**TECHNICAL SPECIFICATION**

**PROVISION OF LOCAL REGULAR BUS SERVICES FOR THE CARRIAGE OF PASSENGERS IN VILNIUS CITY AND NEIGHBOURING MUNICIPALITIES**

**TERMS USED IN THE TECHNICAL SPECIFICATION**

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| **Infrastructure** | means streets, roads, bridges and viaducts, and turn-around points carrying vehicular traffic. |
| **E-** **Charging infrastructure** | means e-charging stations for charging vehicles, power cables, inlets, and other infrastructure necessary for charging vehicles; |
| **Authorized Body** | means “Susisiekimo paslaugos” SĮ. |
| **Route** | means local regular bus routes within the territory of Vilnius City and neighbouring municipalities. |
| **Vehicle** | means buses of the type specified in the Technical Specification. |
| **New vehicle** | means a new, previously not operated vehicle, manufactured no earlier than 2025, and used the Carrier to commence the rendering of the service. |
| **Vehicle reserve** | means the number of vehicles on standby required to replace vehicles that have broken down or are otherwise not functioning properly. |
| **Schedule** | means the rules specifying the arrival and departure times of the vehicle at the starting, terminal, intermediate and interchange point stops on the route (information on the arrival/departure times at interchange stops is provided digitally to the Carrier), the number of vehicles serving the route, and the number of journeys along the route. |
| **Services** | means the provision of passenger transportation services on local (urban) regular transportation routes under the conditions specified in the Contract in accordance with the Order, with the established Rates, which the Carrier, taking into account its commercial interests, would not undertake or would not undertake to the same extent or under the same conditions without receiving a compensation. |
| **Mileage** | means the number of kilometres travelled by the vehicle when carrying passengers on the route. The number of kilometres travelled by the replacement vehicle from the garage (parking space) to the point of entry into the scheduled route shall not be considered as mileage. |
| **Midi bus (midi)** | means a type of double-axle bus with a length of between 8.3 and 10.1 metres and with at least 16 passenger seats; the total number of seats and standing places provided must be at least 45, excluding 1 seat for a disabled person/ a person with special needs in a wheelchair. |
| **Two-axle bus (two-axle)** | means a type of double-axle bus with a length of between 11.8 and 12.3 metres and with at least 25 passenger seats; the total number of seats and standing places provided must be at least 75, excluding 1 seat for disabled persons/persons with special needs in a wheelchair. |

**Part I. General Provisions**

* + - 1. The objective is to select a Carrier to provide passenger transportation services on the routes of the public transport system of Vilnius City (see Table 1) in vehicles meeting the requirements laid down in this Technical Specification and the Contract, and adapted to carry passengers in urban conditions.
      2. The Carrier must render passenger transportation services using new vehicles in accordance with the schedules provided by the Authorised Body.
      3. Table 1 of this Technical Specification “Route information” indicates the provisional timetables for the **7 routes** to be served by the vehicle according to the schedules provided by the Authorized Body (see Annex 1 to the Technical Specification “Provisional schedules for public transport route traffic”). The Carrier will provisionally be required to operate not less than **47 vehicles** **(4 midi buses and 43 two-axle buses)** and a vehicle reserve of **at least 10 percent**  (**see Table 1**) of this number, taking into consideration the technological parameters of the vehicles offered in the tender, respectively by type of vehicle.
      4. The names of the routes listed in Table 1, the route, the length of the route, and the type of vehicle may be subject to adjustment at the time of signing and/or execution of the procurement Contract. No changes to the terms of the Contract are required to change the name of the route, to change the route or to introduce an additional route. The arrangements for organising and operating the routes are set out in Annex 3 to the Contract.
      5. The planned total annual (12-month) mileage of the 7 routes (see Table 1) shall be **4,800,000 (four million eight hundred thousand)** kilometres (of which the estimated mileage of the midi bus routes shall be 310,000 km, the estimated mileage of the two-axle bus routes shall be 4,490,000 km). **The total annual mileage may be increased by no more than 30 (thirty) per cent or decreased by no more than 15 (fifteen) per cent from the planned provisional annual (12-month) total mileage of the routes referred to in this clause, in accordance with the procedures set out in the Contract.**
      6. In the event of an increase in the mileage on the routes, as provided for in point 5 of this Technical Specification and in accordance with the procedures laid down in the Contract, the Carrier shall increase the number of vehicles and the reserve of vehicles proportionately (but not less than by 10 %) in such a way as to ensure the proper performance of the contractual obligations laid down in the Contract.
      7. The mileage referred to in clause 5 of this Technical Specification will not include the distance to be covered by the Carrier's vehicles as a result of circumstances related to the Carrier's work/operation organisation, e.g. the need to recharge the vehicles etc., and zero mileage.
      8. The provisional routes are listed in Table 1 with the routes numbers shown in the table: 1–7 with 4 midi buses and 43 two-axle buses, the estimated start of the services shall be the date indicated in the Carrier's tender, but the services shall commence no later than 730 (seven hundred and thirty) calendar days after the date of entry into force of the Contract. For the commencement of services on the routes referred to in this clause, the Carrier must have a reserve of at least 10 % of the minimum number of vehicles required to operate the route.
      9. The Carrier shall provide the e-charging infrastructure required for the vehicles at its own expense and resources and shall ensure the proper functioning of this infrastructure during the performance of the Contract.
      10. Before the start of the service, the Carrier must install in the vehicles the e-ticketing equipment provided by the Authorized Body, i.e. the vehicles used in providing the service must be equipped with e-ticketing hardware. The Authorised Body will provide the software necessary to the integration and functioning of the hardware of the Carrier’s e-ticketing equipment and will ensure the maintenance of the software.
      11. The Authorised Body, for the duration of the provision of transportation services, will provide the Carrier with the e-ticketing equipment in accordance with the procedure and deadlines laid down in the Contract. The requirements for the installation and maintenance of the hardware for the e-ticketing equipment are set out in Annex 3 of the Technical Specification.
      12. Vehicles must be certified in accordance with Regulation (EU) 2018/858/EC of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC.
      13. The vehicles offered by the Carrier must meet the requirements according to UN/EEC Regulation No. 107[[1]](#footnote-2),no less than those for class I buses.

