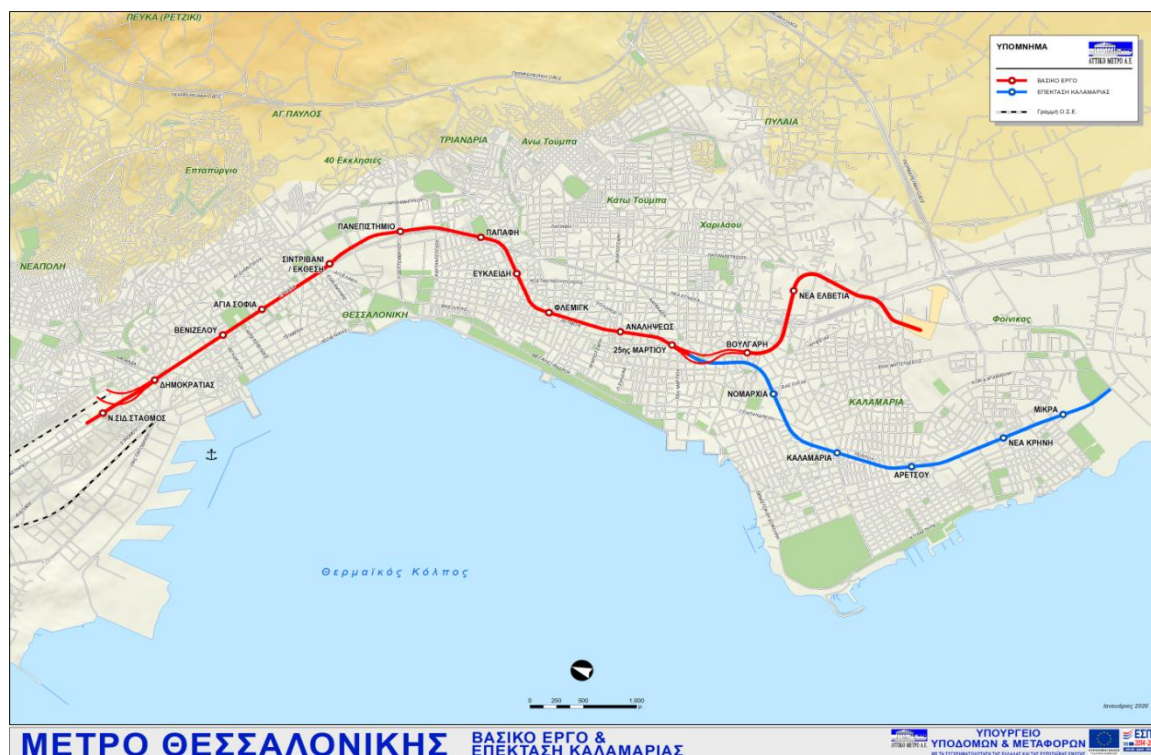


**TITLE:** “International Tender based on the Open Procedure for the Conclusion of a PPP Contract concerning the Operation and Maintenance of Thessaloniki Metro Network”

**RFP–427/22, Α.Σ.: 164503**

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## **1. Introduction**

### **1.1 Purpose of the document**

The purpose of this document is to:

1. Define the Contractor's Payments Mechanism.
2. Define the Key Performance Indicators (KPIs) that the Contractor will have to adhere to, in order to ensure flawless service delivery as regards the operation of the Thessaloniki Metro.
3. Define methods and procedures on the basis of which AM will perform, whenever deemed necessary, inspections, in view of monitoring the performance of the Contractor. In addition to the above, AM may also carry out reviews on the KPIs calculation method on the part of the Contractor.
4. Define the Aggregate Key Performance Indicators (AKPIs) of the Contractor.
5. Describe a more comprehensive Payments Deduction mechanism of the Contractor.

The meaning of the capitalized terms used herein is the one attributed to them in the Partnership Contract or the Invitation to Tender, unless these terms are specifically defined in the Annex of this Document.

### **1.2 Thessaloniki Metro Operation Phases**

The operation of the Thessaloniki Metro is divided time-wise into two phases (Operation Phase A' & Operation Phase B'), as these are described in Chapter 2 of the “Technical Description and Specifications” document and in paragraph 6.1.2 of the Partnership Contract.

The performance assessment system through the KPIs and the Deduction Mechanism of the Monthly Flat Charge shall be common and shall apply to both Metro operation phases. It is noted that with regard to Phase A', provision is made for a period of grace of three (3) months for the mechanism for Deduction to Payments, in view of ensuring smooth familiarization of the Contractor with the Scope of the project.

## **2. The Payments Mechanism**

The Contractor receives Monthly Payment for each Services Contractual Month ( $\mu$ ) during the Services Contractual Year ( $\epsilon$ ). The method of calculation of the Monthly Payment is described in term 2.3 herein.

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### **2.1 The Payments Compensation for Preparatory Periods A' and B'**

#### **Base Project - Preparatory Period A'**

1. The duration of the Preparatory Period A' is set in paragraph 6.1.1 of the Partnership Contract.
2. During the Preparatory Period A', no availability payments are made to the Contractor, while the Contractor shall bear all expenses for this period and, in general, all expenses related to the execution of his liabilities by virtue of the Partnership Contract, as of the commencement of their validity period.
3. Upon completion of the Preparatory Period A' and prior to the commencement of the Commercial Revenue Period A', in case there is a delay in the commencement of the scheduled Commercial Revenue Period A', applicable shall be the terms of paragraphs 6.2.4 - 6.2.6 of the Partnership Contract. More specifically:

- **Compensation of the Contractor because of the delay in the commencement of the Commercial Revenue Period A', not due to his liability**

If the commencement of the Commercial Revenue Period A' delays as to the scheduled availability date and this is not due to the Contractor's liability, the Contractor shall be relieved from the obligations listed in the Key Performance Indicators (KPIs) of the Payments Mechanism. In addition, for as long as the aforesaid period is extended, the Contractor shall be compensated through the availability payments on a monthly basis, reduced by a percentage of 57%. In any case, upon signing this contract, the Contractor shall acknowledge that the aforementioned re-adjustment is fair and correct.

- **Compensation of AM because of the delay in the commencement of the Commercial Revenue Period A', due to the Contractor's liability**

If the commencement of the Commercial Revenue Period A' delays as to the scheduled availability date and this is due to the Contractor's liability, the Contractor shall pay a penalty to AM - per day of delay in operation – amounting to ten thousand (10,000.00) EURO. The overall amount of the penalty imposed as above cannot exceed the amount of three million (3,000,000.00) EURO per year. It is stressed that the above penalties shall be withheld from the first account of the Contractor or from subsequent accounts, if the amount of the first account is less than the penalties imposed.

The Contractor shall not receive any Availability Payments amount for the time period in which the Commercial Revenue Period A' has not commenced and, given that the duration of the



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overall Availability Period (Operation) is ten (10) calendar years, out of the overall amount of the Availability Payments, the Contractor shall irrevocably lose the amount corresponding to the Non-availability Period for the Commercial Revenue Period A’.

**Extension to Kalamaria - Preparatory Period B’**

1. The final deadline for Preparatory Period B’ is set in paragraph 6.2.1.A of the Partnership Contract.
2. Given that the Preparatory Period B’ actually constitutes part of Commercial Revenue Period A’, until completion of Preparatory Period B’ (i.e. until the Scheduled Commercial Revenue Services Availability Date – Period B’), the availability payments due to the Contractor shall be made to him, by virtue of the Partnership Contract and this document, for the commercial revenue of the Base Project only.
3. Upon completion of Preparatory Period B’ and prior to the commencement of the Commercial Revenue – Period B’, if there is a delay in the commencement of the Scheduled Commercial Revenue Period B’, applicable shall be the terms of paragraphs 6.2.4.A – 6.2.6.A of the Partnership Contract. More specifically:

- **Compensation of the Contractor because of the delay in the commencement of the Commercial Revenue Period B’, not due to his liability**

If the commencement of the Commercial Revenue Period B’ delays as to the scheduled availability date and this is not due to the Contractor’s liability, the Contractor shall be relieved from the obligations listed in the Key Performance Indicators (KPIs) of the Payments Mechanism related to the Extension. In addition, for as long as the aforesaid period is extended, the Contractor shall be compensated through the availability payments on a monthly basis, reduced by a percentage of 16%. In any case, upon signing this contract, the Contractor shall acknowledge that the aforementioned re-adjustment is fair and correct.

- **Compensation of AM because of the delay in the commencement of the Commercial Revenue Period B’, due to the Contractor’s liability**

If the commencement of the Commercial Revenue Period B’ delays as to the scheduled availability date and this is due to the Contractor’s liability, the Contractor shall pay a penalty to





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AM - per day of delay in operation – amounting to ten thousand (10,000.00) EURO. The overall amount of the penalty imposed as above cannot exceed the amount of three million (3,000,000.00) EURO per year. It is stressed that the above penalties shall be withheld from the first account of the Contractor or from subsequent accounts, if the amount of the subsequent account is less than the penalties imposed.

The Contractor shall not receive any Availability Payments amount related to the Extension to Kalamaria for the time period in which the Commercial Revenue Period B' has not commenced and the Availability Payment on a monthly basis shall be reduced by 21%.

Given that the duration of the overall Availability Period (Operation) is ten (10) calendar years, out of the overall amount of the Availability Payments, the Contractor shall irrevocably lose the amount corresponding to the Non-availability Period for the Commercial Revenue Period B'.

## **2.2 Annual Flat Charge**

### **2.2.1 Calculation of Annual Flat Charge**

The Annual Flat Charge (EEX<sub>ε</sub>) is the maximum fee paid by the Awarding Authority to the Contractor. It corresponds to one (1) Contractual Year (ε) (based on the Offer of the Contractor) and is partly readjusted on the basis of the Consumer Price Index (CPI/ΔTK). The Annual Flat Charge for the Contractual Year of Services (ε) shall be calculated based on the following formula:

$$EEX_{\varepsilon} = AΣEEX \times \Pi A_{\varepsilon} + MAΣEEX$$

AΣEEX: The Re-adjustable Element of the Annual Flat Charge for the First Contractual Year of Services in line with the Offer of the Contractor, assuming that the First Contractual Year of Services is a full twelve-month period, as eventually revised by virtue of the terms of the PPP Contract.

ΠA<sub>ε</sub>: Re-adjustment Factor for the Contractual Year of Services (ε)

MAΣEEX: Non Readjustable Element of the Annual Flat Charge for the First Contractual Year of Services, in line with the Offer of the Contractor, assuming that the First Contractual Year of Services is a full twelve-month period, as eventually revised by virtue of the terms of the PPP Contract.

### **2.2.2 Readjustment Method of the Annual Flat Charge based on the CPI**

The Readjustment Factor (ΠA<sub>ε</sub>) of the Annual Flat Charge for every Contractual Year of Services (ε) shall be calculated within the first 5 (five) working days of every Contractual Year of Services starting

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from the Contractual Year of Services that follows the first full calendar year of the Period of Services [while for the earlier period, it shall equal to one (1,00)], in line with the following formula:

$$\Pi A_{\varepsilon} = \frac{\Delta TK_{j,\varepsilon}}{\Delta TK_{\eta\Delta A}}$$

Where:

$\Delta TK_{j,\varepsilon}$ : the value of the CPI for the month of November that precedes the Contractual Year of Services in which the calculation is made (the “Readjustment CPI”).

$\Delta TK_{\eta\Delta A}$ : the value of the CPI for the month of November of the year when the date of the Availability of Services is achieved, unless the first Contractual Year of Services is a full calendar year (i.e. the Availability of Services starts on January 1<sup>st</sup>). Thus, the CPI of the month of November preceding the date of the Availability of Services shall be taken into account for the calculation of this element.

### 2.2.3 CPI Forecast

In order to calculate the  $\Pi A_{\varepsilon}$  by virtue of paragraph 2.2 above, when the Readjustment CPI of the Contractual Year ( $\varepsilon$ ) has not been published, then:

1. the forecast of the corresponding indicator shall be used, based on the data of the Bank of Greece (“**CPI Readjustment Forecast**”), while the Annual Flat Charge of the Contractual Year ( $\varepsilon$ ) shall be calculated based on the CPI Readjustment Forecast (“**Annual Flat Charge Forecast**”)
2. within ten (10) days from the date of publication of the CPI Readjustment, the Readjustment factor shall be re-calculated on the basis of the CPI Readjustment and not on the basis of the CPI Readjustment Forecast, while the Annual Flat Charge shall be calculated respectively.
3. any positive or negative balance to arise from the re-calculation and final determination of the Annual Flat Charge in the total amount of the Monthly Payments that have already been paid to the Contractor in the period extending between the calculation of the Annual Flat Charge Forecast and the re-calculation and final determination of the Annual Flat Charge, shall be calculated in the following Monthly Payments as follows:
  - i. if the amount of the Monthly Payments paid to the Contractor, as calculated based on the Annual Flat Charge Forecast, exceeds the amount of the Monthly Payments that the Contractor is entitled to, based on the re-calculated and finally set Annual Flat Charge, the amount of the balance shall be deducted by equal amounts from the remaining Monthly Payments of the same Contractual Year of Services to be made to the Contractor until full amortization.
  - ii. if the amount of the Monthly Payments paid to the Contractor, as calculated based on the Annual Flat Charge Forecast, is less than the amount of the Monthly Payments that the

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Contractor is entitled to, based on the re-calculated and finally set Annual Flat Charge, the amount of the balance shall be paid by equal amounts to the Contractor in the remaining Monthly Payments of the same Contractual Year of Services.

### **2.2.4 Modifications due to changes to the CPI**

If an error occurs in the publication of the CPI (“**Incorrect Indications**”) which was used in the calculation of this Appendix or in the readjustment of the Annual Flat Charge in line with the PPP Contract, and the error is later corrected (“**Correct Indications**”) from the Hellenic Statistical Authority or by another public service responsible for the publication of the CPI, then the Awarding Authority and the Contractor will agree that any calculations carried out based on the Incorrect Indications for readjusting part(s) of the Annual Flat Charge shall be repeated on the basis of the Correct Indications, while any balance to arise in the payments made between the Parties on the basis of the Incorrect Indications shall be paid to the Party entitled to it by the Party owing it within twenty (20) days from the agreement or the determination of the re-calculation. Any relevant dispute to arise may be referred and following a request made by any of the Parties to the Dispute Settlement Procedure as provided for in the PPP Contract (Dispute Settlement Procedure).

