specifications.
- 4.17.24.2 The Contractor shall ensure that patch-up corrosion protection, where needed, is being done on all structural steel-work and steel roofing.
- 4.17.24.3 The Contractor shall appoint a competent registered corrosion specialist to submit a comprehensive corrosion protection report to the Employer once every 3 (three) years.
- 4.17.24.4 The above-mentioned report shall indicate the corrosion status of the ORT facilities, (including water reservoir, fencing, building elements, poles and masts, structural steelwork, etc.) and contain recommendations regarding the paint systems required to protect the assets. On approval by the Employer, the Contractor shall perform all necessary maintenance Works for corrosion prevention.
- 4.17.25 **Structures**
- 4.17.25.1 The Contractor shall maintain all structures, including all buildings, gantry structures, Technical Shelters, canopies and the like in a safe condition.
- 4.17.25.2 The Contractor shall ensure that all rust be treated, water leaks repaired on occurrence, including leaking building roofs, and repairs effected of all joints and structural defects due to normal wear and tear forthwith upon their occurrence.
- 4.17.26 **Gardens**
- 4.17.26.1 The Contractor shall keep all gardens in a neat condition such as to project a good and professional image to the general public.
- 4.17.27 **Buildings and Structures Facilities Maintenance Check-list**
- 4.17.27.1 A check-list and scoring-system shall be used to determine on a qualitative basis, the level of maintenance that is being performed by the Contractor. Refer to Part C3.5.1 – Contract Performance Measurement.
- 4.17.28 **Electrical and mechanical (E&M) maintenance**
- 4.17.28.1 The Contractor shall perform all monitoring, checks and Routine Maintenance on a regular basis as indicated in the approved OMP. He shall ensure that specialised maintenance on systems such as the generator, UPS, air-conditioning etc, shall be performed by specialist sub-contractors.
- 4.17.28.2 All the E&M maintenance shall comply with Part C3.4.1 – Standard specifications for Operations and Maintenance: E&M Specifications. Also refer to Part C3.2.1 – Contract: Scope of Works sections B6.12.4 and B6.12.5 with regards to special maintenance services.

4.17.28.3 Specialised Facilities Maintenance

- (a) The specialist maintenance responsibilities are indicated in Part C3.2.1 – Contract: Scope of Works, section B.6.13. The following is a summarised list of Employers Equipment and other assets that will require specialist maintenance services, as contained in Annexure 1 of this document:

Generators; UPS's; fresh air supply and ventilation systems; air conditioning installations; SCADA systems; lifts in buildings; garden irrigation and sprinkler systems; water features with their pumps and control equipment; sculptures requiring specialist maintenance; industrial kitchen equipment; security fencing and gates including motorised gates; water storage reservoirs; booster pumps; borehole pumps; fire extinguishers; and water treatment plants. Further, all security systems and cameras, access control systems and fire suppression systems that were installed and provided by the Employer will also fall under specialist maintenance.

- (b) The Contractor shall assist and co-operate with the Transitional Subcontractor and the specialist maintenance Subcontractor to perform first-line maintenance on the assets requiring specialist maintenance. The first-line maintenance shall include notifications and call-outs to the specialist maintenance subcontractor/s, implementation of any possible risk mitigation measures required during a breakdown and performance of regular basic checks and monitoring e.g. monitoring of fuel and oil levels of generators. The Contractor shall liaise with the specialist maintenance subcontractor/s before commencement of a specialist maintenance contract on the required first-line maintenance to be performed by the Contractor to ensure optimum functionality and successful operations of the particular Employers Equipment and other assets.
- (c) Table 5-1 and 5-2 in Annexure 1 provides a comprehensive list of possible assets that may be provided by either the Employer or Contractor. This list indicates the maintenance responsibilities of the Contractor.

4.17.29 Earthing tests: 6 (six) monthly reports

- 4.17.29.1 The Contractor shall perform, by suitably skilled Persons, two earthing tests per annum at each facility, including the Gantries, of which one shall be performed at the height of the dry season and one during the rainy season. The Contractor shall provide the Employer of the procedure and methodology of the earthing tests to be performed at the various Sites, for approval of the Employer. The Contractor shall provide the Employer with and as-built drawing indicating the test points with the test values obtained at the earth node. Each earth node shall be numbered that can be referred back to a comprehensive test report. The comprehensive test report shall be updated with every earthing test and submitted to the Employer every six months.
- 4.17.29.2 The earthing nodes will be tested as indicated on the as-built drawings with the values on the as-built drawings taken as the base values. Any changes in the earthing values will be investigated and corrective action motivated by the Contractor.

4.17.29.3 The Contractor shall also include a soil resistivity test in their six-monthly earthing report. The final earthing report to be approved by the Employer with the option to add or change the report when required.

4.17.29.4 All historical records shall be made available to the Next Contractor at the Completion Date.

4.17.30 **Lighting**

4.17.30.1 The Contractor shall replace all lighting lamps as per replacement intervals indicated in the OMP, and approved by the Employer. The lamp replacement shall include replacement of lenses and reflectors, and checking of seals, if necessary.

4.17.30.2 The Contractor shall maintain the lighting installation on a group lamp replacement maintenance system at all the ORT facilities. The Contractor shall use energy efficient lamps as far as possible.

4.17.30.3 Lighting maintenance undertaken by the Contractor shall be done according to SANS ARP 035: 2014

4.17.30.3.1 Group lamp replacement intervals shall be in accordance with acceptable standards and contained in the maintenance manuals. The Contractor shall provide the Employer on a bi-monthly basis with a report on the group lamp replacement and indicate when the next replacement is due per lamp type.

4.17.31 **Weekly inspection and test run of generators**

4.17.31.1 The Contractor shall inspect and test run the generators (mains failure) for a minimum of 5 (Five) minutes, on a weekly basis and for 30 (Thirty) minutes on a bi-monthly basis for the duration of this Agreement to identify any defects. All defects shall be noted in a logbook and reported to the Employer timeously and carry out corrective maintenance as required.