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| Table 1. Information on PT routes | | | | | |  |
| **No.** | **Provisional name of route** | **Provisional route (streets)** | **Provisional route length A-B-A (km)** | **Planned frequency of route during peak periods (times per hour)** | **Planned frequency of route in peak hours (min.)** | **Minimum number of vehicles serving the route, units** | **Vehicle type (midi, two-axle)** |
| 1 | Grigiškės –Gariūnų g. – Oslo g. – Savanorių pr. | Lentvario g., Mokyklos g., Kovo 11–osios g., A1 kelias, Kirtimų g., Gariūnų g., Oslo g., Laisvės pr., Savanorių pr., G.Vilties g.\* | 26.20 | 6 | 10-11 | 6 | two-axle |
| 2 | Stotis – Drujos g. – Žalgirio g. – Stotis | Drujos g., Olandų g., Tuskulėnų g., Žalgirio g., Geležinio Vilko g., Vilkpėdės g., Naugarduko g., Iešmininkų g., Panerių g., Algirdo g., Geležinkelio g. | 16.80 | 6 | 9-10 | 8 | two-axle |
| 3 | Santariškės –Antakalnis – A. Goštauto g. – Iešmininkų g. | Santariškių g., Jeruzalės g., Kalvarijų g., Kareivių g., O. Milašiaus g., Antakalnio g., T. Kosciuškos g., Arsenalo g., Žygimantų g., A. Goštauto g., Geležinio Vilko g., V. Pietario g., Žemaitės g., Naugarduko g., Iešmininkų g. | 39.35 | 6 | 10-13 | 11 | two-axle |
| 4 | Dvarčionys-Saulėtekis-Antakalnio g.-Olandų g.-Stotis- Iešmininkų g. | Keramikų g., Plytinės g., Saulėtekio al., Nemenčinės pl., Antakalnio g., Olandų g., Drujos g., Geležinkelio g., Algirdo g., Panerių g., Iešmininkų g. | 29.70 | 6 | 13-15 | 7 | two-axle |
| 5 | Karoliniškės - Lazdynai - Vikingų slėnis – Liepkalnis | L. Asanavičiūtės g., Laisvės pr., Tūkstantmečio g., Žirnių g., Vikingų g., Žirnių g., Minsko pl.\*, Kamojos g.\*, Ditvos g.\*, Liepkalnio g. | 28.41 | 6 | 10-11 | 7 | two-axle |
| 6 | Žemieji Paneriai – Trakų Vokė – Fabriko g. – Lentvaris | Savanorių pr., Abiejų Tautų Respublikos pl., Galvės pl., Fabriko g., Dzūkų g. | 31.35 | 4 | 15-17 | 4 | two-axle |
| 7 | Iešmininkų g. – Kapsų g.. – Vikingų Slėnis – Burbiškės | Iešmininkų g., Naugarduko g., Kauno g., Švitrigailos g., Dariaus ir Girėno g., Kapsų g.\*, Tyzenhauzų g.\*, Žirnių g., Vikingų g., Žirnių g., Tūkstantmečio g., Tunelio g., Tūkstantmečio g., Burbiškių g.\*, Bartų g.\* | 17.29 | 4 | 15 | 4 | midi |
| **8** | **Vehicle reserve (at least 10%), calculated on a vehicle-by-vehicle basis. The provisional number of vehicles in the reserve shall be calculated by rounding the decimal point to a whole number.** | | | | | | |
|  | | | | | | 1 | midi |
| 5 | two-axle |

Note\*. After adapting the street infrastructure for public transport.

* + - 1. Annex 1 to this Technical Specification contains the schedules for passengers on the public transport routes listed in Table 1. The PT schedule does not include the working and rest times of the Carrier's drivers. It is the Carrier's responsibility, in the course of implementation of the schedule, to plan and organise the drivers' working and resting arrangements in accordance with the requirements laid down.
      2. If necessary, the Authorized Body may instruct the Carrier to change the types of vehicles between the routes served by the Carrier, taking into account the Carrier's existing fleet of vehicles (see Table 1).
      3. The requirements for vehicles are set out in Parts II and III of this Technical Specification.

