



Exhibit 5

Implementation and Operation Program - PIO

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SECTION 1 - INTRODUCTION

1. Presentation

This **Implementation and Operation Program - PIO** gives the guidelines of the main conditions for the execution of the Public Concession Contract of LRV in the Suburbs, hereinafter simply referred to as "LRV" and incorporates the elements of the Concession, constituted by the relationship and characterization of services and works provided for the execution, by the Concessionaire, throughout the Concession period, the appropriate standards and specifications.

This PIO is divided in 4 Sections. This first Section - INTRODUCTION presents its content and structure, describes the LRV in summary and specifies the purpose of Concession. The second Section - OBLIGATIONS OF GENERAL CHARACTER describe the obligations of general character attributed to the Concessionaire, while the third Section - LRV IMPLEMENTATION presents the services and works necessary to the implementation of LRV, divided in Physical Structure, Equipment and Rolling Stock.

The fourth and last Section - LRV OPERATION describes the services and works provided for execution, by the Concessionaire, in the stage of Concession Operation, related to its physical structure, its operational equipment and its rolling stock.

For the LRV implementation, the Concessionaire must prepare the projects established in Annex 4 - Reference Project, and the recommendations and guidelines contained in the second Section of this PIO.

This Annex must be interpreted in accordance with Annex 4 - Reference Project. In case of divergence between the technical specifications hereof and those contained in Annex 4, the provisions in the latter must prevail.

The performance parameter to be observed for accompaniment and acceptance of services and works performed in the LRV implementation is the faithful execution of the Executive Project accepted by Inspection, which must enable, after its execution, the compliance with the performance parameters provided for the stage of Concession Operation, in addition to the limit deadlines specified for the conclusion of each stretch, as described in Chapter 2 of this Section.

Before the beginning of the Operation, the Concessionaire must present the LRV Operation Plan, as specified in Section 4 - LRV OPERATION.

With regard to Section 4, which deals with the Operation stage of the LRV, its items, define the scope of works and its coverage, in addition to executive procedures, with the minimum criteria and requirements for the development of services and execution of planned works.

The Concessionaire must permanently perform all services and works necessary to the maintenance of performance parameters specified, which must ensure the quality of services performed by it.

2. Project description

The LRV to be implemented and operated by the CONCESSIONAIRE comprises a Light Rail Vehicle Line, 21 (twenty-one) STOPS of access to passengers and an operation and maintenance complex. The LRV of Salvador will be implemented between the regions of Comércio and São Luis de Paripe in a total path of 18.5 km, operated in a single line. This path is divided in two stretches, with different implementation efforts, as detailed in the following paragraphs:

- STRETCH 1: extension with approximately 3.5 KM, comprised between the Stops Calçada and Comércio, which comprises a new implementation of permanent path in an occupied area and with road interferences. The conclusion of the segment formed by this stretch and STRETCH 2 corresponds to the Operational Milestone 1;
- STRETCH 2: extension with approximately 1.1 KM, comprised between the Stops Calçada and Baixa do Fiscal. This stretch comprises a part of the current course of the Suburbs' Train and it will be implemented through the requalification of the current permanent path for adequacy to LRV requirements. The conclusion of the segment formed by this stretch and STRETCH 1 corresponds to the Operational Milestone 1;
- STRETCH 3: extension with approximately 13.9 KM, comprised between the Stops Baixa do Fiscal and São Luis de Paripe. This stretch comprises a part of the current course of the Suburbs' Train (between the stops Baixa do Fiscal and Paripe), which will be implemented through the requalification of the current permanent way for adequacy to the requirements of the LRV. In the segment from Paripe to São Luís there has already been operation of railway in the past, however, due to the lack of use and recent

occupation of the population at the location, currently there is no permanent path. In this segment the path will be re-implemented for conclusion of the LRV course. The conclusion of STRETCHES 1, 2 and 3 corresponds to the Operational Milestone 2.



[Permanent way to be implemented / Permanent way to be re-qualified / Permanent way to be re-implemented]

The LRV operation throughout the entire extension of its course will be under the Concessionaire's responsibility, and it is liable for meeting the requirements presented herein and other Contract elements.

The Concession period will have the duration of 20 (twenty) years, counted from the signature of the Contract, with an implementation period of up to 24 (twenty-four) months and divided in 2 (two) Operational Milestones, subject to the summarized table below:

Milestone No.	LRV Stretch	Beginning of the Operation (No. of months after the signature of the Contract)
1	Comércio - Baixa do Fiscal	Up to 19 months
2	Comércio – São Luís de Paripe	Up to 25 months

For fulfillment of the deadlines for beginning of the operation of Milestone 1 there were considered about 4 months, from the signature of the Agreement, for execution of pre-implementation services, such as preparation of work plans and engineering projects necessary.

Each Stretch of Implementation of the LRV will be considered concluded when there is inspection acceptance of the groups of services and works and results in the operation of the respective Operational Milestone, and in the end, the full acceptance of the system is granted.

The Concessionaire must implement the LRV according to the specifications and guidelines described herein. The Concessionaire will be liable for the acquisition of the entire fleet necessary for the LRV Operation, based on the quantitative of trains indicated in ANNEX 8, as well as the systems and other necessary inputs and services. Furthermore, the Concessionaire is liable for the prevention, monitoring, mitigation or treatment of environmental liabilities directly related to its actions in the implementation of the LRV and its operation.

The Concession Operation stage will basically comprise the service and works of Conservation, Maintenance and Operation of the LRV from the attainment of the Operational Milestones until the end of the Concession period.

The list of LRV Stops is presented below.

Stretch No.	LRV Stretch	Stops
1	Comércio – Calçada	Comércio, França, Porto, São

		Joaquim, Calçada
2	Calçada – Baixa do Fiscal	Baixa do Fiscal
3	Baixa do Fiscal – São Luís de Paripe	Santa Luzia, V. Suburbana, Lobato, União, São João, Plataforma, São Brás, Itacaranha, Escada, Praia Grande, Periperi, Setúbal, Coutos, Paripe and São Luis.

SECTION 2 - OBLIGATIONS OF GENERAL CHARACTER

3. Inspection and performance evaluation

The monitoring and inspecting activities, hereinafter referred to as "Inspection", shall have as purpose to verify the compliance with the charges provided in the Concession Agreement and, in particular, in this PIO, ensuring to the users the provision, by the Concessionaire, of an adequate service, in the conditions defined in the Public Notice.

In the exercise of its attributions, the members of Inspection must have free access, at any time, to the data related to the administration, accounting and technical, economic and financial resources of the Concessionaire, as well as the works, equipment and installations that are part of or related to the Concession. Its activities will comprise, especially, the control, by results, of the execution of foreseen services and works, with emphasis in the compliance with the Executive Project and the Operation Plans accepted by it, of the specifications and quality standards established in this PIO and the applicable technical standards, in addition to the performance parameters specified and, when appropriate, within the provided deadlines.

The provision of monitoring reports of the Concession is provided as responsibilities of the Concessionaire, where it must transmit to the Inspection the main facts and data related to the Concession, according to the provisions in Section 4 - LRV OPERATION. It is also provided the performance of a specialized verification company, as established in the agreement, indicated as "Independent Verifier", to be selected by the Granting Authority and contracted by the Concessionaire, for the works of Performance Evaluation of the Concessionaire, under the terms of the Agreement.

4. Projects

The solutions contained in Annex 4 - Reference Project are indicative and establish minimum technical and operational conditions, and the Concessionaire may propose changes, subject to the consent from the Granting Power, which may have as premise the maintenance of the minimum performance and durability conditions provided in the presented elements. For any of the items of this PIO, even where it is not explicitly indicated, before starting any work or service related to the construction of the physical structure of the LRV, as well as before starting any work or maintenance service in the physical structure that implies in the incorporation of some additional element, the Concessionaire must present to the Inspection the respective executive project. The executive project must contain a contingency plan for works and services, in order to minimize the road interferences, where applicable.

The services and works may only be started after the acceptance, by the Inspection, of the respective executive projects. The formal remittance of each executive project must consider the respective deadline for its analysis, compatible with the complexity of intervention. Likewise, any change in the characteristics of operational equipment or rolling stock must be preceded by the presentation to the Inspection of new specification documents of equipment and systems, with specifications of new elements incorporated and the changes in the resulting operation and maintenance routines, in case of necessity of prior approval of specification documents by the Granting Authority.

The Concessionaire must grant access to the people indicated by the Granting Authority, to the data and information management system used by the Concessionaire and its main contractors. This system must allow access, at any time, to information on the project, such as the projects in its most diverse stages, memorials, reports, etc.

All the services and works to be performed in the LRV must be guided, in project and execution stages, by the Brazilian Association of Technical Standards - ABNT. In case of omission, other appropriate standards may be used, which application shall be discussed case by case with the Inspection. The list of specification to be adopted, which must contain the executive procedures and the performance parameters to be attained for several services and works, must contain the executive projects. For services not provided by the standards and specifications indicated, particular specifications must be presented.

The information contained in this PIO reflects the general guidelines to be followed in the detailing of the Executive Project of Implementation of the CLT and in its Operation Plans. However, the presented specifications indicate the minimum quality required for the services, and they must be changed to the extent that new materials, technologies and techniques appear, being always submitted to acceptance of Inspection.

In the end of the LRV Implementation, the Concessionaire must present its as built, where all services effectively executed must be consolidated, with the respective quantities. In general, there may only occur changes to the Executive Project presented by the Concessionaire and accepted by Inspection in specific cases, in which the conditions found in the field could not be foreseen. Consequently, the divergences between the Executive Project and the services and works effectively performed must be of small amount, and it may be only the designs and sheets of tact containing the alterations performed in highlight may be presented, including quantities. In the end of each work or maintenance service with the incorporation of some additional element, the Concessionaire must present to the Inspection its respective as built.