4.17.31.2 The Contractor shall also check and verify that the UPS and electronic equipment is functioning according to specification during the test run of the generator and perform corrective maintenance as required.

4.17.32 **Day-to-day handyman work**

4.17.32.1 The Contractor shall be responsible for all handyman type of maintenance at the Central Operations Centre, Dalpark Operations Centre, Toll Gantries and Technical Shelters, Customer Services Kiosks, Enforcement Depots and Mobile Payment Stations.

4.17.32.2 This maintenance work generally consists of work that requires lower skilled resources and typical examples of such handyman work are repair of:

(a) Window glazing

(b) Doors, including hinges and locks

- (c) Ceilings
- (d) Roofing
- (e) Gutters
- (f) Plumbing
- (g) Security gates
- (h) Security fencing
- (i) Built-in cupboards and furniture
- (j) Window blinds
- (k) Carpets, Floor and wall tiles
- (l) Touch-up painting and the like.

4.17.33 **Maintenance and support liability:**

4.17.33.1 The maintenance and support responsibilities shall be in accordance with Part C3.2.1 – Contract: Scope of Works and Part C3.2.2 – Transitional Subcontract: Scope of Works Allocation.

4.17.33.2 The philosophy of the current performance measurement is in essence that Contract performance is measured through a series of KPI's per Entity, and that the resultant Performance Adjustments are applied through the various Interim and Final Payment Certificates. Should Performance Adjustments occur due to maintenance and support related issues by the Contractor or the Transitional Subcontractor, or as a result of any Toll System performance issues, those specific Performance Adjustments, will be applied in accordance with Part C3.5.1 for the Contractor and/or the Transitional Subcontractor.

4.17.33.3 Similarly, should the Contractor's actions with regards to maintenance and support cause any losses or damages, then those losses and damages will be applied in accordance with Part C3.5.1 for the Contractor and/or the Transitional Subcontractor.

4.17.34 **Maintenance of Mobile Payment Stations**

4.17.34.1 The Contractor shall ensure that the MPS's are maintained in such a manner that each MPS remains roadworthy and free from dents and scratches or any other damage.

4.17.34.2 The mechanical maintenance and the frequency of the maintenance of each MPS shall be done in accordance with the requirements of the manufacturer.

4.18 LANE CLOSURES

- 4.18.1 All Lane closures for all maintenance purposes (facilities and system) shall be arranged, managed and executed through the Routine Road Maintenance (RRM) contractor as and when required by the Contractor or instructed by the Employer.
- 4.18.2 The maximum length of a Lane closure at any Tolling Point shall be 1 km per Lane, consisting of no longer than 500m upstream and 500m downstream. Should a Lane be closed for a longer distance than 1 km, it shall be regarded as an additional Tolling Point Lane closure.
- 4.18.3 Lane closures shall follow the following rules:
- 4.18.3.1 Closure of a shoulder with the adjacent outside Lane shall be considered as a single Lane closure for the purpose of a Lane rental.
- 4.18.3.2 When any middle Lane is closed, the traffic stream shall not be split to the open Lanes both sides of such a closed Lane. The entire traffic stream shall be directed to either the one or other side of the closed Lane by closing additional Lanes.
- 4.18.3.3 In addition, for carriageways with 4 Lanes per direction:
- 4.18.3.3.1 A maximum of 2 Lanes may be closed.
- 4.18.3.3.2 Any middle Lane closure shall be accompanied by the closure of the adjacent outside Lane.
- 4.18.3.4 In addition, for carriageways with 5 Lanes per direction:
- 4.18.3.4.1 If the centre Lane requires closure, the 2 outside (slow) Lanes shall also be closed, i.e. a maximum of 3 Lanes closed.
- 4.18.3.5 In addition, for carriageways with 6 Lanes per direction:
- 4.18.3.5.1 A maximum of 3 Lanes may be closed.
- 4.18.3.6 If and when the new RSS system is triggered by the Employer, the Lane closure costs will be paid for under a Provisional Sum. Lane closures instructed by the Employer or required by the Contractor due to incidents outside of the Contractor's control shall also be covered under this Provisional Sum. In addition, the Contractor shall be allowed a maximum of 500 hours for his normal maintenance for both facilities and systems during the Project duration. The hours allowed for Lane closures shall include, for example, installation, calibration and for all testing purposes. The Contractor is allowed to install the RSS equipment on the gantries under live traffic, however taking into account the strict safety requirements.
- 4.18.3.7 Should a Lane be closed for any reason other than the above or the Contractor exceeds the allowed maximum hours, the Lane closure costs for the RRM contractor will be for the Contractor's costs at the applicable RRM rates. Should the Employer order a Lane closure

due to failure of the Contractor to perform any test or calibration successfully, the Lane closure shall be considered to be a Lane closure at the cost of the Contractor.

4.18.3.8 The Contractor shall only be allowed to close the roadway (all the traffic Lanes in a direction) under special circumstances, which closure shall be subject to the Employer's approval.

4.18.3.9 The peak, off-peak and night hours are shown below:

No Lane closures will be allowed during any peak-hours on weekdays and Saturdays, unless approved by the Employer. If Lane closures during the peak hours occur, a Performance Adjustment per Lane-hour will be applied as indicated in Part C3.5.1 – Performance Measurement.

TABLE 4-3: LANE CLOSURE HOURS

Day	Peak hrs (no Lane closures allowed)	Off-Peak hrs	Night hrs
Weekdays: Monday to Friday	05:00 – 20:00	N/a	20:00-05:00 (or 06:00 Saturday)
Saturdays	06:00- 14:00	14:00-20:00	20:00-06:00 (Sunday)
Sundays and public holidays	N/a	06:00-20:00	20:00-05:00 (Monday/ weekday)

4.19 PERFORMANCE MONITORING

4.19.1 Performance Monitoring

- 4.19.1.1 Performance monitoring shall be performed in accordance with Part C3.5.1 – Contract Performance Measurement.