**II. KEY REQUIREMENTS FOR THE CARRIER AND THE QUALITY OF THE SERVICE PROVIDED**

* + - 1. The Carrier will be obliged to operate the services provided for in the Contract on the routes specified in the Contract (see Table 1) on a daily basis in accordance with the schedules for the routes provided by the Authorized Body. The schedules for the provisional routes (see Table 1) are given in Annex 1 of the Technical Specification.
      2. The requirements for the provision and quality of passenger transportation services are set out in Annex 2 of the Technical Specification.
      3. The Carrier shall be liable for the safety of the passengers and their property carried by means of the service and will be obliged to ensure compliance with all health and safety requirements set by Vilnius City Municipality (hereinafter “the Municipality”) and the state authorities regarding the safe carriage of passengers.
      4. The passenger transportation services provided by the Carrier shall be provided in accordance with the requirements set out in the Contract and its Annexes.
      5. The Carrier shall be fully liable for any damage caused to third parties by the major source of danger (the vehicle) under its control, in accordance with the requirements of Article 6.270 of the Civil Code of the Republic of Lithuania and the Compulsory Civil Liability Insurance of Vehicle Operators of the Republic of Lithuania.
      6. The Carrier will be obliged to ensure that, during the operation of the routes, passengers are duly informed in a timely and appropriate manner (by means of an audible and pictorial announcement) of the public transport stops on the route and the payment procedure, and that the vehicles carry the audible and pictorial information messages provided by the Authorised Body in accordance with the procedure laid down in the Contract.

**III. BASIC REQUIREMENTS FOR VEHICLES**

* + - 1. The mandatory technical requirements for the vehicles that will serve the routes listed in Table 1 are given in Tables 2 and 3 according to the type of PT vehicle.