The Concessionaire is liable for performing, at its own risk, the investigations and studies and prepare all projects necessary to the implementation and further operation of the LRV. In the preparation of the projects, the Concessionaire must observe the municipal postures and other current regulations in the Cities of Salvador and Simões Filho, presenting them to the Inspection for acceptance, regardless of the necessary approvals from the competent authorities involved. The acceptance of Inspection on the projects or studies presented by the Concessionaire does not imply in any liability for it, and it does not exempt, in whole or in part, the Concessionaire from its obligations or of appropriate legal or regulatory provisions, and it is still liable for possible imperfections in the project or in the quality of the service performed.

5. Environmental guidelines

For implementation and operation of the LRV, the Environmental License will not be required, according to opinion from INEMA contained in Exhibit 4 - Appendix C - Environmental License Liability Waiver. However, this waiver of liability may be revoked in case of change in legislation.

The waiver of environmental licensing will not exempt the Concessionaire from other obligations. Therefore, the other environmental determinations, standards and rules defined by other instances under the Federal, State or Municipal scope must be observed.

For attainment of necessary licenses and authorizations, the Concessionaire must observe as reference the characteristics of each stretch, according to the guidelines provided below.

Stretch	Intervention	Reference Environmental Authorizations or Licenses ¹
Stretch 1: Comércio – Calçada	Implementation of permanent way	Vegetation Suppression Authorization
Stretch 2: Calçada – Baixa do Fiscal	Requalification of permanent way	-
Stretch 3: Baixa do Fiscal – São Luís de Paripe	Requalification and reimplementing of permanent way	-

1) The licenses and authorizations provided herein must only serve as reference for the Concessionaire. The Granting Authority will not be held liable for the attainment of environmental licenses or authorizations listed or omitted from the list above, and the Concessionaire is liable for all actions necessary to arrange them.

6. Registers

In the end of the implementation of the LRV, the registrations of its entire physical structure, its operational equipment and rolling stock must be presented to Inspection. The registration of the physical structure must include all interferences of LRV with the networks of public services and other existing interferences. The registrations must be updated on an annual basis, with the presentation of all modifications and increases, when appropriate.

7. Quality management

Without prejudice to the fulfillment of the quality requirements provided in this PIO, the Concessionaire must implement, until the end of the 24th month of Concession, a Quality Management System - SGQ in the operation and maintenance processes, based on the Standard NB 9004, from the Brazilian Association of Technical Standards - ABNT, equivalent to the ISO 9004 Standard of the International Standards Organization, and its updates, and obtain certification until the end of the 5th year of Concession. The certification must have as purpose the adequacy of works of the Concessionaire to the current standards and be substantiated in the user's perspective, i.e., in its evaluation of the service provided. The SGQ must be permanently updated, maintaining the certification until the end of the Concession period.

8. Management

Throughout the entire period of Concession the Concessionaire must provide sufficient administrative structure for the compliance with all contractual obligations.

9. Insurances and guarantees

The Concessionaire must provide contracting of insurances and guarantees throughout the Concession period, subject to the minimum list established in the Agreement.

SECTION 3 - LRV IMPLEMENTATION

The solutions for construction of the physical structure and for acquisition and implementation of operational equipment and rolling stock of the LRV must be defined by the Concessionaire, according to guidelines contained herein, in Exhibit 4 - Reference Project and in Exhibit 8 - Demand and Reference Fleet.

It is the Concessionaire's responsibility to foresee and provide all elements and resources necessary to the operation of LRV according to the provisions in the Agreement and in the annexes, throughout the Concession period.

The implementation of the LRV must be based in its respective Executive Project, prepared according to the guidelines contained in Section 2 - OBLIGATIONS OF GENERAL CHARACTER and presenting it in advance to the Inspection for acceptance. IT must meet the standards of the Brazilian Association of Technical Standards - ABNT, as well as observe the provisions contained in the Technical Documents for Urban Mobility Projects - Light Rail Vehicle, prepared by the Ministry of Cities in December 2016.

The appropriate environmental standards must also be complied with, as established by the managing agencies of environmental policy with jurisdiction over the areas purpose of Concession.

As already described, the services and Implementation works of the LRV have duration limited to 24 (twenty-four) months, and the Concessionaire must prepare and present to the Inspection the corresponding as built, consolidating all services effectively performed, all operational equipment implemented and all the rolling stock provided.

10. Physical Structure

10.1. Preliminary works

10.1.1. Dispossessions

Before the assumption of Concession by the Concessionaire, the Granting Authority will be liable for the arrangements necessary to the declaration of public utility of the properties necessary to the Implementation of the LRV.

The Concessionaire will be liable for, subject to the provisions of applicable legislation, promoting the dispossessions, institutions of administrative easements or administrative limitations to the right of property, amicable and judicial, arranging the dispossession of the referred areas, bearing with the resulting expenses, subject to the provisions contained in the Agreement. There are also irregular occupations in the range of utilization of the way existing in the Suburbs Train, and the Concessionaire is liable for arranging the eviction of these areas, through fair indemnification of improvements, subject to the provisions contained in the Agreement.

For the realization of all works and payment of indemnifications, the Granting Authority estimated the realization of expenses in the amount of R\$ 30,000,000.00 (thirty million Brazilian Reais). The realization of expenses by the Concessionaire in a different amount will give rise to re-composition of the contractual economic-financial balance, in the form established in the Agreement.

10.1.2. Interferences

The Concessionaire must arrange, immediately after the signature of the Agreement, the survey of interferences with the public service networks existing throughout the LRV Line. The Concessionaire must, throughout the implementation of the LRV, relocate, reallocate or remove these interferences, after preparation of specific project, jointly with the responsible companies.

The relocation of interferences must allow that the realization of eventual maintenance services in third parties' networks do not cause impact in the implementation or operation of the LRV. Upon the occurrence of transversal crossings with interferences, they must follow the technical rules on depth, minimum height and constructive methods.

The Concessionaire must provide sufficient resources for the works related to all interferences found in the Implementation of LRV, which will be under its sole and exclusive liability.

It is presented in Appendix B - Registration of interferences contained in Annex 4 - Reference Project to the list of interferences found, as well as the registrations identified in interferences of public services. These registrations will merely serve to support in the identification of interferences, not constituting responsibility of the Granting Authority the accuracy and integrality of information supplied by the concessionaires of public services.

10.1.3. Other services

Other preliminary services must be provided for the Implementation stage, such as the installation of work sites, mobilization and demobilization. The mobilization consists in the implementation of services and general arrangements necessary to the beginning of execution of the work, identification and legal regularization of the areas of sites, payment of taxes and licenses. It also comprises the allocation to the worksites of the supervision, technical and administrative personnel, of tools and equipment provided for initial works and the diligence and implementation of legal arrangements for registration of work in the competent agents such as CREA, City Hall, etc.

The Concessionaire must keep in the works a qualified personnel, in compatible specialization and quantity with the nature and specificity of services, with capacity to perform the works according to the requirements of the Executive Project and service to provided deadlines.

The demobilization consists in the operation, according to the conclusion of service fronts of the work, removal of installations from worksites, removal of available and unserviceable materials. It also comprises the re-establishment of original conditions of the areas where the temporary buildings and facilities of the work were implemented.

The installation of worksites must be performed with adequate and necessary areas and utilities for the perfect functioning of all sectors of the work, such as offices, rooms for technicians, office for Inspection, warehouses for materials, workshops, machinery and pump houses, material technology laboratories, nursery room for first aid, labor safety, refectories, dressing rooms, toilets, accommodation and other facilities necessary to its good functioning.

The central industrial facilities must also be provided for support to the activities of concrete, form, framework, pre-manufactured elements and others, as well as reservoirs and silos for storage of water, cement and aggregate. It must also be foreseen a room for service to suggestions and complaints, with exclusive telephone line for customer service. All standards, safety devices and regulations from the Fire Department and Ministry of Labor must be fully met, and the Concessionaire is the sole liable for the fulfillment of all appropriate requirements.

It is included in the installation of worksites the lease and cleaning of the land for implementation of buildings and execution of temporary hydro-sanitary, electric, lighting, telephone and safety installations, in addition to the management before public service

providers and to the public agencies in general for attainment of the due authorizations and licenses. The worksites, the supporting sites, the warehouses, the installations and perimeter of the work must be fenced, in order to protect, signal and avoid the access of people or vehicles in the areas under intervention.

For small size, short duration services that do not present risks of any nature, portable fences may be used, relocated upon its conclusion.

The services that interfere with traffic or provoke restriction of the circulation area of vehicles or pedestrians may only be performed after prior consultation and authorization of competent agencies, in addition to installation of workmanship signaling. Whenever necessary, the signalers must be allocated and maintained, duly trained and authorized by competent agencies, with flags, lanterns or other safety provisions for protection and guidance of pedestrians and vehicles.

10.2. Embankments and containment structures

The current line of the Suburbs Train in the stretch Calçada-Paripe, between stakes 360 to 480 and 560 to 645, is very close to the coast. In these stretches, containment structures of land have been built, such as retaining wall in mortared stone.

These containments are compromised in several points basically by undermining of the wall base by action of the sea, in case of stone walls, or by oxidations of stays and erosion of contained material. In this stretch there will be necessary punctual interventions for recovery of small bridges and culverts.

10.3. Permanent Way

The Concessionaire will be liable for the implementation, qualification and re-qualification of the entire path of Permanent Way according to the guidelines contained herein. The LRV must operate in a segregated path, according to Appendix A - of Exhibit 4 - Reference Project, with some passage points of pedestrians and crossing with road traffic. The physical segregation must be performed in order to prevent the invasion of the Permanent Way by other vehicles and make the passage points compatible, when necessary.