4.20 REPORTING

4.20.1 Introduction

- 4.20.1.1 All reports listed in this section shall be submitted to the Employer in an electronic medium, i.e. CD/DVD/e-mail in a format as proposed by the Contractor and approved by the Employer.
- 4.20.1.2 The Employer shall be able to access standard reports on demand using a friendly user interface. However, if requested, the Contractor shall provide to the Employer any ad-hoc report requests, on standard system reports, within 24 hours.
- 4.20.1.3 Reports shall indicate which data, if any, is not yet complete or final. The report generation dates shall be indicated on the reports and where statistics or summaries are involved, it should clearly indicate the representative period of the report.
- 4.20.1.4 The principle of the reporting shall be that summary reports shall be available online that drill down capabilities exist to obtain more detailed data.
- 4.20.1.5 Reporting is required on an ad hoc basis, monthly and annually as indicated below:

TABLE 4-4: ORT REPORT REGISTER

No.	Report Name	Purpose	Minimum Information	Frequency
4.20.1.6 Traffic Reports				
a)	Daily and Monthly Traffic Report	Reports on the daily and monthly Traffic per Vehicle Class	<ul style="list-style-type: none"> Total traffic per Vehicle Class per hour, day and month per Tolling Point Total traffic for all Tolling Points Reporting from ORT Back Office System 	Monthly
4.20.1.7 Transaction Processing Reports				
a)	ORT Back Office Transaction Record Reconciliation Report	Reports on Transaction Record reconciliation information per calendar day	<ul style="list-style-type: none"> Transaction Records generated at the RSS Infrequent User Transaction Records Transaction Records to be processed, e.g. Transaction Records waiting for Manual Validation 	Monthly

No.	Report Name	Purpose	Minimum Information	Frequency
			<ul style="list-style-type: none"> Transaction Records transferred to the TCH System Transaction Records of Technical Loss Duplicated or Technical Loss Framing errors, rejected by the TCH Reporting from ORT Back Office System 	
b)	Transaction Record Details	To resolve queries on a Transaction Record and the relevant images	<ul style="list-style-type: none"> Transaction Record information for a specific VLN, eTag, Tolling Point or Account for a specific period. Image information (if available) Reporting from ORT Back Office System 	Ad Hoc
c)	Class Discrepancy Acknowledgements	To monitor the acknowledgements of discrepancies per Tolling Point.	<ul style="list-style-type: none"> Unacknowledged discrepancies Bulk (Forced) acknowledged discrepancies Manually acknowledged discrepancies Semi-automatically acknowledged by the system Discrepancies automatically acknowledged by the system Reporting from ORT Back Office System 	Ad Hoc
d)	Image Processing	Reports on the ANPR and Manual Validation processing statistics per Tolling Point	<ul style="list-style-type: none"> Percentage of automatic reads (ANPR process) Percentage of manual reads (Manual Validation process) Percentage of unsuccessful reads due to equipment error (Non-Compliant) Percentage of unsuccessful reads not due to equipment error (Incomplete) 	Ad Hoc

No.	Report Name	Purpose	Minimum Information	Frequency
			<ul style="list-style-type: none"> Reporting from ORT Back Office System 	
e)	Manual Validation Process Tracking	To report on the disposition codes of images during Manual Validation process, together with the Manual Validation processing statistics	According to the disposition codes of Manual Validation, e.g. <ul style="list-style-type: none"> Altered licence plate Unreadable No Vehicle Licence Plate in image Image too dark Image too light, etc. Reporting from ORT Back Office System 	Ad Hoc
4.20.1.8 Financial Reports				
a)	Financial Reconciliation Report (Transactions)	To supply the financial reconciliation information of the Transaction Records as they are handed over to the TCH for the month.	<ul style="list-style-type: none"> Transaction Records per Discount type sent to the TCH and the associated Nominal Toll Tariffs Transaction Rejections Distinguish between Guaranteed and Not Guaranteed Transaction Records Reporting from ORT Back Office System 	Monthly
b)	Financial Reconciliation Report_(Fin Value)	To supply the financial reconciliation information of the Transaction Values as they are handed over to the TCH per Calendar Day.	<ul style="list-style-type: none"> Nominal Toll Amount of Transaction Records sent to the TCH System Total Discount Amount of the Transaction Records sent to the TCH System Toll Amount (Nominal – Discount) VAT Amount Discount Amount per Discount Type Value of Rejected Transactions 	Monthly

No.	Report Name	Purpose	Minimum Information	Frequency
			<ul style="list-style-type: none"> Transaction Record Processing Fees for transactions sent to the TCH and VPC respectively VAT on the TCH and VPC Processing Fees Distinguish between Guaranteed and Not Guaranteed Transaction Records 	
c)	Discount / Exempt Report	To supply information on Discount and Exempt Transactions per Vehicle Class per Calendar Day.	<ul style="list-style-type: none"> Nominal Toll Amount Adjustments Value of Exempt Transactions Value of other Discount Types – per Discount Type Amount Paid by Road User VAT Amount Reporting from ORT Back Office System 	Monthly
a)	Daily Revenue	Reports on payments received	<ul style="list-style-type: none"> Revenue received per calendar day for account registering, recharges etc, including cash, Bank Issued Card transactions, Bank Debit Card transactions, Smart Card, etc received at each individual Customer Service Facility and in total. Reporting from the TCH System 	Monthly
b)	Revenue Banked	Reports on Revenue Banked	<ul style="list-style-type: none"> Revenue banked daily, indicating cumulative difference between Revenue banked and Revenue received at all Customer Service Facility. Reporting from the TCH System 	Monthly
c)	Account Status	Reports on accounts per Account Type	<ul style="list-style-type: none"> Total number of accounts. New accounts for past month Accounts terminated. Status of accounts in terms of balances (above thresholds, below thresholds). 	Monthly