## **2.3 Monthly Flat Payment**

### **2.3.1 Monthly Flat Charge for the Contractual Month ( $\mu$ )**

The Monthly Flat Charge for each full Contractual Month of Services ( $\mu$ ) in the Contractual Year of Services ( $\epsilon$ ) shall be calculated in line with the following formula:

$$MEX_{\mu} = \frac{EEX_{\epsilon}}{12}$$

For the First and Last Contractual Month of Services, the Monthly Flat Charge shall equal to  $\Gamma$  by  $\Delta$  where:

$$\Gamma = \frac{EEX}{12}$$

$$\Delta = \frac{\text{Number of days of first or last contractual month of services respectively}}{\text{Total number of days of calendar month}}$$



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**2.3.2 Monthly Payment for the Month ( $\mu$ )**

The Monthly Payment for each Contractual Month of Services ( $\mu$ ) in the Contractual Year of Services ( $\epsilon$ ) is the Monthly Flat Charge for the Contractual Month of Services ( $\mu$ ), adjusted in line with the following items:

1. Deductions made to due to Non-Availability/ Delay in the Delivery of Services during the Contractual Month ( $\mu-1$ )
2. Adjustments made by virtue of the provisions of paragraphs 2.3 and 2.4 (with a positive sign in the event of a payment made by the Awarding Authority to the Contractor and with a negative sign in the event of a payment made by the Contractor to the Awarding Authority).

$M\mu$ : Monthly Payment for the Contractual Month of Services ( $\mu$ ) in the Contractual Year of Services ( $\epsilon$ )

$MEX_{\epsilon}$ : Monthly Flat Charge for the Contractual Month of Services ( $\mu$ )

$AM\Delta_{\mu-1}$ : Deductions made to due to Non-Availability/ Delay in the Delivery of Services during the Contractual Month of Services ( $\mu-1$ ), where:  $AM\Delta(\mu-1) = MEX(\mu) * \text{Aggregate AKPI}(\mu-1)$

Aggregate AKPI: The maximum percentage of Payments Deduction that results, as described in the Payments Document. To avoid any doubts, the aggregate AKPI is set as the total of all Payment Deductions for the Services Contractual Month ( $\mu$ ), as these are calculated in accordance with the Payments Document.

$\Pi\Delta TK$ : Adjustments due to CPI changes/ errors, in line with paragraphs 2.3 and 2.4.

**2.4 Compensation of the Contractor**

**2.4.1 General**

AM shall compensate the Contractor for all the services provided in the framework of the Contract during the stages of the Thessaloniki Metro revenue service, on a monthly basis for all services provided, as provided for in the present Payments Document. The Contractor's compensation shall be deducted by specific amounts to be extracted based on the performance indicators stated herein and/or to correspond to penalties or compensations that may arise to the detriment of the Contractor.

**2.4.2 Submission of Performance Reports**

The Contractor's Performance Report shall be submitted to AM on a monthly basis, within 5 days from the end of the month covered by the report and shall include the completed reports per service



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provided, as required in paragraph 1.3.1 herein. Any delay in the submission of the Report shall entail a reduction of the monthly fee, as described in paragraph 3.1 herein.

On the basis of the Contractor's Performance Report, AM shall decide on whether a deduction to the availability payment of the Contractor is necessary and shall advise the Contractor so that he proceeds with the relevant reduction in the account to be submitted within the current month, in line with paragraph 2.4.3.

**2.4.3 Submission of Monthly Accounts**

The monthly accounts prepared the framework of the Contract shall be submitted to AM during the first 10 months of each calendar month and shall cover the previous calendar month. The account shall be submitted in five (5) printed original copies and in digital format.

The accounts shall be compiled in line with AM's indications. Accounts shall be submitted in digital files editable by AM.

Deductible from the accounts of the Contractor shall be all the requirements of ATTIKO METRO S.A., such as any eventual retention, clauses or penalties, in line with the provisions of this document or other contractual documents, related to defects and omissions and, in general, any requirement of ATTIKO METRO S.A. which has not been satisfied in any other way whatsoever.

ATTIKO METRO S.A. shall proceed with the review of the account within (15) working days from the day of its receipt and, having verified the correctness of the data, shall approve the account.

If in the required certificates/ back-up documentation of the account there are ambiguities or inaccuracies, or omissions, ATTIKO METRO S.A. shall point them out to the Contractor and shall demand that the account is re-drafted and resubmitted. If this case, the set deadline for the review of fifteen (15) working days shall start counting from the time that the account is resubmitted by the Contractor. Further to its review, the account shall be approved by ATTIKO METRO S.A. and shall constitute the payment certificate for the payment of the Contractor. ATTIKO METRO S.A. shall pay the amount of the approved account of the Contractor within thirty (30) days from the date of the receipt of the invoices, on condition that they are accompanied by the following legal justification documents.



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The required justification documents for the partial payments of the Contractor are as follows:

- accounts approved by ATTIKO METRO S.A. accompanied by the approved final acceptance protocols
- the Contractor's invoice, as foreseen by law.
- tax and social security contributions clearance certificates, in line with the applicable provisions.

The Contractor shall also submit any other justification document required by the Greek legislation and any other document to be required by ATTIKO METRO S.A..

All payments to the Contractor, as these ensue from the present Contract, shall be effected only if the invoices submitted by the Contractor have been issued by a company/ joint venture lawfully established in Greece in line with the Greek law or have been issued abroad. Invoices must be duly documented, justified and accompanied by the necessary back-up documentation.

Deductions in favor of third parties, as well as any other surcharge, shall be borne by the Contractor in accordance with the applicable legislation, VAT not included, concerning the delivery of the material or the provision of services to the place and in the manner foreseen by the contract documents. In particular, the following deductions shall apply to the Contractor:

- a) Deduction of 0.07% calculated on the value of each payment before taxes and deductions in order to meet the operational needs of the Hellenic Single Public Procurement Authority (HSPPA), which shall be borne by the Contractor (Article 4 of Law 4013/2011 as applicable following the amendments made by Law 4912/22);
- b) Deduction of 0.02% in favor of the development and maintenance of the Integrated Information System of ESIDIS, which is calculated on the value of the contract, VAT excluded. This amount shall be deducted from each payment by ATTIKO METRO S.A. in the name of and on behalf of the Ministry of Digital Governance, in accordance with paragraph 6, article 36, Law 4412/2016;
- c) Deduction of 0.1% which is calculated on the value of each payment before taxes and deductions in favor of the HSPPA (article 350, paragraph 3 of Law 4412/2016, as applicable following the amendments made by Law 4912/22).



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The deductions in favor of third parties shall be subject to the proportional stamp duty of 3% valid each time and to a 20% contribution -to this end- of the duty stamp in favor of OGA, calculated on the duty stamp.

Each payment shall be subject to the income tax deduction, as foreseen by the applicable legislation. The Contractor shall be fully and exclusively responsible for all contributions, amounts due, duties and other payments to social insurance funds, health care funds and pension funds of professionals, public or other agencies.

The Contractor shall be fully and exclusively liable for all contributions, amounts due, duties and other payments to social insurance funds, health care funds and pension funds for professionals, public or other agencies.

The currency of the Contractor's payment shall be the EURO.

**2.4.4 The financial model**

The financial model, which constitutes part of the Financial Offer, as well as the business plan, shall bind the Contractor as regards the implementation of the Project. Any modifications to the financial model shall be made only following AM's written approval. Any updates to the above shall be notified to AM for commenting, which should be demonstrably taken into account by the Contractor. If, within a deadline of thirty (30) days from the relevant –as per the above- notification to AM, the latter does not make any comments, the submitted updated financial model shall be considered as final and shall be attached to the Contract, thus constituting its integral part.

**2.5 Payments Deduction due to Non- Availability or due to the Delay in Services Delivery**

**2.5.1 Right of the Awarding Authority to proceed with Deductions**

In case the Contractor fails to meet his availability obligations as regards the services provided or delays in the delivery (performance) of his services, as the availability and his performance are set in the PPP Contract and in this Payments Document and as measured either based on the KPIs presented in this Document, or in the framework of controls performed by AM, the Awarding



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Authority/AM shall proceed with Payment Deductions from the Monthly Flat Charge in accordance with Annex 3.

**2.6 Restrictions applicable to the Deductions**

**2.6.1 Cash Flow Restrictions**

The Awarding Authority cannot, for any Contractual Month of Services ( $\mu$ ) whatsoever, proceed with any Deductions higher than the Monthly Flat Charge. Moreover, in any case, the total of Deductions of a Contractual Year of Services ( $\epsilon$ ) cannot be higher than the Annual Flat Charge.

**2.6.2 Limit in the Deductions made due to the Delay in the Delivery of Services**

The Awarding Authority cannot, for any Contractual Year of Services ( $\epsilon$ ), proceed with any Deductions due to the Delay in the Delivery of Services higher than an amount equal to 24% of the Annual Flat Charge in the same Contractual Year ( $\epsilon$ ).

**3. Key Performance Indicators**

**3.1 Performance Report**

**3.1.1 Submission of Report**

The Contractor shall be under the obligation to submit the Performance Report which will present the level of quality of the services provided using certain KPIs and will cover the entire spectrum of the operation, maintenance, cleaning, security and AFC management of the Metro. The Contractor's Performance Report shall be submitted to AM on a monthly basis, within 5 days from the end of the reporting month, including completed reports per service provided. Any delay in the submission of the Report shall entail a reduction of the monthly payment, as described in para. 4.1 of this document. The format and the content of the monthly Performance Report shall be finalized by AM within a period of three months from the commencement of the operation of the Base Project. In any case, the monthly Performance Report shall include:

- The detailed description (time, place, type of incident, involved parties, impact on persons, impact on infrastructure or equipment) of all incidents which occurred within the reporting period.





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- The detailed description of all deficiencies and bad practices noted within the reporting month during operation and/or during the inspections carried out by the AM, as these are described through the indicators and the relevant filled-in questionnaires.
- The calculation of the performance achieved by the Contractor using specific and clearly defined KPIs, as these are specified in para. 2.3 herein, which will cover all operation areas of the system, as these are defined in the Technical Description. The Report shall also separately include the high and medium criticality (importance) indicators, as these are specified in paragraph 3.5 herein.

**3.1.2 Report Evaluation**

Every time that the Contractor deviates from the target-price related to any KPI of high importance, the Contractor's monthly payment shall be reduced on the basis of the method developed in the Chapter 3 herein.

In the framework of the Contractor's assessment procedure, provision is made for certain mandatory inspections in significant activity fields to be carried out by AM or by a representative of the Contractor that he will appoint. In these cases, questionnaires shall be created for specific indicators, which will be included in the specific document as an annex, and will be made available to the Contractor during contract signing. During the inspections, the Contractor reserves the right to have a representative of his on site. AM shall inspect, on a monthly basis, all the fields of the system and, upon communication with the Contractor, he shall have the right to inspect more than once during the same monthly period areas where problems have been noted.

If, further to the consent of the AM, no inspections are carried out during a specific period, it will be considered that the Contractor's Key Performance Indicators, the scoring of which depends of the inspection results, have reached the required target value, with the exemption of cases for which reasonable charges or complaints have been filed, the reliability of which was ascertained through their official registration.

During the inspection, an inspection log per area shall be filled in, recording all the details of the incident identification, such as detailed location, date, time and photographic material. In the event of complaints filed by passengers for areas assessed by means of the KPIs, the Contractor shall be under the obligation, within three (3) working days from the filing of the complaint, to conduct an investigation for the incident and to compile an incident investigation report that will be assessed and taken into account in the scoring of the corresponding KPIs for the areas that the complaint concerns. AM may carry out in its own judgment an investigation on each incident.



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**3.2 Revision of KPIs**

**3.2.1 Submission of a Request**

The Contractor shall have the option to submit a Request for Revision of the structure or of the required target of any KPI that the Contractor deems as leading to an unfair and misinterpreted assessment of his performance, as failing to provide the required benefits and failing to ensure the provision of the desired quality of services for the passengers.

**3.2.2 Specifications of Request for Revision**

The Contractor may file a Request for Revision to the OA/AM after six (6) months of revenue service starting from the commissioning of the Metro railway line, at after that, whenever the Contractor deems necessary.

The Request shall include a detailed reference to the contested KPI. The request shall present the relevant indicator with the corresponding target value, the performance of the Contractor in the specific indicator for a minimum period of six (6) months of revenue service before the submission of the request and the opinion of the Contractor in relation to the causes which affected the performance of the indicator in the field of application of the contested KPI, and, finally, the suggestions for partial or full revision of the subject indicator or of the target value.

AM shall acknowledge receipt of the request and shall be responsible to initiate a circle of negotiations with the Contractor, so that they may jointly examine all the parameters required and identify the areas which could be improved and where a well-justified modification of the definition, the calculation method or the target value of the KPI could be made. In the framework of the negotiations, the following criteria should be taken into account and the relevant revision shall be examined on the basis of the extent to which these criteria were satisfied:

1. The level of services offered to the passengers or the level of safety in the maintenance of the individual structures and equipment of the Thessaloniki Metro transportation railway network should not be downgraded due to revision of the indicator under discussion.
2. Any eventual actions aimed at modifying the revenue service should be clearly defined, and a full-justified presentation of the way in which these modifications could improve the performance of the Contractor should be given.
3. The revision of the definition, the calculation method and of the target value should have a reasonable and fair impact.
4. It should be ensured that the revision of the definition, the calculation method and the target value will not lead to a reduction of the ridership or to passengers discrediting this urban mode of transport and, consequently, to a severe damage to the commercial revenue of the OA/AM.



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Any request of the Contractor for revision of indicators shall be in effect only if accepted by AM, which shall opine in a justified manner. During the period when the implementation of an eventual modification is examined and until the date a decision is made on the final revision of the KPI by the OA/AM, the performance assessment system shall apply as is.

**3.3 Evaluation of poor performance**

If it is ascertained that the Contractor has low performance in specific KPIs, AM shall reserve the right to request from the Contractor to submit his proposals on the improvement of his performance in the specific indicators, the identification and highlighting of the causes of the failures but also to submit proposals to change his business approach in view of improving his performance.

**3.4 Classification of KPIs**

The KPIs shall be classified based on the following characteristics:

- Activity
- Importance

**Activity:** The KPIs shall be classified in 6 activities, to which the Contractor shall have to successfully respond, during the implementation of the Project:

- Operation
- Maintenance
- Cleaning
- Security/ Protection
- AFC Management
- Other.

**Importance:** The KPIs have been assessed and classified on the basis of their criticality for a smooth operation and success of the Thessaloniki Metro. As KPIs of high importance have been set those KPIs that the Contractor has to include in this monthly report and which will be taken into account in the deduction of the monthly fee when target values are not met. As KPIs of medium importance have been set those KPIs for which the Contractor shall have to include in the monthly report, which, however, will not be taken into account in the deduction of the monthly fee when target values are not met.

Every indicator has been assigned a name, a target value and a calculation formula. The allocation of the KPIs is presented in the following table.

