**Technical Specification**

1. **GENERAL INFORMATION**
   1. ***The subject of the procurement*** is the development, supply and maintenance of modern and efficient parking systems (hereinafter referred to as – the System) for Riga Municipality Limited Liability Company (*SIA*) Rīgas satiksme(hereinafter referred to as – Rīgas satiksme), that includes:
      1. Pre-payment Accounting System (hereinafter referred as PAS);
      2. Post-payment Notice Management System (hereinafter referred as PNMS);
      3. Parking Control System (hereinafter referred as PCS);
      4. Resident Permit Management System (hereinafter referred as RPMS);
      5. Parking Lot Accounting System (hereinafter referred as PLAS).
   2. Meaning:
      1. Development works – configuration of the System in line with the Contracting Authority's needs and requirements according to the Technical Specification.
      2. Maintenance works – maintenance works include modification of the System after its delivery to the production environment to correct delivery/development related errors, improve performance or other IT system features, system and technical problem solving. Maintenance management is the adaptation of the System, including technical support, to the priorities of the business, according to cost estimates and System maintenance personnel.
      3. Change request – work assignment in which the tasks to be performed and the objectives to be achieved are defined in the work execution process and will be deemed as changes or additions to the System, except for those changes or additions that are a necessary prerequisite for the realisation of the functionality specified in the Technical Specification, although not explicitly described in the Technical Specification.
   3. **Definitions, acronyms and abbreviations**
      1. Explanation of definitions, abbreviations and terms used in the document.

| Definition, designation or abbreviation | Description |
| --- | --- |
| PMS | Parking Management System |
| PCS | Parking Control System |
| APCS | Automated Parking Control System |
| PAS | Payment Accounting System |
| RPMS | Resident Permit Management System |
| VEH | Vehicle |
| PN | Post-payment notice |
| PNMS | Post-payment Notice Management System |
| REV | Register of Electric Vehicles |
| GIS | Geographical Information System |
| DLX (DocLogix) | Document Management System of Rīgas satiksme |
| ECE | Electronic Control Equipment |
| CSDD | Road Traffic Safety Directorate |
| SMR | Register of postal, courier and collection passes issued by the Ministry of Transport |
| PLAS | Parking Lot Accounting System |
| Parking permit | * Active parking payment registered in PAS; * Resident permit valid for a specific street section registered in RPMS; * Entry into REV; * Entry into SMR; * Entry into PLAS; * PN applied in the fare zone under review or higher. |

* 1. ***The purpose of PAS*** is to provide a management of the parking payment process and a secure and convenient way for customers to pay for parking services in different ways.
  2. ***The aim of PCS*** is to provide an efficient and modern parking control process and process management. PCS is a set of software and equipment designed to effectively control the use of paid parking lots.
  3. ***The aim of PNMS*** is to provide management and control of post-payment parking notifications and related processes. Post-payment notices are generated in PCS and then, together with photographs, sent to PNMS.
  4. ***The purpose of RPMS*** is to enable customers to purchase residents' permits for paid parking lots and to manage and control the processes related to residents' permits for paid parking lots.
  5. ***The purpose of PLAS*** is to provide an efficient and automated way to record and manage paid parking lots and related processes, to provide complete information about each parking lot on a street section and the infrastructure located there.
  6. From the date of conclusion of the Contract, the Tenderer shall provide Services within the following terms:
     1. System development within a maximum of 8 months.
     2. Maintenance works shall be provided within 48 months of the conclusion of the Transfer and Acceptance Deed.
  7. The following documentation shall be produced along with the acceptance and transfer deed:
     1. System Implementation Plan;
     2. Guidelines for the preparation of files;
     3. Guidelines for merchants (Operators);
     4. Security Audit by an independent third party;
     5. provide a risk assessment and submit it in accordance with the procedures defined by the Contracting Authority;
     6. Description of each API call, including the call and examples of all possible responses with field formats and explanations;
     7. User's manual on the full functionality of the System, including video recordings and explanatory notes;
     8. Administrator's manual on the full functionality of the System, including video recordings and explanatory notes;
     9. Installation manual, if any;
     10. System versions, if any;
     11. Finished System code uploaded to the repository provided by the Contracting Authority;
     12. List of specialists involved in the performance of the Contract, accompanied by copies of the qualification documents of all the specialists indicated;
     13. Tenderer shall submit the documentation to the Contracting Authority in Latvian in an electronic editable format (MS Word or MS Excel recognisable);
     14. The Tenderer may combine several manuals into one by agreement with the Contracting Authority;
     15. The System shall be implemented in the test and production environment.
  8. **User management and training**
     1. The Tenderer shall provide the administration of several levels of users in the Microsoft Active Directory (AD), defining rights and levels of access, for example:
        1. Key user (Administrator) who shall be able to grant users access to the System data;
        2. System users;
        3. Other System users.
     2. The Tenderer shall provide an online or, if necessary, face-to-face training to key users (administrators) on the System use.
     3. Prior to acceptance of the development work, the Tenderer shall provide user training in the System’s test environment to verify the application of the user manuals and full functionality of the System.