No.	Report Name	Purpose	Minimum Information	Frequency
			<ul style="list-style-type: none"> Reporting from the TCH System. 	
d)	Transaction Status	To determine the financial status of the Project in terms of transactions that were paid, Violations, exempted, Discounts etc.	<ul style="list-style-type: none"> Reconciliation of all transactions that were sent from the ORT Back Office to the TCH Back Office with the updated transactions as received back from the TCH. Reporting from the TCH System. 	Monthly
e)	Payment Trends	To report on trends of usage of Payment Options and Payment mechanisms.	<ul style="list-style-type: none"> Users per Payment Option and Payment mechanism. Reporting from the TCH System. 	Monthly
f)	Cash-up Reports	To report on Cash-ups performed on the system.	<ul style="list-style-type: none"> Reconciliation of Income declared versus Income expected by the system. Reporting from the TCH System. 	Monthly
4.20.1.9 Audit Trails				
a)	Audit Trails	To monitor additions and changes to data.	<ul style="list-style-type: none"> Original data Changed data User identification of System User who was responsible for the addition / change of the data. Reporting from ORT Back Office System 	Ad Hoc
b)	Access Control	To monitor access to the system.	<ul style="list-style-type: none"> System User who logged in/logged out Date and time of login / logout Reporting from ORT Back Office System 	Ad Hoc
c)	Version Control Lists	To monitor the versions installed on the system	<ul style="list-style-type: none"> Module name / number Version number Compilation date of module 	Ad Hoc

No.	Report Name	Purpose	Minimum Information	Frequency
			<ul style="list-style-type: none"> Reporting from ORT Back Office System 	
d)	Validation Lists Retrieved	To audit the movement of the Validation List(s) from the TCH to the RSS.	<ul style="list-style-type: none"> Listing of: Validation List(s) identification number/name Time retrieved from the TCH System Time transferred to the RSS. Reporting from ORT Back Office System 	Ad Hoc
e)	Data Transmission	To audit the movement of data from the ORT Back Office to the TCH and vice versa per Calendar Day	<ul style="list-style-type: none"> Listing of: Date and time when data were transmitted to the TCH System – within 2 hours, 24 hours, 48 hours or after 48 hours. Reporting from ORT Back Office System 	Ad Hoc
f)	Day/Month closures	To determine the status of the Calendar day	Current system status for the day / month: <ul style="list-style-type: none"> Transaction Records generated at the RSS Transaction Records received in ORT-BO Transaction Records sent to TCH Technical Loss – Duplicate Transaction Records Technical Loss – Framing Transaction Records Difference in Transaction Records Data Complete indicator Reporting from ORT Back Office System 	On closure of the day/month Ad hoc
4.20.1.10 System Maintenance Reports				

No.	Report Name	Purpose	Minimum Information	Frequency
a)	AVC Accuracies	Reports on the overall accuracies of the AVC when comparing the AVC class to the Actual Class per Tolling Point – and per Camera	<ul style="list-style-type: none"> • AVC over- and under classifications per Tolling Point • Reporting from ORT Back Office System 	Ad Hoc
b)	MTBF	Reports on the calculated MTBFs (based on the up-time) for all the major subsystems.	<ul style="list-style-type: none"> • MTBF of the sub-systems • Reporting from ORT Back Office System 	Ad Hoc
c)	System Availability	Reports on the calculated Availability (based on the duration of the Down-time) for all the major subsystems, per subsystem or Tolling Point.	<ul style="list-style-type: none"> • Time the system is in use • Time spent on maintenance • Down-time • Reporting from ORT Back Office System 	Ad Hoc
d)	Equipment Failures Report	Reports on the Equipment Failures	<ul style="list-style-type: none"> • Equipment failures per Tolling Point and subsystem during a selected period. • Reporting from ORT Back Office System 	Ad Hoc
e)	Incident Report	Reports on Incidents that occurred on the system	<ul style="list-style-type: none"> • Incident type • Date and time when incident occurred • Corresponding Transaction Record (if available) • Summarized incident information per Tolling Point. • Reporting from ORT Back Office System 	Ad Hoc
f)	Response and Repair Times	To report on the incident response and Repair Time	<ul style="list-style-type: none"> • Time Incident occurred • Time when it was acknowledged 	Ad Hoc

No.	Report Name	Purpose	Minimum Information	Frequency
			<ul style="list-style-type: none"> Time when it was resolved / repaired (If applicable) Reporting from ORT Back Office System 	
g)	Dashboard	To report on information as supplied by the dashboard Software applications	<ul style="list-style-type: none"> Depends on the dashboard Software application Reporting from ORT Back Office System 	Ad Hoc
4.20.1.11 Maintenance Reports				
a)	Upgrade Reports	To report on upgrades of System or Equipment.	<ul style="list-style-type: none"> System and Hardware upgrade information. Reporting from the ORT Back Office / TCH System. / Generated manually 	Monthly
b)	Problem Data Reports	To report on any data losses, data corruption, data problems that effected the Employer information per Tolling Point	<ul style="list-style-type: none"> Transactions sent to TCH Compliant and Complete Transaction Record data Compliant and Incomplete Transaction Record data Non-Compliant Transaction Record data Transaction Record and Payment data lost Corrupt Transaction Record and Payment data Other data problems Reporting from the ORT Back Office or TCH System. 	Monthly
c)	Support Reports	To report on all support and maintenance actions.	<ul style="list-style-type: none"> Number of Support requests Support request actions Problem resolved status Reporting from the Support Helpdesk 	Monthly

No.	Report Name	Purpose	Minimum Information	Frequency
d)	Stock and Spares Reports	To report on stock and spares levels.	<ul style="list-style-type: none"> Tags in stock Spares levels along the route Reporting from the Asset Management & TCH System. 	Monthly
4.20.1.12 Accounting and contractual				
a)	Financial Statements	To report on the financial status of the ORT Operator	The Contractor shall supply the Employer within 90 (ninety) days of the end of the operating year the annual audited financial report and accounts of the Contractor as per the GAAP.	Annually
b)	Contractual Reporting	To report on contractual issues	<p>The Contractor shall notify the Employer prior to taking any action which would result in any change in:</p> <ul style="list-style-type: none"> Management and organisational structure; Change in appointment of Chief Executive Officer, Chief Finance Officer or any other senior technical staff of the Contractor; Contracts to be executed by the Contractor for the purpose of implementing the Agreement; Change in fiscal year; and Change in Memorandum and Articles of Association or the shareholders agreement of the Contractor. <p>Any change shall require consent from the Employer as such a change may not alter the shareholder composition in terms of the tendered black economic empowerment content within the original Tender as well as the associated overall financial position of the Tenderer.</p> <p>Manually created report.</p>	Ad Hoc