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| Table 2. Requirements for **midi bus** type vehicles: | |
| **Requirement** | **Technical characteristics** |
| 1. Vehicle and type of vehicle | * 1. A double-axle M3CE class low-floor city bus (the low-floor part must be located in the area between the axles of the bus) with a length of 8.3 to 10.1 metres.   2. All vehicles offered must be of the same make and model, assembled according to the same technological process in the same factories. |
| 1. Number of passengers carried, excluding the driver | * 1. The vehicle must be equipped with at least 16 seats for passengers, the total number of installed seats and standing places must be at least 45, excluding 1 seat for disabled/persons with special needs with a wheelchair (with fastening straps, rails or other wheelchair mounting equipment) in the low-floor area between the bus axles. For standing passengers, backrests must be provided along the vehicle window in the standing passenger area. |
| 1. Minimum environmental criteria[[2]](#footnote-3) | * 1. The vehicle's powertrain must use electricity.   2. The level of emitted sound in vehicles of category M3 must not exceed the following limits (according to Regulation (EU) No. 540/2014 of the European Parliament and of the Council):   - 73 dB(A) with an engine of less than 150 kW;  - with an engine of 150 kW or more but not more than 250 kW - 76 dB(A)  - 77 dB(A) with an engine of at least 250 kW.   * 1. Vehicles must be equipped with Tyre Pressure Monitoring System, (TPMS).   2. Drivers involved in the service must be trained to drive economically.   3. The Carrier must be obliged to collect the used consumables and must have contracted with companies that provide this service for their disposal. |
| 1. Vehicle fuel type and powertrain | * 1. Fuel type - electricity, powertrain - electric motor. (An electric bus designed, adapted and used to carry passengers on the roads.) |
| 1. Height | * 1. The height of the passenger compartment (at the aisles in the lower section) shall not be less than 2100 mm. The requirement does not apply beyond the second entry/exit door, where steps may be provided if required by the design of the vehicle. |
| 1. Passenger service doors | * 1. At least 2 doors, at least 1 of which must be double doors for passenger boarding/ alighting on the right side of the vehicle:   2. the door opening method is coordinated with the Authorized Body before the commencement of the provision of passenger transportation services;   3. with occupant pinch protection (the door must open if there is an obstacle between the doors when closing);   4. the width of the opening of a double door shall not be less than 1200 mm;   5. with emergency door opening on the outside;   6. when a door closes, the audible and light signals at that door (in the passenger compartment) must be activated;   7. the door is operated in two ways:      1. from the driver's workstation, with the possibility of opening all the doors at the same time or individually;      2. passenger independent door opening system: with buttons in the passenger compartment and on the outside of the vehicle, which can be used by passengers to independently open specific doors (including the front) by themselves; these buttons can only be activated (turned on) by the driver from his workstation. The requirements for the buttons and their placement are specified in Annex No. 2 to the technical specification.   8. the vehicle's braking or other system must be activated when the doors are open to prevent the vehicle from moving when the doors are open. The door opening must be blocked automatically when the vehicle is moving.   9. Other requirements for passenger service doors are given in Annex 2 of the Technical Specification.   10. The driver's workstation must be set up in such a way that at least 600 mm of the front door width is available for passenger boarding. The workstation must be closed or semi-closed, and ensuring an unchanging microclimate at the driver’s workstation when the front door is open. The cab design shall incorporate elements to enable the driver to communicate with passengers. At least 50% of the cab partition area must be transparent. |
| 1. Vehicle access ramp (for wheelchair, child/ infant stroller) | * 1. A ramp shall be provided at the passenger service door for the access of a wheelchair for a person with reduced mobility or a stroller for child/infant;   2. The ramp must be able to support a load of at least 350 kg.   3. Buttons for announcing the entry or exit of a wheelchair or a stroller shall be located on the outside of the door and on the inside of the door near the wheelchair space. When one of the buttons is activated, the passenger is informed by a light signal. |
| 1. Manoeuvrability | * 1. The right-hand turning radius of the vehicle curb to curb must not exceed 10.0 m. The Carrier will be required to provide a diagram showing the right-hand turning path of the vehicle prior to the commencement of the provision of the passenger transportation services. |
| 1. Driving system | * 1. The steering wheel must be installed on the left side of the vehicle. |
| 1. Flag holder | * 1. The flag holder shall be located in the upper front part of the vehicle on both sides of the vehicle.   2. The Carrier must purchase the flags of the Republic of Lithuania. The size of the flags of the Republic of Lithuania is 300 x 500 mm, the length of the flag shaft is 500 mm, and the diameter of the shaft is 15 or 16 mm. |
| 1. Flooring | * 1. The requirements for vehicle floors are specified in Annex 2 of the Technical Specification.   2. The height of the floor of all vehicles from the entry/exit step to the ground shall not exceed 270 mm (kneeling system could be used) in accordance with UN/ECE Regulation No. 107[[3]](#footnote-4) "Uniform provisions concerning the approval of vehicles of category M3 with regard to their general construction" [2015/922] Annex 8, point 3.1).   3. Passenger boarding/ alighting steps and floor edges are marked with bright contrasting markings and boarding step lighting. |
| 1. Passenger compartment air conditioning (ventilation, heating systems) | * 1. The HVAC system of the vehicle shall be electrically powered, i.e. not dependent on any auxiliary power source other than batteries installed in the vehicle, or hybrid, i.e. both electrically powered by batteries installed in the vehicle and an auxiliary power source powered by biofuel (HVO) or its equivalent alternative fuels.   2. The auxiliary power source shall not use fossil fuels (diesel or similar). The auxiliary power source shall only be used for the HVAC system of the vehicle.   3. An auxiliary power source shall be permitted for use in cold weather with an outside air temperature of 0 °C and below, and in hot weather with an outside air temperature of +30 °C and above, according to an outside air temperature sensor installed in the vehicle. The use of an auxiliary energy source in other cases shall be subject to the approval of the Authorised Body.   4. The Carrier shall provide the authorised body with access to monitor remotely, directly and in real time the activation and use of any such auxiliary energy source and the actual air temperature at the time of activation or use.   5. The requirements for air conditioning and heating of vehicles and the temperature in the vehicle compartment are given in Annex 2 of the Technical Specification.   6. The passenger compartment shall have at least 4 windows with lockable vents. |
| 1. Vehicle decoration/labelling | * 1. The requirements for the decoration of the vehicles are set out in Annex 2 of the Technical Specification.   2. The paint used for the exterior of the vehicles shall be RAL 3000 (Pantone 1805C/U). Certain body elements, such as contours or lights, may be painted in black or silver. Specific elements and color codes shall be agreed with the Authorized Body prior to the commencement of passenger transport services. The paint used for the exterior of the vehicles must be able to withstand regular washing of the vehicle (e.g. with brushes, high-pressure water jets) and to environmental influences. |
| 1. Windows | * 1. Vehicle windows must be made of safety (toughened) glass.   2. Passenger boarding door glass shall cover at least 50% of the door area.   3. The front display shall be located at the front of the vehicle, in the upper part of the windscreen or above the windscreen. |
| 1. Interior lighting / exterior lighting, lights | * 1. The passenger compartment shall be equipped with partial (night) and full (day) passenger compartment lighting.   2. Passenger compartment lights shall be so arranged as to provide illumination of the passenger compartment and the passenger service door without dazzling the driver.   3. There shall be boarding step lighting at the passenger service doors. The lights must automatically switch on when the door is opened and off when it is closed. |