1. **SYSTEM REQUIREMENTS**
   1. **General requirements for PAS, PNMS, PCS, RPMS and PLAS**
      1. The Tenderer shall ensure smooth operation of the System. This means that the availability of the System shall not be lower than 99,8% per month, except in the case of planned interruption or development work, excluding planned delivery work, of the System for reasons beyond the control of the Tenderer.
      2. Only authenticated and authorised users shall be allowed to work with the System and real-time data synchronisation and user permission changes in Microsoft Active Directory (AD) shall be ensured.
      3. The Tenderer shall ensure automatic storage, archiving, anonymisation, deletion or minimisation of data and delivery at the request of the Contracting Authority within the time limits specified.
      4. The Tenderer shall develop the service in compliance with security standards.
      5. The Tenderer shall ensure simultaneous processing of requests, including requests that have formed a queue.
      6. The Tenderer shall ensure real-time data exchange.
      7. The Tenderer shall ensure the calculation and correction of the fee for the service.
      8. The Tenderer shall ensure the automated and manual administration of data archiving and deletion.
      9. The Tenderer shall provide data exchange via API.
      10. The Tenderer shall ensure short processing times for requests.
      11. The Tenderer shall ensure monitoring of data exchange and processes.
      12. The Tenderer shall provide audit trails of the activities performed in the System.
      13. System shall be deployed in an MS Azure environment as specified by the Contracting Authority.
   2. **Integration with the Contracting Authority's Information Systems (IS):**
      1. The Tenderer shall ensure regular data exchange via API or equivalent method according to the criteria and frequency defined by the Contracting Authority.
      2. The Tenderer shall ensure the integration of PAS data with the Contracting Authority's Information Systems (hereinafter referred as IS), e.g.:
         1. private office at the website of the Contracting Authority;
         2. parking area display at the website of the Contracting Authority.
      3. The Tenderer shall ensure the integration of PCS data with the Contracting Authority's IS, e.g.:
         1. PAS;
         2. PNMS;
         3. PLAS;
         4. RPMS;
         5. APCS;
      4. The Tenderer shall ensure the integration of PNMS data with the Contracting Authority's IS, e.g.:
         1. PAS;
         2. PCS;
         3. RPMS;
         4. PLAS;
         5. Private office at the website of the Contracting Authority;
         6. Website of the Contracting Authority;
         7. DLX or other document management system;
         8. Accounting system.
      5. The Tenderer shall ensure the integration of RPMS data with the Contracting Authority's IS, e.g.:
         1. PAS;
         2. PCS;
         3. PLAS;
         4. Website of the Contracting Authority;
         5. Private office at the website of the Contracting Authority;
         6. Accounting system;
         7. DLX or other document management system.
      6. The Tenderer shall ensure the integration of PLAS data with the Contracting Authority's IS, e.g.:
         1. PAS;
         2. PCS;
         3. RPMS;
         4. Website of the Contracting Authority;
         5. Private office at the website of the Contracting Authority;
         6. Accounting system;
         7. DLX or other document management system.
   3. Integration with external IS:
      1. The Tenderer shall ensure regular data exchange via API or equivalent method according to the criteria and frequency defined by the Contracting Authority:
         1. CSDD, and others;
2. **Technical requirements of PAS** 
   1. PAS is part of the PMS.
   2. The main functions of PAS are to check requests to start payment for parking and to provide answers which determine whether or not payment may be initiated. In addition, PAS shall also process requests from the parking control system which include checking the parking payment facts and blocking payment options. In addition to the management of parking payment processes, the payment system shall provide APIs for data exchange with service providers as well as with ECE. This process will allow successful coordination of payment processes between all participants involved and automatic receipt and processing of information about the payment initiation and suspension.
   3. **Processing of requests from Intermediary Service Operators** – as the principles of operation of the Mobile Payment Service (hereinafter referred as Operator) and ECE differ, it is necessary to provide different principles for the processing and registration of requests for initiation and suspension of payments.
      1. **Processing of Operator Requests**
         1. **Initiation of payment** – to initiate payment for a parking lot, the Operator sends a payment initiation request to PAS and waits a maximum of 15 seconds for PAS to reply. PAS system registers and verifies the received request. After the verification is completed, PAS sends a reply to the Operator. PAS reply may be either affirmative or negative. If the reply is affirmative, the Operator shall initiate the payment of the parking lot and take the starting time of the payment set by PAS as the start time. If the Operator does not receive a reply from PAS within 15 seconds of sending the payment initiation request, the Operator shall initiate payment without receiving a reply. In this case, the Operator shall take the time of sending the request as the payment initiation time. In addition, the Operator shall record an indication in the System that the payment has been initiated without confirmation due to the unavailability of PAS and shall send the initiated payment information to PAS as soon as the connection to PAS is restored.
         2. **Suspension of payment** – to suspend a payment, the Operator sends a payment suspension request to PAS and waits a maximum of 15 seconds for PAS to reply. PAS registers and verifies the received request. After the verification is completed, PAS sends a reply to the Operator. PAS reply may be either affirmative or negative. If the reply is affirmative, the Operator shall suspend the payment of the parking lot and take the end time of the payment set by PAS as the stop time. If the Operator does not receive a reply from PAS within 15 seconds of sending the payment initiation request, then the Operator shall suspend payment without receiving a reply. In this case, the Operator shall take the time of sending the request as the payment suspension time. In addition, the Operator shall record an indication in the system that the payment has been suspended without confirmation due to the unavailability of PAS and shall send the initiated payment information to the PAS as soon as the connection to PAS is restored.





