

ANNEX 05

SERVICES CORRESPONDING TO OPERATIONAL FUNCTIONS

SPONSORED CONCESSION OF PUBLIC SERVICES OF EXPANSION, OPERATION, MAINTENANCE AND MAKING OF INVESTMENTS NECESSARY FOR EXPLORATION OF THE ROAD SYSTEM CALLED RODOANEL NORTE LOT

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1. INITIAL PROGRAM

The CONCESSIONAIRE, as soon as it finishes the WORKS FOR IMPLEMENTATION of the ROAD SYSTEM, within the period defined in the AGREEMENT, shall undertake the INITIAL PROGRAM, as applicable, with the objective of providing the START DATE OF OPERATION with conditions of safety and comfort for the USERS, and shall cover the measures/activities listed below.

With the exception of those that are not linked to specific contractual milestones, the deadlines for carrying out the activities provided for in this ANNEX are indicated in the Deadline Table of item 13. The delay in the dates established for each activity will subject the CONCESSIONAIRE to the application of administrative sanctions provided for in ANNEX 11.

In addition to the requirements set forth in this ANNEX, the CONCESSIONAIRE shall, before the conclusion of the PI, submit to ARTESP the OPERATIONAL RULES that will establish the instructions for routine procedures and for exceptional cases, such as use of free lane, traffic of special loads, evasions, cancellation of improper registrations, accidents and others.

1.1. Operating Personnel

All operating personnel (SAU, PGF, scale, toll and conservation) must be properly uniformed and identified, as specified by ARTESP, with PPE's and EPC's and receive training with the objective of standardizing the procedures and services provided to USERS from of the START DATE OF OPERATION, and the CONCESSIONAIRE will have time to make any necessary adjustments and adaptations as a result of ARTESP's request. The uniform must comply with Standard NBR 15292/2013, which deals with High Visibility Safety Clothing and contain the CONCESSIONAIRE's identification.

All operating personnel (SAU, PGF, scale, toll and conservation) must receive periodic training, given by professionals, employees, or company, both with experience in the subject object of the respective training, on emergency signaling, programmed signaling, road operation, first aid, among others.

1.2. OPERATIONAL CONTROL CENTER - OCC

On the START DATE OF OPERATION, the CONCESSIONAIRE shall have a definitive OCC exclusively for the ROAD SYSTEM, in order to centralize and control the activations of resources monitored by the OCC, the attendance and control of events in the ROAD SYSTEM. Therefore, it must be equipped with, at least, a temporary Radiophony System for communication with operational vehicles and other fixed points of operation, in addition to a 0800-type telephone system for communication with USERS.

The OCC must have its equipment and/or systems implemented and/or complemented in order to offer for operation, at least, the implementation of the Radiophony System, Vehicle Monitoring and Geopositioning System, Automated Event Control System, Panels/Monitors of assistance to operators and Communication System with the User through the 0800 telephone. The Automated Event Control System shall record information history and support the fulfillment of all requirements established in the AGREEMENT and in ARTESP's current Technical Specifications, with regard to the operation of the ROAD SYSTEM.

The OCC's activities must comply with the standards, deadlines and rules defined in ANNEX 07.

1.3. Operational Vehicles

The Operational Vehicles must be available for operation on the START DATE OF OPERATION, and must meet the specifications, as to the types and quantities that are sufficient to meet the service levels.

The Operational Vehicles must be properly characterized and identified by the ARTESP operational prefix, equipped according to the requirements for each type of vehicle, in terms of operating material and emergency signaling to respond to occurrences, radio communication with the OCC and Monitoring and Geopositioning System.

The equipment and operating and signaling materials must be in a state of conservation that does not impair their functions and follow technological developments throughout the SPONSORED CONCESSION period, in accordance with the rules set forth in the AGREEMENT.

Temporary or definitive radiocommunication equipment must be in full operation on the STARTING DATE OF OPERATION, including communication with the provisional or definitive OCC.

It will be required for all operating vehicles to implement a monitoring system and geographic positioning system, whose module should be integrated into the OCC and ARTESP, providing online, real-time position information of vehicles, the situation control and driver and enabling the communication between the driver and OCC through data.

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

1.4. User Service Station (SAU)

On the START DATE OF OPERATION, the CONCESSIONAIRE shall determine strategic points along the ROAD SYSTEM for the distribution and parking of Operational Vehicles, which are duly protected by road containment devices and other requirements set out in this ANNEX.

The implementation of SAU Service Stations must take place in accordance with the rules set out in this ANNEX and ANNEX 07.

At SAU Posts, service to USERS must be carried out by presential attendants, 24 (twenty-four) hours a day, 07 (seven) days a week, until the remote service platforms are implemented and have been approved by ARTESP.

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

1.4.1 Remote Service Equipment

After the completion of the SAU Service Stations, the CONCESSIONAIRE may propose the replacement of the on-site attendants at the SAU Service Stations with equipment that allows remote service to users. This action is subject to the prior authorization of ARTESP, which will be issued after testing and evaluating the prototype of the equipment proposed by the CONCESSIONAIRE.

If the CONCESSIONAIRE opts for remote service to USERS, in the event of equipment failure (for any reason, including exclusions of guilt) or scheduled shutdown, the CONCESSIONAIRE must immediately position one of its employees to assist users in person (not can use the employees of the operational vehicles), until the operation of the self-service equipment is reestablished.

Remote service equipment must meet, at a minimum, the following requirements:

- i. guarantee accessibility conditions for disabled users;
- ii. have a flat screen measuring at least 22 (twenty-two) inches;
- iii. have an intuitive operating system and hardware that provide the user with basic instructions for using the equipment;
- iv. ensure the execution of a video call, which allows communication, in real time, between the user and the attendant at the CONCESSIONAIRE's OCC;
- v. enable text communication with attendants at the CONCESSIONAIRE's OCC;
- vi. allow the CONCESSIONAIRE's OCC operator to locate the user on the highway; and
- vii. provide USERS with additional interactive resources, such as the presentation of maps and useful information about the ROAD SYSTEM (distance from the nearest cities, location of service stations, etc.).

For each service performed on the equipment installed by the CONCESSIONAIRE at the SAU Service Stations, information regarding the date, time, operator, and other information must be stored, allowing an audit to be carried out in the database for future inspection and evaluation of the system's efficiency.

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

The equipment must support telemetry integrated with ARTESP's systems in order to allow remote consultation in real time of the equipment's operational status by the ICC. The telemetry information delivered by the CONCESSIONER to ARTESP must reflect the availability of communication between the OCC and the equipment.

The form of availability, by the CONCESSIONER, of the telemetry data and camera images, and the form of integration to ARTESP systems, must fully comply with the procedures, technologies and interfaces formally defined by ARTESP.

The operation of remote assistance equipment must meet the service levels set out in APPENDIX H.

1.5. User Communication System

On the START DATE OF OPERATION, the CONCESSIONAIRE must have implemented a 0800 telephone system, centralized at the OCC, operating 24 (twenty-four) hours a day, 07 (seven) days a week, including holidays. The 0800 number must be publicized throughout the ROAD SYSTEM at kilometer milestones and through installed vertical signs, as established in the current ARTESP signage manual.

According to the deadlines established in ANNEX 07, the CONCESSIONAIRE shall establish a definitive telephone system for 0800 service, which will be available to USERS 24 (twenty-four) hours a day, 07 (seven) days a week, including holidays.

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

From the beginning of the COMMERCIAL OPERATION, the CONCESSIONAIRE shall publish and maintain an institutional website (web page) with the following characteristics: road map; rectigraphic map; traffic conditions updated at least every 30 minutes; list of existing equipment in the network granted: cameras, service/fuel stations; weighing stations; SAU (Customer Service) stations; PORTICS etc.

1.6. Communication System with the Information Control Center (ICC) of ARTESP

From the beginning of the COMMERCIAL OPERATION, the CONCESSIONAIRE, through the OCC, must notify the ICC of ARTESP, via email or a specific system approved by the Agency, of all occurrences and/or events considered relevant, in accordance with the technical specifications and/or ARTESP's current procedures.

From the beginning of the COMMERCIAL OPERATION, the CONCESSIONAIRE shall make available to the ICC of ARTESP, a RESTful WEB service - Representational State Transfer - through a documented and RESTCompliant API (Application Programming Interface), where the following will be exposed:

- 1) Vehicle count data, classified by vehicle type, collected through traffic analysis systems;
- 2) Vehicle counting data, classified according to the definitions in Annex 4, collected through the counting systems available in the GANTRY;
- 3) Data of all occurrences and/or events within the boundaries of the right-of-way or non-buildable range;
- 4) Data on traffic conditions, weather conditions and travel time between the municipalities of the road network granted;
- 5) Data on works in progress; and
- 6) Other data that are later requested by the Agency.

Requests made to the URI - Uniform Resource Identifier - provided by the API, must respond with a payload formatted in JSON, obligatorily, and other formats to be defined by ARTESP, if necessary. The service must make data available from the beginning of the concession until the current time of the request, with a maximum time of 1s to respond to the request.

The data provided must be updated in real time and meet all criteria already defined or to be defined by ARTESP.

1.7. Physical-Executive Schedule

The CONCESSIONAIRE shall deliver to ARTESP the PHYSICAL-EXECUTIVE SCHEDULE for the implementation of all Equipment, Vehicles and Control Systems of the ROAD SYSTEM, detailed according to the model to be provided by ARTESP.

1.8. Deadline Table

ACTIVITY	ANNEX ITEM	TERM
INITIAL PROGRAM		
Completion of PI	1	Until START DATE OF OPERATION
Standardization, identification, training of Operating Personnel	1.1	Until START DATE OF OPERATION
Implementation of systems/equipment in the OCC	Error! Reference source not found.	Until START DATE OF OPERATION
Implantation of the definitive equipment of the radio communication system (including communication with the OCC) in the Operational Vehicles	1.3	Until START DATE OF OPERATION
Installation and integration with the OCC of the Monitoring and Geopositioning System in all Operational Vehicles	1.3	Until START DATE OF OPERATION
Definitive characterization of Operational Vehicles	1.3	Until START DATE OF OPERATION
Implementation of SAU Stations	Error! Reference source not found.	Until START DATE OF OPERATION
Build a definitive 0800-type telephone system	1.5	Until START DATE OF OPERATION
Provide an Institutional website with traffic conditions, and information on existing equipment in the network	1.5	From the beginning of the COMMERCIAL OPERATION .
Provide WEB service for data collection	1.5	From the beginning of the COMMERCIAL OPERATION .
Publish the 0800 contact number throughout the ROAD SYSTEM,	1.5	Until START DATE OF OPERATION

ACTIVITY	ANNEX ITEM	TERM
INITIAL PROGRAM		
complying with the standards established by ARTESP.		
Provide access to the definitive 0800-type telephone system database	1.5	Until START DATE OF OPERATION

2. Operational Vehicles

2.1. Quantitative conditions

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

The quantities of Operating Vehicles must be constantly reviewed throughout the CONCESSION TERM, at the CONCESSIONAIRE's discretion, considering the forecast of demand growth and seasonality, ensuring service levels are met.

The CONCESSIONAIRE may opt for the purchase, lease, outsourcing, leasing or equivalent legal institute of the Operational Vehicles, without prejudice to the need to revert Operational Vehicles sufficient to meet the service levels at the time of return of the ROAD SYSTEM, as provided for in ANNEX 10.

In the last year prior to the signing of the PROVISIONAL RECEIPT TERM, operational vehicles must have a maximum of 50% (fifty percent) given their estimated useful life, considering the time elapsed since the year of manufacture, established in this item 2.

2.2. Operational Conditions

Operational Vehicles must be available for operation on the START OF OPERATION DATE and must meet specifications, as to types, and quantities that are sufficient to meet service levels, equipped with a non-removable device for intermittent or rotating red lighting to rescue ambulances and in yellow-amber for the other Operational Vehicles, in accordance with current legislation, containing operating materials and emergency signaling to respond to occurrences and radiocommunication equipment with the OCC and Monitoring and Geopositioning System, whose module must be integrated to the OCC, and must have online and real-time positioning, control of the vehicle's situation and communication between the driver and the OCC through a control data channel and/or voice.

These operating and signaling equipment and materials must be in a state of conservation that does not impair their functions, and must accompany technological developments throughout the SPONSORED CONCESSION period, in accordance with the rules set forth in the AGREEMENT.

The vehicles must be characterized with the CONCESSIONAIRE's brand/logo, with the inscription of "FREE SERVICE" on the sides and a 0800 telephone number, so that they identify the vehicle to the USER, and must evolve to the definitive characterization, according to the project presented by the

CONCESSIONAIRE to ARTESP. It should be noted that emphasis should be given to the CONCESSIONAIRE's name and not to the economic group to which it belongs.

These vehicles are intended to assist in the following services to USERS: Towing Service, APH Service, Traffic Inspection Service, Animal Apprehension Service, Fire Fighting Service and Mechanical Rescue Service.

Operational Vehicles must be replaced with the following frequency:

- i. traffic inspection vehicles and mechanical rescue vehicles: at most every 02 (two) years;
- ii. light and medium ambulances and tow trucks: at most every 05 (five) years; and
- iii. irrigation trucks, trailer for transporting seized large animals (VTAV) and heavy tow trucks: at most every 10 (ten) years.

The CONCESSIONAIRE may provide reserve vehicles for the fleet of Operational Vehicles, according to their size, types and quantities necessary to fulfill the contractual obligations. Such vehicles must be capable of replacing damaged vehicles or vehicles undergoing preventive maintenance, without harming the level of service to USERS and the quality of service provision, in compliance with the IQD.

Reserve Operational Vehicles for APH, light towing, mechanical assistance and traffic inspection services must have the same characterization as the regular fleet. Those that are eventually made available on a non-recurring basis (heavy winch, water truck), must have a minimum characterization, different from that practiced in the regular fleet (subject to ARTESP's approval), being certain that this must allow the identification, by USERS, of the vehicles as being at the service of the CONCESSIONAIRE and under the delegation of ARTESP.

3. COLLECTION CONTROL SYSTEM

3.1. Basic Concepts

The TOLL TARIFF collection services comprise the operation of the collection system aiming, during 24 (twenty-four) hours a day, the collection of TOLL RATE, the control of vehicle traffic and the financial and accounting control of the collected values .

Before the start of the FULL and/or PARTIAL COMMERCIAL OPERATION, the CONCESSIONAIRE shall, by itself or by third parties, provide the Toll Information Monitoring System (MIP), as determined in a specific regulation and its updates, which establishes the rules for the standardization, implementation, operation and maintenance of the referred MIP in the ROAD SYSTEM GANTRIES.

The Collection Control System must have MIP implemented and in full operation.

The MIP must be approved and certified by ARTESP or by an appointed body, with regard to technical issues, as well as in relation to financial closing. The approval of the system must occur in accordance with the Deadlines of the item 13 .

The Collection Control System must allow ARTESP collect online the information inherent to the collection of TARIFFS and the operation in the GANTRIES, so that they are virtually transferred to the ARTESP Headquarters and integrated into the ICC.

Validation activities of all information from the Collection Control System may be performed remotely, at the CONCESSIONAIRE's physical facilities, in the State of São Paulo. However, for ARTESP supervision purposes, the information must be available, in real time, at the margin of the ROAD SYSTEM, by a professional trained to operate the System.

For all the items described in this section, the CONCESSIONAIRE must implement a digital system of registration, management and consultation of data via web, with user/password pairs available for ARTESP, as well as the integration and alignment with ARTESP's ICC.

3.2. Description, Specifications and Service Levels

The Collection Control System will be responsible for managing the collection of fees through the GANTRIES, allowing access to the rendering of accounts online by ARTESP.

3.2.1. Collection Methods

It will be mandatory to adopt the method of payment in FREE FLOW / FREE FLOW, disciplined in ANNEX 04, and must meet legal and tax obligations, as well as those arising from the service and technological evolution, in addition to allowing the adoption of new tariff policies throughout the SPONSORED CONCESSION period for the ROAD SYSTEM, whose implementation will observe the rules of the AGREEMENT, ANNEX 4 and this ANNEX.

3.2.1.1 The FREE FLOW collection operating system must include, at least:

3.2.1.1.1 Gantry to be located at the access to the highway that does not prevent the entrance or exit of any type of vehicle that has no controlled use;

3.2.1.1.2 Fixed radar for each runway that is part of the respective access;

3.2.1.1.3 Axis sensors (identifying and registering the axes that touch the ground and those that do not), to identify vehicles that use the respective access;

3.2.1.1.4 Video registration system with the function of optical character recognition (OCR) that is capable of registering the information of both the rear and the front plates, of the vehicles that use the respective access;

3.2.1.1.5 Collection system that enable electronic payment, using AVI and/or other available technology, ensuring interoperability with the systems currently implemented, in accordance with the relevant regulations of ARTESP;

3.2.1.1.6. Signaling system that allows the USER to view the TOLL TARIFF value, according to item 2.6 below.

3.2.1.2 The gantries must house the necessary equipment to register the entrance and exit of USERS from the ROAD SYSTEM, as well as to enable the functionalities required within the scope of the collection system.

3.2.1.3 The gantries must be protected with road containment devices in order to comply with the regulations in force and relevant at the time of implementation and the provisions of ANNEX 06.

3.2.1.4 It will be up to the CONCESSIONAIRE to position the USERS' identification and billing gantries in order to allow billing in accordance with the TCP traveled.

3.2.1.5 It is forbidden to implement an access or passage control device (gate) at the entries and exits of the ROAD SYSTEM.

3.2.1.6 The CONCESSIONAIRE shall comply with Ordinance ARTESP No. 97, of December 22, 2020, or current regulations, regarding the regulatory requirements for the implementation, operation and maintenance of the Toll Information Monitoring System.

3.2.1.7 The signaling system responsible for informing the USER of the current TOLL TARIFF value for a given TCP must, at least, (i) be positioned at the entrances and exits of the ROAD SYSTEM, in each direction of traffic, and (ii) indicate the value of the TOLL TARIFF referent to the CATEGORY 1 for the applicable TCPs.

3.2.1.8 The CONCESSIONAIRE may suggest different positions from the signaling system, which can only be implemented with the approval of ARTESP.

3.2.1.9 The CONCESSIONAIRE shall also make available on its website and other relevant platforms (e.g., mobile application) the current TOLL TARIFF values of all CATEGORIES, for each TCP.

3.2.1.10 The CONCESSIONAIRE shall develop and implement a fully auditable system capable of making the information generated by the electronic billing systems available to ARTESP, including the identification of infringing vehicles, subject to the provisions of ANNEX 05 and ANNEX 26.

3.2.1.10.1. The examination of the records, followed by any issuance of notices of infraction, will be the responsibility of the GRANTING AUTHORITY.

3.2.1.10.2 ARTESP and the CONCESSIONAIRE may enter into an agreement with the DER to facilitate the transfer of information related to the registration of traffic infractions, including with regard to DEFAULTING USERS, in order to assist in the issuance of infraction notices by the GRANTING AUTHORITY.

The CONCESSIONAIRE shall monitor the quality of the records of infringing vehicles, in order to ensure compliance with the standards and requirements established by the GRANTING AUTHORITY and by ARTESP's technical specifications. Records whose quality compromises their use for the issuance of infraction notices will be discarded, given that the related transactions cannot be accounted for the purposes of the demand risk sharing mechanism disciplined in the AGREEMENT, without prejudice to the application of the sanctions provided for in the AGREEMENT and ANNEX 11.

The equipment of the collection system shall store the records for a minimum period of 30 (thirty) days in the GANTRIES, and the CONCESSIONAIRE shall keep the data stored and available to ARTESP for the entire CONCESSION TERM.

