

## **ANNEX 05**

### **SERVICES CORRESPONDING TO OPERATIONAL FUNCTIONS**

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INTERNATIONAL TENDER No 01/2019

**CONCESSION TO PROVIDE PUBLIC SERVICES FOR OPERATION, MAINTENANCE AND  
MAKING OF INVESTMENTS REQUIRED FOR EXPLOITATION OF THE HIGHWAY SYSTEM  
CALLED THE PIRACICABA-PANORAMA LOT**

## INDEX

1.	INTENSIVE INITIAL PROGRAM AND INITIAL ADAPTATION PROGRAM .....	6
1.1.	Operating Staff.....	6
1.2.	Operational Control Center (CCO) .....	6
1.3.	Operational Vehicles .....	7
1.4.	Service station for Customer Service (SAU).....	7
1.5.	User Communication System.....	8
1.6.	Physical Executive Schedule .....	8
1.7.	Delivery of Vehicles to the Military Road Police .....	8
1.8.	Table of PII Deadlines.....	9
1.9.	Table of Deadlines of P.A. I. (Initial Suitability Program of the Transferred System).....	10
2.	OPERATING VEHICLES .....	11
3.	COLLECTION CONTROL SYSTEM .....	12
3.1.	Basic concepts.....	12
3.2.	Description, Specifications and Service Levels .....	12
3.2.1.	Collection Control System.....	12
3.2.1.1.	Collection Modalities .....	12
3.2.1.2.	Violation Control System, Exempt Vehicles, Anomalies / Discrepancies and Irregular Road Usage.....	13
3.2.1.3.	Specifications for Automatic and Semi-Automatic Systems.....	14
4.	TRANSIT SURVEILLANCE CONTROL SYSTEM AND TRANSPORT AND SUPPORT FOR NON-DELEGATED SERVICES.....	17
4.1.	Basic Concepts.....	17
4.2.	Description, Specifications, Service Levels and Performance Indicators.....	17
4.2.1.	Vehicle Weighing System .....	17
4.2.1.1.	General Inspection Post - PGF.....	18
4.2.1.2.	Vehicle Weighing System Equipment and processing of weighing activities performed by CONCESSIONAIRE.....	19
4.2.2.	Mobile Weighing Subsystem .....	23
4.2.3.	Speed Control System .....	24
4.2.3.1.	Fixed Speed Control .....	24
4.2.3.2.	Static Speed Control .....	27
4.2.4.	Inspection and Control of Noise Emission .....	28

4.2.5.	Providing material and financial resources for overt road traffic policing	28
4.2.6.	Instruction and Technical Rationale for Authorization and Grant Applications .....	29
4.2.6.1.	DOMAIN RANGE access management of the ROAD SYSTEM .....	29
4.2.6.2.	Adequacy of access in contractual Works .....	31
4.2.6.3.	Support services to be performed by CONCESSIONAIRE .....	32
4.2.6.4.	Supporting organizational structure .....	35
4.2.6.5.	Management of domain band occupation of the ROAD SYSTEM .....	35
4.2.7.	Management of exceptional cargo transportation.....	38
4.2.8.	Road Police .....	39
5.	COMMUNICATION AND RELATIONSHIP SYSTEM.....	39
5.1.	Basic Concepts.....	39
5.2.	Description, Specifications and Service Levels .....	40
5.2.1.	0800 Attendance System .....	40
5.2.2.	Radio System .....	40
5.2.3.	Data Transmission System .....	40
5.2.4.	CCO.....	41
5.2.5.	User Communication System - Emergency Phone type - Call Box...41	
5.2.6.	User Communication System, via Wireless Data Network.....	42
5.2.6.1.	Inspection Parameters .....	44
5.2.7.	Panel System of variable messages (PMVs).....	45
5.2.7.1.	Panel of Fixed Variable Message .....	46
5.2.7.2.	Panel of mobile variable message.....	47
5.2.8.	Ombudsman and Other User Relationship Channels .....	47
5.2.9.	Service to Local Authorities.....	48
6.	TRAFFIC MONITORING SYSTEM .....	48
6.1.	Basic Concepts.....	48
6.2.	Description, Specifications and Service Levels .....	48
6.2.1.	Traffic Sensing System .....	48
6.2.2.	Traffic Monitoring System by CFTV.....	50
7.	ROAD OPERATION, SAFETY AND USER COMFORT .....	52
7.1.	Basic Concepts.....	52
7.2.	User Security Plan .....	52
7.2.1.	NBR ISO 39001 – Road Safety Management System.....	53
7.2.2.	Road Safety Inspection / Audit – ISR .....	53
7.2.2.1.	Surveys.....	53

7.2.2.2.	Coding .....	54
7.2.2.3.	Final Reports.....	55
7.2.3.	Accident Reduction Program – PRA .....	57
7.2.4.	Accident Database.....	58
7.2.5.	Road Safety Commission.....	59
7.2.6.	Speed and risk management .....	59
7.2.7.	Road Safety Communication Program .....	60
7.2.8.	Traffic Evolution Roding .....	60
7.2.9.	User Support Services (SAU).....	60
7.2.10.	About the Compliance Program (Compliance) .....	66
7.3.	Intervention Plans in the road system (PISR).....	66
8.	OPERATIONAL MANUALS .....	66
9.	SUPERVISION AND AUDIT .....	67
9.1.	Information System .....	67
9.1.1.	Daily and weekly information.....	68
9.1.2.	Monthly, half yearly and yearly information .....	69
9.1.3.	Database of CCO.....	70
9.1.4.	Systematic submission of information .....	70
9.1.5.	Information Systems Audit .....	70
9.2.	Quality management system.....	70
10.	ADDITIONAL SERVICES .....	71
11.	RESTING AREAS FOR TRUCKERS .....	71
12.	NEUTRAL CARBON PROGRAM (Operation Neutral Carbon) .....	72
12.1.	Inventory.....	72
12.2.	Compensation.....	73
12.3.	Certification of neutralization of GEE .....	73
13.	TABLE OF DEADLINES .....	73

## **1. INTENSIVE INITIAL PROGRAM AND INITIAL ADAPTATION PROGRAM**

The CONCESSIONAIRE, as soon as it takes over the administration of the ROAD SYSTEM, shall undertake the Initial Intensive Program of the Transferred System (PII) and PAI (Initial Adaptation Program of the Transferred System), as applicable, with the purpose of providing the immediate improvement of the safety and comfort conditions of the USERS, and shall include the following steps / activities.

Except for those that are not bound by specific contractual milestones, the deadlines for carrying out the activities provided for in this ANNEX are indicated in the Time Frame of item 12. The delay in the dates established for each activity will subject the CONCESSIONAIRE to the application of administrative sanctions provided for in Annex 11 - PENALTIES.

The diagnosis expressed in the inspection reports prepared by the Return Committee, according to the rules established in ANNEX 18, will present the specifications and characteristics at the moment of transfer of the REMAINING SYSTEM to the road network within the scope of Concession Contract008 / CR / 1998.

### **1.1. Operating Staff**

All operating personnel (SAU, PGF, scale, toll and conservation) must be properly uniformed and identified, as specified by ARTESP, and receive training in order to standardize the procedures and services provided to USERS from the date of signing of the TERM OF INITIAL TRANSFER and / or TRANSFER TERM OF THE REMAINING SYSTEM, as applicable, and the CONCESSIONAIRE will have a deadline to make any adjustments and adaptations that may be necessary as requested by ARTESP.

The uniform must contain only the ID of the CONCESSIONAIRE, and it is forbidden to use the name of the third party.

All operating personnel (SAU, PGF, scale, toll and conservation) must receive periodic training, with certificate of participation, on emergency signaling, scheduled signaling, road operation, first aid and etc.

### **1.2. Operational Control Center (CCO)**

On the date of signing of the INITIAL TRANSFER AGREEMENT, the CONCESSIONAIRE shall have a provisional or definitive CCO in the ROAD SYSTEM, with the purpose of centralizing and controlling the triggering of resources monitored by the CCO, the attendances and the control of events in the ROAD SYSTEM. To this end, it shall be equipped with at least a provisional Radio System for communication with operating vehicles and other fixed operating points, as well as a provisional 0800 telephone system for communication with USERS.

The provisional or definitive CCO shall, within the deadlines defined in this ANNEX, have its equipment and / or systems implemented and / or complemented in order to offer for operation, at a minimum, the implementation of the Radiophony System, Vehicle Monitoring and Geopositioning System, Automated Event Control System, Operator Assistance Panels / Monitors and User Communication System by calling 0800. The Automated Event Control System shall record historical information and support compliance with all requirements set forth in the CONTRACT and ARTESP's current Technical Specifications regarding the operation of the ROAD SYSTEM.

On the TRANSFER DATE OF THE REMAINING SYSTEM, the CONCESSIONAIRE may choose to either (i) take over the operation of the pre-existing CCO or (ii) to inform the GRANTING AUTHORITY that it will use another CCO structure. In both cases, the services and systems must be continued after

the transfer, without loss of information regarding the equipment deployed in the REMAINING SYSTEM and without prejudice to the interfaces established with ARTESP systems, including telemetry data.

The activities of the CCO shall be appropriate to the standards, deadlines and rules set out in ANNEX 07.

### **1.3. Operational Vehicles**

Operational Vehicles shall be available for operation on the date of signature of the INITIAL TRANSFER TERM and / or REMAINING SYSTEM TRANSFER TERM and shall meet specifications as to the types and quantities sufficient to meet service levels.

The Operational Vehicles must be properly equipped, according to the requirements for each type of vehicle regarding operational material and emergency signaling to attend to occurrences, radio communication with the CCO, Monitoring and Geo-positioning System and their identification.

The equipment and materials of operation and signaling shall be in a state of conservation that does not impair their functions and monitor the technological evolution throughout the CONCESSION period, as per the rules set forth in the CONTRACT.

Provisional or definitive radio communication equipment shall be fully operational by the date of signing of the INITIAL TRANSFER TERM, including communication with the provisional or definitive CCO.

The implementation of a Monitoring and Geo-Positioning System will be mandatory for all Operational Vehicles, whose module must be integrated with the CCO and ARTESP, providing online and real-time vehicle positioning information, situation and driver control, as well as enabling communication between the driver and the CCO through data.

The vehicles must be marked with the brand / logo of the CONCESSIONAIRE and must evolve to the definitive characterization, according to the project presented by the CONCESSIONAIRE to ARTESP. It must be emphasized that emphasis must be given to the name of the CONCESSIONAIRE and not to the economic group to which it belongs.

### **1.4. Service station for Customer Service (SAU)**

On the date of signing of the INITIAL TRANSFER AGREEMENT, the CONCESSIONAIRE shall determine strategic points throughout the ROAD SYSTEM for distribution and parking of Operational Vehicles, which are duly protected by road restraint devices and other requirements set forth in this ANNEX, as well as disposing of provisional SAUs for USER service. According to the term defined in this APPENDIX, the CONCESSIONAIRE may make any adjustments to the provisional SAUs.

The implementation of provisional and definitive SAUs shall occur according to the rules set forth in this ANNEX and in ANNEX 07.

If interim SAUs are installed in a container, it will be mandatory to acclimatize and deploy facilities to service USERS, toilets for employees and USERS (including those with special needs (PNE)), and dependency for APH employees, as per legislation in force.

During this period, no shelter for Operational Vehicles will be required.

Until the definitive SAUs stations are implemented, attendance will be mandatory 24 (twenty-four) hours a day in the provisional SAUs.

On the date of signing of the REMAINING SYSTEM TRANSFER TERM, the CONCESSIONAIRE shall fully assume the operation of the existing Operational Bases, adapting them to operate as provisional SAUs, and determining strategic points along the ROAD SYSTEM for distribution and parking of the Operational Vehicles, These are duly protected by road containment devices and other requirements

set forth in this ANNEX, in order to meet service levels, until their adaptation to the definitive SAU models. If necessary to meet the service levels provided for in this APPENDIX, the CONCESSIONAIRE shall implement and operate new interim SAU posts.

SAU Stations shall be characterized, with the CONCESSIONAIRE brand / logo, and shall evolve to the definitive characterization, with the identification of the location in the building's forehead, visible to the traffic flow of the road, according to the project presented by the CONCESSIONAIRE to ARTESP. It must be noted that emphasis must be given to the name of the CONCESSIONAIRE and not to the economic group to which it belongs.

### **1.5. User Communication System**

On the date of signing of the INITIAL TRANSFER AGREEMENT, the CONCESSIONAIRE shall have a CCO-type provisional 0800 telephone system, operating 24 hours a day, all days of the week, including holidays and weekends. The 0800 number shall be disclosed throughout the EXISTING SYSTEM on the milestones and through installed vertical signage plates as it was set forth in the current ARTESP signage manual.

On the date of signing of the REMAINING SYSTEM TRANSFER TERM, the definitive 0800 telephony system will also meet the REMAINING SYSTEM USERS. The CONCESSIONAIRE shall make all necessary adjustments to the telephone system, following the rules already implemented in the EXISTING SYSTEM, such as the disclosure of the number 0800, throughout the Remaining System, so that the USER has this number when the need to communicate any event to the CCO (provisional and definitive).

If at the time of signing of the REMAINING SYSTEM TRANSFER TERM, the deadline for constitution of the definitive 0800 telephone system referred to in this item has not yet expired, the CONCESSIONAIRE shall use the provisional system already constituted, migrating to the definitive 0800 telephony system by the deadline set for either the EXISTING SYSTEM or the REMAINING SYSTEM.

The implementation of a 0800 telephone answering system at the CCO will also be mandatory. This system shall allow the issuance of a Repressed Demand Report, whenever requested by the GRANTING AUTHORITY.

Within the term established in this APPENDIX, the CONCESSIONAIRE shall constitute a definitive 0800 telephone system, which will be available to USERS 24 (twenty-four) hours per day, during all days of the week, including holidays and weekends.

The CONCESSIONAIRE shall provide access to the definitive 0800 telephone system database, including all operational information, and with real-time and online interconnection with the JRC.

### **1.6. Physical Executive Schedule**

The CONCESSIONAIRE shall deliver to ARTESP the Physical-Executive Schedule of implementation and revitalization of all ROAD SYSTEM Equipment, Vehicles and Control Systems, detailed according to the model to be provided by ARTESP.

### **1.7. Delivery of Vehicles to the Military Road Police**

The CONCESSIONAIRE shall deliver to PMRv the duly characterized and equipped vehicles, as detailed in the CONTRACT and, especially, in ANNEX 07 of the CONTRACT.



### 1.8. Table of PII Deadlines

ACTIVITY	APPENDIX ITEM	DEADLINE
<b>INITIAL INTENSIVE PROGRAM</b>		
PII Conclusion	<b>Error! Reference source not found.</b>	Up to twelve (12) months from the date of signature of the INITIAL TRANSFER TERM
Adjustments and adaptations in standardization, identification, training of Operative Personnel	<b>Error! Reference source not found.</b>	Up to sixty (60) days from the date of signature of the INITIAL TRANSFER TERM
Implementation and / or complementation of systems / equipment in the provisional CCO	1.2	Up to one hundred and eighty (180) days from the date of signature of the INITIAL TRANSFER TERM
Implementation of the definitive equipment of the radiocommunication system (including communication with the CCO) in the Operational Vehicles.	<b>Error! Reference source not found.</b>	Up to 360 (three hundred and sixty) days from the date of signature of the INITIAL TRANSFER TERM
Installation and integration to the provisional CCO of the Monitoring and Geo-positioning System in all Operational Vehicles	1.3	Up to one hundred and eighty (180) days from the date of signature of the INITIAL TRANSFER TERM
Definitive characterization of operating vehicles	1.3	Up to 360 (three hundred and sixty) days from the date of signature of the INITIAL TRANSFER TERM
Possible adaptations and adjustments to interim SAUs	1.4	Within 60 (sixty) days from the date of signature of the INITIAL TRANSFER TERM
To constitute definitive 0800 telephone system Con	<b>Error! Reference source not found.</b>	Up to one hundred and eighty (180) days from the date of signature of the INITIAL TRANSFER TERM
To disseminate the contact number type 0800 throughout the EXISTING SYSTEM in accordance with the standards established by ARTESP.	1.5	Up to one hundred and eighty (180) days from the date of signature of the INITIAL TRANSFER TERM
To provide access to the 0800 definitive telephone system database	<b>Error! Reference source not found.</b>	Up to one hundred and eighty (180) days from the date of signature of the INITIAL TRANSFER TERM
Delivery of the physical-executive schedule of implementation and revitalization of all equipment, vehicles and systems.	<b>Error! Reference source not found.</b>	Up to one hundred and eighty (180) days from the date of signing of the Initial Transfer Term

ACTIVITY	APPENDIX ITEM	DEADLINE
<b>INITIAL INTENSIVE PROGRAM</b>		
Car delivery to PMRv	<b>Error! Reference source not found.</b>	Up to sixty (60) days from the date of signing of the Initial Transfer Term

**1.9. Table of Deadlines of P.A. I. (Initial Suitability Program of the Transferred System)**

ACTIVITY	APPENDIX ITEM	DEADLINE
<b>INITIAL FITNESS PROGRAM</b>		
Conclusion of P.A.I. (Initial Suitability Program of the Transferred System)	1	Up to 06 (six) months from the date of signature of the REMAINING SYSTEM TRANSFER TERM
Adjustments and adaptations in standardization, identification, training of Operative Personnel at the request of ARTESP	1.1	Up to sixty (60) days from the date of signature of the REMAINING SYSTEM TRANSFER TERM
Monitoring and Geo-positioning System CCO installation and integration in all Operational Vehicles	<b>Error! Reference source not found.</b>	Up to one hundred and eighty (180) days from the date of signature of the REMAINING SYSTEM TRANSFER TERM
Adaptation of operational bases in interim SAUs	1.4	Up to sixty (60) days from the date of signature of the REMAINING SYSTEM TRANSFER TERM
Necessary adaptations to the 0800 telephone system already deployed to the EXISTING SYSTEM	<b>Error! Reference source not found.</b>	Up to sixty (60) days from the date of signature of the REMAINING SYSTEM TRANSFER TERM
To disseminate the contact number type 0800 throughout the REMAINING SYSTEM in accordance with the standards established by ARTESP.	<b>Error! Reference source not found.</b>	Up to sixty (60) days from the date of signature OF THE REMAINING SYSTEM TRANSFER TERM
To provide access to the 0800 definitive telephone system database	<b>Error! Reference source not found.</b>	Within 60 (sixty) days from the date of signature of the REMAINING SYSTEM TRANSFER TERM

## **2. OPERATING VEHICLES**

The CONCESSIONAIRE shall provide Operational Vehicles in the quantities and types that meet the need to maintain the quality and continuity of service in the ROAD SYSTEM, since it is up to the CONCESSIONAIRE to dimension the system of execution of the services granted capable of meeting the IQD.

The quantities of Operational Vehicles shall be constantly reviewed throughout the CONCESSION TERM, considering the forecast of demand growth and seasonality.

The CONCESSIONAIRE may opt to purchase, lease, outsource or lease these Operational Vehicles, except for the need to revert sufficient Operational Vehicles to meet the service levels at the time of return of the ROAD SYSTEM, as provided in APPENDIX 10 to the CONTRACT.

In the last year prior to the signing of the PROVISIONAL RECEIPT AGREEMENT, operating vehicles shall have a maximum of 50% (fifty percent) of the time of use, considering the time elapsed since the year of manufacture, established in item 2. The quantity and the specification of operating vehicles must be sufficient to maintain the required level of service and comply with the Performance Indicators.

It comprises a fleet of vehicles adapted and equipped with a non-removable flashing or rotating red lighting device for rescue ambulances, and amber-yellow for other Operational Vehicles, according to current legislation. Operational Vehicles shall be available 24 (twenty-four) hours a day to attend operational events in the ROAD SYSTEM, duly characterized, with "FREE SERVICE" inscription on the sides, the CONCESSIONAIRE mark, the 0800 telephone number and other equipment. identifying the vehicle with the USER.

For the composition of this vehicle fleet, the CONCESSIONAIRE shall initially consider the operation of the EXISTING SYSTEM and, subsequently, the receipt of the sections of highways that make up the REMAINING SYSTEM. The characterization of the Operational Vehicles will be subject to ARTESP inspection, regarding compliance with the guidelines for the emphasis on the name of the CONCESSIONAIRE provided for in item 1.3 and current technical specifications.

These vehicles are intended to assist in the following services to USERS: winch service, first aid service and injured medical care, traffic inspection service, animal seizure service in ROAD SYSTEM DOMAIN RANGE, several truck services -system with irrigation system (for fire fighting, runway washing, washing of vertical signs, among others) and mechanical rescue service.

Operational Vehicles must be replaced as follows:

- Inspection of traffic and mechanical rescue vehicles: every 02 (two) years;
- Ambulances and light squeaks: every five (05) years; and
- Irrigating trucks, large pickup trucks and heavy winches: every 10 (ten) years.

For all Operational Vehicles, the implementation of a Monitoring and Geo-positioning system will be mandatory, whose module must be integrated with the CCO. It must have online and real-time positioning, control of the vehicle's situation and communication between the driver and the CCO via channel control and / or voice data.

The CONCESSIONAIRE shall provide spare vehicles for the Operational Vehicle fleet, according to their size, of the types and quantities required to fulfill the contractual obligations, as well as have characterization and specifications equivalent to those of regular operating vehicles. Such vehicles shall be capable of replacing damaged or preventive maintenance vehicles, without impairing the level of service to USERS and the quality of service provided to IQD.

The CONCESSIONAIRE shall comply with the alphanumeric identification rules for operating vehicles as determined by ARTESP and / or applicable law.

### **3. COLLECTION CONTROL SYSTEM**

#### **3.1. Basic concepts**

Toll services include the operation of tolls for 24 (twenty-four) hours per day to charge TOLL TARIFF, the control of vehicle traffic and the financial and accounting control of the collected amounts.

Prior to the commencement of COMMERCIAL OPERATION OF TOLL STATIONS, CONCESSIONAIRE shall, by itself or by third parties, provide a Toll Information Monitoring System (MIP), as determined by specific regulation and its updates, which establishes standards for standardization, implementation, operation and maintenance of said IPM in the ROAD SYSTEM TOLL STATIONS.

The Collection Control System shall have MIP implemented and fully operational. The MIP shall be approved and certified by ARTESP or by a designated body regarding technical issues as well as financial closure. The approval of the system shall occur in accordance with the Time Frame of item 13. For the REMAINING SYSTEM, the MIP already implemented may be considered, which shall be subject to adaptation, certification and approval, in order to meet the specific regulation, that was mentioned above in this section.

The Collection Control System shall allow ARTESP, *online*, to collect the information inherent to the collection of the tariffs and the operation in the TOLL STATIONSS, so that they are virtually transferred to ARTESP Headquarters and integrated with the CCI.

For all items described in this section, the CONCESSIONAIRE shall implement a digital system for registration, management and consultation of data throught the *internet*, providing ARTESP user / password pairs, as well as integration and alignment with ARTESP CCI.