The project prepared by the Concessionaire must use embedded rails, which will facilitate the crossing of the path by pedestrians and vehicles, when necessary. The adjacent surface to the rails must use coatings that enable low maintenance efforts and great resistance to support the flow of vehicles and pedestrians, respecting the necessities of permeability and draining.

The Concessionaire must contemplate in its project of Permanent Way the installation of multi-ducts, which serve as path for the energy cables and other systems necessary for the LRV system, especially the optical fiber cables, specified under the scope of Telecommunications .

The geometric project of Permanent Way must be compatible with the selected Rolling Stock. The dynamic feedback of the vehicle must also be considered for dimensioning of width in the curves of the path, considering the minimum radius of curve throughout the path and the parking lot.

10.4. Constructions

It is foreseen the execution, by the Concessionaire, of all Stops and operational and administrative buildings necessary for the operation of the LRV, including construction of the facilities of the Maintenance Patio and Operational Control Center (CCO), as provided in Annex 4, for maintenance of the rolling stock of the entire LRV.

The buildings must be built with top quality material. The buildings project must, whenever possible, value the natural lighting and ventilation of the environments. In general and especially in the Stops, the following aspects must be considered: sustainability, accessibility, design, safety, physical segregation, comfort, functionality and possibility of commercial exploitation of its space.

10.5. Surroundings

The Concessionaire must promote the urban treatment in the surroundings of the areas of stops. This treatment must take in consideration the safety, accessibility and experience of LRV users. The understanding of the surrounding and adjacent areas is defined in Exhibit 4 - Reference Project, in its item 16.

In the security aspect, the characteristics that take better lighting in crossings and access points must be contemplated, as well as pavement allow the circulation of users and other transportations without offering risk to them or to the operation of the LRV and obstacle free

areas for circulation of people. In the points where there is necessity for greater security actions, delimitating fences must also be installed, where they are necessary for the safety of LRV, its users or third parties.

The lighting of the surroundings must have the objective of propitiating safety and also to facilitate the movement of users. To that end, the lighting must be design to guide the passenger flow and facilitate the identification of obstacles by pedestrians. The lighting project must prioritize the traffic of users and pedestrians, not the traffic of vehicles.

In order to guarantee the accessibility to users, the surroundings of access points to LRV must present the necessary infrastructure to carry users with special needs and people with reduced mobility. The infrastructure provided must also include tactile floor, access ramps and railings according to accessibility standards. The levelling of platforms with the sidewalk and passage points must also be planned in order to propitiate greater rapidity to the system and facilitate mobility in its surrounding. The levelling may also be considered in the project prepared for the sidewalks, which may be built without discontinuity or degrees for the pedestrian. The entire implementation project of the LRV must follow standards established in NBR 9050 - Accessibility to buildings furniture, urban spaces and equipment.

The urban furniture used in the surrounding must contribute with the project's concept, in order to propitiate security and mobility, in addition to a good user experience, in general. To that end, the standard of furniture used must be approved by the Granting Authority. The entire urban furniture under the responsibility of the Concessionaire must follow the standard established in NBR 9283 (1986) - Urban Furniture.

Another aspect that must be contemplated in projects prepared by the Concessionaire is the vegetation. The use of vegetal coating in the surrounding will have as objectives to reconstitute the vegetation affected by the works. Whenever possible, the existing vegetation in the places affected by works must be reutilized.

The use of vegetation that allows easy conservation must be foreseen, avoiding draining problems. The projects prepared must be integrated in order to prevent that the implemented vegetation does not cover the lighting of sidewalks and surroundings.

The architecture and urbanism projects of the surroundings must also contemplate the qualification of sidewalks, characterized in three lanes: the service lane, the free lane and the

transition lane. The service lane must contemplate the adjacent area to the curb, where the furniture items implemented must be located, including trash cans and light posts. The free lane must be dedicated to the circulation of people, free from interferences and obstacles that impair the circulation of pedestrians. This band may be visually noted to facilitate the visualization by the users.

The transition lane represents the area between the free lane and the buildings must be designed to enable the transition in indentation areas or where there are places of commerce and services, with entry and exit of people. This lane may be used for allocation of some elements of furniture such as announcements, tables and chairs.

The pavement of sidewalks must be designed with antiskid, firm and stable material, to guarantee the safety of users. The stability of the pavement is also important to guarantee that materials do not come off and obstruct the rails, causing accidents with the trains.

The Concessionaire must design the inclination of sidewalks to ensure the adequate drainage for the materials, directing the water flow for gardens and rainwater drainage systems.

The sizing of LRV sidewalks must also respect the requirements of the Fire Department and other competent authorities on the distance between the catenary contact supply wire and the facades of real estate properties.

The Concessionaire's obligations regarding the surroundings are restricted to the realization of initial investments, therefore, not contemplating coatings, as well as the maintenance of interventions performed throughout the Concession.

10.6. Systems

For a safe, efficient and comfortable circulation condition, it is necessary the acquisition of adequate operating system, integrated between themselves, which complement each other and may interact with those that will be installed in the vehicles.

In the relation rolling stock, permanent way, stops and operational centers, there are processes and procedures of information, control, signaling, warning and transmission of messages or command signs, which require the integration of a set of independent and specific systems, adequately connected and adjusted to promote and guarantee safety and even emergency conditions.

The Concessionaire will be liable for implementing the following systems according to its specifications, in addition to the provisions in Annex 4 - Reference Project.

10.6.1. Telecommunications systems

The Telecommunications Systems for LRV are necessary to provide safety, operability and comfort to passengers that use the LRV as means of transport. For integration of LRV systems, the Telecommunications Systems will also be controlled in an integrated manner in the CCO and Maintenance Patio, where its main equipment must be located, including managers, concentrators, servers and recorders of audio and video.

The secondary equipment such as local servers, when necessary, and other peripheral equipment, such as telephones, video cameras, speakers, noise sensors, amplifiers, panels with Light Emitting Diode (LED), Man-Machine Interface (IHM) of operation, switches, among others that may be distributed in the CCO, in the Patio, in the stops, throughout the ways, electric feeding substations and other locations with necessity of support from the Telecommunications System.

The Telecommunication System will have a platform based in technologies updated and consecrated predominantly Transmission Control Protocol / Internet Protocol (TCP/IP), Ethernet 10/100/1000 self-negotiable, using for feeding of its peripherals the system Power over Ethernet (PoE) where applicable, aiming at minimizing the infrastructure and perfect integration between the systems due to the necessities of sharing, compatibility, selection and integration of devices between the several systems and subsystems.

The set of Telecommunications Systems must present the following minimum characteristics:

a. Telephony

For the service of necessities of telephone communications turned to LRV operation and its management, the Concessionaire must implement a Telephony System, with subsystems of administrative telephony and operational telephony. The subsystem of administrative telephony must meet the necessities of internal and external communication of its several administrative units, while the subsystem of operational telephony will meet the necessities of communication directly related to the LRV operation, as the communications between CCO, the Maintenance Patio, etc.

The Telephony System must use a private telephone switchboard (PABX), equipped with a matrix of digital temporal switching controlled by a stored program (CPA-T), having an advanced software project, a protocol compatible with the interconnection of the type digital network of integrated services (RDSI). The switchboard must be interconnected to the public network, aiming at extending the service for service to the users, for the utilization of free telephone service (0800), as described in item 10.7. The private telephone switchboard must still perform the gateway function of voice IP, connected to the Transmission System, in order to enable the communication of the CCO with the other operational branches of telephony.

b. Digital transmission

The operational and administrative areas must be interconnected by a high-speed Transmission System, which will integrate all other systems in real time. The transmission must be performed through optical fiber, with, at least, one pair of cables, in paths and stops, as a safety measure for possible cases of disruption. The network with exclusive fibers may be used for systems that require high reliability and that even are not compatible with the available channels, as well as to those that justify technically and economically its application.

Additionally, the Concessionaire must include in its project the implementation of ducts, sub-ducts, fiber optical cables, as well as passage boxes in splices stretches. There must be contemplated 18 pairs of optical fibers for private use of the Government of the State of Bahia.

The infrastructure of fiber optical wiring and the Transmission System must follow the definitions for implementation of Telecommunication Systems of the following standards and standardizing agencies:

- a. ABNT - Brazilian Association of Technical Standards
- b. Telebrás – Telecomunicações Brasileiras AS
- c. Standards ISO4427 and DIN8074

The cables intended to the use by the Government of the State of Bahia must obey the following specifications:

- Subterranean Optical Dielectric Cable Against Rodents - Flame retardant
- Cable Designation: CFOA-SM-DDR-G-Z-RC
- CFOA - Fiber optical cable coated in acrylate

- SM - Optical fiber type: SM (singlemode)
- DDR - Dielectric duct protected against rodent attacks
- G - Jelly filled
- Z - Number of optical fibers
- RC - Flame retardant

Application: Indicated for external installations such as cable for network of transportations in urban junctions or access in subscribers' networks. It can be installed in duct lines or aerial lines wrapped in a string.

Jelly filled core protected against penetration of humidity with external flame retardant coat. The Cable must be totally anti-rodent dielectric and support high temperatures.

Active network equipment must be installed in each Stop, in the Maintenance Patio and in the administrative center. A Network Management Center must be installed in the CCO to offer the management, configuration and supervision resources in an integrated and organized manner, propitiating transparency and greater safety to the other applications.

The connection between equipment belonging to the various systems and the distribution system in Stops and in the CCO must be performed through a structured network. This network must also perform the connection between the servers of the corporate network and other planned systems, such as ticketing and collection.

c. Radio communication

A Radio communication System must be installed by the Concessionaire, constituted by a central station in the CCO, with automatic commutation and management terminal for the network, in addition to repeater radio stations, base radio stations and VHF mobile bases for all compositions of the LRV, in addition to portable transceptors. The objective of the System is to make the communications between the compositions, the CCO and the Maintenance Center, as well as enabling the efficient communication with the maintenance teams and the operational agents.