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| <b>Allocation of KPIs</b>         |    |
|-----------------------------------|----|
| Operation-related KPIs            | 28 |
| Maintenance-related KPIs          | 8  |
| Cleaning-related KPIs             | 2  |
| Security/ Protection-related KPIs | 8  |
| AFC Management-related KPIs       | 2  |
| KPIs - General                    | 3  |
| KPIs of high importance           | 28 |
| KPIs of medium importance         | 23 |
| Total of KPIs                     | 51 |

### **3.5 KPIs Calculation Method**

KPIs shall be defined as followed:

- I. Reports generated from the relevant systems (Management Information Systems, etc.) per operation or predefined period depending on the KPIs.
- II. Inspections carried out by the AM or third parties appointed by AM to this end, whenever and for no matter how long deemed advisable by AM, in its own absolute judgement. AM may, at its discretion, notify the Contractor that an inspection will be carried out, while the Contractor shall be entitled, to appoint, at its discretion, a representative to attend the inspection. In general, all items and locations shall be inspected. Nevertheless, cleaning per operation period shall be carried out at the discretion of AM (or of the inspectors appointed by AM). It is possible that a specific object/location is inspected more than once during an operation period. If irregularities are ascertained during an inspection, AM (or the inspectors appointed by AM) may inspect anew

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the same object/location at a time to be agreed upon, in order to verify that the problem has been rectified. Irregularities ascertained during an inspection shall be documented in detail in the questionnaire, a copy of which shall be made available to the Contractor

- III. Complaints received by any media making reference to an incident, a near failure, improper behavior of the Contractor's personnel, lack of information or unreliable information and, in general, anything else affecting the KPIs. If it is necessary to prove the validity of the complaint, the Contractor shall re-examine the files, the logs, the reports of the personnel involved, the recorded video and any other relevant documentation or data and shall draw a conclusion three (3) days at the latest upon receipt of the complaint.
- IV. Surveys which may be conducted by AM or others appointed by AM to this end. The questions of the survey may cover any sector of Services, which, to a great extent, is under the Contractor's control. For example, customer satisfaction shall be assessed on the basis of the following aspects:
  - 1. Satisfaction from the operation (frequency, punctuality of trips, etc.)
  - 2. Cleanliness in public areas and trains
  - 3. Availability and reliability of information
  - 4. Politeness and appearance of the personnel
  - 5. Total score of customer satisfaction.

It is noted that out of the aforementioned categories shown in the questionnaire, in the Payments Deduction Mechanism consideration shall only be made of the assessment aspect of the “Availability and reliability of information”. The results of the questionnaire to be obtained in this specific category participate in a weighted average, as described in detail in Paragraph 4.2 herein.

However, if in any of the remaining categories a deviation higher than 30% from the target-, the data of the relevant category shall be assessed in the framework of a discussion held between the Contractor and AM. With a reasonable time frame, the Contractor shall submit to AM for approval measures and strategies for improvement.

In addition to the aforementioned categories, the survey may also include other subjects, as these may be set by AM at its own discretion. However, any new item to be added to the questionnaire shall not be taken into account in the Payments Deduction Mechanism.

Based on the performance of the Contractor in previous Operation Periods and the number of the complaints received by customers, AM or any persons appointed by the latter may conduct additional surveys at all times.



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If, at the end of a month, the required inspections which are taken into account in the calculation of the value of the indicator have not been conducted, the indicator shall not be taken into account in the Payments Deduction.

### **3.6 Overview of the KPIs**

The KPIs are presented in detail in the following table:



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| A. Operation/Service |   |  |              |            |
|----------------------|---|--|--------------|------------|
| S/N                  | Title                                       | Calculation  | Value Target | Importance |
| A.1                  | Arrival accuracy                            | $\frac{\text{Overall time of service}}{\text{Overall time of service} + \text{Delay}}$   | 99.6%        | High       |
| A.2                  | Trips between train failures                | Trips between train failures causing delays $\geq 5$ minutes   | 2%           | Medium     |
| A.3                  | % of trains operating according to schedule | $\frac{\text{Total of trains in operation} - \text{Trains not in operation according to schedule}}{\text{Total of trains in operation}}$ | 98%          | High       |
| A.4                  | Regularity of trains                        | $\frac{\text{Total service time during the required service time}}{\text{Required service time}}$  | 99.7%        | High       |



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|      |   |   |       |        |
|------|---|---|-------|--------|
| A.5  | % of available trains for service in peak hours     | $\frac{\text{Trains available in peak hours}}{\text{Trains scheduled to be available in peak hours}}$             | 99.9% | Medium |
| A.6  | % of available trains for service in non-peak hours | $\frac{\text{Trains available in non – peak hours}}{\text{Trains scheduled to be available in non – peak hours}}$ | 99.9% | Medium |
| A.7  | Availability of rail service                        | $\frac{\text{Actual trips}}{\text{Scheduled trips}}$  | 99.7% | High   |
| A.8  | % of trip cancellations in peak hours               | $\frac{\text{Cancelled trips in peak hours}}{\text{Scheduled trips in peak hours}}$                               | 0.1%  | Medium |
| A.9  | % of trip cancellations in non-peak hours %         | $\frac{\text{Cancelled trips in non – peak hours}}{\text{Scheduled trips in non – peak hours}}$                   | 0.1%  | Medium |
| A.10 | % of Vehicle-km coverage                            | $\frac{\text{Actual Vehicle – km}}{\text{Scheduled Vehicle – km}}$  | 95%   | High   |





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|      |   |  |       |        |
|------|---|--|-------|--------|
| A.11 | % of lifts available for use                            | $\frac{\text{Total of available lifts operating hours}}{\text{Total of required lifts operating hours}}$           | 99%   | High   |
| A.12 | % of escalators available for use                       | $\frac{\text{Total of available escalators operating hours}}{\text{Total of required escalators operating hours}}$ | 99%   | High   |
| A.13 | % of ATIMs available in the network                     | $\frac{\text{Total of available ATIMs operating hours}}{\text{Total of required ATIMs operating hours}}$           | 99%   | High   |
| A.14 | % of AFCS gates in operation                            | $\frac{\text{Total of available AFCS Gates operating hours}}{\text{Total of required AFCS operating hours}}$       | 99.5% | High   |
| A.15 | % of actual service provided covering scheduled service | $\frac{\text{Actual transfer passengers' volume}}{\text{Scheduled capacity of transfer passengers' volume}}$       | N/A   | Medium |

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|      |  |  |     |        |
|------|--|--|-----|--------|
| A.16 | Change in ridership as compared to the initial theoretical estimated ridership             | $\frac{\text{Actual ridership} - \text{Initial estimated ridership}}{\text{Initial estimated ridership}}$            | N/A | Medium |
| A.17 | Availability of the Passenger Information System (PIS) in stations and on-board the trains | $\frac{\text{Total operating hours of active PIS}}{\text{Total operating hours of required PIS}}$                    | 99% | High   |
| A.18 | Quality of information provided  | Availability and reliability of information<br>(on the basis of a questionnaire)                                     | 70% | High   |
| A.19 | Availability and reliability of information signs  | Availability and reliability of information provided by maps, schedules and information signs (based on inspections) | 98% | High   |
| A.20 | Website information  | Number of cases in which the website information were obsolete or inaccessible (based on inspections)                | 4%  | High   |

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|      |  |   |                         |        |
|------|--|---|-------------------------|--------|
| A.21 | % of Complaints                        | $\frac{\text{Number of complaints per reference period}}{\text{Number of Passengers}}$                      | 5%                      | High   |
| A.22 | Speed of response to written requests  | $\frac{\text{Sum up of response times to written requests}}{\text{Total number of written requests}}$       | 24 hours                | High   |
| A.23 | Total Customer Satisfaction score      | % of customer satisfaction based on a survey questionnaire  | 70%                     | Medium |
| A.24 | Personnel – Politeness and appearance  | % of cases in which the personnel’s appearance / behavior was inappropriate (based on inspections)          | 2%                      | High   |
| A.25 | Passenger density                      | $\frac{\text{Number of standees per train in peak hours}}{\text{Square meters of train}}$                   | 4                       | Medium |
| A.26 | Mean Time of Call Handling at the PABX | $\frac{\text{Total Customer Waiting Time} + \text{Total Call Time}}{\text{Total Number of Calls Received}}$ | 8 minutes               | High   |
| A.27 | Systems’ Technical Availability        | $1 - \frac{\text{Systems’ downtime throughout the total of service hours}}{\text{Total hours of service}}$  | Depending on the System | High   |



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|      |                                    |  |       |      |
|------|------------------------------------|--|-------|------|
| A.28 | % of PSDs available in the network | $\frac{\text{Overall operating hours of available PSDs}}{\text{Overall operating hours of required PSDs}}$ | 99.5% | High |
|------|------------------------------------|--|-------|------|

| B. Maintenance |  |  |              |            |
|----------------|--|--|--------------|------------|
| S/N            | Title  | Calculation  | Value Target | Importance |
| B.1            | Mean time to repair or to maintain                       | $\frac{\text{Total service time}}{\text{Number of works / instructions for maintenance causing interruptions/delays in service}}$  | N/A          | Medium     |
| B.2            | Buildings Maintenance                                    | Number of cases in which irregularities were identified in the retained assets during inspection   | 2            | High       |
| B.3            | Vehicle-km related check per train and maintenance cycle | <ol style="list-style-type: none"> <li>Maximum train deviation from average vehicle-km per train</li> <li>Maximum train maintenance deviation from average vehicle-km per maintenance cycle</li> </ol> | N/A          | Medium     |

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|     |   |  |     |        |
|-----|---|--|-----|--------|
| B.4 | Supervision of foreseen maintenance activities  | Number of cases in which irregularities were identified in performing the maintenance activities foreseen in the pertinent specifications                                  | 0   | High   |
| B.5 | Mean time between failures - MTBF               | $\frac{\text{Number of service hours per reporting period}}{\text{Number of failures per reporting period}}$ <p>It concerns failures setting the trains out of service</p> | N/A | Medium |
| B.6 | Scheduled man-hours for maintenance             | $\frac{\text{Scheduled man – hours for maintenance}}{\text{Total available man – hours}}$  | N/A | Medium |
| B.7 | Scheduled man-hours for maintenance per km      | $\frac{\text{Scheduled man – hours for maintenance}}{\text{Total kilometers of the line}}$   | N/A | Medium |
| B.8 | Scheduled man-hours for maintenance per station | $\frac{\text{Scheduled maintenance manhours}}{\text{Total of number of stations}}$   | N/A | Medium |



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| <b>C. CLEANING</b> |  |   |                     |                   |
|--------------------|--|---|---------------------|-------------------|
| <b>S/N</b>         | <b>Title</b>   | <b>Calculation</b>  | <b>Target Value</b> | <b>Importance</b> |
| C.1                | Scoring of the perception of cleanliness in stations | Each station shall be evaluated once a month against a report/checklist to be defined by AM | 98%                 | High              |
| C.2                | Scoring of the perception of cleanliness in trains   | 10 trains shall be evaluated once a month against a report/checklist to be defined by AM    | 98%                 | High              |



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| <b>D. Security / Protection</b> |  |  |                     |                   |
|---------------------------------|--|--|---------------------|-------------------|
| <b>S/N</b>                      | <b>Title</b>   | <b>Calculation</b>   | <b>Target Value</b> | <b>Importance</b> |
| D.1                             | Response to failures or dangerous conditions                       | Calculated as a weighted average of the waiting time to answer a telephone call for maintenance, of the time elapsed before a critical/urgent maintenance report is responded and of the time elapsed before a typical maintenance report is addressed | 98%                 | High              |
| D.2                             | % of injuries caused to the maintenance personnel                  | $\frac{\text{Number of injuries to the maintenance personnel}}{\text{Total maintenance personnel}}$  | 0%                  | Medium            |
| D.3                             | Lost Man-hours due to injuries caused to the maintenance personnel | $\frac{\text{Lost man-hours due to injuries to the maintenance personnel}}{\text{Total man-hours worked by the maintenance personnel}}$  | 0%                  | Medium            |
| D.4                             | Cases of cyber security violation                                  | Number of cases of cyber security violations per month   | 0                   | High              |
| D.5                             | Immediacy of Passenger Information in emergencies (PA, PIS)        | Mean Time to Provide Passenger information in emergencies (PA, PIS)  | 98%                 | High              |



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|-----|---------------------------------------|---|-------|--------|
| D.6 | Cases of intrusion in protected areas | Number of intrusions in protected areas per month   | 0     | High   |
| D.7 | % of lost trips due to accidents      | $\frac{\text{Number of scheduled trips' cancellations due to accidents yearly}}{\text{Total number of scheduled trips yearly}}$ | 0%    | Medium |
| D.8 | % of CCTV cameras in operation        | $\frac{\text{Overall operating hours of available CCTV cameras}}{\text{Overall operating hours of required CCTV cameras}}$      | 99.5% | High   |

| E. MANAGEMENT OF AFC FARE |                               |  |              |            |
|---------------------------|-------------------------------|--|--------------|------------|
| S/N                       | Title                         | Calculation  | Target Value | Importance |
| E.1                       | Ability to avoid fare evasion | $\frac{\text{Number of inspected passengers holding a valid ticket}}{\text{Number of inspected passengers}}$ | 98%          | Medium     |
| E.2                       | % of ticket inspection        | $\frac{\text{Number of inspected passengers}}{\text{Total number of passengers, based on travel path}}$      | 0.5%         | Medium     |





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| F. GENERAL |  |  |              |            |
|------------|--|--|--------------|------------|
| S/N        | Title  | Calculation  | Target Value | Importance |
| F.1        | Average delay in the submission of the foreseen reports            | Number of days beyond the submission deadline  | 0            | Medium     |
| F.2        | Average delay in the submission of the foreseen documents          | Number of days beyond the submission deadline  | 0            | Medium     |
| F.3        | Man-hours used for further improvement / training of the personnel | $\frac{\text{Man – hours used for continuous improvement} + \text{training}}{\text{Total man – hours of maintenance personnel}}$ | N/A          | Medium     |

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### 3.7 Detailed Calculation of KPI

| A.1. Arrival Accuracy |  |
|-----------------------|--|
| Method of Calculation | Contractor's Operations Report   |
| KPI target value      | 99.6%  |
| Detailed Calculation  | $AKA = \left( \frac{1}{T} \sum_t \frac{\Delta P \Sigma_t * \Pi X \Delta}{\Delta P \Sigma_t * \Pi X \Delta + \Delta P K t * X K r} \right) * 100\%$ <ul style="list-style-type: none"> <li>• AKA : average percentage of arrival accuracy for the monthly reporting period</li> <li>• <math>\Delta P \Sigma_t</math>: number of trips per train in the monthly reporting period</li> <li>• <math>\Pi X \Delta</math>: scheduled traveled trip path</li> <li>• <math>\Delta P K t</math>: number of trips presenting delay per train within the monthly reporting period</li> <li>• <math>X K r</math>: average delay time per trip and per train within the monthly reporting period</li> <li>• T: total number of trains per monthly reporting period</li> </ul> |

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### A.2. Vehicle-km between train failures

| Method of Calculation | Contractor's Operations Report   |
|-----------------------|--|
| KPI target value      | 2%   |
| Detailed Calculation  | $M\Delta = \frac{MK\Delta}{\Delta P} * 100\%$ <ul style="list-style-type: none"> <li>• <math>M\Delta</math> : percentage of trips delayed by more than 5' in the monthly reporting period</li> <li>• <math>MK\Delta</math> : number of trips delayed by more than 5' in the monthly reporting period</li> <li>• <math>\Delta P</math>: number of total trips made in the monthly reporting period</li> </ul> |