#### **3.2. Description, Specifications and Service Levels**

##### **3.2.1. Collection Control System**

The Collection Control System will be responsible for managing tariff collection in TOLL STATIONS, allowing access to accountability *online* by ARTESP. This system must be compatible with three collection modes: automatic, semi-automatic and manual.

##### **3.2.1.1. Collection Modalities**

The following forms of collection will be mandatory, and must comply with legal and tax obligations, as well as those resulting from the service and technological evolution, in addition to allowing the adoption of new tariff policies throughout the concession period for the Road System.

##### **(a) Automatic Payment**

It occurs through the use of electronic identification by collection control equipment, containing the vehicle information necessary for collection, which will be captured and identified by the control equipment in the passage by road destined to the automatic collection of TOLL STATIONS.

The equipment will record the ticket and vehicle data, calculate the fare amount due, debit the value and store the data from the automatic collection operation electronically.

In this modality, there will be a speed limit for approaching the TOLL STATIONS previously established by the GRANTING AUTHORITY, which will be supervised through an electronic speed bump system, which must be installed in all roads that are able to operate with automatic collection control ( duly approved by the competent departments on the date of COMMERCIAL OPERATION OF TOLL STATIONS).

The automatic payment parameters must be in accordance with the standardization rules in force and issued by ARTESP throughout the CONCESSION TERM, observing the risk matrix of the CONTRACT.

(b) Semi-automatic Payment

Payment method, regulated by ARTESP according to Ordinance and / or specification in force at the time of implementation, using electronic approach reading media (without contact). This payment method must be installed on all roads that allow manual payment.

The system to be implemented by the CONCESSIONAIRE shall be installed to suit all types of vehicles.

(c) Manual Payment

In this modality, the current system of manual collection to be performed exclusively in kind is used, but it is foreseen, modernization of equipment to allow the adoption and new collection policies in TOLL STATIONS.

It is noteworthy that for all forms of payment described (automatic, semi-automatic and manual), there are vehicles exempt or exempt from the TOLL TARIFF. These vehicles travel on either road. There are also vehicles that carry excess loads, which may or may not be exempt from RATE, and which use the side roads because of their dimensions. The CONCESSIONAIRE shall even provide for the attendance of these types of USERS.

**3.2.1.2. Violation Control System, Exempt Vehicles, Anomalies / Discrepancies and Irregular Road Usage**

For the three charging modes (automatic, semi-automatic and manual), for exempt vehicles and for vehicles with excess loads, Violation Control systems shall be implemented in all roads to control and record the tickets, as described in the items “a” and “b” below.

(a) Records of CTB Infringements

Non-metrological systems / equipment shall be implemented to record CTB infringements committed on the runways and in the TOLL STATIONS, duly regulated by CONTRAN / DENATRAN, including, among others, the following cases: evasion without payment of the RATE, traffic in a location not allowed and / or misuse of any clues.

Throughout the CONCESSION TERM, for the implementation and operation of non-metrological systems / equipment, the CONCESSIONAIRE shall fully comply with current legislation. Mandatorily, the CONCESSIONAIRE shall also comply with all requirements, specifications, procedures and quality standards formally defined by ARTESP, as well as the determinants of the GRANTING AUTHORITY.

The CONCESSIONAIRE shall ensure that the information stored by the implemented control system of both non-metrological equipment and electronic spines is always properly available for access by the

authorities, so that it is possible to identify the stored content, within the requested deadlines, so that they may file the vehicles for the recorded non-conformities.

(b) Control and Ticket Registration

The system shall record any type of vehicle that travels on any of the highway roads, even those exempt or exempt from the RATE, anomalies / discrepancies and excess loads, unequivocally identifying it, with data and image, with its characteristics (plate, mark, number of axes), as well as the date and place of occurrence.

This system must also provide a means of restraining the passage of the vehicle on all roads by means of a gate that prevents the passage of any type of vehicle.

The systems described in items “a” and “b” shall be implemented in conjunction with the Collection Control System, so that at the beginning of COMMERCIAL OPERATION OF TOLL STATIONSS, these Systems / Equipment are approved by the competent bodies and in full. operation / operation.

The CONCESSIONAIRE shall ensure access to the stored ticket control and registration information through ARTESP's CCI.

### **3.2.1.3. Specifications for Automatic and Semi-Automatic Systems**

(a) Standardization

The Collection Control System shall meet all standardization requirements existing on the highways of the State of São Paulo, in addition to those defined by ARTESP and set forth in current legislation, throughout the CONCESSION TERM. Compliance with the standards by the CONCESSIONAIRE shall comply with the risk matrix of the CONTRACT.

(b) Marketing

The CONCESSIONAIRE shall enter into agreements with the Automatic System Operators (OSAs) and the Credit or Means of Payment (GC) Manager, duly authorized by ARTESP, enabling the vehicles to pass through the automatic and semi-automatic charging roads. The time to update ticket information shall comply with ARTESP's determination and / or legislation and regulation in force throughout the CONCESSION. Compliance with the standards by the CONCESSIONAIRE shall comply with the risk matrix of the CONTRACT.

(c) Assumptions for Project Development of Automatic and Semi-Automatic Systems applicable throughout the CONCESSION period

The following assumptions constitute the obligation of the CONCESSIONAIRE for the adequacy and viability, at its expense, of the implementation of automatic and semi-automatic collection of TOLL TARIFF, as they integrate or will integrate the prevailing tariff policy over the CONCESSION TERM:

- To increase the flow capacity of TOLL STATIONSS;
- To allow charging depending on the physical characteristics of the vehicles, such as number of axles, number of non-suspended axles, number of wheels per axle, weight, kilometer driven, time slot or the composition of two or more items;
- To allow advance payment for automatic and semi-automatic charging modes (prepaid and postpaid), when using the ROAD SYSTEM;



In addition, the following assumptions must also be met by the project, according to the billing method, 24 (twenty-four) hours per day, all days of the week, including holidays and weekends, without prejudice to the obligation of the CONCESSIONAIRE adoption of complementary operational measures aimed at the safety of USERS and the fluidity of the ROAD SYSTEM:

- To inhibit fraud attempts;
- To record unambiguously with data and images system violations, exempt vehicles, anomalies / discrepancies and unlawful use on all roads;
- To enable the registration of the entire fleet of official vehicles of the State, and its future expansion, for exemption from the TOLL TARIFF;
- To provide supervision, control, operation and maintenance facilities;
- To provide operational resources to facilitate financial auditing;
- To enable integration and interoperability with other existing systems;
- To provide real-time information on vehicle flow (quantity and type) at the CCO;
- To allow the surveillance of vehicle identification data, as recommended in existing traffic legislation;
- To allow *upgrade* without the need for full system changeover;
- To be flexible to include new functions and controls;
- To comply with the quality programs that may be developed by ARTESP and / or current legislation, actively participating in pursuit of the defined goals, observing the applicable CONTRACT terms, obligations and risks;
- To provide audiovisual resources to instruct and inform USERS without compromising system flow. The purpose of these audiovisual resources shall be in accordance with the rules established by the GRANTING AUTHORITY;
- To provide features that locally and remotely signal the occurrence of any system failures;
- To allow remote control;
- The validation activities of all information of the Collection Control System shall be performed in the physical dependencies of the ROAD SYSTEM, at the margin of the mesh granted, preferably at the CCO or in TOLL STATIONSS;
- In both-way TOLL STATIONSS, regardless of the number of roads, there must be (i) at least one employee in the course assist activity for each direction, or (ii) to choose to use remote attendance technology capable of immediately detecting, informing the USER and triggering the removal of stopped vehicles on the automatic charging roads, provided that the service level described in APPENDIX I is respected. In the case of option (i), In the case of an automatic road at both ends of the STATION in a single charging direction, there must be at least one employee at each end in all shifts in order to add road safety;
- At TOLL STATIONS, the same collaborator will not be able to develop different activities simultaneously;

- From 9 (nine) collection roads (including auxiliary and motorcycle), per traffic direction, at least one automatic collection road (exclusive) and two mixed collection roads (manual / automatic) shall be installed in each end of the STATIONS;
- Automatic roads shall undergo technical and operational approval processes, as determined by ARTESP and / or current legislation;
- Automated roads must be built and deployed to enable their USERS not to be impacted by manual charging queues;
- The REMAINING SYSTEM equipment, facilities and procedures shall comply with the requirements contained in this APPENDIX according to the Schedule of item 13.

The collection system also allows the collection of information from the road / STATION equipment for online monitoring, providing:

- Electric current monitoring for audible alarm, visual alarm, fare indicator (ITSL), release traffic light and marquee traffic light, warning traffic light, gate barrier, *loop*, dual wheel sensor, axle sensor, suspended axle sensor, vehicle entry / exit detection sensors (light barriers or similar), trihedron (or similar equipment) etc;
- Ethernet network point monitoring via *switch* within the runway *rack*, configured to operate in promiscuous mode, for AVI antenna systems, SLT hardware, semiautomatic reader, card reader (PIN PAD), road PC, triplet PMV type, VAS camera and VES camera etc ;
- Readings of all sensors and / or equipment must be obtained prior to their entry into the plates or PLCs - Programmable Logic Controllers for the Collection System; and
- For all existing road equipment, information collection must originate directly from sensors and / or equipment.

The Collection Control System shall provide access to all information from the Collection System, so that the MIP system may collect the necessary information. However, it is not allowed to make data available through *views*, *scripts*, *webservice*, etc., that is, to collect information directly from database tables.

(d) Audit

ARTESP will audit the control software employed to control and manage transactions carried out on TOLL STATIONS.

The CONCESSIONAIRE shall conduct an annual audit with an independent, reputable and well-known company and communicate to ARTESP when requested, presenting the results or data on the progress of the audit.

The Collection Control System shall have a Telemetry System, meeting the basic and operational functionalities of the collection equipment with information available at TOLL STATIONS.

Service levels applicable to the Collection Control System are set forth in Appendix I.



#### **4. TRANSIT SURVEILLANCE CONTROL SYSTEM AND TRANSPORT AND SUPPORT FOR NON-DELEGATED SERVICES**

##### **4.1. Basic Concepts**

The traffic and transportation inspection activity is part of the set of NON-DELEGATED SERVICES remaining the exclusive responsibility of the PUBLIC POWER, which also includes the ostensible policing of road traffic and the issuance of permits and authorizations.

The CONCESSIONAIRE shall be responsible for carrying out inspection support activities, especially with regard to vehicle weighing, which shall be performed at fixed and mobile stations of the ROAD SYSTEM, as well as providing material resources for the exercise of ostensive road traffic policing (compliance with the contract entered into between ARTESP, CPRV, DER / SP and other concessionaires), as well as perform the technical analysis of requests for authorization for events in the ROAD SYSTEM and transport of exceptional cargo.

The CONCESSIONAIRE shall systematically carry out analyzes on the occurrences of the ROAD SYSTEM under its administration, which shall be the object of the Road Safety Commission meeting (ruled in item 7.2.5 of this Annex), in order to inform the PMRV and / or other traffic and enforcement authorities (including ARTESP itself) for information that enables you to improve your enforcement system.

The occurrences to be analyzed are those that have the greatest potential to generate serious accidents on the highway, such as: speeding, non-use of seat belts, overtaking in a disallowed location, and others with significant impact on the occurrence of accidents.

The traffic and transportation inspection function shall include the inspection of vehicles in transit by the ROAD SYSTEM, as established in the CTB and in the ordinances issued by the DER, in the ARTESP normative acts, as well as in the applicable and applicable legislation and regulations.

Without prejudice to the monitoring of the conducts that must, under the terms of the CONTRACT and this ANNEX, be performed by the CONCESSIONAIRE, the inspection, made by the traffic authorities, will be performed at fixed stations, located along the ROAD SYSTEM, called PGF.

The boundaries of the DOMAIN RANGE, in the areas considered urbanized, must be physically established by walls, screened fences or hedges, which will be defined and chosen according to their ability to contain invasions, avoid damage to public assets and contribute to road safety.

##### **4.2. Description, Specifications, Service Levels and Performance Indicators**

###### **4.2.1. Vehicle Weighing System**

The vehicle weighing operation aims to enforce the provisions of the current traffic legislation regarding gross weight limits, per axle and per vehicle.

The Vehicle Weighing System shall be designed in accordance with the principle of road preselection of vehicles to be inspected, ie such that only those who are overweight or very close to the limit after weighing in the Selective Moving Weighing Scales (Moving Weighing System - SISPEMOV - WIM Weight in Motion System) are directed to the weighing on the precision dynamic balance of the fixed weighing station to check for any excess and subsequent measures.

Electronic selective weighing systems in motion and precision weighing systems shall consist of image capture, plate reading, axle and vehicle flow logging equipment, as well as weight data collection. The data recorded in such systems shall be collected and stored by the CONCESSIONAIRE, and made available in real time, through the Internet, to ARTESP, the CCI and / or another system indicated by ARTESP. Collected and stored data must be made available for access by transit authorities to support NON-DELEGATED SURVEILLANCE SERVICES. The electronic data acquisition system shall have a

web access platform, in real time, of all data collected in the field. User / password pairs must be provided for ARTESP use and consultation.

In accordance with current legislation and regulations, the CONCESSIONAIRE shall implement an appropriate signaling system to indicate to USERS the location of weighing points and the need for vehicles to pass and route to precision weighing stations. It shall also elaborate all the technical, operational and administrative procedures of the weighing stations, and they are substantiated in its own manual, which shall be prepared by the CONCESSIONAIRE, for ARTESP's approval.

The costs and costs of implementing, maintaining, and complying with current standards that may change from such systems, including the infrastructure required to share data collected with ARTESP, whether through fiber optics, radio transmission or any other necessary technologies to allow data sharing, observe the provisions of the risk matrix of the CONTRACT.

It will be the responsibility of the CONCESSIONAIRE to implement, for vehicle weighing systems, infrastructure that is suitable for compliance with the collection operating system based on the concept of *Free Flow* and in the collection of tariffs that reflect the mileage traveled by USERS, observing the contractual regulation and risk allocation.

The CONCESSIONAIRE shall provide for the existence of a procedure regarding the weight control of vehicles compatible with the system of other scales of the state road network outside the ROAD SYSTEM. Such compatibility aims to homogenize criteria and standards in order to eliminate the possibility of legal consequences arising from discrepancies between weighing the same vehicle, carried out in different locations.

Thus, the Vehicle Weighing System shall consist of an Electronic Weighing in Motion (SISPESMOV) system using High Speed Weigh-in-Motion (HS-WIM) technology to be installed on the road at locations precede the General Inspection Posts (PGFs) and precision weighing systems, which shall be implemented in the PGFs.

#### **4.2.1.1. General Inspection Post - PGF**

The PGF will be a road unit, managed by the CONCESSIONAIRE and operated in conjunction with the GRANTING AUTHORITY, with the purpose of providing support for the exercise of NON-DELEGATED SERVICES, which include the inspection of vehicles and drivers, as well as of USERS, regarding the following: Items:

- Documentation of drivers and vehicles;
- Documentation and packing of the cargo; and
- Overweight, height, width and length of vehicles.

The CONCESSIONAIRE shall provide support and infrastructure for the development of the aforementioned activities, including cleaning service, property security, office supplies, support equipment and other instruments necessary for the performance of these activities. The projects for the adequacy and / or implementation of the civil infrastructure of PGFs observe the rule established in Appendix J.

In addition to operating accommodations (weighing room, equipment room, pantry, toilets and others), the PGF shall offer accommodation to USERS (bathrooms and public telephone), who had their vehicle retained for any irregularity.

The PGF must be deployed immediately after the TOLL STATIONexits, at a minimum distance of 150 (one hundred and fifty) meters from the end of the carboy and a maximum distance of 2000 (two thousand) meters from the TOLL STATIONS. There is no vehicle leakage (entrances and exits, stopping bridges, etc.) between the STATION and the PGF. In this configuration, the Selective Moving Weighing

Scale (WIM System - *Weight in Motion*) on the road shall be installed at the approach of the TOLL STATION allowing all vehicles that cross a given TOLL STATION to be pre-weighed by means of the monitoring and weighing systems and equipment installed and managed by the CONCESSIONAIRE, and, if applicable, may be warned on the collection roads (manual , mixed and automatic) for PGF targeting for precision balance weighing. This configuration will also allow future adaptations and improvements in the collection system that may be incorporated in the context of ORDINARY REVIEWS.

The PGF has a modular design and may, depending on the physical and operational characteristics of the respective sections of the ROAD SYSTEM, be composed of one or more modules. In total your set may include at least the following modules:

(a) Scale module

In the Precision Balance Module, the functions related to the control and supervision of excess weight, height, width and length of vehicle will be performed.

Its facilities must comply with the provisions of this ANNEX.

The minimum quantity of PGFs, their location, the definition of the minimum modules required and the implementation deadlines are provided for in ANNEX 7 of the CONTRACT.

(b) Dangerous Goods Transport Vehicle Inspection and Seizure Module:

The CONCESSIONAIRE shall prepare the complete projects of the inspection and seizure module for dangerous goods transport vehicles in accordance with ABNT (BRAZILIAN ASSOCIATION OF TECHNICAL STANDARDS) NBR 14095, or another one that replaces it, and submit them to the prior approval of ARTESP.

The CONCESSIONAIRE will be responsible for the operation of fixed weighing stations installed in the PGFs, including the control of entry and exit of vehicles in the weighing room and the weighing operation itself, performed automatically or by the scale operator when it is necessary.

The examination of the documentation, followed by any issuance of infraction notices, will be the responsibility of agents of the GRANTING AUTHORITY. The GRANTING AUTHORITY agent may act through the PGF or through remote access. The CONCESSIONAIRE shall install a telepresence type system that allows remote service to the USER and weight control by remote agent, considering the CONTRAN Resolution number 459/2013, the CONTRAN Resolution number 547/2015 and the DENATRAN Ordinance number 870/2010, and updates.

**4.2.1.2. Vehicle Weighing System Equipment and processing of weighing activities performed by CONCESSIONAIRE**

The Vehicle Weighing System is comprised of SISPEMOV (including HS-WIM Selective Dynamic Scale, image capture systems, license plate reading and data acquisition equipment) and Precision Weighing System (composed of precision scales, imaging, license plate reading and data acquisition equipment), vehicle presence detector, control equipment, peripherals and signaling devices.

Vehicles selected by selective moving weighing shall be directed to precision weighing stations to determine their effective weight. Once the excess weight is confirmed, the vehicle will be retained and assessed by the Road Executive Agency's inspector, and an area must be provided for the retention of the offending vehicle until the removal of the excess load.

The electronic system shall be designed to store the weighing report data for a minimum of six (6) months and, in cases of overweight, automatically issue the AIIP, infringement notification document,

which shall will allow the fine to be imposed. The CCO must have access to this data automatically. (*online*).

Weighing equipment must be linked to the CCO allowing ARTESP, *online*, to collect information inherent to the weighing system and send it through SISPESMOV to the JRC and the traffic enforcement agencies.

The equipment shall be designed to match the relevant types of scales so that the equipment permits the control of the flow of vehicles at fixed stations.

The fixed weighing system shall have a telemetry system, meeting the basic and operational functions of these equipments.

(a) Selective Balance of Weight in Motion

The Selective Balance of Weight in Motion shall be of SISPESMOV type, using HS-WIM technology, which shall allow the system to mature at 4 levels over a period of 4 years in accordance with COST 323, as follows:

**Accuracy Class Width (Confidence Interval  $\delta$  (%))**

Criterion (type of measurement)	Domain of Use	Accuracy classes: Confidence Interval $\delta$ (%)						
		A(5)	B+(7)	B(10)	C(15)	D+(20)	D(25)	E
1. Gross weight	Gross weight > 3,5 t	5	7	10	15	20	25	> 25
Axle Load:	Axle Load > 1 t							
2. Axis Group		7	10	13	18	23	28	> 28
3. Single axis		8	11	15	20	25	30	> 30
4. Group axis		10	14	20	25	30	35	> 35
Speed	V > 30 km/h	2	3	4	6	10	10	> 10
Distance between the axis		2	3	4	6	10	10	> 10
Total flow		1	1	1	3	5	5	> 5

From 0 to 12 months of operation, class “D20”, with an average maximum error of 15% of the total gross vehicle weight and 30% of the axle weight with a speed of up to 150 km / h;

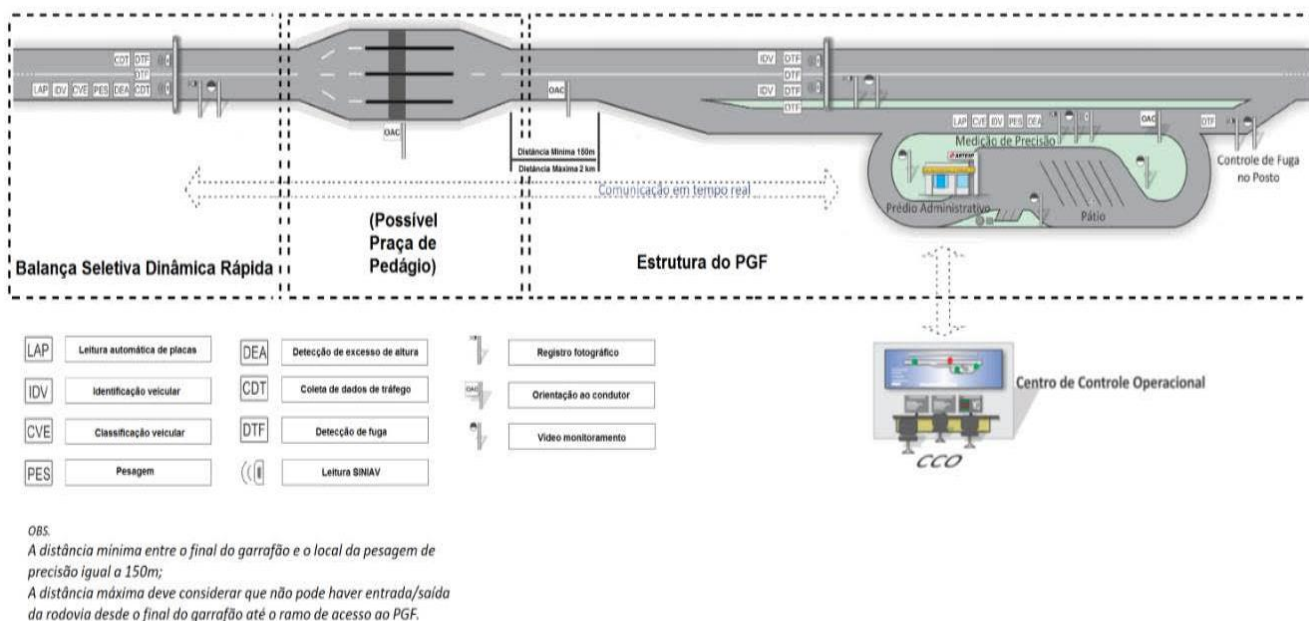
From 12 to 24 months, class “C15”, with an average maximum error of 15% of the total gross vehicle weight and 25% of the axle weight with speeds of up to 150 km / h;

From 24 to 36 months, class “B10”, with an average maximum error of 10% of the total gross vehicle weight and 20% of the axle weight with a speed of up to 150 km / h;

From 36 months onwards, class “B7”, with an average maximum error of 7% of the total gross vehicle weight and 14% of the axle weight with a speed of up to 150 km / h.