| 1. Loudspeakers | * 1. The requirements for internal and external loudspeakers for vehicles are given in Annex 2 of the Technical Specification. The loudness must be agreed upon with the Authorized Body prior to the commencement of the provision of the passenger transportation services. |
| 1. Passenger Information System | * 1. The vehicles must be equipped with external and internal passenger information displays. The requirements for the information to be displayed on external and internal displays are given in Annex 2 of the Technical Specification.   2. Passenger information displays (internal and external) shall be controlled by a display controller. The requirements for the input methods for the information to be displayed are given in Annex 2 of the Technical Specification.   3. Passenger information system components, including LED or LCD displays, shall be capable of operating throughout the working day (during all the journeys).   4. Exterior displays using light-emitting diode (SMD LED or equivalent) technology, in which each point of the sign is a LED or equivalent technology. The colour of the LEDs in the part of the display showing the route number is colour RGB and in the part showing the direction is monochrome white or equivalent. The external displays shall provide a minimum viewing angle of 110° and a luminance of at least 3500 cd/m2 (for the RGB section) and at least 5000 cd/m2 (for the white part).   5. There shall be one external passenger information display at the front of the vehicle. The resolution of the part of the front display showing the route number shall be at least 32×19 pixels and the resolution of the part of the front display showing the direction of the route, must be at least 144x24 pixels. The size of this display shall be sized to the maximum dimensions of the window or the cavity above the window.   6. There shall be 1 external passenger display on the right-hand side of the vehicle. The resolution of the part of the side display showing the route number shall be at least 32×19 pixels and the resolution of the part of the side display showing the direction of the route, must be at least 144x24 pixels. The size of this display shall be sized to the maximum dimensions of the window or the cavity above the window.   7. There shall be one external passenger information display at the rear of the vehicle. The resolution of the part of the rear display showing the route number shall be at least 32×19 pixels and the resolution of the part of the rear display showing the direction of the route, must be at least 144x24 pixels. The size of this display shall be chosen to the maximum extent possible within the dimensions of the window or cavity of the display above the window. The size of this display must be chosen maximally according to the dimensions of the window or the display cavity above the window. The route number must be displayed to the right of the route direction. If, due to the design of the bus, it is not possible to install an external display of such parameters at the rear of the bus, another solution is possible that meets the requirements for the information provided to passengers set out in Annex No. 2 to the technical specification. Such a solution is agreed upon with the Authorized Body prior to the commencement of the provision of passenger transportation services.   8. Vehicles must be equipped with 1 external passenger information display on the left side, displaying the route number, the resolution of which must be at least 32x19 pixels. The size of this display must be chosen to the maximum extent possible within the dimensions of the cavity of the display above the window, and if there is no such cavity and the display is installed on the window, the height of the display must be chosen to be the same as the height of the rear or side (right) display.   9. The vehicles shall be equipped with 2 internal displays with an LCD TFT screen or equivalent technology and a diagonal of at least 29 inches.   10. The internal displays shall have a digital interface to the external displays. A resolution of at least 1920x610 pixels and an ultrawide (aspect ratio) of at least 32:9. The display shall be able to show two different images simultaneously. The places of attachment of displays must be agreed upon with the Authorized Body prior to the commencement of the provision of passenger transportation services.   11. Inside displays shall have a minimum vertical viewing angle of 170° and a minimum horizontal viewing angle of 170° (ultrawide viewing). The brightness of internal displays must reach at least 600 cd/m2. The internal display board shall be adapted to show a static image without the additional use of matrix burn-in reduction techniques. The screen coating shall be Anti-glare.   12. The method of transmission of data updates (audio, route information, promotional videos displayed on internal display screens) shall be remote.   13. The passenger information system must be able to provide audio recordings of stops and other information relevant to passengers. The audio announcement of stops shall be synchronised with the display of visual information on internal passenger displays. It shall be made possible to publish the name of the stop and other information related to the stop message (e.g. "Next", "Next stop", "Last stop on the route", "Detour", "Depot trip", etc.). Records of other (non stop related) information must be made able to be published every certain number of stops as provided by the Authorized Body, and/or on a certain route. The sound files shall be provided to the Carrier by the Authorized Body. The Authorized Body shall inform the Carrier of the need for audio recordings via the passenger information system.   14. The display controller must have the technical capability to connect third-party equipment via a LAN network. |
| 1. Passenger seats | * 1. Passenger seats shall be individual (separate), consisting of a separate backrest and padded seat base made of plastic.   2. Seats must be resistant to wear, dirt and breakage.   3. Two folding single seats in the standing compartment next to the disabled person's seat or equivalent should be equipped.   4. A wheelchair space must be provided, including a backrest. It shall be equipped with a STOP button (with light indication) and a wheelchair attachment.   5. The seating layout, colour scheme and material shall be agreed with the Authorized Body prior to the commencement of the provision of the passenger transportation services. |
| 1. Passenger compartment handrails, handles, waste bins | * 1. Requirements for passenger compartment handrails, handholds are given in Annex 2 of the Technical Specification.   2. One bin must be installed at the driver's workstation. |
| 1. Wi-Fi internet system and universal connectors (USB Type-C) must be equipped in the passenger compartment. | * 1. The requirements for Wi-Fi technology are set out in Annex 2 to the Technical Specification.   2. The Wi-Fi device (router) must be installed in the vehicle in such a way that it is protected and out of the reach of passengers.   3. The Wi-Fi device (router) must be suitable for use in a vehicle (transport), i.e. it must be able to withstand an operating temperature of -20°C to +45°C, a humidity of 90% and voltage fluctuations.   4. The requirements for the universal connector (USB Type-C) are given in Annex 2 of the Technical Specification. |
| 1. Automatic passenger counting equipment | * 1. The requirements for automatic passenger counting equipment are given in Annex 2 of the Technical Specification. |
| 1. In-vehicle and exterior cameras | * 1. The requirements for interior and exterior CCTV camera equipment are given in Annex 2 of the Technical Specification. |
| 1. Alcohol interlock | * 1. The vehicle shall be equipped with an alcohol interlock device which shall comply with the Lithuanian standard LST EN 50436-2:2014 (or equivalent) “Alcohol interlocks. Test methods and performance requirements. Part 2: General preventive use devices with a nozzle for measuring the concentration of alcohol in exhaled air” (with additions and amendments). |
| 1. Maximum permissible mass of the vehicle | * 1. In accordance with the legislation of the Republic of Lithuania in force on the date of issue of the certificate of conformity of the vehicle. |
| 1. E-ticket hardware | * 1. The hardware requirements for the e-ticket are set out in Annex 3 of the Technical Specification. |