The Radio communication System must ensure operational agility, due to the rapidity and flexibility in contacts. It must be constituted by mobile stations (vehicles) and portable (individuals), which must operate in a frequency to be defined by the technical project of the

network. This project must allow all operational functions to communicate with the CCO and between themselves.

The attainment of operation frequencies and operation license of the mobile radio service must be required by the Concessionaire, with the preparation of the technical project and protocol before ANATEL, in a timely manner, so the system is in operation until the Implementation.

d. Timing

A Timing System must be implemented by the Concessionaire in order to synchronize the times in all operational facilities of the Concessionaire, offering thus unified, accurate and reliable time information to its users and its administrative, operational and maintenance teams and all equipment involved in the operation. This system must synchronize the signal reception that will command digital slave watches in the CCO and the others, in Stops and other operational installations.

The Master Clock will be synchronized through GPS - Global Positioning System, and it will send the synchronism signal, through the Optical Transmission System, to the secondary clocks installed in the stops, within defined synchronism and communication standards. These secondary clocks will synchronize the digital slave clocks. The Master Clock must have its own time base, which enables an accurate operation of the system in case of loss of satellite signal.

e. Sound

The Concessionaire must install a Sound System, with complete audio system for the Stops and all equipment necessary to the operation of the sound system and centralized chronometry. The System must allow to the CCO to issue pre-recorded warnings and messages for a single Stop, for a set or for all Stops, according to the necessity. The notices emitted in the CCO (both generated by the operator and the pre-recorded ones) will have priority over the notices emitted in the Stops, if appropriate. The use of background music in Stops will be optional. The background music, if appropriate, must be generated from appropriate medias (digital or magnetic) and transmitted by CCO. Electronic panels integrated to the CCO must also be installed, which allow disclosure of information for the hearing impaired.

f. Control and supervision

In order to enable the more efficient management of the LRV operation and safety of users and facilities, an Electronic Monitoring System (SME) must be installed, based on the technology of Closed Circuit TV (CCTV). This system must allow the monitoring of the main areas of Stops

and ways, of the Maintenance Patio and rectifying substations, from the CCO. The cameras may be mobile, connected to the operating system, enabling the transmission of video signals to the CCO.

The CCTV System is constituted by strategically positioned cameras throughout the LRV system, which signals will be sent by the digital recorder to the CCO through the Optical Transmission System. In the CCO, the signals received from Stops will be monitored through work stations connected in network through the Optical Transmission System.

The monitoring cameras must digitally record images 24 hours per day, 7 days per week, with identification of the camera, date, hour, minute and second. The disk storage capacity, jointly with the compaction algorithm must allow a minimum period of 15 days of recording of the images of all CCTV cameras.

Cameras for monitoring of the crossings with the public way must also be installed.

The CCO must have work stations available with functions of visualization, access, control and the administration of cameras and digital video recorders (DVR) of the Stops. From these work stations it must be possible to access the images of all live cameras, as well as the recorded images. Any image may be seen and reviewed in the CCO room, with mechanisms that facilitate the search for date and time and by movement detection.

In the CCO work stations dedicated to the accompaniment of CCTV, it must be possible to configure the visualization of the cameras in several forms in the same screen of the monitor as 16 images, 8 images, 4 images or full screen.

Through a graphic interface, a synoptic panel installed in the CCO must present, in real time, the location of cameras and indication of the operation status of the equipment of the main console and commutation matrix.

g. Recording

The Concessionaire must implement a digital voice recording/reproduction system. The recording of all communications between the compositions and operational supervision must be performed, in order to guarantee traceability and survey of the exchange of information between the parties, in case of occurrence of anomaly or accident.

The Voice Recording System will interrupt the Rewriting system of Voice will record, uninterruptedly, all the voice communications that involve the direct traffic management. All information collected and the actions adopted in response must be registered, in an inviolable manner, for at least 20 days, and integrate the data bank, serving as basic input for the strategic works of planning and operational and safety control.

10.6.2. Electronic ticketing and collection system

The basic purpose of the Electronic Ticketing System will be allowing the control of passenger access to the LRV, from the registration of information for statistic and planning purposes, until the tariff collection resulting from its use.

This system will be composed by devices that constitute a blockade of separation between the free and paid areas of the boarding and disembarkation platforms, as well as ticket selling and consulting machines. Each blockade must have the minimum capacity of controlling the flow according to the demand of passengers per hour in the entrance and exit in each stop.

The electronic ticketing system operates with an architecture of open systems, in a client-server computer model and it meets the specified requirements of capacity, connectivity and modularity, in order to ensure the future evolution of the system.

The electronic ticketing system to be implemented by the LRV Concessionaire must provide the inter-operability with the current system of the Subway System of Salvador and Lauro de Freitas - SMSL, Collective Transportation System by Bus - CTSB and the system of Metropolitan bus, and it may be integrated with other means of transport.

10.7. User service systems

The Concessionaire must implement the User Information and User Complaint and Suggestion Systems, and the provisions in Exhibit 6 - Performance Evaluation System must be observed.

10.7.1. User information system

The Concessionaire must implement a structure able to produce and edit a periodic bulletin, to be freely distributed to the users, especially in stops, disclosing the important aspects of Concession, news on services under execution, in addition of matters on diverse subjects related to the LRV.

The User Information System also involves the services offered through radio (information provided to the broadcasting companies), through the Internet, fiber optics network, telephone, multimedia system, among other devices to be implemented.

10.7.2. System of claims and suggestions from users

The Concessionaire must build a structure able to the receipt, analysis, decision-making and issuance of response to the complaints and suggestions issued by the users.

The Concessionaire must receive the complaints and suggestions through various communication channels, which must be at the disposal of users until the end of the Operation stage of the LRV, including:

- Letters or emails, delivered directly to the Concessionaire;
- Letters, emails or other records, delivered directly to the Inspections, posteriorly forwarded to the Concessionaire;
- Register books of complaints and suggestions to be put at the disposal of users in Stops; and
- Gratuitous telephone service (0800).

10.8. Administration system

As a result of the necessity of managing the Concession, the Concessionaire must provide furniture and equipment for this task. The types and quantitative of furniture and equipment that the Concessionaire demonstrates to be enough for the performance of its administrative activities must be sufficient, for the entire Concession period. The administrative vehicles must be specified jointly with the other operational vehicles.

The furniture and equipment considered herein must be used for the Concession administration tasks. In this case, the Concessionaire must indicate the necessary, as a result of provision of administrative structure.

10.9. Safety and surveillance system

The Concessionaire must provide a safety and surveillance structure, which will inspect the physical structure and all areas of the LRV under its responsibility. Under the terms of the Federal Law No. 6.149, dated 12/02/1974, the Concessionaire must organize and keep its own

security body, which will perform in all areas under its responsibility. The performance of the Security Body must aim at the following objectives:

- Safety of users;
- Discipline of users;
- Prevention and repression of crimes and misdemeanors in the LRV facilities and preservation of property;
- Maintenance or re-establishment of the normality of LRV traffic, before any fact or emergency with a police character that may prevent it or disturb it;
- Immediate removal, regardless of presence of police authority, victims, objects or vehicles which, in case of accident or crime, are under the road bed, in the train, or in operational areas, impairing the traffic of LRV;
- Arrest of criminals and offenders caught in the act;
- Seizure of instrument, objects or values related to crimes or misdemeanors, delivering them, jointly with the offender, if appropriate, to the competent police authority;
- Isolation of accident, crime or misdemeanor locations, for purposes of expert verifications, as long as it does not result in stoppage of LRV traffic;
- Inspection of the operational areas, aiming at the localization of suspect objects resulting from threats to the operation of the LRV;
- Realization, if necessary, of first aid to possible victims;
- Transportation of possible wounded people to the emergency room or hospital, maintaining the custody of their belongings;
- In case of fatal victims, their removal to a location where there is no interference with the operation of the LRV service; and
- Issuance of a Police Report, for a timely forwarding to the competent authority and supply to the interested parties.

The employees of the Safety Body must wear standardized uniforms, presented and accepted by the Inspecting, and no other object must overlap them except for those provided in operational procedure. The specifications of equipment used by the Safety Body must be accepted by the Inspection.

The use of safety equipment has as basic purpose to guarantee the integrity of users, employees and preservation of the LRV's assets.

The Concessionaire may, in the interest of public safety, allocate facilities in its service or operational areas for the installation of Military Police posts with the intent of supporting the preventive and repressive policing.

10.10. Operational and administrative vehicles

Due to the necessity of administration and operation of the Concession, including its conservation and maintenance, the Concessionaire must provide vehicles for this task. The types and quantitative of furniture, equipment and vehicles that the Concessionaire demonstrates to be enough for the performance of its administrative activities must be sufficient, for the entire Concession period.

The vehicles must have facilities for transportation of luggage and also, service to accessibility standards, with special attention to disabled people.

10.11. Stops

The stops will be partially open facilitating the circulation and ventilation, but maintaining the access blockade. The stops must have devices for access blockade of users to the paid areas.

The stops will be composed by an elevated platform, in the limit of the platform floor with the train, there will be an identification lane, in yellow, to prevent possible accidents. A special floor for orientation of people with special needs will be placed.

The facilities of visual programming and signaling must include information systems that support the passengers in the comprehension of the LRV service. This information may be static, including maps of lines and stops, its surroundings and other transportation systems that operate in the region, and dynamic, such as electronic panels that provide the times of the next trains or real-time warnings about the operation. The information systems may also establish the provision of touristic information about the city of Salvador, especially the region of the railway suburb, as well as advertising space.