The balance must be installed over the highway's roads, at points prior to the PGFs, with distances and details to be defined in a Project prepared by the CONCESSIONAIRE and which must be submitted to ARTESP's approval. The CONCESSIONAIRE shall present: (i) Study of location of the weighing system of the Granted section; (ii) Project for the Mobile Weighing Operating System and (iii) Project for the adaptation of the Remaining System Weighing System within the deadlines set forth in item 13 of this ANNEX.

### Esquemático de Implantação do Sistema de Pesagem em Movimento (SISPESMOV) operando como Balança de Pesagem em Movimento Rápida (referencial):



Note: For sensors that do not work statically or at low speed.

The information and data generated by SISPEMOV will be available for remote access and / or monitoring by the surveillance agents.

#### (b) Fixed Precision Balance

It must be of the type "slow electronic dynamics", with a maximum error of 0.5%, to perform precision weighing, per axle and / or axle set, in the minimum amount of 150 (one hundred and fifty) vehicles per hour, in minimum speed of 12 km / h, with measurement according to current metrological legislation, allowing at least the following basic operational facilities:

- Entering operating parameters manually and automatically (communication with SISPESMOV);
- Issuance of listings of overweight transactions by axle and PBT (total gross weight) / PBTC (combined total gross weight);
- possibility of automatic classification of vehicles through codes according to Denatran Ordinance number 63/2009 or update;
- start of weighing;



- total and axle / assembly load;
- end of weighing;
- type and class of vehicle;
- license plate registration of vehicles;
- control of vehicle length, width and height;
- image leak detection; and
- AIIP issuance.

(c) Vehicle Presence Detector and Image Registration

It shall be installed in all roads of the ROAD SYSTEM and shoulder, Fast Moving Selective Weighing Scale, Medium Selective Scale and Precision Scale for leak detection and registration of offending vehicles, providing image containing day-readable vehicle plate, DENATRAN Ordinance Number 870/2010 or current legislation is respected.

(d) Control Equipment

It must include a local information storage system designed to prevent fraud or destruction.

(e) Peripheral Items

The control room of the weighing station must be equipped with peripherals to monitor the operations. These peripherals must include equipment that presents the layout of the STATION/ highway and allow identifying infringing vehicles, including cameras, video terminals and printers.

(f) Signaling Devices

It comprises the external panel to inform the driver of the weighing result of his vehicle, as well as semaphore assemblies to direct the vehicle inside the station.

They shall be adequately designed to guide the vehicles when driving within the weighing station. These devices must be activated automatically from the control room of the station.

(g) Approach Speed Devices

In the precision balance, the location of which will be defined in a project submitted by the CONCESSIONAIRE to ARTESP, a light type system shall be implemented to inform the measured approach speed of the vehicle, indicating to the driver the speed that is traveling at the approach of the balance, the ideal speed range that you must be driving and also symbols that warn the driver to accelerate or brake his vehicle to reach the ideal weighing speed range.

This device shall be interconnected to the weighing control systems recording the speed of each heavy vehicle, allowing access to this data for surveillance purposes.

(h) Telepresence Equipment

Weighing stations shall be provided with telepresence equipment interconnected with the CCO and local, to be defined by the authorities, where may be the agent of the GRANTING AUTHORITY

responsible for the operation of the weighing station. This equipment must allow auditory and visual communication between the crowded agent and the USER located in the PGF.

(i) Service Levels and Performance Indicators

The human and material resources of the surveillance system shall be sized to meet the service levels provided for in APPENDIX I and IQD provided for in ANNEX 03 and APPENDIX C, without causing disruption to USERS.

Every PGF or other weighing station, when implemented, must provide a place for the formation of vehicle lines, without these lines interfering with the road or the shoulder. To this end, the weighing stations will be supervised, also in relation to any queues. If this fact is observed, the CONCESSIONAIRE will be required to take steps to eliminate this problem, either by changing the type of equipment, expanding the weighing station, or others

#### **4.2.2. Mobile Weighing Subsystem**

In the EXISTING SYSTEM, it is not defined the implantation of weight control of Mobile Weighing type vehicle (Mobile Scale). For the REMAINING SYSTEM, the CONCESSIONAIRE shall maintain, revitalize and operate the Mobile Weighing Stations installed and in working condition.

Mobile Scales are intended for weight control at vanishing points not covered by fixed weighing stations.

For operation of REMAINING SYSTEM Mobile Scales the following must be considered:

(a) Operational Characteristics

Weighing scales shall be of the portable slow dynamic electronic type, with a minimum accuracy of 1% (one percent), allowing the weighing of moving vehicles with a minimum speed of up to 12 km / h (twelve kilometers per hour) with a minimum capacity of weighing 150 (one hundred and fifty) vehicles / hour.

When excess is found, the equipment must beep and automatically emit the AIIP.

The rating terminal shall allow the introduction of parameters necessary for operation, such as:

- timetable;
- overweight per axle, axle set or total gross weight;
- sequence number of the passage;
- date and time;
- vehicle license plate;
- axis unbalance and
- average speed / handling.

(b) Levels of Service

Service levels shall be in accordance with APPENDIX I and, where applicable, APPENDIX C.

Any queuing that interferes with the highway or the side of the highway must be avoided. Operation with any queue formations will be supervised and may have its operation interrupted when it poses risks to the user's safety. In stations with a high incidence of queuing, the CONCESSIONAIRE will be obliged to take steps to eliminate this problem, either by changing the type of equipment, enlarging the station, installing a Moving Weighing System, or others.

#### **4.2.3. Speed Control System**

The Speed Control System aims to enforce the provisions of the current traffic legislation, regarding the maximum speed limits established for the ROAD SYSTEM (or sections of this ROAD SYSTEM).

The CONCESSIONAIRE will be responsible for the implementation, complementation, revitalization, homologation, operation and maintenance of the systems and equipment that make up the Speed Control System in the ROAD SYSTEM, fully and simultaneously meeting all requirements, terms and quantities set forth in ANNEX 5, 6 and 7 of the CONTRACT.

The CONCESSIONAIRE shall acquire new speed meters, whose model has been approved by INMETRO, ensuring full compliance with the current metrological regulation. Equipment that does not meet this condition will not be approved by the GRANTING AUTHORITY.

The implementation process of the speed control system (fixed and static) will only be considered concluded by ARTESP after the approval of the speed control equipment by the GRANTING AUTHORITY, with the proper publication of the act in the Official Gazette of the State - DOE.

It is the sole responsibility of CONCESSIONAIRE to maintain the certification of all speed control equipment, as established by current legislation. Verification certificates must be sent by the CONCESSIONAIRE to ARTESP and the other competent bodies of the GRANTING AUTHORITY, within the terms and conditions set forth in the current technical specifications. To this end, the CONCESSIONAIRE shall take all measures it deems necessary, especially with regard to activities and terms involving third parties, such as certifying bodies.

Throughout the CONCESSION TERM, regarding the implementation and operation of the speed control system (fixed and static), the CONCESSIONAIRE shall fully comply with current legislation. Mandatorily, the CONCESSIONAIRE must also meet all requirements, specifications, procedures and quality standards defined by ARTESP and / or the GRANTING AUTHORITY.

##### **4.2.3.1. Fixed Speed Control**

The CONCESSIONAIRE shall implement “fixed” speed control equipment at points of the ROAD SYSTEM, pursuant to the provisions of ANNEX 7 of the CONTRACT.

For the definition of the locations of installation of the fixed speed control inspection points, the CONCESSIONAIRE shall develop technical studies at its expense, respecting the methodology and deadlines formally established by ARTESP. These studies will be analyzed by ARTESP and GRANT POWER. When requested by ARTESP, it will be incumbent upon the CONCESSIONAIRE to perform technical studies in specific locations, or to reevaluate fixed speed control points implemented.

It must be considered road sections that present potential risk (unfavorable geometry, access, etc.), high accident rate, speed practiced above the regulated and requiring the maintenance of speed within the established maximum limit. The road safety inspection / audit (governed by item 7.2.2 of this Annex) must be used as a further source of information for this study.

The locations in which fixed-type speed control equipment will be installed are called “fixed speed control points”.



Based on the analysis of the technical studies performed by the CONCESSIONAIRE, ARTESP may request the relocation of fixed speed control points. In such cases, it will be up to the CONCESSIONAIRE to bear the costs of performing technical studies and relocation.

The CONCESSIONAIRE SHALL, whenever changes occur in the constant variables in the study and / or at least every twelve (12) months, measure the effectiveness of the fixed speed meters through a new technical study.

All fixed speed control points shall be active, that is, fully installed with camera support posts, road restraint devices, equipment shelter boxes, electrical power and inductive loops for vehicle detection. In addition to this infrastructure, each point will also consist of equipment capable of measuring the speed of vehicles in all roads simultaneously and must record the image of the offending vehicles.

When technical studies determine the need for control at the same location in both directions of single-road traffic, the fulfillment of the Concessionaire's obligation to implement a single fixed speed control point capable of performing the necessary monitoring shall be characterized.

In single-road highways, where studies point to the need for equipment in only one direction of traffic, a device that restricts the use of the opposite road as an escape from enforcement must be implemented, such as beacons.

When determined by ARTESP the implementation of a fixed speed meter in critical sections, with a speed limit equal to or below 60 km / h (sixty kilometers per hour), the use of "barrier or electronic bump" type equipment is mandatory. In addition to the speed meter and the image recording device, these devices must be equipped with a display device that shows drivers the measured speed.

The implementation of barrier or electronic speed bump will be mandatory for all roads of the toll stations with automatic charging (exclusive and mixed).

The CONCESSIONAIRE may opt for fixed speed meters that use alternative technologies to surface sensors, provided that there is express permission of the GRANTING AUTHORITY and that these technologies are proven to perform at or above inductive loops.

Fixed speed control points must operate every day of the week, including Saturdays, Sundays and holidays, 24 hours a day. When this period is not observed by the CONCESSIONAIRE, the daily downtime will be recorded for the purpose of calculating the monthly downtime. In the event of equipment failure due to failures, maintenance and / or certification procedures, the procedures, deadlines and other conditions formally established by ARTESP and GRANTING AUTHORITY shall be met.

All fixed speed control points shall be interconnected to the CCO through the data transmission system, so that the records of the infringing vehicles are grouped in a specific equipment, in order to transmit them to the GRANTING AUTHORITY, observing the deadlines. defined for this activity in the current technical specifications. The integrity of the records and the security of data transmission must be ensured through the use of passwords or other type of access key, packet delivery confirmation, encryption and others.

Examination of the records, followed by any issuance of notices of infringement, will be the responsibility of agents of the GRANTING AUTHORITY.

The CONCESSIONAIRE shall monitor the quality of the photographic records of the infringing vehicles, in order to ensure compliance with the standards and requirements established by the GRANTING AUTHORITY and ARTESP's technical specifications. According to criteria established by the GRANTING AUTHORITY, it will be discarded by it, the records whose quality compromises their use for issuing the infraction notices.

The CONCESSIONAIRE shall ensure that the identifying information and filenames of the photographic records are correct, in accordance with standards set by the GRANTING AUTHORITY and ARTESP technical specifications. Photographic infringement records that present erroneous information at the data check or in the name of the record files will be discarded by the GRANTING AUTHORITY if such errors can be identified.

In cases where the insertion of erroneous information in the *data check* or in the name of the registry files leads to the improper issuance of infraction notices by the GRANTING AUTHORITY, the CONCESSIONAIRE shall be subject to the application of the administrative sanctions provided for in ANNEX 11.

Monthly, for each speed control equipment, will be calculated by the GRANTING AUTHORITY record utilization rate, based on the total number of records processed in the month and the number of records discarded. The CONCESSIONAIRE shall maintain the level of the utilization rate according to the standards defined by the GRANTING AUTHORITY and ARTESP technical specifications.

The CONCESSIONAIRE must also ensure that there are no irregularities in the numerical sequence of the infringement records transmitted to the GRANTING AUTHORITY.

The system shall allow in the form of contingency to obtain information from local vehicle offender registrations through portable data collection equipment. When necessary, it is incumbent upon the CONCESSIONAIRE to perform the manual collection of encrypted records and subsequently transmit them to the GRANTING AUTHORITY.

When requested by the GRANTING AUTHORITY, it is incumbent upon the CONCESSIONAIRE to perform the retransmission of the infringement records to the GRANTING AUTHORITY.

Fixed type speed control equipment shall store infringement records for a minimum of 30 (thirty) days.

Fixed type speed control equipment installed by the CONCESSIONAIRE shall have functionality that allows the accounting and classification of all vehicles passing through the fixed speed control point. For classification purposes, light, heavy vehicles and motorcycles must be considered. This feature must also allow the storage and export of data regarding the speed practiced by all vehicles. The way in which the data is delivered by the CONCESSIONAIRE and the way of integration with the GRANTING AUTHORITY and ARTESP systems shall comply fully with the procedures, technologies and interfaces defined by ARTESP.

Fixed speed control equipment installed by the CONCESSIONAIRE shall have optical character recognition (OCR) functionality to identify license plates of vehicles passing through the fixed speed control point. This feature applies not only to infringing vehicles, but to all vehicles passing through the fixed speed control point. If requested by ARTESP, such data shall be transmitted by the CONCESSIONAIRE to ARTESP and / or the GRANTING AUTHORITY, in real time. The way in which the data is delivered by the CONCESSIONAIRE and the form of integration with the GRANTING AUTHORITY and ARTESP systems shall be in full compliance with the procedures, technologies and interfaces formally defined by ARTESP.

Fixed speed control points must be entered into ARTESP's registration systems through procedures and interfaces formally defined by ARTESP.

Fixed type speed control equipment shall support telemetry integrated with ARTESP systems in order to enable remote and real-time consultation of their operational status by the JRC. Telemetry information provided by the CONCESSIONAIRE to ARTESP shall reflect the availability of communication between the CCO and the equipment.

The way in which CONCESSIONAIRE delivers the telemetry data and the way it is integrated with ARTESP's systems shall comply fully with the procedures, technologies and interfaces formally defined by ARTESP.

ARTESP may at any time request that CONCESSIONAIRE feed ARTESP's systems with additional information on the operation of the equipment, in accordance with procedures and interfaces similar to those used by CONCESSIONAIRE.

The operation of “fixed” speed gauges shall comply with the service levels provided for in APPENDIX I.

#### **4.2.3.2. Static Speed Control**

The CONCESSIONAIRE shall purchase “static” type speed measuring equipment, pursuant to the provisions of ANNEX 7 of the CONTRACT.

The locations of operation must be defined in conjunction with the GRANTING AUTHORITY, considering road sections with a high rate of disobedience to the speed limit and others in order to establish a strategy of operation of the equipment that enhances its use.

“Static” speed meters shall be operated every day of the week, including Saturdays, Sundays and holidays, for a minimum effective operating period of 8 (eight) hours per day, with continuous supervision of CONCESSIONAIRE's employees. When this period is not observed by the CONCESSIONAIRE, the daily downtime will be recorded for the purpose of calculating the monthly downtime. In the event of equipment failure due to failures, maintenance and / or certification procedures, the procedures, deadlines and other conditions formally established by ARTESP and GRANTING AUTHORITY shall be met.

The CONCESSIONAIRE shall send monthly scale of operation of static radars to ARTESP and other competent agencies of the GRANTING AUTHORITY by the 20th (twenty) of the previous month. This range shall include simultaneous operation of all available static speed meters. At its discretion, ARTESP or GRANTING AUTHORITY may define changes to the scale presented by the CONCESSIONAIRE. If there is an impediment to compliance with the approved scale of operation, due to force majeure or unforeseeable circumstances, ARTESP shall be notified in accordance with the rules established by the corresponding technical specification.

At the end of each period of operation of “static” type speed meters, the CONCESSIONAIRE shall transmit the records of the infringing vehicles to the GRANTING AUTHORITY, observing the deadlines defined for this activity in the current technical specifications. The integrity of the records and the security of data transmission must be ensured through the use of passwords or other type of access key, packet delivery confirmation, encryption and others.

Examination of the records, followed by any issuance of notices of infringement, will be the responsibility of agents of the GRANTING AUTHORITY.

The CONCESSIONAIRE shall monitor the quality of the photographic records of the offending vehicles, in order to ensure compliance with the standards and requirements established by the GRANTING AUTHORITY and ARTESP's technical specifications. According to criteria established, the GRANTING AUTHORITY will discard the records whose quality compromises its use for issuing the infraction notices.

The CONCESSIONAIRE shall ensure that the identification information (*datacheck*) and filenames of the photographic records are correct, according to standards set by the GRANTING AUTHORITY and ARTESP technical specifications. Photographic infringement records that present erroneous information in the *data check* or in the record file name will be discarded by the GRANTING AUTHORITY if such errors can be identified.

In cases where the insertion of erroneous information in the *datacheck* or in the name of the registry files causes the wrongful issuance of infraction notices by the GRANTING AUTHORITY, the CONCESSIONAIRE shall be subject to the application of the administrative sanctions provided for in ANNEX 11 of the CONTRACT.

Monthly, for each equipment, will be calculated by the GRANTING AUTHORITY the rate of use of records, based on the total number of records processed in the month and the number of records discarded. The CONCESSIONAIRE shall maintain the level of the utilization rate according to the standards defined by the GRANTING AUTHORITY and ARTESP technical specifications.

The CONCESSIONAIRE must also ensure that there are no irregularities in the numerical sequence of the infringement records transmitted to the GRANTING AUTHORITY.

Equipment must be registered in ARTESP's registration systems through procedures and interfaces formally defined by ARTESP.

ARTESP may at any time request that CONCESSIONAIRE feed ARTESP's systems with additional information on the operation of the equipment, in accordance with procedures and interfaces similar to those used by CONCESSIONAIRE.

Operation of "static" type speed meters shall meet the service levels provided for in APPENDIX I.

#### **4.2.4. Inspection and Control of Noise Emission**

The emission of noise, by the CONCESSIONAIRE or third parties subcontracted by it, of service / miscellaneous works on the traffic roads, shall comply with the provisions contained in Resolution Number 1 of the National Environmental Council (CONAMA), of March 8, 1990, or any other amendment or replacement.

In the event of environmental problems caused by noises harmful to neighboring communities, ARTESP, responsible for supervising the CONCESSIONAIRE, may determine that the CONCESSIONAIRE prepares specific studies, to be carried out by entities or bodies of recognized technical capacity, suitability and exemption.

The CONCESSIONAIRE will be obliged to take all the measures established by the mentioned specific studies, at its expense and within the time required by ARTESP, depending on the size of the inconveniences brought to the affected communities.

Regardless of the above conditions, the CONCESSIONAIRE shall comply with the noise emission requirements set forth in the relevant municipal legislation when transposing urbanized areas.

#### **4.2.5. Providing material and financial resources for overt road traffic policing**

In the EXISTING SYSTEM, the CONCESSIONAIRE shall provide for the provision of material and financial resources to traffic policing, as of the DATE OF TRANSFER OF EXISTING SYSTEM CONTROL. In the REMAINING SYSTEM, the CONCESSIONAIRE shall assume the provision of these resources for the ostensible road traffic policing, from the date of signing of the REMAINING SYSTEM TRANSFER TERM.

Overt, preventive and repressive road traffic policing is a non-delegated service. Its execution will be the responsibility of the Military Road Police (PMRV).

The CONCESSIONAIRE shall provide the necessary support to the execution of this service through the provision of material resources, the execution of construction works and / or adaptation of the civil installations necessary for the operation of the ostensive road traffic policing posts and modules.

The provision of resources and the relationship with the PMRv, at the operational and administrative levels, must be disciplined by adhering to the contract already signed with the State of São Paulo, through its organs responsible for the ostensive road traffic policing, with the intervention of the ARTSP

These resources shall be used, as described in the agreement, and are limited to the monthly amount of four hundred and sixteen thousand reais - brazilian currency (R \$ 416,000.00) at the base date of the CONTRACT.

#### **4.2.6. Instruction and Technical Rationale for Authorization and Grant Applications**

Issuance of authorizations and grants by the PUBLIC POWER constitutes NON-DELEGATED SERVICE, as defined by the CONCESSION REGULATION.

It shall be incumbent upon the CONCESSIONAIRE to provide the necessary support for the execution of these NON-DELEGATED SERVICES, especially with regard to the preparation of studies aiming at the technical basis, as well as the instruction of requests and requests for exceptional cargo transportation, opening / closing requests. or regularization of ACCESS to neighboring properties, requests for installation of visibility panels on the highway, permits and grants made by the interested parties and their subsequent referral to the GRANTING AUTHORITY or ARTESP, in compliance with the laws and regulations, in particular the legal and the chronological order of order entry.

The CONCESSIONAIRE shall comply with the regulation related to exceptional loads (Ordinance SUP / DER-064 of 12/21/2016 and Ordinance ARTESP Number 46 of 12/27/2016 or another that will complement or replace it).

In the case of access and installation of billboards, the CONCESSIONAIRE shall comply with Law 4.946 / 1985, Decree 30.374 / 89, Ordinance SUP / DER-078/2001 and Section 3.02 of the DER / SP Standards Manual and other documents to be issued by ARTESP, or supervening legislation and regulation that replaces the related normative commands.

##### **4.2.6.1. DOMAIN RANGE access management of the ROAD SYSTEM**

The CONCESSIONAIRE shall elaborate an ACCESS operational management plan consisting of a set of actions for the regularization and ordering of access to neighboring properties, aiming at the preservation of the environment and the safety of USERS. This plan must be delivered by the CONCESSIONAIRE, according to the deadlines defined in the Time Frame of item 13.

In addition to the physical availability of the documents, the CONCESSIONAIRE shall synchronize information, data and documents, digitally and *online*, with the ARTESP CCI, or other system that may be indicated by it. If it is necessary to submit projects related to the ACCESS and DOMAIN RANGE of the highways of the ROAD SYSTEM, the CONCESSIONAIRE shall feed the SISPROJ (or current digital system) in digital version. The plan must contain at least the following items:

- Topographic survey of the limits of the DOMAIN RANGE of the highways that make up the ROAD SYSTEM, as expropriated by the GRANTING AUTHORITY, in coordinates and format to be defined by ARTESP.