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| Table 3. Requirements for **two-axle bus** type vehicles: | |
| **Requirement** | **Technical characteristics** |
| 1. Vehicle and type of vehicle | * 1. A double-axle M3CE class low-floor city bus (the lower part must be located in the area between the axles of the bus) with a length between 11.8 and 12.3 metres.   2. All vehicles offered must be of the same make and model, assembled according to the same technological process in the same factories. |
| 1. Number of passengers carried, excluding the driver | * 1. The vehicle shall be equipped with a minimum of 25 passenger seats and the total number of seating and standing places provided shall be at least 75, excluding 1 place for disabled persons/persons with special needs with a wheelchair (with fastening straps, rails or other wheelchair attachments) in the low-floor area between the axles of the bus. For standing passengers, backrests must be provided along the vehicle window in the standing passenger area. |
| 1. Minimum environmental criteria[[4]](#footnote-6) | * 1. The vehicle's powertrain must use electricity.   2. The level of emitted sound in vehicles of category M3 must not exceed the following limits (according to Regulation (EU) No. 540/2014 of the European Parliament and of the Council):   - 73 dB(A) with an engine of less than 150 kW;  - with an engine of 150 kW or more but not more than 250 kW - 76 dB(A)  - 77 dB(A) with an engine of at least 250 kW.   * 1. Vehicles must be equipped with Tyre Pressure Monitoring System, (TPMS).   2. Drivers involved in the service must be trained to drive economically.   3. The Carrier must be obliged to collect the used consumables and must have contracted with companies that provide this service for their disposal. |
| 1. Vehicle fuel type and powertrain | * 1. Fuel type - electricity, powertrain - electric motor. (An electric bus designed, adapted and used to carry passengers on the roads.) |
| 1. Height | * 1. The height of the passenger compartment (at the aisles in the lower section) shall not be less than 2100 mm, except at axle mounting points where uniform elevation must be ensured. |
| 1. Passenger service doors | * 1. At least 3 double doors for passenger boarding/ alighting on the right side of the vehicle. If the design of the bus makes it possible to install only a single front door, such a door must be no narrower than 700 mm wide and must be coordinated with the Authorized Body prior to the start of passenger transport services;   2. the door opening method is coordinated with the Authorized Body before the commencement of the provision of passenger transportation services;   3. with occupant pinch protection (the door must open if there is an obstacle between the doors when closing);   4. the width of the opening of the double doors through which disabled people in wheelchairs can board shall not be less than 1200 mm, the width of other doors is coordinated with the Authorized Body before the start of passenger transport services;   5. with emergency door opening on the outside;   6. when a door closes, the audible and light signals at that door (in the passenger compartment) must be activated;   7. the door is operated in two ways:      1. from the driver's workstation, with the possibility of opening all the doors at the same time or individually;      2. passenger independent door opening system: with buttons in the passenger compartment and on the outside of the vehicle, which can be used by passengers to independently open specific doors (including the front) by themselves; these buttons can only be activated (turned on) by the driver from his workstation. The requirements for the buttons and their placement are specified in Annex No. 2 to the technical specification.   8. the vehicle's braking or other system must be activated when the doors are open to prevent the vehicle from moving when the doors are open. The door opening must be blocked automatically when the vehicle is moving.   9. Other requirements for passenger service doors are given in Annex 2 of the Technical Specification.   10. The driver's workstation must be set up in such a way that at least 600 mm of the front door width is available for passenger boarding. The workstation must be closed or semi-closed, and ensuring an unchanging microclimate at the driver’s workstation when the front door is open. The cab design shall incorporate elements to enable the driver to communicate with passengers. At least 50% of the cab partition area must be transparent. |
| 1. Vehicle access ramp (for wheelchair, child/ infant stroller) | * 1. A ramp shall be provided at the passenger service door for the access of a wheelchair for a person with reduced mobility or a stroller for child/infant;   2. The ramp must be able to support a load of at least 350 kg.   3. Buttons for announcing the entry or exit of a wheelchair or a stroller shall be located on the outside of the door and on the inside of the door near the wheelchair space. When one of the buttons is activated, the passenger is informed by a light signal. |
| 1. Manoeuvrability | * 1. The turning circle of the vehicle shall not exceed 12,5 m (Annex 11, point 3.4, to UN/ECE Regulation No 107 "Uniform provisions concerning the approval of vehicles of category M3 with regard to their general construction" [2015/922]. |
| 1. Driving system | * 1. The steering wheel must be installed on the left side of the vehicle. |
| 1. Flag holder | * 1. The flag holder shall be located in the upper front part of the vehicle on both sides of the vehicle.   2. The Carrier must purchase the flags of the Republic of Lithuania. The size of the flags of the Republic of Lithuania is 300 x 500 mm, the length of the flag shaft is 500 mm, and the diameter of the shaft is 15 or 16 mm. |
| 1. Flooring | * 1. The requirements for vehicle floors are specified in Annex 2 of the Technical Specification.   2. The height of the floor of all vehicles from the entry/exit step to the ground shall not exceed 270 mm (kneeling system could be used) in accordance with UN/ECE Regulation No. 107[[5]](#footnote-7) "Uniform provisions concerning the approval of vehicles of category M3 with regard to their general construction" [2015/922] Annex 8, point 3.1).   3. Passenger boarding/ alighting steps and floor edges are marked with bright contrasting markings and boarding step lighting. |
| 1. Passenger compartment air conditioning (ventilation, heating systems) | * 1. The HVAC system of the vehicle shall be electrically powered, i.e. not dependent on any auxiliary power source other than batteries installed in the vehicle, or hybrid, i.e. both electrically powered by batteries installed in the vehicle and an auxiliary power source powered by biofuel (HVO) or its equivalent alternative fuels.   2. The auxiliary power source shall not use fossil fuels (diesel or similar). The auxiliary power source shall only be used for the HVAC system of the vehicle.   3. An auxiliary power source shall be permitted for use in cold weather with an outside air temperature of 0 °C and below, and in hot weather with an outside air temperature of +30 °C and above, according to an outside air temperature sensor installed in the vehicle. The use of an auxiliary energy source in other cases shall be subject to the approval of the Authorised Body.   4. The Carrier shall provide the authorised body with access to monitor remotely, directly and in real time the activation and use of any such auxiliary energy source and the actual air temperature at the time of activation or use.   5. The requirements for air conditioning and heating of vehicles and the temperature in the vehicle compartment are given in Annex 2 of the Technical Specification.   6. The passenger compartment shall have at least 4 windows with lockable vents. |
| 1. Vehicle decoration/labelling | * 1. The requirements for the decoration of the vehicles are set out in Annex 2 of the Technical Specification.   2. The paint used for the exterior of the vehicles shall be RAL 3000 (Pantone 1805C/U). Certain body elements, such as contours or lights, may be painted in black or silver. Specific elements and color codes shall be agreed with the Authorized Body prior to the commencement of passenger transport services. The paint used for the exterior of the vehicles must be able to withstand regular washing of the vehicle (e.g. with brushes, high-pressure water jets) and to environmental influences. |
| 1. Windows | * 1. Vehicle windows must be made of safety (toughened) glass.   2. Passenger boarding door glass shall cover at least 50% of the door area.   3. The front display shall be located at the front of the vehicle, in the upper part of the windscreen or above the windscreen. |