3.2.1.11 The FREE FLOW system shall operate every day of the week, including Saturdays, Sundays and holidays, 24 (twenty-four) hours a day. The daily downtime for all elements of the system will be recorded for the purpose of calculating the monthly downtime. In cases where equipment is inoperative due to failures, maintenance and/or certification procedures, the procedures, deadlines and other conditions formally established by ARTESP and the GRANTING AUTHORITY must be met.

3.2.1.12. The CONCESSIONAIRE may close sections of the lanes under the GANTRIES to carry out maintenance and/or certification procedures, if necessary and upon prior notice to ARTESP, provided that it does not make impossible for users to enter or leave the ROAD SYSTEM.

3.2.1.13. The procedures provided for in this ANNEX may be revised, by agreement between the PARTIES and ARTESP, for greater effectiveness, including in the event of the supervenience of a specific rule that provides for a FREE FLOW billing system.

(a) Free Flow Automatic Payment

Payment modality through the use of electronic identification by collection control equipment, containing the vehicle's information necessary for collection, which will be captured and identified by the control equipment in the passage through the lane destined for automatic collection of the GANTRIES.

The equipment will register the passage and the vehicle data, calculate the fare due, debit the amount, and store the data of the automatic collection operation electronically.

In this modality, there will be a speed limit for approaching the GANTRIES, previously established by ARTESP, which will be monitored through a system of fixed radars, which must be installed on all runways object of said GANTRIES, duly approved by Organs competent bodies on the START DATE OF OPERATION.

The automatic payment parameters must comply with the standardization rules in force and issued by ARTESP throughout the CONCESSION TERM, observing the AGREEMENT risk matrix.

(b) Payment in FREE FLOW

The free flow payment method, adopted in this CONCESSION, will follow the rules established in ANNEX 04.

3.2.2. Violation Control System, Exempted Vehicles, Anomalies/Discrepancies and Improper Use of Lanes

For the above charging modalities, for exempt vehicles and for vehicles traveling with excess loads, Violation Control systems must be implemented in all lanes for administration and registration of tickets, as described in items "a" and "b" Next.

(a) Records of Violations against the BTC

Non-metrological systems/equipment must be implemented to record CTB infractions committed on the lanes object of the GANTRIES, duly regulated by CONTRAN/DENATRAN, as applicable, including, among others, the following cases: evasion without payment of the TARIFF, traffic in a place not permitted and/or irregular use of any lanes.

During the entire CONCESSION TERM, for the implementation and operation of non-metrological systems/equipment, the CONCESSIONAIRE must fully comply with current legislation. Mandatory, the CONCESSIONAIRE must also meet all requirements, specifications, procedures and quality standards formally defined by ARTESP and/or the GOVERNMENT, under the terms of the AGREEMENT.

The CONCESSIONAIRE shall ensure that the information stored by the implemented control system, both from non-metrological equipment and fixed radars, is available for access by the authorities, so that it is possible to identify the stored content, within the requested deadlines, so that they can fine the vehicles for registered nonconformities.

(b) Control and Record of Passage

For vehicles that are exempt or exempted from paying the fee, anomalies/discrepancies and surplus loads, the system shall record any type of vehicle, its characteristics (plate, make, and number of axles) as well as the date and place of the occurrence, identifying it unequivocally by data and image.

The systems described in items "a" and "b" must be implemented together with the Collection Control System, so that in the beginning of the FULL and/or PARTIAL COMMERCIAL OPERATION, these Systems/Equipment are approved by Organs competent bodies and in full operation/operation.

The CONCESSIONAIRE shall ensure access to the control and registration information of stored tickets, through ARTESP's ICC.

3.2.3. Specifications for the Systems collection

(a) Standardization

The Collection Control System must meet all the standardization requirements existing on the highways of the STATE, in addition to those defined by ARTESP and contained in the legislation in force, throughout the TERM OF THE CONCESSION. Compliance with the standards of standardization by the CONCESSIONAIRE shall comply with the provisions of the risk matrix of the AGREEMENT.

(b) Commercialization

The CONCESSIONAIRE shall sign contracts with the Automatic System Operators (OSA's) duly authorized by ARTESP, making it possible for vehicles to pass through the collection lanes. The updating time for the ticket information must meet ARTESP's determination and/or the legislation and regulations in force during the entire period of the SPONSORED CONCESSION. Compliance with the standards of standardization by the CONCESSIONAIRE shall comply with the provisions of the risk matrix of the AGREEMENT.

(c) Assumptions for Project Development of Collection Systems applicable during the CONCESSION period

The following premises constitute the CONCESSIONAIRE's obligation to adapt and make feasible, at its own expense, the implementation of ways to collect the TOLL TARIFF, as they integrate or come to integrate the tariff policy in force throughout the CONCESSION TERM:

- i. allow charging based on the physical characteristics of the vehicles, such as number of axles, number of suspended or non-suspended axles, number of wheels per axle, by weight, per kilometer traveled, by time slot or even by the composition of two or more items;
- ii. allow advance payment for automatic collection modalities;
- iii. The project presented by the CONCESSIONAIRE shall, according to the billing method, consider the operation 24 (twenty-four) hours a day, 07 (seven) days a week, including holidays, without prejudice to the CONCESSIONAIRE's obligation to adopt complementary operational measures aiming at the safety of USERS and the fluidity of the ROAD SYSTEM and preventing fraud attempts;
- iv. allow integration and interoperability with other current systems; provide real-time information about vehicle flow (quantity and type) at the operational control centers of the highway and Toll Stations;
- v. enable the registration of the entire fleet of official vehicles of the STATE, and its future expansion, for the purpose of exemption from the TOLL TARIFF;
- vi. allow upgrade, without the need for a complete change of the system;
- vii. be flexible to include new functions and controls;
- viii. present audiovisual resources to instruct and inform Users, without compromising system flow; present resources that indicate the occurrence of any failures in the system both locally and remotely;
- ix. provide, in real time, in the OCC and in the GANTRIES, information on the flow of vehicles (quantity and type);
- x. to allow the inspection of vehicle identification data, as required by the existing traffic legislation;
- xi. allow for modernization ("upgrade"), without the need for total system replacement;
- xii. be flexible for the inclusion of new functions and controls;

- xiii. meet the quality programs that may be developed by ARTESP and/or current legislation, actively participating in the pursuit of defined goals, observing the terms, obligations and risks of the applicable AGREEMENT;
- xiv. Audit ARTESP shall audit the control software used for controlling and managing the transactions made at the Toll Stations.
- xv. The application of audiovisual resources must follow the rules established by ARTESP;
- xvi. provide features that signal, locally and remotely, the occurrence of any faults in the system;
- xvii. allow remote control;
- xviii. validate all information from the Collection Control System at the CONCESSIONAIRE's physical facilities, in the State of São Paulo;
- xix. obtain technical and operational approval for the lanes subject to the charge, as determined by ARTESP and/or current legislation;
- xx. the Collection System must also allow the collection of information from the track equipment for online monitoring, making it available, as applicable, according to the collection solution implemented by the CONCESSIONAIRE;
- xxi. monitoring through electrical current for the systems, loop, dual wheel sensor, axle sensor, suspended axle sensor, vehicle detection sensors (optical barriers or similar) etc.;
- xxii. Ethernet network point monitoring through existing switch inside the track rack, configured to operate in promiscuous mode, for AVI antenna systems, SLT hardware, VAS camera and VES camera etc.;
- xxiii. the readings of all sensors and/or equipment must be obtained before entering the boards or PLCs – Programmable Logic Controllers for acquisition of the Collection System;
- xxiv. for all existing equipment on the runways, the collection of information must originate directly from the sensors and/or equipment; and
- xxv. the Collection Control System must provide access to all the Collection System information, so that the MIP system can collect the necessary data. However, it is not allowed to make data available through views, scripts, web services, etc., that is, the collection of information directly from the database tables.

(d) Audit

ARTESP will audit the control software used to control and manage transactions carried out through the FREE FLOW system.

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

The Collection Control System must have a Telemetry System, meeting the basic and operational functionalities of the collection equipment with information made available in the GANTRIES.

The service levels applicable to the Collection Control System must comply with the standards in APPENDIX H.

4. TRAFFIC AND TRANSPORT SUPERVISION CONTROL SYSTEM AND SUPPORT TO NON-DELEGATED SERVICES

4.1. Basic Concepts

7.2.5

The traffic and transport inspection activity is part of the set of NON-DELEGATED SERVICES, remaining as an exclusive attribution of the PUBLIC GOVERNMENT, which also includes the ostensive policing of road traffic and the issuing of permits and authorizations.

The CONCESSIONAIRE will be responsible for carrying out inspection support activities, especially with regard to vehicle weighing, which will be carried out on the rolling lanes through direct weighing, at fixed and/or mobile stations of the ROAD SYSTEM, as well as providing resources materials for the exercise of ostensible policing of road traffic (conditional on adherence to the agreement signed between ARTESP, Highway Police Command - CPRv, Department of Roads and Highways - DER/SP and other CONCESSIONAIREs), in addition to d and carry out technical analysis of authorization requests for events in the ROAD SYSTEM and transport of exceptional loads.

The CONCESSIONAIRE shall systematically carry out analyzes on occurrences in the ROAD SYSTEM under its administration, which will be the object of a meeting of the Road Safety Commission (ruled in item 7.2.5 of this ANNEX), providing information to PMRv and/or other traffic and inspection authorities (including ARTESP itself) that allows it to improve its inspection system.

The occurrences to be analyzed are those that have the greatest potential to generate serious accidents on the highway, such as: speeding, not wearing a seat belt, overtaking in an unauthorized place, among others with a significant impact on the occurrence of accidents.

The function of traffic and transport inspection must include the inspection of vehicles in transit through the ROAD SYSTEM, as established in the CTB, ordinances issued by the DER, normative acts of ARTESP, as well as in all current and relevant legislation and regulations.

The inspection carried out by the transit authorities will also be carried out at fixed posts, located along the ROAD SYSTEM, called PGFs - General Inspection Post, without prejudice to the monitoring that must be carried out by the CONCESSIONAIRE, under the terms of the AGREEMENT and this ANNEX.

4.2. Description, Specifications, Service Levels and Performance Indicators

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

The Vehicle Weighing System must be designed observing the principle of pre-selection and/or direct weighing of vehicles to be inspected on the track. Considering the principle of pre-selection, that is, in such a way that only those overweight or with weight very close to the limit established by Organs competent bodies, after weighing in the Selective Weigh-in-Motion Scale (Weighing-in-Motion System - SISPEMOV - WIM Weight in Motion System), are directed to weighing on the dynamic precision scale of the fixed weighing station, to prove any excess and subsequent measures.

Electronic selective and/or precision weighing systems (direct weighing) in motion and precision weighing systems in PGFs must be composed of image capture equipment, plate reading, flow registration by axle and vehicle category, as well as weight data collection. The data recorded in such systems must be collected and stored by the CONCESSIONAIRE, and made available in real time to ARTESP, via web, in the ICC and/or in another system that is indicated by ARTESP. The data collected and stored must be available for access by transit authorities to support NON-DELEGATE inspection SERVICES. The electronic data acquisition system must have a real-time web access platform for all data collected in the field. User/password pairs must be provided for use and consultation by ARTESP.

In addition to the weighing system, the load stop locations must provide the capacity to carry out weighing of oversized loads.

The locations of these areas are indicated in ANNEX 12. 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 forward to precision weighing stations. The CONCESSIONAIRE shall prepare all the technical, operational and administrative procedures of the weighing stations, being embodied in its own manual, for approval by ARTESP.

The expenses and costs of implementation, maintenance and adaptations to the current regulations and that may be changed, of such systems, including the infrastructure necessary for sharing the data collected with ARTESP, whether through optical fiber, radio transmission or any other technologies necessary to allow the sharing of data, will observe the provisions of the risk matrix of the AGREEMENT.

For vehicle weighing systems, the CONCESSIONAIRE will be responsible for implementing the appropriate infrastructure to make it compatible with the collection operating system based on the FREE FLOW concept and charging fees that reflect the mileage traveled by USERS, observing the relevant contractual rules.

The CONCESSIONAIRE shall provide for the existence of a procedure for the inspection of vehicle weights compatible with the system of other scales on 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 the occurrence of discrepancies between weighings of the same vehicle, carried out in different locations. Thus, the Vehicle Weighing System must consist of an electronic Weighing-in-Motion system (SISPEMOV), using High Speed Weigh-in-Motion (HS-WIM)

technology, capable of analyzing the pre-selection of vehicles and/or carry out direct weighing (precision weighing, inspection of dimensions and punishment of offenders (escape and excess weight)) to be installed on the roadway in places that precede the General Inspection Posts (PGFs) and by systems of precision weighing that should be implemented in the PGFs.

4.2.1. General Inspection Office (PGF);

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

- i. documentation of drivers and vehicles;
- ii. documentation and cargo packaging; and
- iii. excess weight, height, width and length of vehicles.

The CONCESSIONAIRE shall provide support and infrastructure for the development of the aforementioned activities, including everything necessary for cleaning service, property security, office supplies, support equipment, among others. The projects for the adequacy and/or implementation of the civil infrastructure of the PGFs observe the rule set out in APPENDIX G.

In addition to the operational accommodations (weighing room, equipment room, pantry, toilets and others), the PGF must offer accommodations to USERS (bathrooms and public telephone) who have their vehicle detained due to some irregularity.

THE PGF must be implemented in the location indicated in ANNEX 12. The Selective Weigh-in-Motion Scale (WIM System) on the roadway must be installed so that all vehicles circulating on the ROAD SYSTEM can be weighed in advance, through the monitoring and weighing systems and equipment installed and managed by the CONCESSIONAIRE. Also, the CONCESSIONAIRE shall provide signs that allow the USER to be notified on the roadways to directing the vehicle to the PGF, for weighing on the precision scale.

This configuration should allow for future adaptations and improvements in the collection system that may be incorporated in ORDINARY REVISIONS.

The PGF has a modular conception and, according to the physical and operational characteristics of the respective stretches that make up the ROAD SYSTEM, it can be composed of one or more modules. In total, its set may include at least the following modules:

(a) Weigh Scale Module

The activities related to control and inspection of overweight, height, width and length of the vehicle shall be performed in the Precision Weigh Scale Module.

Its facilities must comply with the provisions of this ANNEX.

The minimum number of PGFs, the location, the definition of the minimum modules required and the implementation deadlines must follow the provisions of ANNEX 07.

(b) Module for Inspection and Seizure of Vehicles transporting Dangerous Goods:

The CONCESSIONAIRE shall prepare complete projects for the Module for Inspection and Seizure of Vehicles transporting Dangerous Goods according to the ABNT NBR 14095 Project, or a standard that replaces it, and submit them to ARTESP for prior approval.

It shall be the CONCESSIONAIRE's responsibility to operate the fixed weighing stations (GIS) and that includes the control of vehicles entering and exiting the weighing station and the weighing operation itself, performed either automatically or by the scale operator when needed.

The examination of the documentation, followed by eventual issuance of infraction notices, will be the responsibility of the Executive Traffic Authority. The GRANTING AUTHORITY may act in person with the PGF or through remote access (Ordinance DER 087/2021, its updates or others that may replace them). The CONCESSIONAIRE shall install a telepresence system that allows remote service to the USER and the inspection of weight by a remote agent, considering CONTRAN Resolution No. 459/2013, CONTRAN Resolution No. 547/2015 and DENATRAN Ordinance No. 870/2010, their updates or others that replace them.

The entire infrastructure for the control and operation of the Remote Access must be provided for the OCC of the CONCESSIONAIRES and/or in a location to be determined by the Executive Traffic Authority.

4.2.2. Vehicle Weighing System Equipment and processing of weighing activities performed by the CONCESSIONAIRE

The Vehicle Weighing System consists of SISPESMOV (including selective dynamic scale - HS-WIM, image capture systems, plate reading and data acquisition equipment) and the Precision Weighing System (composed of a precision scale, image capture systems, license plate reading and data acquisition equipment), vehicle presence detector, control equipment, peripherals and signaling devices.

Vehicles selected for selective weighing in motion must 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 inspector of the Highway Executive Agency, and an area must be provided for the retention of the offending vehicle until the excess load is bled.

In the configuration with direct weighing (precision weighing, inspection of dimensions and punishment of fleeing or overweight offenders) in motion, the system must allow integration with the PGFs to complement the inspections to be required by Organs responsible bodies, The vehicle will be retained and assessed by the inspector of the Highway Executive Agency, and an area must be provided for the retention of the offending vehicle until the excess load is bled.

The electronic system must be designed to store data for issuing weighing reports for a minimum period of 6 (six) months and, in cases of excess weight, automatically issue the AIIP, a document notifying the

infraction committed, which will allow the imposition of the fine. The OCC must have access to this data immediately (online).

The weighing equipment must be interconnected to the ARTESP ICC online allowing the collection of information inherent to the weighing and sending system through SISPEMOV to the ICC and to the traffic inspection bodies.

The equipment must be designed in order to match the appropriate types of scales, so that the equipment allows the control of the flow of vehicles at the fixed stations.

The fixed weighing system must have a telemetry system, meeting the basic and operational functions of this equipment and must be shared with ARTESP in real time.

In addition, the selective and/or precision balance in motion must provide the following information:

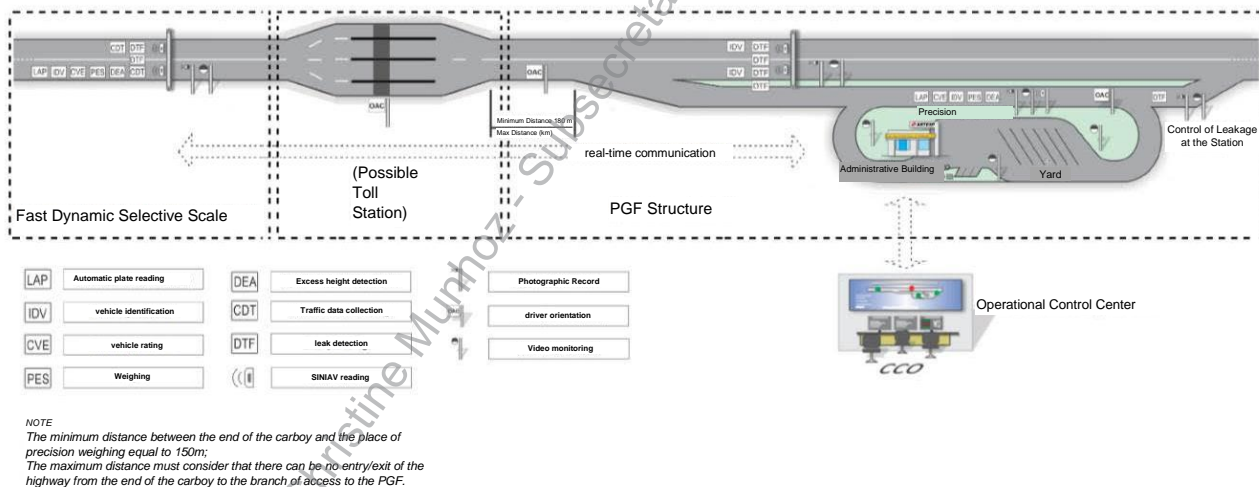
- i. identification of the date and time of the ticket;
- ii. ability to classify axle types (single, double tandem and triple tandem) and vehicle classes according to the current regulatory classification (DNIT);
- iii. determination of axle weight and total gross vehicle weight;
- iv. determination of the total length and height of the vehicle;
- v. determination of vehicle speed;
- vi. identification of vehicles through their plates or other means;
- vii. equipment for detection and reading of license plates and/or other means of vehicle identification;
- viii. variable message panels for directing vehicles into the PGF;
- ix. lane number of registers; identification of equipment and installation location;
- x. escape control through the lanes not served by SISPEMOV and the shoulder;
- xi. data collection and management through a digital system via web, with real time online updates and availability of user/password pairs for eventual consultation by ARTESP; and
- xii. integration of real-time information with the weighing station (PGF), with the CONCESSIONAIRE's OCC and ARTESP's ICC, in addition to sending information to the traffic authorities.