In cases where the GRANTING AUTHORITY does not inform the limits of the DOMAIN RANGE, or if there are disagreements as to the physical location (fence) and the expropriation made, the CONCESSIONAIRE shall delimit its limits through research with the real estate registry office, confronting with the boundary properties:



- Survey of all existing accesses, identifying by numbering (ID number), type of access, regularity (whether authorized or not), owner, registration number, etc., as well as meeting the requirements of current legislation, as to the physical characteristics of ACCESS.
- Elaboration of a plan in the updated and geo-referenced aerophotogrammetric base of the excerpt in digital file and with the possibility of printing in A1 format, scale 1: 1000, which shall include the DOMAIN RANGE, as expropriated by the GRANTING AUTHORITY, and / or surveyed by the CONCESSIONAIRE, properly numbered ACCESSSES, mileage, access axis coordinates near the outside of the edge of the road, the perimeter of all existing border properties along the granted roads, type of ACCESS, owner, registration number, and as if the ACCESS may remain open or if it must be closed, as well as the proposed accessibility solution in accordance with the legislation in force in the case of ACCESS that will be closed. The CONCESSIONAIRE may present technical alternatives to the aerophotogrammetric survey, provided that the method used achieves at least the same results as those specified herein.
- This plant must necessarily include all the investments provided for in the NOTICE, the CONTRACT, and especially the ANNEX 07 of the CONTRACT.

A review of the operational management plan shall be delivered by the CONCESSIONAIRE every 5 (five) years, and in the last year of CONCESSION, during the process of reversing the ROAD SYSTEM to the GRANTING AUTHORITY, the final version shall be delivered.

For the ACCESSSES that will remain open, even if not authorized, the CONCESSIONAIRE SHALL formally inform the owners - by letter - about the need for regularization and observance of the procedure established by the current legislation. The CONCESSIONAIRE shall maintain at its expense adequate safety conditions for traffic on ACCESS.

The CONCESSIONAIRE shall make the management and take the necessary measures so that all bordering owners that fit this item regularize the ACCESS within a maximum period of 05 (five) years. At the end of the term, if not achieving the objective, the CONCESSIONAIRE shall present the status of each ACCESS proving that it has taken all the measures provided for the ACCESS not yet settled.

The CONCESSIONAIRE shall deliver to the GRANTING AUTHORITY, within the period provided for in item 12 of this APPENDIX, a complete report (registration) of all ACCESSSES existing in the road network, containing the information specified by ARTESP and, if any, in the model required by ARTESP. This registration must be updated monthly by the CONCESSIONAIRE.

Unauthorized ACCESSSES that pose risks to highway users must be given priority in the withdrawals and actions described in this item, including for the purposes of settlement or closure. In case of closure, the CONCESSIONAIRE shall suggest an accessibility alternative in accordance with current legislation.

The preparation of the ACCESS project and its implementation are the responsibility and will be at the expense of the interested party.

In the case of the need for a collecting marginal road to enable the regularization of the ACCESS to be implemented within the DOMAIN RANGE for the border owners who have no access alternative but the highway, the collecting marginal road in question will be designed, executed and implemented under the sole responsibility and expense of the CONCESSIONAIRE, including its maintenance, upkeep and operation.

Regarding the project and works necessary for the regularization of the access to the collecting marginal way, these shall be of full responsibility and expense of the interested party in accordance with the current legislation.

It is considered an integral part of ACCESS any study, design, execution and implementation of works from the outer edge of the waterway or road to the limit fence of the DOMAIN RANGE.

#### 4.2.6.2. Adequacy of access in contractual Works

With the goal of planning and safety, in projects of expansion, duplication, road intersections, or any intervention that reconfigures the road system, even if it does not change the boundaries of the domain, the CONCESSIONAIRE shall contemplate, during the CONCESSION TERM, the planning ACCESS to borderline properties.

In cases where the planning indicates the necessity for the construction of the collection road, within the DOMAIN RANGE, to allow the owner to settle the existing ACCESS, the CONCESSIONAIRE shall execute the collection road at his expense.

This activity must consider the survey of all boundary properties existing in the stretch, as well as the easements of passage facing the DOMAIN RANGE and the surroundings of the devices, in addition to the launching in the appropriate scale plan and in accordance with the perimeter contained in the license plate updated, and it is updated in the BIM model, according to APPENDIX J.

The CONCESSIONAIRE shall prepare a study in partnership with the municipalities where investments will be made, indicating the desirable points of access and the alternatives that best serve the municipality, considering the municipal guidelines and the municipal master plan.

It must appear on the plant, individually and within the designed perimeter:

- Registration Number;
- ID number (access identification) according to the access register;
- Name of the owner;
- Number of the expropriation process;
- Expropriated area (m<sup>2</sup>) in the name of DER / SP;
- Remaining area (m<sup>2</sup>) left for DER / SP;
- Remaining area (m<sup>2</sup>) that remained with the owner;
- Full perimeter of all properties, including possible access to other city or state roads; and
- Possible easements duly registered in the registration.

The graphic presentation must include the accessibility solution of each border property in accordance with current legislation, making it compatible with the projects for opening / regularizing ACCESS requests.

No bordering property must be in the situation of jammed area due to contractual works, as well as works that may be included in the contract. If this occurs, its release will be the sole responsibility and expense of the CONCESSIONAIRE.

Collecting marginal roads within the DOMAIN RANGE, to be implemented, in accordance with ANNEX 7, shall be paved and maintained by the CONCESSIONAIRE, as well as existing marginal roads in the areas of influence of the works.

The projects and works necessary for the regularization of ACCESS to the collection ways shall be carried out under the responsibility and at the expense of the interested party, in accordance with current legislation.

In the case of duplication works or any contractual work that needs to use the area of ACCESS authorized and already implemented (regularized access), the CONCESSIONAIRE shall (i) during the construction period provide a provisional ACCESS observing the safety rules and primary coating, observing the rules of ANNEX 6 of the CONTRACT, (ii) and, until the conclusion of the works, recompose the mentioned ACCESS, at its expense and under its responsibility, complying with the norms and specifications in force at the time of implementation, updating the provision in the BIM model. in accordance with the procedures set out in APPENDIX J.

#### **4.2.6.3. Support services to be performed by CONCESSIONAIRE**

The CONCESSIONAIRE shall provide the support services to the GRANTING AUTHORITY, according to the rules established in the CONTRACT and its ANNEXES. All information, data and documents generated in connection with the activities listed below shall be made available to ARTESP by synchronization with the JRC or otherwise indicated by ARTESP.

Support services to ARTESP, which must be performed by CONCESSIONAIRE, are considered to be all the following activities:

##### **(a) Actions for Control and Inspection of Access to DOMAIN RANGE**

- Preparation and maintenance of the ACCESS register, indicating the situation of each one of them, within the period provided for in item 13 of this ANNEX;
- Monthly submission of the updated ACCESS register to ARTESP, together with a report of the work done by the CONCESSIONAIRE on media or by data transmission to be defined by ARTESP;
- Presentation of the information listed in ANNEX 06 of the CONTRACT for execution of resettlement processes of irregular occupation of the DOMAIN RANGE;
- Identification of unauthorized ACCESS and issuance of notice to the owner indicating the need for regularization, based on current legislation.
- Inspection in the non-edifying strip so as not to occur occupation contrary to the current legislation, as well as pointing out any works or activities in the neighboring properties, especially regarding the legality of the work or activities in the "non aedificandi" strip, identifying where the ACCESS to the property, communicating to ARTESP and taking all necessary and appropriate measures;
- Identification of authorized ACCESS that is in breach of existing regulations and issuance of a notice to the owner, indicating the need to remedy the irregularities identified, based on current legislation and making ARTESP aware. When it is necessary to close the ACCESS, the CONCESSIONAIRE shall point out the identified irregularities and whenever possible an alternative solution in order to subsidize the action taken by ARTESP.
- Instruction of the process and assembly of file with documentation regarding irregular ACCESS with photos, technical reports and the formal communication of irregularity delivered to the owner, necessarily indicating the items of legislation and regulation that are in discontract and the applicable sanctions, sending the material to ARTESP.
- Feasibility and delivery to the neighboring owners of notifications / subpoenas and correspondence issued by ARTESP within 5 (five) business days from receipt by the CONCESSIONAIRE, with copy to ARTESP, except in the case of notification of the initiation of sanctioning administrative proceedings;



- To provide the closing of ACCESS, accompanied by PMRv, when there is a court order or ARTESP regarding irregular access.
- To submit a technical report to ARTESP, when requested by a qualified professional, containing necessary and detailed information about the situation of any specific establishment, property or access, containing photos of the location, history and other specificities required, so that it meets to requests made by ARTESP, no later than 15 (fifteen) days after the request.
- To keep always ARTESP informed of all existing lawsuits regarding access, as established by ARTESP.
- For contractual works, it is necessary that the operational access management plan is already completed in the intervention section; therefore, the accesses in the stretch must already be identified according to the plan.

(b) Management of DOMAIN RANGE

- The limits of the DOMAIN RANGE and remnants of remaining areas must be inspected and kept in order, according to the expropriation plan made by the GRANTING AUTHORITY or by the CONCESSIONAIRE;
- The CONCESSIONAIRE shall not allow neighboring owners to construct buildings (dwellings, warehouses, etc.) near the highway DOMAIN boundary and remaining area boundaries, or have doors and windows that access the DOMAIN RANGE and thereby allow , the circulation of pedestrians within said road.
- The CONCESSIONAIRE shall take all necessary actions, including requesting the elaboration of the occurrence report and recomposing the boundary fence of the domain strip, in the correct place in accordance with the expropriation made by the GRANTING AUTHORITY or by the CONCESSIONAIRE;
- Fencing boundaries of the DOMAIN RANGE and the remaining areas that suffer rupture must be recomposed, in the correct place, within 24 hours of the finding of the rupture, avoiding the emergence of new irregular accesses;
- Regarding the remaining areas, the CONCESSIONAIRE shall keep them in order, without invasion, properly surrounded with walls in the urban and urbanized region, and with fence or fence in the rural region;
- DOMAIN RANGE must be kept free of solid residues (domestic or commercial), including debris;
- It will not be allowed to use the DOMAIN RANGE for other purposes, especially those that compromise road and user safety.

(c) Support Actions for ARTESP in Orienting Stakeholders and on Receipt of Documentation for Opening / Regularization / Readjustment of Access

- To guide interested parties on the current regulation, form and procedures for the request for opening / regularization / readjustment of ACCESS to the highways that make up the ROAD SYSTEM, according to the criteria established in the legislation and regulations of the GRANTING AUTHORITY.
- To provide interested parties with the delimitation of the DOMAIN RANGE of the highway where the ACCESS is to be built, as expropriated by the GRANTING AUTHORITY or by the

CONCESSIONAIRE, without prejudice to the terms of the CONTRACT to be included in the projects to be presented.

- To receive and check the documentation for opening or regularizing ACCESS, observing if all documents were delivered to the ROAD SYSTEM, as directed by ARTESP.
- To carry out the analysis of the documentation, as well as the FUNCTIONAL AND EXECUTIVE PROJECTS presented by the interested party, as directed by ARTESP, making them compatible with the contractual projects planned for the stretch;
- To forward to ARTESP the documentation received with your technical opinion, according to the model to be provided by ARTESP.
- The analysis and the referral to ARTESP must be carried out within 30 (thirty) days of the delivery of the order by the interested party to the CONCESSIONAIRE, and the CONCESSIONAIRE shall notify ARTESP if this deadline cannot be fulfilled, indicating the justification and expectation of deadline to fulfill the obligation;
- To prepare planning studies for the authorization or regularization of access to the highways that make up the ROAD SYSTEM;
- To set up a folder to be sent to ARTESP and instruct the process with the documentation and projects provided by the interested party, accompanied by the respective analysis (preliminary study, FUNCTIONAL PROJECT, EXECUTIVE PROJECT and other documents received by the CONCESSIONAIRE);
- If there is a previous process with the GRANTING AUTHORITY relating to ACCESS, the CONCESSIONAIRE shall provide a full copy of the material that makes up the process, including the projects in the original size, and incorporate the process to be sent to ARTESP;
- To keep in the possession of the CONCESSIONAIRE folder containing (i) a copy of all documentation and projects provided by the interested party, (ii) the documentation generated by the CONCESSIONAIRE and sent to the interested party and ARTESP, and (iii) the documentation sent to the CONCESSIONAIRE by ARTESP;
- To receive the communication from ARTESP regarding the analysis of the order and projects and deliver to the interested party for appropriate and necessary measures within a maximum of 5 (five) business days from the receipt of the document by the CONCESSIONAIRE, with a copy to ARTESP;
- To control the deadlines for delivery of projects and documentation, in case of request or regularization of access, and inform ARTESP of cases in which the interested party does not submit the documentation on time;
- To provide interested parties, with a copy to ARTESP, within a maximum of 5 (five) business days from receipt of the document by the CONCESSIONAIRE, the access authorizations issued by ARTESP, together with a copy of the approved and stamped project by ARTESP for their execution, or communicate the rejections with their justifications;
- To maintain a copy of each approved project to keep road of execution. Any alterations to the approved project must be submitted to ARTESP's prior analysis and approval for the continuity of the work;
- To issue authorization to start works, establishing the conditions for the construction and operation of the access, as well as authorizing the start of works and services of the approved ACCESS;
- To provide a copy of the works authorization to the interested party, after signing, sending a copy to ARTESP.

- The constitution of physical processes does not exclude the need for online sharing of documents, data and information, if the projects are approved, which must be made available in the ARTESP JRC and / or in the other digital channels indicated by the GRANTING AUTHORITY, as appropriate.

(d) Supporting Actions to ARTESP regarding the supervision of works and access services

- To provide ARTESP with the schedule of works for the implementation or regularization of ACCESS, delivered by the interested party, in accordance with the contractual works;
- To control compliance with the deadline set for commencement of works, as established by current legislation, informing ARTESP if the deadline is not met;
- To oversee the ACCESS implementation and recovery works, according to the approved projects, preventing the interested party from performing the work differently from the approved project.
- During the entire period of the work, the CONCESSIONAIRE shall monitor and ensure that the signs and road containment devices are in compliance with the rules in force at the time of the intervention in order to ensure the road safety of USERS.
- To issue monitoring report and monthly physical progress of the work, according to the model to be provided by ARTESP, based on its inspection inspections, according to the work execution schedule, sending it to ARTESP no later than the 10th. business day of each month.
- To control compliance with the deadline for completion of the works, as established by current legislation, informing ARTESP if the deadline is not met.
- To undertake an inspection and request the interested party to deliver “as built” within 10 days of the mentioned inspection, if the respective work is in accordance with the approved project, for the release of the work for operation.
- To inform ARTESP of the amount charged to the interested party as defined by ARTESP, with its calculation memories.
- To ensure the physical, signaling and operational conditions of the deployed ACCESS.
- To monitor accesses, identifying occurrences of irregularities.

#### **4.2.6.4. Supporting organizational structure**

The CONCESSIONAIRE shall maintain, throughout the CONCESSION TERM, in its organizational structure, an exclusive and permanent area to take care of NON-DELEGATED SERVICES, headed by a professional who has the necessary conditions to perform the activities performed by a civil engineer with expertise in highways.

#### **4.2.6.5. Management of domain band occupation of the ROAD SYSTEM**

The CONCESSIONAIRE shall provide the support services to the GRANTING AUTHORITY, according to the rules established in the CONTRACT and its ANNEXES. All information, data and documents generated in connection with the activities listed below shall be made available to ARTESP by synchronization with the JRC or otherwise indicated by ARTESP.

Support services to ARTESP are considered, which must be performed by the CONCESSIONAIRE all the following activities:

(a) Control and inspection actions of the DOMAIN RANGE

The CONCESSIONAIRE shall survey, identify and initiate the regularization process of the DOMAIN RANGE occupations, immediately informing ARTESP. In addition, the CONCESSIONAIRE shall prepare and submit to ARTESP, for approval, a DOMAIN RANGE occupation management plan in accordance with the Schedule of Item 13. The CONCESSIONAIRE shall synchronize all information, data and documents specified by ARTESP, including projects approved by the GRANTING AUTHORITY, digitally and online, with the ARTESP JRC, or such other system as may be indicated by it.

The CONCESSIONAIRE shall take care of the entire DOMAIN RANGE and the non-buildable area, supervising them, in order to inhibit / avoid the installation of indicative, advertising or provisional advertisements, construction of any kind of buildings or urban / road infrastructure installations. are not expressly authorized by the competent road and / or road agency or entity with a circumscription on the road.

In such cases, the CONCESSIONAIRE shall take all necessary administrative and judicial measures, including the filing of possessory actions, to maintain the integrity and delimitation of the domain boundary.

In the case of irregular occupations verified in the reference survey of ANNEX 02 of the CONTRACT, the CONCESSIONAIRE shall establish proper management of the process of relocation of these occupations, through planned actions, as defined in ANNEX 06 (Item 5.2).

The CONCESSIONAIRE shall:

- to check the non-edifying strip so as not to occupy contrary to the legislation in force, as well as point out any works or activities in the neighboring properties, especially regarding the legality of the work or activities in this range, identifying where the access to the property will occur, communicating ARTESP and taking all necessary and appropriate measures;
- to instruct the process and assemble the folder with documentation regarding the irregularities identified with photos, technical reports and the formal communication of irregularity delivered to the owner or legitimate owner, indicating the items of the regulation and / or decree that are in disagreement, as well as as the applicable sanctions, sending the process to ARTESP;
- to enable the necessary measures before the competent authorities in relation to irregular and borderline occupations, observing the systematic of the Contract, the legislation in force and other recommendations of ANNEX 06 of the CONTRACT regarding the resettlement processes of the DOMAIN RANGE;
- to arrange to vacate areas within the DOMAIN RANGE or area "*non aedificandi*", accompanied by the Military Road Police, when there is a court order, or ARTESP, when an irregularity is found; and
- to keep ARTESP always informed of all lawsuits brought against it.

(b) Actions to support ARTESP in providing guidance to interested parties and receiving documentation for opening / adjusting / readjusting ACCESS.

The CONCESSIONAIRE MUST guide interested parties on the current regulation, form and procedures for the request for occupation of the DOMAIN RANGE of the highways that make up the ROAD SYSTEM, according to the criteria established in the legislation and in the ordinances of DER or ARTESP, or others that replace them.

The CONCESSIONAIRE shall:

- To provide interested parties, through digital and editable physical means, the delimitation of the DOMAIN RANGE of the highway, for inclusion in the projects to be presented;
- To receive and check the documentation for occupation of the DOMAIN RANGE, observing if all the documents were delivered, in each phase, according to ARTESP's guidance; and
- To analyze the documentation and the FUNCTIONAL AND EXECUTIVE PROJECTS submitted by the interested party, as directed by ARTESP, forwarding to the Agency the documentation received with its technical opinion, prepared by a professional who is competent to do so, according to specific legislation and standards determined by ARTESP.

The analysis and referral to ARTESP must be carried out within 30 (thirty) days of the delivery of the order by the interested party, and the CONCESSIONAIRE shall notify ARTESP if this deadline is impossible to fulfill, indicating the justification and the expected deadline to fulfill the obligation.

The CONCESSIONAIRE shall prepare planning studies for the authorization of the occupation of the DOMAIN RANGE of the highways that make up the ROAD SYSTEM, assembling a folder to be sent to ARTESP. The process must be instructed with the documentation and projects provided by the interested party, necessarily in original copies, accompanied by the respective analysis (preliminary study, FUNCTIONAL PROJECT, EXECUTIVE PROJECT and other documents on the subject received by the CONCESSIONAIRE).

If there is a prior process with the GRANTING AUTHORITY regarding the intended occupation, the CONCESSIONAIRE shall necessarily provide a full copy of the material that makes up the process, including the projects in the original size, and incorporate the process to be sent to ARTESP.

The folder containing a copy of all documentation and projects provided by the interested party shall be kept in the possession of the CONCESSIONAIRE, including (i) the documentation generated by the CONCESSIONAIRE and sent to the interested party and ARTESP, (ii) the documentation sent to the CONCESSIONAIRE by ARTESP.

The CONCESSIONAIRE will receive notice from ARTESP, regarding the analysis of requests for occupation of the domain and projects and will inform / deliver to the interested party for appropriate and necessary measures.

The CONCESSIONAIRE must control the deadlines set for the delivery of projects and documentation, in case of request or regularization of the occupation of the domain and inform ARTESP of the cases in which the interested party does not submit the documentation within the deadline.

The CONCESSIONAIRE shall deliver to the interested parties the authorization to occupy the DOMAIN RANGE issued by ARTESP together with a copy of the approved project stamped by ARTESP for its execution, or to communicate the rejections with the respective justifications.

The CONCESSIONAIRE shall:

- to keep a copy of each approved project in its possession to monitor implementation. Any changes to the approved project must be submitted for prior review and duly approved by ARTESP for continuity;
- to establish the conditions for construction and operation, as well as authorize the commencement of works and services; and
- to deliver a copy of the DOMAIN RANGE authorization form to the interested party, after signing, sending a copy to ARTESP.

The constitution of physical processes does not exclude the need for online sharing of documents, data and information, if the projects are approved, which must be made available in the ARTESP CCI and / or in the other digital channels indicated by the GRANTING AUTHORITY, as the case may be.

(c) Support actions for ARTESP regarding the supervision of works and services in DOMAIN RANGE

The CONCESSIONAIRE shall:

- to provide ARTESP with the schedule of works and services in the DOMAIN RANGE, delivered by the interested party, in the same way as those used for contractual works;
- to control compliance with the deadline set for the commencement of works, as established by current legislation, informing ARTESP if the deadline is not met;
- to supervise the works, according to the approved projects, preventing the interested party from performing the work differently;
- to issue monitoring report and monthly physical progress of the work, according to ARTESP specifications, based on its inspection inspections, in accordance with the work execution schedule, sending it to ARTESP by the 10th (10th) business day of each month;
- to control compliance with the deadline for completion of works, as established by current legislation, informing ARTESP if the deadline is not met;
- to conduct an inspection and request the Interested Party to deliver the “as built” within 10 (ten) days of the mentioned inspection, if the respective work is in accordance with the approved project, for the release of the work for operation;
- to inform ARTESP of the amount of fees charged to the interested party, as defined by ARTESP, with their calculation memories;
- to ensure physical, signaling and operational conditions; and
- to inspect the occupation of the domain, identifying irregularities.

#### **4.2.7. Management of exceptional cargo transportation**

The CONCESSIONAIRE may be compensated for services rendered in the implementation of operational schemes necessary for special operations to transport exceptional loads, which may directly affect the flow and safety of traffic, and shall comply with the rules of Ordinance SUP / DER 64/2016 and its amendments, as well as ARTESP Ordinance 46/2016 and rules, regulations, technical specifications and / or parameters established in the notice and the concession agreement.



#### **4.2.8. Road Police**

The CONCESSIONAIRE shall, in addition to the provisions of the Contract with the Military Road Police, in accordance with the provisions of ANNEX 7, provide the Military Road Police with the vehicles necessary to carry out the activities of ostensive road traffic policing in the ROAD SYSTEM. The vehicles must be delivered duly documented, equipped and characterized, according to the standard established by the Military Road Police of the State of São Paulo. The duly equipped and characterized vehicles, as well as the other equipment necessary for carrying out the ostensive traffic inspection, must be delivered to ARTESP or to whom it indicates.