* + 1. **Information to be included in the payment initiation request:**
       1. VEH number – letters and numbers only and Latin alphabet (limitation of the number of characters);
       2. Tariff zone;
       3. Customer identifier;
       4. Transaction identifier;
       5. Payment type (SMS, App, ECE);
       6. Merchant number;
       7. Time of sending the request;
       8. Type of request (start);
    2. **Information to be included in the payment suspension request:**
       1. Customer identifier;
       2. Transaction identifier;
       3. Time of sending the request;
       4. Type of request (stop);
    3. **Processing of ECE requests** – as the start and end time for parking payment transactions made via ECE is determined at the time of the transaction, PAS shall provide the processing of requests containing both start and end times. After the customer has entered the necessary parameters in ECE and confirmed the initiation of the payment, request is sent to PAS to check whether ECE may proceed with the payment process according to the information provided in the request, if so, the customer makes the payment at the POS terminal and after confirmation of the payment ECE sends the payment information to PAS. In case no response is received by ECE within 15 seconds after sending the payment initiation verification request, ECE shall continue the payment process without confirmation by recording the indication that PAS was unavailable and payment initiated without confirmation and after successful completion of the payment process ECE shall send the payment information to PAS with the indication that PAS was unavailable and payment initiated without confirmation.



Planned that it will be possible for a customer to extend a payment made by ECE before the end of the previous payment, therefore PAS should be able to process ECE requests for parking payment extension.

* + 1. **Processing of Operator Information Notifications** – System should be developed and the possibility to process notifications sent by Operators, e.g., notifications about malfunctions of the Operator's system, which the Operator would be obliged to send if a malfunction is detected in its system, should be provided.
  1. **Processing of Operator Information Notifications** – Register of Operator Problems – Operator problems are recorded (accounting) – System should be developed and the possibility to process notifications sent by Operators, e.g., notifications about malfunctions of the Operator's system, which the Operator would be obliged to send if a malfunction is detected in its system, should be provided.
  2. **System operation test**
     1. The Tenderer shall provide PAS monitoring possibility (MS Azure).
     2. The Tenderer shall provide availability monitoring.
     3. The Tenderer shall provide a performance accounting report.
  3. **Payment processing**
     1. The Tenderer shall ensure correction of incoming payments.
     2. The Tenderer shall provide the possibility to set, correct, change the maximum chargeable amount (before stop) for all or for a specific zoning.
     3. The Tenderer shall provide the possibility to stop payment.
  4. **Data tables**
     1. **Payment Table** – Data of pre-payments made by customers using the mobile payment service or ECE shall be stored. The table shall contain at least the following information:
        1. Payment order number;
        2. Payment ID;
        3. Payment start time;
        4. Payment end time;
        5. Tariff zone;
        6. Payment type information;
        7. Service operator name;
        8. Payment registration time;
        9. Payment receipt time in database.
     2. **Payment Blocking Table** – Shall contain at least the following information on payment blocking requests sent by other systems:
        1. Request order number;
        2. Request ID;
        3. Request author;
        4. Payment blocking start time;
        5. Payment blocking end time;
        6. Tariff zone.
     3. **Request Table** – Shall contain information on payment initiation and suspension requests and the replies received. At least the following information shall be included:
        1. Request order number;
        2. Request ID;
        3. Request author;
        4. Information specified in the request;
        5. Request receipt time;
        6. Reply to the request;
        7. Response time;
        8. Control (inspection) events (ID).
     4. **Other Systems Requests Table**– Shall accumulate data on requests from other systems and the replies received. An example of one such system requesting information would be a PCS requesting data on active payments. At least the following information shall be included:
        1. Request order number;
        2. Request ID;
        3. Request author;
        4. Information specified in the request;
        5. Request receipt time;
        6. Reply to the request;
        7. Response time.
     5. **Tariff Table** – Information on parking lot tariffs, types and period of operation is stored. Contains at least the following fields:
        1. Tariff ID;
        2. Tariff name;
        3. Tariff value;
        4. Tariff validity hours;
        5. Tariff validity days;
        6. Tariff validity period per day;
        7. Tariff zone;
        8. Tariff creation date;
        9. Tariff validity start date;
        10. Tariff end date;
        11. Tariff name in languages (LV, EN).
     6. **Zone Operating Times Table** – Information on tariff zones and their operating times is stored. Contains at least the following data:
        1. Operators and their rights table;
        2. Users and access rights table;
        3. User log files – audit table;
        4. System notification table;
        5. Operators' information notices table.
  5. **Data exchange with the Parking Control System** – In order to provide the parking control function, it is necessary to foresee that PAS will have to process the requests from the Parking Control System for parking payment verification and parking payment blocking.
  6. **Data exchange with accounting (automated reports)** – At a time specified by the Contracting Authority each day, reports shall be generated for the payments received the previous day, taking into account the record of receipt of payment in the database, and the reports shall be posted on the Contracting Authority's resource:
     1. Posting of Operator transaction summaries;
     2. Posting of ECE summaries;
     3. Invoicing of legal entities for VAT transactions;
     4. Posting of all payments by merchant ID on the Contracting Authority's resource.
  7. **User Interface** – Users shall be provided with a user-friendly and intuitive interface for the management, control and user management of parking payment processes. The user interface shall be customisable, allowing different groups of users to access the functionality of System, taking into account their rights and level of responsibility. The user interface shall provide the following sections:
     1. **Tariff section**
        1. It shall be possible to add tariff zones (allowed letters A–Z, allowed numbers 0–9, allowed symbols ()).
        2. It shall be possible to set the duration of the tariff zone.
        3. It shall be possible to set different zone hours for each day of the week, public holidays and rescheduled days, by hours. It shall be possible for a zone to start at 8:00 a.m. and remain in operation until 8:00 a.m. the following day.
        4. It shall be possible to administer public holidays and rescheduled days.
        5. It shall be possible to set a minimum payment per zone by hours.
        6. It shall be possible to send out notifications with editable text.
        7. It shall be possible to set a charging metering step per hour, per zone and per day.
        8. It shall be possible to set free-of-charge time.
        9. It shall be possible to set a maximum payment per zone, per amount, per number of hours and per time.
        10. It shall be possible to set a daily maximum payment for the use of a parking lot, after which the parking lot is free-of-charge until the end of the zone's business hours.
        11. It shall be possible to set a daily subscription per zone and per day of the week.
        12. It shall be possible to set a payment accounting step of 1 minute and to round up the payment amount to the nearest whole cent.
     2. **User registration section**
        1. The Tenderer shall provide integration with AD and 2FA (two-factor authentication).
        2. It shall be ensured that only AD users can use PAS user interface.
        3. It shall be possible to register, assign, change and deactivate user roles in PAS.
        4. It shall provide three levels of access and activity rights groups and multiple PAS role allocations.
        5. Addition (ID), deactivation of merchants (Operators):
           1. Merchants shall be registered with at least the following parameters:

Merchant registration number;

Merchant ID;

Contract number;

Contract start date;

Contract end date;

Merchant name.

* + 1. **Requests section**
       1. Sub-section shall be provided to display approved payments. It shall be possible to filter the data by different fields.
       2. Sub-section showing the requests received and the replies sent to them shall be provided.
    2. **Reports section shall at least consist of:**
       1. Financial report;
       2. Request report;
       3. System operation report;
       4. Statistical report.
    3. **Real-time monitoring (Dashboards)**
       1. **Monitoring of requests processing:** This monitoring dashboard will provide information on requests processing, their number, status and timing, giving an insight for the availability of System and its operation.
       2. **Monitoring of payments**: This monitoring dashboard will allow users and administrators to monitor the payment process, including approved payments, amounts and statistics.
       3. **Monitoring of data exchange**: This monitoring dashboard will provide an overview of the data exchange process between PAS and other systems, monitor data synchronisation and error management.
    4. **System notifications**
       1. System shall send the following notifications:
          1. Request queue is forming in the System;
          2. System is unable to contact the intermediary service provider;
          3. Erroneous requests are received from the service provider;
          4. No payments are received from Operators or ECE for more than certain minutes and during zoning operation, as well as the possibility to set and change these settings;
          5. etc.
    5. **Audit trails**
       1. System shall provide audit trails of:
          1. actions performed by users;
          2. registration of users and changes to their rights;
          3. changes to tariffs;
          4. changes to tariff zones;
          5. errors in the system servers and services;
          6. corrections to data;
          7. deletions of data.
    6. **Data deletion and archiving**
       1. The Tenderer shall provide the possibility to anonymise the data.
       2. The Tenderer shall provide the possibility to archive the data.
       3. The Tenderer shall provide the possibility to delete the data.

1. **Technical requirements of PCS** 
   1. The PCS is part of the Parking Management System.



* 1. The PCS interacts with other PMS systems and the external resource – CSDD, and others.
  2. The main elements of PCS are:
     1. Mobile parking controller app (developed in Android environment).
     2. Automated vehicle number reading and recognition system for installation on the vehicle.
     3. System management dashboard.
     4. System database.
  3. System shall be able to retrieve data from different registers online, block customers from paying for the parking service in case of a PN notice, record data related to the parking control process.
  4. The mobile parking control app is designed to support the parking control process. It shall include the following sections:
     1. Vehicle number verification;
     2. Time controls;
     3. Blocking tasks;
     4. Work tasks;
     5. Events;
     6. History of time controls;
     7. Statistics of the day;
     8. Information notices;
     9. Video daily report;
     10. Post-payment notices;
     11. User settings;
     12. System settings.
  5. System shall be able to record every action taken by the controllers in the Mobile application and the GPS location where the action was taken, as well as every request sent and the response received.
  6. **Mobile parking control application**
     1. **Vehicle number verification**
        1. It shall be possible for the controller to enter VEH number in the Mobile application in two ways, either by scanning VEH number or by entering it manually;
        2. If the VEH number is entered using the number scanning method, it should be possible for the controller to confirm that the VEH number has been scanned correctly. Therefore, a visually easy to read comparison view between the scanned VEH number and the recognised VEH number shall be provided. It shall be possible to correct the recognised number if it has been recognised inaccurately.
        3. The number scanning window shall provide functionality to change the scanning distance (zoom), flash on and other additional functionality.
        4. The total time for recognition of one scanned number and verification of the Parking Permit shall not exceed 1.5–2 seconds.
        5. For manual entry, letters A–Z allowed, digits 0–9 allowed, maximum number of symbols 9. After manual entry of the number, the VEH number must be reconfirmed by the controller before printing the notice or before closing the case in event the notice is applied electronically. Provision shall be made for the event where the VEH may not be equipped with a national registration number plate.
        6. In order to check the Parking Permit, System shall be able to determine in which tariff zone, street and street section the controller/VEH to be checked is located.
        7. The controller shall be able to take an unlimited number of photographs at each time control event.
        8. It shall be provided for the controller to manually change the tariff zone, street and street section if they have been inaccurately identified by the System.
        9. System shall be able to check if:
           1. VEH has no active payment registered in PAS system;
           2. post-payment notice in the tariff zone being checked or in a higher value tariff zone has not been applied to VEH
           3. Residents' Permit related to the street section being checked has not been registered for VEH;
           4. wheel-locking device has to be applied to VEH;
           5. VEH is not registered in REV;
           6. VEH is not registered in SMR;
           7. VEH has not an active record in PLAS system;
           8. VEH has not an active entry in the Information Notices Register.
        10. After the end of the parking permit check, the results of the check shall be displayed on the telephone screen and shall be viewable until the VEH check process is completed.
        11. It shall be possible for the controller to initiate time control for VEHs for which no parking permit was found during the check.
        12. It shall be possible to change the duration of time control (with certain role permissions) in System settings.
        13. It shall be possible to specify in the System settings that, after approval of the scanned number, if no parking permit is registered in the System, the time control can be initiated automatically or manually.
        14. When the time control is finished, System shall re-check the parking permit and display the result of the check on the telephone screen.
        15. It shall be possible for the controller to initiate the re-check of the parking permit himself/herself during the time control.
        16. Various security solutions shall be provided, e.g., if the System has detected that a resident permit has been issued to a specific VEH on a specific street section, the controller shall not be able to apply a PN notice to the specific VEH.
     2. **Time controls**
        1. After scanning or manual input of the number, System shall check whether the VEH is allowed to use the paid parking lot. If the VEH is not registered with a parking permit, a time control is initiated and at the end of the control time, if the parking permit is still not registered for the VEH, a PN is applied.
        2. In the time control view, the controller shall be able to view the VEHs for which time control has been initiated and the following parameters:
           1. VEH number;
           2. Duration of time control;
           3. mark if the VEH will be subject to a PN with warning;
           4. mark if the VEH will be subject to a wheel-locking device.
        3. It shall be foreseen that if the VEH under review is already under time control initiated by the automated parking control solution, or the time control has already ended but the PN has not yet been applied, the controller shall be able to take over this time control if he can apply the PN first. This process should also work in the opposite direction, if the automated solution detects that the time control has expired for a particular VEH but the application of the PN has not yet started, then the System shall take over the time control and apply the PN.
        4. In both cases the controller shall be aware that the time control has been taken over by the other system:
           1. PN preparation view:

It shall be possible to open each of the time controls in a wider view, thus entering the PN preparation section. In this section the controller shall have an option to view the results of the Parking Permit check, view and adjust as necessary the information required for the application of the PN, prepare and print the PN and close the time control file with the different statuses.

* + - 1. **Blocking tasks**
         1. If VEH has at least two outstanding post-payment notices and the parking user has been informed (has received a printed notice or CSDD has sent information to the customer) of the outstanding post-payment notices, starting with the third applicable notice, a wheel-locking device shall be applied to VEH. With the possibility to change the set parameters.
         2. Possibility for the controller to receive information that a wheel-locking device will be applied to the VEH.
         3. Functionality to document the wheel-locking and unlocking process of the VEH shall be provided.
         4. Functionality to record the PN payments related to wheel-locking shall be provided.
         5. Functionality for the management of the wheel-locking and unlocking process of the VEH shall be provided.
         6. Traceability of the wheel-locking and unlocking process of the VEH (who, when, at what time, why) shall be ensured.
         7. It should be possible that VEH can be blocked both at the time of the third PN notice application and afterwards. For example, if the blocking-related PN was applied using the automated solution, then the VEH will actually be blocked after the PN has been applied. It shall therefore be possible for the controller to print a post-payment notice after the VEH has been blocked, which will contain additional information on the application of the wheel-locking device and information on the unpaid PNs.
      2. **Work tasks**
         1. The work tasks section shall display the work tasks assigned to the controller (indicating the street sections). The work tasks shall be based on the street sections where the paid parking lots are located. At the end of the inspection of each specific street section, the controller shall make a note of the results of the inspection, indicating the result of the inspection and comments on the progress of the inspection, if any. (Pre-defined classifiers with the possibility to delete, modify or add.) It shall be provided that the controller may only make a note on the inspection of an object within or at a specified distance from the section to be inspected.
         2. When starting the inspection of each street section, the controller shall be informed if there are any coordinated occupied paid parking lots (information from the PLAS) or if any additional checks or actions need to be carried out on the specific street section (information from the work tasks section). The controller shall be able to take photographs of the coordinated and non-coordinated occupied parking lots and add comments within the section to be inspected as specified in the work task. If an additional task is defined in the work task for a specific street section to be inspected, the controller shall be able to take a photo, add a comment and indicate the status of the additional task within this additional task.
      3. **Events**
         1. This section shall allow recording of various predefined and undefined events related to the work process, the addition of photographs and comments. Filtering of different types of data shall be provided.
      4. **Lunch/other breaks**
         1. This section shall allow the controller to note that he/she is on a lunch or other break. While the controller is on a lunch break, he/she shall not have access to other sections of the application.
         2. The controller shall be able to check how much of the available break time he/she has used.
      5. **History of time controls**
         1. In this section the controller shall be able to view the time controls started and closed for the day and their statuses, as well as those time controls that were taken over by the other system.
      6. **Statistics of the day**
         1. In this section the controller shall be able to select a period and view the results of his/her work – number of VEH and parking lots checked, number of PN applied, number of VEHs blocked and unblocked and other indicators.
      7. **Information notices**
         1. This section shall allow the controller to receive and read the information notices prepared and sent by the responsible employee. It shall be foreseen that after receiving the information notice the controller should acknowledge its receipt, if the controller does not do so for more than 5 minutes (with the possibility to change) the rest of the application is blocked until the controller reads the notice.
         2. The controller shall be able to view the history of notices received.
      8. **Video daily report**
         1. In this section the controller shall be able to note events related to the use of the video recorder by the controller – time of switching the recorder on and off, incidents of the day and comments on them, if any. It is preferable to provide the possibility of transferring the camera number, switching on, switching off and recording of events to the control application.
      9. **User settings**
         1. This section shall allow the user to make various adjustments to the app to suit their needs, e.g., notification tone for end of time control, notification tone for new information notice and other settings.
      10. **System settings**
          1. This section shall allow, with administrator access, to change various settings of the app, e.g., duration of time control and other settings.
  1. **Technical requirements of APCS**
     1. Automatic control will be required when the Binding Regulations will come into force at the request of the Contracting Authority.
     2. In the automatic parking control mode, the controller shall drive a vehicle equipped with VEH number recognition system.
     3. APCS requirements:
        1. the system shall be able to read and recognise the registration number of the VEH with 95% accuracy;
        2. the system shall be able to read the number during daylight and after dark;
        3. the system shall be able to detect the beginning and the end of the paid parking lot with an accuracy of 20 cm;
        4. the system shall be able to identify the country of registration of the number plate;
        5. the system shall be able to identify whether the VEH is located in a paid parking lot area;
        6. the system shall be able to interact with PMS;
