**TECHNICAL SPECIFICATION**

**On restoring and ensuring the operation of the LCD monitors of the passenger information system in the vehicles of RM LLC Rīgas satiksme**

**Subject of the procurement:** Restoration and maintenance of LCD monitors for the passenger information system installed in RM LLC Rīgas satiksme (hereinafter referred to as the Customer) public transport, i.e. buses, trolleybuses (Solaris) and the 1st delivery low-floor trams (Škoda), which have exceeded the manufacturer's warranty (hereinafter referred to as the Vehicles)

**Expected duration of the Contract:**

1. **6 months for the implementation of technical solution (including the delivery of equipment);**
2. **Warranty period – 36 months after signing the acceptance deed for the delivery of particular equipment.**

**Payment:** Customer ensures payment for the delivered equipment (after signing the acceptance deed for a certain amount) in full.

**The present situation:** Vehicles of different types and manufacturers with LCD monitors (number of monitors – 350 units) of different resolutions (see Table 1 for a detailed list of vehicle models and number) are at the disposal of Customer. The existing LCD monitor solutions are wired to a network switch which is connected to the Customer's mobile router Teltonika RUTX50 (https://wiki.teltonika-networks.com/view/RUTX50\_Manual). The data connection to the Customer's ERP system (Porteus) server in Microsoft Azure is provided via a private APN and via Microsoft Azure Express route using private IP addressing and DNS records. Internal vehicle network has fixed IP addresses. Vehicles have a variable voltage and a standard range of 12V-36V DC, and can experience rapid temperature fluctuations during the winter months with regular crossing of the condensation point. Vehicles generate regular vibrations during the movement which requires additional demands for the fastenings and connections. As part of the planned procurement, it will be necessary to restore the operation of 350 LCD monitors.

**Information on the vehicles that are at the disposal of Customer and**

**have exceeded the manufacturer's warranty**

Table 1

*“\*\*” – the number of LCD monitors in each model of vehicle type will be specified after the market research (in the process of forming the procurement documents)*

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| *Type* | *Model* | *Year of delivery* | *Number of vehicles but the number of monitors can vary due to the model of vehicle\*\** |
| **Trolleybuses** | Škoda 27Tr | 2014/2015 | 25 |
| 2016 | 50 |
| 2018/2019 | 75 |
| 2020 | 100 |
| **Buses** | Solaris Urbino 18 | 2014 | 35 |
| Solaris Urbino 18 | 2015 | 35 |
| Solaris Urbino 18 | 2017 | 35 |
| Solaris Urbino 12 | 2017 | 35 |
| Solaris Urbino 18 | 2022 | 8 |
| **Trams** | T-3A  | n/a | 100 (carriages) |
| T-3M | n/a |
| **Trams** **(low-floor)** | 15T  | 2009 | 26 (compositions) |
| 15T1 |

**FORM OF THE TECHNICAL TENDER**

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| **TECHNICAL SPECIFICATION** | **Tenderer's technical solution**  | **The pros and cons of the proposed solution, additional comments and opinions.** |
| 1. The Tenderer shall provide:
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| * 1. A full technical solution that includes setting the required resolution and restoring and maintaining the operation of LCD monitors of the passenger information system in the Customer's vehicles and connecting them to the unified passenger information system CRM (Porteus). The vehicles for which the technical solution has to be provided within the timeframe specified in point 3.2 will be agreed with the Customer after the signing of the Contract.
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| * 1. The possibility to connect the LCD monitor control unit to the Microsoft Azure infrastructure managed by the Customer and to display the information prepared for passengers in accordance with the CRM requirements online in *html* format.
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| * 1. The following parameters related to the operation of the equipment:
		1. electrical supply voltage/power supply in the operating range 12-36V DC;
		2. operating temperature of at least -30oC to +40oC;
		3. operating relative humidity of at least 15% to 85%;
		4. IP of at least IP30;
		5. secure connection considering vibrations during the movement of vehicle.
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| * 1. The proposed equipment (if additionally required to the technical solution proposed by the Tenderer) must meet the following requirements: at least 16GB RAM, at least 64GB SSD internal data storage, on-board CPU at least Single Core performance 1090 and Multi Core performance 2900.
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| * 1. The Tenderer shall deliver the solution with all the necessary software and licences installed (if needed).
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| * 1. The Tenderer shall provide details of the necessary routing and connections to the Customer's equipment which will be agreed upon during implementation, but the routing shall not violate the Customer's security policies and procedures.
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| 1. The Customer shall replace the equipment in the vehicles by its own means.
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| 1. The Tenderer shall provide the service within the following deadlines:
	1. installation of at least 1 (one) prototype of the solution in the Customer's Vehicle - within 2 (two) weeks after signing the Contract;
	2. provide the technical solution for at least 350 LCD monitors - within 6 months from the date of signing the Contract;
	3. if the warranty repair cannot be carried out within 10 working days, the Tenderer shall replace the defective equipment.
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| * 1. The Tenderer shall provide at least 36 (thirty-six) months warranty for the technical solution installed in the Customer's Vehicles (installed equipment and the software works in the delivered equipment).
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| 1. Support should be provided for all types of Vehicles mentioned in the Technical Specification. The list in the Technical Specification may be revised during the term of Contract.
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| 1. The Tenderer shall provide:
	1. additional spare parts for 24 (twenty four) months after the expiry of the warranty period;
	2. availability of at least 3 (three) spare kits (solution set (equipment for LCD monitor operation and cables and/or fixing brackets, screws) and software) at the Customer's warehouse at no additional cost for operational replacement of the solution for each type of Vehicle;
	3. software for automatic configuration of the equipment parameters.
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| 1. The Tenderer shall provide on-site training to at least 4 (four) employees of the Customer on the replacement, programming (including rebooting of the software after repairs) and other maintenance of the technical solution (including equipment) installed on the Vehicles. Duration of the training shall be at least 4 (four) hours for each of the Customer's employees.
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| 1. The minimum level of technical support for the service offered:
	1. The warranty service shall include the work, materials and parts necessary to prevent operational problems of the solution mentioned in the Technical Specification according to the warranty conditions and software updates according to the manufacturer's conditions;
		1. provide support on weekdays from 8:00 a.m. to 4:00 p.m.;
		2. response time to a problem request – no later than the next working day from 8:00 a.m. to 4:00 p.m.;
		3. if the Customer cannot resolve the problem, the availability of a technician is ensured no later than the next working day from 8:00 a.m. to 16:00 p.m. or by agreement with the Customer on another time or method of delivery of the equipment;
		4. Tenderer must provide centralised processing of requests, problems and faults for services provided during the period of the Contract, during working hours (from 8:00 a.m. to 4:00 p.m.) through the following channels:
2. calls to a specified contact telephone number or e-mails to a specified e-mail address:
3. upon receipt, the application shall be registered in the Tenderer's Application System, stating the time of the application and providing a registration confirmation by sending a reply e-mail;
4. Customer shall be provided with an access to the applications registered in the Tenderer’s Application System.
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| 1. ADDITIONAL PROVISIONS, GUIDELINES AND RECOMMENDATIONS to be considered for the preparation and implementation of quality procurement documents.
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