The CONCESSIONAIRE may choose to purchase, lease, outsource or lease these types of vehicles, and they must purchase new vehicles in the last year prior to the signing of the PROVISIONAL RECEIPT OF TERMS, as it was set out in ANNEX 10 of the CONTRACT.

For the supply of vehicles and their equipment, the CONCESSIONAIRE shall comply with the following Technical Specifications of the Military Police of the State of São Paulo, or other regulations that may replace them:

(a) Vehicles

- Control vehicle - technical specification CPRv-032 / UGE / 08;
- Patrol vehicle - technical specification CPRv-031 / UGE / 08;
- TOR car - technical specification CPRv-001/08/13;

(b) Equipments

- Emergency signal - technical specification CPRv-057 / UGE / 08\_B;
- Mobile transceiver radio - technical specification CPRv-058 / UGE / 08\_C.
- OCR cameras, in the quantities indicated in APPENDIX 7.

## **5. COMMUNICATION AND RELATIONSHIP SYSTEM**

### **5.1. Basic Concepts**

Services corresponding to operational functions and support for NON-DELEGATED SERVICES shall be assisted by a telecommunications system consisting of a Data Transmission System, which is responsible for interconnecting the various systems installed along the highway to the CCO.

In turn, the CCO must coordinate and control all operational functions of a communication system with the USER, a network of variable message panels and fixed and mobile telecommunications networks, installed at fixed points of the ROAD SYSTEM (TOLL STATIONSS), checkpoints and other operational bases) and the mobile units of the various services, as well as the ombudsman and other relationship channels with the USER.

The sizing and deadlines for the implementation of all these systems are provided for in ANNEX 7 of the CONTRACT.

For all items described in this section, the CONCESSIONAIRE shall implement a digital system for registration, management and consultation of data via web, with integration and alignment with the CCI.

## **5.2. Description, Specifications and Service Levels**

### **5.2.1. 0800 Attendance System**

The CONCESSIONAIRE will be responsible for the implementation, revitalization, complementation, operation and maintenance of systems and Attendance equipment of the type:0800, in the ROAD SYSTEM, fully and simultaneously meeting all requirements, quantities and terms set out in ANNEX 5, 6 and 7 of the CONTRACT.

The CONCESSIONAIRE shall constitute a definitive 0800 telephone system, which shall be available to USERS 24 hours a day, all days of the week, including holidays and weekends, observing the rules of courtesy with the USERS.

The CONCESSIONAIRE shall provide access to the definitive 0800 telephone system database, including all operational information, and with real-time and online interconnection to ARTESP's CCI.

The implementation of a 0800 attendance system at the CCO will also be mandatory. This system must allow the issuance of Repressed Demand Report, whenever requested by the GRANTING AUTHORITY.

### **5.2.2. Radio System**

The CONCESSIONAIRE will be responsible for the implementation, revitalization, complementation, operation and maintenance of the systems and equipment constituting the Radio System in the Highway System, aiming to fully and simultaneously meet all requirements, quantities and terms set forth in ANNEX 5, 6 and 7 to the CONTRACT. and its appendices.

The Radio System shall include the establishment of fixed stations, mobile stations, portable stations and repeater stations, capable of ensuring communication with all workstations, whether fixed or mobile, throughout the ROAD SYSTEM, without presenting any point with. communication signal failure.

Fixed, mobile, portable and repeater stations must be registered in ARTESP registration systems through procedures and interfaces formally defined by ARTESP.

Repeater stations must support telemetry integrated with ARTESP systems in order to enable remote and real-time consultation of the operational status of equipment by the JRC. Telemetry information provided by the CONCESSIONAIRE to ARTESP shall reflect the availability of communication between the CCO and the equipment.

The way in which CONCESSIONAIRE delivers the telemetry data and the way it is integrated with ARTESP's systems shall be in full compliance with the procedures, technologies and interfaces formally defined by ARTESP.

ARTESP may at any time request that CONCESSIONAIRE feed ARTESP's systems with additional information on the operation of the equipment, in accordance with procedures and interfaces similar to those used by CONCESSIONAIRE.

Operation of the Radio System shall meet the service levels provided for in APPENDIX I.

### **5.2.3. Data Transmission System**

The CONCESSIONAIRE shall be responsible for the implementation, complementation, revitalization, operation and maintenance of the systems and equipment constituting the Road System Data Transmission System, and shall comply fully and simultaneously with all requirements, quantities and terms set forth in ANNEX 5, 6 and 7. to the CONTRACT and its APPENDICES. The data transmission system shall have an architecture available 24 (twenty four) hours a day, including weekends and holidays, allowing coverage of all data generating points and information of the ROAD SYSTEM, using



It is up-to-date technology and capable of meeting the demand demand without loss of performance of every segment of the architecture. It must enable the collection, treatment, processing and transmission, as well as access to this information in real time, from the CONCESSIONAIRE's CCO.

When equipment or system with critical, complex and systemic failures with relevant impact to the operation is detected, the CONCESSIONAIRE shall, within a maximum of 2 (two) hours, inform ARTESP.

The Concessionaire shall have fault management system, performance, configuration and security of the data transmission network.

The operation of the Data Transmission System shall meet the service levels provided for in APPENDIX I.

#### **5.2.4. CCO**

The CONCESSIONAIRE will be responsible for the implementation, revitalization, operation and maintenance of the CCO (building, systems and equipment) in order to fully and simultaneously meet all requirements for the definitive CCO established in the APPENDICES.

The CCO will be responsible for routinely monitoring the traffic of the ROAD SYSTEM and coordinating the actions of the SAU, as well as the Traffic Inspection units, triggering all resources necessary for operational interventions, including other entities such as PMRv, Fire Department, Environment, Civil Police and Military Police, when applicable.

The CCO shall coordinate all extraordinary events involving special operations of any kind in the ROAD SYSTEM.

The systems and operation of the CCO, pursuant to this APPENDIX, shall be exclusive, but there is no prohibition to share building, except for the rule applicable to the reversibility of the CONCESSION assets.

The CCO shall be operated by qualified personnel and shall have operational systems and databases to feed an ARTESP online information system, appropriate to the operational needs of the ROAD SYSTEM, including, for example, equipment telemetry data, systems communication with USERS, TOLL STATIONS, variable message board system, traffic monitoring, enforcement and conservation systems.

The way in which the CONCESSIONAIRE delivers the information inherent to the CCO's systems, including telemetry data, as well as the way it is integrated with ARTESP's systems shall follow the procedures, technologies and interfaces formally defined by ARTESP.

The CCO, in addition to centralizing and controlling the equipment installed along the granted highways, must have a weather information system, making them available to the CCO operator and enabling decision-making in advance of climate changes that may interfere with the traffic of the highways of the ROAD SYSTEM.

When equipment or system with critical, complex and systemic failures with relevant impact to the operation is detected, the CONCESSIONAIRE shall, within 2 (two) hours, inform ARTESP. The operation of the CCO shall meet the service levels provided for in APPENDIX. I.

In the event of failure of any equipment, system or functionality that make up the CCO, these shall have their operation restored by the CONCESSIONAIRE within 48 (forty-eight) hours.

#### **5.2.5. User Communication System - Emergency Phone type - Call Box**

Maintenance and operation of the user communication system, emergency telephone type (*Call Box*) It is only applicable after the signing of the REMAINING SYSTEM TRANSFER TERM, when the

CONCESSIONAIRE shall maintain and operate all such equipment installed on the REMAINING SYSTEM highways.

According to deadlines stipulated in ANNEX 07 of the CONTRACT, the communication system with the USER, emergency phone type (*Call Box*) and shall be replaced by a communication system with the User via wireless data network, meeting the requirements set forth in item 5.2.6 of this ANNEX 05.

For User Communication System, type Emergency Phone (*Call Box*) installed on the REMAINING SYSTEM highways, the CONCESSIONAIRE shall comply with the following requirements.

Equipment must be registered in ARTESP's registration systems through procedures and interfaces formally defined by ARTESP.

The equipment must support telemetry integrated with ARTESP systems in order to allow remote and real-time consultation of the operational state of the equipment by the JRC. Telemetry information provided by the CONCESSIONAIRE to ARTESP shall reflect the availability of communication between the CCO and the equipment.

The concessionaire's availability of telemetry data and the way it is integrated into ARTESP's systems shall be in full compliance with the procedures, technologies and interfaces formally defined by ARTESP.

Answering emergency calls through the User Communication System, type Emergency Telephone (*Call Box*) shall be executed by the CCO, and the same service positions as the 0800 service and the User Communication System via Wireless Data Network may be used.

The USER, when activating the equipment, must receive a sound or voice signal that his call has been received or that the equipment is in maintenance, defect etc.

The operation of the Emergency Call Telephone (User Box) Communication System shall meet the service levels provided for in APPENDIX I.

#### **5.2.6. User Communication System, via Wireless Data Network**

The User Communication System via Wireless Data Network is a set of equipment and software that allows the users of the granted ROAD SYSTEM to establish communication with the CONCESSIONAIRE CCO, with the purpose of requesting information or assistance in emergency situations, for example means a data communication network that is using wireless communication technology such as wifi.

It is the responsibility of the CONCESSIONAIRE to implement, revitalize, operate and maintain the systems and equipment in the ROAD SYSTEM, which make up the Wireless Communication User System in order to fully and simultaneously meet all the requirements, terms and quantities set forth in the APPENDIX. The System shall be deployed through a wireless communication network using technology compatible with the major commercial mobile terminals such as Wi-Fi technology, taking into account the requirements of ARTESP's current technical specifications.

The System shall be deployed throughout the granted ROAD SYSTEM, ie the coverage of the wireless network shall cover the full extent of the granted highways, including shoulders, domain and central site, as applicable. In the implementation of physical infrastructure, all requirements related to road safety must be observed, according to the rules established by the applicable technical standards and the current technical specifications of ARTESP.

The wireless communication network must take *handoff* (or *roaming*), which consists of the automatic transfer of a user's connection on the move from one base station (access point) to another. This, the *handoff* shall enable a user who travels the highway at a speed compatible with the permitted limits to

have uninterrupted access to services made available through the CONCESSIONAIRE's wireless network.

The CONCESSIONAIRE may restrict the use of the wireless data network only to emergency communications and, optionally, to other concession-related services, including operational demands, if there is no different determination from ARTESP or contractual requirement to deploy new services.

The CONCESSIONAIRE must ensure that emergency communications traffic on the wireless data network is not hampered by data traffic from other concession-related services, with a negative impact on the availability and quality of emergency communications.

The wireless communication network must be appropriately sized to meet capacity requirements commensurate with the number of potential USERS and the services available over the wireless network.

The CONCESSIONAIRE shall implement a transport network that enables the communication of the base stations (wireless access points) with the CCO, which may be the same optical communication network used for data transmission of the ITS equipment deployed by the CONCESSIONAIRE on the granted highways.

The wireless communication network deployed by CONCESSIONAIRE shall be intended to provide users with CONCESSION-related services, including emergency services, and to meet highway operating needs, and sharing of the network with third party services is not permitted, unless expressly determined by contract or by authorization of ARTESP.

The CONCESSIONAIRE shall be responsible for the operation and maintenance of the wireless communication network that serves users in an emergency situation. The use of a third party network over which the CONCESSIONAIRE does not have full control over capacity, availability and coverage is not permitted the express contractor authorization of ARTESP.

The Wireless Data Network User Communication System shall support voice communication service with the CONCESSIONAIRE CCO in real time, such as a telephone call, for emergency care in the granted lot.

In addition, the CONCESSIONAIRE shall offer video communication and chat communication (instant text messaging) services.

Voice, video and text communication services must be accessed through a portal (webpage) to be developed by CONCESSIONAIRE, to which the USER must be automatically directed when connecting to CONCESSIONAIRE's wireless data network.

Voice, video and text communication services must be available and functioning properly for stationary vehicles everywhere served by the wireless network, including shoulders.

Proper operation is considered as the possibility of establishing emergency calls with the CCO, with voice and video quality that allows intelligible communication between the parties, and without interruption due to wireless signal variation or any network failures.

Additionally, CONCESSIONAIRE may develop a mobile application that provides access to voice, video and text communication services similar to the portal.

Application development for voice service for emergency communication does not exclude the need for the voice communication solution through the portal.

Answering emergency calls through the Wireless Data Network User Communication System shall be performed by the CCO and may use the same answering positions as 0800 service and emergency telephones. (*Call Box*).

**The attendance system shall enable the identification of the location of the user requesting emergency assistance by means of the following minimum information: highway and kilometer,** according to current technical specifications of ARTESP. The answering system shall enable the recording and recording of calls made through the wireless data network and the calculation of statistics.

The CONCESSIONAIRE shall implement a management system for the entire communication network that supports the User Communication System via Wireless Data Network, including fault management and performance.

To ensure that USERS are aware that the Wireless Data Network User Communication System is available for emergency service, the CONCESSIONAIRE must install information signs throughout the wireless coverage ROAD SYSTEM according to established signaling standards. by ARTESP. For the implementation and operation of the User Communication System via Wireless Data Network, the CONCESSIONAIRE must meet all the requirements established by applicable ANATEL standards.

Wireless Access Point equipment must be entered into ARTESP's registration systems through procedures and interfaces formally defined by ARTESP.

Wireless Access Point equipment must support telemetry integrated with ARTESP systems in order to enable remote and real-time consultation of equipment operational status by the JRC. Telemetry information provided by the CONCESSIONAIRE to ARTESP shall reflect the availability of communication between the CCO and the equipment.

The manner in which the CONCESSIONAIRE will make available telemetry data and the way it is integrated with ARTESP's systems shall comply fully with the procedures, technologies and interfaces defined by ARTESP.

ARTESP may at any time request that CONCESSIONAIRE feed ARTESP's systems with additional information on the operation of the equipment, in accordance with procedures and interfaces that are similar to those used by CONCESSIONAIRE.

#### **5.2.6.1. Inspection Parameters**

Operation of the User Communication System via Wireless Data Network shall comply with the service levels provided for in Appendix I and Performance Indicators provided for in ANNEX 03 of CONTRACT and APPENDIX C.

**Verification of the service level** (operability) of the User Communication System via Wireless Data Network may be performed by analyzing the performance of the System on any part of the Road System and / or the availability of Wireless Access Points.

System performance analysis will be performed by establishing test calls on the granted road system. Given that in the Wireless Data Network User Communication System there is no determination of specific highway locations for calls, surveillance is performed by means of random point testing on any part of the ROAD SYSTEM, and not necessarily throughout the ROAD SYSTEM, in accordance with the provisions of ARTESP's technical specifications.

The analysis of the availability of wireless access points refers to periodically checking whether the number of inoperative wireless access points is in accordance with the service level provided for in APPENDIX I.

The CONCESSIONAIRE shall implement the necessary redundancies of network and equipment to ensure compliance with the level of service required for the Wireless Data Network User Communication System.

### 5.2.7. Panel System of variable messages (PMVs)

The CONCESSIONAIRE is responsible for the implementation, revitalization, operation and maintenance of the Road System PMV systems and equipment, in order to fully and simultaneously meet all requirements, terms and quantities set forth in the Appendices and Appendices. The purpose of the PMVs is to provide clear and succinct information and guidance to drivers driving along the highway. The messages to be conveyed by PMVs can be classified into:

- warning messages;
- guidance messages; and
- institutional messages.

Warning messages are intended to alert highway users of adverse traffic conditions in certain locations (works, detours, accidents, fog, etc.), and such messages must be conveyed with appropriate informational content at and through appropriate ways (through the PMVs and also through other available means, such as the CONCESSIONAIRE's website), which allow, as far as possible and reasonable and in the light of the informed conditions, the USER's reaction to the decision to traffic the impacted section. .

Guidance messages are intended to educate USERS on proper behavior while driving on the highway, or to guide USERS on actions to be taken at certain flagged locations on the highway.

The institutional messages are intended to provide information of interest to ARTESP or CONCESSIONAIRE regarding improvements implemented, objectives achieved and goals to be achieved in the operation, conservation and expansion of the Highway System, among others.

The operation of PMVs, including aspects such as update frequency and priority message types, shall follow the rules established by ARTESP through its current technical specifications.

The PMVs will be of two types: fixed, installed in fixed structure on the highway, and mobile, installed in own trailer or semi-trailer.

Fixed PMV messages will be delivered from the CCO, which will have online control over all these equipment installed in the Road System.

### 5.2.7.1. Panel of Fixed Variable Message

Fixed type PMV equipment must meet the following requirements:

- The messages conveyed must be visible and understandable at least 300 (three hundred) meters in clean, dry and sunny weather;
- the brightness index of the panel must be automatically adjusted according to the environment;
- modular equipment, which allows replacement of components for maintenance purposes;
- have at least 2 (two) lines for messages, and some messages may be composed in a single line, double the character box;
- character with a minimum box height of 45 (forty-five) centimeters;
- The panel shall allow the configuration of traffic signals as specified in the Brazilian Traffic Code. For this, the panel must have a minimum of 3 (three) colors (green, red and amber);
- each line must have a minimum of 15 (fifteen) characters;
- contain fixed, flashing, sequential, bright display modes.

For operating purposes, the following requirements must be met:

- PMVs will be considered non-operational for as long as they are not serving messages.
- PMVs will be considered inoperative if they have malfunctioning or “off” LEDs.
- PMVs will be considered inoperative if communication with the CCO is interrupted, preventing aired messages from being updated.

The system shall have a central control system, to be installed at the ROAD SYSTEM operational control center (CCO), which shall be responsible for the management of the fixed field panels and shall have all the necessary resources to monitor the operation, as well as identify failures in PMVs and issue alarms to their operators.

The central control system shall provide functionalities enabling at least:

- Scheduling for automatic display of messages at pre-set times;
- routine for monitoring deleted points;
- routine for monitoring the messages conveyed;
- report, at the operator's request, of the messages conveyed broken down by panel and by slot;
- message editing and delivery at any time; and
- storage of 200 (two hundred) messages.

Equipment must be registered in ARTESP's registration systems through procedures and interfaces formally defined by ARTESP.

The equipment must support telemetry integrated with ARTESP systems in order to allow remote and real-time consultation of the operational state of the equipment by the JRC. Telemetry information



provided by the CONCESSIONAIRE to ARTESP shall reflect the availability of communication between the CCO and the equipment.

In addition to telemetry information, the CONCESSIONAIRE shall supply ARTESP systems with information about the messages conveyed by the equipment, enabling remote and real-time consultation by the JRC.

The CONCESSIONAIRE's availability of telemetry data and equipment message information, and its integration with ARTESP's systems shall be in full compliance with the procedures, technologies and interfaces formally defined by ARTESP.

ARTESP may at any time request that CONCESSIONAIRE feed ARTESP's systems with additional information on the operation of the equipment, in accordance with procedures and interfaces that are similar to those used by CONCESSIONAIRE.

The operation of the fixed-type Variable Message Board System shall meet the service levels provided for in Appendix I and Performance Indicators provided for in ANNEX 03 and APPENDIX C.

#### **5.2.7.2. Panel of mobile variable message**

The panel of mobile variable message shall be installed on its own trailer or semi-trailer and shall have the following minimum characteristics:

- to be visible and understandable at a distance of at least 300 (three hundred) meters in clean, dry weather with sunny weather;
- to have a minimum of two (2) lines for messages, and some messages may be composed in single line, double the character box;
- character with a minimum box height of 37 (thirty-seven) centimeters;
- each line must have a minimum of 7 (seven) characters;
- to display fixed, flashing and sequential display modes;
- to have standard messages;
- control module to configure the signaling to be presented; and
- Own power supply, with a minimum autonomy of 12 (twelve) hours of uninterrupted operation.

Mobile PMVs will be considered inoperative if they have malfunctioning or "off" LEDs.

This equipment must be used as needed, as reinforcement in signaling under abnormal operating conditions such as works, road closure, congestion etc., especially to inform USERS warning messages, to communicate adverse traffic conditions, and PMVs Furniture must be positioned and contain appropriate content to allow, as far as possible and reasonable, the USER to react and make decisions regarding the use of the impacted road section.

At all times, all existing equipment must be operational and ready for use. Operation of the movable variable message board system shall meet the service levels provided for in APPENDIX I.

#### **5.2.8. Ombudsman and Other User Relationship Channels**

The CONCESSIONAIRE shall implement and maintain in full operation and within the established standards, the Ombudsman and Other User Relationship Channels, provided for in the current legal

and infra-legal rules, as well as in the ARTESP regulations and ordinances, pursuant to the PUBLIC NOTICE and CONTRACT.

The CONCESSIONAIRE Ombudsman shall:

- (i) to receive, process and analyze the manifestations and suggestions of USERS or third parties affected by the provision of the DELEGATED SERVICES, following the treatment and the effective conclusion of the manifestations / suggestions before the CONCESSIONAIRE, formulating a response within 30 (thirty) days, from the date of the manifestation / suggestion and may be extended only once, for the same period, provided it is duly justified;
- (ii) to prepare an annual management report, which must consolidate the statements and suggestions, indicating i) the number of statements organized by subject, ii) causes and reasons, iii) finding recurring points and, based on them, point out and suggest improvements in the delivery of DELEGATED SERVICES;
- (iii) to promote the participation of USERS in matters of CONCESSION interest;
- (iv) to monitor the provision of services, with a view to ensuring their effectiveness;
- (v) to propose improvements in the provision of services;
- (vi) to assist in the prevention and correction of acts and procedures incompatible with those established in this AGREEMENT; and
- (v) to propose the adoption of measures to defend the user's rights, in compliance with the provisions of this CONTRACT and the current legislation; and promote the adoption of mediation and conciliation between the USER and the CONCESSIONAIRE without prejudice to other competent bodies.

The management report shall be forwarded to the maximum authority of the CONCESSIONAIRE and also to the GRANTING AUTHORITY and ARTESP, as well as made available on the Internet, with the information inherent to the Ombudsman and other User Relationship Channels, and centralizing them to the ICC. if so the broadest publicity and social control.

#### **5.2.9. Service to Local Authorities**

The CONCESSIONAIRE shall, through SISDEMANDA, have an exclusive service channel for Local Authorities. Inquiries from Local Authorities must be answered by the CONCESSIONAIRE within five (5) business days from the date of submission. ARTESP shall have access to inquiries sent by the Local Authorities at the time of submission, as well as be immediately informed of the response given by the CONCESSIONAIRE to the authorities.

### **6. TRAFFIC MONITORING SYSTEM**

#### **6.1. Basic Concepts**

Services corresponding to operational functions and support for NON-DELEGATED SERVICES shall be assisted by Traffic Monitoring Systems, with equipment installed at the main points of the road system, integrated with the CCO through a real time data transmission system.

At the CCO, the data reported by the equipment that makes up this Traffic Monitoring System must be presented to the operators of this CCO in panels (video wall) and video monitors, through images or other visualization, capable of providing all necessary data. for the perfect monitoring of highway operation from a distance.

The deadlines and quantification for the implementation of this system are set out in ANNEX 07 of the CONTRACT.