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**A.3. % of Trains operating according to schedule**

| Method of Calculation | Contractor's Operations Report  |
|-----------------------|---|
| KPI target value      | 98%   |
| Detailed Calculation  | $\Pi\Sigma K = \frac{T - T_{dl}}{T} * 100\%$ <ul style="list-style-type: none"> <li>• <math>\Pi\Sigma K</math>: percentage of trains operating according to schedule in the monthly reporting period</li> <li>• T: total number of available trains performing trips in the monthly reporting period</li> <li>• <math>T_{dl}</math>: number of trains which, for certain trips, deviate from schedules in the monthly reporting period</li> </ul> |

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| A.4. Train regularity |   |
|-----------------------|---|
| Method of Calculation | Contractor's Operations Report  |
| KPI target value      | 99.7%   |
| Detailed Calculation  | $K\Sigma = \left( \frac{1}{T} \sum_t \left[ \frac{XPA_t}{A\pi\lambda} \right] \right) * 100\%$ <ul style="list-style-type: none"> <li>• KΣ: average percentage of train regularity in the monthly reporting period</li> <li>• T: total number of trains available for use in the monthly reporting period</li> <li>• t: Train</li> <li>• <math>XPA_t</math>: time in the monthly reporting period during which a train is in a state of full operational readiness and can perform trips</li> <li>• <math>A\pi\lambda</math>: time in the monthly reporting period during which trains must be available for use</li> </ul> |

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### A.5. % of trains available for service in peak hours

| Method of Calculation | Contractor's Operations Report   |
|-----------------------|--|
| KPI target value      | 99.9%  |
| Detailed Calculation  | $\Delta \Sigma pk = \frac{\Pi \Sigma pk}{\Sigma pk} * 100\%$ <ul style="list-style-type: none"> <li>• <math>\Delta \Sigma pk</math>: percentage of trains available in peak hours</li> <li>• <math>\Pi \Sigma pk</math>: number of trains in operation in peak hours</li> <li>• <math>\Sigma pk</math>: Number of trains scheduled for operation in peak hours</li> </ul> <p><i>Note:</i> For a one-month evaluation period, this indicator shall be calculated on a daily basis, covering in total the Metro services in peak hours. The final value of the indicator for the monthly period shall be calculated as the weighted average of the values.</p> |

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### A.6. % of trains available for service in non-peak hours

| Method of Calculation | Contractor's Operations Report   |
|-----------------------|--|
| KPI target value      | 99.9%  |
| Detailed Calculation  | $\Delta\Sigma op = \frac{\Pi\Sigma op}{\Sigma op} * 100\%$ <ul style="list-style-type: none"> <li>• <math>\Delta\Sigma op</math>: percentage of trains available in non-peak hours</li> <li>• <math>\Pi\Sigma op</math>: number of trains in operation in non-peak hours</li> <li>• <math>\Sigma op</math>: number of trains scheduled for operation in non peak hours</li> </ul> <p><i>Note:</i> For a one-month evaluation period, this indicator shall be calculated on a daily basis, covering in total the Metro services in non-peak hours. The final value of the indicator for the monthly period shall be calculated as the weighted average of the values.</p> |



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| A.7. Rail service availability |  |
|--------------------------------|--|
| Method of Calculation          | Contractor's Operations Report   |
| KPI target value               | 99.7%  |
| Detailed Calculation           | $EE = \frac{\Pi\Delta}{\Pi P\Delta} * 100\%$ <ul style="list-style-type: none"> <li>• <math>\Pi\Delta</math>: Trips made in the monthly reporting period</li> <li>• <math>\Pi P\Delta</math>: Scheduled trips in the monthly reporting period</li> <li>• <math>EE</math>: Rail Service Availability</li> </ul> |



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| A.8. % of trip cancellations in peak hours |   |
|--|---|
| Method of Calculation                      | Contractor's Operations Report  |
| KPI target value                           | 0.1%  |
| Detailed Calculation                       | $ME\Xi p = \frac{AKp}{\Pi P\Delta p} * 100\%$ <ul style="list-style-type: none"> <li>• AKp: Cancelled trips not made within the p period</li> <li>• <math>\Pi P\Delta p</math>: Scheduled trips made within the p period</li> <li>• ME<math>\Xi</math>p: Percentage of non availability of the critical Rail Service in peak hours.</li> </ul> <p><i>Note:</i> For a one-month evaluation period, this indicator shall be calculated on a daily basis, covering in total the Metro services in peak hours. The final value of the indicator for the monthly period shall be calculated as the weighted average of the values.</p> |

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### A.9. % of trip cancellations in non-peak hours

| Method of Calculation | Contractor's Operations Report   |
|-----------------------|--|
| KPI target value      | 0.1%   |
| Detailed Calculation  | $MEEp = \frac{AKEp}{\Pi P \Delta Ep} * 100\%$ <ul style="list-style-type: none"> <li>• AKEp: Cancelled trips not made in non-peak hours</li> <li>• <math>\Pi P \Delta Ep</math>: Scheduled trips in non-peak hours</li> <li>• MEEp: Percentage of non availability of the critical Rail Service in non peak hours.</li> </ul> <p><i>Note:</i> For a one-month evaluation period, this indicator shall be calculated on a daily basis, covering in total the Metro services in non-peak hours. The final value of the indicator for the monthly period shall be calculated as the weighted average of the values.</p> |



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| A.10. % of traveled vehicle-km |  |
|--------------------------------|--|
| Method of Calculation          | Contractor's Operations Report   |
| KPI target value               | 95%  |
| Detailed Calculation           | $OXM = \frac{\Pi OXMd}{\Pi PROXMd} * 100\%$ <ul style="list-style-type: none"> <li>• OXM: Percentage of traveled vehicle-km.</li> <li>• Π OXM: Actual vehicle-kms, as produced by the actual train passage and trips recording system.</li> <li>• Π PROXMd: Scheduled vehicle-kms as a result from the daily timetable.</li> </ul> <p><i>Note:</i> For a one-month evaluation period, this indicator shall be calculated on a daily basis, covering in total the Metro services throughout the Metro revenue service. The final value of the indicator for the monthly period shall be calculated as the weighted average of the OXM values for all days in a month.</p> |

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| A.11. % of lifts available for use |   |
|------------------------------------|---|
| Method of Calculation              | Contractor's Operations Report  |
| KPI target value                   | 99%   |
| Detailed Calculation               | $ANE\Lambda_s = \frac{1}{APANE\Lambda_s} \sum_{\alpha} \left( \frac{XANE\Lambda_{\alpha, s}}{\Pi PANE\Lambda_{\alpha, s}} \right) * 100\%$ <ul style="list-style-type: none"> <li>• ANEΛs, : Percentage of lift service availability per station</li> <li>• s: station</li> <li>• α: every lift in a station</li> <li>• APANEΛs: number of lifts in the station</li> <li>• XANEΛ: Actual time of lift operation</li> <li>• ΠPANEΛ: Scheduled / Anticipated time of lift operation</li> </ul> <p><i>Note:</i> For a one-month evaluation period, this indicator shall be calculated for all stations of the line, covering in total the Metro services throughout the Revenue Service. The final value of the indicator for the monthly period shall be calculated as the weighted average of the ANEΛs values for all stations of the line.</p> |

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### A.12. % of escalators available for use

| Methods of Calculation | Contractor's Operations Report  |
|------------------------|---|
| KPI target value       | 99%   |
| Detailed Calculation   | $K\Lambda_s = \frac{1}{APK\Lambda_s} \sum_k \left( \frac{XK\Lambda_{k,s}}{\Pi PK\Lambda_{k,s}} \right) * 100\%$ <ul style="list-style-type: none"> <li>• KΛs : Percentage of availability of the escalators' operation in the stations</li> <li>• s: Station</li> <li>• κ: every escalator in a station</li> <li>• APKΛs: number of escalators in the station</li> <li>• XKΛ: Actual time of operation of escalators in a station</li> <li>• ΠPKΛ: Scheduled / Anticipated time of operation of escalators in a station</li> </ul> <p><i>Note:</i> For a one-month evaluation period, this indicator shall be calculated for all stations, covering in total the Metro services throughout the Revenue Service. The final value of the indicator for the monthly period shall be calculated as the weighted average of the KΛs values for all stations of the line.</p> |

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| A.13. % of ATIMS available in the network |  |
|---|--|
| Method of Calculation                     | Contractor's Operations Report   |
| KPI target value                          | 99%  |
| Detailed Calculation                      | $AM_s = \frac{1}{AMEEs} \sum_q \left( \frac{MA_{q,s}}{\Pi\Lambda} \right) * 100\%$ <ul style="list-style-type: none"> <li>• AM<sub>s</sub>: % of ATIMs available per station</li> <li>• MA: Total number of operating hours of each ATIM within 24 hours</li> <li>• ΠΛ: Total period of Metro operation within 24 hours.</li> <li>• q: Every ATIM</li> <li>• s: station where the availability of ATIMs is recorded</li> <li>• AMEEs: number of ATIMs in an s station</li> </ul> <p><i>Note:</i> For a one-month evaluation period, this indicator shall be calculated for all stations of the line, covering in total the Metro services throughout the Revenue Service. The final value of the indicator for the monthly period shall be calculated as The weighted average of the daily AMs values for each station. The subject indicator shall be mentioned in the report for the entire network as well (as the average of the results per station).</p> |

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| A.14. % of AFCS Gates in operation |  |
|------------------------------------|--|
| Method of Calculation              | Contractor's Operations Report   |
| KPI target value                   | 99.5%  |
| Detailed Calculation               | $A\varSigma s = \frac{1}{A\varSigma \varSigma K s} \sum_f \left( \frac{M\varSigma f, s}{\Pi \Lambda} \right) * 100\%$ <ul style="list-style-type: none"> <li>AΣs: % of AFCS Gates in operation</li> <li>MΣ: Total operating hours of each AFCS within 24 hours</li> <li>ΠΛ: Total period of Metro operation within 24 hours</li> <li>f: each AFCS</li> <li>s: station where the AFCS availability is recorded</li> <li>AΣKK: No. of AFCSs in an s station</li> </ul> <p><i>Note:</i> For a one-month evaluation period, this indicator shall be calculated for all stations of the line, covering in total the Metro services throughout the Revenue Service. The final value of the indicator for the monthly period shall be calculated as the weighted average of the daily AΣs values for each station. The subject indicator shall be mentioned in the report for the entire network as well (as the average of the results per station).</p> |

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### A.15. % of actual service provided covering the scheduled service

| Method of calculation | Contractor's Operations Report   |
|-----------------------|--|
| KPI target value      | N/A  |
| Detailed Calculation  | $ΑΠ = \frac{ΠΜ}{ΑΒ * ΑΕ * ΔΡΜ} * 100\%$ <ul style="list-style-type: none"> <li>• ΑΠ: % of the actual service provided covering the scheduled service</li> <li>• ΠΜ: actual volume of passengers transferred counted within 24 hours</li> <li>• ΑΒ: Number of vehicles of each train</li> <li>• ΑΕ: passenger capacity of each train vehicle</li> <li>• ΔΡΜ: Number of scheduled trips according to the timetable within 24 hours of Metro operation</li> </ul> <p><i>Note:</i> For a one-month evaluation period, this indicator shall be calculated on a daily basis for all stations of the line, covering in total the Metro services throughout the Revenue Service. The final value of the indicator for the monthly reporting period shall be calculated as the weighted average of the daily ΑΠs values for the thirty days of the reporting month.</p> |





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**A.16. Variation of actual ridership as to the initial estimated ridership**

| Method of Calculation | Contractor's Operations Report  |
|-----------------------|---|
| KPI target value      | N/A   |
| Detailed Calculation  | $ΜΠ = \left( \frac{ΠΜ - ΑΛ}{ΑΛ} \right) * 100\%$ <ul style="list-style-type: none"> <li>• ΜΠ: % of the variation of ridership as to the initial estimated ridership</li> <li>• ΠΜ: actual ridership calculated within the month</li> <li>• ΑΛ: Initial estimated ridership calculated on a monthly basis</li> </ul> |

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### A.17. Availability of the Passenger Information System (PIS) at the stations and in the trains

| Method of Calculation | Contractor's Operations Report  |
|-----------------------|---|
| KPI target value      | 99%   |
| Detailed Calculation  | $\%MA_s = \frac{1}{MA_s} \sum_y \left( \frac{\Sigma A_{ys}}{\Pi A} \right) * 100\%$ <ul style="list-style-type: none"> <li>• MA: Available PISs at the stations and in the trains</li> <li>• ΣA: Total operating hours of each PIS within 24 hours</li> <li>• ΠA: Total period of the Metro operation within 24 hours</li> <li>• y: each PIS</li> </ul> <p><i>Note:</i> For a one-month evaluation period, this indicator shall be calculated for all stations in the line, covering in total the Metro services in the entire period of its daily operation. The final value of the indicator for the monthly period shall be calculated as the weighted average of the line stations.</p> |



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| <b>A.18. Quality of the information provided</b> |  |
|--|--|
| Method of Calculation                            | Questionnaire  |
| KPI target value                                 | 70%  |
| Detailed Calculation                             | In order to determine the specific KPI, the availability and reliability of information shall be assessed based on a questionnaire |

| <b>A.19. Availability and reliability of information shown on signs</b> |  |
|---|--|
| Method of Calculation   | Inspection   |
| KPI target value  | 98%  |
| Detailed Calculation  | In order to determine the specific KPI, the availability and reliability of the information shown on signs shall be assessed based on inspection |

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### **A.20. Website information**

|                       |   |
|-----------------------|---|
| Method of Calculation | Inspection  |
| KPI target value      | 4%  |
| Detailed Calculation  | In order to determine the specific KPI, the quality of the website information shall be assessed based on inspection. |

### **A.21. % of Complaints**

|                       |   |
|-----------------------|---|
| Method of Calculation | # of Complaints   |
| KPI target value      | 5%  |
| Detailed Calculation  | $\Pi\P = \frac{A\P}{\Pi M} * 100\%$ <ul style="list-style-type: none"> <li>• ΠΠ: % of complaints</li> <li>• ΑΠ: Number of complaints recorded in the monthly reporting period</li> <li>• ΑΕ: Number of traveling passengers in the monthly reporting period.</li> </ul> |

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| A.22. Speed to respond to written messages |   |
|--|---|
| Method of Calculation                      | Contractor's Operations Report  |
| KPI target value                           | 24 hours  |
| Detailed Calculation                       | $T\Gamma M = \frac{\chi\Gamma M}{\Gamma M}$ <p>TΓM= Speed of response to written messages</p> <p>ΧΑΓΜ= Total of response times to written messages in the reporting period</p> <p>ΓΜ= Total number of written messages received in the reporting period</p> |



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**A.23. Total score of customer satisfaction**

|                       |   |
|-----------------------|---|
| Method of Calculation | Questionnaire   |
| KPI target value      | 70%   |
| Detailed Calculation  | For the determination of the specific KPI, the customer satisfaction shall be assessed based on questionnaire |