| 1. Interior lighting / exterior lighting, lights | * 1. The passenger compartment shall be equipped with partial (night) and full (day) passenger compartment lighting.   2. Passenger compartment lights shall be so arranged as to provide illumination of the passenger compartment and the passenger service door without dazzling the driver.   3. There shall be boarding step lighting at the passenger service doors. The lights must automatically switch on when the door is opened and off when it is closed. |
| 1. Loudspeakers | * 1. The requirements for internal and external loudspeakers for vehicles are given in Annex 2 of the Technical Specification. The loudness must be agreed upon with the Authorized Body prior to the commencement of the provision of the passenger transportation services. |
| 1. Passenger Information System | * 1. The vehicles must be equipped with external and internal passenger information displays. The requirements for the information to be displayed on external and internal displays are given in Annex 2 of the Technical Specification.   2. Passenger information displays (internal and external) shall be controlled by a display controller. The requirements for the input methods for the information to be displayed are given in Annex 2 of the Technical Specification.   3. Passenger information system components, including LED or LCD displays, shall be capable of operating throughout the working day (during all the journeys).   4. Exterior displays using light-emitting diode (SMD LED or equivalent) technology, in which each point of the sign is a LED or equivalent technology. The colour of the LEDs in the part of the display showing the route number is colour RGB and in the part showing the direction is monochrome white or equivalent. The external displays shall provide a minimum viewing angle of 110° and a luminance of at least 3500 cd/m2 (for the RGB section) and at least 5000 cd/m2 (for the white part).   5. There shall be one external passenger information display at the front of the vehicle. The resolution of the part of the front display showing the route number shall be at least 32×19 pixels and the resolution of the part of the front display showing the direction of the route, must be at least 144x24 pixels. The size of this display shall be sized to the maximum dimensions of the window or the cavity above the window.   6. There shall be 1 external passenger display on the right-hand side of the vehicle. The resolution of the part of the side display showing the route number shall be at least 32×19 pixels and the resolution of the part of the side display showing the direction of the route, must be at least 144x24 pixels. The size of this display shall be sized to the maximum dimensions of the window or the cavity above the window.   7. There shall be one external passenger information display at the rear of the vehicle. The resolution of the part of the rear display showing the route number shall be at least 32×19 pixels and the resolution of the part of the rear display showing the direction of the route, must be at least 144x24 pixels. The size of this display shall be chosen to the maximum extent possible within the dimensions of the window or cavity of the display above the window. The size of this display must be chosen maximally according to the dimensions of the window or the display cavity above the window. The route number must be displayed to the right of the route direction.   8. Vehicles must be equipped with 1 external passenger information display on the left side, displaying the route number, the resolution of which must be at least 32x19 pixels. The size of this display must be chosen to the maximum extent possible within the dimensions of the cavity of the display above the window, and if there is no such cavity and the display is installed on the window, the height of the display must be chosen to be the same as the height of the rear or side (right) display.   9. The vehicles shall be equipped with 4 internal displays with an LCD TFT screen or equivalent technology and a diagonal of at least 29 inches.   10. The internal displays shall have a digital interface to the external displays. A resolution of at least 1920x610 pixels and an ultrawide (aspect ratio) of at least 32:9. The display shall be able to show two different images simultaneously. The places of attachment of displays must be agreed upon with the Authorized Body prior to the commencement of the provision of passenger transportation services. If, due to the design of the bus, it is not possible to install a 29-inch rear display, it is allowed to install an 18-inch or larger display with a resolution of at least 1900x610 pixels and a screen aspect ratio of at least 16:9 as 1 (one) of 4 displays. The requirement for the ability to display two different images does not apply to an 18-inch diagonal display.   11. Inside displays shall have a minimum vertical viewing angle of 170° and a minimum horizontal viewing angle of 170° (ultrawide viewing). The brightness of internal displays must reach at least 600 cd/m2. The internal display board shall be adapted to show a static image without the additional use of matrix burn-in reduction techniques. The screen coating shall be Anti-glare.   12. The method of transmission of data updates (audio, route information, promotional videos displayed on internal display screens) shall be remote.   13. The passenger information system must be able to provide audio recordings of stops and other information relevant to passengers. The audio announcement of stops shall be synchronised with the display of visual information on internal passenger displays. It shall be made possible to publish the name of the stop and other information related to the stop message (e.g. "Next", "Next stop", "Last stop on the route", "Detour", "Depot trip", etc.). Records of other (non stop related) information must be made able to be published every certain number of stops as provided by the Authorized Body, and/or on a certain route. The sound files shall be provided to the Carrier by the Authorized Body. The Authorized Body shall inform the Carrier of the need for audio recordings via the passenger information system.   14. The display controller must have the technical capability to connect third-party equipment via a LAN network. |
| 1. Passenger seats | * 1. Passenger seats shall be individual (separate), consisting of a separate backrest and padded seat base made of plastic.   2. Seats must be resistant to wear, dirt and breakage.   3. Two folding single seats in the standing compartment next to the disabled person's seat or equivalent should be equipped.   4. A wheelchair space must be provided, including a backrest. It shall be equipped with a STOP button (with light indication) and a wheelchair attachment.   5. The seating layout, colour scheme and material shall be agreed with the Authorized Body prior to the commencement of the provision of the passenger transportation services. |
| 1. Passenger compartment handrails, handles, waste bins | * 1. Requirements for passenger compartment handrails, handholds are given in Annex 2 of the Technical Specification.   2. One bin must be installed at the driver's workstation. |
| 1. Wi-Fi internet system and universal connectors (USB Type-C) must be equipped in the passenger compartment. | * 1. The requirements for Wi-Fi technology are set out in Annex 2 to the Technical Specification.   2. The Wi-Fi device (router) must be installed in the vehicle in such a way that it is protected and out of the reach of passengers.   3. The Wi-Fi device (router) must be suitable for use in a vehicle (transport), i.e. it must be able to withstand an operating temperature of -20°C to +45°C, a humidity of 90% and voltage fluctuations.   4. The requirements for the universal connector (USB Type-C) are given in Annex 2 of the Technical Specification. |
| 1. Automatic passenger counting equipment | * 1. The requirements for automatic passenger counting equipment are given in Annex 2 of the Technical Specification. |
| 1. In-vehicle and exterior cameras | * 1. The requirements for interior and exterior CCTV camera equipment are given in Annex 2 of the Technical Specification. |
| 1. Alcohol interlock | * 1. The vehicle shall be equipped with an alcohol interlock device which shall comply with the Lithuanian standard LST EN 50436-2:2014 (or equivalent) “Alcohol interlocks. Test methods and performance requirements. Part 2: General preventive use devices with a nozzle for measuring the concentration of alcohol in exhaled air” (with additions and amendments). |
| 1. Maximum permissible mass of the vehicle | * 1. In accordance with the legislation of the Republic of Lithuania in force on the date of issue of the certificate of conformity of the vehicle. |
| 1. E-ticket hardware | * 1. The hardware requirements for the e-ticket are set out in Annex 3 of the Technical Specification. |
| 1. Transport of micro-mobility vehicles | * 1. The vehicle must have space and equipment inside the vehicle to allow the safe carriage of a bicycle in the vehicle. Equipment (e.g. fastening belts, a rack) must not interfere with standing passengers. The requirements are set out in Annex 2 of the Technical Specification. |