In order to provide security to the users and facilitate the action in cases of operational necessity, the stops may also have video cameras connected to the Operational Control Center

- CCO, which will perform the monitoring of images and will take the appropriate measures, when necessary.

The self-service machines must be installed on the outside of the stops for sale of transportation titles (tickets).

10.12. Rolling stock

In this Chapter, the acquisition of the rolling stock to be acquired by the Concessionaire and that are necessary to the operation of the LRV is provided, according to the performance indexes required and according to its operational program, observing still the quantitative established in Exhibit 8 - Demand and Reference Fleet. The specifications of cars and their component equipment must be contained in the specifications book. The realization of all tests must be previously informed to the Inspection, which must accompany them and, if appropriate, refuse them, with presentation of the due justifications.

In addition to the specifications, all equipment must have operation and maintenance manuals, to be presented to the Inspection. All technical, operational and administrative procedures, regarding the operational functions, must be substantiated in a proper manual, which must be prepared by the Concessionaire.

The technology to be adopted for conception and project of trains and its systems must be digital, current, proven and with experience of utilization of national or international LRVs. The utilization of used, obsolete, discontinued products or with foreseen production closing will not be accepted.

The materials used in cars and equipment must be of the non-propagating flame type or issue high density of smoke. The values of time of propagation and density of smoke established must be proven in tests, according to the standard NBR 9442. The isolation of wires and cables must be of material of the non-propagating flame type, low emission of smoke and exempt from halogens. The electric and electronic equipment must meet the requirement of electromagnetic compatibility tests of vibration and shock.

The Concessionaire may define the model and manufacturer of the LRV to be acquired and implemented, as well as the specification of the gauges used in the permanent way, as long as the obligations, the ones in the Concession Agreement and other exhibits are met, especially

Annexes 8 and 4. The specifications of the Rolling Stock and gauges must be compatible with the infrastructure implemented, allowing adequacies for expansion of the system capacity, if necessary. These adequacies may include increase of the compositions, expansion of stops, etc. The Rolling Stock selected must also be adequate to the local necessities, with air conditioning adapted to Salvador's weather and, above all, to the expected volume of passengers, including in rush hours.

The Operation Plan to be presented by the Concessionaire must discipline all transportation conditions, including for transportation of specific load, times and wagons.

10.13. Accessibility guidelines

The entire project of the LRV must consider accessibility guidelines, with purpose of universalization of access to the service provided. These guidelines must facilitate the use of the LRV and the communication for people with reduced mobility and people with special needs.

The entire project of the LRV must meet the guidelines of accessibility provided in Decree No. 5296 dated December 2, 2004 and in Federal Laws No. 9503, dated September 23, 1997 - Brazilian Traffic Code No. 10048, dated November 8, 2000 and No. 10098, dated December 19, 2000 and Standard NBR14021. The public areas must meet the standard NBR 9050. In equipment where the user utilizes self-service, the standard NBR 15250 must be met.

The accessibility elements that must be implemented by the Concessionaire include access ramps, tactile floor, walkways and specifications of stairs, handrails and railings.

10.14. Reuse of existing infrastructure

It is possible, at the discretion of the Concessionaire and through prior approval from the Granting Authority, the re-use of part of the existing infrastructure of operation of the Suburb Train - such as rails, sleepers, path ballast (as long as it is not contaminated), energy systems and others - as long as it is in usage conditions and that it does not imply in the compromising of the quality established for operation of the LRV.

The re-use of the existing infrastructure which lifespan is exhausted until the end of the Concession will also import in the obligation of replacement of the re-used infrastructure for a new one until the end of the Concession term, under the Concessionaire's risk. The

Concessionaire must submit, jointly with the request for approval of re-use of the infrastructure, a substitution plan for a new one during the term of the Concession.

SECTION 4 - OPERATION OF THE LRV

11. Operational requirements

11.1. General Considerations

The operational requirements listed herein represent the minimum quality requirements to be fulfilled in the operation and other services provided by the Concessionaire during the term of the LRV Concession agreement. The Concessionaire must undertake to fulfill these requirements, providing services with the adequate quality and use all its experience and all technological resources to overcome them.

An Operation Plan must be prepared by the Concessionaire containing the operational guidelines that will be adopted by the LRV during the Concession period, whether in normality situations or in contingencies, according to the technical, operational and constructive characteristics of the systems, rolling stock, equipment and facilities that will be implemented.

During the term of the Concession Agreement, the Operation Plan must be periodically reviewed, aimed at adapting it to new environmental and/or technological scenarios. If necessary, due to exceptional reasons, temporarily operate at odds with the current version of the Operation Plan, the Concessionaire must present justifications for such fact to the Granting Authority and, if necessary, prepare specific guidelines to be adopted in these conditions of exceptional operation.

During the entire Operation period, the Concessionaire must provide to the Granting Authority operational reports containing information with daily granularity, minimally including the data used for determination of Performance Indicators, whenever available, in addition to other operational information required by the Granting Authority.

11.2. Service Provision

The Concessionaire will develop its Operation Plan in order to ensure the Granting Authority that:

- The LRV vehicles will provide boarding and disembarkation of passengers in all stops that are in operational state. The boarding and disembarkation will not be possible out of the stops, in situation of operational normality. It is possible that the service will not be provided upon the occurrence of motives listed below, which must be clearly informed to the users:
 - End or interruption of the operational service;
 - Adjustments in the time frame or operational strategy;
 - Failures;
 - Incidents.
- The vehicles may only operate with all doors closed and perform the operation of doors (opening and/or closing) when stopped;
- The time in which the vehicle remains with open doors for boarding and disembarkation of passengers will not be lower than 10 (ten) seconds and the total time of stops, including the operations of opening and closing of doors, will not be lower than 15 (fifteen) seconds. The time for boarding and disembarkation of passengers with the vehicle stopped with open doors will be measured between the total opening of doors and the beginning of emission of warning signs (audible and visual) of closing doors.
- The conductors will fulfill and respect traffic signaling, maintaining speed compatible per stretch and safety distance between the vehicles, respecting curves, pedestrian crossings and crossings.

In occurrences that may compromise the safety of users or in situations of technical failure, the Concessionaire must neutralize the causes of incidents, and to that end it may:

- Release or close the access blockades of the stops
- Fully or partially interrupt the service provision
- Perform evacuation of LRV users, as long as it conducts it with safety until the nearest stop



- Perform tow of the LRVs with or without passengers, as long as traffic safety conditions are ensured, of coupling and tow
- Provide services in simple way, as long as the traffic circulation safety conditions are ensured

11.3. Use of transportation titles

The Concessionaire undertakes to transport the users within the following principles and considerations:

- There will be no passage on the inside of the vehicles, and the users that intend to board in the LRV must acquire transportation title in the box offices, self-service machines of the stops or other regulated points of sale;
- Every user with a valid LRV transportation title is entitled to travel in the LRV (including gratuitousness and discounts guaranteed by law);
- All the users that intend to board the VLD must use their transportation titles in the access blockades of stops, regardless of the charging regime used (full tariff, integration or gratuitousness);
- Every user that is not bearer of transportation title or that did not use its transportation title in the access blockades and not subject to regularization of such situation, at the moment, must be invited to leave the vehicle or the stop by employees of the Concessionaire, and it must be required, if necessary, the collaboration of operational agents of the Concessionaire. The offender will still be subject to the appropriate legal penalties. The Concessionaire must perform educative programs before the users and the population, with the purpose of instructing about the LRV and its ticketing system;
- All policies and regulations instituted by the State authority regarding the intermodal integration will be fully adopted by the LRV, in force in the collective public transportation systems.

In case of a situation that require the evacuation of the vehicle in operation, the passengers must be informed and oriented on how to proceed safely. In these cases, the evacuation of the vehicle must be preferably performed in a stop.

The Concessionaire must apply procedures that ensure to the Granting Authority and users affected by the non-conclusion of the trip that they will not be financially penalized for this incident. The procedures to be implemented must enable the reimbursement of users through credit in the transportation titles used in the non-concluded trip and the credits performed must contemplate amounts equivalent to those previously debited.

11.4. Stops

The stops represent a first contact of the user with the LRV. Therefore, it is necessary that the Concessionaire maintains the stops considering not only the functional aspect of access to the vehicle, but also user experience.

The Concessionaire must invest in the visual aspect, in the adequate insertion in the urban route, in the landscaping adequacy in the surrounding of the stops and in the equipment at the disposal of users.

With the advance of dissemination of the LRV as means of transport of the population, the stops will tend to become not only access points to the LRV, but location references in the city and places where useful services to the community in general are found.

Therefore, the Concessionaire will be able to promote:

- The implementation in the surrounding of the stops of a visual communication that informs its location and guides the access to them;
- The installation of services of public use, such as trash cans, clocks, thermometers, etc.

The stops, with regard to the operational aspect must have, still, an efficient system of information to the user, including:

- Panels of fixed messages;
- Panels of variable messages.

The panels of fixed messages must contain, among others, the following information:

- Stop name;

- Traffic direction;
- Types of tickets, tariffs and types and conditions of the gratuitousness;
- Map of the stops of LRV;
- Location map of the stop and main points of interest in its surrounding;
- Frame of transfer possibilities in the LRV and intermodal integrations in its surrounding;
- Picture with the expected intervals in peaks and valleys (business days and weekends);
- Other orientations at the Concessionaire's discretion.

The variable message panels must transmit information such as:

- Time;
- Temperature;
- Waiting time expected for the next vehicles;
- Educative messages;
- Institutional campaigns of public interest;
- Information about possible traffic delays and interruptions.

The stops will have platforms with function of allowing, on an easy, safe and comfortable manner, the access of all users to the vehicles. The Concessionaire must design in the extremities of stops, ramps that facilitate the access to it and ensure, even in the worst conditions that the track and the vehicle may present, that the unevenness between the platform floor and the inside of the vehicle meets the parameters of universal accessibility, according to the ABNT standard and that the distance between the vehicle and the platform does not compromise the safety of the operation.