        7. the system shall be able to anonymise data not related to the PN in photographs (human faces, other VEH numbers);
        8. the system shall be able to check whether a Parking Permit has been granted to a VEH according to its location;
        9. in case the check detects that the VEH does not have a Parking Permit, the system shall automatically start time control and upon re-entering the specific street section, if the VEH still does not have a Parking Permit and is in the same location, block the customer from paying for the parking and apply a PN notice;
        10. it shall be possible to change the duration of time control in the system settings as required;
        11. the system shall have the functionality to mark parking lot boundaries on a map;
        12. it shall be possible to use the system in automatic mode – where the system automatically detects the start and end of parking lots and scans numbers across a predefined area or in manual mode – where the employee can determine which side of the street to scan and when;
        13. it shall be possible that if an initiated time control is not closed within the specified (value shall be configurable) minutes or the tariff zone of a given parking lot has expired, the time control is closed automatically. The number of minutes shall be variable in the system settings;
        14. a route planning tool shall be provided;
        15. the route shall be able to change dynamically depending on whether time controls were initiated in the inspected object;
        16. the system shall have a user interface where an employee using the APCS can:
            1. see the route to be followed during the parking lot controls;
            2. monitor the operation of the system;
            3. view online images from the scanning cameras
            4. view what VEHs have been placed on the time control;
            5. enable/disable the number scanning mode;
            6. view the accuracy rate of the recognition of the number plates scanned;
            7. switch from automatic mode, where the system automatically detects the start and end of parking lots and scans numbers across a predefined area to manual mode – where the employee can determine which side of the street to scan and when;
        17. the system shall inform the employee when a printed notice is to be applied to a VEH, e.g., VEH which does not have a Latvian national registration plate or PMS system has an indication that a printed notice is to be applied to that VEH;
        18. the system shall inform the employee when a wheel-locking device is to be applied to that VEH;
        19. the following data shall be available in the system:
            1. the movement of the equipped VEH, both online and in history;
            2. the actions taken by the employee in APCS;
            3. the operation of APCS;
            4. various statistics, e.g., parking lot occupancy, number of VEHs in parking lots, number of PNs applied, etc.;
        20. the statistical data must also be visually displayed on a map.
  2. **Application of the PN**
     1. If during the parking control process it is detected that a Parking Permit (RPMS or CSDD) for the VEH has not been registered in PMS, PN shall be applied to the VEH. Depending on the situation, the notice may be applied electronically or physically. PN (with the possibility to add, amend and modify its format) shall contain the following information:
        1. Type 1 notice:
           1. PN number;
           2. QR code when scanned, directs the customer to the PN payment portal where the payment is prepared, which can be made by selecting one of the internet banks;
           3. date and time of the initiation of the time control;
           4. date and time of the application of the notice;
           5. location of the paid parking lot (street and section of street);
           6. tariff zone;
           7. VEH registration number;
           8. VEH country of registration;
           9. amount of the post-payment;
        2. Type 2 notice:
           1. PN number;
           2. QR code when scanned, directs the customer to the PN payment portal where the payment is prepared, which can be made by selecting one of the internet banks;
           3. date and time of the initiation of the time control;
           4. date and time of the application of the notice;
           5. location of the paid parking lot (street and section of street);
           6. tariff zone;
           7. VEH registration number;
           8. VEH country of registration;
           9. amount of the post-payment;
           10. warning of the existence of a debt;
           11. information related to the debt of the PN.
        3. Type 3 notice:
           1. PN number;
           2. QR code when scanned, directs the customer to the PN payment portal where the payment is prepared, which can be made by selecting one of the internet banks;
           3. date and time of the initiation of the time control;
           4. date and time of the application of the notice;
           5. location of the paid parking lot (street and section of street);
           6. tariff zone;
           7. VEH registration number;
           8. VEH country of registration;
           9. amount of the post-payment;
           10. warning of the application of a wheel-locking device;
           11. information related to the debt of the PN.
     2. **Electronic post-payment notice**
        1. The PN is applied electronically if the VEH meets the following parameters:
           1. VEH has a national registration plate registered in Latvia;
           2. there are no unpaid PNs registered in the PNMS for the VEH which have not been sent via the CSDD.
     3. **Physical post-payment notice**
        1. The PN is applied physically (by printing it out) if the VEH meets any of the following parameters:
           1. VEH does not have a national registration plate registered in Latvia;
           2. VEH does not have a national registration plate;
           3. there are unpaid PNs registered in the PR for the VEH which have not been sent via the CSDD;
           4. a wheel-locking device is applied to the VEH.
  3. **Processing of PN**
     1. **PN inspection**
        1. In order to verify that PN produced by the Automated Parking Control process are correctly produced, it is necessary to compare the photograph of the VEH number plate obtained during the scan and the VEH number plate registered in the System.
        2. Functionality for the approval of PNs produced by the Automated Parking Control process shall be provided. The approval should be done within 5 minutes of the notice being made while the payment blocking is in force. It shall be possible that a controller in the VEH or by a data processor in the office can make the approval.