In addition to this information, the precision balance in motion must be calibrated according to current metrological legislation, allowing at least the following basic operational facilities:

- i. issuing of listings of transactions with overweight per axle and PBT (total gross weight) / PBTC (total combined gross weight);
- ii. possibility of automatic classification of vehicles through codes according to Denatran Ordinance No. 63/2009, its updates, or any other that may replace it;
- iii. start of weighing;
- iv. total load and per axle/assembly;
- v. end of weighing;
- vi. vehicle type and class;
- vii. license plate registration of the vehicles;
- viii. control the length, width and height of the vehicle;
- ix. image-based leak detection; and
- x. issue of the AIIP.

The scale must be installed on the highway lanes, at points that precede the PGFs, with distances and details to be defined in a project prepared by the CONCESSIONAIRE and which must be submitted for approval by ARTESP.

The data recorded in such systems shall be collected and stored by the CONCESSIONAIRE, and made available in real time, via the web, to ARTESP, at the ICC or another system that is designated by



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

The OCC shall have access to that data automatically (online). The weighing equipment shall be connected to the OCC so that ARTESP can collect the information related to the weighing system online and send it to the ICC (ARTESP's Information Control Center) and to regulatory traffic agencies.

(a) Fixed Precision Scale

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

- i. entering operational parameters manually and automatically (communication with SISPEMOV);
- ii. issuing of listings of transactions with overweight per axle and PBT (total gross weight) / PBTC (total combined gross weight);
- iii. possibility of automatic classification of vehicles through codes according to Denatran Ordinance No. 63/2009, its updates, or any other that may replace it;
- iv. start of weighing;
- v. total load and per axle/assembly;
- vi. end of weighing;
- vii. vehicle type and class;
- viii. license plate registration of the vehicles;
- ix. control the length, width and height of the vehicle;
- x. image-based leak detection; and
- xi. issue of the AIIP.

(b) Vehicle Presence Detector and Image Registration

They must be installed in all lanes of the ROAD SYSTEM and the shoulder, on the Selective Weighing Scale in Rapid Motion and precision scale, for leak detection and registration of infringing vehicles, providing an image containing the vehicle's license plate legible daily, in compliance with Ordinance No. 870/2010 of DENATRAN or current legislation.

(c) Control Equipment

issuance of transaction lists containing overweight per axle and PBT/PBTC (Total Gross Weight/Total Combined Gross Weight); possibility of classifying vehicles via codes;

(d) Peripherals

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

(e) Signaling Devices

They comprise the external panel to inform the driver of the result of the weighing of his vehicle, as well as semaphore sets to direct the vehicle inside the station.

Control Equipment It shall consist of a local information storage system, designed to prevent fraud or destruction. These devices should be triggered automatically from the control room of the station.

(f) Approach Speed Devices

In the precision weighing scale, whose location will be defined in the project presented by the CONCESSIONAIRE and approved by ARTESP, a luminous system must be installed, informing the computed speed of the approaching vehicle, indicating to the driver the speed that he is traveling in the approach to the scale, the ideal speed range that he should be traveling and also symbols that inform the driver to accelerate or brake his vehicle, reaching the ideal weighing speed range.

This device must be interconnected to the weighing control systems, registering the speed of each heavy vehicle, allowing data access for inspection.

(g) Telepresence Equipment

The weighing stations must foresee telepresence type equipment, interconnected to the OCC and a place, to be defined by the authorities, where the agent of the GRANTING AUTHORITY responsible for the operation of the weighing station can be stationed. This equipment must allow auditory and visual communication between the agent and the USER located in the PGF and provide the information necessary for the inspection, in compliance with CONTRAN Resolution No. 459/2013, CONTRAN Resolution No. 547/2015 and DENATRAN Ordinance No. 870/2010, and updates.

(h) Service Levels and Performance Indicators

The human and material resources of the inspection system must be dimensioned in order to meet the service levels provided for in APPENDIX H and IQD provided for in ANNEX 03 and APPENDIX C, without causing inconvenience to USERS.

Therefore, the weighing stations shall also be inspected regarding possible lines. If the formation of queues is verified, the CONCESSIONAIRE must adopt measures to eliminate the problem and, if the need to change the type of equipment, expand the weighing station, or measures that require investments in equipment, systems or interventions on the lanes of bearing or in the RIGHT-OF-WAY, they must observe the rules applicable to ORDINARY REVISIONS.

4.2.3. Fixed and Mobile Speed Control Equipment

The Speed Control System aims to comply with the provisions of the traffic legislation in effect, as to the maximum speed limits established for the ROAD SYSTEM (or stretches of this ROAD SYSTEM).

The CONCESSIONAIRE will be responsible for the implementation, complementation, revitalization, approval, operation and maintenance of the systems and equipment that constitute the Speed Control System in the ROAD SYSTEM, and must fully and simultaneously meet all requirements, deadlines and quantities established in ANNEXES 05, 06 and 07.

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

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

The CONCESSIONAIRE will be fully responsible for keeping the certification of all speed control equipment (fixed and portable) updated, as established by current legislation. The verification certificates must be sent by the CONCESSIONAIRE to ARTESP and to the other competent agencies of the GRANTING AUTHORITY, in the deadlines and conditions established in the technical specifications in force. To this end, the CONCESSIONAIRE must adopt all measures it deems necessary, especially with regard to activities and deadlines that involve third parties, such as certifying agencies.

During the entire CONCESSION TERM, the CONCESSIONAIRE must fully comply with current legislation regarding the implementation and operation of the speed control system (fixed and portable). The CONCESSIONER must meet all the 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" type speed control equipment at points of the ROAD SYSTEM, pursuant to the provisions of ANNEX 07.

The places where fixed-type speed control equipment will be installed are called "fixed speed control points".

The CONCESSIONAIRE shall develop technical studies to define the most suitable locations for the installation of fixed speed control inspection points, at its own expense, respecting the methodology and deadlines formally established by ARTESP. The studies will be analyzed by ARTESP and the GRANTING AUTHORITY.

Whenever requested by ARTESP, the CONCESSIONAIRE will prepare technical studies in specific locations or carry out a reassessment of the fixed speed control points implemented.

The studies should consider stretches of highway that present potential risk (unfavorable geometry, accesses, etc.), high accident rates and speeds practiced above the regulated speed, whenever it is necessary to maintain the speed within the maximum limit established by law. The road safety inspection/audit (ruled in item 7.2.2 of this ANNEX) should be used as an additional source of information for this study.

Based on the analysis of the technical studies carried out by the CONCESSIONAIRE, ARTESP may request the relocation of fixed speed control points, with the CONCESSIONAIRE bearing the costs of carrying out technical studies and relocating the equipment.

The CONCESSIONAIRE shall, whenever there are changes in the variables contained in the study and/or at most every 12 (twelve) months, measure the effectiveness of the fixed speed meters by means of a new technical study.

All fixed speed control points must be active, i.e. fully installed with poles to support the cameras, road restraint devices, boxes to shelter the equipment, electrical power, and inductive loops to detect vehicles. In addition to this infrastructure, each point will also have equipment capable of measuring the speed of vehicles on all lanes simultaneously, and will record the image of the offending vehicles.

When the technical studies determine the need for control at the same location in both directions of traffic on single lanes, the CONCESSIONAIRE shall implement a single fixed speed control point capable of carrying out the necessary monitoring.

In places of single-lane highways, in which studies indicate the need for equipment in only one direction of traffic, the CONCESSIONAIRE must implement a device that prohibits the use of the opposite lane to escape inspection (for example, beacons).

When the ARTESP determines the implementation of fixed speed meters in critical and vulnerable stretches of road, in which there is a punctual reduction of speed in relation to the road's speed limit, the use of fixed-reducer type equipment (electronic speed bumps) will be mandatory. In addition to sensors to measure speed and image recording devices, this equipment must be equipped with a device (display) that shows the measured speed to drivers. Mandatory, there must be an independent display for each existing traffic lane at the inspection site.

The CONCESSIONER may opt for fixed speed meters that use alternative technologies to surface sensors, provided that there is express authorization from the granting authority and that these technologies, demonstrably, present performance equal to or better than inductive loops.

Fixed speed control points must operate 24 (twenty-four) hours a day, 07 (seven) days a week, including holidays. If the CONCESSIONAIRE fails to comply with this determination, the daily downtime will be computed to calculate the monthly downtime period. In cases where equipment is inoperative due to failures, maintenance and/or certification procedures, the procedures, deadlines and other conditions formally established by ARTESP and the GRANTING AUTHORITY must be met.

All fixed speed control points must be interconnected to the OCC through the data transmission system, so that the records of the offending vehicles are grouped in a specific equipment, with the purpose of transmitting them to the GRANTING AUTHORITY, observing the deadlines defined for this activity in the technical specifications in effect. The CONCESSIONAIRE shall manage and take the necessary actions to ensure that all owners of the surrounding areas that fall under this item regularize the accesses within a maximum period of 05 (five) years. The CONCESSIONAIRE shall submit to the Concession Grantor a full report on all existing accesses in the highway network, containing the information specified by ARTESP in the model required by ARTESP, if applicable.

The examination of the records, followed by any issuance of notices of infraction, will be the responsibility of the GRANTING AUTHORITY.

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

The CONCESSIONAIRE shall ensure that the identification information (check date) and the names of the photographic records files are correctly listed, according to the standards defined by the GRANTING AUTHORITY and in ARTESP's technical specifications. The GRANTING AUTHORITY will discard the photographic records of infractions that present erroneous information in the data check or in the name of the records' files, if it is possible to identify such errors.

The CONCESSIONAIRE will be subject to the application of the administrative sanctions provided for in ANNEX 11 to the AGREEMENT in cases where the insertion of erroneous information in the *check date* or in the name of the files of the records, cause the issuance of an undue infraction notice by the GRANTING AUTHORITY.

Monthly, for each speed control equipment, the granting authority will calculate the registers utilization index, based on the total amount of registers processed in the month and the amount of registers discarded by the granting authority. The CONCESSIONAIRE must maintain the level of the utilization index in accordance with the standards defined by the granting authority and the technical specifications of ARTESP.

The CONCESSIONAIRE must guarantee that there are no irregularities in the numerical sequence of the violation records transmitted to THE GRANTING AUTHORITY.

The system must allow, in the form of contingency, the obtaining of the information of violating vehicles at a local level through portable data collection equipment.

When necessary, the CONCESSIONAIRE must manually collect the encrypted records and, later, transmit them to the GRANTING AUTHORITY.

The CONCESSIONAIRE shall carry out the retransmission of the infringement records to the GRANTING AUTHORITY whenever requested by the latter.

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

The fixed speed control equipment installed by the CONCESSIONAIRE must have functionality that allows the accounting and classification of all vehicles that pass through the fixed speed control point. For classification purposes, light, heavy vehicles, and motorcycles should be considered.

This functionality must also allow the storage and export of data related to the speed practiced by all vehicles.

The way the CONCESSIONAIRE delivers this data and the way it is integrated to the systems of the granting authority and ARTESP must fully comply with the procedures, technologies and interfaces defined by ARTESP.

The fixed speed control equipment installed by the CONCESSIONAIRE must have an Optical Character Recognition (OCR) function to identify the license plates of the vehicles that pass through the fixed speed control point.

This functionality applies to all vehicles that pass through the fixed speed checkpoint, whether they have committed a traffic violation or not.

Whenever requested by ARTESP, this data must be transmitted by the CONCESSIONAIRE to ARTESP and/or to the granting authority, in real time.

The way the CONCESSIONAIRE delivers this data and the way it is integrated to the systems of the granting authority and ARTESP must fully comply with the procedures, technologies and interfaces formally defined by ARTESP.

The fixed speed control points must be inserted in the ARTESP registration systems through the procedures and interfaces formally defined by ARTESP.

The fixed speed control equipment must support telemetry integrated to the ARTESP systems in order to allow remote consultation in real time of their operational status by the JRC.

The telemetry information delivered by the CONCESSIONAIRE to ARTESP must reflect the availability of communication between the OCC and the equipment.

The form of telemetry data delivery by the CONCESSIONAIRE and the form of integration to ARTESP systems must fully comply with the procedures, technologies and interfaces formally defined by ARTESP.

At any time, ARTESP may determine that the CONCESSIONAIRE supplies the ARTESP systems with additional information about the equipment operation, according to procedures and interfaces similar to those that the CONCESSIONAIRE is using.

The operation of “fixed” type speed meters must meet the service levels provided for in APPENDIX H.

4.2.3.2. Speed control Portable

The CONCESSIONAIRE shall acquire portable speed measuring equipment, pursuant to ANNEX 07 to the AGREEMENT, and supply this equipment to the Department of Highways of the State of São Paulo - DER/SP, which will be responsible for the operation, under the terms of current legislation.

The operation sites must be defined together with the granting authority, considering stretches of highway with a high rate of disobedience to the maximum speed limit and stretches with a higher risk of accidents, in order to establish an operation strategy for the equipment that maximizes its use.

The GRANTING AUTHORITY, including represented by DER/SP, will define the scale of operation of the portable speed meters, notifying ARTESP and the CONCESSIONAIRE.

The examination of the records, followed by any issuance of notices of infraction, will be the responsibility of the GRANTING AUTHORITY.

During the operation, if irreparable damage or loss of any of the portable speed meters occurs, for any reason in which the DER/SP (or the competent body for the respective operation) has not given cause, it will be up to the CONCESSIONAIRE to acquire and provide the DER/SP new equipment, as a replacement. In this case, the new equipment must be supplied to DER/SP within 60 (sixty) days after the CONCESSIONAIRE is officially notified by ARTESP.

The GRANTING AUTHORITY will discard the photographic records of infractions that present erroneous information in the *data check* or in the name of the records' files, if it is possible to identify such errors. The equipment must be registered in ARTESP's registration systems through the procedures and interfaces formally defined by ARTESP.

The operation of static speed meters shall meet the service levels provided for in APPENDIX H.

4.2.4. Inspection and Control of Noise Emission

The emission of noise, when carrying out, by the CONCESSIONAIRE or third parties subcontracted by it, of various services/works on the traffic lanes, must comply with the provisions contained in DD No.

100/2009/P - Procedure for measuring noise levels in Linear Systems carriage; and DD nº 389/2010/P - Regulation of noise levels in linear transport systems located in the State of São Paulo.

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

The CONCESSIONAIRE shall adopt all the measures established by the aforementioned specific studies, at its own expense and within the deadlines required by ARTESP, depending on the dimension of the inconveniences brought to the affected communities.

Regardless of the above conditions, the CONCESSIONAIRE must comply with the requirements related to the emission of noise established in the relevant municipal legislation, when transposing urbanized areas.

4.2.5. Instruction and Technical Basis of Requests for Authorizations and Grants

The issuance of authorizations and grants by the GRANTING AUTHORITY constitutes a NON-DELEGATE SERVICE, as defined by the CONCESSION REGULATION.

The CONCESSIONAIRE shall provide support for the execution of these NON-DELEGATE SERVICES, especially with regard to the preparation of studies aiming at the technical foundation, instruction of orders and requests for the transport of exceptional loads, requests for the installation of advertising panels with visibility on the highway, authorizations and grants made by the interested parties and their subsequent forwarding to the GRANTING AUTHORITY or ARTESP, in compliance with the laws and regulations, in particular the legal deadlines and the chronological order of the entry of requests, among others.

The CONCESSIONAIRE must comply with the regulation related to exceptional loads (Ordinance SUP / DER-064 of 12/21/2016 and ARTESP Ordinance No. 46 of 12/27/2016 or another that may complement or replace it).

In cases of installation of advertising panels, the CONCESSIONAIRE must comply with the documents to be issued by ARTESP, or relevant legislation.

The Rodoanel Metropolitano Mário Covas (SP 021) is a highway called class zero, closed and with full access control.

Authorization of access to neighboring properties is not allowed, considering that State Decree No. 55,498, of February 26, 2010, revoked State Decree No. 47,889, of June 12, 2003, which approved the access authorization regulation by SP 021 highway.

If supervening legislation starts to authorize the access regulation (in full or in part), the implementation requests must be submitted to and examined by the CONCESSIONAIRE for later submission and analysis by the GRANTING AUTHORITY, in the form that may be regulated and specified.

The CONCESSIONAIRE shall not allow, throughout the ROAD SYSTEM, that constructions of any nature, along, along and contiguous to the limit of the RIGHT-OF-WAY, have entrances, exits and circulation within the RIGHT-OF-WAY.

The limits of right-of-ways and boundaries of remaining areas must be strictly inspected and kept in order, according to the expropriation plan carried out by the Granting Authority.

The limits of the RIGHT-OF-WAY, in sections considered urban or urbanized by ARTESP and at the CONCESSIONAIRE's expense, must be physically delimited by walls, with height and other characteristics, capable of containing invasions, preventing damage to public property and contributing to the road safety, as well as may be fenced off in rural areas .

It is the CONCESSIONAIRE's responsibility to continuously monitor the RIGHT-OF-WAY, in order to identify temporary, permanent or sporadic invasions, as well as implement the necessary measures to keep it free from the entry of pedestrians, animals or vehicles, at its expense and seeking support from the PMRv, if necessary.

As it is an area expropriated by PUBLIC CONCESSIONAIRE DECREE for the implementation of the highway, its auxiliary roads, equipment and road devices, the RIGHT-OF-WAY must always be kept clean, free from dirt, garbage, debris; and also, it must not allow its use for other purposes, especially those that compromise road safety and USERS' safety (except for those allowed in the RIGHT-OF-WAY occupancy regulation). If there is urbanization in an initially rural area, the CONCESSIONAIRE must replace the fence with a wall, in order to prevent pedestrians from entering the RIGHT-OF-WAY.

Walls and fences installed at the edge of the right-of-way, if removed or damaged, must be immediately replaced and replaced in the same place.

All appropriate and necessary measures in the event of any invasion, removal, damage or any non-compliance with regard to the limit of the RIGHT-OF-WAY and remaining areas, must be carried out by the CONCESSIONAIRE immediately, observing the AGREEMENT's risk matrix.

The CONCESSIONAIRE must proceed with the inspection of the non-building strip so that no occupation contrary to the legislation in force occurs, as well as, point out any works or activities in the neighboring properties, especially in relation to the legality of the work or activities in the lane "*non aedificandi*", identifying where the access to the property will occur, communicate ARTESP and take all necessary and appropriate measures.

The CONCESSIONAIRE shall not allow them to build houses and dwellings close to the RIGHT-OF-WAY or *non aedificandi* and that have doors and windows with exits and pedestrian circulation within the right-of-way.

The CONCESSIONAIRE will be responsible for inspecting the occurrence of irregular access openings, and any suspicious attitude towards opening access without proper authorization, must immediately take all appropriate and necessary measures, as well as, in order not to allow the consolidation of the irregularity, and inform ARTESP.

In the event of landlocking of properties due to expropriations necessary for the implementation of works, the CONCESSIONAIRE shall point out the solutions for unblocking, either by registering right-of-way

(indemnified or not) in the relevant registrations or by implanting marginals outside the RIGHT-OF-WAY, as the case may be .

4.2.5.1. Support services to be performed by the CONCESSIONAIRE

The CONCESSIONAIRE must provide support services to ARTESP, according to the rules established in the AGREEMENT and its annexes.

All information, data and documents generated during the execution of the activities listed below, should be made available to ARTESP, through synchronization with the ICC or in another way that may be indicated by ARTESP.