**A.24. Personnel – politeness and appearance**

|                       |   |
|-----------------------|---|
| Method of Calculation | Inspection  |
| KPI target value      | 2%  |
| Detailed Calculation  | For the determination of the specific KPI, the politeness, behavior and appearance of personnel shall be assessed based on inspection |

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### A.25. Passenger density

|                       |  |
|-----------------------|--|
| Method of Calculation | Inspection   |
| KPI target value      | 4  |
| Detailed Calculation  | For the determination of the specific KPI, the passenger density per train shall be assessed based on inspection |

### A.26. Mean Time of Call Handling at the PABX

|                       |  |
|-----------------------|--|
| Method of Calculation | Contractor's Operations Report   |
| KPI target value      | 8 minutes  |
| Detailed Calculation  | $EYK = \frac{\sum_{cl} (AN_{cl} + X\Lambda_{cl})}{K\Lambda}$ <ul style="list-style-type: none"> <li>AN: waiting time of call in minutes</li> <li>XΛ: duration of call in minutes</li> <li>cl: every incoming call at the PABX</li> <li>KΛ: total number of incoming calls in the monthly reporting period</li> <li>EYK: average service time per incoming call in minutes</li> </ul> |

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### A.27. Systems' Technical Availability

| Method of Calculation | Contractor's Operations Report   |                                   |                                    |                                    |   |               |        |   |                                   |        |   |                  |        |   |   |        |   |   |        |   |              |        |   |                                    |        |
|-----------------------|--|-----------------------------------|------------------------------------|------------------------------------|---|---------------|--------|---|-----------------------------------|--------|---|------------------|--------|---|---|--------|---|---|--------|---|--------------|--------|---|------------------------------------|--------|
| KPI target value      | Depending on the System  |                                   |                                    |                                    |   |               |        |   |                                   |        |   |                  |        |   |   |        |   |   |        |   |              |        |   |                                    |        |
| Detailed Calculation  | $T\Delta\Sigma = 1 - \frac{\Omega\Delta\Sigma}{\Sigma\Omega\Lambda} * 100\%$ <ul style="list-style-type: none"><li>TΔΣ:% of systems' technical availability</li><li>ΩΔΣ: Systems' downtime throughout the total of service hours in the reporting period</li><li>ΣΩΛ: Total service hours of the operation systems in the reporting period</li></ul> <p>For each one of the available systems, the target value is different and the percentage of the minimum technical availability is presented in the following table.</p> <p>In case the Technical Availability percentage value for a specific system is lower than the minimum technical availability value then, automatically, the total KPI has not achieved the target value.</p> |                                   |                                    |                                    |   |               |        |   |                                   |        |   |                  |        |   |   |        |   |   |        |   |              |        |   |                                    |        |
|                       | <table><tr><th>S/N</th><th>System</th><th>Minimum Technical Availability (%)</th></tr><tr><td>1</td><td>Rolling Stock</td><td>99.00%</td></tr><tr><td>2</td><td>Automatic Train Supervision (ATS)</td><td>99.95%</td></tr><tr><td>3</td><td>OCC Workstations</td><td>99.75%</td></tr><tr><td>4</td><td>Automatic Train Protection (ATP) of the line and on the train</td><td>99.98%</td></tr><tr><td>5</td><td>Automatic driverless Train Operation (ATO) of the line and on the train</td><td>99.50%</td></tr><tr><td>6</td><td>Interlocking</td><td>99.98%</td></tr><tr><td>7</td><td>Power Remote Control System (PRCS)</td><td>99.98%</td></tr></table>  | S/N                               | System                             | Minimum Technical Availability (%) | 1 | Rolling Stock | 99.00% | 2 | Automatic Train Supervision (ATS) | 99.95% | 3 | OCC Workstations | 99.75% | 4 | Automatic Train Protection (ATP) of the line and on the train | 99.98% | 5 | Automatic driverless Train Operation (ATO) of the line and on the train | 99.50% | 6 | Interlocking | 99.98% | 7 | Power Remote Control System (PRCS) | 99.98% |
|                       | S/N  | System                            | Minimum Technical Availability (%) |                                    |   |               |        |   |                                   |        |   |                  |        |   |   |        |   |   |        |   |              |        |   |                                    |        |
|                       | 1  | Rolling Stock                     | 99.00%                             |                                    |   |               |        |   |                                   |        |   |                  |        |   |   |        |   |   |        |   |              |        |   |                                    |        |
|                       | 2  | Automatic Train Supervision (ATS) | 99.95%                             |                                    |   |               |        |   |                                   |        |   |                  |        |   |   |        |   |   |        |   |              |        |   |                                    |        |
| 3                     | OCC Workstations   | 99.75%                            |                                    |                                    |   |               |        |   |                                   |        |   |                  |        |   |   |        |   |   |        |   |              |        |   |                                    |        |
| 4                     | Automatic Train Protection (ATP) of the line and on the train  | 99.98%                            |                                    |                                    |   |               |        |   |                                   |        |   |                  |        |   |   |        |   |   |        |   |              |        |   |                                    |        |
| 5                     | Automatic driverless Train Operation (ATO) of the line and on the train  | 99.50%                            |                                    |                                    |   |               |        |   |                                   |        |   |                  |        |   |   |        |   |   |        |   |              |        |   |                                    |        |
| 6                     | Interlocking   | 99.98%                            |                                    |                                    |   |               |        |   |                                   |        |   |                  |        |   |   |        |   |   |        |   |              |        |   |                                    |        |
| 7                     | Power Remote Control System (PRCS)   | 99.98%                            |                                    |                                    |   |               |        |   |                                   |        |   |                  |        |   |   |        |   |   |        |   |              |        |   |                                    |        |





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|    |  |         |
|----|--|---------|
| 8  | Traction Current Removal System (TCR)              | 99.99%  |
| 9  | Optical Transmission Network and Fibre Optics (FO) | 99.998% |
| 10 | Platform Screen Doors (PSD)                        | 99.70%  |
| 11 | Building Automation Control System (BACS)          | 99.95%  |
| 12 | Telephone System - Automatic and Direct Line       | 99.98%  |
| 13 | Radio Communication at the tunnels                 | 99.98%  |
| 14 | Traction Power                                     | 99.99%  |

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| A.28. % of PSDs available in the network |  |
|--|--|
| Method of Calculation                    | Contractor's Operations Report   |
| KPI target value                         | 99.5%  |
| Detailed Calculation                     | $\Pi\Theta_s = \frac{1}{M\Theta A_s} \sum_w \left( \frac{MA_{w,s}}{\Pi\Lambda} \right) * 100\%$ <ul style="list-style-type: none"> <li>• <math>\Pi\Theta_s</math>: % of PSDs available per station</li> <li>• MA: Total number of operating hours of each PSD within 24 hours</li> <li>• <math>\Pi\Lambda</math>: Total period of Metro operation within 24 hours</li> <li>• w: Each PSD</li> <li>• s: station where the availability of PSDs is recorded</li> <li>• MΘAs: number of PSDs in an s station</li> </ul> <p><i>Note:</i> For a one-month evaluation period, this indicator shall be calculated for all stations of the line, covering in total the Metro services throughout the Revenue Service. The final value of the indicator for the monthly reporting period shall be calculated for each station as the weighted average of the AOs values for the entire network (as the average of the results per station).</p> |

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### B.1. Mean time to repair or to maintain

| Method of Calculation | Contractor's Operations Report  |
|-----------------------|---|
| KPI target value      | N/A   |
| Detailed Calculation  | $MXE = \frac{\Sigma X\Lambda}{AE\Sigma\Sigma}$ <ul style="list-style-type: none"> <li>• MXE: Mean time to repair or to maintain in the reporting period</li> <li>• ΣXΛ: Total service time of Thessaloniki Metro in the reporting period</li> <li>• AEΣΣΣ: Number of maintenance works/instructions causing interruptions or delays in service in the reporting period</li> </ul> |

### B.2. Buildings Maintenance

| Method of Calculation | Inspection  |
|-----------------------|---|
| KPI target value      | 2   |
| Detailed Calculation  | For determining the specific KPI, the progress of building maintenance works shall be evaluated based on inspection |

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### B.3. Vehicle-km related check per train and maintenance cycle

| Method of Calculation | Contractor's Operations Report   |
|-----------------------|--|
| KPI target value      | N/A  |
| Detailed Calculation  | $MA\Sigma = \max_T (OX\Pi_t - OX\Sigma_t)$ <ul style="list-style-type: none"> <li>• <math>MA\Sigma</math>: Maximum train vehicle-km deviation from the foreseen train vehicle-km during which maintenance related activities must be performed in the monthly reporting period</li> <li>• <math>OX\Pi_t</math>: Foreseen train vehicle-km, upon completion of which regular train maintenance must be carried out in the monthly reporting period</li> <li>• <math>OX\Sigma_t</math>: actual vehicle-km per train, upon completion of which maintenance works are actually executed in the monthly reporting period</li> <li>• <math>T</math>: total number of trains in service per monthly reporting period</li> </ul> |

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### B.4. Supervision of foreseen maintenance activities

|                       |   |
|-----------------------|---|
| Method of Calculation | Inspection  |
| KPI target value      | 0   |
| Detailed Calculation  | For determining the specific KPI, the progress of the foreseen maintenance works shall be evaluated based on inspection |

### B.5. Mean time between failures (MTBF)

|                       |   |
|-----------------------|---|
| Method of Calculation | Contractor's Operations Report  |
| KPI target value      | N/A   |
| Detailed Calculation  | $MTBF = \frac{\Sigma \chi \lambda}{\text{ΑΑΠ}}$ <ul style="list-style-type: none"> <li>• MTBF: Mean Time Between Failures in the reporting period</li> <li>• ΣΧΛ: Total service time of the Thessaloniki Metro in the reporting period</li> <li>• ΑΑΠ: Number of failures per reporting period</li> </ul> |



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| B.6. Scheduled man-hours for maintenance |  |
|--|--|
| Method of Calculation                    | Contractor's Operations Report   |
| KPI target value                         | N/A  |
| Detailed Calculation                     | $\Sigma YNT = \frac{E\S * d * h}{E\Gamma * d * h}$ <ul style="list-style-type: none"> <li>• ΣYNT: percentage of maintenance man-hours / service man-hours</li> <li>• EΣ: number of persons engaged in the maintenance</li> <li>• EΓ: number of persons engaged in the entire Metro operation</li> <li>• d: number of work days per employee per month</li> <li>• h: number of work hours per employee per day</li> </ul> |



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**B.7. Scheduled man-hours for maintenance per km**

| Method of Calculation | Contractor's Operations Report   |
|-----------------------|--|
| KPI target value      | N/A  |
| Detailed Calculation  | $\frac{E\Sigma * d * h}{\chi\lambda}$ <ul style="list-style-type: none"> <li>d: number of work days per employee per month</li> <li>h: number of work hours per employee per day</li> <li><math>\chi\lambda</math>: total kms of line</li> <li><math>E\Sigma</math>: number of persons engaged in maintenance</li> </ul> |

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### B.8. Scheduled man-hours for maintenance per station

|                       |  |
|-----------------------|--|
| Method of Calculation | Contractor's Operations Report   |
| KPI target value      | N/A  |
| Detailed Calculation  | $\frac{E\S * d * h}{s}$ <ul style="list-style-type: none"> <li>d: number of work days per employee per month</li> <li>h: number of work hours per employee per day</li> <li>s: total number of stations of the line</li> <li>EΣ: number of persons engaged in maintenance</li> </ul> |

### C.1. Scoring of the perception of cleanliness in stations

|                       |  |
|-----------------------|--|
| Method of Calculation | Inspection   |
| KPI target value      | 98%  |
| Detailed Calculation  | For determining the specific KPI, the cleanliness of each station shall be evaluated once every month in relation to the report / checklist to be determined by AM based on inspection |





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### **C.2. Scoring of the perception of cleanliness in trains**

|                       |  |
|-----------------------|--|
| Method of Calculation | Inspection   |
| KPI target value      | 98%  |
| Detailed Calculation  | For determining the specific KPI, the cleanliness of each train shall be evaluated once every month in relation to the report / checklist to be determined by AM based on inspection |

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### D1. Response to failures or dangerous conditions

| Method of Calculation | Contractor's Operations Report   |
|-----------------------|--|
| KPI target value      | 98%  |
| Detailed Calculation  | $AΣΕΣ = \left( 0,30 \cdot \frac{AK15s}{ΣK} + 0,40 \cdot \frac{AK1h}{ΣKA} + 0,30 \cdot \frac{AA48h}{ΣTA} \right) \cdot 100\%$ <ul style="list-style-type: none"> <li>• AΣΕΣ: % of response to failures or dangerous conditions</li> <li>• AK15s: Number of calls responded within 15sec</li> <li>• ΣK: Total of calls</li> <li>• AK1h: Number of critical / urgent reports addressed within 1 hour</li> <li>• ΣKA: Total of critical / urgent reports</li> <li>• AA48h: Number of typical reports addressed within 48 hours</li> <li>• ΣTA: Total of typical reports</li> </ul> |



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| D.2.% of injuries caused to the maintenance personnel |   |
|---|---|
| Method of Calculation                                 | Contractor's Operations Report  |
| KPI target value                                      | 0%  |
| Detailed Calculation                                  | $ΤΡΠΣ = \frac{ΑΤΠΣ}{ΣΠΣ} * 100\%$ <ul style="list-style-type: none"><li>• ΤΡΠΣ :% of injuries caused to the maintenance personnel</li><li>• ΑΤΠΣ: Number of injured employees belonging to the maintenance personnel in the reporting period</li><li>• ΣΠΣ: Total maintenance personnel</li></ul> |

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### D.3. Lost Man-hours due to injuries caused to the maintenance personnel

| Method of Calculation | Contractor's Operations Report  |
|-----------------------|---|
| KPI target value      | 0%  |
| Detailed Calculation  | $ΧΕΠΣ = \frac{ΧΕΤΠΣ}{ΣΕΠΣ} * 100\%$ <ul style="list-style-type: none"> <li>ΧΕΠΣ: % of lost man-hours due to injuries caused to the maintenance personnel</li> <li>ΧΕΤΠΣ: lost man-hours due to injuries caused to the maintenance personnel in the reporting period</li> <li>ΣΕΠΣ: Total man-hours worked by the maintenance personnel in the reporting period</li> </ul> |

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### D.4. Cases of cyber security violation

|                       |   |
|-----------------------|---|
| Method of Calculation | Contractor's Operations Report  |
| KPI target value      | 0   |
| Detailed Calculation  | The number of cyber security violations in one-month period is calculated |

### D.5. Immediacy of Passenger Information in emergencies (PA, PIS)

|                       |   |
|-----------------------|---|
| Method of Calculation | Contractor's Operations Report  |
| KPI target value      | 98%   |
| Detailed Calculation  | $AM = \frac{EM' * \alpha + \Sigma M' * \beta}{\Sigma \Pi}$ <ul style="list-style-type: none"> <li>• AM: Promptness</li> <li>• EM': number of incidents in which the first information message was announced to the public in 3 minutes</li> <li>• ΣM': number of incidents in which audio information messages were announced every 5 minutes until the incident ended</li> <li>• ΣΠ: total number of incidents requiring passenger information</li> </ul> <p>α=50   β=50</p> |