     2. **Transmission of PN to CSDD**
        1. It shall be possible that after approval the electronically generated PN are sent to the CSDD (API) for further processing. Before sending the PN to the customer, CSDD should check whether the VEH in question is registered in the register of operational VEHs. If the VEH to which the PN has been applied is registered in the register of operational VEHs, CSDD does not send the information on the PN to the owner of the VEH, but the APS returns a response that the VEH for example has a special status.
        2. In case CSDD fails to send the PN information to the owner of the VEH, CSDD shall return a reply to PMS with the reason why the information was not sent.
  4. **PCS WEB User interface**
     1. **Control process**
        1. This section shall contain detailed information about the parking control process, e.g., VEH number checked, time and date of check, result of check, requests sent and replies received and time of reception, etc. Different types of data filtering shall be possible.
     2. **Time controls**
        1. This section shall contain detailed information on the time controls carried out, including photographs, etc. Different types of data filtering shall be possible.
     3. **Blocking process**
        1. Blocking (Dashboard)
           1. This section shall contain online operational information on current blocking orders, blocked VEHs, etc. Different types of data filtering shall be possible.
        2. Blocking overview
           1. This section shall provide detailed historical information on the process of blocking and unblocking VEH, payments recorded, photographs, etc. Different types of data filtering shall be possible.
     4. **PN approval**
        1. Approval section
           1. This section shall provide PN approval functionality. This section shall be available on both tablets and computers.
        2. Approval history section
           1. This section shall contain detailed information on the approval of PN, including photographs. Different types of data filtering shall be possible.
     5. **Online map (by default showing information for the current day)**
        1. This section shall provide an online map displaying online information on the location of controllers, Automated Parking Control System devices and blocked VEHs, etc., with a choice of settings. Different types of data filtering shall be possible, including historical data.
        2. The map shall have several layers and be able to define (draw, set, define by address or address range) tariff and other types of zones.
     6. **Real-time monitoring (Dashboards)**
        1. This section shall display online information on the progress of the parking control process, e.g., individual controller performance, controller downtime, route information, etc.
        2. An info panel shall also be provided to display information/warnings if any of the predefined parameters are exceeded e.g., interruption duration, or controller downtime duration etc. Functionality for defining such parameters shall be provided.
     7. **Statistics section**
        1. Various statistical information and reports shall be available in this section. Different types of data filtering shall be possible.
     8. **Movement history section**
        1. This section shall provide a map showing historical information on the movement of controllers and APCS equipment, the location of blocked VEHs, the location of controller actions for which a location has been recorded, etc. parameters. Different types of data filtering shall be possible.
     9. **Events**
        1. This section shall contain information on events sent by controllers during the work process, including photographs. Different types of data filtering shall be possible.
     10. **Routes**
         1. This section shall provide functionality for routing, including the possibility to mark a route on a map. Routes shall be based on the street sections defined in PLAS.
     11. **Work tasks**
         1. This section shall allow the planning and creation of controller work tasks based on routes. It shall be possible to assign additional tasks to the controller which may be defined within a specific time period or on a specific street section. It shall be possible to review the performance of the work tasks and additional tasks. It shall be possible to define a sequence of work tasks to be performed and a starting point for the performance of the work task.
     12. **Reports**
         1. It shall be possible to retrieve different, predefined reports over a defined period.
     13. **Informative notices**
         1. **General information notices**
            1. This section shall have the functionality to produce informative notices that will be displayed to controllers during a specific time period. It shall be possible to specify the time period when the informative notice is to be displayed. It shall be possible to check when the controller has read the informative notice.
         2. **Informative notices in work tasks**
            1. This section shall have the functionality to produce informative notices to be displayed to controllers when the controller carries out an inspection of a specific parking object. It shall be possible to specify the object and the time period when the informative notice is to be displayed. It shall be possible to check when the controller has read the informative notice.
         3. **VEH informative notices**
            1. This section shall have the functionality to produce informative notices to be displayed to controllers when a controller checks a specific VEH. It shall be possible to specify the VEH number and the time period when the informative notice is to be displayed. It shall be possible to check when the controller has read the informative notice.
     14. **Personal settings**
         1. The possibility to select the desired visual and customisable settings.
     15. **Post-payment tariffs**
         1. It shall include functionality to define post-payment tariffs and period of their validity.
         2. It shall be possible to define which PN notice results in a warning and which PN results in a wheel-locking device.
  5. **Data exchange with CSDD for PCS and APCS**
     1. In order to provide the data necessary for the operation of PCS and APCS on the EVs and VEHs for which the Ministry of Transport has issued postal, courier and collection passes, it is necessary to establish a data exchange with CSDD and to upload the latest data to PMS once every hour specified by the Contracting Authority.