The following activities are considered support services to ARTESP, which must be performed by the CONCESSIONAIRE

(a) Control and Supervision Actions of the Accesses to the RIGHT-OF-WAY

- i. 13Inspection of the non-edifying strip so that there is no occupation contrary to current legislation, as well as an appointment and embargo of any works or activities on neighboring properties, especially with regard to the legality of the work or activities in the non-edifying strip, notifying ARTESP and taking all the necessary and appropriate measures;
- ii. Provide for the closing of accesses, as well as avoid opening or permanence of accesses, requesting the support of the Military Highway Police, if necessary;
- iii. Keep ARTESP always informed of all negotiations regarding irregular occupations and the progress of all existing legal actions; and
- iv. Guidance for Interested Parties on the prohibition of opening accesses.

(b) RIGHT-OF-WAY Management

- i. The limits of the RIGHT-OF-WAY and boundaries of remaining areas must be inspected and kept in order, according to the expropriation plan carried out by the GRANTING AUTHORITY or the CONCESSIONAIRE;
- ii. The CONCESSIONAIRE shall not allow neighboring landowners to build buildings (housing, sheds, etc.) near the limit of the RIGHT-OF-WAY of the highway and the limits of the remaining areas, or that have doors and windows that access the RIGHT-OF-WAY and allow, consequently, the circulation of pedestrians within the aforementioned lane;
- iii. The CONCESSIONAIRE shall take all necessary actions, including requesting the preparation of the police report and carrying out the restoration of the wall or fence surrounding the RIGHT-OF-WAY, in the correct location, in accordance with the expropriation carried out by the GRANTING AUTHORITY or the CONCESSIONAIRE;

- iv. Delimiting walls and fences and the RIGHT-OF-WAY and the remaining areas that have broken must be recomposed, in the correct place, within a maximum period of 24 hours from the discovery of the breach, avoiding the emergence of irregular accesses;
- v. Regarding the remaining areas, the CONCESSIONAIRE must keep them in order, without encroachment, duly fenced in with walls in the urban and urbanized region, and with fences or fence in the rural region;
- vi. THE RIGHT-OF-WAY must be kept free of solid waste (domestic or commercial), including rubble; and
- vii. The use of the RIGHT-OF-WAY for other purposes will not be allowed, especially those that compromise road safety and that of USERS.

4.2.5.2. Supporting Organizational Structure

The CONCESSIONAIRE shall maintain, throughout the TERM OF THE CONCESSION, in its organizational structure, a department responsible, exclusively or not, for taking care of the provision of NON-DELEGED SERVICES.

4.2.5.3. Management of the occupancy of the ROAD SYSTEM's right-of-way

The CONCESSIONAIRE must provide support services to ARTESP, according to the rules established in the AGREEMENT and its annexes.

All information, data and documents generated during the activities below should be made available to ARTESP, through synchronization with the JRC or in any other way indicated by ARTESP. We emphasize the need to observe the content of ANNEX 18 regarding the rules applicable to the management of the occupation of the RIGHT-OF-WAY during the beginning of the AGREEMENT, especially in the PRE-CONSTRUCTION PERIOD and in relation to the INSPECTION REPORT.

The following activities are considered support services to ARTESP that must be performed by the CONCESSIONAIRE:

(a) Control and inspection actions of the RIGHT-OF-WAY

The CONCESSIONAIRE shall watch over the entire RIGHT-OF-WAY and non-buildable area, inspecting them, in order to inhibit/avoid the installation of indicative, advertising or provisional announcements, construction of buildings of any nature or urban/road infrastructure facilities that do not have express authorization from the competent transit and/or road body or entity with jurisdiction over the road.

In these 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 right of way.

The CONCESSIONAIRE shall:

- i. verify the non-edifying strip so that there is no occupation contrary to current legislation, as well as point out any works or activities on neighboring properties, especially

- regarding the legality of the work or activities in this strip, identifying where access to the property will occur, communicating the ARTESP and taking all necessary and appropriate measures. Except in cases expressly provided for by law and in the AGREEMENT, the CONCESSIONAIRE is responsible for monitoring and all necessary actions to prevent the RIGHT-OF-WAY from being invaded by people or vehicles of any size for access to the highway or for access to any property border;
- ii. instruct the process and carry out the composition of the folder with the documentation referring to the irregularities identified with photos, technical reports and the formal communication of irregularity delivered to the owner or legitimate possessor, indicating the items of the regulation and/or the decree that are in disagreement, as well as the applicable sanctions, sending the process to ARTESP;
 - iii. enable the necessary measures before the competent authorities in relation to irregular and bordering occupations, observing the AGREEMENT system, the legislation in force and other recommendations of ANNEX 06 referring to the RESETTLEMENT processes of the RIGHT-OF-WAY;
 - iv. maintain a record of existing, regular and irregular occupations, in the RIGHT-OF-WAY with the geographic coordinates, made available in SISGIS and in a spreadsheet, provided through SISATIVOS, without prejudice to the rules described in ANNEX 18;
 - v. arrange for the eviction of areas within the RIGHT-OF-WAY or non-edifying area, accompanied by the Military Highway Police, when there is a court order, or by ARTESP, on the occasion of the finding of irregularity; and
 - vi. keep ARTESP always informed of all legal actions filed against it.

The identification and regularization of occupations in the RIGHT-OF-WAY that have occurred before the signature of the INSPECTION REPORT related to occupations in the RIGHT-OF-WAY are disciplined in ANNEX 18.

(b) Actions to support ARTESP in guiding interested parties and receiving documentation for RIGHT-OF-WAY

The CONCESSIONAIRE shall guide interested parties on the current regulation, form and procedures for the request for occupation of the RIGHT-OF-WAY 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 will update or replace them.

The CONCESSIONAIRE shall:

- i. provide interested parties, by physical digital and editable means, with the delimitation of the RIGHT-OF-WAY of the highway, so that it can be included in the projects to be presented;

- ii. receive and check the documentation for occupation of the RIGHT-OF-WAY, observing that all documents have been delivered, in each of the phases, according to ARTESP's guidance;
- iii. analyze the documentation and the FUNCTIONAL and EXECUTIVE PROJECTS presented 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; and
- iv. make available the history of the processes between the CONCESSIONAIRE and the interested party of each occupation by online sharing, according to standards determined by ARTESP.

The analysis and forwarding to ARTESP must be carried out within a period of up to 30 (thirty) days from the delivery of the request by the interested party. The CONCESSIONAIRE shall notify ARTESP if it is impossible to comply with this deadline, indicating the justification and expected deadline for compliance with the obligation.

The CONCESSIONAIRE shall prepare planning studies for the authorization of the occupation of the RIGHT-OF-WAY of the highways that make up the ROAD SYSTEM, composing 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 previous process with the GRANTING AUTHORITY regarding the intended occupation, the CONCESSIONAIRE must provide a full copy of the material that makes up the process, including the projects in their original size, and incorporate it into the process to be sent to ARTESP.

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

The CONCESSIONAIRE will receive a communication from ARTESP, regarding the analysis of requests for occupation of the right-of-way and projects, and must inform/deliver to the interested party for appropriate and necessary measures.

The CONCESSIONAIRE must control the deadlines established for the delivery of projects and documentation, in cases of request or regularization of the occupation of the right of way, and inform ARTESP of the cases in which the interested party does not submit the documentation on time.

The CONCESSIONAIRE will deliver to interested parties the authorizations for occupation of the RIGHT-OF-WAY issued by ARTESP together with a copy of the project approved and stamped by ARTESP for its execution, or communicate the denials with the respective justifications.

The CONCESSIONAIRE shall:

- i. keep in its possession a copy of each approved project, for execution follow-up. Any changes to the approved project must be submitted for prior analysis and obtain proper approval from ARTESP for continuity;
 - ii. establish the conditions for construction and operation, as well as authorize the start of works and services;
 - iii. deliver a copy of the authorization term for occupation of the RIGHT-OF-WAY to the interested party, after signature, sending a copy to ARTESP; and
 - iv. The constitution of physical processes does not exclude the need to share documents, data and information online, if the projects are approved, which must be made available at the ARTESP ICC and/or other digital channels indicated by the GRANTING AUTHORITY, as the case may be.

(c) Support actions for ARTESP regarding the inspection of works and services in the RIGHT-OF-WAY

The CONCESSIONAIRE shall:

- i. provide ARTESP with the schedule of works and services in the RIGHT-OF-WAY, delivered by the interested party, in the same manner as those used for the contractual works;
- ii. control the compliance with the deadline for the beginning of the works, as established in the legislation in force, informing ARTESP if the deadline is not met;
- iii. supervise the works, according to the approved projects, preventing the interested party from performing the work differently;
- iv. issue a monthly monitoring and physical progress report on the execution of the work, according to ARTESP's specifications, based on its inspection inspections, according to the work execution schedule, sending it to ARTESP by the 10th (tenth) business day of each month;
- v. monitor compliance with the deadline for completion of the works, as established in the legislation in force, informing ARTESP if the deadline is not met;
- vi. carry out an inspection and ask the Interested party to deliver the "as built", within 10 (ten) days of said inspection, if the respective work is in accordance with the approved project, releasing the work for operation;
- vii. to inform ARTESP the amount of the tariffs charged to the interested party, as defined by ARTESP, with its calculation memories;
- viii. ensure the physical, signaling and operational conditions; and

- ix. to inspect the occupation of the right-of-way, identifying occurrences of irregularities.

4.2.6. Management in the transport of exceptional loads

The CONCESSIONAIRE may be remunerated for services provided in the implementation of operational schemes related to special operations for the transport of exceptional loads, which may directly affect the fluidity and safety of traffic, observing the rules of Ordinance SUP/DER 64/2016, its amendments, as well as ARTESP Ordinance No. 46/2016, rules, regulations, technical specifications and/or parameters established in the REQUEST FOR BIDS, in the AGREEMENT or those that may replace them.

4.2.7. Road Policing

The CONCESSIONAIRE shall provide for the supply of material and financial resources to the traffic police, as of the START DATE OF OPERATION. In the ROAD SYSTEM, the CONCESSIONAIRE shall assume the provision of these resources for the ostensible policing of road traffic.

The ostensible policing of road traffic, preventive and repressive, constitutes a NON-DELEGED SERVICE. Its execution will be the responsibility of the Military Highway Police (PMRv).

The CONCESSIONAIRE shall provide the necessary support for 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 posts and modules of ostensible policing of road traffic.

The supply of resources and the relationship with the PMRv, at the operational and administrative levels, should be regulated by adherence to the agreement already signed with the STATE, through its agencies responsible for the ostensive policing of road traffic, with the intervention of ARTESP.

These resources must be used, as described in the agreement, and are limited to the annual amount of BRL 1,200,000.00 (one million, two hundred thousand reais), on the base date contained in Clause 3.2 of the AGREEMENT.

For the supply of vehicles and equipment, whose obligation is not to be confused with the resources mentioned in the previous paragraph, 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, as well as the amounts indicated in ANNEX 07:

(a) Vehicles

- i. Command vehicle - technical specification CPRv-032/UGE/08;
- ii. Patrol vehicle - technical specification CPRv-031/UGE/08;
- iii. TOR vehicle – technical specification CPRv-001/08/13.

(b) Equipment

- i. Monitoring and surveillance cameras.

5. COMMUNICATION AND RELATIONSHIP SYSTEM

5.1. Basic Concepts

The services corresponding to operational functions and support for NON-DELEGED SERVICES must be supported by a telecommunications system composed of a Data Transmission System, responsible for interconnecting the various systems installed along the highway to the OCC.

In turn, the OCC 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 (GANTRIES, and other operational bases) and in the mobile units of the various services, in addition to the ombudsman and other channels of relationship with the USER.

The dimensioning and deadlines for the implementation of all these systems are provided for in ANNEX 07.

For all items described in this section, the CONCESSIONAIRE shall implement a digital system for registering, managing and consulting data via the web, with integration and alignment with the ICC.

5.2. Description, Specifications and Service Levels

5.2.1. 0800 Customer Care System

The CONCESSIONAIRE will be responsible for the implementation, complementation, operation and maintenance of the telephone system for 0800 Service in the ROAD SYSTEM, fully and simultaneously meeting all requirements, quantities and deadlines established in ANNEXES 05, 06 and 07.

USERS service through the 0800 service must be performed at the OCC, and attendants must observe all rules of courtesy and cordiality with USERS.

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

This system shall allow the issuance of a 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 Radiophony System in the Highway System, aiming to fully and simultaneously meet all requirements, quantities and deadlines established in ANNEXES 05, 06 and 07 and their APPENDICES.

The Radiophony System shall rely on the implementation of fixed stations, mobile stations, portable stations and repeater stations, capable of guaranteeing 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's registration systems through procedures and interfaces formally defined by ARTESP.

The repeater stations must support telemetry integrated into ARTESP's systems in order to allow the ICC to consult remotely and in real time the operational status of the equipment. The telemetry information delivered by the CONCESSIONAIRE to ARTESP must reflect the availability of communication between the OCC and the equipment.

The form of telemetry data delivery by the CONCESSIONAIRE and the form of integration to ARTESP systems must fully comply with the procedures, technologies and interfaces formally defined by ARTESP.

At any time, ARTESP may request that the CONCESSIONER feeds the ARTESP systems with additional information about the equipment operation, according to procedures and interfaces similar to those that the CONCESSIONAIRE is using.

The operation of the Radiophony System must meet the service levels provided for in APPENDIX H.

5.2.3. Data Communication Systems

The CONCESSIONAIRE shall be responsible for the implementation, completion, operation and maintenance of the systems and equipment comprising the Data Transmission System of the Road System, and shall fully and simultaneously meet all requirements, quantities and deadlines established in ANNEXES 05, 06 and 07 and APPENDICES

The data transmission system must have an architecture available 24 (twenty-four) hours a day, 07 (seven) days a week, including holidays, which allows coverage of all data and information generating points of the ROAD SYSTEM, using up-to-date technology capable of meeting the required demand without loss of performance for every segment of the architecture.

The data transmission system shall enable the collection, treatment, processing and transmission, as well as access to this information in real time, from the CONCESSIONAIRE's OCC.

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

The CONCESSIONAIRE must have a fault management system, performance, configuration and security of the data transmission network.

The operation of the Data Transmission System must meet the service levels provided for in APPENDIX H.

5.2.4. Operational Control Center (OCC)

The CONCESSIONAIRE will be responsible for the implementation, revitalization, operation and maintenance of the OCC (building, systems and equipment) in order to fully and simultaneously meet

all requirements, quantities and deadlines established in ANNEXES 05, 06 and 07, the AGREEMENT and APPENDICES.

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

The OCC must coordinate all extraordinary events that involve special operations of any nature in the ROAD SYSTEM.

The OCC must, according to the deadlines defined in ANNEX 07, have adequate equipment and/or systems to offer operators, at least, the following resources:

- i. Automated Event Control system;
- ii. Radiophony system;
- iii. Operational Vehicles Monitoring and Geopositioning system;
- iv. CFTV Operational Control Center - OCC (with intelligent video analysis technology);
- v. system of monitors and panels (video wall), integrated to all the systems of the OCC;
- vi. Service system via 0800;
- vii. Remote Assistance system at SAU stations (if the CONCESSIONAIRE has chosen to use this resource);
- viii. User Communication call box system;
- ix. User Communication System via Wireless Data Network;
- x. control and command system of variable message panels;
- xi. system for consulting the information recorded by traffic sensors;
- xii. unrestricted access to the telephone network for communication and activation of external resources.

The systems and operation of the OCC, pursuant to this ANNEX, must be exclusive. However, there is no prohibition on building sharing, except for the rule applicable to the reversibility of the SPONSORED CONCESSION's assets.

The OCC must be operated by qualified personnel and have operational systems and databases, intended to feed an information system online of ARTESP, suited to the operational needs of the ROAD SYSTEM, including, for example, telemetry data from equipment, from the communication systems with USERS, from the GANTRIES, from the system of variable message panels, from the traffic monitoring, inspection and conservation.

The form of delivery by the CONCESSIONAIRE of the information inherent to the OCC systems, including telemetry data, as well as the form of integration with ARTESP's systems shall comply with the procedures, technologies and interfaces formally defined by ARTESP.

The OCC, besides centralizing and commanding the equipment installed along the highways granted, must have a weather conditions information system, making it available to the OCC operator and enabling decision-making in advance of weather changes that may interfere with traffic on the highways that are part of the ROAD SYSTEM.

The OCC must operate 24 (twenty-four) hours a day, every day of the week, including weekends and holidays. When equipment or system with critical, complex and systemic failures with relevant impact to the operation are detected, the CONCESSIONAIRE must, within a maximum of 2 (two) hours, inform ARTESP. The operation of the OCC must meet the service levels provided for in APPENDIX H.

In case of failure of any equipment, system or functionality that make up the OCC, they must have their operability restored by the CONCESSIONAIRE within 48 (forty-eight) hours.

5.2.5. System for Communication with Users (Call Box)

The User Communication System consists of a set of equipment and software that allows USERS of the granted ROAD SYSTEM to establish communication with the CONCESSIONAIRE's OCC, with the aim of requesting information or assistance in emergency situations, through boxes call boxes, installed along the stretches of highways that make up the ROAD SYSTEM.

The CONCESSIONAIRE is responsible for the implementation, revitalization, operation and maintenance of the systems and equipment in the ROAD SYSTEM, which make up the User Communication System, in order to fully and simultaneously meet all the requirements, deadlines and quantities established in the ANNEXES and APPENDICES.

The System must be implemented throughout the HIGHWAY SYSTEM granted, with the installation of a call box every 1000 (one thousand) meters, on all existing lanes, including side roads. In the implementation of the physical infrastructure, all requirements related to road safety and accessibility must be observed, according to the rules established by the applicable technical standards and the current technical specifications of ARTESP.

All call boxes must contain graphics that inform the USER, at a minimum: name of the CONCESSIONAIRE, location of the call box and 0800 service number.

The CONCESSIONAIRE shall implement a transport network that enables communication between the call boxes and the OCC, which may be the same optical communication network used for data transmission of the ITS equipment deployed by the CONCESSIONAIRE on the highways granted. The transport network must be adequately sized to meet capacity requirements compatible with the number of potential USERS.

The CONCESSIONAIRE shall be responsible for the operation and maintenance of the transport network used by the Communication System with the User, not being allowed the use of third-party network, of which the CONCESSIONAIRE does not have full control over the capacity, availability and coverage.

The User Communication System must function properly, supporting voice communication service with the CONCESSIONAIRE's OCC, in real time, such as a telephone call, for emergency assistance in the granted lot.

Adequate operation is understood as the possibility of establishing emergency calls with the OCC, with audio quality that allows intelligible communication between the parties, and without interruptions due to any type of failure.

When activating the call box, through sound messages, the user must be informed about the service, waiting in line or equipment failure.

Emergency calls must be handled by attendants positioned in the OCC. The number of attendants available at the OCC must be dimensioned so that the maximum time in the queue for service is 20 (twenty) seconds. The service must be carried out by the attendants directly, and the use of automated pre-service systems is prohibited.

The service system must make it possible to identify the location of the user requesting emergency assistance through the following minimum information: highway, kilometer, direction and lane (express or marginal). The answering system must also allow the recording of all calls made (answered or not), and the recording of calls established through the User Communication System, allowing the calculation of statistics.

To ensure that USERS are aware that the User Communication System is available for emergency assistance, the CONCESSIONAIRE shall install information boards on the ROAD SYSTEM, according to the signaling standards established by ARTESP.

The call boxes equipment must be inserted into ARTESP's registration systems through procedures and interfaces formally defined by ARTESP.

The "call boxes" equipment must support telemetry integrated into ARTESP's systems, in order to allow the ICC to consult remotely and in real time the operational status of the equipment.

