**TECHNICAL SPECIFICATION**

**On integration of external LED information panels and audio announcement system of RP SIA “Rīgas satiksme”** **low-floor trams of the 1st delivery with RP SIA “Rīgas satiksme” vehicle management system PikasFleet**

**Subject of the procurement**: On integration of external LED information panels and audio announcement system of RP SIA “Rīgas satiksme” low-floor trams of the 1st delivery with RP SIA “Rīgas satiksme” vehicle management system PikasFleet.

**Expected duration of the Contract: 6 months and 36-month warranty period**

**The present situation:** 26 low-floor trams (hereinafter referred to as ZGT) with LED external information panels (number of LED panels 350 units), for which the manufacturer's warranty has expired are at the disposal of Customer:

* model 15T (20 compositions – 3-section), number of LED panels in one ZGT – 13 units;
* model 15T1 (6 compositions – 4-sections), number of LED panels in one ZGT – 15 units.

Each ZGT has a side, front and rear information panel and on-board information monitor (diagram of the location of LED information panels is attached as the Annex 1.1). The monitors display information related to the public transport route.

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.

**Annexed:** Annex 1 – Form of technical tender that includes the requirements of technical specification.

**Annex 1**

**FORM OF 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 for integration of existing external LED information panels and audio announcement system of Customer’s low-floor trams of the 1st delivery with Customer’s vehicle management system PikasFleet,

*or*A full technical solution that provides the replacement of existing external LED information panels together with required fastenings and integration of audio announcement system of Customer’s low-floor trams of the 1st delivery with Customer’s vehicle management system PikasFleet. |  |  |
| * 1. Possibility to display the following information in LED information panels:
		1. number of route and the driving direction in the front LED panel;
		2. number of route and the driving direction in the rear LED panel;
		3. number of route and the driving direction in the side LED panel (installed onboard in each section between passenger doors);
		4. in the side LED panel (installed at the 1st passenger door) or in the front right lower corner behind the windshield, for informing the visually impaired about the route number and/or pictogram.
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| * 1. The front and side LED information panels display two rows of letters and the route number of three-digits, as well as special graphic pictograms.
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| * 1. There is no limit to the number of symbols for the name of the route direction, a "sliding" line solution is automatically provided in cases where the length of the text exceeds the length of one line of diodes.
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| * 1. Applied color of display – orange LED diodes. Resolution cannot be less than existing one (see Annex 1.1).
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| * 1. Possibility to change tone of the LED diodes for the route number displayed on the front LED panel.
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| * 1. Possibility to play information, providing volume control and defining day and night mode:
		1. in the internal onboard speakers. The maximum difference of sound intensity in the vehicle must not exceed 3 dB (A). Ability to play audio announcements using the microphone installed in the driver's cabin;
		2. external speakers. It must be possible to control the external speakers from the vehicle driver's cabin.
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| * 1. Display and playing of information synchronously with the Customer's existing passenger information system (API availability).
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| * 1. Functionality for management of information switching in fully autonomous manual mode.
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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 17-36 VDC;
		2. operating temperature of at least - 40oC līdz + 70oC;
		3. operating relative humidity of at least 15% līdz 85%;
		4. device IP of at least IP30;
		5. secure connection considering vibrations during the movement of vehicle.
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| * 1. Monitoring system for diagnostic of system errors and the control of information displaying in the Customer’s infrastructure Microsoft Azure.
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| * 1. The Tenderer shall delivery the solution with all necessary software and unlimited licenses installed (if needed).
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| * 1. Customer's mobile router Teltonika RUTX50 (<https://wiki.teltonika-networks.com/view/RUTX50_Manual>) must be used to ensure communication;
	2. 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 and/or configure the equipment in the vehicles by its own means with the support of the Tenderer’s specialists. The Tenderer shall take the damaged equipment/spare part from the Customer's warehouse and replace it with another one within 2 working days.
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| 1. The Tenderer shall provide the service within the following deadlines:
	1. installation of at least 1 (one) technical solution or prototype (equipment) in Customer’s ZGT – within 1 (one) month after signing of the Contract;
	2. technical solution or delivery of new equipment for 26 ZGT – within 6 (six) months after signing of the Contract*.*
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| 1. The Tenderer shall provide the documentation of the technical solution or the new equipment in Latvian and English language.
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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.
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| 1. Support should be provided for all Vehicles mentioned in the Technical Specification.
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| 1. The Tenderer shall provide:
	1. additional spare parts for 12 (twelve) months after the expiry of the warranty period;
	2. availability of at least 1 (one) operative spare kit at the Customer’s warehouse at no additional cost for operational replacement of the solution. Restoration of the spare kit at Customer’s warehouse within 2 working days;
	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) of the technical solution (including equipment) installed in ZGT and other issues related to the maintenance of the technical solution.
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| 1. The minimum level of technical support for the service offered within the warranty period and post-warranty cases:
	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 working days 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 by its own means, the availability of technician is ensured on-site 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 to the Customer.
		4. Tenderer must provide centralized 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.) via 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. Tenderer shall provide the access to the Customer 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 procurement documents.
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***Annex 1.1***

*To the TECHNICAL SPECIFICATION*

*“On integration of external LED information panels*

*and audio announcement system of RP SIA “Rīgas satiksme” low-floor trams*

*of the 1st delivery with RP SIA “Rīgas satiksme”*

*vehicle management system PikasFleet”*

Information about the external and internal LED information panels

of the 1st delivery low-floor trams

1. **Location**



*Image – 3-section low-floor tram\**

* **1** – Front and rear LED information panels where the information about route number and driving direction is displayed – 3-digit route number with minimal height 170 mm and two lines of letters with a minimum height of 90 mm.
* **2** – Side external LED information panel where the information about route number and driving direction is displayed.
* ***3*** *– LCD panels that do not relate to this Market Research.*
* **4** – Internal LED information panel where the sliding text – information about driving direction, date, time and the next stop - is displayed.
* **5** – Informative panel where the time and route number is displayed.

**II. Size and resolution**

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| *Type of information panel* | *Size* | *Resolution (number of LED)* |
| Front and rear LED information panel | 200 mm x 1440 mm | 18 rows, 140 columns |
| Side external LED information panel | 200 mm x 1200 mm | 18 rows, 119 columns |
| Internal LED information panel where the sliding text is displayed | 38 mm x 642 mm | 8 rows, 144 columns |
| Informative panel where the time is displayed | - | - |

*\*Location of panels in 4-section low-floor tram is identical, number of LED panels is indicated in the Technical specification.*