**IV. ANNEXES TO THE TECHNICAL SPECIFICATION**

* + - 1. The Technical Specification has 4 (four) annexes which form an integral part of the Technical Specification:
  1. Annex 1. “Provisional schedules of public transport routes”;
  2. Annex 2. “Requirements for the passenger transportation services provided and their quality”;
  3. Annex 3. “Descriptions and requirements for the e-ticketing system and related equipment”;
  4. Annex 4. “Approval of the compliance of the Carrier’s Tender to the Technical Specification”.

**Municipality Authorized Body Carrier**

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1. Regulation No 107 of the Economic Commission for Europe of the United Nations (UNECE) — Uniform provisions concerning the approval of category M2 or M3 vehicles with regard to their general construction [2015/922] [↑](#footnote-ref-2)
2. Order of the Minister of the Environment No. D1-672[List of products for which environmental protection criteria are applicable in public procurement, description of the procedure for applying environmental protection criteria and environmental protection criteria that contracting authorities must apply when purchasing goods, services or works](https://www.e-tar.lt/portal/lt/legalAct/6f875be088a611e7a3c4a5eb10f04386) [↑](#footnote-ref-3)
3. Regulation No. 107 of the Economic Commission for Europe of the United Nations (UN/ECE) Uniform provisions concerning the approval of category M2 or M3 vehicles with regard to their general construction [2015/922]. [↑](#footnote-ref-4)
4. Order of the Minister of the Environment No. D1-672[List of products for which environmental protection criteria are applicable in public procurement, description of the procedure for applying environmental protection criteria and environmental protection criteria that contracting authorities must apply when purchasing goods, services or works](https://www.e-tar.lt/portal/lt/legalAct/6f875be088a611e7a3c4a5eb10f04386) [↑](#footnote-ref-6)
5. Regulation No. 107 of the Economic Commission for Europe of the United Nations (UN/ECE) Uniform provisions concerning the approval of category M2 or M3 vehicles with regard to their general construction [2015/922]. [↑](#footnote-ref-7)