#### **6.2. Description, Specifications and Service Levels**

##### **6.2.1. Traffic Sensing System**

According to specifications, terms and quantities defined in the APPENDICES, the CONCESSIONAIRE shall implement, complement, revitalize, operate, update and maintain equipment and systems in order to fully and simultaneously meet all requirements for the Traffic Sensing System.

The Traffic Sensing System shall cover all road sections (SPs and SPAs) in order to monitor the quantitative and qualitative evolution of the road system's vehicle flow. Traffic sensors deployed on both the EXISTING and REMAINING SYSTEMS shall measure vehicle flow as well as the speed and weight of vehicles traveling on the ROAD SYSTEM. The CONCESSIONAIRE shall divide the highways of the ROAD SYSTEM into homogeneous segments (sections with similar physical and operational characteristics). This division must be presented in report form and validated by ARTESP.

In each homogeneous segment, the CONCESSIONAIRE shall calculate the operational service level according to the method of the *Highway Capacity Manual*, established in IP00.000.000-0-A23 / 001 and its revisions or current technical specification.

For this, in the critical section of each homogeneous segment, volume, speed and weight data of the vehicles shall be collected simultaneously in all roads and running roads.

The service level must be calculated in real time and transmitted to ARTESP every fifteen (15) minutes during all hours of the year, following the methodology defined in the ARTESP technical specifications.

Traffic data shall be obtained by means of traffic sensors implemented in the homogeneous sections of the ROAD SYSTEM, so that the information collected may be audited by the GRANTING AUTHORITY at any time of the year or period of the day. All locations for which TOLL STATIONSS are planned must contain a traffic sensor, whether or not it is a component of TOLL STATIONSS.

The monitoring of sections under the influence of access, needles and entanglements must be done through a specific traffic study report, under the responsibility of the CONCESSIONAIRE, to be requested by ARTESP according to the needs of each case. Studies must follow the procedures defined in ARTESP standards, design instructions and technical specifications.

For devices belonging to the ROAD SYSTEM, at least one semi-annual traffic study report shall be made under the responsibility of the CONCESSIONAIRE. The frequency of reports may be reasonably changed by ARTESP according to the needs of each case. Studies must follow the procedures defined in ARTESP standards, design instructions and technical specifications.

The calibration of the traffic sensing equipment must meet the accuracy limits defined in the corresponding ARTESP technical specifications.

After the implementation of the traffic sensor equipment, if there are changes in the characteristics of the homogeneous sections, ARTESP may request the relocation or installation of the traffic sensor installation points, according to the technical need. In such cases, it will be up to the CONCESSIONAIRE to bear the costs of relocation, implementation and calibration of equipment.

Traffic sensors shall be driven by inductive and piezometric loops or other technologies offering similar or superior performance. They must also offer at least the following features:

- vehicle count, by direction and by road;
- length of vehicles;
- classification of vehicles between light and heavy, having as a parameter the length of the vehicle;
- speed (of each vehicle, average by vehicle class and overall average);
- distance and time interval between vehicles (GAP);

- time lag between front of two subsequent vehicles (HEADWAY);
- occupancy rate (time the loop was occupied by vehicles, relative to a time basis);
- axle weight and total gross vehicle weight, which will be used for statistical analysis;
- axle rating and type of roadway that will be used for statistical analysis; and
- Redundancy of power supply (in addition to the main source, provision must be made for uninterruptible power supply - UPS, with or without generator set), with a minimum autonomy of sixteen (16) hours.

To comply with the obligations of the Traffic Sensing System, the CONCESSIONAIRE shall make available, in the first year of the concession, an integrated digital system, through the Internet, for consultation of the data collected by the SATs (SIS-SAT).

Traffic sensors must be registered in ARTESP registration systems through procedures and interfaces formally defined by ARTESP.

Traffic sensors shall support telemetry integrated with ARTESP systems in order to enable remote and real-time consultation of the operational status of the equipment by the JRC. Telemetry information provided by the CONCESSIONAIRE to ARTESP shall reflect the availability of communication between the CCO and the equipment.

In addition to the telemetry information, the CONCESSIONAIRE shall supply ARTESP systems with the count, speed and weight data recorded by the traffic sensors, enabling remote and real time consultation by the CCI.

The manner in which the CONCESSIONAIRE makes available telemetry data and data recorded by the equipment, and the form of integration with the ARTESP systems shall comply fully with the procedures, technologies and interfaces formally defined by ARTESP.

ARTESP may at any time request that CONCESSIONAIRE feed ARTESP's systems with additional information on the operation of the equipment, in accordance with procedures and interfaces similar to those used by CONCESSIONAIRE.

Operation of the Traffic Sensing System shall meet the service levels provided for in APPENDIX I.

It is mandatory to install a Traffic Sensing System in the exact locations provided for the installation of TOLLSTATIONSS in case of alteration, in accordance with ANNEX 4. The full operation of the Traffic Sensing System is a condition for the operation of the TOLL STATIONthat has been repositioned.

### **6.2.2. Traffic Monitoring System by CCTV**

The CONCESSIONAIRE will be responsible for the implementation, complementation, revitalization, operation and maintenance of the systems and equipment that make up the CCTV Traffic Monitoring System in order to fully and simultaneously cover 100% (one hundred percent) of the ROAD SYSTEM, all requirements and deadlines set out in the ANNEXES and APPENDICES.

In accordance with deadlines and rules set out in ANNEX 07, the deployed CCTV system shall provide Intelligent Video Analysis (IVA) technology capable of analyzing 100% (one hundred percent) of the images recorded by all CCTV equipment of the EXISTING SYSTEM and the REMAINING SYSTEM.

The CCTV Traffic Monitoring System shall allow the monitoring of the entire road network of the Highway System, object of the Concession, through images made available in real time on video monitors and *videowall* that were installed at the CCO, including at night.

The system that centralizes the images of the cameras installed along the Highway System, in the CCO, shall have an image recording system. The images must be stored in the CCO for a minimum of 45 (forty-five) days. After this period the images referring to relevant occurrences, accidents, excerpts (including signs) with road closing, shall be stored by the CONCESSIONAIRE for a period of 5 (five) years, and may be requested by ARTESP at any time within this period.

The Intelligent Video Analysis System shall enable automatic detection of incidents and potential risk situations throughout the ROAD SYSTEM, alarming the corresponding images in the CCO. The operation of the IVA system must fully comply with the requirements and procedures established by ARTESP in the current technical specifications.

All CCTV equipment that makes up the Traffic Monitoring System must have the following minimum characteristics:

- 360 ° horizontal movement;
- 32x optical zoom;
- to have remote control of horizontal, vertical movements and image approximation (*pan*, *tilt* and *zoom*);
- to enable automatic or manual operation through CCO commands by the operator;
- to enable pre-configuration of monitoring points (presets) with the possibility of programmed or event-driven automatic movement;
- to enable night monitoring with infrared or other technology with equivalent or better performance;
- have compatible support (pole) so that the camera at maximum zoom will not interfere with the image, by the vibration of support post; and
- cameras with a minimum resolution of 1920x1080 (full HD).

Minimum characteristics of video analysis (minimum analytical functions):

- volumetric count;
- detection of vehicles against; and
- detection of vehicles or stationary objects (shoulder or road); and
- event detection (animals, fire outbreaks, etc.) in the domain range.

Alarms issued must be analyzed and stored along with information regarding time, operator, acknowledgment / rejection and other data necessary for occurrence survey and database audit for future inspection and evaluation of system efficiency.

This CCTV system shall monitor all TOLL STATIONSS and all PGFs of the EXISTING SYSTEM and REMAINING SYSTEM, in both directions. It must also allow monitoring of all PMVs of the ROAD SYSTEM, allowing the viewing clearly enough to read the messages served.

Equipment must be registered in ARTESP's registration systems through procedures and interfaces formally defined by ARTESP.

The equipment must support telemetry integrated with ARTESP systems in order to allow remote and real-time consultation of the operational state of the equipment by the JRC. Telemetry information provided by the CONCESSIONAIRE to ARTESP shall reflect the availability of communication between the CCO and the equipment.

In addition to the telemetry information, the CONCESSIONAIRE shall provide the images of all CCTV System cameras for remote and real time viewing by the CCI.

The CONCESSIONAIRE is responsible for contracting a data link between the CCO and CCI, with the capacity to guarantee the simultaneous transmission of images from at least four (4) cameras.

The manner in which the CONCESSIONAIRE shall make available telemetry data and camera images, and the form of integration with ARTESP systems, shall comply fully with the procedures, technologies and interfaces formally defined by ARTESP.

ARTESP may at any time request that CONCESSIONAIRE feed ARTESP's systems with additional information on the operation of the equipment, in accordance with procedures and interfaces that are similar to those used by CONCESSIONAIRE.

The operation of the CCTV Traffic Monitoring System shall meet the service levels provided for in APPENDIX I.

## **7. ROAD OPERATION, SAFETY AND USER COMFORT**

### **7.1. Basic Concepts**

A highway traffic monitoring and operation system concomitant with providing service to USERS is part of the set of operational functions designed to provide safety and comfort to road USERS.

Roadblocks caused by accidents and vehicles parked on the shoulders of drivers asking for help reduce the capacity of the ROAD system, impacting traffic and increasing the risk of new accidents. User Assistance and Traffic Monitoring Systems will aim to ensure full utilization of highway capacity, traffic flow, safety and comfort for USERS who will have a service system at their disposal, maintain safety levels as well as such as the provision of first aid to accident victims and their rapid transportation to affiliated hospitals.

These activities include the special operations required to address high season situations, extended holidays, regional events, traffic diversions for the execution of works, and / or exceptional cargo transportation, emergency schemes, DOMAIN FIRE fires. , from climate adversities such as rain and fog, as well as to all operational coordination activities involving other entities in the road system. These operations must be scheduled for deployment at specific times so as not to impair the performance of road system traffic.

The planning of these operations must be previously submitted to the prior approval of ARTESP and then widely disseminated to USERS and media.

### **7.2. User Security Plan**

The User Safety Plan must be based on the knowledge of the safety and comfort needs of the Users that the CONCESSIONAIRE will obtain through the survey of risk situations, accidents and registered victims, statistical analysis and field observations.

The road safety plan consists of the elements: certification of NBR ISO 39001 - road safety management system, road safety inspection / audit (ISR), traffic accident reduction program (PRA), accident



database, road safety committee, speed and risk management, road safety communication program, and road safety manager review and approval of projects in accordance with APPENDIX J.

The CONCESSIONAIRE shall implement in all its areas of action, the guidelines established in NBR ISO 39.001 - road safety management system.

#### **7.2.1. NBR ISO 39001 – Road Safety Management System**

ISO 39001 - Road Safety Management System is an international standard, which was published in Brazil in 2015, the purpose of which is to implement a Road Safety Management System with a Road Safety Policy and Action Plans covering all areas. and employees of the organization.

The CONCESSIONAIRE shall not only elaborate and implement its road safety management system, as well as certify the organization and maintain the certification with the certifying bodies. The certification process must be completed according to the deadline set in item 13 of this ANNEX, and when the operation of the REMAINING SYSTEM begins, the highways that make up this system must integrate the safety management system.

The CONCESSIONAIRE shall implement in all its areas of action the guidelines set forth in ISO 39.001.

At the end of the deadline, a report on the road safety management system must be sent to ARTESP, along with the documents (digitally) that make up the process (policy, procedures, instructions) and certifying the certification.

Audit reports as well as certification renewals and eventual revisions in the documents that compose the process must be sent annually to ARTESP for information.

#### **7.2.2. Road Safety Inspection / Audit – ISR**

Inspection / audit is a preventive and systematic procedure for formal road safety assessment for vehicles, motorcycles, pedestrians and cyclists in each of the road segment evaluation segments.

The CONCESSIONAIRE shall provide, at its expense, the hiring of an experienced company / professional, suitable, formally qualified and authorized by a competent body, independent and not linked to the CONCESSIONAIRE to perform road safety inspections / audits, following at least the program methodology. International Road Assessment System (IRap) or similar recognized methodology, added to surveys obtained by video-based inspections.

The inspection / audit of the ROAD SYSTEM shall be performed and delivered to ARTESP by the end of the 2nd (second) year of CONCESSION and updated every 4 (four) years. The preparation of the inspection / audit shall cover the EXISTING SYSTEM AND REMAINING SYSTEM and be delivered to both systems on coincident dates.

The ISR must include 3 steps, namely: (i) surveys, (ii) coding and (iii) final report.

##### **7.2.2.1. Surveys**

The survey phase consists of a field inspection (in situ) in the ROAD SYSTEM (with video and / or photographic record), focusing exclusively on road safety.

Image collection and quality must be in accordance with technical quality specifications to enable the implementation of the International Road Evaluation Program (IRap) methodology or similar recognized methodology.

The survey must allow the full visualization of 140 (one hundred and forty) degrees from the center of the rolling strip, with georeferenced images collection, in a necessarily less than 20 (twenty) meters interval.

Field inspection shall be capable of, but not limited to:

- to evaluate the physical / geometric characteristics of the highway and DOMAIN RANGE;
- to assess road conservation conditions (pavement, signs, etc.) and accessibility to vulnerable (walkways, bus stops, etc.)
- to evaluate the local conditions of operation, situation of works or events, speed practiced, lighting in sections (hills, urban, return and access devices, crossings) etc;
- to evaluate current and future traffic characteristics especially at peak hours and their interaction with adjacent land use;
- to verify the impacts of the interaction of the various road elements with each other and with the adjacent road network;
- to evaluate the behavior and safety conditions of highway users (driver, motorcyclist, cyclist, pedestrian);
- to identify irregular conduct (conversions, road stops, crossings in non-signaled places, pedestrian and cyclist walk, etc.); and
- to identify and analyze the effectiveness of security risk mitigation measures already in place.

Complementary evaluations. In addition to the survey provided above, the CONCESSIONAIRE shall also, upon request by ARTESP:

- to evaluate the conditions of conservation of the highway as the walkways, bus stops, among others;
- to assess other local highway conditions, such as weather conditions and night visibility;
- to evaluate the behavior of ROAD SYSTEM USERS; and
- to make accurate measurements of attributes such as road width and displacement when necessary to identify hazards on the highway.

#### 7.2.2.2. Coding

The coding step refers to the translation of the elements viewed in the video record and additional information into attributes currently coded every 100 (one hundred) meters. The database shall follow the standards required for insertion into the analysis software and the coding shall follow the technical quality standards in order to enable the implementation of the international road evaluation program (IRap) methodology or similar recognized methodology.

At this stage, the field survey must be aggregated from external information such as accident history, pedestrian / cyclist counts, VDM analysis, boundary occupation analysis, DOMAIN RANGE topographic profile, road geometric profile, etc. to display a complete ROAD SYSTEM parameter.

The coding *software* and corresponding programming must contain at least the following requirements:

- Encoding form including all listed road attributes to allow programmers to select attribute categories by entering numeric or alphanumeric data, drop-down menus or attribute buttons;
- Display of images at intervals no larger than 20 (twenty) meters and with encoding data storage for images at 100 (one hundred) meter intervals;
- Automatic incorporation of georeferencing data collected during the search and associated with each image into the stored encoding data, without the need for the Programmer to manually recode the georeferencing data;
- Ability to accurately measure attributes such as road width and displacement to identify road hazards; and
- Ability to share data without any restrictions.

Even nowadays they are understood as standard deliverables of a coding project, as follows:

- Preliminary report confirming team members and roles, the schedule, the coding system to be used, the planning of quality reviews, including the independent coding quality reviewer's confirmation.
- Licensed copies of specialized software used to view and encode georeferenced images or designs and encoding.
- Brief weekly report summarizing progress (measured by completing km), completed quality review processes, identified quality issues, rectifications made, activity photos, planned activities for the next two weeks, and any issues that may affect the performance of the project.
- Add coding to road sections or projects where coding has been completed, in a Microsoft Excel format that conforms to the File Upload Specification and does not produce validation errors in the coding validation tool and when loaded into the software.
- Final coding for all roads / drawings in Microsoft Excel format that conforms to the File Upload Specification and does not produce validation errors in the tool when loaded into the software.
- Independent coding quality review report prepared by the independent reviewer and explaining completed review processes, identified issues and remediation recommendations.

### **7.2.2.3. Final Reports**

The final report must consolidate the results of the analysis phase, with copies of the images collected in the survey phase and the basic statistics of the coded elements, as well as presenting the mitigating measures (short, medium and long term) and proposition of their implementation.

All raw information shall be delivered to ARTESP in editable format for road safety management purposes, and ARTESP shall have unrestricted access, upon request, to project results and analysis directly in software.

The full technical report shall contain at least:

- Complete details of the road system history, tasks and objectives, including a list of all road segments;
- Details of the registered attributes of the ROAD SYSTEM, including, but not limited to, assessment of physical / geometric characteristics, conservation conditions, status of works or

events, speed practiced, lighting in sections, current and future traffic characteristics, especially at peak hours volume and interaction with adjacent land use and interaction impacts between road elements;

- Details (including source) of all supporting data used;
- Shoulder rating table detailed by road segment;
- Shoulder rating maps, where applicable;
- Safer Highway Investment Plan;
- Countermeasures generated and the locations of installation, observing, for definition of countermeasures, ARTESP norms and standards;
- Description and consolidation of all observations made, including the prioritization of interventions to be carried out based on those mitigations that have the greatest potential to reduce the number of accidents;
- Analysis of the countermeasures proposed by the software and justifications for choosing the countermeasure selected for deployment.
- Material registered in the field survey; and
- Details of training and workshops available and demonstrations carried out during the project.

At a minimum, the following assumptions shall be considered for the calculation of the shoulder rating of the road segments:

- Speed: regulatory speed identified in the road segment;
- Traffic: current VDMA and predicted VDMA for the next ISR update, to be performed every four years;
- Accidents: (i) accident base at least three (3) years prior to the date established for the ISR; and (ii) percentage of unreported accidents equal to 10% (ten percent);
- Life value predicted by the Traffic Accident Cost Estimates in Brazil report based on the Simplified Update on Previous IPEA Surveys, or the most recent similar survey approved by ARTESP; and
- The analysis must be performed considering each road segment determined by the traffic studies, and the shoulder rating of the stretch must be the average of the ratings given for each homogeneous stretch.

ARTESP and CONCESSIONAIRE may jointly define the complementary measures to be adopted in the above calculation of shoulders.

The above referenced reports shall include an additional section with the CONCESSIONAIRE's assessment / conclusion about each of the countermeasures generated, indicating action and implementation time, whenever applicable.

If the proposed countermeasure is not covered by the CONCESSIONAIRE's obligations under the CONTRACT and / or is scheduled to occur later than that determined in the result of the methodology, the CONCESSIONAIRE shall register the demand in SISDEMANDA, according to the procedure established in APPENDIX H.

The aforementioned report shall support the CONCESSIONAIRE in the preparation of its accident reduction program (PRA).

In the SRIs defined throughout the Concession, the final report must include an additional section with the performance evaluation of the implemented countermeasures, as well as the classification analysis in order to identify if there was a worsening in any segment.

### **7.2.3. Accident Reduction Program – PRA**

The accident reduction program (PRA) is a document containing studies of accidents occurring in the ROAD SYSTEM, correlated with the targets set by ARTESP, the ISO 9.001 system and the results obtained from the ISR and speed management, so that indicators of the acceptable road safety are met. It must be performed in a permanent and updated process.

Its content, form and periodicity are established through ARTESP technical specifications, and the CONCESSIONAIRE must comply with the documents in force when preparing the PRA.

The PRA must:

- (a) focus on reducing the number of accidents and casualties (injuries and fatalities);
- (b) consist of a regular and systematic study;
- (c) present a detailed diagnosis of accidents occurring in the previous three (3) years;
- (d) contain an assessment of the causes and factors that determine the diagnosed safety conditions;
- (e) propose and implement actions to reduce the number and severity of accidents, identifying if it meets the goals determined by ARTESP;
- (f) present a schedule for carrying out the proposed actions; and
- (g) determine performance indicators of the proposed actions.

The PRA is a task of high technical demand whose efficiency depends on professionals, with adequate training for its elaboration, requiring a set of specific competences that stand out:

- (a) sound knowledge in the fields of road safety and road construction, as well as the behavior of USERS;
- (b) ability and availability to identify and analyze information from accident and other road safety statistics; and
- (c) previous experience in accident studies, signaling and USER behavior.

The actions to be proposed in PRA may be engineering, operational, educational and coercive.

(a) Engineering actions shall include physical interventions (extensions, signaling, etc.) identified in the safety studies carried out by the CONCESSIONAIRE and shall be aimed at improving the safety of USERS. When not defined in the obligations of the CONCESSIONAIRE, they will observe the rules of SISDEMANDA;

(b) Operational actions are directed to both scheduled events (works, transportation with dangerous products, road saturation at specific times, etc.), as well as emergency events (accidents, landslides, floods, animals on the road, adverse weather conditions, etc.), in order to guarantee road safety to USERS;

(c) the educational actions are aimed at imbuing the users with behavioral behaviors of road safety, reaching not only the drivers, but also the communities surrounding the highways of the ROAD SYSTEM, as well as promoting simulated involving all public, governmental and public entities. These actions must include not only campaigns, lectures, but also training, research, etc.

(d) enforcement actions are the responsibility of the granting agent. However, the CONCESSIONAIRE shall provide information and data on accidents and disobedience to the CTB (Brazilian Traffic Code), necessary for the planning of these activities, including proposing joint actions with PMRv, based on studies, information, analysis and needs arising from the road operation. .

System safety critical points / sections shall be identified according to the methodology proposed by ARTESP through technical specification and considered in the PRA.

ISR and speed management reports shall support the CONCESSIONAIRE in the preparation of its accident reduction program (PRA).

The CONCESSIONAIRE shall provide resources not only for the preparation of the PRA, but also for the implementation of actions in order to achieve the goals and mitigate the identified risk points.

The PRA coverage and delivery period may be changed by ARTESP upon formal communication and / or revision of the relevant technical specification.

The CONCESSIONAIRE shall also submit a monthly PRA monitoring report as per the technical specification in force at the time of their preparation.

If the REMAINING SYSTEM TRANSFER TERM is signed after the delivery of the PRA and still in the first half of the year, the PRA shall be revised to include the REMAINING SYSTEM within 3 (three) months from the date of signature of the mentioned term.

#### **7.2.4. Accident Database**

The CONCESSIONAIRE shall make available to ARTESP an accident database containing all accidents occurring in the ROAD SYSTEM, with indications as to their nature, type of vehicle involved, time, consequences generated, georeferencing and other information, according to the model indicated by ARTESP. To assemble the Database, the CONCESSIONAIRE shall collect from DER the information of the last 05 (five) years prior to the beginning of the concession.

The CONCESSIONAIRE shall throughout the CONCESSION TERM, at its expense, meet ARTESP's specifications regarding the classification of occurrences, as well as minimum data to be collected and made available in its database.

The availability of the accident database shall be made by digitally sending the data from the date of signing of the INITIAL TRANSFER TERM and the REMAINING SYSTEM TRANSFER TERM, as well as forwarded to the ARTESP JRC *online*, according to the APPENDIX H.