No.	Report Name	Purpose	Minimum Information	Frequency
4.20.1.13 Electrical and Mechanical				
a)	General Electrical Equipment report	To report on electrical issues.	<p>The report shall include but not be limited to the following minimum inspection and testing requirements:</p> <ul style="list-style-type: none"> • Inspect all distribution boards • Test all earth leakage units • Inspect wiring • Labelling • Legend cards <p>Generate manually from inspections.</p>	Every 2 years
b)	Generator report	To report on the electrical and mechanical status of all the standby diesel generators	<ul style="list-style-type: none"> • Generator status • Generator room condition • Generator test results • Oil sample test results by an approved lubrication analyst laboratory. • Availability of spares and the supplier's details. • Dummy load test. • A copy of the Generator lock book for the period of the report. • Rotation testing of the mobile generators. The mobile generators to be tested at several Sites so that the mobile generators and change over system can be tested at each Site once a year. • Generate manually from inspections. 	6-Monthly
c)	UPS report	To report on the status of all the UPS's	The UPS status i.e. all available voltages frequencies, currents and alarm conditions. Any data recoded by the UPS to be included in the UPS report. The Contractor to obtain the required communication device from	2-Monthly

No.	Report Name	Purpose	Minimum Information	Frequency
			<p>the manufacturer to extract data if required at their own cost.</p> <p>The condition of the UPS room, i.e. cleanliness of the room, room temperature, etc.</p> <p>UPS load test. The load test will be done over a period of 30min with readings every 5 minutes. The results shall be plotted on a graph to estimate the total battery standby time.</p> <p>The Contractor shall also execute an impedance test on each battery and report the value.</p> <p>Indication on batteries replaced or due for replacements for individual batteries and whole battery bank</p> <p>A copy of the UPS logbook for the period of the report.</p> <p>Generate manually from inspections.</p>	
d)	Earthing and lightning protection status report	To report on the Earthing and lightning protection	<ul style="list-style-type: none"> As-built based drawing indicating the test points with the test values obtained at the earth node. Each earth node on the drawing shall be numbered that can be referred back to a comprehensive test report. A comprehensive test report that shall be updated with every earthing test and submitted to the Operational Manager every six months The earthing nodes shall be tested as indicated on the as-built drawings with the base values on the as-built drawings as reference. Any changes in the earthing values will be investigated and corrective 	6-Monthly

No.	Report Name	Purpose	Minimum Information	Frequency
			<p>action motivated by the Contractor with reference to the SANS regulation</p> <ul style="list-style-type: none"> The comprehensive test report shall also include a soil resistivity test taken on the day of the earthing test. The final earthing report to be approved by the Employer with the option to add or change the report when required. All surge arrestors shall be inspected and the status reported. Generate manually from inspections. 	
e)	Corrosion protection report	To report on the corrosion status of the ORT facilities	<ul style="list-style-type: none"> Discuss the corrosion status of the ORT facilities, (e.g. water reservoir, fencing, building elements, poles and masts, structural steelwork, etc) Recommendations regarding the paint systems required to protect the Assets. Provide a program to attend to the corrosion problems identified in the corrosion report. The report shall be compiled by a competent registered corrosion specialist to the Employer. Generate manually from inspections. 	3 Yearly
f)	Handyman report	To report on all damaged and failed equipment and the corrective action taken.	<ul style="list-style-type: none"> All damaged and failed equipment i.e. taps doors, windows locks, paint, cracks, etc. Corrective action and an estimated completion date with a program if necessary or as requested by the Operational Manager. 	Monthly

No.	Report Name	Purpose	Minimum Information	Frequency
			<ul style="list-style-type: none"> Generate manually from inspections. 	
g)	Lighting Report	To report on all lighting maintenance issue and actions taken	<ul style="list-style-type: none"> Group lighting replacement undertaken per type of bulb per facility as per required intervals Group lighting replacement due per type of bulb per facility as per required intervals Specifications per light bulb to comply with energy savings 	Bi-monthly
h)	Heating Ventilation and Air Conditioning report	To discuss the status of the HVAC equipment and maintenance carried out.	<p>The report shall discuss the status of the HVAC equipment and maintenance carried out.</p> <p>The Contractor shall also provide corrective action and an estimated program on the repairs to the Employer on problems identified in the HVAC report.</p> <p>Generate manually from inspections.</p>	Monthly
i)	Fire detection system report.	To report on the status of the fire detection system	<ul style="list-style-type: none"> Status of the fire detection system. Action taken to restore any problem or alarm condition Generate manually from inspections. 	Monthly
j)	Security and access control report	To report on the status of the security and access control system	<ul style="list-style-type: none"> The status of the security and access control system Action taken to restore any problem or alarm condition. The alarm and access control system report to be extracted and added to the Contractor's security and access control report A corrective action and program to attend to problems identified in the security and access control report 	Monthly

No.	Report Name	Purpose	Minimum Information	Frequency
			<ul style="list-style-type: none">Generate manually from inspections.	

SECTION 5. HANDBACK REQUIREMENTS.

5.1 INTRODUCTION

- 5.1.1 The Contractor' s Hand-Back Requirements are contained in Part C3.3.1 - General Operations Specifications.
- 5.1.2 Notwithstanding the above mentioned requirements as contained in Part C3.3.1, the Contractor shall ensure that the Goods, including all equipment, systems and facilities are handed to the Employer in a fully functional state, fit for purpose and free of defects and damages.
- 5.1.3 The Contractor shall, as part of the Hand-Back, provide a full complement of tools and spares as indicated in the various maintenance manuals to ensure the maintainability for the Toll System by the next Contractor.

ANNEXURE 1: ASSETS

The purpose of the table 5-1 and 5-2 below is to provide a categorisation of possible assets, if at all provided by the Employer, Contractor or Transitional Subcontractor. The tables are not meant to be a definitive list of assets to be provided by either the Employer or the Contractor, but further to give guidance on responsibilities of each Party involved in terms of the management thereof and also to indicate the maintenance and insurance responsibilities of each Party.