The form of telemetry data availability by the CONCESSIONAIRE and the form of integration to ARTESP systems must fully comply with the procedures, technologies and interfaces defined by ARTESP.

At any time ARTESP may request that the CONCESSIONAIRE supplies the ARTESP systems with additional information about the operation of the equipment, according to procedures and interfaces similar to those that the CONCESSIONAIRE is using.

The operation of the User Communication System must meet the service levels provided for in APPENDIX H and Performance Indicators provided for in ANNEX 03 and APPENDIX C.

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 OCC of the CONCESSIONAIRE, with the objective of requesting information or help in emergency situations,

through a data communication network that uses wireless communication technology such as, for example, wi-fi.

The CONCESSIONAIRE is responsible for the implementation, revitalization, operation and maintenance of the systems and equipment in the ROAD SYSTEM, which make up the Communication System with the User via Wireless Network in order to fully and simultaneously meet all requirements, deadlines and quantities established in the ANNEXES and APPENDICES.

The system must be deployed through a wireless communication network, using technology compatible with the main mobile terminals available on the market, such as Wi-Fi technology, considering the requirements of ARTESP's current technical specifications. The System must be implemented throughout the granted ROAD SYSTEM, that is, the wireless network coverage must cover the entire length of the granted highway, including the shoulders, right-of-way and median, as applicable. In the implementation of the 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 support *handoff* (or roaming), which consists of the automatic transfer of a user's connection, in motion, from a base station (access point) to an adjacent one. So, the *handoff* must enable a user traveling on the highway at a speed compatible with the permitted limits to have uninterrupted access to the services made available through the CONCESSIONAIRE's wireless network.

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

The CONCESSIONAIRE must ensure that the traffic of emergency communications on the wireless data network will not be impaired by data traffic from other services related to the concession, with negative impact on the availability and quality of emergency communications.

The wireless communication network must be adequately sized to meet capacity requirements compatible with the number of potential USERS and the services made available through the wireless network.

The CONCESSIONAIRE must implement a transport network that enables the communication of base stations (wireless access points) with the OCC, which can be the same optical communication network used for data transmission of the ITS equipment deployed by the CONCESSIONAIRE on the highway.

The wireless communication network implemented by the CONCESSIONAIRE shall have the purpose of providing users with services related to the CONCESSION, which includes emergency care, and meeting the needs of highway operation, sharing the network with third-party services is not allowed, unless expressly determined by contract or authorization by ARTESP.

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

The Communication System with the User via Wireless Data Network must support voice communication service with the CONCESSIONAIRE's OCC in real time, such as a telephone call, for emergency assistance in the granted lot.

Additionally, the CONCESSIONAIRE shall offer video communication and chat communication services (instant text messages).

The voice, video and text communication services must be accessed through a portal (web page), to be developed by the CONCESSIONAIRE, to which the USER must be automatically directed when connecting to the CONCESSIONAIRE'S wireless data network.

Voice, video, and text communication services must be available and working properly for stationary vehicles on the entire stretch served by the wireless network, which includes the shoulders.

Adequate operation is understood to mean the possibility of establishing emergency calls with the OCC, with voice and video quality that allows intelligible communication between the parties, and without interruptions due to wireless network signal variation or any network failures. .

Additionally, the CONCESSIONAIRE may develop an application for mobile devices, which provides access to voice communication services, video and text similar to the portal.

The development of an application for voice service for emergency communication does not exclude the need for the voice communication solution through the portal.

The answering of emergency calls made through the User Communication System via Wireless Data Network must be performed by the OCC, and may use the same service positions of the 0800 service and emergency phones (Call Box).

The service system must make it possible to identify the location of the user requesting emergency assistance through the following minimum information: highway and kilometer, according to ARTESP's current technical specifications. The answering system must make it possible to log and record the calls established via the wireless data network and to calculate statistics.

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

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

The Wireless Access Point equipment must be inserted in ARTESP's registration systems through the procedures and interfaces formally defined by ARTESP.

Wireless Access Point equipment must support telemetry integrated into ARTESP's systems in order to enable remote and real-time consultation of the operational status of the equipment by the ICC. The telemetry information delivered by the CONCESSIONAIRE to ARTESP must reflect the availability of communication between the OCC and the equipment.

The form of telemetry data availability by the CONCESSIONAIRE and the form of integration to ARTESP systems must fully comply with the procedures, technologies and interfaces defined by ARTESP. At any time ARTESP may request that the CONCESSIONAIRE feeds the ARTESP systems with additional information about the equipment operation, according to procedures and interfaces similar to those that the CONCESSIONAIRE is using.

5.2.6.1. Parameters for Inspection

The operation of the Communication System with the User via Wireless Data Network shall meet the service levels provided for in APPENDIX H and Performance Indicators provided for in ANNEX 03 to the AGREEMENT and APPENDIX C.

Verification of the service level (operability) of the Communication System with the User via Wireless Data Network may be carried out by analyzing the performance of the System in any section of the Road System and/or the availability of Wireless Access Points.

The performance analysis of the System will be carried out by setting up test calls on the granted road system. Since the Communication System with the User via Wireless Data Network does not determine specific locations on the highway for making calls, inspection is carried out through tests at random points in any stretch 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 implies checking, periodically, if the number of inoperative wireless access points is in accordance with the level of service provided for in APPENDIX H.

The CONCESSIONAIRE must implement the necessary network and equipment redundancies to ensure the service level required for the Communication System with the User via Wireless Data Network is met.

5.2.7. System of Variable Message Signs (VMSs)

The CONCESSIONAIRE is responsible for the implementation, revitalization, operation and maintenance of the VMS systems and equipment of the Highway System, in order to fully and simultaneously meet all requirements, deadlines and quantities established in the ANNEXES and APPENDICES.

The VMSs are intended to convey clearly and succinctly information and guidance to drivers traveling on the highway. The messages to be conveyed by VMSs can be classified into:

- i. Warning messages;
- ii. Guidance messages;

iii. Institutional messages;

The purpose of the warning messages is to alert highway USERS about adverse traffic conditions in certain places (construction works, detours, accidents, fog, etc.), and such messages must be conveyed with due informative content, in places and through appropriate means, which allow, as far as possible and in view of the informed conditions, the USER's reaction as to the decision to travel on the impacted stretch.

The orientation messages have the objective of educating the USERS about proper behavior while traveling on the highway, or even, to orient the USERS about the actions to be adopted in certain signaled places on the highway.

The institutional messages aim at providing information of interest to ARTESP or the CONCESSIONAIRE about the improvements implemented, objectives reached and goals to be achieved in the operation, conservation and expansion of the ROAD SYSTEM, among others.

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

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

The messages from the fixed VMSs will be broadcasted from the OCC, which will have online control over all this equipment installed on the Highway System.

5.2.7.1. Fixed Variable Message Panel

Fixed type VMS equipment must meet the following requirements:

- i. the messages broadcast must be visible and understandable at a minimum distance of 300 (three hundred) meters in clear, dry weather and with high sun;
- ii. the panel luminosity index should be automatically adjusted according to the environment;
- iii. the equipment must be modular, allowing the replacement of components for maintenance purposes;
- iv. present a minimum of two (2) lines for messages, and some messages may be composed on a single line, with double the character case;
- v. character with a minimum case of 45 (forty-five) centimeters in height;
- vi. the panel must allow the configuration of traffic signs as specified in the Brazilian Traffic Code. For this, the panel must present a minimum of 3 (three) colors (green, red and amber);

- vii. each line must have a minimum of 15 (fifteen) characters; and
- viii. contain fixed, flashing, sequential, bright display modes.

For operating purposes, the following requirements must be met:

- i. VMSs will be considered non-operational during the time they do not broadcast messages;
- ii. VMSs will be considered inoperative if they present malfunctioning or “off” LEDs that impair the understanding of the messages by USERS;
- iii. the VMSs will be considered inoperative if the communication with the OCC is interrupted, preventing the messages transmitted from being updated.

2. The system must have a central control system, to be installed in the operational control center (OCC) of the ROAD SYSTEM, which will be responsible for managing the fixed panels in the field and having all the necessary resources to monitor the operation, as well as identify faults in VMSs and issue alarms to their operators. The central control system must provide functionalities that allow, as a minimum:

- i. programming for automatic presentation of messages at pre-established times;
- ii. routine for monitoring deleted points;
- iii. routine for monitoring the messages transmitted;
- iv. report, at the operator's request, of the messages transmitted broken down by panel and by time slot;
- v. editing and broadcasting messages at any time; and
- vi. storage of 200 (two hundred) messages.

The equipment must be registered in the ARTESP registration systems through the procedures and interfaces formally defined by ARTESP.

The equipment must support telemetry integrated to the ARTESP systems in order to enable remote consultation in real time of the operational status of the equipment by the ICC.

The telemetry information delivered by the CONCESSIONAIRE to ARTESP must reflect the availability of communication between the OCC and the equipment.

Besides the telemetry information, the CONCESSIONAIRE must feed the ARTESP systems with information about the messages conveyed by the equipment, allowing remote consultation in real time by the ICC.

The way the CONCESSIONAIRE makes telemetry data and information about messages from the equipment available, and the way it is integrated to ARTESP systems must fully comply with the procedures, technologies and interfaces formally defined by ARTESP.

At any time ARTESP may request that the CONCESSIONAIRE feeds its systems with additional information about the equipment operation, according to procedures and interfaces similar to those that the CONCESSIONAIRE is using.

The operation of the Fixed Type Variable Message Sign System shall meet the service levels provided for in APPENDIX H and Performance Indicators provided for in ANNEX 03 and APPENDIX C.

5.2.7.2. Mobile Variable Message Sign

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

- i. be visible and understandable from a distance of at least 300 (three hundred) meters in clear, dry weather and in full sun;
- ii. present a minimum of 2 (two) lines for messages, and some messages may be composed in a single line, with double the character box;
- iii. character with a minimum case of 37 (thirty-seven) centimeters in height;
- iv. each line must have a minimum of 7 (seven) characters;
- v. present fixed, flashing and sequential display modes;
- vi. have standard messages;
- vii. control module to configure the signaling to be presented;
- viii. own electrical supply, with a minimum autonomy of 12 (twelve) hours of uninterrupted operation; and
- ix. remote configuration of messages from the OCC via wireless communication network.

VMSs will be considered inoperative if they present malfunctioning or “off” LEDs that impair the understanding of the messages by USERS;

This equipment must be used as needed, as reinforcement in signaling in abnormal operating conditions, such as construction, lane closing, traffic jams, etc., especially to inform USERS of warning messages, to communicate adverse traffic conditions, and the mobile VMSs must be positioned and include appropriate content to allow, as far as possible, reaction and decision making by the USER regarding the use of the impacted road stretch.

The operation of the Mobile Variable Message Sign System must meet the service levels provided for in APPENDIX H.

5.2.8. Ombudsman and Other User Relationship Channels

The CONCESSIONAIRE must keep fully operational and within established standards the Ombudsman Office and User Relationship Systems and Channels foreseen in legal and infra-legal regulations in force, as well as in ARTESP's regulatory standards and ordinances, in accordance with the Bidding Announcement and the Concession AGREEMENT.

The CONCESSIONAIRE's Ombudsman shall:

- i. receive, process and analyze the manifestations and suggestions of the 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, counting from the date of the manifestation/suggestion, which may be extended only once, for the same period, as long as duly justified;
- ii. prepare, annually, a management report, which should consolidate the manifestations and suggestions, indicating (a) the number of manifestations organized by subject, (b) causes and motives, (c) verification of recurring points and, based on them, point out and suggest improvements in the provision of DELEGATED SERVICES;
- iii. promote the participation of USERS in matters of interest to the SPONSORED CONCESSION;
- iv. monitor the provision of services, in order to ensure their effectiveness;
- v. propose improvements in the provision of services;
- vi. auxiliary in the prevention and correction of acts and procedures incompatible with those established in this AGREEMENT; and
- vii. propose the adoption of measures to defend the USER's rights, in compliance with the provisions of this AGREEMENT and the legislation in force; and promote the adoption of mediation and conciliation between the USER and the CONCESSIONAIRE without prejudice to other competent bodies.

3. The management report must be forwarded to the CONCESSIONAIRE's highest authority, 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 centralize them ICC, ensuring thus the widest publicity and social control.

5.2.9. Assistance to Local Authorities

The CONCESSIONAIRE shall, through SISDEMANDA, have an exclusive service channel to the Local Authorities. Questions from Local Authorities must be answered by the CONCESSIONAIRE within 5 (five) business days from the date of submission. ARTESP must have access to the questions sent by

the Local Authorities at the time of submission, as well as being immediately informed of the response given by the CONCESSIONAIRE to the authorities.

6. TRAFFIC MONITORING SYSTEM

6.1. Basic Concepts

The services corresponding to operational functions and support for NON-DELEGED SERVICES must be supported by Traffic Monitoring Systems, with equipment installed at the main points of the road system, integrated with the OCC through a data transmission system, in real time.

In the OCC, the data informed by the equipment that compose this Traffic Monitoring System must be presented to the operators of this OCC in panels (*Video Wall*) and video monitors, through images or other type of visualization, capable of providing all the necessary data for the perfect monitoring of the highway operation from a distance.

The service will be responsible for inspecting the RIGHT-OF-WAY and the tracks, in order to detect any irregularities and occurrences, as well as the presence of USERS requiring service. The service will be responsible for providing support to any and all operations carried out on the ROAD SYSTEM.

It will also be responsible for inspecting the occurrence of irregular access openings. Therefore, any suspicious attitude towards opening access must be immediately communicated to the CONCESSIONAIRE area that takes care of the matter, which must immediately take all appropriate and necessary measures, and inform ARTESP.

The deadlines and quantification for the implementation of this system are provided for in ANNEX 07 of the AGREEMENT.

6.2. Description, Specifications and Service Levels

6.2.1. Traffic Sensing System

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

The Traffic Sensing System must cover all road sections of the ROAD SYSTEM in order to allow the monitoring of the quantitative and qualitative evolution of the flow of vehicles in the ROAD SYSTEM. The traffic sensors must measure the flow of vehicles, 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 the form of a report and validated by ARTESP.

In each homogeneous segment, the CONCESSIONAIRE shall calculate the operational service level according to the Highway Capacity Manual methodology, established in IP-00.000.000-0-A23/001 and its revisions.

For this, in the critical section of each homogeneous segment, data on volume, speed and weight of vehicles must be collected, simultaneously in all lanes and traffic lanes.

The service level must be calculated in real time and transmitted to ARTESP every 15 (fifteen) minutes, without interruption, respecting the methodology defined in ARTESP's technical specifications.

Obtaining traffic data must be done through traffic sensors implanted in the homogeneous sections of the roads that are part of the ROAD SYSTEM, so that the information collected can be audited by the GRANTING AUTHORITY at any time of the year or period of the day. All locations for which the implementation of a PORTICO is planned must contain a traffic sensor.

The monitoring of sections under the influence of accesses, switches 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. The studies must follow the procedures defined in the rules, project instructions and technical specifications of ARTESP.

For devices belonging to the ROAD SYSTEM, at least one six-monthly traffic study report must be made, under the responsibility of the CONCESSIONAIRE. The frequency of reports may be justifiably altered by ARTESP according to the needs of each case. The studies must follow the procedures defined in the rules, project instructions and technical specifications of ARTESP.

The critical safety points/sections within the system shall be identified according to the method proposed by ARTESP.

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 installation points of the traffic sensors, according to the technical need. In such cases, the CONCESSIONAIRE shall bear the costs of relocation, implementation and calibration of the equipment.

Traffic sensors should be driven by inductive and piezometric loops or other technologies that offer similar or superior performance. They should also offer, as a minimum, the following features:

- i. vehicle count, per direction and per lane;
- ii. length of the vehicles;
- iii. classification of vehicles between light and heavy, using vehicle length as a parameter;
- iv. speed (of each vehicle, average per vehicle class, and overall average);
- v. distance and time interval between vehicles (GAP);
- vi. time interval between the front of two subsequent vehicles (HEADWAY);
- vii. occupancy rate (time the loop was occupied by vehicles, relative to a time base);
- viii. axle weight and total gross vehicle weight, which will be used for statistical analysis;
- ix. axle classification and type of tread that will be used for statistical analyses; and

- x. power supply redundancy (in addition to the main source, an uninterrupted power supply unit – UPS, with or without a generator set), with a minimum autonomy of 16 (sixteen) hours must be provided.

The traffic sensors must be registered in the ARTESP registration systems through the procedures and interfaces formally defined by ARTESP and the topics scheduled to be discussed at a later date should be indicated in the ARP.

The traffic sensors must support telemetry integrated with ARTESP's systems in order to enable remote consultation in real time of the equipment's operational status by the ICC. The telemetry information delivered by the CONCESSIONAIRE to ARTESP must reflect the availability of communication between the OCC and the equipment.

Besides telemetry information, the CONCESSIONAIRE must feed the ARTESP systems with counting, speed and weight data recorded by the traffic sensors, allowing remote consultation in real time by the ICC.

The way the CONCESSIONAIRE makes telemetry data and the data registered by the equipment available, and the way it is integrated to ARTESP systems, must fully comply with the procedures, technologies and interfaces formally defined by ARTESP.

At any time ARTESP may request that the CONCESSIONAIRE feeds the ARTESP systems with additional information about the operation of the equipment, according to procedures and interfaces similar to those that the CONCESSIONAIRE is using.

The operation of the Traffic Sensing System must meet the service levels provided for in APPENDIX H and Performance Indicators provided for in ANNEX 03 and APPENDIX C to the AGREEMENT.

It is mandatory to install a Traffic Sensing System in the exact locations provided for the installation of PORTS in case of alteration, pursuant to ANNEX 04.

The full operation of the Traffic Sensing System is a condition for the repositioned GANTRY to start operating.

6.2.2. CFTV Traffic Monitoring System

The CONCESSIONAIRE will be responsible for the implementation, completion, operation and maintenance of the systems and equipment that make up the CFTV Traffic Monitoring System in order to fully and simultaneously meet all the requirements and deadlines defined in the ANNEXES and APPENDICES and provide 100% coverage (one hundred percent) of the ROAD SYSTEM, by means of mobile cameras, to be verified in clear weather, during the daytime period.

According to the deadlines and rules established in ANNEX 07, the CFTV system implemented must provide for Intelligent Video Analysis (IVA) technology with the capacity to analyze 100% (one hundred percent) of the images recorded by all CFTV equipment implemented in the ROAD SYSTEM. For the night period, Intelligent Video Analysis will only be required in relation to sections where there is infrared range (or technology with equivalent or superior performance).

The CFTV Traffic Monitoring System shall allow monitoring of the entire road network that is part of the Road System, object of the SPONSORED CONCESSION, through images made available in real time, on video monitors and *videowall* installed at the OCC, including at night.

The System that centralizes the images from the cameras installed along the Road System, at the OCC, must have an image recording system. The images must remain stored in the OCC for a minimum period of 45 (forty-five) days. After this period, the images referring to relevant occurrences, accidents, sections (including signaling) with lane closure, must be stored by the CONCESSIONAIRE for a period of 5 (five) years, and may be requested by ARTESP at any time within this period.

All CFTV equipment that make up the Traffic Monitoring System must have the following minimum characteristics:

- i. 360° horizontal movement;
- ii. 30x optical zoom (minimum);
- iii. remote control of horizontal and vertical movements and image approximation (pan, tilt and zoom);
- iv. enable automatic or manual operation through commands from the OCC, by the operator;
- v. enable the pre-configuration of monitoring points (presets) with the possibility of automatic programmed or event-driven movement;
- vi. enable nighttime monitoring with infrared technology or other technology with equivalent or better performance;
- vii. have compatible support (pole) so that the camera at maximum zoom does not present interference in the image, due to the vibration of the support pole; and
- viii. cameras with a minimum resolution of 1920x1080 (full HD).