For this obligation, the CONCESSIONAIRE shall make available, in the first year of the Concession, an integrated digital system, via web, for the consultation of accident data (SIS-ACCIDENTS). User / password pairs must be provided to query, search and audit information directly in the system - access to raw and consolidated accident information.



#### **7.2.5. Road Safety Commission**

The CONCESSIONAIRE shall establish a road safety commission to handle the safety issues of the ROAD SYSTEM under its responsibility.

The CONCESSIONAIRE must have at least one dedicated professional with knowledge in the area of road safety, who will make up the commission.

The establishment of the commission involves the communication to ARTESP of its formation, as well as the members that make up it. Any change in its composition must be formalized with ARTESP within one (1) month of its occurrence.

The committee shall establish internal rules, taking into account the following organizational scheme:

- (a) to be comprised of at least 4 (four) members who are part of the CONCESSIONAIRE's technical staff and linking: one to the works / conservation area, one to the project / signage area, another to the operation area and one room to road safety area. The CONCESSIONAIRE shall also invite you to participate in a PMRv representative.
- (b) the commission may include other professionals or external consultants, such as temporary members, to substantiate the studies.
- (c) the commission may establish partnerships with persons outside the CONCESSIONAIRE for information exchange.
- (d) The topics covered, the teams involved, the studies and the results obtained shall be presented in the PRA, as well as the themes programmed for approach in the subsequent period shall be indicated in the PRA.

Bimonthly, the CONCESSIONAIRE shall forward to ARTESP, together with the monthly monitoring of the PRA, the minutes of the Commission meetings held in the quarter containing the matters discussed, the action plans defined, as well as the results of the analysis of the events provided. for in item 4.1. of this Annex that were made available to PMRv and actions derived from this analysis.

#### **7.2.6. Speed and risk management**

It is up to the CONCESSIONAIRE to monitor the speed practiced by USERS throughout the ROAD SYSTEM of their competence, in order to subsidize the coercive, educational and engineering actions related to this subject. This monitoring must be done systematically through field research.

The CONCESSIONAIRE shall systematically analyze the speed practiced by users in order to study it along with the history of accidents and infractions recorded by DER and PMRv, in order to know the profile of Users and to subsidize the definition of mitigating actions to be taken. PRA, as well as subsidize the Ostensivo Road Traffic Policing in its inspection actions.

These surveys must be performed using data from equipment installed and operating in the ROAD SYSTEM, such as traffic sensors (SATs), radar (fixed and static), mobile weighing system, etc., for at least 24 (twenty-four) hours of a typical week.

In addition to monitoring the speed practiced, the CONCESSIONAIRE shall perform the compatibility analysis between speed regulations x speed practiced x road geometry (vertical and horizontal curves).

The CONCESSIONAIRE shall implement a process of managing the speed practiced and the risk situations, crossing this information with the accident history and highway VDM.

In addition to the systemic speed management provided for in this item, the CONCESSIONAIRE shall, throughout the CONCESSION TERM, carry out, at its expense, a speed survey practiced at specific points when requested by ARTESP.

Within the deadlines described in item 12 of this attachment, the CONCESSIONAIRE shall submit to ARTESP a report of its management process which may be reviewed and commented by the Agency.

If the REMAINING SYSTEM TRANSFER TERM is signed after the delivery of the first report, data on the REMAINING SYSTEM shall be included in the next review after the date of signature of that term.

Speed management shall be performed systematically every 6 (six) months, including the entire ROAD SYSTEM.

Within the periods described above, the CONCESSIONAIRE shall submit to ARTESP a report of its management process, which may be reviewed and commented by the Agency.

For this obligation, the CONCESSIONAIRE shall make available, in the first year of the Concession, an integrated digital system, via web, to consult the data collected by the radar (SIS-RAD). User / password pairs must be provided to query, search, and audit information directly in the system - access to raw and consolidated speed and vehicle count / volume information and CCI integration.

#### **7.2.7. Road Safety Communication Program**

In order to make USERS come to the highways more aware of road safety issues, the CONCESSIONAIRE shall promote actions, events and campaigns, alone or in conjunction with other concessionaires, in order to guide and educate the safe use of the road. .

To this end, it must foresee in its annual budget costs for the production of security campaigns that include: (i) media (TV, radio, newspaper and internet), (ii) production and printing of graphic materials (leaflets, banners and banners), (iii) press advisory actions, and (iv) holding events with the neighboring community of the ROAD SYSTEM. Security campaign costs in this paragraph are not listed in EVTE.

Priority must be given to the dissemination of campaigns in high seasons in order to raise awareness of as many road users and community as possible regarding road safety issues, and actions must follow the standards set by ARTESP and will be subject to your prior approval.

The CONCESSIONAIRE shall provide funds to meet this item, emphasizing that these actions are beyond those eventually provided for in the PRA. The obligation is considered fulfilled whenever the CONCESSIONAIRE adheres to the companies and road safety actions of the GRANTING AUTHORITY and / or ARTESP.

#### **7.2.8. Traffic Evolution Roading**

For the purpose of monitoring the evolution of traffic in the ROAD SYSTEM, the CONCESSIONAIRE shall perform traffic counts sorted by vehicle class, by highway segment that are part of the ROAD SYSTEM, defined to allow the elaboration of the traffic flow chart of the ROAD SYSTEM database with this information, permanently updated and accessible in real time by the GRANTING AUTHORITY.

#### **7.2.9. User Support Services (SAU)**

SAU Stations must include APH service to injured people, with eventual removal of victims to back-up hospitals, mechanical rescue service to damaged vehicles and winch service, clearing the road and eventual removal of the vehicle to a safe place, accredited workshops or exit points of the highways that are part of the ROAD SYSTEM.

The SAU Stations must also count on the support of the Mobile Traffic Inspection units, to detect occurrences and situations that require intervention, as well as to perform emergency signaling, which is necessary in attendance, mobile animal seizure units and mobile fire-fighting irrigating truck unit in or near the DOMAIN RANGE and road cleaning when required.

SAU Stations shall be designed to ensure a minimum distance of 10 (ten) meters from the runway's outer edge, including covered external storage for materials used in the Traffic Operation, covered "boot-off", for useless materials collected on the highway, covered garage for operating vehicles that remain parked there, with a minimum of 5 (five) spaces for truck-type vehicles; and specific place for the washing and disinfection of the ambulance and its equipment, with the proper collection system for treatment of waste, waste and contaminated water, regardless of the sewer or sump system.

SAU Stations shall offer specific facilities to serve all USERS, in accordance with technical standards of NBR 9050, such as: air-conditioned user service room, male and female toilets, adapted for people with special needs (PNE), changing room in an exclusive room, parking for USER vehicles with vacancies for ride-type vehicles, elderly people, people with special needs (PNE) and truck parking at least 30 meters long; and attendant 24 (twenty four) hours per day (through individuals or the remote attendance equipment centralized in the telepresence CCO, provided that it has been previously approved by ARTESP). It must also have internet service and connection via wireless data network with access to SAU users.

In relation to the employees of the CONCESSIONAIRE, SAU Stations shall, throughout the CONCESSION TERM, observe the current labor standards, especially the occupational health and safety rules established in the applicable legislation.

The CONCESSIONAIRE shall prove the time of service (time of activation by the USER until arrival at the place of occurrence) to USERS and / or occurrences, including by geolocation.

The specifications and service levels for USER Support Services are as follows:

(a) Winch Service

It comprises a network of suitably equipped light, medium and heavy-duty mobile winch units intended for clearing, vehicle removal and tipping loads on and off the coach bed, operated by specialized personnel trained periodically.

The CONCESSIONAIRE shall have equipment for detaching vehicles, articulated or not for each group of 03 (three) heavy winches.

The service will be responsible for the removal of crashed vehicles on the highways of the ROAD SYSTEM and vehicles stopped on shoulders or refuges, with electromechanical breakdown, not resolved by the mechanical rescue service. It is also for this service to remove, at PMRv's request, vehicles seized from the granted road network (from the seizure site to the nearest PMRv base).

Mobile winch units shall be equipped with CCO Telecommunication System and Geo-Positioning Monitoring and Geo-Positioning System online and in real time.

The CONCESSIONAIRE shall comply with the provisions of CONTRAN Resolution number 552, of September 17, 2015, as well as ABNT (BRAZILIAN ASSOCIATION OF TECHNICAL STANDARDS) NBR 15883-2: 2010 - Part 2 - Flat Straps (or any other that may change or replace them)., regarding the use of fastening straps, as well as observing the current legislation that regulates the matter, replacing the flat straps whenever there is evidence of deterioration.

Mobile winch units may remain parked at strategic points of the ROAD SYSTEM, awaiting activation, or remain in circulation at their service stretch, as the CONCESSIONAIRE operationalizes. These points are preferably the SAU Stations, defined and implemented by service segment.

The resources of the service, material and human, must be sized according to the characteristics of the road system, to meet small, medium and large vehicles, articulated or not, and to observe the service levels established in APPENDIX I and IQD provided for in ANNEX 03 of the CONTRACT and APPENDIX C.

In order to monitor this minimum level of service, ARTESP shall maintain a CCI inspection and monitoring plan, including checking the arrival times of the winch at the event location (from the moment the winch was requested to the CCO until the arrival of the event). winch to the venue), considering all occurrences involving winch, excluding the occurrences provided for in the current technical specification, in the month considered for inspection.

(b) Mobile Prehospital Care Service (APH)

It comprises a network of basic support ambulances (type B ambulance, according to Ministry of Health Ordinance number 2048 of 2002, or another that may change or replace it) and advanced support ambulance (type D ambulance, according to Ordinance Ministry of Health number 2048 of 2002, or another that may change or replace it), both meeting NBR 14561/2000 (or another that will change or replace it), properly equipped and accredited, with ground, aquatic and altitude rescue material for first aid, rescue and removal operations, operated by their respective qualified crews, all linked to an Emergency Regulation Center.

The service shall provide medical or indirect, remote or medical assistance, as well as emergency care including the removal of victims, with the correct technique and under appropriate conditions, to the hospital closest to a network of rear hospitals, indicated by the Regulatory Center. Emergency Room.

Basic support ambulances and advanced support ambulances shall be provided with a telecommunication system with the operational control center and monitoring and geolocation system linked to the CCO *online* and in real time.

Ambulances must remain awaiting activation, stationed at SAU Stations, and it is certain that at least 04 (two) Advanced Support Ambulances (type D ambulance) must be guaranteed for the ROAD SYSTEM.

The resources of the service, material and human, must be appropriately sized according to the characteristics of the ROAD SYSTEM, in order to meet the service levels established in APPENDIX I and IQD provided for in ANNEX 03 and APPENDIX C.

In order to monitor these levels of service, ARTESP shall maintain a CCI inspection and monitoring plan, including the verification of the arrival times of the APH service at the event location (when the CCO became aware of the occurrence until the arrival of the service). APH service at the event location, subject to verification by geo-location, if necessary), considering all occurrences involving the APH service, excluding the occurrences provided for in the current technical specification, in that month considered for inspection.

(c) Traffic Inspection Service

Mobile Traffic Inspection units shall be equipped with a Telecommunication System with the Operational Control Center and a Geo-linked Monitoring and Geo-Positioning System online and in real time. They must also be equipped and operated by qualified and periodically trained personnel for inspection of road maintenance, signaling and road safety elements, fire fighting, emergency signaling, temporary road maintenance of the ROAD SYSTEM, to be aware of the Standards. Techniques of ABNT

(BRAZILIAN ASSOCIATION OF TECHNICAL STANDARDS) NBR 6971/12, NBR 15486/16 and the DER Signaling Manual, or other that may change or replace them.

The ROAD SYSTEM shall be divided into sub-sections, as defined in ET-DOP-GOE-C-OPE-SAU, whose circulation, under normal operating conditions, does not exceed ninety (90) minutes during the night, between 18h (eighteen hours) and 6am (six hours) the next day. It is emphasized that normal operating condition implies that the inspection vehicle circulates on the highway operating between service levels “A” to “C”, that is, between free flow and stable flow, where the road change maneuvers be done with caution so that the coach can see problems on the road and DOMAIN RANGE. Sub-sections must be approved by ARTESP.

During the daytime, from 6 am to 6 pm on the same day, the traffic inspection will be carried out through the CCTV Traffic Monitoring System, without prejudice to the use of vehicle for inspection. CONCESSIONAIRE's discretion. If any occurrence is detected during the day, the CONCESSIONAIRE shall activate the nearest Traffic Inspection Service mobile unit, observing the service levels defined in APPENDIX I. In the event that the weather conditions do not allow the occurrence of occurrences in the ROAD SYSTEM, The CONCESSIONAIRE shall carry out the Traffic Inspection Service by means of mobile units, whose circulation, under normal operating conditions, does not exceed ninety (90) minutes.

Until such time as the CCTV traffic monitoring system and intelligent video analysis (IVA) functionality are in place and fully meeting all the requirements set forth in this Annex, the CONCESSIONAIRE shall perform on the corresponding road segment, the Traffic Inspection Service through mobile units, whose circulation, under normal operating conditions, does not exceed ninety (90) minutes.

Traffic inspection (mobile units and CCTV) have the following objectives: (i) detect the need for help to the User; (ii) inspect the roads and the domain road, identifying and reporting to the CCO all critical points of highway axle accidents, problems found regarding irregularities and / or need for maintenance in buildings, patios and rest areas, presence and removal of animals and objects from the road etc .; (iii) actively participate in the occurrence of accidents, fire fighting in the domain, fog, fog, smoke on the road, removal of walkers and removal of animals and other emergency situations; (iv) for mobile units to provide emergency signaling and traffic diversions, and (v) to support other services. It is the obligation of the CONCESSIONAIRE to meet the above objectives and maximum circulation time, when applicable, using the necessary human and operational resources.

It will be incumbent upon the Traffic Inspection Service to provide support to any and all operations carried out on the Highway System, to accompany the transport of exceptional cargo and to provide support for the supervision of such transportation, as well as other NON-DELEGATED SERVICES, including activities related to the Highway Police.

The Traffic Inspection service will be responsible for checking the wagon bed to detect any irregularities and occurrences such as damaged safety features, undermining or cracking of the pavement, erosions etc., as well as the presence of USER vehicles standing on the wagon bed sub-stretch requiring care.

The Traffic Inspection service will also be responsible for inspecting the DOMAIN RANGE, checking for opening or reopening of irregular access, irregular occupation by clandestine point of sale, street vendors or any other unauthorized activities.

Therefore, any suspicious attitude towards opening access without proper authorization must be immediately reported to the CONCESSIONAIRE area that takes care of the matter, which must immediately take all appropriate and necessary measures, and inform ARTESP.

The CONCESSIONAIRE shall report every six months on the coverage area of each Traffic Inspection sub-section, which will serve for inspection purposes and may not be changed during the period informed without prior authorization from ARTESP.



To monitor this level of service, ARTESP shall maintain a CCI inspection and monitoring plan, including the verification of traffic inspection circulation times at the CCO, through the Monitoring and Geo-Positioning System of these vehicles captured by the MITS system online and in real time.

(d) Animal Seizure Service in the Highway Domain Range

The animal seizure service shall have large pickup truck motor vehicles, with wooden cage body, capable of carrying up to two (2) large animals, properly equipped and arranged along the stretch granted, periodically trained to perform this function, on the wagon bed or on the DOMAIN RANGE of the highways that are part of the Highway System, in order to ensure the safety of USERS. Seized animals will be transported to municipal zoonosis centers, specific animal seizure yards or partner / partner institutions.

The CONCESSIONAIRE may have its own seizure yard or enter into agreements with municipal governments, or third parties, that have an animal seizure yard.

Mobile animal seizure units must remain stationed at SAUs, defined and deployed by service sub-section and be equipped with CCO Telecommunication System and CCO-linked *online* monitoring and geo-positioning system.

The resources of the service, material and human, own or subcontracted, must be sized according to the characteristics of the ROAD SYSTEM, in order to meet the demand of this service. The team, own or subcontracted, must be qualified and trained to trigger appropriate decisions and actions according to the situation found (wild / domestic, alive / injured / dead, small / medium / large size, etc.).

Live captured domestic animals must be sent to specialized partner / partner institutions to receive treatment (feeding, zoonosis control), depending on the type of animal. A bulletin or equivalent identifying the animal and the owner must be drawn up in order to form a register of seized animals and their owners. The CONCESSIONAIRE shall reimburse the GRANTING AUTHORITY in the event of liability arising from accidents caused by the presence of animals in the ROAD SYSTEM.

The CONCESSIONAIRE shall promote awareness campaigns on responsible ownership with the USERS and with the surrounding population.

Captured wild animals must be sent to environmental agency sorting centers (CETAS, Wild Animal Rehabilitation Centers - CRAS, among others) and / or institutions suitable for receiving wild animals (zoos, hospitals veterinarians from veterinary colleges, research institutes, universities, among others). Partnerships signed or terminated must be informed to ARTESP. The CONCESSIONAIRE shall adopt the practices recommended by the São Paulo Integrated Environmental Management System for the management and rescue of victimized wildlife or for the disposal of dead animals.

If it is not possible to establish agreements and partnerships, the CONCESSIONAIRE shall adjust with the Secretariat of Infrastructure and Environment the specific procedures to be adopted along each sub-section of the concession.

(e) Fire Fighting Service

The CONCESSIONAIRE shall implement adequate fire prevention and fire fighting infrastructure in the “non aedificandi” domain and area, in accordance with the Fire Action Plan defined in ANNEX 06. The main objective is to reduce the occurrence of outbreaks. as well as to extinguish them still in their early stages.

Prevention must include monitoring the domain through the CCTV-IVA system to identify the principle of fire outbreaks, the dissemination of educational and informative messages on the Message Boards, the CONCESSIONAIRE website, TOLL STATIONSS and SAU stations. , participation in campaigns stipulated by the GRANTING AUTHORITY, government environmental awareness programs,



communication actions with local and regional media, focused on the dissemination of preventive measures, as well as the proper execution of canning activities, such as pruning, mowing, weeding and firebreaks, removal of dead and dry trees, plant residues and other combustible materials, in accordance with standards set out in ANNEX 06.

The Fire Fighting Service shall have mobile irrigation and Traffic Inspection truck units equipped with special equipment and materials for fire fighting, such as motorcycle pumps and flexible tanks, baffles, gloves, boots, tools and others deemed necessary, as well as water reservoirs, available throughout the ROAD SYSTEM, taking into consideration the vulnerability and criticality of the stretches, as per risk analysis and assessment within the scope of risk analysis studies and mapping of critical areas of the Fire Action Plan.

Irrigating trucks shall contain all equipment necessary for fire-fighting services, in order to effectively control and extinguish the focus, without prejudice to the performance of the Fire Department in more serious situations.

The CONCESSIONAIRE shall have personnel trained periodically to: (i) perform fire service, (ii) assist in the washing of the runway and the release of accidents with dangerous products and others, and (iii) perform cleaning of signs and road safety devices to ensure the safety of USERS.

Irrigating truck units shall be equipped with CCO Telecommunication System and Geo-linked Monitoring and Geo-Positioning System *online* and in real time.

These units must remain stationary at strategic points of the ROAD SYSTEM, awaiting activation. These points are preferably the USER Service System Stations, defined and implemented by service segment.

The CONCESSIONAIRE shall have its own or established water reservoirs through agreements / partnerships with companies, neighboring owners, SABESP, Autonomous Water and Sewerage Services (SAAE) or similar, in order to ensure water supply in fires. In the case of establishing agreements / partnerships, the CONCESSIONAIRE shall send annually document proving its renewal.

The resources of the service, material and human must be sized according to the characteristics of the Road System, in order to meet the demand of this service.

(f) Service of Mechanical Help

It comprises a network of mobile units equipped to provide mechanical and electrical service, operated by specialized personnel (this service may be provided by traffic inspection type vehicles and winches, with exclusive vehicles not being required).

The purpose of the service will be the service of vehicles with electromechanical breakdown, stopped on the shoulder or refuges of the highways of the ROAD SYSTEM, aiming to return them to circulation expeditiously.

The Mechanical Help units shall be equipped with a CCO Telecommunication System and a Geo-linked Monitoring and Geo-Positioning System *online* and in real time.

These units must remain stationary at strategic points of the ROAD SYSTEM, awaiting activation. These points are preferably the SAU Stations, defined and implemented by service segment.

The resources of the service, material and human, must be sized according to the characteristics of the road system, in order to cater to small, medium and large vehicles, and to observe a service level expressed by the indexes contained in ANNEX 3 and APPENDIX I.

To follow up on this level of service, ARTESP shall maintain a CCI inspection and monitoring plan, including the verification of the arrival times of the Mechanical Help at the event location (when the Mechanical Help was requested to the CCO until the arrival of the service at the event location, verifiable

by the service vehicle's geolocation information, if necessary), considering all occurrences involving the Mechanical Helpservice, excluding the occurrences provided for in the current technical specification, in the month considered for inspection.

#### **7.2.10. About the Compliance Program (Compliance)**

The CONCESSIONAIRE shall, within 360 (three hundred and sixty) days from the signing of the CONTRACT, implement and maintain compliance program within its scope, consisting of internal integrity and audit mechanisms and procedures to encourage the reporting of irregularities and the effective application of codes of ethics and conduct, policies and guidelines with the purpose of detecting and remedying deviations, frauds, irregularities and unlawful acts committed against PUBLIC ADMINISTRATION, in prestige to Federal Law number 12.846 / 13 (Anticorruption Law ).

The compliance program shall be prepared in compliance with applicable law, in particular: (i) Federal Law number 12,846 / 13; (ii) Federal Decree Number 8.420 / 15; (iii) Ordinance CGU 909/15; (iv) the Practice Manual for the Evaluation of the Integrity Program in the Administrative Process for Accountability of Legal Entities, of the Ministry of Transparency and the Comptroller General of the Union, as applicable; and (v) the Corporate Governance Best Practice Code Guidelines of the Brazilian Institute of Corporate Governance.

The compliance program shall provide for a sector responsible for the implementation, management and supervision of the activities provided for therein, endowed with autonomy, independence and impartiality to coordinate control activities, and with sufficient material, human and financial resources for its regular operation.

#### **7.3. Intervention Plans in the road system (PISR)**

Prior to the execution of interventions in the ROAD SYSTEM that cause capacity reduction on the highway, the CONCESSIONAIRE shall prepare and submit to ARTESP approval a Road System Intervention Plan (PISR) containing at least the following information:

- average daily volume (VDM), peak hour volume (VHP), service level and current stretch capacity and with intervention;
- traffic simulation with delay time forecast and queue extension in the segment involved;
- description of complementary works to mitigate negative impacts on traffic; and
- programming of interventions to be carried out and design of traffic diversions containing all necessary signaling.

Due to the negative effect on the highway, ARTESP may justifiably demand that the work be carried out at night;

Upon approval of the Intervention Plan by ARTESP, the CONCESSIONAIRE shall comply with the maximum delay time and maximum queue length.