The stops must be covered to protect the users from adverse weather condition and the direct incidence of solar rays and they must have banks and/or support equipment intended, mainly to

users with special needs. There must also be blockades to prevent the access from users without transportation titles.

The Concessionaire must consider the lighting of the stops, not only as an urban necessity, but as a vital component for the safety of users and the LRV system, throughout the entire operation period. The correct lighting of the stops must collaborate to discourage possible actions of theft and vandalism. The lighting and/or a specific signaling may also be used as one more resource intended to inform the population that a LRV vehicle is in movement in the Stop region.

The Concessionaire must provide a professional responsible for the operation of each stop during the operation. The stop agents must guide and support the users, in addition to acting in emergency situations or contingency to maintain the safety and normality of the operation.

The stop agent shall have the following activities as attributions:

- Orient the users to keep the circulation areas unobstructed
- Support the movement of the users that have limited mobility
- Provide information to the users
- Guide the boarding and disembarkation, prioritizing people with special needs, elderly, accompanied children and pregnant women
- Act to keep comfort levels, acting in cases of tumult during boarding and disembarkation
- Act to avoid the circulation of users or unauthorized personnel out of the crosswalks and other areas that offer risk
- Remove obstructions that prevent the regular movement of the LRV

11.5. Cleaning

The cleaning activity is one of the most sensitive and impactful points in the perception of quality of a public transportation system.

The Concessionaire must adopt a systematic of cleaning and sanitation of its operational installations (including stops and Maintenance Patio) and vehicles on the inside and outside.

Special emphasis must be given to the stops for the fact of being locations with great visibility for the population of its surrounding and with the great traffic of passengers.

The outside cleaning of the vehicles and internal manual cleaning must be preferably performed in a path that allow the recovery of wash waters.

There must be adequate treatment for harmful residues to the environment, which must follow the standards and rules applicable in environmental legislation.

The Concessionaire must establish quick intervention mechanism that may act to correct problems, caused by users and/or weather events, which occur during the times of circulation, causing to prevail the perception of cleaning and organization.

11.6. Visual communication

The Concessionaire must prepare a visual communication project, which will include the visual standards to be implemented in the LRVs, stops and facilities of the Concessionaire and used in the materials and communication portals of the Concessionaire. The proposal of visual communication of the Concessionaire must be submitted to the Granting Authority for evaluation and approval.

The external visual pattern of the LRVs must be adequate to the local environment, in harmony with the coast line and the region of the railway Suburb. The following must be minimally included:

- Name and logos of the Concessionaire and the State Government of Bahia
- Indication of the destination of the LRV
- Indication of car number
- Luminous indication of the opening of doors

The internal visual communication of the vehicles must be focused to guide the passengers in the use of the LRV, using plates, adhesives and panels. The visual communication items must minimally include the following information:

- Indications for use of doors
- Luminous indication of the opening and closing of doors
- Indication of entry and exit direction
- Indication of the train destination
- Indication of the map of stops
- Indication of the location and instructions for use of the fire extinguishers
- Indication of opening of emergency doors
- Indication of warnings and rules of use of the LRV
- Instructions for emergency situations
- Indication of the existence of security cameras
- Indication of car number

11.7. Exploration of advertising

The Granting Authority will authorize the Concessionaire to explore, for advertising purposes, locations in stops, inside and outside of vehicles.

The advertising must obey the standards that regulate the sector in terms of ethics, and the common-sense must limit the quantitative of exposed parts aiming at not contributing with the urban visual pollution. To that end, the limitations to the Concession agreement must be obeyed.

11.8. Human resources

The human resources, own or third party, are the personified image of the Concessionaire and they must, therefore, be appropriate to the challenge that they will face.

All employees of the Concessionaire or third-party companies that provide services to it must mandatorily be qualified and technically capable for the performance of its activities.

The Operation Plan to be presented by the Concessionaire must contain the policy that one intends to apply in the capacitation of human resources that it will use.

The behavior of employees and subcontractors of the Concessionaire must be educated, dignified and courteous, in all contact with the public and work colleagues. The aspects of sociability and to serve the public with promptness, in a kind, educated and efficient manner must be prioritized. The following behaviors will not be admitted:

- Smoking in the vehicles
- Activating the horn or any other equipment unnecessarily
- Use covers, over the driver's seat and bulkhead curtain
- Unnecessarily chat with the users
- Use slangs and inappropriate language during the fulfillment of its functions
- Allowing any type of commerce, irregular advertising or beggary on the inside of trains
- Attend service under influence of alcohol or drink alcoholic drinks during working hours
- Use personal audio reproduction devices (such as *mp3 players*, cellular phone devices, etc.)

The Concessionaire's employees, when in service, must be wearing uniforms and bearing, in a visible manner, their badges or specific identification parts.

The Concessionaire's employees must receive the personal protective equipment (PPE) and collective protective equipment (CPE) adequate to the realization of its activities. The

Concessionaire will also be liable for training these professionals in order to use such equipment and require its correct utilization.

The badges or identification cards of the professionals of the Concessionaire or subcontractor must minimally present the following information:

- Company name
- Full name of the employee
- Employee's function
- Recent color photo of the employee
- Registration number in the company
- Company's telephone

For legal purposes, the Granting Authority will not make distinction between the Concessionaire's employees and those of the companies subcontracted as service providers.

11.9. Operational Control Center - CCO

The Operational Control Center must operate during the entire LRV operation, including internal activities, not focused on the public, such as parking and maneuver of the compositions. The controllers must have all equipment and furniture necessary for the execution of the control and monitoring activities of LRV operation, in all its amplitude. Dedicated workstations must be provided for this function. The control and regulation equipment must operate in redundancy in cases of occurrence of technical problems or any interruption in the operation of equipment.

The controllers must supervise the operation through video equipment, which will minimally provide images of the following areas:

- Stops
- Entrances and exits of the Maintenance Patio
- Parking ways

- Road crossings

The entire operation of the LRV System will be controlled from the centralized command in the Operational Control Center - CCO. Thus, the CCO must be designed in order to support the functionality of location of all vehicles throughout the main way, parking, maneuver spaces and patios, enabling the realization of the control and operational supervision of the LRV System.

The CCO systems must allow the operator to communicate with the conductors of the LRVs through the radio communication systems to transmit information of stoppage time in stops, delay or advance time in relation to the time table, etc.

The location of the LRVs throughout the path will be made automatically, aiming at maintaining the Centralized Control System informed on the position of each composition. This function must be performed by the Vehicle Location System - "Automatic Vehicle Location - AVL", which must be capable of detecting and recognizing vehicles in the entire stretch of the line, serving as basis for an effective supervision and operational control. The transmission of LRV-CCO and CCO-LRV data must be made through the radio communication system.

The Centralized Control System performs the regulation calculation of train gears in the line from the information sent by the AVL and sends the appropriate information to each LRV. The information (delay time, advance time, stoppage time at stops, etc.) will be received on board and exhibited to the IHM of the cabin.

Through the radio communication system, the CCO operators must establish, in addition to data communication, voice communication with the LRV conductors.

The Centralized Control System of the CCO will also be liable for the supervision and control of the course of LRV, not only on the main paths, but also by the parking lots, dispatch and retreat of LRV in the patio, as well as by the supervision and control of the electric supply system, of ancillary equipment and passenger flow.

The events occurred in the field must generate indications that will be transmitted to the SCC. These indications, jointly with the pre-established objectives, must guide the effective control of the transportation system.

The activities dedicated to the update of information about the services provided must be contemplated in the CCO scope. The CCO must concentrate accurate and updated information

about the LRV operation at all times. The CCO must have the capacity of providing the following activities:

- Send visual and sound messages through the information channels implemented in the stops and LRVs of the sound system
- Update the site of the Concessionaire with relevant information about the operation
- Call the Concessionaire's professionals and escalate actions in emergency cases
- Inform operational or maintenance teams about occurrences and abnormalities in real time

11.10. Maintenance patio

The Maintenance Patio must accommodate the Concessionaire's maintenance staff, including own or outsourced team. Specific services may be performed in other locations, as appropriate.

The operation of the Maintenance Patio must follow the current legislation and the safety criteria presented in the other items hereof, ensuring the prevention of risks to the professionals allocated in the Maintenance of the LRV.

11.11. Operational regulations

The Concessionaire must submit to the appreciation of the Granting Authority, an instrument that defines the behavioral attitudes expected, not only from the system users, but also the citizens in general, especially the part that interact directly with the LRV, raising awareness on the importance of its actions in the quality of service to be provided. This instrument must be an integral part of the Operational Plan.

The regulation must evidence the consequences that the inadequate social behavior will generate in the LRV operation and the inconveniences that it may generate to the users of the service, in the population in general and in the mobility in the region.

The user must be aware that, in last instance, its comfort and safety will be affected when:

- Concessionaire's Employees are prevented from performing their operational functions or in case of damages or inappropriate use of equipment installed in the vehicles, in the boarding/disembarkation locations and/or at the LRV facilities;
- Objects or substances that may occasionally threaten the physical integrity or users or decrease their commodity are transported in the vehicles;
- The users behave in an inconvenient manner in social terms, disturbing the others with their attitudes, acts and actions;
- The users practice acts and/or actions associated to the political or religious conviction;
- The legal orientations and guidelines of any instance of the public administration or the Concessionaire are disrespected.

The regulation to be presented by the Concessionaire must also approach attitudes of the non-user public that may interact with the LRV as pedestrian or conductor of vehicle in the ways surrounding the system.

The introduction of the LRV technology will lead the citizens to the habit of coexisting with vehicles, in which it will not be possible to board/disembark at any point of the course, which may not deviate from obstacles that invade its circulation area and that, due to its dimensions and weight, do not instantly react to the commands from the operators.