TABLE 5-1 : FACILITY ASSETS

The 'Facility Assets' (those Assets related to the civil, structural, building, services and electrical & mechanical infrastructure within the boundaries of the Site) are described and classified in Table 5-1 of this Annex 1.

The 'Facility Assets' are broken down according to:

- General Facilities, refer to Table 5-1: A,
- Electrical & Mechanical Facilities, refer to Table 5-1: B.

TABLE 5-2 : TOLL SYSTEM'S ASSETS

The 'Toll Systems Assets' (those Assets related to the Toll Systems pursuant to Part C3.4 of the Employer's Requirements) are described and categorised in Table 5-2 of this Annexure 1.

The Toll Systems Assets are broken down according to:

- RSS (Road Side System), refer to Table 5-2: A, and
- All other systems (excl. RSS's), including back office systems for ORT, TCH and VPC, refer to Table 5-2: B.

GENERAL NOTES TO THE TABLES:

The **"INITIALLY PROVIDED BY"**, means the Party (either the Employer or the Contractor) responsible for the initial provision of the assets.

The **"OWNERSHIP BY"**, means the Party (either Employer, Contractor or the Transitional Subcontractor) who is the owner of the assets.

The **"ASSET MANAGEMENT BY"**, means the Party (either the Employer or the Contractor) who is responsible to perform the asset management services.

The **“MAINTENANCE BY”**, means the Party (either the Employer or the Contractor) that shall be responsible for the routine, corrective, breakdown and handyman maintenance of the ‘Facility Assets’.

The **“SPECIALIST MAINTENANCE BY”**, means the Party (either the Employer or the Contractor) that shall be responsible for the specialist maintenance in accordance with clauses 4.17.4.3 and 4.17.5.4 of this Part C3.3.2.

The **“INSURANCE BY”** classification, means the Party (either the Employer or the Contractor) responsible for all insurances as required e.g. accident damage, theft and the like during the Contract Period.

The **“FIDIC GCC CLASSIFICATION”** category means the definition in the General Conditions of PART C1 within which such asset shall be classified during the performance of the Contract.

The Contractor shall manage and maintain all the assets in accordance with his obligations as contained in the relevant Employer’s Requirements.

The Contractor shall at the end of the Contract Period hand back all assets of which the Employer is defined as the owner or has become the owner during the Contract Period, in accordance with the hand back requirements pursuant to Part C3.3.1 and C3.3.2 of the Employer’s Requirements.

TABLE 5-1: FACILITY ASSETS WITHIN SITE BOUNDARIES, UNLESS OTHERWISE INDICATED

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC GCC CLASSIFICATION
A	GENERAL FACILITIES (CIVILS & STRUCTURAL, BUILDING AND SERVICES INFRASTRUCTURE) WITHIN THE BOUNDS OF THE EMPLOYERS FACILITIES							
1	Roadways and access roads	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility
2	Road signs, road markings & road markers	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility
3	Building areas boundary fencing & gates	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility
4	Paving, walkways and parking areas	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility
5	Technical Shelters & associated structures	Employer	Employer	Contractor	Contractor	n/a	Employer	general facility
6	Trenching, sleeves, ducts, manholes, test pits (e.g. earth nodes) & draw boxes, excluding the associated tolling systems related communication backbone infrastructure, and	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
	those outside the Site boundaries								
7	Toll gantries & associated structures including test, spare and temporary gantries. (Corrosion control will be done under Provisional Sum)	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility	
8	Lighting masts and poles (excluding related to highway)	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility	
9	Garden areas (landscaped)	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility	
10	Open Areas (natural vegetation)	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility	
11	Building structures (Complete repainting will be done under provisional Sum)	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility	
12	Main water supply lines	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility	
13	Borehole(s)	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility	
14	Water reservoirs (fire & building supply)	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility	
15	Storm water infrastructure	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC GCC CLASSIFICATION
16	Firewater reticulation infrastructure	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility
17	Main sewerage reticulation & infrastructure (e.g. septic tank systems)	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility
18	Protection structures, barriers & restrictors	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility
19	Buildings water reticulation	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility
20	Buildings sewerage reticulation & infrastructure (e.g. toilets)	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility
21	Loose safes	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment
22	Locking mechanisms & building fixtures (gutters, windows, doors and any part or associated accessory)	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility
23	Geysers, basins, taps, valves, showers, etc.	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility
24	Fire extinguishers	Employer	Employer	Contractor	Contractor - 1 st line	Contractor	Contractor	Employers Equipment