The delivery of the PISR and the related traffic simulations with the expected delay time will be assessed by the Performance Indicators provided in Annex 3.

### **8. OPERATIONAL MANUALS**

All technical, operational and administrative procedures related to the services described in items 3, 4, 5, 6 and 7, shall be substantiated in a specific manual, individualized by subject, which shall be prepared by the CONCESSIONAIRE and submitted to ARTESP for approval, according to with the deadlines

described in the Schedule of Item 13. This manual shall describe the activities of all employees involved in the administration and operation of the respective services, observing the requirements of ARTESP in Technical Specifications.

Any changes made by CONCESSIONAIRE or determined by ARTESP that may be necessary in any item of the operation manual will only be effective and effective after ARTESP's prior approval during the entire concession period.

The alterations promoted in the Manuals, at the initiative of the CONCESSIONAIRE, will be submitted to ARTESP, which must manifest itself within 15 (fifteen) days. Already the changes requested by ARTESP must be implemented by the CONCESSIONAIRE and sent to ARTESP within 15 (fifteen) days from their receipt. ARTESP shall express its opinion within 15 (fifteen) days from dispatch by the CONCESSIONAIRE.

In all cases, ARTESP may only question the changes made by the CONCESSIONAIRE if they fail to comply with applicable rules or constitute contractual default.

The technical, operational and administrative procedures of the REMAINING SYSTEM shall be in accordance with the requirements contained in this ANNEX according to the deadlines defined in the Time Frame of item 13.

## **9. SUPERVISION AND AUDIT**

ARTESP will supervise the services related to operation, traffic and road safety, in order to verify compliance with the minimum required standards, by:

- surveys conducted by ARTESP or performed by companies contracted for this purpose;
- analysis of data available on ARTESP systems;
- analysis of remotely collected images;
- analysis of data or reports provided by agencies of the GRANTING AUTHORITY;
- analysis of data (raw or processed), reports or systems of the CONCESSIONAIRE; and
- specific, regular or extraordinary audits.

For all items described in this section, the CONCESSIONAIRE shall implement a digital system for registration, management and consultation of data through the Internet, providing ARTESP user / password pairs, as well as integration and alignment with ARTESP CCI.

### **9.1. Information System**

In order to allow and facilitate the inspection and audit processes, the CONCESSIONAIRE shall implement an information system based on statements and / or reports that will allow ARTESP to follow up the data related to all services related to operation, traffic and safety road.

The information to be provided by the CONCESSIONAIRE shall follow standard templates provided by ARTESP.

The information system must include access to daily, weekly, monthly and annual information, observing the following system:

### 9.1.1. Daily and weekly information

The CONCESSIONAIRE shall keep at the disposal of ARTESP a computerized database, allowing real time access, with information including, but not limited to:

- volume of hourly traffic recorded at each TOLL STATIONS, ordered by vehicle class;
- number of booths in operation at each TOLL STATION during shifts;
- daily collection results by operating cabin;
- volume and speed of traffic, subdivided into intervals of 15 (fifteen) minutes per road, obtained through automatic collectors installed in the critical sections of each homogeneous segment, as it was set forth in this Annex; Packages shall be identified by vehicle type, at least in the “light” and “commercial” categories;
- In the TOLL STATION sections, specifically indicate the hourly volume of buses and motorcycles;
- hourly volume of vehicles subject to weighing, running in section immediately upstream of the weighing base (mobile and fixed);
- number of vehicles passing through the various stages of weighing, sorted by vehicle class as well as those evading from weighing;
- number of notices of infringement for overweight, daily values of the notices and the amount of the excess found;
- hours of scale in operation, disposal and maintenance;
- number of user service events, ordered by event type, according to the services involved;
- indications of the service time intervals of each service involved in the events, to allow their tabulation;
- Characterization of all accidents occurred in the road system, with indications about their nature, type of vehicle involved, and consequences generated, according to the model to be delivered by ARTESP; and
- summary of major traffic occurrences in the ROAD SYSTEM.

In real time and online the CONCESSIONAIRE shall provide update of occurrences / events:

DISCRIMINATION	UPDATE FREQUENCY	STATUS
OCCURRENCES IN GENERAL	15 MINUTES	CLOSED
INCIDENTS	15 MINUTES	CLOSED
ACCIDENTS	6 MINUTES	CLOSED
TRAFFICK JAMS	6 MINUTES	CLOSED
PROHIBITED RANGE	6 MINUTES	CLOSED
ACTIVATED RESOURCES	6 MINUTES	CLOSED
EXTERNAL RESOURCES	6 MINUTES	CLOSED
PROVISIONS	6 MINUTES	CLOSED
VEHICLES THAT WERE INVOLVED	6 MINUTES	CLOSED

DISCRIMINATION	UPDATE FREQUENCY	STATUS
PROCESS	15 MINUTES	CLOSED
TO RELATE PROCESSES	15 MINUTES	CLOSED
EVENTS OF A PROCESS	6 MINUTES	CLOSED
PMV MESSAGES	6 MINUTES	CLOSED
EQUIPMENT MONITORING	6 MINUTES	CLOSED
LOCAL EQUIPMENT MONITORING	6 MINUTES	CLOSED
SAT VEHICLE COUNT	6 MINUTES	CLOSED
MAINTENANCE	15 MINUTES	CLOSED
WORKS AND SERVICES	15 MINUTES	CLOSED
GROUP DOMAIN OF WORKS AND SERVICES	15 MINUTES	

NOTE: The table above will be updated reflecting the level of integration of data and systems involved between ARTESP and the Concessionaire.

#### 9.1.2. Monthly, half yearly and yearly information

The CONCESSIONAIRE shall issue, and / or make available through the JRC, monthly and annual reports containing the summaries of statistical data and operational occurrences, in order to allow analysis of seasonal traffic behavior, operations in TOLL STATIONSS, weighing operations, traffic and transportation inspection, routine and special traffic operations and service to USERS.

##### (a) Monthly:

The CONCESSIONAIRE shall monthly:

- For all homogeneous segments of the ROAD SYSTEM, calculate the operational service level, according to the methodology recommended in this ANNEX and ANNEX 07 of the CONTRACT;
- to inform the “road inventory”, register formed by the linear assets (continuous elements, kept in segments with beginning and end, measuring in meters or kilometers, such as: trunk axis, interconnections, accesses, vicinals, branches, roundabouts, bicycle paths , parks, tunnels and special artwork), and non-linear (non-continuous, watertight, localized and georeferenced elements in linear assets such as: vertical and horizontal signage, aerial, safety equipment, ITS (Intelligent Equipment System), buildings , buildings, vehicles, bases, SAU stations, etc.);
- to provide the amount of human resources, equipment and vehicles available in the operational areas in the monthly scale format for each SAU service, including the CCO;
- to provide the amount of human resources, equipment and vehicles available in the operational areas in the monthly scale format for the DER and PMRv;
- to position the GRANTING AUTHORITY on the progress of the solution to locations previously identified as uneven and critical access on road safety issues.

##### (b) Semiannual

The CONCESSIONAIRE shall every six months:

- To provide ARTESP with the update of the register of operational and administrative vehicles and annually the update of the register of buildings, according to the Technical Specification.

(c) Yearly

The CONCESSIONAIRE shall annually:

- to provide ARTESP with information on the evolution of the various types of vehicles that circulate on each highway of the ROAD SYSTEM, as well as on the USER profile, with emphasis on motorcyclists, pedestrians and truck drivers.
- to provide ARTESP with color digital aerial images through SIGGIS with a minimum spatial resolution of 50 cm (fifty centimeters), compatible with the geographic coordinate system used by ARTESP, of the entire ROAD SYSTEM including the DOMAIN RANGE and adjacent side areas, totaling at least about 2000 m (two thousand meters) wide. This survey shall contain the restoration of the layout of the highways that are part of the ROAD SYSTEM, their clovers, intersections and accesses, the registration of all pertinent elements to the CONCESSION, such as TOLLSTATIONSS, SAU stations, weighing stations and buildings in general, as well as all horizontal and vertical signs, continuous protection devices (metal fenders, rigid concrete barriers, anti-glare devices, etc.), bridges, viaducts, walkways, etc. Each type of information must be presented in an independent layer in order to allow the GRANTING AUTHORITY to set up a ROAD SYSTEM database.

#### **9.1.3. Database of CCO**

The CONCESSIONAIRE shall keep at the disposal of the GRANTING AUTHORITY, allowing real time access at any time, all available operational data and information through the CCO's database, including toll, weighing, traffic occurrences and conservation. road maintenance for inspection and audit purposes.

#### **9.1.4. Systematic submission of information**

The form and frequency of the information to be sent to ARTESP will be identified, according to the need. ARTESP will provide standardized templates to be completed by the CONCESSIONAIRE through technical standards.

#### **9.1.5. Information Systems Audit**

The Audit will be done through the MITS System (or another as ARTESP indicates) which shall read the date and time fields of the occurrences, times and service provided to the USERS to identify the CONCESSIONAIRE operator who changed / modified the given and its justification.

### **9.2. Quality management system**

The CONCESSIONAIRE shall offer external and internal quality assurance, through its certification, ISO system- 9.000 (Standards NBR ISO 9.002 and NBR ISO 9.004-2), as regards the services corresponding to operational functions, including support activities for non-delegated services, namely:

- toll system operation;
- operation of the traffic and transportation inspection system; and



- road system operation, safety and comfort of USERS.

## **10. ADDITIONAL SERVICES**

The complementary services, to be performed directly by the CONCESSIONAIRE or by third parties, as provided for in ANNEX 01, will depend on the prior approval of ARTESP.

The CONCESSIONAIRE, in compliance with current legislation, will define the conditions for the provision of services, especially regarding operational aspects.

## **11. RESTING AREAS FOR TRUCKERS**

In the ROAD SYSTEM, in compliance with Federal Law number 13.103, of March 2, 2015 (or another that may replace it), which provides for the exercise of the driver's profession and disciplines the working day and rest interval, CONCESSIONAIRE shall, within the DOMAIN RANGE, establish and operate areas for this purpose, in accordance with the provisions of ANNEX 7 of the CONTRACT, with at least the following characteristics:

- 100% (100%) covered and lighted courtyard and meeting the lighting project according to standardization, paved, segregated with fence or wall in its entire perimeter and demarcated with circulation and parking roads for articulated or not articulated vehicles in the minimum area of 20,000 m<sup>2</sup> (twenty thousand square meters);
- Single entrance and exit control gate with vehicle and person access controller to rest area facilities, with 24-hour property security, CCTV cameras for monitoring yard movement (entrances, exits, parking), maneuvers, buildings), with 100% (one hundred percent) coverage of the rest area facilities. Images must be stored and maintained for at least the last 30 (thirty) days of operation;
- 10% (ten percent) of electric power point vacancies for refrigerated loads;
- Restroom for men, women and people with reduced mobility, with individual boxes;
- Locker room area, with individualized lockers, with padlock support and benches for sitting and changing;
- Area of showers with individualized boxes male, female and for people with reduced mobility with regulatory dimensions, all closed by door, containing support for placing towels, clothes and accessories inside the box;
- Area with washing tank and clothes drying line;
- Cafeteria with furniture (tables and chairs), microwave, coffee maker and drinking fountains with drinking water;
- Wireless data network service with free access to users and employees, with the same characteristics as SAUs stations;
- Lighting and cleaning 24 (twenty-four) hours a day; and
- Rest and leisure room with tables, chairs, sofas and TV.

The CONCESSIONAIRE may commercially exploit ancillary recipes from rest areas, in the cases provided for in the above listing after the twelfth hour of use. For other services, the CONCESSIONAIRE may freely explore ancillary revenues, subject to contractual provisions and applicable law.

The rules for the use of rest areas will be defined in normative acts of ARTESP.

If there is no exploitation of ancillary revenues for the following services, the Trucker Rest Area must preferably be near a Highway Service Station containing: (i) Emergency supply and care services such as tire shop, auto repair shop, auto shop, oil change ditch, accessory stores and others; and (ii) Restaurant, diner, telephone, convenience store, baby changing room, etc.

## **12. NEUTRAL CARBON PROGRAM (Operation Neutral Carbon)**

The Zero Carbon Program shall be implemented by the CONCESSIONAIRE with the objective of neutralizing the Greenhouse Gas (GHG) emissions, calculated in carbon equivalent (CO<sub>2</sub>e), from the CONCESSIONAIRE'S OPERATING ACTIVITIES in the ROAD SYSTEM.

For the purposes of this Program only, the following exhaustive list is understood as OPERATING ACTIVITIES:

- traffic inspection;
- winch and mechanical service services;
- ambulances;
- incident handling (fire fighting and animal seizure); and
- Operation of toll stations, CCO and other administrative buildings managed by CONCESSIONAIRE.

The Program will consist of three phases described and specified below.

### **12.1. Inventory**

The CONCESSIONAIRE shall conduct an annual inventory to calculate all its GHG (Greenhouse gases) emissions and quantify the emissions (in carbon equivalent) related to the CONCESSIONAIRE's operating activities to be neutralized.

The deadline for submitting the first inventory is set out in item 13 of this annex. The Inventories shall cover the period from January to December of the previous year and shall be prepared based on internationally recognized methodologies and standards, such as ABNT (ISO 14.064-1, GHG (Greenhouse gases) Protocol and / or other standards) and equivalent standards.

Inventories shall cover all emissions from OPERATING ACTIVITIES.

The CONCESSIONAIRE shall submit to the GRANTING AUTHORITY certification of its inventory. Certification must be carried out by an independent, reputable company, of notorious specialization and which has the proper qualifications with the competent bodies, such as INMETRO.

Emissions inventory and certification shall be submitted to the GRANTING AUTHORITY annexed to the Annual Environmental Performance Report (RADA), in conjunction with the definition of voluntary carbon equivalent (CO<sub>2</sub>e) GHG (Greenhouse gases) emission reduction targets for the next period.

## 12.2. Compensation

The CONCESSIONAIRE shall offset greenhouse gas emissions with the objective of neutralizing, at a minimum, the emissions resulting from the ROAD SYSTEM OPERATING ACTIVITIES.

The compensation program shall be executed every five years, consolidating the demands indicated in the annual inventories. These compensatory measures include, among others: (i) compensatory planting and / or reforestation project; (ii) purchase of carbon credits in the Regulated or Voluntary Market; and (iii) Clean Development Mechanism.

In the case of the option of neutralization of emissions by reforestation project, it cannot be linked to environmental licensing processes or other legal obligations of the CONCESSIONAIRE, and its maintenance must be guaranteed until the planting becomes self-sustaining.

The CONCESSIONAIRE shall adopt the compensatory measures preferably in the State of São Paulo.

## 12.3. Certification of neutralization of GEE

In order to ensure the effectiveness of this program, the CONCESSIONAIRE SHALL obtain, at the end of each five-year cycle described in item 12.2 above, a certificate and / or equivalent document issued by an independent, reputable company of notable specialization and which has the appropriate qualifications from to competent bodies, to certify to the GRANTING AUTHORITY the fulfillment of the objective of neutralizing GHG (Greenhouse gases) emissions from the OPERATING ACTIVITIES.

This certificate will be used by the GRANTING AUTHORITY to confirm neutralization of emissions during the period, which will be done by comparing the information present in the inventories and the certified neutralizations.

## 13. TABLE OF DEADLINES

OTHER DEADLINES		
Delivery of Operational Vehicles operation manual to ARTESP for approval	<b>Error! Reference source not found.</b>	Up to 360 (three hundred and sixty) days from the date of signature of the INITIAL TRANSFER TERM.
MIP system approval in the EXISTING SYSTEM	<b>Error! Reference source not found.</b>	Up to one hundred and eighty (180) days from the start of operation of the toll stations of the existing system
MIP system adaptation and approval for the REMAINING SYSTEM	<b>Error! Reference source not found.</b>	Up to one hundred and eighty (180) days from the signature of the REMAINING SYSTEM TRANSFER TERM

OTHER DEADLINES		
Adequacy of equipment, facilities and technical, operational and administrative procedures of the TOLLSTATIONSS of the REMAINING SYSTEM.	<b>Error! Reference source not found.</b>	Within three (3) months after the date of signature of the TERM OF TRANSFER OF REMAINING SYSTEM.
Delivery of the Operation Manual of the ARTESP Collection Control System, for approval	<b>Error! Reference source not found.</b>	Up to 60 (sixty) days prior to the commencement of operation of the Toll Station of the EXISTING SYSTEM.
Weighing System Location Study of the stretch that was granted	<b>Error! Reference source not found.</b>	Within six (6) months after the signature of the INITIAL TRANSFER TERM
Operating System Design of Mobile Weighing	<b>Error! Reference source not found.</b>	Within 12 (twelve) days after the signature of the INITIAL TRANSFER TERM
Project to adjust the weighing system of the REMAINING SYSTEM	<b>Error! Reference source not found.</b>	Within six (6) months after the signature of the REMAINING SYSTEM TRANSFER TERM
To survey, identify and initiate the process of regularization of the occupations of the DOMAIN RANGES of the EXISTING SYSTEM.	<b>Error! Reference source not found.</b>	Within three (3) months after the date of signature of the TERM OF INITIAL TRANSFER.
To survey, identify and initiate the process of regularization of the occupations of the DOMAIN RANGES of the REMAINING SYSTEM.	<b>Error! Reference source not found.</b>	Within three (3) months after the date of signature of the REMAINING SYSTEM TRANSFER TERM
Delivery of schedule for delivery of Operational Management Plan of ACCESSES of the EXISTING SYSTEM.	<b>Error! Reference source not found..</b>	Up to 6 (six) months from the signing of the INITIAL TRANSFER TERM.
Schedule delivery for delivery of Operational Management Plan of ACCESSES OF THE REMAINING SYSTEM.	<b>Error! Reference source not found.</b>	Up to six (6) months from the signing of the REMAINING SYSTEM TRANSFER TERM.
Survey of all existing ACCESSES	<b>Error! Reference source not found.</b>	6 (six) months after the date of signature of the INITIAL TRANSFER TERM and of the REMAINING SYSTEM TRANSFER TERM

OTHER DEADLINES		
Research regarding the regularity of ACCESSES	<b>Error! Reference source not found.</b>	Twelve (12) months after the date of signature of the INITIAL TRANSFER TERM and of the REMAINING SYSTEM TRANSFER TERM
Elaboration of the plant in the updated and georeferenced aerophotogrammetric base, including the DOMAIN RANGE and the properly numbered ACCESSES	<b>Error! Reference source not found.</b>	Eighteen (18) months after the date of signature of the INITIAL TRANSFER and of the REMAINING SYSTEM TRANSFER TERM
Preparation and delivery of access register, indicating the situation of each of them.	<b>Error! Reference source not found.</b>	Up to twelve (12) months from the signature of the TERM OF INITIAL TRANSFER.
Delivery of Operational Access Management Plan of the existing system.	<b>Error! Reference source not found.</b>	Up to eighteen (18) months from the signature of the TERM OF INITIAL TRANSFER.
Delivery of Operational Access Management Plan of the REMAINING SYSTEM.	<b>Error! Reference source not found.</b>	Up to eighteen (18) months from the signature of the TERM OF TRANSFER OF REMAINING SYSTEM.
Delivery of the Operational Management Plan for the domain of the EXISTING SYSTEM.	<b>Error! Reference source not found.</b>	Up to six (6) months from the signature of the INITIAL TRANSFER TERM.
Delivery of the Operational Management Plan for the domain of the REMAINING SYSTEM.	<b>Error! Reference source not found.</b>	Up to six (6) months from the signature of the TERM OF TRANSFER OF REMAINING SYSTEM.
Delivery of the operation manual of the Traffic and Transportation Inspection Control System and Support to NON DELEGATED SERVICES	<b>Error! Reference source not found.</b>	Up to twelve (12) months from the date of signature of the INITIAL TRANSFER TERM
Implementation, operation and disclosure of other channels of relationship with the USER provided for in current legislation	<b>Error! Reference source not found.</b>	Within 45 (forty-five) days from the date of signature of the INITIAL TRANSFER TERM

OTHER DEADLINES		
Compliance with the requirements related to human, material and technological resources established in the current legislation regarding the ombudsman channels and other relationship channels with the USER.	<b>Error! Reference source not found.</b>	Up to ninety (90) days from the date of signature of the INITIAL TRANSFER TERM
Compliance with operational, administrative and procedural requirements set forth in current legislation regarding the Ombudsman and other channels of relationship with the USER.	<b>Error! Reference source not found.</b>	Up to ninety (90) days from the date of signature of the INITIAL TRANSFER TERM
Compliance with requirements and quality indicators and deadlines provided for in current legislation regarding the Ombudsman and other channels of relationship with the User	<b>Error! Reference source not found.</b>	Up to ninety (90) days from the date of signature of the INITIAL TRANSFER TERM
Delivery of ARTESP Communication and Relationship System Operation Manual for approval	<b>Error! Reference source not found.</b>	Up to twelve (12) months from the date of signature of the INITIAL TRANSFER TERM
Delivery of Traffic Sensing System Operation Manual to ARTESP for approval	<b>Error! Reference source not found.</b>	Up to twelve (12) months from the date of signature of the INITIAL TRANSFER TERM
System Certification of Road Safety Management	7.2.1	Up to eighteen (18) months from the date of signature of the INITIAL TRANSFER TERM
First road safety inspection / audit of the ROAD SYSTEM	7.2.2	Within 24 (twenty-four) months from the date of signature of the INITIAL TRANSFER TERM
Other road safety inspections / audits of the ROAD SYSTEM	7.2.2	Every 4 (four) years from the first inspection
Road Safety Commission	<b>Error! Reference source not found.</b>	Up to six (6) months from the date of signature of the INITIAL TRANSFER TERM
First Report on Practice Speed and Risk Management of the EXISTING SYSTEM	<b>Error! Reference source not found.</b>	Up to eighteen (18) months from the date of signature of the INITIAL TRANSFER TERM
Speed and Risk Management Practices Process of REMAINING SYSTEM	<b>Error! Reference source not found.</b>	Up to six (6) months from the date of signature of the REMAINING SYSTEM TRANSFER TERM



OTHER DEADLINES		
To implement and maintain compliance program ( <i>compliance</i> ) within its scope	6.2.10	Up to 360 (three hundred and sixty) days from the date of signature of the INITIAL TRANSFER TERM
Delivery of the Road System Operation, Safety and User Manual	<b>Error! Reference source not found.</b>	Up to twelve (12) months from the date of signature of the INITIAL TRANSFER TERM
Provision of color digital images of the entire EXISTING SYSTEM	<b>Error! Reference source not found.</b>	Up to 3 (three) months from date of subscription OF THE INITIAL TRANSFER TERM
Quality Assurance Certification	<b>Error! Reference source not found.</b>	Up to two (2) years from the date of signature of the INITIAL TRANSFER TERM
First Annual Inventory of GHG (Greenhouse gases) emission	12.1	Up to twelve (12) months from the date of signature of the INITIAL TRANSFER TERM