4. The Intelligent Video Analysis System shall enable, when the camera is not in motion or executing pre-programmed routines, the automatic detection of incidents and situations of potential risk along the ROAD SYSTEM, alarming the corresponding images in the OCC. The operation of the IVA system must fully comply with the requirements and procedures established by ARTESP in the technical specifications in force.

Minimum video analytics features (minimum analytical functions):

- i. volumetric counting;
- ii. detection of oncoming vehicles;
- iii. detection of vehicles or stationary objects (shoulder or lane); and
- iv. detection of occurrences (animals, fire outbreak, etc.) in the right-of-way.

The alarms issued must be analyzed and stored along with information regarding time, operator, confirmation/rejection, and other data necessary to survey the occurrence and audit the database for future inspection and evaluation of the system's efficiency.

The CFTV system must monitor all PORTS, in both directions, all PGFs and all rest areas for truck drivers and for parking hazardous products of the ROAD SYSTEM, as applicable. It must also allow the monitoring of all the VMSs of the ROAD SYSTEM, enabling the visualization with enough clarity to read the messages conveyed.

In addition, 22 (twenty-two) exclusive CFTV equipment (cameras) must be provided for the monitoring of places considered as points of attention and/or at risk to public and road safety, through the restoration of the economic-financial balance of the AGREEMENT. Such equipment must be installed punctually, according to the location shown in the table below. These points of attention must be monitored on a full-time basis, and must provide for complementary technologies, available on the market, that can help maintain public safety. Examples of these technologies are: OCR, presence detector, infrared, thermal sensor, among others, full-time and considering or not the implementation of primary containment. This equipment, to be used exclusively for the purpose of monitoring aimed at public safety, must meet, at least, the technical specifications of the cameras used for traffic monitoring (including intelligent video analysis), and respect the same levels of service and indicators of performance.

MUNICIPALITY	PLACE	APPROXIMATE LAT/LOG
SÃO PAULO	BICA D'ÁGUA	-23.438180845801597, -46.61426808084626
SÃO PAULO	JARDIM PARANÁ	-23.44585728721677, -46.68766246790739
SÃO PAULO	PARADA DE TAIPAS	-23.44740488992797, -46.681562114700654
SÃO PAULO	JARDIM DAMASCENO	-23.43864999641733, -46.70431973741909
SÃO PAULO	JARDIM REANTO VERDE	-23.42684917691887, -46.588820745088235
SÃO PAULO	JARDIM PERI	-23.45183897877531, -46.65163259146288
SÃO PAULO	MORRO DO PIOLHO	-23.436221798473625, -46.60388859738219
SÃO PAULO	ENTRONCAMENTO FERNÃO DIAS	-23.424866575969652, -46.57382211552065
GUARULHOS	PARQUE CONTINENTAL	-23.42141792891221, -46.56216492384776
GUARULHOS	CHÁCARA CABUÇU / RECANTO SÃO JORGE	-23.41322525567474, -46.5433786003452
GUARULHOS	VILA UNIÃO	-23.39788583701449, -46.48343607597978
GUARULHOS	PARQUE SANTOS DUMONT	-23.39923299558824, -46.46630352225263
SÃO PAULO	JARDIM VILA RICA	-23.427018552117335, -46.58959028187312
GUARULHOS	CIDADE SOBERANA	-23.388493664185887, -46.442043110046704
GUARULHOS	VILA CARMELA	-23.392966419165557, -46.39440353487807
GUARULHOS	ENTRONCAMENTO PRESIDENTE DUTRA	-23.41405186492849, -46.36476244319827
SÃO PAULO	SANTA INÊS	-23.45189799563618, -46.65234577936241
SÃO PAULO	BOTUQUARA	-23.42176950925719, -46.724929568414204
SÃO PAULO	CHIQUEIRÃO - VISTA ALEGRE	-23.443961075308955, -46.69526097897103
SÃO PAULO	CANDIDO NAZARÉ	-23.4313229612654, -46.70942106814664
GUARULHOS	SÃO JOÃO	-23.388717701954956, -46.442136570728024
SÃO PAULO	JARDIM BRASILIA - FAVELA DA ONÇA	-23.438192424024074, -46.70530904706256

The equipment must be registered in the ARTESP registration systems through the procedures and interfaces formally defined by ARTESP.

The equipment must support telemetry integrated to the ARTESP systems in order to enable remote consultation in real time of the operational status of the equipment by the ICC.

The telemetry information delivered by the CONCESSIONAIRE to ARTESP must reflect the availability of communication between the OCC and the equipment.

The CONCESSIONAIRE shall make the images from all cameras of the CFTV System available for remote and real-time viewing by the ICC, in addition to telemetry information.

The CONCESSIONAIRE shall contract a data link between the OCC and the ICC, capable of guaranteeing the simultaneous transmission of images from at least 4 (four) cameras.

The form of telemetry data and camera images made available by the CONCESSIONAIRE, and the form of integration to ARTESP systems, must fully comply with the procedures, technologies and interfaces formally defined by ARTESP.

At any time, ARTESP may request that the CONCESSIONAIRE feeds the ARTESP systems with additional information about the operation of the equipment, according to procedures and interfaces similar to those that the CONCESSIONAIRE is using.

The operation of the CFTV Traffic Monitoring System must meet the service levels provided for in APPENDIX H and Performance Indicators provided for in ANNEX 03 and APPENDIX C.

7. ROAD SYSTEM OPERATION, SAFETY AND COMFORT OF USERS

7.1. Basic Concepts

A system for monitoring and operating the traffic of the highway concomitant with the provision of service to USERS is part of the set of operational functions intended to provide safety and comfort to USERS of the road.

The blocking of lanes caused by accidents and vehicles stopped on the shoulders with drivers asking for help reduce the capacity of the roads that are part of the ROAD SYSTEM, impacting traffic and increasing the risk of new accidents. The User Service and Traffic Monitoring Systems aim to guarantee the full use of the highway's capacity, the flow of traffic, safety and comfort to USERS who will have a service system at their disposal, maintenance of safety levels, as well as such as the provision of first aid to accident victims and quick transport to partner hospitals.

These activities include the special operations required to meet the needs of high seasons, extended holidays, regional events, traffic detour for the execution of works, and/or exceptional cargo transportation, emergency schemes, fires in the RIGHT-OF-WAY, weather adversities such as rain and fog, as well as all the operational coordination activities involving other entities in the road system; These operations must be scheduled for implementation on specific occasions, so as not to harm the traffic performance of the road system.

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

7.2. User Safety Plan

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

The road safety plan must be composed of the following elements: NBR ISO 39001 certification – road safety management system, road safety inspection/audit (ISR), traffic accident reduction program (ARP), accident database, road safety commission, speed management and risk situations, road safety communication program and analysis and approval of the road safety manager in the projects according to APPENDIX G rules.

The CONCESSIONAIRE shall implement, in all its areas of action, the guidelines established in NBR ISO 39001 – Road Safety Management System.

7.2.1. NBR ISO 39001 – Road Safety Management System

ISO 39001 – Road Safety Management System is an international standard, published in Brazil in 2015, whose objective is the implementation of a Road Safety Management System with a Road Safety Policy and Action Plans that encompass all areas and organization's employees.

The CONCESSIONAIRE must elaborate and implement its road safety management system, as well as certify the organization and maintain the certification with the certifying agencies. The certification process must be completed according to the deadline set forth in the item of 13 this ANNEX, and when the START DATE OF OPERATION, 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 established in NBR ISO 39.001.

At the end of the term, the CONCESSIONAIRE shall forward a report on the road safety management system to ARTESP, together with the documents (digital) that make up the process (policy, procedures, instructions) and that prove the certification.

The audit reports as well as the certification renewals and eventual revisions in the documents that make up the process must be sent annually to ARTESP for knowledge.

7.2.2. Road safety inspection/audit – ISR

Inspection/audit is a preventive and systematic procedure for the formal assessment of road safety for vehicles, motorcycles, pedestrians and cyclists in each of the assessment segments that are part of the ROAD SYSTEM.

The CONCESSIONAIRE shall provide, at its own expense, to hire an independent company/professional not linked to the CONCESSIONAIRE to carry out road safety inspections/audits,

following, at least, the methodology of the International Highway Assessment Program (iRAP) or methodology recognized similarity, added to the surveys obtained by inspections through video-recording.

The preparation of the inspection/audit must cover the entire ROAD SYSTEM.

The CONCESSIONAIRE shall provide, at its own expense, for the preparation of said report every 4 (four) years, at least 180 days before the ORDINARY REVISION.

The ISR should comprise three stages: (i) surveys, (ii) codification and (iii) final report.

7.2.2.1. Surveys

The survey stage consists of a field inspection (*in situ*) in the ROAD SYSTEM (with video and/or photographic record).

The way of collection and the quality of the images must be in accordance with the technical quality specifications in order to enable the implementation of the methodology of the international program of evaluation of highways (iRAP) or similar recognized methodology.

The survey must allow a full view of 140 (one hundred and forty) degrees from the center of the roadway, with the collection of georeferenced images, at an interval of less than 20 (twenty) meters.

The field inspection must be able to at least:

- i. evaluate the physical/geometric characteristics of the highway and RIGHT-OF-WAY;
- ii. assess the conservation conditions of the highway (pavement, signage, etc.) and accessibility to the vulnerable (footbridges, etc.);
- iii. evaluate the local operating conditions, situation of works or events, speed practiced, lighting in urban sections, return and access devices, crossings, etc.;
- iv. to evaluate the current and future characteristics of the traffic mainly in the hours of greater volume and its interaction with the adjacent land use;
- v. verify the impacts of the interaction of the various road elements with each other and with the adjacent road network;
- vi. evaluate the behavior and safety conditions of road users (drivers, motorcyclists, cyclists, pedestrians);
- vii. identify irregular behavior (conversions, stops in the right-of-way, crossings in unmarked places, longitudinal walking by pedestrians and cyclists, etc.); and
- viii. identify and analyze the effectiveness of security risk mitigation measures already implemented.

In addition to the survey provided above, the CONCESSIONAIRE shall also, if requested by ARTESP:

- i. evaluate the conservation conditions of the highway regarding the footbridges, bus stops, among others;
- ii. assess other local road conditions, such as weather conditions and nighttime visibility;
- iii. evaluate the behavior of USERS of the ROAD SYSTEM; and
- iv. perform, where necessary, accurate measurements of attributes such as lane width and displacement to identify road hazards.

7.2.2.2. Coding

The encoding step refers to the translation of the elements visualized in the video record and additional information into attributes currently encoded every 100 (one hundred) meters. The database must follow the standards required for insertion into the analysis *software* and the coding must follow the technical quality standards in order to enable the implementation of the methodology of the International Highway Assessment Program (iRAP) or similar recognized methodology.

At this stage, the field survey must be aggregated with external information, such as accident history, pedestrian/cyclist counts, VDM analysis, analysis of border occupation, topographic profile of the RIGHT-OF-WAY, geometric profile of the road, etc. in order to present a complete parameter of the ROAD SYSTEM.

The coding software and the corresponding programming must contain, as a minimum, the following requirements:

- i. coding 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;
- ii. display of images at intervals not greater than 20 (twenty) meters and with storage of encoding data for images at intervals of 100 (one hundred) meters;
- iii. automatic embedding of georeferencing data collected during the survey and associated with each image into the stored encoding data, without requiring the programmer to manually recode the georeferencing data;
- iv. ability to accurately measure attributes such as lane width and displacement to identify road hazards; and
- v. ability to share the data without any restrictions.

Also, the following are understood as standard deliverables of a coding project:

- i. 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.
- ii. licensed copies of specialized software used to view and encode georeferenced images or designs and coding.
- iii. brief weekly report summarizing progress (measured against kilometers completed), quality review processes completed, quality issues identified, rectifications performed, activity photos, activities planned for the next two weeks, and any issues that may affect project performance.
- iv. inclusion of coding for the road sections or projects where coding has been completed, in a Microsoft Excel format that complies with the File Upload Specification and does not produce validation errors in the coding validation tool and when uploaded to the software.
- v. final encoding 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.
- vi. independent coding quality review report prepared by the independent reviewer and explaining the completed review processes, identified issues, and remediation recommendations.

7.2.2.3. Final Report

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

All raw information must be delivered to ARTESP in an editable format for road safety management purposes, as well as ARTESP's unrestricted access, as requested, to the results and analysis of the projects directly in software.

The complete technical report must contain, at a minimum:

- i. complete details of the ROAD SYSTEM's history, tasks and objectives, including a list of all road segments;
- ii. details of the registered attributes of the ROAD SYSTEM, including, among others, evaluation of the physical/geometric characteristics, conservation conditions, situation of works or events, speed practiced, lighting in sections, current and future characteristics of traffic, especially during peak hours and interaction with adjacent land use and impacts of interaction between road elements;
- iii. details (including source) of all supporting data used;

- iv. detailed star rating table by road segment;
- v. star rating maps, where applicable;
- vi. Safer Highways Investment plan;
- vii. generated countermeasures and installation locations, observing, for the definition of countermeasures, ARTESP's norms and standards;
- viii. description and consolidation of all observations made, including prioritization of interventions to be carried out having as parameters those mitigations that have the greatest potential to reduce the number of accidents;
- ix. analysis of countermeasures proposed by the software and justifications for choosing the countermeasure selected for implementation;
- x. material recorded in the field inspection; and
- xi. details of training and workshops provided and demonstrations held during the project.

At least the following assumptions will be considered for calculating the star rating of road segments:

- i. speed: regulatory speed identified in the road segment;
- ii. traffic: current AADT and expected AADT for the next ISR update, to be performed every four years;
- iii. accidents: (i) accident base of, at least, 3 (three) years before the date established for carrying out the ISR; and (ii) percentage of unreported accidents equal to 10% (ten percent);
- iv. value of life predicted by the report Estimate of Costs of Traffic Accidents in Brazil based on the Simplified Update of Previous Surveys by IPEA, or a more recent similar survey approved by ARTESP; and
- v. the analysis must be carried out considering each road segment determined by the traffic studies, and the star rating of the section shall be the average of the classifications presented for each homogeneous section.

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

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

If the proposed countermeasure is not included among the CONCESSIONAIRE's obligations under the AGREEMENT and/or is scheduled to occur at a later time than determined in the result of the

methodology, the CONCESSIONAIRE must register the demand in SISDEMANDA, according to the procedure established in APPENDIX H.

The above-referenced report shall support the CONCESSIONAIRE in the preparation of its accident reduction program (ARP).

In the ISR foreseen throughout the CONCESSIONCONCESSION SPONSORED, the final report should bring another additional section with the performance evaluation of the implemented countermeasures, as well as an analysis of the classification in order to identify if there was a worsening in any segment.

7.2.3. Accident Reduction Program - PRA

The Accident Reduction Program (ARP) is a document that contains studies of accidents that occurred in the ROAD SYSTEM, correlated with the goals stipulated by ARTESP, the goals stipulated by the GRANTING AUTHORITY, the ISO 39.001 system and the results obtained from the ISR and the management speed, so that acceptable road safety indicators are achieved. It must be carried out in a permanent and updated process.

Its content, form and frequency will be established through ARTESP's technical specifications, and the CONCESSIONAIRE must comply with the documents in force at the time of the elaboration of the PRA.

The Accident Reduction Program (ARP) must:

- i. focus on reducing the number of accidents and victims (wounds and fatalities);
- ii. consist of a regular and systematic study;
- iii. present a detailed diagnosis of accidents that occurred in the previous 3 (three) years;
- iv. contain the assessment of the causes and factors that determine the diagnosed safety conditions;
- v. propose and implement actions to reduce the number and severity of accidents, identifying whether it meets the goals determined by ARTESP and the GRANTING AUTHORITY;
- vi. present a schedule for carrying out the proposed actions; and
- vii. determine performance indicators of the proposed actions.

The Accident Reduction Program (ARP) is a highly technically demanding task whose efficiency depends on professionals with adequate training for its preparation, requiring a set of specific skills, of which the following stand out:

- i. solid knowledge in the fields of road safety and road construction, as well as the behavior of USERS;

- ii. ability and willingness to identify and analyze information from accident statistics and other road safety data; and
- iii. previous experience in accident studies, signage and USER behavior.

The actions to be proposed in the Accident Reduction Program (ARP) can be engineering, operational, educational and coercive.

- i. engineering actions must include physical interventions (expansions, signage, etc.) identified in the safety studies carried out by the CONCESSIONAIRE and must be aimed at improving the safety of USERS. When not provided for in the CONCESSIONAIRE's obligations, they will observe the SISDEMANDA rules;
- ii. operational actions are aimed both at scheduled events (works, transport with dangerous products, saturation of the road at specific times, etc.), and at emergencies (accidents, landslides, floods, animals on the road, adverse weather conditions, etc.), in a way that to guarantee road safety to USERS;
- iii. The educational actions are aimed at encouraging USERS to conduct road safety behaviors, reaching not only drivers, but also the communities surrounding the highways that are part of the ROAD SYSTEM, as well as promoting simulations involving all public and governmental entities and neighboring communities. These actions should encompass campaigns, lectures, training, research, etc.;
- iv. enforcement actions of inspection are the responsibility of the agents of the GRANTING AUTHORITY. However, the CONCESSIONAIRE must provide information and data on accidents and non-compliance with the CTB (Brazilian Traffic Code), necessary for the planning of these activities, including proposing joint actions with the PMRv, based on studies, information, analyzes and needs arising from the road operation .

The critical safety points/sections of the system must be identified, according to the methodology proposed by ARTESP through technical specification and considered in the PRA.

The ISR and speed management reports must support the CONCESSIONAIRE in the preparation of its accident reduction program (ARP).

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, observing the risk matrix of the AGREEMENT.

The information system should provide daily, weekly, monthly and annual access to information, observing the following method:

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

7.2.4. Accident Database

The CONCESSIONAIRE shall make available to ARTESP an accident database containing all accidents that occurred in the ROAD SYSTEM, with indications of their nature, type of vehicle involved, time, consequences generated, georeferencing and other information, according to the model indicated by ARTESP.

The CONCESSIONAIRE shall, throughout the CONCESSION TERM, at its own expense, comply with ARTESP's specifications regarding the classification and standardization of occurrences, as well as minimum data to be collected and made available in the ICC through the data integration bus.

7.2.5. Road Safety Commission

The CONCESSIONAIRE must establish a road safety commission to deal with safety issues of the ROAD SYSTEM of its responsibility.

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

The institution of the commission involves the communication to ARTESP of its formation, as well as of the members that compose it. Any change in its composition must be formalized with ARTESP within 30 (thirty) days of its occurrence.

The commission shall establish an internal regime, taking into account the following organizational scheme:

- i. be made up of at least 4 (four) members who are part of the CONCESSIONAIRE's technical staff, being linked: one to the works/conservation area, one to the project/signaling area, one to the operation area and one to the area of road safety. The CONCESSIONAIRE shall also invite a representative of PMRv to participate;
- ii. the committee may include other professionals from the CONCESSIONAIRE or external consultants, as temporary members, to substantiate the studies;
- iii. the commission may establish partnerships with people external to the CONCESSIONAIRE, for the exchange of information;
- iv. the topics addressed, the teams involved, the studies and the results obtained must be presented in the PRA, in the same way, the topics programmed to be approached in the subsequent period must be indicated in the PRA.

Bimonthly, the CONCESSIONAIRE shall forward to ARTESP, together with the monthly monitoring of the PRA, the minutes of the Committee's meetings held in the two-month period containing the matters discussed, the defined action plans, as well as the results of the analysis on the occurrences provided for in the item **Error! Reference source not found.** of this ANNEX that were made available to the PMRv and actions arising from this analysis.