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
					maintenance only				
25	Waste bins	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment	
26	All office furniture and office supplies and furniture for Employer's use	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment	
27	Cleaning equipment & Materials	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment	
28	Traffic management aids (cones, delineators, movable signs, movable barriers, emergency lamps, etc.)	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment	
29	Financial management / administration aids (money scales, coin counters, fax machines, mobile phones, computers, note counters, counterfeit detectors, copiers, projectors, etc.)	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment	
30	Supplier manuals, design documentation and as-built	Employer	Employer	Contractor	Employer	n/a	Employer	Employer's Documents	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
	drawings associated with general facilities provided by Employer								
31	Supplier manuals, design documentation and as-built drawings associated with general facilities provided by Contractor	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
32	General operations supplies, stationary, spares, maintenance tools and consumables	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment	
33	Construction, operating and maintenance vehicles	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment	
34	Operation and Maintenance Plan & Operation and Maintenance Manuals as per Employer's Requirements & contractual obligations	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
35	General management & administrative systems, plans, procedures and programmes as a consequence to the execution	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
	of the Works and performance of the Operation Service								
36	Contractor's general head office facilities, i.e. facilities supplied by the Contractor.	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment	
B	ELECTRICAL & MECHANICAL FACILITIES WITHIN THE BOUNDS OF THE EMPLOYERS FACILITIES								
1	Cabling supply: Toll Systems i.e. Cable trays, ladders & power skirting	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
3	Distribution board components (switch gear) [buildings, Technical Shelters, etc.] provided by Employer	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
4	Cable markers	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
5	Control panels & cabling	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
6	Electrical reticulation i.e. cabling & wiring [in and for facilities provided by the Employer]	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
7	Electrical reticulation i.e. cabling & wiring [in and for facilities, Plant & software provided by the Contractor]	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Plant	
8	Scissor or Hinge type mast counter weights where applicable (excl for highway lighting)	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
9	HV power supply installation	Employer	Employer	Contractor	3rd party	n/a	3rd party	Employer's Equipment	
10	HV transformer installation	Employer	Employer	Contractor	3rd party	n/a	3rd party	Employer's Equipment	
11	HV switch gear installation	Employer	Employer	Contractor	3rd party	n/a	3rd party	Employer's Equipment	
12	Distribution kiosks, mini-sub, transformers & metering equipment	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
13	LV power supplies, distribution & sub distribution boards and cabling to and between DB's and sub-DB's in building and Technical Shelter facilities provided by the Employer	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
14	LV power supplies, distribution & sub distribution boards and cabling to and between DB's and sub-DB's at toll gantries (for the purpose of Plant provided by the Contractor)	Contractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
15	Power supply to toll gantry LV point of supply	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
16	Power supply from toll gantry LV point to Plant (i.e. gantry equipment) provided by the Contractor	Contractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
17	Surge protection components in main and sub distribution boards up to class II protection [power reticulation, in buildings,	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
	in Technical Shelter / gantry areas] provided by Employer .								
18	Surge protection equipment & earthing installations [for power reticulation, Plant & software provided by the Contractor]	Contractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
19	Building facilities (provided by Employer): Complete road and area lighting installation	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
20	Tolling Points (provided by Employer): Area lighting including high masts, lighting poles and low voltage power reticulation for the purpose of proper Plant functioning	Employer	Employer	Contractor	Contractor	n/a	Contractor	general facility	
21	Lighting luminaires and components at facilities provided by the Employer (excl highway lighting)	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
22	Power outlets (sockets & isolators at facilities provided by Employer)	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
23	Warning beacons, fog lights or similar provided by Employer	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
24	Electrical spares & maintenance tools (excl for specialist maintenance)	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Plant	
25	Electrical consumables and other equipment (globes, luminaries, ladder, hand tools, etc.)	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment	
26	High mast raising winches / mechanisms / units, etc.	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
27	Rope kits	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
28	Locking mechanisms (immovable safes)	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
29	Mechanical spares & maintenance tools provided by the Contractor	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Plant	
30	Mechanical consumables (lubricants, fuel, etc.)	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC GCC CLASSIFICATION
31	Supplier manuals, design documentation and as-built drawings associated with E&M facilities provided by Employer	Employer	Employer	Contractor	Employer	n/a	Employer	Employer's Documents
32	Supplier manuals, design documentation and as-built drawings associated with E&M facilities provided by Contractor	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents
33	E&M management & administrative systems, plans, procedures and programmes as a consequence to the execution of the Works and performance of the Operation Service	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents
34	Contractor's head office E&M facilities	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment
35	Lifts in Central Operations Centre (COC)	Employer	Employer	Contractor	Contractor - 1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
36	Garden irrigation, sprinkler systems, water features including pumps etc.	Employer	Employer	Contractor	Contractor - 1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
37	Sculptures requiring on-going specialist maintenance	Employer	Employer	Contractor	Contractor - 1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
38	Industrial kitchen equipment	Employer	Employer	Contractor	Contractor - 1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
39	Access motors or barriers & cabling	Employer	Employer	Contractor	Contractor - 1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
40	Security fencing electrification systems & cabling	Employer	Employer	Contractor	Contractor - 1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
41	SCADA monitoring system of critical equipment i.e. generator, UPS, equipment room temperature, incl. power monitoring system to be provided on the incoming supply from the local authority where applicable.	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
42	Fresh air supply systems; ducting, fans, dampers, balancing equipment, diffusers, filters, extractor fans, pre-heaters, etc [in and at building facilities and Technical Shelters provided by the Employer]	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
43	Air-conditioners & components [in and at building facilities and Technical Shelters provided by the Employer]	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
44	Generator shelter ventilation	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
45	UPS room ventilation	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
46	UPS system complete with electronic and battery cabinet with cabling	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
47	Central air-conditioning systems [at building and Technical Shelter facilities provided by Employer]	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
48	Diesel generator complete [diesel motor, alternator, switch gear, controllers, fuel tanks, fuel pumps, radiator, exhaust, dummy loads, batteries, etc.] provided by the Employer	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
49	Water storage reservoir pump(s) & controller(s)	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
50	Water storage booster pump(s) & controller(s)	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
51	Borehole pumps & controller(s)	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
52	Water treatment plants	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
53	Electrical spares & maintenance tools for specialist maintenance	Contractor	Employer	Contractor	Contractor -1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	