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### D.6. Cases of intrusion in protected areas

|                       |   |
|-----------------------|---|
| Method of Calculation | Contractor's Operations Report  |
| KPI target value      | 0   |
| Detailed Calculation  | The number of intrusions of protected areas in one month period is calculated |

### D.7. % of lost trips due to accidents

|                       |  |
|-----------------------|--|
| Method of Calculation | Contractor's Operations Report   |
| KPI target value      | 0%   |
| Detailed Calculation  | $\chi\lambda\lambda\lambda = \frac{\alpha\pi\Delta\lambda}{\Sigma\alpha\pi\Delta} * 100\%$ <ul style="list-style-type: none"> <li>ΧΕΠΣ: % of lost trips due to accidents</li> <li>ΑΠΔΑ: number of cancelled scheduled trips due to accidents per year</li> <li>ΣΑΠΔ: total number of scheduled trips per year</li> </ul> |

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| D.8. % of CCTV cameras in operation |  |
|-------------------------------------|--|
| Method of Calculation               | Contractor's Operations Report   |
| KPI target value                    | 99.5%  |
| Detailed Calculation                | $\Pi K_s = \frac{1}{AK\Sigma_s} \sum_v \left( \frac{\Omega K v, s}{\Pi \Lambda} \right) * 100\%$ <ul style="list-style-type: none"> <li>• <math>\Pi K_s</math>: % of CCTV cameras in operation per station</li> <li>• <math>\Omega K</math>: Total number of operating hours of each CCTV camera within 24h</li> <li>• <math>\Pi \Lambda</math>: Total period of Metro operation within 24 hours.</li> <li>• <math>v</math>: Each CCTV camera</li> <li>• <math>s</math>: station where the availability of CCTV cameras is recorded</li> <li>• <math>AK\Sigma_s</math>: number of CCTV cameras within an s station</li> </ul> <p>Note: For a one-month evaluation period, this indicator shall be calculated for all stations of the line, covering in total the entire Metro operation. The final value of the indicator for the monthly period shall be calculated as the weighted average of the <math>\Pi K_s</math> values for each station. The subject indicator shall be mentioned in the report for the entire network as well (as the average of the results per station).</p> |



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| E.1. Ability to avoid fare evasion |  |
|------------------------------------|--|
| Method of Calculation              | AM Information   |
| KPI target value                   | 98%  |
| Detailed Calculation               | $IAE = \left( \frac{MKE}{AEEI} \right) * 100\%$ <ul style="list-style-type: none"> <li>• IAEs: Ability to avoid (fare evasion)</li> <li>• MKE: number of inspected passengers holding a valid ticket in all stations and inspections</li> <li>• AEE: total number of inspected passengers in all stations and inspections</li> </ul> |



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| E.2. % of tickets inspection |   |
|------------------------------|---|
| Method of Calculation        | AM Information  |
| KPI target value             | 0.5%  |
| Detailed Calculation         | $IEE = \frac{AEE}{\Sigma AE} * 100\%$ <ul style="list-style-type: none"> <li>IEEs: % of tickets inspection</li> <li>AEE: number of passengers inspected in the reporting period</li> <li>ΣAE: total number of passengers in all stations</li> </ul> |

| F.1. Average delay in the submission of the foreseen reports |  |
|--|--|
| Method of Calculation  | AM Information   |
| KPI target value   | 0  |
| Detailed Calculation   | The subject indicator is calculated on the basis of AM information |

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### F.2. Average delay in the submission of the foreseen documents

|                       |  |
|-----------------------|--|
| Method of Calculation | AM Information   |
| KPI target value      | 0  |
| Detailed Calculation  | The subject indicator is calculated on the basis of AM information |

### F.3. Man-hours utilized for further improvement / training of the personnel

|                       |   |
|-----------------------|---|
| Method of Calculation | Contractor's Operations Report  |
| KPI target value      | N/A   |
| Detailed Calculation  | $\frac{E \Sigma E * d * h}{E \Sigma * h_m}$ <ul style="list-style-type: none"> <li>d: number of work days per employee per month in which programs for further training take place</li> <li>h: number of work hours per employee per day in which programs for further training take place</li> <li>EΣE: number of employees participating in further training programs</li> <li>EΣ: total number of employees</li> <li><math>h_m</math> : total work hours per employee per month</li> </ul> |

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### **4. Payments Deduction Mechanism (PDM)**

#### **4.1 Description of the Payments Deduction Mechanism**

The PDM in combination with the Performance Report aims at ensuring the smooth operation of the Thessaloniki metro in respect of predefined targets. The PDM is a mechanism which ensures the deduction of the payments made to the Contractor and involves the reduction of the Monthly Flat Charge when the target values of critical KPIs are not met. The mechanism only includes high criticality KPIs, as these are presented in Chapter 3 of this document.

Aggregate KPIs (AKPIs) are the indicators which include one or more KPIs. In order to develop them, the KPIs are assigned Weight Coefficients, as these are described in chapter 4.2 herein. Weight Coefficients do not weight the target values but rather the payments deduction level of every AKPI.

A maximum payments deduction percentage is set for the AKPIs depending on their importance in ensuring the smooth operation of the Thessaloniki Metro. These percentages may be increased further to a continued non-fulfillment of the target values of one or more KPIs. The maximum payments deduction percentage of all KPIs (without assuming any eventual continued non-fulfillment of the target values of one or more KPIs) shall be equal to 12% of the Contractor's monthly payment. This percentage may be increased up to 15% of the Contractor's monthly payment, if failure to meet the target values of one or more Aggregate KPIs is noted for 1 to 3 consecutive months and may rise up to 24%, if failure to fulfill the target values of one or more than one AKPIs is noted for more than 4 months.

The additional increase percentages applicable to the payments deduction percentages shall be calculated as follows:

| <b>Condition</b>                                  | <b>Additional increase percentage applicable to Deduction Percentage</b> |
|---|--|
| Failure to meet one AKPI for 1 month              | 0%   |
| Failure to meet one AKPI for 2 consecutive months | 15%  |
| Failure to meet one AKPI for 3 consecutive months | 30%  |
| Failure to meet one AKPI for 4 consecutive months | 100%   |

More precisely, the payments deduction percentage shall be calculated as follows:

| <b>Scenario</b>  | <b>Payment Deduction Rate</b>         |
|--|---------------------------------------|
| - Failure to meet one or more AKPIs with a cumulative payments deduction percentage <12% | Sum of payments deduction percentages |

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|   |   |
|---|---|
| - No continued failure to meet an AKPI for more than 1 month  |   |
| <ul style="list-style-type: none"> <li>- Failure to meet one or more AKPIs with a cumulative payments deduction percentage <math>\geq 12\%</math></li> <li>- No continued failure to meet an AKPI for more than 1 month</li> </ul>  | <b>Total deduction: 12%</b>   |
| <ul style="list-style-type: none"> <li>- Failure to meet one or more AKPIs with a cumulative payments deduction percentage <math>&lt; 12\%</math></li> <li>- Continued failure to meet one or more AKPIs for more than 1 month and less than 4 months</li> <li>- No continued failure to meet an AKPI for more than 4 months</li> </ul>             | <p>Sum of payments deduction percentages and sum of the additional increase percentages applicable to the payments deduction percentages for indicators with 1 or more continued achievement failures for 3 or less than 3 months</p> <p><b>Total deduction up to 15%</b></p> |
| <ul style="list-style-type: none"> <li>- Failure to meet one or more AKPIs with a cumulative payments deduction percentage <math>\geq 12\%</math></li> <li>- Continued failure to meet one or more AKPIs for more than 1 month and less than 4 months</li> <li>- No continued failure to meet an AKPI for more than 4 months</li> </ul>             | <p>12% + Sum additional increase percentages applicable to the payments deduction percentages for indicators with 1 or more continued achievement failures for 3 or less than 3 months</p> <p><b>Total deduction up to 15%</b></p>  |
| <ul style="list-style-type: none"> <li>- Failure to meet one or more AKPIs with a cumulative payments deduction percentage <math>&lt; 12\%</math></li> <li>- No continued failure to meet one or more AKPIs for more than 1 month and less than 4 months</li> <li>- Failure to meet one or more AKPIs for more than 4 consecutive months</li> </ul> | <p>Sum of payments deduction percentages + Sum of additional increase percentages applicable to the payments deduction percentages for an AKPI with achievement failure of more than 4 consecutive months</p> <p><b>Total deduction up to 24%</b></p>                         |
| <ul style="list-style-type: none"> <li>- Failure to meet one or more AKPIs with a cumulative payments deduction percentage <math>\geq 12\%</math></li> <li>- No continued failure to meet one or more AKPIs for more than 1 month and less than 4 months</li> <li>- Failure to meet one or more AKPIs for more than 4 consecutive months</li> </ul> | <p>12% + Sum of additional increase percentages applicable to the payments deduction percentages for an AKPI with achievement failure of more than 4 consecutive months</p> <p><b>Total deduction up to 24%</b></p>   |
| - Failure to meet one or more AKPIs with a cumulative   | Sum of payments deduction   |

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|  |   |
|--|---|
| <p>payments deduction percentage &lt;12%</p> <ul style="list-style-type: none"> <li>- Continued failure to meet one or more AKPIs for more than 1 month and less than 4 months</li> <li>- Failure to meet one or more AKPIs for more than 4 consecutive months</li> </ul>  | <p>percentages + Sum of additional increase percentages applicable to the payments deduction percentages for indicators with 1 or more continued achievement failures for 3 or less than 3 months + Sum of additional increase percentages applicable to the payments deduction percentages for AKPIs with achievement failure of more than 4 consecutive months</p> <p><b>Total deduction up to 24%</b></p>      |
| <ul style="list-style-type: none"> <li>- Failure to meet one or more AKPIs with a cumulative payments deduction percentage <math>\geq 12\%</math></li> <li>- Continued failure to meet one or more AKPIs for more than 1 month and less than 4 months</li> <li>- Failure to meet one or more AKPIs for more than 4 consecutive months</li> </ul> | <p>12% + Sum of the additional increase percentages applicable to the payments deduction percentages for indicators with 1 or more continued achievement failures for 3 or less than 3 months + Sum of additional increase percentages applicable to the payments deduction percentages for composite AKPIs with achievement failure of more than 4 continuous months</p> <p><b>Total deduction up to 24%</b></p> |

It should be noted that during the first three (3) months of the operation of the Thessaloniki Metro, the Contractor shall receive the monthly payment without the deduction of the payment deriving from the PDM.

Moreover, for every day of delayed submission of the Monthly Performance Report, the Contractor shall be charged with 0.02% on the monthly payment.

### **4.2 AKPIs Overview**

The following table presents the AKPIs, the KPIs that compose the AKPIs, the importance of the KPIs in the AKPIs in terms of percentage, and the activity they fall into:



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| <b>A/A</b> | <b>AKPI</b>   | <b>No. of KPI</b> | <b>KPI</b>  | <b>KPI Importance %</b> | <b>Activity</b> |
|------------|---------------|-------------------|---|-------------------------|-----------------|
| 1          | Vehicle-km    | 1.1               | % of vehicle-km travelled   | 100%                    | Operation       |
| 2          | Reliability   | 2.1               | Arrival accuracy  | 30%                     |                 |
|            |               | 2.2               | % of Trains operating according to schedule                                   | 20%                     |                 |
|            |               | 2.3               | Regularity of trains  | 20%                     |                 |
|            |               | 2.4               | Availability of rail service  | 30%                     |                 |
| 3          | Accessibility | 3.1               | % of Lifts available for use  | 15%                     |                 |
|            |               | 3.2               | % of Escalators available for use   | 25%                     |                 |
|            |               | 3.3               | % of ATIMs available in the network   | 15%                     |                 |
|            |               | 3.4               | % of AFCS Gates in service  | 20%                     |                 |
|            |               | 3.5               | % of motorized PSDs available in the network                                  | 25%                     |                 |
| 4          | Information   | 4.1               | Availability of the Passenger Information System (PIS) in stations and trains | 35%                     |                 |

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|   |                                   |     |  |      |             |
|---|-----------------------------------|-----|--|------|-------------|
|   |                                   | 4.2 | Quality of information provided                      | 20%  |             |
|   |                                   | 4.3 | Availability and Reliability of information signs    | 25%  |             |
|   |                                   | 4.3 | Availability and Reliability of information signs    | 25%  |             |
|   |                                   | 4.4 | Website information                                  | 20%  |             |
| 5 | Customer Service and Satisfaction | 5.1 | % Complaints   | 30%  |             |
|   |                                   | 5.2 | Speed of response to written requests                | 25%  |             |
|   |                                   | 5.3 | Personnel – politeness and appearance                | 20%  |             |
|   |                                   | 5.4 | Mean Time of Call Handling at the Call Centre        | 25%  |             |
| 6 | Systems’ reliability              | 6.1 | Systems’ Technical Availability                      | 100% |             |
| 7 | Maintenance                       | 7.1 | Buildings’ Maintenance                               | 20%  |             |
|   |                                   | 7.2 | Supervision of foreseen maintenance activities       | 80%  | Maintenance |
| 8 | Cleaning                          | 8.1 | Scoring of the perception of cleanliness in stations | 50%  | Cleaning    |



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|   |                      |     |   |     |                     |
|---|----------------------|-----|---|-----|---------------------|
|   |                      | 8.2 | Scoring of the perception of cleanliness in trains          | 50% |                     |
| 9 | Security/ Protection | 9.1 | Response to failures or to dangerous conditions             | 25% | Security/Protection |
|   |                      | 9.2 | Case of cyber security violations                           | 10% |                     |
|   |                      | 9.3 | Immediacy of passenger information in emergencies (PA, PIS) | 20% |                     |
|   |                      | 9.4 | Case of intrusion in protected areas                        | 25% |                     |
|   |                      | 9.5 | % of CCTV cameras in operation                              | 20% |                     |





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The maximum payments deduction percentage per AKPI derives from the following table:

| Activity    | Composite KPI                     | Maximum percentage of Payments Deduction |
|-------------|-----------------------------------|--|
| Operation   | Vehicle-km                        | 6.00%                                    |
|             | Effectiveness                     | 6.00%                                    |
|             | Accessibility                     | 2.00%                                    |
|             | Information                       | 2.00%                                    |
|             | Customer Service and Satisfaction | 2.00%                                    |
|             | Systems' Reliability              | 3.00%                                    |
| Maintenance | Maintenance                       | 5.00%                                    |
| Cleaning    | Cleaning                          | 3.00%                                    |
| Security    | Security                          | 3.00%                                    |



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**4.3 Analysis of Payment Reduction of KPI of High Importance**

**4.3.1 AKPI 1**

**4.3.1.1 KPI 1.1**

| <b>% of Vehicle-km travelled</b> |      |
|----------------------------------|------|
| KPI 1.1 Target value             | 95%  |
| Importance of KPI 1.1 in AKPI 1  | 100% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| <b>Value of Indicator 1.1</b> | <b>Marginal Percentage of Payment Deduction</b> | <b>Cumulative Percentage of Payment Deduction</b> |
|-------------------------------|---|---|
| Target value up to 94.00%     | 1.8%  | 1.8%  |
| 93.99%-93.01%                 | 1.8%  | 3.6%  |
| 93% & less than 93%           | 2.4%  | 6.0%  |

As concerns this indicator, an offset percentage for the monthly payment deduction is calculated, in case the indicator's value exceeds 100%. The offset percentage is indicated here-below:

| <b>Value of Indicator 1.1</b> | <b>Marginal Percentage of Payment Deduction</b> | <b>Cumulative Percentage of Payment Deduction</b> |
|-------------------------------|---|---|
| 100.1%-102%                   | 1.5%  | 1.5%  |
| 102.1%-104.99%                | 1.5%  | 3.0%  |



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|                    |      |      |
|--------------------|------|------|
| 105% and over 105% | 3.0% | 6.0% |
|--------------------|------|------|

As concerns the subject indicator, if, at the end of a calendar month, the difference between the sum up of the offset percentages of payment deduction and reduction is positive, the difference shall be set off in equal amounts against any reductions in the Contractor's fee for the subsequent year. The offset may be implemented throughout the subsequent year.