7.2.6. Speed and risk management

The CONCESSIONAIRE shall monitor the speed practiced by USERS throughout the ROAD SYSTEM within its competence, in order to support coercive, educational and engineering actions aimed at this matter. This monitoring should be done systematically through field research.

The CONCESSIONAIRE shall systematically carry out an analysis of the speed practiced by USERS in order to study it together with the history of accidents and infractions recorded by DER and PMRv, in order to know the profile of USERS and support the definition of mitigating actions to be foreseen in the PRA, as well as subsidize the Ostensive Policing of Road Traffic in its inspection actions.

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

In addition to monitoring the speed used, the CONCESSIONAIRE shall carry out a compatibility analysis between regulatory speeds vs. practiced speed vs. track geometry (vertical and horizontal curves).

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

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

Within the deadlines described in the item 12 of this ANNEX, the CONCESSIONAIRE shall forward a report on its management process to ARTESP, which may be analyzed and commented on by the Agency.

Speed management must be carried out systematically every 6 (six) months, covering the entire ROAD SYSTEM.

Within the deadlines described above, the CONCESSIONAIRE shall forward a report on its management process to ARTESP, which may be analyzed and commented on by the Agency.

For this obligation, the CONCESSIONAIRE shall make available, in the first year of the SPONSORED CONCESSION, an integrated digital system, via web, for consulting the data collected by the radars (SIS-RAD). User/password pairs must be provided for consultation, research and auditing of information directly in the system – access to raw and consolidated information on speed and vehicle counts/volumes and integration with the ICC.

7.2.7. Road Safety Communication Program

The CONCESSIONAIRE shall promote actions, events and campaigns, alone or together with other CONCESSIONAIRES, to guide and educate about the safe use of the highway, ensuring the awareness of USERS regarding road safety.

To this end, the CONCESSIONAIRE shall provide in its annual budget for costs with the production of safety campaigns that include: (i) media placement (TV, radio, newspaper and internet), (ii) production and printing of graphic materials (brochures, banners and banners), (iii) press relations actions, and (iv) holding events with the community bordering the ROAD SYSTEM.

The dissemination of campaigns in high seasons should be prioritized, raising the awareness of the largest possible number of USERS and the neighboring community about road safety issues, and the actions must follow the standards established by ARTESP and will be subject to its prior approval. .

The CONCESSIONAIRE shall provide resources to meet this item, emphasizing that these actions are in addition to those eventually provided for in the ARP. The obligation is considered fulfilled whenever the CONCESSIONAIRE adheres to the GRANTING AUTHORITY's and/or ARTESP's road safety campaigns and actions.

7.2.8. Monitoring the Evolution of Traffic

The CONCESSIONAIRE shall carry out traffic counts ordered by vehicle classes, by road segment comprising the ROAD SYSTEM, defined in order to allow the preparation of reports on the evolution and behavior of the ROAD SYSTEM traffic, maintaining a database with this information, permanently updated and accessible in real time by the GRANTING AUTHORITY, to monitor the evolution of traffic in the ROAD SYSTEM.

7.2.9. User Support Services (SAU)

The SAU Posts must include APH Service for victims, with eventual removal of victims to rear hospitals, mechanical assistance service for damaged vehicles and towing service, with clearing the lane and eventual removal of the vehicle to a safe place, terminal points or points of support of the highways that are part of the ROAD SYSTEM.

The SAU Posts must also count on the support of the mobile Traffic Inspection units, for the detection of occurrences and situations that require intervention, as well as, for the execution of emergency signaling, necessary in the attendance, mobile units of apprehension of animals and mobile units of irrigation truck to fight fires in the RIGHT-OF-WAY or in nearby areas and cleaning of lanes, when necessary.

All User Assistance Services vehicles must remain arranged along the ROAD SYSTEM, at SAU stations strategically chosen by the CONCESSIONAIRE, provide completely free services, be characterized, identified by an operational prefix and in good condition, as well as operate for 24 hours. (twenty-four) hours a day, seven (7) days a week, including holidays.

The SAU Stations (including their external facilities and parking lots) must be designed in such a way as to guarantee a minimum distance of 10 (ten) meters from the outer edge line of the roadway, with acceleration and deceleration ranges compatible with current regulations. , including covered external storage for storage of materials used in the Traffic Operation, covered external shelter type "off-the-shelf", for useless materials collected on the highway, covered garage for operational vehicles that remain parked there, with at least 5 (five) spaces for truck type vehicles; and a specific place for washing and disinfecting the ambulance and its equipment, with the proper collection system for the treatment of residues, waste and contaminated water, regardless of the sewage system or cesspool.

5. The SAU Service Stations must offer specific facilities to serve all USERS, in accordance with the technical standards of NBR 9050, including, at least: an air-conditioned USER service room (minimum 10m²), male and female restrooms, adapted for people with disabilities (PNE) and baby changing facilities in an exclusive room, all with internal access to the building, parking for USER vehicles with spaces for passenger vehicles, the elderly, people with special needs (PNE) and parking for trucks with at least 30 meters in length; and attendant 24 (twenty-four) hours a day, 07 (seven) days a week, including holidays (through an individual or remote service equipment centralized in the OCC telepresence type, provided that it is previously approved and authorized by ARTESP) . It must also have internet service and connection via wireless data network with access to USERS and SAU employees.

In relation to the CONCESSIONAIRE's employees, the SAU Service Stations must, throughout the CONCESSION TERM, observe the labor standards in force, especially the occupational health and safety standards established in the applicable legislation.

6. The CONCESSIONAIRE must prove the time of service to USERS and/or occurrences, including by Geopositioning, according to the Technical Specification on Concepts of Service Levels and Quantification of SAU Services - ET-DOP-GOE-C-OPE-SAU-NS.

The Geopositioning system of all operational vehicles must have a telemetry system, so that the identification and location of the vehicles are shared with ARTESP in real time, through access by the OCC of the CONCESSIONAIRE, ICC of ARTESP and/or the portal web or other form to be defined by ARTESP. The system should allow selective extraction of reports and information (by vehicle, period, occurrence, travel time of subsections, among others).

Specifications and service levels for USERS Support Services are as follows:

(a) Winch Service

It comprises a network of mobile units of light, medium and heavy tow trucks, duly equipped, intended to carry out operations of clearing the lane, removing vehicles and removing loads that have fallen inside and outside the cartable bed, operated by specialized personnel and periodically trained.

The CONCESSIONAIRE must be able to debunk vehicles, articulated or not.

The towing service will be responsible for removing injured vehicles on the highways that are part of the ROAD SYSTEM and vehicles stopped on shoulders or shelters, with an electromechanical failure, not resolved by the mechanical assistance service. This service is also responsible for the removal, at the request of the PMRv, of vehicles seized on the granted road network (from the place of seizure to the base of the nearest PMRv), given that the CONCESSIONAIRE cannot be penalized or suffer deductions from the INDICATORS OF PERFORMANCE if it is unable, as a result of meeting the PMRv, to meet the required service levels.

The mobile winch units must be equipped with a Telecommunication System with the OCC and a Monitoring and Geopositioning System connected to the OCC online and in real time.

7. The CONCESSIONAIRE shall comply with the provisions of CONTRAN Resolution No. 552, of September 17, 2015, as well as with ABNT 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 paying attention to the current legislation, which governs the matter, replacing the flat straps and other equipment and tools necessary for the service, provided for in the current technical specification, whenever there is evidence of deterioration.

The mobile winch units may remain parked at strategic points of the ROAD SYSTEM, awaiting activation, or remain in circulation in their service subsection, according to the CONCESSIONAIRE's operation. These points are, preferably, the SAU Posts, defined and implemented by service subsection.

The resources of the services, material and human, must be dimensioned according to the characteristics of the road system, in order to serve small, medium and large vehicles, articulated or not, and to observe the service levels established in APPENDIX H and IQD provided for in ANNEX 03 and APPENDIX C.

To monitor this minimum level of service, ARTESP must maintain an inspection and monitoring plan via the ICC, including the verification of the arrival times of the winch at the event location (from the moment the CONCESSIONAIRE becomes aware of the event through any existing means of communication until the moment the winch arrives at the event site, which can be proved by Geopositioning, if necessary), considering all the occurrences of the month involving the winch service, excluding the occurrences provided for in the current technical specification, in the month considered for inspection.

(b) Mobile Pre-Hospital Care Services (APH).

8. It comprises a network of basic support ambulances (type B ambulance, according to Ministry of Health Ordinance No. of the Ministry of Health nº 2048 of 2002, or another that will change or replace it), both complying with NBR 14561/2000 (or another that will change or replace it), duly equipped and accredited, with material for land, water and height rescue, for first aid assistance, rescues and removals, replacing, whenever there is evidence of deterioration or malfunction, the equipment and tools necessary for the service, provided for in the current technical specification, being operated by their respective qualified crews, all linked to an Urgency and Emergency Regulation Center.

The Pre-Hospital Care service must provide medical assistance or medical assistance, indirectly or remotely, as well as emergency assistance, including removal of victims of accidents or "sudden illness", with correct technique and in appropriate conditions, to the nearest hospital. of a network of back-up hospitals, indicated by the Urgency and Emergency Regulation Center.

Basic support ambulances and advanced support ambulances must be equipped with a telecommunication system with an operational control center and a monitoring and Geopositioning system linked to the OCC online and in real time.

9. Ambulances must remain waiting for the activation, parked at SAU Posts, being sure that at least 01 (one) Advanced Support Ambulance (D-type ambulance) must be guaranteed for the ROAD SYSTEM.

The CONCESSIONAIRE shall define the procedure for attending to accidents with victims incarcerated/trapped in hardware and train the ambulance crew to perform this procedure, observing the guidelines of NBR 14561/2000 (or any other that may change or replace it).

The service resources, material and human, must be properly dimensioned by the CONCESSIONAIRE according to the characteristics of the ROAD SYSTEM, in order to meet the service levels established in APPENDIX H and IQD provided for in ANNEX 03 and APPENDIX C.

In order to monitor these service levels, ARTESP must maintain an inspection and monitoring plan via the ICC, comprising the verification of the arrival times of the APH service at the event location (when the OCC became aware of the occurrence until the arrival of the APH service at the event's location, subject to verification by Geopositioning, if necessary), considering all occurrences of the month 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 must be equipped with a Telecommunications System with the Operational Control Center and Monitoring and Geopositioning System connected to the OCC online and in real time. They must also be equipped with appropriate signaling materials and tools for the performance of activities, being operated by qualified and periodically trained personnel for inspection of road conservation, integrity and use of the right-of-way, signaling elements and road safety, firefighting, execution of emergency signaling, maintenance of temporary signaling on the highways of the ROAD SYSTEM, having knowledge of the Technical Standards of ABNT NBR 6971/12, NBR 15486/16 and the DER Signaling Manual, or any other that may change them or replace them.

The ROAD SYSTEM shall be divided into subsections, as defined in the Technical Specification, whose circulation, under normal operating conditions, does not exceed 90 (ninety) minutes during the night period, between 6:00 pm (eighteen hours) and 6:00 am (six hours) of the next day. It should be noted that normal operating conditions imply that the inspection vehicle circulates on the highway operating between service levels "A" to "C", that is, between free flow and stable flow, where lane change maneuvers be done with care, so that the technician can visualize the problems on the track and in the RIGHT-OF-WAY, including the need for canning services defined in ANNEX 06 of this AGREEMENT. The form of division of the subsections must be approved by ARTESP.

During the daytime period, between 6:00 am (six o'clock) and 6:00 pm (eighteen o'clock) of the same day, traffic inspection vehicles must wait for activation, parked at SAU Posts and the service will be carried out through the Traffic Monitoring System by CFTV, without prejudice to the use of a vehicle for inspection, at the CONCESSIONAIRE's discretion. If any occurrence is detected during the day, the CONCESSIONAIRE must call the nearest Traffic Inspection Service mobile unit, observing the service levels defined in APPENDIX I.

In the event that weather conditions or failures in the related systems do not allow the identification of occurrences in the ROAD SYSTEM through the CFTV traffic monitoring system, the CONCESSIONAIRE shall carry out the Traffic Inspection Service by means of mobile units, whose circulation, under normal operating conditions, does not exceed 90 (ninety) minutes.

As long as the CFTV traffic monitoring system and the intelligent video analysis (IVA) functionality are not implemented and fully complying with all the requirements established in this ANNEX, the CONCESSIONAIRE shall perform the Traffic Inspection Service on the corresponding road segment through of mobile units, whose circulation, under normal operating conditions, does not exceed 90 (ninety) minutes.

Traffic inspection (mobile units and CFTV) has the following objectives: (i) to detect the need for assistance to the User; (ii) inspect the lanes and the right-of-way, identifying and reporting to the OCC all critical points of accidents on the highway axis, problems found regarding irregularities and/or the need for maintenance in buildings, patios and rest areas, check the presence and arrange for the removal of objects and dead animals from the road, providing the appropriate destination for each situation, assisting in scaring and apprehending small, medium and large animals, etc.; (iii) actively participate in the occurrence of accidents, fire fighting in the right-of-way, fog, fog, smoke on the road, guidance of walkers and other emergency situations; (iv) for mobile units to provide emergency signaling and traffic detours, and (v) to support other services.

It is the CONCESSIONAIRE's obligation to meet the objectives set out above and the maximum circulation time, when applicable, making use of the human and operational resources necessary to do so.

The Traffic Inspection Service will be responsible for providing support to any and all operations carried out on the Road System, monitoring the transport of exceptional loads and providing support for the inspection of these transports, as well as other NON-DELEGED SERVICES, including activities related to the Highway Police.

The Traffic Inspection service will be responsible for inspecting the cartable bed, aiming to detect any irregularities and occurrences in damaged safety elements, inefficient vertical, horizontal and aerial signaling, undermining or cracks in the pavement, erosions in embankment or slope skirts, etc., as well as the presence of USER vehicles parked on the carriage bed of the subsection requiring service.

The Traffic Inspection service will also be responsible for inspecting the RIGHT-OF-WAY, verifying the opening or reopening of irregular accesses, irregular occupation by clandestine points of sale, street vendors, works or maintenance of other public service CONCESSIONAIREs (telephone, oil, gas, electricity, water) or private individuals (works outside the *non aedificandi* range that may interfere with the RIGHT-OF-WAY, such as a drainage system, etc.), or any other activities not authorized by ARTESP.

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

The CONCESSIONAIRE shall inform every six months the coverage area of each Traffic Inspection subsection, which will serve for inspection and which cannot be changed during the informed period without prior authorization from ARTESP.

To monitor this level of service, ARTESP must maintain an inspection and monitoring plan via the ICC, comprising the verification of the circulation times of the traffic inspection at the OCC, through the

Monitoring and Geopositioning System of these vehicles captured by the MITS system online and in real time.

(d) Animal Apprehension Service on the Highway Right-of-way

10. The animal apprehension service must have boxes and cages with appropriate sizes for the transport of small and medium-sized animals and 2 (two) trailer-type vehicles, with a cage-type body, with a capacity for transporting up to 2 (two) large animals, pulled by a motor vehicle with compatible traction capacity, connected via radio with the OCC, available 24 (twenty-four) hours, and equipped with a Monitoring and Geopositioning System connected to the OCC online and in real time, available to the along the stretch granted for the collection and apprehension of animals, either on the carriage bed or in the RIGHT-OF-WAY of the highways that are part of the ROAD SYSTEM, with the objective of guaranteeing the safety of USERS. The seized animals will be transported to municipal zoonosis centers, specific animal seizure yards or to partner/affiliated institutions.

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

Mobile animal arrest units must remain parked at SAU Posts, defined and implemented by service subsection and be equipped with a Telecommunication System with the OCC and a Monitoring and Geopositioning System connected to the OCC, online and in real time.

The service resources, material and human, own or subcontracted, must be dimensioned according to the characteristics of the ROAD SYSTEM, in order to meet the demand for this service.

The team, own or subcontracted, must be qualified and trained in order to trigger appropriate decisions and actions according to the situation encountered (wild/domestic, live/injured/dead, small/medium/large, etc.).

It is mandatory to send domestic animals captured alive to specialized institutions associated with them/partners in order to receive treatments (feeding, zoonosis control), according to the type of animal. An incident report, or something equivalent, must be drawn up, identifying the animal and the owner, in order to form a register of seized animals and their respective owners. The CONCESSIONAIRE shall reimburse the GRANTING AUTHORITY and ARTESP in case of liability resulting from accidents caused by the presence of animals in the ROAD SYSTEM.

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

Wild animals, collected or captured, whether alive, injured or dead, must be sent to environmental agencies' sorting centers (Wild Fauna Triage Centers - CETAS, Wild Animal Rehabilitation Centers - CRAS, among others) and/or institutions capable of receiving wild animals (zoos, veterinary hospitals, veterinary colleges, research institutes, universities, among others). Partnerships signed or finalized must be informed to ARTESP.

The CONCESSIONAIRE shall adopt the practices recommended by the São Paulo Fauna Integrated Environmental Management System for the management and rescue of victimized wild fauna or for the disposal of dead animals.

If it is not possible to establish agreements and partnerships, the CONCESSIONAIRE must adjust the specific procedures to be adopted along each subsection of the SPONSORED CONCESSION with the Department of Infrastructure and Environment.

(e) Fire Fighting Service

The CONCESSIONAIRE shall implement adequate infrastructure to prevent and fight fires in the RIGHT-OF-WAY and *NON AEDIFICANDI* area, in accordance with the Fire Action Plan, defined in ANNEX 06. The main objective is to reduce the occurrence of fire outbreaks, as well as to extinguish them in their initial stage.

Prevention should include monitoring the right of way through the CFTV-IVA system in order to identify the beginning of fire outbreaks, the dissemination of educational and informational messages on Message Boards, on the CONCESSIONAIRE's *website*, GANTRIES and SAU stations, participation in campaigns stipulated by the GRANTING AUTHORITY or ARTESP, 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 conservation activities, such as pruning, mowing, weeding and firebreaks, removal of dry and dead trees, plant residues and other combustible materials, according to the standards established in ANNEX 06.

The Fire Fighting Service must have 2 (two) mobile units of irrigation trucks, connected via radio with the OCC, available 24 hours a day, equipped with special equipment and materials for fighting fires, such as motor pumps and flexible tank, dampers, gloves, boots, tools and other deemed necessary, as well as water reservoirs, available along the ROAD SYSTEM, taking into account the vulnerability and criticality of the stretches, according to the analysis and risk assessment within the scope of the analysis studies of risk and mapping of critical areas included in the Fire Action Plan.

Irrigation trucks must contain all the necessary equipment for firefighting services, in order to effectively control and extinguish the outbreak, without prejudice to the Fire Department's performance in more serious situations.

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

The mobile winch units must be equipped with a Telecommunication System with the OCC and a Monitoring and Geopositioning System connected to the OCC online and in real time.

These units must remain parked at strategic points of the ROAD SYSTEM, awaiting activation. These points are, preferably, the SAU Posts, defined and implemented by service subsection.

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

The service resources, material and human, own or subcontracted, must be dimensioned according to the characteristics of the ROAD SYSTEM, in order to meet the demand for this service.

(f) Mechanical Assistance Service

It comprises a network of mobile units equipped to provide mechanical and electrical assistance, operated by specialized personnel (this service may be provided by operational vehicles such as traffic inspection and winches, exclusive vehicles are not mandatory, however, such vehicles must be equipped with adequate tooling for the execution of this service).

The Mechanical Assistance Service must attend to vehicles with an electromechanical failure, stopped on the shoulder or shelters of the highways that are part of the ROAD SYSTEM, aiming to return them to circulation in an expeditious manner.