TABLE 5-2: SYSTEM ASSETS

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
A	RSS (ROAD SIDE SYSTEM)								
1	Servers, controllers, computers & recorders and peripherals	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
2	Consoles, terminals & monitors	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
3	Reading, mounting and other devices not listed	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
4	Antennas & beacons	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
5	Display units	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
6	Printers	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
7	Switches & sirens	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
8	Communication equipment , peripheral communications, and associated equipment such as routers and media converters	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
9	Data extraction ports	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
10	Network cabling, copper & fibre optic (LAN)	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
11	Gantry cabling	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
12	Junction boxes	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
13	Conduits, trunking, trays & ducts	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
14	Automatic vehicle counting & classification equipment & peripherals (including detectors, loops, sensors, curtains, cameras and the like)	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
15	Lightning protection units	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
16	Motors and mechanical parts of barriers & booms at Tolling Points for access control	Employer	Employer	Contractor	Contractor -1 st line maintenance only	Contractor	Contractor	Employer's Equipment	
17	TS Detection cameras & peripherals	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
18	Equipment labeling/encoding	Contractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
19	Fibre optic cabling along the toll network between gantries	Employer	Employer	Employer	Employer	n/a	Employer	Employer's Equipment	
20	RSS test equipment, test rigs & tools for RSS equipment (Excluding for the test Site installations)	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Plant	
21	Test site: RSS equipment and associated spares	Transitional Subcontractor	Transitional Subcontractor	Transitional Subcontractor	Transitional Subcontractor	n/a	Transitional Subcontractor	Contractor's Equipment	
22	RSS (excluding test site): Spares such as power supplies, batteries, computers, converters, communication cards, detectors, boxes, boards,	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
	plates, sensors, disk drives, breakers, switches, monitors, buttons, connectors, protectors, signs, regulators, devices, units, etc.								
23	Consumables & Assets (not listed elsewhere) needed for installation	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Equipment	
24	Software, computer programs, peripheral software, interface software, protocols & licenses	Transitional Subcontractor	n/a	Contractor	Contractor	n/a	Contractor	Contractor's Documents	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
25	Source code in software escrow	Transitional Subcontractor	Contractor	Employer (or Appointed Agent)	Contractor	n/a	Contractor	Contractor's Documents	
26	Design documentation and drawings pursuant to Design Build Sections (Contractor Supplied)	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
27	Technical documentation & supplier manuals	Contractor		Contractor	Contractor	n/a	Contractor	Contractor's Documents	
28	Operation & maintenance manuals, procedures, protocols and management & administrative systems and plans	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
29	Other hardware and equipment related Assets pursuant to the current RSS design and the Contract	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
30	Other software & documentation related Assets pursuant to the current RSS design and the Contract	Transitional Subcontractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
31	New complete RSS (Contractor Supplied)	Contractor	Employer	Contractor	Contractor	Contractor	Contractor	Plant	
B	ALL OTHER SYSTEMS (Excl RSS's) AND BACK OFFICE SYSTEMS FOR ORT, TCH & VPC,								
1	Network equipment, racks & cabling (LAN)	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
2	Network equipment & peripherals (WAN)	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
3	CCTV equipment (matrix, cabling, lightning protection, card(s) and peripherals)	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
4	PABX, telephones and peripherals	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
5	Conduits, trunking, ducts, trenching	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
6	TS Operational monitoring equipment	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
7	Servers (NET, exchange, web and the like), including peripherals such	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
	as routers, modems, security protection, remote interface units, etc.								
8	Work stations, PCs, terminals, monitors and the like, including peripherals such as screens, modems, readers, writers, sound cards, key boards, remote interface units, etc.	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
9	Call center control & communication equipment and peripherals	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
10	ETC Point of Sale equipment	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
11	ETC reading & testing equipment	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
12	ETC personalization equipment	Transitional Subcontractor		Contractor	Contractor	n/a	Contractor	Plant	
13	ETC Tags	Employer or Contractor	Employer	Contractor	Contractor	n/a	Contractor & Customer	Employer's Equipment	
14	Printers & peripherals	Contractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
15	Recorders & monitoring equipment	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
16	Auxiliary equipment for remote enforcement	Transitional Subcontractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
17	Auxiliary equipment for remote Customer Services	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Plant	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
18	Operating system software	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
19	Database system software	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
20	Application software	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
21	Protocol & communication software	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
22	Network interface & 3rd party interface software	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
23	Data security & protection software	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
24	Driver & DLL software	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
25	Source code in software escrow	Transitional Subcontractor	Transitional Subcontractor	Employer (or Appointed Agent)	Contractor	n/a	Contractor	Contractor's Documents	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC GCC CLASSIFICATION
26	System & sub-system recovery packs	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents
27	Configuration & version control software	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents
28	Operating system software licences	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents
29	Database system software licenses	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents
30	Application software licenses	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents
31	Peripheral software licences	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents
32	Hardware spares, testing equipment and maintenance tools	Contractor	Employer	Contractor	Contractor	n/a	Contractor	Plant
33	Consumables & Assets(not listed elsewhere)	Contractor	Employer	Contractor	Contractor	n/a	Contractor	Plant

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
	needed for installation								
34	Back office systems technical and design documentation & drawings	Transitional Subcontractor	Transitional Subcontractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
35	Hardware & software systems supplier guides and user manuals	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
36	Back office systems installation, testing & training manuals	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
37	Hardware & software testing, operation & maintenance protocols, plans, procedures and management /	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
	administrative systems								
38	Other hardware & equipment related Assets pursuant to the Contractor's back office systems design and the Contract	Contractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
39	Other software & documentation related Assets pursuant to the Contractor's back office systems design and the Contract	Contractor	Contractor	Contractor	Contractor	n/a	Contractor	Contractor's Documents	
40	Mobile Payment Stations	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	
41	Mobile Policing Vehicle	Employer	Employer	Contractor	Contractor	n/a	Contractor	Employer's Equipment	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
42	Security and surveillance cameras - external & internal (Employer supplied)	Employer	Employer	Contractor	Contractor - 1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
43	Security control system equipment. (Employer supplied)	Employer	Employer	Contractor	Contractor - 1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
44	Building and Site access control equipment and devices. (Employer supplied)	Employer	Employer	Contractor	Contractor - 1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	
45	Fire detection and suppression equipment and systems. (Employer supplied)	Employer	Employer	Contractor	Contractor - 1 st line maintenance only	Specialist Maintenance Subcontractor	Contractor	Employer's Equipment	

ITEM	ASSET CATEGORY DESCRIPTION	INITIALLY PROVIDED BY	OWNERSHIP BY	ASSET MANAGEMENT BY	MAINTENANCE BY	SPECIALIST MAINTENANCE BY	INSURANCE BY	FIDIC CLASSIFICATION	GCC
46	Security and surveillance cameras - external & internal (Contractor supplied)	Contractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
47	Security control system equipment. (Contractor supplied)	Contractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
48	Building and Site access control equipment and devices. (Contractor supplied)	Contractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	
49	Fire detection and suppression equipment and systems. (Contractor supplied)	Contractor	Employer	Contractor	Contractor	n/a	Contractor	Plant	