Thus, the regulation must raise awareness to the public in general that:

- The necessary space for LRV circulation is not only the one occupied by the rails that are embedded in the way, but by an area that exceeds this lane and that will be materialized in the pavement, whether by paint, short wall, studs or another way of segregation;
- Pedestrians or vehicles that invade the LRV circulation area, disrespecting the signaling (luminous, sonorous or physical), when it is activated, put at risk not only its physical integration, but also the physical integrity of LRV passengers;
- That the placing of oil, stones or other objects in the rails or in the devices of way will be harmful to the circulation of the LRV and may provoke serious accidents;

- That when electric wires, signals or other equipment installed throughout the way, intended to control the circulation of the LRV, the flow of information that protect its circulation will be interrupted, and it may provoke immediate interruption of the stretch affected as an extreme measure to prevent the occurrence of accidents.

In addition to the provision of rules of utilization, the Concessionaire must take the measures to guarantee the safety and comfort of its users, acting to instruct or even avoid the entrance of people that present behaviors that impair the other users of the LRV, including:

- People under the influence of alcohol or other drugs;
- Inconveniently dressed people;
- Bearers of firearms or white weapons (except military, police or people with the appropriate licensed);
- People that inappropriately activate or use the equipment of the LRV;
- People that throw trash or waste in inappropriate location.

11.12. Relationship channels

The Concessionaire will perform its operational activities aiming at reaching, and, whenever possible, overcome the goals and performance and quality indexes in accordance with Exhibit 6 - Performance Evaluation System or others that may be negotiated.

The Concessionaire must offer to the users conditions of expressing themselves and interacting with it, regardless of the formality of opinion polls, as a quick and efficient manner of quickly evaluating and correcting deviations that may be occurring in the established goals.

A service that ensures the return of objects lost by the users, which have been found in the LRV must be provided by the Concessionaire. This will be an important procedure for the relationship of users with the Concessionaire.

Thus, the Concessionaire must implement relationship channels with the users and keep, at a visible location, in the vehicles and stops, information about how such services may be accessed and also information about the relationship channels provided with the same purpose by the Granting Authority.

11.13. Lost and found center

A service with the purpose of recovering lost objects by the user must be implemented by the Concessionaire. A Lost and Found Center must be provided at an easily accessible location to the user for the provision of these services.

The objects must be remitted to the Lost and Found Center in up to 24 hours after its localization by the Concessionaire's employees and they must be stored there for up to 60 days, with exception of perishable objects or objects that offer risk to the public and to the operation personnel. After this period the objects will be treated according to specific procedures according to their nature. Documents stored in the Lost and Found Center that are not redeemed within this period will be remitted to the respective emitting agencies, if possible.

12. Operational Parameters

12.1. Opening hours

The LRV system must operate everyday of the year, from 05:00 AM to 00:00 AM.

12.2. Carousel

Trying to meet the demand projected, under the terms of the provisions in Exhibit 8, three carrouseles have been defined for the LRV Operation:

Carousel 1 - Stretch between the stops from Comércio to São Luis

Carousel 2 - Stretch between the stops from Comércio to Periperi

Carousel 3 - Stretch between the stops from Comércio to Plataforma

12.3. Interval between vehicles (*headway*)

The users of public transportation systems want respect to its right to be transported with comfort, safety and regularity. Thus, the intervals between vehicles must be respected, in order to enable the specified occupation rates.

In the stage of Full Operation the Concessionaire must meet the following intervals between the trains:

- Stretch Comércio – São Luis (carousel 1): 20 minutes
- Stretch Comércio - Periperi (carousel 2): 20 minutes
- Stretch Comércio - Plataforma (carousel 3): 10 minutes

12.4. Occupation rate

The occupation rate (standing passengers per m²) is one of the most easily perceptible parameters by the user of public transportation system and, for that reason, it will be one of the most important requirements to ensure the satisfaction of LRV users. For that reason, the Concessionaire must plan its operation to guarantee the maximum occupation rate of 6 (six) standing passengers/m², and it may reach to 10 (ten) standing passengers/m², in exceptional circumstances, limited up to 15% (fifteen percent) of the operating hours/day of the LRV. This rate must be rigorously managed and, whenever possible, gradually reduced by the Concessionaire as a continuous improvement systematic in the service quality.

12.5. Operational reserve

The Concessionaire must provide an operational reserve of LRV vehicles to serve possible necessities of the operation and enable the realization of programmed maintenances.

As a reference the Granting Authority recommends at least that this reserve is equal to 10% (ten percent) of the total fleet. The Concessionaire may, at its sole discretion, increase the quantitative of vehicles intended to the operational reserve.

The vehicles of the operational reserve may be used, at the Concessionaire's discretion, subject to its operation Plan, exceptionally, in rush hours, for service of the users in the more intense stretches of the LRV.

12.6. Special operations and interruption

The Concessionaire must consider in its Operation Plan the possibility of alterations in the operation hours, *headways*, carousels or use of special regimes, which will be previously defined before the Granting Authority. The special regimes will be defined according to the

realization of events performed in the city or other occurrences, which may demand specifically adjusted intervals to meet exceptional demands or service interruptions.

During the term of the Concession Agreement other changes or special operations may also be previously agreed between the Granting Authority and the Concessionaire, as a result of the adaptation of the user to the new transportation system and to the re-adequacies or modifications in the use of the urban space where the LRV will circulate.

Likewise, the Concessionaire must consider that in the region served by the LRV, the closing of streets may occur as a result of own festivities or local events. The closing or circulations restrictions associated to eventual unscheduled interruptions must be analyzed in advanced and agreed between the Concessionaire and the Granting Authority. The LRV Operation Plan must provide strategies and resources that allow to minimize possible impacts of these occurrences about the network, as well as operations in a differentiated manner as a result of large events and festivities.

Operational re-establishment actions must be performed with the smaller impact possible in the circulation and in the regular activities of the region of occurrence, and the system must provide, in its project, redundancies that minimize the consequences of such events.

13. Maintenance requirements

After the beginning of commercial operation and during the entire Concession period, the maintenance of systems, installations and equipment that will compose the LRV system will be of exclusive responsibility of the Concessionaire.

The Concessionaire, during the Concession period, must be structured to directly execute, or execute through third parties, the preventive and corrective maintenances of edifications, facilities, systems, rolling stock (vehicles) and equipment of the LRV, and it must implement a preventive maintenance program based on inspections, monitoring, reviews and interventions.

13.1. Maintenance engineering

The Concessionaire must create and maintain during the entire Concession period, a technical unit integrated by engineers and technicians, with demonstrated experience in maintenance. This unit will be responsible for developing and improving the maintenance services of facilities,

rolling stock, equipment and fixed systems aiming at ensuring the specified levels of reliability, availability, maintainability and safety.

The maintenance engineering must develop procedures, programming, routines and scripts of preventive maintenance based on the recommendations from the designers / manufacturers / constructors involved, in the practices adopted in other LRV or metro-rail systems and in the experience accumulated by its technicians.

This unit must as well act in the management activities of guarantees, analysis of technical problems and quality audits, as well as proposing to the suppliers of imported systems/equipment, a nationalization program of its components/spare parts.

The procedures, programming and routines implemented must, during the entire Concession period, be evaluated and updated in a continuous improvement procedure, in order to increase the reliability and availability of equipment and the efficiency of services provided to the users.

13.2. Technical documentation

The Concessionaire must create and maintain technical file containing the documentation delivered by the suppliers / manufacturers of the rolling stock and the manufacturers/installers of other systems, installations and equipment. Based on these documents, in the experience of its technicians and in data obtained with operators of equivalent systems already in service, the engineering of maintenance will produce specific documentation for the work of operation teams and field and workshop maintenance.

All the documentation received or developed internally must be technically reliable, correctly preserved, be available to the executing agents and be permanently updated based on the feedback of obtained results. This file will be the technical documentary basis over which the (scheduled and re-establishment) maintenances of the rolling stock, facilities and fixed equipment that will constitute the LRV system will be performed.

13.3. Maintenance scheduling

The basic objectives of maintenance scheduling shall be the safety, reliability and availability of systems, rolling stock, equipment and fixed installations.

The corrective maintenance services must be constituted in eventual interventions, and the Concessionaire must try to minimize its occurrence.

The Concessionaire must prepare its manual of maintenance and operation, which must be forwarded to the Granting Authority.

The Concessionaire, from the operation of the Concession, must forward to the Granting Authority, periodic reports of maintenance that contemplates all preventive and corrective actions of maintenance, performed in it.

The Granting Authority may perform verifications, at its sole discretion, to inspect the systems, the rolling stock, the equipment and the fixed installations, as well as accompanying the preventive and/or corrective maintenance actions.

The scheduled maintenances for the public access areas or that impair the availability of necessary equipment for the provision of transportation service must be performed after the closing of commercial operation. The emergency corrective maintenances must be performed as soon as possible, in order to minimize the effects in the commercial operation of the LRV.

13.3.1. Permanent Way

The inspections of Permanent Way must be performed in a frequency that enables the detection of problems in the way, including minimally the problems regarding geometry, rails, fixations and welds, as well as the drainage devices of the rail bed.

The railroad switching devices (AMV), in turn, must be maintained and inspected with special attention, due to the great necessity of observation for maintenance. Based on the inspections performed in the way, the Concessionaire must program its maintenance actions.