The mobile winch units must be equipped with a Telecommunication System with the OCC and a Monitoring and Geopositioning System connected to the OCC online and in real time.

These units must remain parked at strategic points of the ROAD SYSTEM, awaiting activation. These points are, preferably, the SAU Posts, defined and implemented by service subsection.

The service resources, material and human, must be dimensioned according to the characteristics of the road system, in order to serve small, medium and large vehicles, and to observe the level of service expressed by the indices contained in ANNEX 03 and in APPENDIX H.

To monitor this level of service, ARTESP must maintain an inspection and monitoring plan via the ICC, including the verification of the arrival times of the Mechanical Assistance at the event site (when the Mechanical Assistance was requested from the OCC until the moment of the arrival of the service at the place of the event, verifiable by the Geopositioning information of the service vehicle, if necessary), considering all occurrences involving the Mechanical Assistance service in the month, expunged the occurrences foreseen in the current technical specification, in the month considered for inspection.

7.2.10. From the Compliance Program

The CONCESSIONAIRE shall, within the period provided for in the AGREEMENT and without prejudice to the terms set forth in said Clause, implement and maintain a compliance program within its scope, consisting of internal mechanisms and procedures for integrity, audit and incentive to report irregularities and in the effective application of codes of ethics and conduct, policies and guidelines with the objective of detecting and remedying deviations, fraud, irregularities and illicit acts practiced against the PUBLIC ADMINISTRATION, in prestige to Federal Law No. 12,846/13 (Anti-Corruption Law).

The compliance program must be prepared in compliance with applicable legislation, in particular: (i) Federal Law No. 12,846/13; (ii) Federal Decree No. 8,420/15; (iii) Ordinance CGU 909/15; (iv) the Practical Manual for the Evaluation of the Integrity Program in Administrative Proceedings for the Accountability of Legal Entities, of the Ministry of Transparency and General Controllership of the Union, as applicable; and (v) the Guidelines of the Code of Best Practices of Corporate Governance, of the Brazilian Institute of Corporate Governance.

The COMPLIANCE PROGRAM must provide for a sector responsible for the application, management and supervision of the activities provided for therein, which must be endowed with autonomy, independence and impartiality to coordinate control activities, and must also be endowed with sufficient material, human and financial resources for its regular operation.

The CONCESSIONAIRE shall include, in the scope of the audit referred to in this item, the verification of compliance and compliance, by the CONCESSIONAIRE, with the rules and procedures relating to transactions between Related Parties provided for in the Agreement and in the Policy on Transactions with Related Parties of the CONCESSIONAIRE.

7.3. Intervention Plans in the Road System (PISR)

The CONCESSIONAIRE shall prepare and submit a Road System Intervention Plan (PISR) in advance for approval by ARTESP whenever there are interventions in the ROAD SYSTEM, which cause a reduction in capacity on the road, containing, at least, the following information:

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

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

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

The delivery of the PISR and the respective traffic simulations with the delay time forecast will be evaluated by the Performance Indicators provided for in ANNEX 03.

8. OPERATING MANUAL

All technical, operational and administrative procedures related to the services described in this ANNEX must be embodied in their own manual, individualized by subject, which must be prepared by the CONCESSIONAIRE and delivered to ARTESP for approval, in accordance with the deadlines described in the Item 13. This manual must 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 promoted by the CONCESSIONAIRE or determined by ARTESP that may be necessary, in any item of the operation manual, will only come into force and be effective after approval by ARTESP during the entire period of the SPONSORED CONCESSION.

The alterations made in the Manuals, at the initiative of the CONCESSIONAIRE, will be submitted to ARTESP, which may manifest itself within a period of up to 15 (fifteen) days from the request protocol. The changes requested by ARTESP must be implemented by the CONCESSIONAIRE and sent to ARTESP within a period of up to 15 (fifteen) days from their receipt.

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

The technical, operational and administrative procedures of the ROAD SYSTEM must conform to the requirements contained in this ANNEX according to the deadlines defined in the Deadlines Table of item 13.

9. AUDIT AND SUPERVISION

ARTESP will exercise the supervision of the services corresponding to the operation, traffic and road safety, in order to verify compliance with the minimum standards required, through:

- i. surveys carried out by ARTESP, or carried out by companies contracted for this purpose;
- ii. analysis of data available in ARTESP/ICC systems;
- iii. analysis of images collected remotely;
- iv. analysis of data or reports provided by bodies of the GRANTING AUTHORITY;
- v. data analysis (raw or processed), reports or systems of the CONCESSIONAIRE; and
- vi. specific, regular or extraordinary audits.

For all the items described in this section, the CONCESSIONAIRE must implement a digital system of registration, management and consultation of data via web, with user/password pairs available for ARTESP, as well as the integration and alignment with ARTESP's ICC.

9.1. Information System

The CONCESSIONAIRE shall implement an information system based on statements and/or reports that allow the monitoring, by ARTESP, of the data referring to all the services corresponding to the operation, traffic and road safety, in order to allow and facilitate the inspection and audit.

The information to be provided by the CONCESSIONAIRE will follow standardized models, provided by ARTESP.

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

9.1.1. Daily and weekly information

The CONCESSIONAIRE shall keep a computerized database available to ARTESP, allowing real-time access to information including, but not restricted to:

- i. hourly traffic volume registered in each PORT, ordered by vehicle class;
- ii. daily collection results, per route in the ROAD SYSTEM;
- iii. volume and speed of traffic, subdivided into intervals of 15 (fifteen) minutes, per lane, obtained through automatic collectors installed in the critical sections of each homogeneous segment, as established in this ANNEX; the volumes must be identified by type of vehicle, at least in the “light” and “commercial” categories;
- iv. Registration of operational and administrative vehicles;
- v. Registration of operational and administrative buildings;
- vi. in the GANTRY sections, specifically indicate the hourly volume of buses and motorcycles;
- vii. hourly volume of vehicles subject to weighing, which circulate in a section immediately upstream of the weighing base (mobile and fixed);
- viii. number of vehicles that pass through the various stages of weighing, ordered by vehicle class, as well as those that evade weighing;
- ix. number of notices of infraction for overweight, daily values of the notices and the value of the excess verified;
- x. scale hours in operation, inoperative, available and maintenance;
- xi. number of USER service events, sorted by type of event, according to the services involved;
- xii. indications of the service time intervals of each service involved in the events, in order to allow their tabulation;
- xiii. characterization of all accidents that 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;
- xiv. Indication of Relevant Events and their updates according to the model standardized by ARTESP, and
- xv. summary of the main traffic occurrences in the ROAD SYSTEM.

In real time and online, the CONCESSIONAIRE shall provide updates on occurrences/events:

DESCRIPTION	Frequency of update	STATUS
GENERAL OCCURRENCES	15 MINUTES	CLOSED
ISSUES	15 MINUTES	CLOSED
ACCIDENTS	6 MINUTES	CLOSED
CONGESTIONS	6 MINUTES	CLOSED
PROHIBITED RANGE	6 MINUTES	CLOSED
ACTIVATED RESOURCES	6 MINUTES	CLOSED
EXTERNAL RESOURCES.	6 MINUTES	CLOSED
MEASURES	6 MINUTES	CLOSED
VEHICLES INVOLVED	6 MINUTES	CLOSED
PROCESS	15 MINUTES	CLOSED
RELATED PROCESSES	15 MINUTES	CLOSED
EVENTS OF A PROCESS	6 MINUTES	CLOSED
VMS MESSAGES	6 MINUTES	CLOSED
MONITOR EQUIPMENT	6 MINUTES	CLOSED
MONITOR LOCAL EQUIPMENT	6 MINUTES	CLOSED
VEHICLE COUNT	6 MINUTES	CLOSED
GEOPOSITIONING OF OPERATING VEHICLES	2 MINUTES	RAISED
MAINTENANCE	15 MINUTES	CLOSED
THE WORKS AND SERVICES	15 MINUTES	CLOSED
WORKS AND SERVICES GROUP DOMAIN	15 MINUTES	CLOSED

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

9.1.2. Monthly, semi-annual and annual information

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

(a) Monthly

The CONCESSIONAIRE shall monthly:

- i. for all homogeneous segments of the ROAD SYSTEM, calculate the level of operational service, according to the methodology recommended in this ANNEX and ANNEX 07;

- ii. inform the “road inventory”, a register formed by linear assets (continuous elements, maintained in segments with beginning and end, measured in meters or kilometers, such as: trunk axis, interconnections, accesses, side roads, branches, roundabouts, shoulders, bike lanes, parks, tunnels and special works of art), and non-linear (non-continuous, watertight, located and georeferenced elements in linear assets, such as: vertical and horizontal signage, aerials, safety equipment, ITS (Intelligent Equipment System), buildings, buildings, vehicles, bases, SAU stations, etc.). Until the relevant monitoring system is implemented, said inventory must be presented monthly, on the dates and in the formats to be defined by ARTESP;
- iii. provide the amount of human resources, equipment and vehicles available in the operational areas on a monthly basis for each SAU service, including the OCC;
- iv. provide the amount of human resources, equipment and vehicles available in the operational areas on a monthly basis for the DER and PMRv;
- v. update ARTESP regarding the progress and actions of the notification / regularization processes of irregular accesses;
- vi. position the GRANTING AUTHORITY on the progress of the solution for the places previously identified as irregular and critical access in road safety issues.

(b) Biannual

The CONCESSIONAIRE shall every six months:

- i. provide ARTESP with the update of the registration of operational and administrative vehicles, according to the Technical Specification.

(c) Annual

The CONCESSIONAIRE shall annually:

- i. provide ARTESP with the update of the register of operational and administrative buildings, according to the Technical Specification;
- ii. provide ARTESP with information on the evolution of the different types of vehicles that circulate on each highway of the ROAD SYSTEM, as well as the profile of the USER, with emphasis on motorcyclists, pedestrians and truck drivers; and
- iii. provide through SIGGIS to ARTESP digital color aerial images 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 RIGHT-OF-WAY and adjacent side areas, totaling, at least, about 2000 m (two thousand meters) in width. This survey must contain the restitution of the route of the highway that is part of the ROAD SYSTEM, its clovers, intersections and accesses, the registration of all elements relevant to the SPONSORED CONCESSION, such as PORTS, SAU stations, PMRv stations, weighing stations and buildings in general, as well as all

horizontal and vertical signage, 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 ARTESP to set up a ROAD SYSTEM database.

9.1.3. OCC database

The CONCESSIONAIRE shall keep at the disposal of the GRANTING AUTHORITY, allowing access in real time and at any time, all data and operational information available, through the OCC database, including those referring to tolls, weighing, service to SAU users, occurrences and road conservation/maintenance, for inspection and auditing purposes.

9.1.4. Systematic sending of information

The form and frequency of the information to be sent to ARTESP will be identified, as necessary. ARTESP will provide standardized models to be filled in by the CONCESSIONAIRE, through technical standards.

9.1.5. Information Systems Audit

The audit will be done through the MITS system (or one that ARTESP might indicate) that will track the dates and times of occurrences of care and services provided to users to identify the CONCESSIONAIRE operator who changed / modified the data and his/her justification.

9.2. Quality Management System

The CONCESSIONAIRE shall offer quality assurance, external and internal, through its certification, ISO 9000 system (NBR ISO 9002 and NBR ISO 9004-2 Standards), with regard to services corresponding to operational functions, including activities to support non-delegated services, namely:

- i. operation of the toll system;
- ii. operation of the traffic and transportation control system;
- iii. Operation of the user service system - SAU; and
- iv. operation of the road system, safety and comfort of the USERS.

10. COMPLEMENTARY 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, in the cases provided for in the AGREEMENT.

The CONCESSIONAIRE, observing the legislation in effect, will define the conditions for the provision of services, especially those related to operational aspects.

11. REST AREAS FOR TRUCK DRIVERS

Although not initially foreseen, if required by the GRANTING AUTHORITY, through the restoration of the economic and financial balance and in accordance with the rules and procedures of the AGREEMENT, in compliance with Federal Law No. 13,103, of March 2, 2015 (or another that change

or replace), which provides for the exercise of the profession of driver and disciplines the working day and rest interval, the CONCESSIONAIRE may, within the RIGHT-OF-WAY, implement and operate areas for this purpose, according to the rules of ANNEX 07 to the AGREEMENT, with at least the following characteristics:

- i. fenced and illuminated patio with 100% (one hundred percent) coverage and complying with the lighting project according to regulations, paved, segregated with fence or wall in all its perimeter and demarcated with circulation lanes and parking for articulated or non-articulated vehicles, with an area minimum of 20,000 m² (twenty thousand square meters);
- ii. single gatehouse for entry and exit control with access controller for vehicles and people to the rest area dependencies, with 24 (twenty-four) hour heritage security, CFTV cameras to monitor movement in the yard (entries, exits, parking, maneuvers, buildings), with 100% (one hundred percent) coverage of the premises of the rest area facilities. Images from at least the last thirty (30) days of operation must be stored and maintained;
- iii. 10% (ten percent) of vacancies with electricity point for refrigerated loads;
- iv. men's and women's bathroom area and for people with reduced mobility, with individualized boxes;
- v. changing room area, containing individual lockers, with padlock support and benches to sit and change;
- vi. shower area with individualized boxes for men, women and for people with reduced mobility with regulatory dimensions, all closed by a door, containing support for placing towels, clothes and accessories inside the shower;
- vii. area with washing tank and clothesline for drying clothes;
- viii. cafeteria with furniture (tables and chairs), microwave, coffee maker and drinking fountains with drinking water;
- ix. wireless data network service with free access to users and employees, with the same characteristics as SAU stations;
- x. lighting and cleaning 24 (twenty-four) hours a day; and
- xi. rest and leisure room with tables, chairs, sofas and TV.

The CONCESSIONAIRE may commercially exploit ancillary revenue from the rest areas, in the cases provided for in the list above, after the twelfth hour of use. For the other services, the CONCESSIONAIRE may freely explore the ancillary revenues, in compliance with the contractual provisions and current legislation.

The rules for using the rest areas will be defined in ARTESP's normative acts.

In case there is no exploration of accessory revenue for the following services, the Rest Area for Truckers should preferably be near a regularized and authorized Service and Supply Station, with access to the highway, containing: (i) Services of supply and emergency service, such as tire repair, machine store, auto electric, ditch for oil change, accessory stores and others; and (ii) Restaurant, snack bar, telephone, convenience store, diaper room, etc.

12. CARBON NEUTRAL PROGRAM (Carbon Neutral Operation)

The Zero Carbon Program shall be implemented by the CONCESSIONAIRE with the objective of neutralizing the emissions of Greenhouse Gases (GHG), calculated in carbon equivalent (CO_2e), from the OPERATIONAL ACTIVITIES of the CONCESSIONAIRE in the ROAD SYSTEM.

For the exclusive purposes of said Program, it is understood as OPERATIONAL ACTIVITIES, the following exhaustive list:

- i. traffic inspection;
- ii. Winch and Mechanical Assistance services;
- iii. ambulances;
- iv. handling incidents (Fire Fighting and Animal Apprehension); and
- v. operation of the OCC and other administrative buildings managed by the CONCESSIONAIRE.

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

12.1. Inventory

The CONCESSIONAIRE shall carry out an annual inventory to calculate all its GHG 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 the item 13 of this ANNEX. The Inventories must cover the period from January to December of the previous year, being prepared based on methodologies and standards internationally recognized in the market, such as the ABNT NBR ISO 14.064-1 Standard, GHG Protocol and/or other equivalent standards.

The inventories must cover all emissions related to OPERATIONAL ACTIVITIES.

The CONCESSIONAIRE must provide ARTESP with a certification of its inventory. The certification must be carried out by an independent, reputable company of notorious specialization and that has the necessary qualifications from competent bodies, such as INMETRO.

The emissions inventory and its certification must be submitted to ARTESP annexed to the Annual Environmental Performance Report (RADA), together with the definition of voluntary targets for the reduction of GHG emissions, in carbon equivalent (CO₂e), for the next period.

12.2. Compensation

The CONCESSIONAIRE shall carry out the compensation of greenhouse gas emissions with the objective of neutralizing, at least, the emissions resulting from the OPERATIONAL ACTIVITIES of the ROAD SYSTEM.

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

In the case of the option of neutralizing emissions through a 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 plantation becomes self-sustainable.

12.3. GHG neutralization certification

As a way of guaranteeing the effectiveness of this program, the CONCESSIONAIRE must obtain, at the end of each five-year cycle described in the item 12.2 above, a certificate and/or equivalent document issued by an independent, reputable company with well-known specialization and that has the necessary qualifications from the competent bodies, to attest to ARTESP the fulfillment of the objective of neutralizing GHG emissions from operating activities.

This certificate will be used by ARTESP to confirm the neutralization of emissions occurred in the period, which will be carried out by comparing the information present in the inventories and the certified neutralizations.

13. DEADLINES

OTHER DEADLINES		
Delivery of the OCC Operations Manual and the characterization of the Operational Vehicles to ARTESP for approval.	8	Up to the START DATE OF OPERATION.
Homologation of MIP system in the ROAD SYSTEM.	Error! Reference source not found.	Up to 180 (one hundred and eighty) days from the DEFINITIVE TRANSFER TERM.
Delivery of the Collection Control System Operation Manual to ARTESP for approval.	8	Up to 60 (sixty) days before the start of operation of the PORTICS.



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OTHER DEADLINES		
Preparation of an updated and georeferenced aerophotogrammetric base plan with the RIGHT-OF-WAY.	4.2.6.1.	18 (eighteen) months from the START DATE OF OPERATION.
Delivery of the ROAD SYSTEM RIGHT-OF-WAY Operational Management Plan.	4.2.5.3	BEFORE START DATE OF OPERATION.
Delivery of the operation manual for the Transit and Transport Inspection Control System and Support for NON-DELEGED SERVICES	8	BEFORE START DATE OF OPERATION.
Implementation, operation and dissemination of other relationship channels with the USER provided for in current legislation	Error! Reference source not found.	Before START DATE OF OPERATION
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	Error! Reference source not found.	Before START DATE OF OPERATION
Compliance with operational, administrative and procedural requirements provided for in current legislation regarding the ombudsman and other relationship channels with the USER	Error! Reference source not found.	Before START DATE OF OPERATION.
Compliance with the requirements and quality indicators and deadlines provided for in current legislation regarding the ombudsman and other relationship channels with the USER	Error! Reference source not found.	Before START DATE OF OPERATION.
Delivery of the Communication and Relationship System Operation Manual to ARTESP for approval	8	Before START DATE OF OPERATION
Delivery of the Traffic Sensing System Operation Manual to ARTESP for approval	8	Before START DATE OF OPERATION
Certification of the Road Safety Management System	7.2.1	Up to 18 (eighteen) months from the START DATE OF OPERATION.
Other road safety inspections/audits of the ROAD SYSTEM	7.2.2	Every 4 (four) years, before the beginning of the ORDINARY REVISION procedures
Road Safety Commission	7.2.5	Up to 6 (six) months from the START DATE OF OPERATION.



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OTHER DEADLINES		
Management Process of the speed practiced and the risk situations of the ROAD SYSTEM	7.2.6	Up to 6 (six) months from the START OF OPERATION.
Implement and maintain a compliance program within its scope	7.2.10	11. Up to 12 (twelve) months from the INITIAL TRANSFER TERM.
Delivery of the Road System Operation Manual, Safety and User Comfort	8	Up to the START DATE OF OPERATION
Provision of digital color images of the entire ROAD SYSTEM	9.1.2	Up to the START DATE OF OPERATION
Quality assurance certification	9.2	Up to 2 (two) years from the START DATE OF OPERATION.
First annual GHG emissions inventory	12.1	Up to 12 (twelve) months from the START DATE OF OPERATION.