**4.3.2 AKPI 2**

**4.3.2.1 KPI 2.1**

| Arrival Accuracy                |       |
|---------------------------------|-------|
| KPI 2.1 Target Value            | 99.6% |
| Importance of KPI 2.1 in AKPI 2 | 30%   |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 2.1 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 99% | 1.5%                                     | 1.5%                                       |
| 98.99%-98.01%          | 1.5%                                     | 3.0%                                       |
| 98% and less than 98%  | 3%                                       | 6.0%                                       |



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**4.3.2.2 KPI 2.2**

| <b>% of Trains operating according to schedule</b> |     |
|--|-----|
| KPI 2.2 Target Value                               | 98% |
| Importance of KPI 2.2 in AKPI 2                    | 20% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| <b>Value of Indicator 2.2</b> | <b>Marginal Percentage of Payment Deduction</b> | <b>Cumulative Percentage of Payment Deduction</b> |
|-------------------------------|---|---|
| Target value up to 97%        | 1.5%  | 1.5%  |
| 96.99%-96.01%                 | 1.5%  | 3.0%  |
| 96% and less than 96%         | 3%  | 6.0%  |

**4.3.2.3 KPI 2.3**

| <b>Trains Regularity</b>        |       |
|---------------------------------|-------|
| KPI 2.3 Target Value            | 99.7% |
| Importance of KPI 2.3 in AKPI 2 | 20%   |



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For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 2.3 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 99% | 1.5%                                     | 1.5%                                       |
| 98.99%-98.01%          | 1.5%                                     | 3.0%                                       |
| 98% and less than 98%  | 3.0%                                     | 6.0%                                       |

**4.3.2.4 KPI 2.4**

| Availability of Rail Service    |       |
|---------------------------------|-------|
| KPI 2.4 Target value            | 99.7% |
| Importance of KPI 2.4 in AKPI 2 | 30%   |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 2.4 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 99% | 1.5%                                     | 1.5%                                       |
| 98.99%-98.01%          | 1.5%                                     | 3.0%                                       |



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|                       |      |      |
|-----------------------|------|------|
| 98% and less than 98% | 3.0% | 6.0% |
|-----------------------|------|------|

**4.3.3 AKPI 3**

**4.3.3.1 KPI 3.1**

| % of Lifts available for use    |     |
|---------------------------------|-----|
| KPI 3.1 Target value            | 99% |
| Importance of KPI 3.1 in AKPI 3 | 15% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 3.1 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 98% | 0.6%                                     | 0.6%                                       |
| 97.99%-97.01%          | 0.6%                                     | 1.2%                                       |
| 97% and less than 97%  | 0.8%                                     | 2.0%                                       |



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**4.3.3.2 KPI 3.2**

| % of Escalators available for use |     |
|-----------------------------------|-----|
| KPI 3.2 Target value              | 99% |
| Importance of KPI 3.2 in AKPI 3   | 25% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 3.2 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 98% | 0.6%                                     | 0.6%                                       |
| 97.99%-97.01%          | 0.6%                                     | 1.2%                                       |
| 97% and less than 97%  | 0.8%                                     | 2.0%                                       |

**4.3.3.3 KPI 3.3**

| % of ATIMs available to the public |     |
|------------------------------------|-----|
| KPI Target value 3.3               | 99% |
| Importance of KPI 3.3 in AKPI 3    | 15% |



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For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 3.3 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 98% | 0.6%                                     | 0.6%                                       |
| 97.99%-97.01%          | 0.6%                                     | 1.2%                                       |
| 97% and less than 97%  | 0.8%                                     | 2.0%                                       |

**4.3.3.4 KPI 3.4**

| % of AFCS gates in operation    |       |
|---------------------------------|-------|
| KPI 3.4 target value            | 99.9% |
| Importance of KPI 3.4 in AKPI 3 | 20%   |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 3.4   | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|--------------------------|--|--|
| Target value up to 99.5% | 0.6%                                     | 0.6%                                       |





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|                       |      |      |
|-----------------------|------|------|
| 99.49%-99.01%         | 0.6% | 1.2% |
| 99% and less than 99% | 0.8% | 2.0% |

**4.3.3.5 KPI 3.5**

| % of Motorized PSDs available in the network |       |
|--|-------|
| KPI 3.5 target value                         | 99.5% |
| Importance of KPI 3.5 in AKPI 3              | 25%   |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 3.5 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 99% | 0.6%                                     | 0.6%                                       |
| 98. 9%-98.01%          | 0.6%                                     | 1.2%                                       |
| 98% and less than 98%  | 0.8%                                     | 2.0%                                       |



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**4.4.1 AKPI 4**

**4.4.1.1 KPI 4.1**

| Availability of the Passenger Information System (PIS) at the stations and in the trains |     |
|--|-----|
| KPI 4.1 target value   | 99% |
| Importance of KPI 4.1 in AKPI 4  | 35% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 4.1 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 98% | 0.6%                                     | 0.6%                                       |
| 97.99%-97.01%          | 0.6%                                     | 1.2%                                       |
| 97% and less than 97%  | 0.8%                                     | 2.0%                                       |

**4.4.1.2 KPI 4.2**

| Quality of the provided information |     |
|-------------------------------------|-----|
| KPI 4.2 target value                | 70% |
| Importance of KPI 4.2 in AKPI 4     | 20% |



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For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 4.2    | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|---------------------------|--|--|
| Target value up to 60.01% | 0.6%                                     | 0.6%                                       |
| 60-50.01%                 | 0.6%                                     | 1.2%                                       |
| 50% and less than 50%     | 0.8%                                     | 2.0%                                       |

**4.4.1.3 KPI 4.3**

| Availability and reliability of information shown on signs |     |
|--|-----|
| KPI 4.3 target value                                       | 98% |
| Importance of KPI 4.3 in AKPI 4                            | 25% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 4.3 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 97% | 0.6%                                     | 0.6%                                       |
| 96.99%-96.01%          | 0.6%                                     | 1.2%                                       |



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|                       |      |      |
|-----------------------|------|------|
| 96% and less than 96% | 0.8% | 2.0% |
|-----------------------|------|------|

**4.4.1.4 KPI 4.4**

| Website Information             |     |
|---------------------------------|-----|
| KPI 4.4 target value            | 4%  |
| importance of KPI 4.4 in AKPI 4 | 20% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 4.4 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 6%  | 0.6%                                     | 0.6%                                       |
| 6.01%-9.99%            | 0.6%                                     | 1.2%                                       |
| 10% and less than 10%  | 0.8%                                     | 2.0%                                       |



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**4.5.1 AKPI 5**

**4.5.1.1 KPI 5.1**

| % of Complaints                 |     |
|---------------------------------|-----|
| KPI 5.1 target value            | 5%  |
| Importance of KPI 5.1 in AKPI 5 | 30% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 5.1 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 6%  | 0.6%                                     | 0.6%                                       |
| 6.01%-7.99%            | 0.6%                                     | 1.2%                                       |
| 8% and less than 8%    | 0.8%                                     | 2.0%                                       |

**4.5.1.2 KPI 5.2**

| Response speed to written requests |          |
|------------------------------------|----------|
| KPI 5.2 target value               | 24 hours |
| Importance of KPI 5.2 in AKPI 5    | 25%      |



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For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 5.2      | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|-----------------------------|--|--|
| Target value up to 36 hours | 0.6%                                     | 0.6%                                       |
| 36.01-48 hours              | 0.6%                                     | 1.2%                                       |
| 48 hours and more           | 0.8%                                     | 2.0%                                       |

**4.5.1.3 KPI 5.3**

| Personnel – politeness and appearance |     |
|---------------------------------------|-----|
| KPI 5.3 target value                  | 2%  |
| Importance of KPI 5.3 in AKPI 5       | 20% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 5.3 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 3%  | 0.6%                                     | 0.6%                                       |



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|                |      |      |
|----------------|------|------|
| 3.01%-4.99%    | 0.6% | 1.2% |
| 5% and over 5% | 0.8% | 2.0% |

**4.5.1.4 KPI 5.4**

| Mean Time for Handling a Call at the PABX |           |
|---|-----------|
| KPI 5.4 target value                      | 8 minutes |
| Importance of KPI 5.4 in AKPI 5           | 25%       |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 5.4        | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|-------------------------------|--|--|
| Target value up to 12 minutes | 0.6%                                     | 0.6%                                       |
| 12.01-15 minutes              | 0.6%                                     | 1.2%                                       |
| More than 15 minutes          | 0.8%                                     | 2.0%                                       |



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**4.6.1 AKPI 6**

**4.6.1.1 KPI 6.1**

| Systems' Technical Availability |                         |
|---------------------------------|-------------------------|
| KPI 6.1 target value            | Depending on the System |
| Importance of KPI 6.1 in AKPI 6 | 100%                    |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 6.1  | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|---|--|--|
| Value lower than the minimum technical availability of any system | 3.0%                                     | 3.0%                                       |

It must be noted that for the first two years as of the commencement of operation, indicator 6.1. shall not constitute a part of the payments deduction mechanism.

**4.7.1 AKPI 7**

**4.7.1.1 KPI 7.1**

**Buildings Maintenance**





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|                                 |     |
|---------------------------------|-----|
| KPI 7.1 target value            | 2   |
| Importance of KPI 7.1 in AKPI 7 | 20% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 7.1 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 3   | 2.0%                                     | 2.0%                                       |
| Over 3                 | 3.0%                                     | 5.0%                                       |

**4.7.1.2 KPI 7.2**

| Supervision of foreseen maintenance activities |     |
|--|-----|
| KPI 7.2 target value                           | 0   |
| Importance of KPI 7.2 in AKPI 7                | 80% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:



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| Value of Indicator 7.2 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| 1 and over             | 5.0%                                     | 5.0%                                       |

**4.8.1 AKPI 8**

**4.8.1.1 KPI 8.1**

| Scoring of the perception of cleanliness in stations |     |
|--|-----|
| KPI 8.1 target value                                 | 98% |
| Importance of KPI 8.1 in AKPI 8                      | 50% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 8.1      | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|-----------------------------|--|--|
| Target value up to 95%      | 1.0%                                     | 1.0%                                       |
| 94.99% and less than 94.99% | 2.0%                                     | 3.0%                                       |

**4.8.1.2 KPI 8.2**

| Scoring of the perception of cleanliness in trains |     |
|--|-----|
| KPI 8.2 target value                               | 98% |



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|                                 |     |
|---------------------------------|-----|
| Importance of KPI 8.2 in AKPI 8 | 50% |
|---------------------------------|-----|

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 8.2      | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|-----------------------------|--|--|
| Target value up to 95%      | 1.0%                                     | 1.0%                                       |
| 94.99% and less than 94.99% | 2.0%                                     | 3.0%                                       |

**4.9.1 AKPI 9**

**4.9.1.1 KPI 9.1**

| Response to failures or dangerous conditions |     |
|--|-----|
| KPI 9.1 target value                         | 98% |
| Importance of KPI 9.1 in AKPI 9              | 25% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:



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| Value of Indicator 9.1 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 97% | 0.8%                                     | 0.8%                                       |
| 96.99%-96.01%          | 0.8%                                     | 1.6%                                       |
| 96% and less than 96%  | 1.4%                                     | 3.0%                                       |

**4.9.1.2 KPI 9.2**

| Cases of cyber security violation |     |
|-----------------------------------|-----|
| KPI 9.2 target value              | 0   |
| Importance of KPI 9.2 in AKPI 9   | 10% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 9.2 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| 1 and over             | 3%                                       | 3%   |



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**4.9.1.3 KPI 9.3**

| Immediacy of Passenger Information in emergencies (PA, PIS) |     |
|---|-----|
| KPI 9.3 target value  | 98% |
| Importance of KPI 9.3 in AKPI 9                             | 20% |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 9.3 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 97% | 0.8%                                     | 0.8%                                       |
| 96.99%-96.01%          | 0.8%                                     | 1.6%                                       |
| 96% and less than 96%  | 1.4%                                     | 3.0%                                       |

**4.9.1.4 KPI 9.4**

| Cases of intrusion in protected areas |     |
|---------------------------------------|-----|
| KPI 9.4 target value                  | 0   |
| Importance of KPI 9.4 in AKPI 9       | 25% |



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For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 9.4 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| 1 and over             | 3.0%                                     | 3.0%                                       |

**4.9.1.5 KPI 9.5**

| % of CCTV cameras in operation  |       |
|---------------------------------|-------|
| KPI 9.5 target value            | 99.5% |
| Importance of KPI 9.5 in AKPI 9 | 20%   |

For reasons of calculating the monthly payment deduction, the payment deduction per indicator value shall be calculated as follows:

| Value of Indicator 9.5 | Marginal Percentage of Payment Deduction | Cumulative Percentage of Payment Deduction |
|------------------------|--|--|
| Target value up to 99% | 0.8%                                     | 0.8%                                       |
| 98.99%-98.01%          | 0.8%                                     | 1.6%                                       |
| 98% and less than 98%  | 1.4%                                     | 3.0%                                       |



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**ANNEX 1: Definitions**

|   |   |
|---|---|
| Cancelled Trip  | A cancelled trip is a trip which was not executed at all.   |
| Payments Deduction due to Non Availability on his part or due to Delay in Services Delivery | The reduction in the Monthly Payment due to the Contractor's failure to meet his availability obligations as regards the services provided or his delay in the delivery of services, as his availability and the performance are specified in the PPP Contract and in this Payments Document and as measured either on the basis of the KPIs presented herein, or in the framework of controls performed by AM. |
| Failed Trip   | A failed trip is a trip that has not started until the scheduled departure time of the subsequent trip (Failure at the start of the train trip) or a trip that ends before 75% of the train trip is completed (withdrawal from Service).  |
| Failure   | Failure means the interruption of the operation of a system which lasts longer than the duration of the operational headway. Any accidental or intentional bad use by the personnel does not constitute a “Failure” in the sense of the term described in this document.  |
| Consumer Price Index (CPI)  | The consumer price index, as prepared and published on a month basis by the Hellenic Statistical Authority.   |
| Trip  | A trip is the journey of an Train in Operation from its scheduled starting position up to the specified terminal station, based on the scheduled trips.   |
| Annual Flat Charge  | The maximum fee paid by the Awarding Authority to the Contractor, which corresponds to one (1) full Contractual Year of Services and is partially re-adjusted based on the Consumer Price Indicator.  |