13.3.2. Structures and constructions

For the maintenance of structures and buildings, the Concessionaire must perform the following activities:

- Obtain all necessary licenses

- Request formal authorization from the Granting Authority, minimally presenting project, execution plan, impacts in daily operation, schedule of execution and specifications of the materials and services
- Guarantee the quality of materials and equipment used
- Follow the appropriate techniques and regulations
- Notify the Granting Authority on the conclusion of maintenance works
- Perform inspections of finished works with the Granting Authority
- Request Term of Receipt of the Works/Reforms to the Granting Authority

The approval of services and issuance of the Term of Receipt by the Granting Authority does not imply in any liability to the latter, and it does not exempt the Concessionaire from its obligations.

13.4. Safety guidelines

Any maintenance intervention throughout the operational network may only be performed in accordance with the operational procedures that shall take into consideration not to impair the LRV operation or put at risk the safety of LRV users, of the collectivity in general and the Concessionaire's employees.

In case of necessary interventions for maintenance in the way, the Concessionaire must pay attention to the interdiction and signaling of acting locations, in order to avoid risks to the users, employees of the Concessionaire and pedestrians, as well as to avoid damage to the circulation of vehicles in the region.

It must be established in the preventive maintenance procedures that, after the end of the services, the cleaning is performed in equipment, ways, tunnels, subterranean passages, workshops, patios, rectifying substations or any other place where it had been performed.

There must be special attention in the Concessionaire's procedures to the collection and destination of garbage, waste, lubricants, solvents and other products and similar byproducts, with the purpose that these tests do not cause environmental damages, in strict compliance with applicable legislation, standards and regulations.

13.5. Maintenance management

The Concessionaire must implement, up to the end of the first year after the beginning of the commercial operation, a computerized maintenance management system - SIGMA, where all preventive and corrective activities must be registered in a data bank. The SIGMA must allow consultation, at any time, of stored information and it must be constituted in the history of assets granted or incorporated to the LRV, throughout the Concession period.

All the preventive and/or corrective maintenance programming must be inserted in SIGMA, including the inspections, monitoring, reviews and preventive and/or corrective interventions, with execution date, mileage and/or time of operation, when appropriate, and the other information that allow its traceability and research.

13.6. Supply management

The Concessionaire must implement, until the end of the first year after the beginning of commercial operation, a computerized supply management system.

13.7. Failure management

The Concessionaire must implement, from the beginning of commercial operation, even if partially, a systematic for opening and closing of failures, with priority criteria for common service to the operation and maintenance areas. This systematic, posteriorly, will be an integral part of the maintenance management system - SIGMA.

13.8. Basic maintenance definitions

The Concessionaire must consider the following basic definitions, for execution of maintenance services:

- Corrective Maintenance Levels - the occurrences of corrective maintenances will be classified in 3 (three) levels:
 - Level 1 - Emergency: it is all and any occurrence that provokes interference in the commercial operation and that provokes withdrawal of circulation of defective equipment, system and/or rolling stock (vehicle) and that impairs the commercial operation, requiring the immediate service of the maintenance team aiming at re-establishing its operability;

- Level 2 - Urgency: it is all and any occurrence that provokes interference in the commercial operation and restrictions in the utilization of equipment, system and/or rolling stock (vehicle), but that does not prevent that the defective system/equipment remains in commercial operation in a degraded manner, however, absolutely safe and that does not impair the image of the Concessionaire before the public opinion, until the maintenance can intervene, which may occur within the shortest possible period;
- Level 3 - Programmed: it is all and any occurrence that provokes interference in the commercial operation and imposes restrictions to the operation of the defective equipment, system or rolling stock, but that may have its repair performed by the maintenance at a time in which there is availability or which intervention may be postponed to be performed with the next programmed preventive maintenance, however, allowing an absolutely safe operation that does not impair the Concessionaire's image before public opinion;
- Programmed Maintenance Activity: it is all and any preventive and/or corrective maintenance activity contained in a maintenance plan;
- Maintenance Plan: it is the detailing of services to be performed through a programmed preventive and/or corrective maintenance program to guarantee the performance, availability and safety specified for the equipment, systems or rolling stock of the LRV.

A vehicle will be considered available in case it does not have any open occurrence of Level 1 - Emergency that prevents its safe circulation, and that does not generate interferences in the circulation of other vehicles, damage to safety or to the comfort of the user and that does not affect the Concessionaire's image before public opinion.

The vehicle will be considered unavailable in case it presents any of the failures listed below:

- Allowing the opening of doors with moving vehicle;
- Allowing the opening of doors inappropriately or on the opposite side to the commanded;
- Presenting one or more sheets of door that cannot be locked in the closed position;



- Having one or more doors without luminous and/or sonorous signaling of imminent closing;
- Presenting failure of operation in the speed control;
- Presenting inoperative controls;
- Presenting essential inoperative instruments;
- Presenting burnt smell or signals of fire or smoke;
- Presenting abnormalities that prevent the access to the controls of the vehicle;
- Presenting broken glasses in doors or windows;
- Presenting broken windshields or inoperative windshield wiper;
- Presenting inoperative Public Warning equipment;
- Presenting inoperative communication equipment;
- Presenting failures in coupling devices that prevent the coupling and uncoupling;
- Presenting failure in the application and/or removal of any of the brake systems;
- Presenting electric supply failure;
- Presenting an inoperative compressor or with leakage of air under the box;
- Having more than two emergency lights off;
- Presenting abnormalities in the traction system, such as low propulsion, brake or acceleration struts;
- Presenting abnormal trepidations and noises;
- Presenting inoperative air conditioning system;
- Presenting lack of more than one fire extinguisher, or containing more than one fire extinguisher discharged, inoperative or out of the validity period;

- Presenting internal or external graffiti with inconvenient, insulting or embarrassing content;
- Presenting damaged banks, finishing panels or hand picks;
- Having more than 10% (ten percent) of the area with damaged or loose floor, offering risk of accident to the users;
- Presenting protrusions or finishing failures that offer risk of accident to the users;
- Presenting failure in any of the alert equipment, such as: front and back lights, horn and/or another sonorous resource, intended to notice the pedestrians and vehicles that are using the same rolling lane, of approximation or circulation of the LRV;
- Presenting failures in the CCTV circuit, intended to the support to vehicle conduction.

A stop will be considered available when it does not present occurrences of Level 1 - Emergency, which prevent the use by users, not allowing safe boarding or disembarkation. All systems, equipment and facilities of stops must offer minimum technical and safe operating conditions, and they must not present any irregularities that affect the Concessionaire's image.

A stop will be considered unavailable, in case it presents any of the conditions below:

- Having more than 20% (twenty percent) of the user circulation areas without lighting or presenting irregularities that put their safety at risk;
- Having obligatory equipment for use of people with special needs out of order;

14. Operation support activities

14.1. Performance evaluation

The performance of a specialized advisor, as provided in agreement, referred to as "Independent Verifier", must be provided, to be hired by the Concessionaire, with validation by the Granting Authority, for works of Performance Evaluation of the Concessionaire, under the terms hereof.

The Concessionaire will be responsible for providing all information about the operation, maintenance or other aspects of the LRV that are necessary for Performance Evaluation by the Independent Verifier.

The performance indicators of the Concession are defined in Exhibit 6 - Performance Evaluation System.

15. SPECIAL OPERATION CONDITIONS

Considering that the LRV Operation will occur in stages, distributed in 02 (two) Operational Milestones, specific conditions have been established for partial operation of the LRV, as described in sub-items 15.1 and 15.2.

All the conditions established above were established under the light of the Full Operation of the LRV, which will be partially reconfigured based on the provisions in sub-items 15.1 and 15.2, and all other conditioners that are not expressly changed below are considered fully applicable in the partial operation stages of the LRV.

15.1. Milestone 1 Operation

The Operational Milestone 1 consists in the Operation of the LRV in the stretch comprised between the Stops Comércio and Baixa do Fiscal, and this is the first stretch to be operated by the Concessionaire.

The headway in this stage will be 20 (twenty) minutes and the Operation will occur between 8:30 A.M. and 4:30 P.M. In this stage there will be no application of the Performance Evaluation System established in Annex 6 - Performance Evaluation System.

During this stage the operation will occur on an assisted manner, in a way that there will be no collection of public tariff from the LRV users, which will freely enter the LRV, being only accounted for statistic purposes. Therefore, in this period the concessionaire's income will result from the receipt of the public considerations and ancillary income. As there will be no tariff collection, the ticketing, commercialization and liquidation systems are expendable in this stage.

In this stage, the LRV may operate with systems and CCO operating partially and with the Maintenance Patio partially implemented, as long as the minimum safety and comfort

requirement are safeguarded. The distribution mechanism of the risks of liquidation and demand system disciplined in the Agreement will not occur in this stage.

For this stage the Rolling Materials will be acquired based on the quantities indicated in Annex 8, which characteristics may be different from the ones specified in this Exhibit and Exhibit 4.

A specific Operation Plan for this stage must be presented with at least 60 (sixty) days in advance from the beginning of the Operation, which will be submitted to approval by the Granting Authority.

15.2. Milestone 2 Operation

the Operational Milestone 2 consists in the Operation of the LRV in the stretch comprised between Stops Comércio and São Luis. The operational conditions established herein will last until the end of the Concession, and the full compliance with all the requirements established in items 1 to 14 hereof are required.

In this stage the operation will be commercial, in a way that there will be collection of public tariff from LRV users. Therefore, in this stage the concessionaire's income will result from the receipt of tariff income, public considerations and ancillary income. Thus, the ticketing, commercialization and liquidation systems must be implemented by the Concessionaire and in full operating conditions.

In this period there will be distribution mechanism of the liquidation system, and also the demand system, and the Performance Evaluation System established in Exhibit 6 - Performance Evaluation System will be applied.

For this stage the Rolling Materials will be acquired based on the quantities indicated in Exhibit 8, which characteristics must meet minimum specifications established herein and in Exhibit 4.

The Concessionaire's Operation Plan must be presented with at least 60 (sixty) days in advance from the beginning of the Operation, which will be submitted to approval by the Granting Authority.