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|                                    |   |
|------------------------------------|---|
| Delay                              | <p>A train trip is delayed if the actual time of the travel exceeds the scheduled travel time (applicable under normal operation conditions and in downgraded operation conditions) by the seconds corresponding to the operational headway. Only commenced train trips shall be considered as delayed.</p> <p>Any accidental or intentional bad use does not constitute an Operation Failure leading to a Delay in the sense described in this document.</p> |
| Cyber-security                     | <p>All arrangements and measures introduced for the protection of the information systems and their users against unauthorized access, attacks and damage, so as to ensure the confidentiality, integrity and availability of the data.</p>   |
| Mean Cycle Between Failures (MCBF) | <p>Number of operation cycles per reporting period)/(Number of failures per reporting period).</p>  |
| Mean Time To Repair (MTTR)         | <p>The Mean Time To Repair is the mean active repair time required after the arrival of the maintenance crew to identify and isolate the fault, to execute repair works and to carry out the operational control in order to verify that the system has reverted to a fully operational mode.</p>   |
| Mean Time Between Failures (MTBF)  | <p>Number of hours of operation per reporting period)/(Number of failures per reporting period).</p>  |
| Monthly Payment                    | <p>The payment calculated and paid on a monthly basis by the Awarding Authority to the Contractor having implemented the foreseen Deductions.</p>   |
| Vehicle/kilometers                 | <p>Vehicle/kilometers are the kilometers (distance) covered by the trains.</p>  |
| Speed restriction                  | <p>Speed restriction means the maximum speed in which a train can safely pass through a track section under the existing conditions at the time of passage.</p>   |





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|   |   |
|---|---|
| Case of Non Availability / Delay in Services Delivery | A specific case of the Contractor's failure to meet his availability obligations as regards the services provided or a specific case related to the Contractor's delay in the delivery of services, as his availability and performance are specified in the PPP Contract and in this Payments Document and as measured either on the basis of the KPIs presented herein, or in the framework of controls performed by AM, which (specific case), once identified, leads to the reduction in the Monthly Flat Charge or the Annual Flat Charge during the respective Contractual Month of Services or Contractual Year of Services. |
| Temporary speed limitation                            | Temporary speed limitation is a planned limitation in train speed due to temporary conditions, e.g. indicatively, maintenance conditions.   |
| Contractual Year of Services                          | The twelve-month time period which starts on January 1 <sup>st</sup> and ends on December 31 <sup>st</sup> of each calendar year, with the following exception:<br><br>a) the first Contractual Year of Services will be the time period which starts on the Services Availability Date and ends on December 31 <sup>st</sup> of the same calendar year and<br><br>b) the Last Contractual Year of Services will be the time period which starts on January 1 <sup>st</sup> of the last calendar year of the Contractual Period and ends in the last day of the Contractual Period in the same calendar year.                       |
| Contractual Month of Services                         | Every calendar month of a Contractual Year of Services, with the following exception:<br><br>a) the first Contractual Month of Services starts on the Services Availability Date and ends on the last day of the same calendar month, and<br><br>b) the Last Contractual Month of Services starts on the first day of the last calendar month of the Contractual Period and ends on the last day of the Contractual Period in the same calendar month.  |



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|              |   |
|--------------|---|
| Target-value | Target-value is the minimum (or, depending on the case, the maximum) value, which must be achieved for each Key Performance Indicator, so that the performance of the indicator is deemed acceptable. |
|--------------|---|

**ANNEX 2: Abbreviations**

|                 |   |
|-----------------|---|
| AMEE /<br>ATIM  | Αυτόματο Μηχάνημα Έκδοσης Εισιτηρίων /<br>Automatic Ticket Issuing Machine              |
| ΑΣΣΚ /<br>AFCS  | Αυτόματο Σύστημα Συλλογής Κομίστρου /<br>Automatic Fare Collection System               |
| ΔΑΑ /<br>KPIs   | Δείκτες Αξιολόγησης Απόδοσης /<br>Key Performance Indicators                            |
| ΜΑΠ /<br>PDM    | Μηχανισμός Απομείωσης Πληρωμών /<br>Payments Deduction Mechanism (PDM)                  |
| ΣΔΑΑ /<br>AKPIs | Σύνθετοι Δείκτες Αξιολόγησης Απόδοσης /<br>Aggregate Key Performance Indicators (AKPIs) |
| AM              | ΑΤΤΙΚΟ ΜΕΤΡΟ Α.Ε. /<br>ΑΤΤΙΚΟ ΜΕΤΡΟ Σ.Α.  |
| ΑΣΣΚ /<br>AFC   | Αυτόματο Σύστημα Συλλογής Κομίστρου /<br>Automatic Fare Collection                      |
| MCBF            | Μέσος Κύκλος Μεταξύ Βλαβών/<br>Mean Cycle Between Failures                              |
| MTBF            | Μέσος Χρόνος Μεταξύ Βλαβών /<br>Mean Time Between Failures                              |
| MTTR            | Μέσος Χρόνος έως την Επισκευή /   |



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|             |   |
|-------------|---|
|             | Mean Time to Repair   |
| ΣΠΕ/<br>PIS | Σύστημα Πληροφόρησης Επιβατών /<br>Passenger Information System |



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**ANNEX 3: Review of AKPI and KPI of High Criticality**

| S/N | AKPI          | KPI S/N | KPI  | Target value | KPI Percentage of Importance | Maximum Penalty per AKPI |
|-----|---------------|---------|--|--------------|------------------------------|--------------------------|
| 1   | Vehicle kms   | 1.1     | % of Coverage of Vehicle kms   | 95%          | 100%                         | 6%                       |
| 2   | Reliability   | 2.1     | Arrival Accuracy   | 99.6%        | 30%                          | 6%                       |
|     |               | 2.2     | % of of trains operating according to schedule   | 98%          | 20%                          |                          |
|     |               | 2.3     | Regularity of Trains   | 99.7%        | 20%                          |                          |
|     |               | 2.4     | Availability of rail service   | 99.7%        | 30%                          |                          |
| 3   | Accessibility | 3.1     | % of lifts available for use   | 99%          | 15%                          | 2%                       |
|     |               | 3.2     | % of escalators available for use  | 99%          | 25%                          |                          |
|     |               | 3.3     | % of ATIMs available in the network  | 99%          | 15%                          |                          |
|     |               | 3.4     | % of AFCS gates in operation   | 99.9%        | 20%                          |                          |
|     |               | 3.5     | % of motorized PSDs available in the network   | 99.5%        | 25%                          |                          |
| 4   |               | 4.1     | Availability of the Passenger Information System (PIS) in stations and on-board the trains | 99%          | 35%                          | 2%                       |

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|   |                                   |     |  |                         |      |    |
|---|-----------------------------------|-----|--|-------------------------|------|----|
|   |                                   | 4.2 | Quality of information provided                      | 70%                     | 20%  |    |
|   |                                   | 4.3 | Availability and reliability of information signs    | 98%                     | 25%  |    |
|   |                                   | 4.4 | Website information                                  | 4%                      | 20%  |    |
| 5 | Customer Service and Satisfaction | 5.1 | % of Complaints                                      | 5%                      | 30%  | 2% |
|   |                                   | 5.2 | Speed of response to written requests                | 24 hours                | 25%  |    |
|   |                                   | 5.3 | Personnel – Politeness and appearance                | 2%                      | 20%  |    |
|   |                                   | 5.4 | Mean Time of Call Handling at the PABX               | 8 minutes               | 25%  |    |
| 6 | Systems' Reliability              | 6.1 | Systems' Technical Availability                      | Depending on the System | 100% | 3% |
| 7 | Maintenance                       | 7.1 | Buildings Maintenance                                | 2                       | 20%  | 5% |
|   |                                   | 7.2 | Supervision of foreseen maintenance activities       | 0                       | 80%  |    |
| 8 | Cleaning                          | 8.1 | Scoring of the perception of cleanliness in stations | 98%                     | 50%  | 3% |
|   |                                   | 8.2 | Scoring of the perception of cleanliness in trains   | 98%                     | 50%  |    |



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|   |                         |     |   |       |     |    |
|---|-------------------------|-----|---|-------|-----|----|
| 9 | Security/<br>Protection | 9.1 | Response to failures or dangerous conditions                | 98%   | 25% | 3% |
|   |                         | 9.2 | Cases of cyber security violation                           | 0     | 10% |    |
|   |                         | 9.3 | Immediacy of Passenger Information in emergencies (PA, PIS) | 98%   | 20% |    |
|   |                         | 9.4 | Cases of intrusion in protected areas                       | 0     | 25% |    |
|   |                         | 9.5 | % of CCTV cameras in operation                              | 99.5% | 20% |    |
|   |                         |     |   |       |     |    |



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**ANNEX 4: Review of Payment Deduction for KPI of High Criticality (without weighting based on the importance percentage)**

| <b>S/N<br/>KPI</b> | <b>KPI</b>                                     | <b>Range 1</b>            |      | <b>Range 2</b> |      | <b>Range 3</b>        |      |
|--------------------|--|---------------------------|------|----------------|------|-----------------------|------|
| 1.1                | % of Coverage of Vehicle kms                   | Target value up to 94.00% | 1.8% | 93.99%-93.01%  | 3.6% | 93% and less than 93% | 6.0% |
| 2.1                | Arrival accuracy                               | Target value up to 99%    | 1.5% | 98.99%-98.01%  | 3.0% | 98% and less than 98% | 6.0% |
| 2.2                | % of of trains operating according to schedule | Target value up to 97%    | 1.5% | 96.99%-96.01%  | 3.0% | 96% and less than 96% | 6.0% |
| 2.3                | Regularity of Trains                           | Target value up to 99%    | 1.5% | 98.99%-98.01%  | 3.0% | 98% and less than 98% | 6.0% |
| 2.4                | Availability of rail service                   | Target value up to 99%    | 1.5% | 98.99%-98.01%  | 3.0% | 98% and less than 98% | 6.0% |
| 3.1                | % of lifts available for use                   | Target value up to 98%    | 0.6% | 97.99%-97.01%  | 1.2% | 97% and less than 97% | 2.0% |



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|-----|--|---------------------------|------|---------------|------|-----------------------|------|
| 3.2 | % of escalators available for use  | Target value up to 98%    | 0.6% | 97.99%-97.01% | 1.2% | 97% and less than 97% | 2.0% |
| 3.3 | % of ATIMs available in the network  | Target value up to 98%    | 0.6% | 97.99%-97.01% | 1.2% | 97% and less than 97% | 2.0% |
| 3.4 | % of AFCS gates in operation   | Target value up to 99.5%  | 0.6% | 99.49%-99.01% | 1.2% | 99% and less than 99% | 2.0% |
| 3.5 | % of PSDs available in the network   | Target value up to 99%    | 0.6% | 98.99%-98.01% | 1.2% | 98% and less than 98% | 2.0% |
| 4.1 | Availability of the Passenger Information System (PIS) in stations and on-board the trains | Target value up to 98%    | 0.6% | 97.99%-97.01% | 1.2% | 97% and less than 97% | 2.0% |
| 4.2 | Quality of information provided  | Target value up to 60,01% | 0.6% | 60%-50.01%    | 1.2% | 50% and less than 50% | 2.0% |
| 4.3 | Availability and reliability of information signs  | Target value up to 97%    | 0.6% | 96.99%-96.01% | 1.2% | 96% and less than 96% | 2.0% |





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|-----|---|--|------|---------------------|------|-----------------------------|------|
| 4.4 | Website information                       | Target value<br>up to 6%   | 0.6% | 6.01%-9.99%         | 1.2% | 10% and<br>more than<br>10% | 2.0% |
| 5.1 | % of Complaints                           | Target value<br>up to 6%   | 0.6% | 6.01%-7.99%         | 1.2% | 8% and more<br>than 8%      | 2.0% |
| 5.2 | Speed of response to<br>written requests  | Target value<br>up to 36<br>hours  | 0.6% | 36.01-48<br>hours   | 1.2% | More than 48<br>hours       | 2.0% |
| 5.3 | Personnel – Politeness<br>and appearance  | Target value<br>up to 3%   | 0.6% | 3.01%-4.99%         | 1.2% | 5% and more<br>than 5%      | 2.0% |
| 5.4 | Mean Time of Call<br>Handling at the PABX | Target value<br>up to 12<br>minutes  | 0.6% | 12.01-15<br>minutes | 1.2% | More than 15<br>minutes     | 2.0% |
| 6.1 | Systems' Technical<br>Availability        | Value lower<br>than the<br>minimum<br>technical<br>availability of<br>any system | 3.0% | N/A                 | N/A  | N/A                         | N/A  |
| 7.1 | Buildings Maintenance                     | Target value<br>up to 3  | 2.0% | More than 3         | 5.0% | N/A                         | N/A  |



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|-----|---|------------------------|------|-----------------------------|------|-----------------------|------|
| 7.2 | Supervision of foreseen maintenance activities              | 1 and more than 1      | 5.0% | N/A                         | N/A  | N/A                   | N/A  |
| 8.1 | Scoring of the perception of cleanliness in stations        | Target value up to 95% | 1.0% | 94.99% and less             | 3.0% | N/A                   | N/A  |
| 8.2 | Scoring of the perception of cleanliness in trains          | Target value up to 95% | 1.0% | 94.99% and less than 94.99% | 3.0% | N/A                   | N/A  |
| 9.1 | Response to failures or dangerous conditions                | Target value up to 97% | 0.8% | 96.99%-96.01%               | 1.6% | 96% and less than 96% | 3.0% |
| 9.2 | Cases of cyber security violation                           | 1 and more than 1      | 3.0% | N/A                         | N/A  | N/A                   | N/A  |
| 9.3 | Immediacy of Passenger Information in emergencies (PA, PIS) | Target value up to 97% | 0.8% | 96.99%-96.01%               | 1.6% | 96% and less than 96% | 3.0% |
| 9.4 | Cases of intrusion in protected areas                       | 1 and more than 1      | 3.0% | N/A                         | N/A  | N/A                   | N/A  |



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|     |                                |                        |      |                   |      |                       |      |
|-----|--------------------------------|------------------------|------|-------------------|------|-----------------------|------|
| 9.5 | % of CCTV cameras in operation | Target value up to 99% | 0.8% | 98.99%-<br>98.01% | 1.6% | 98% and less than 98% | 3.0% |
|-----|--------------------------------|------------------------|------|-------------------|------|-----------------------|------|