1. **Technical requirements of the PNMS** 
   1. The PNMS is part of the Parking Management System and interacts with other PMS systems and external resources, the Website of Contracting Authority, the Accounting System and the CSDD.



* 1. **WEB User interface blocks**
     1. **Register of Notices**
        1. The Register of Notices section collects information on all applicable PN, related actions, payments made, statuses assigned and other relevant information.
        2. The Register of Notices displays the information in two ways: List view and Detail view. The List view displays the primary information about the notice, while clicking on a notice record opens the detailed information of the notice.
        3. Extensive filtering of information shall be provided in all sections where possible.
        4. Export of selected information shall be provided in all sections where possible.
        5. **List view**
           1. The following information shall be displayed in the List view for notices:

Notice number;

File (printable notice);

Street;

Street section;

Zone;

Country;

Employee number;

Name and surname of employee;

Notice date;

Notice time;

Notification applied in APCS (yes/no);

Vehicle number;

Total amount of the notice;

Post-payment amount;

Fees for applying the notice;

Indication whether the customer has been informed about the notice:

Not informed;

Informed in person;

Informed on the Portal;

Informed by CSDD (by post or electronically);

Status of notice in CSDD:

Not sent;

Waiting for a reply;

Sent;

Failed to send;

Sent again;

Alert sending flag;

Alert sending costs;

Which of the notice types ( I, II, III);

Whether an application of wheel-locking device is associated with the notice;

Costs of the application of a wheel-locking device;

Photo, present or absent;

Status of the notice (What status?):

Registered;

Cancelled;

Frozen – temporary.

Source of status;

Status for sending to accounting;

Payment status:

Unpaid;

Waiting for payment – linked to the blocking payment;

Partly paid;

Paid;

Overpayment;

Debt amount (which is displayed at the current moment taking into account all statuses);

Claim status;

Debt recovery status;

Payment status in debt recovery;

Amount of debt recovery costs;

Date of submission to debt recovery.

* + - 1. **Detail view**
         1. The Detail view shall display all the information contained in the List view and in addition:

Photographs related to the application of the PN;

Photographs related to the application of the wheel-locking device;

Payment history;

Information on the status, history and activity of payments related to the application of the wheel-locking device;

Claims history/response history;

Debt recovery history;

Notice cancellation history;

Notice correction history;

Notice amount correction history;

* + - * 1. The following functionality shall be included in the Detail view:

Initiation of notice cancellation;

Approval of notice cancellation;

Notice cancellation and revocation of cancellation;

Notice correction;

Addition of a justification for notice correction (comment, attachment);

Possibility to correct post-payment notice amount;

Addition of photographs and files.

* + - 1. **Manual entry of notices**
         1. It shall include functionality for manual entry of post-payment notices and addition of photographs.
      2. **Claims**
         1. The Register of Claims shall include a List view and a Detail view, as well as a Claims Processing Section and a Replies Section.
         2. Each claim should be a separate “case” which is examined, to which various additional material may be added, to which a reply is prepared and which has different automatic statuses, depending on what is being done with the claim at the time.
         3. PNMS shall be able to exchange data on claims related to post-payment notices with DLX or another document management system.
         4. It shall include functionality for manual addition of claims.
         5. It shall be possible to classify claims, e.g., first-time, repeated, etc.
         6. It shall be possible for users, according to their assigned roles, to receive e-mail notifications of changes related to adding a new claim, reviewing a claim, responding to a claim or reminders of outstanding work on claims.
         7. It shall be possible to provide a control function for the processing of claims at different stages of their processing, based on the date of the claim.
         8. It shall be possible to add a claim after the deadline of processing claims.
         9. It shall be possible to define deadlines for the processing of claims depending on the type of claim.
         10. It shall be possible to summarise overpayments made and to identify post-payment notices to which the overpayment should be linked.
      3. **List view**
         1. **The following information shall be displayed in the List view:**

Claim number;

Claim registration number in DLX or other document management system;

Claimant;

PN to which the claim relates;

PN date;

Claim registration date;

Claim submission date;

Claim submission method/channel;

Claims class (first-time, repeated ....);

Decision date;

Reply status (in preparation, in process, awaiting reply, replied...);

Reply date;

Indication that additional material from the customer is pending or has been submitted;

Claim status;

Last status date;

Last status author;

Validity of the claim;

Decision;

Decision justification.

* + - 1. **Detail view**
         1. It shall be foreseen that all attached materials can be read immediately on the portal and do not need to be opened separately. Attached material shall be arranged in order of attachment, but it shall be possible to change the order by means of a drag and drop interactive user interface technique.
         2. The Detail view shall display all the information contained in the List view and in addition:

Claim submitted by the customer;

Attached material;

Claim status change history;

Decision change history;

Additional information requests;

Response and their preparation history;

Various status change history;

Indication that the customer has been warned in advance;

Notice that a reminder has been sent;

Reminder date;

Change of notification type from manual to CSDD or vice versa.

* + - * 1. The following functionality shall be included in the Detail view:

Addition (different formats) and deletion of additional material by drag and drop;

Control of receipt and registration dates;

Correction of claim status;

Correction of response status;

Viewing of PN information related to the claim;

Initialisation of manual reminder sending;

It shall be possible to change the post-payment PN amount to be paid by the customer after the claim has been processed.

* + - 1. **Claims processing section**
         1. As the processing of claims is a separate process and is carried out by a specific user or group of users, a separate section for processing claims should be provided.
         2. It shall be foreseen that all attached materials can be read immediately on the portal and do not need to be opened separately. Attached material shall be arranged in order of attachment, but it shall be possible to change the order by means of a drag and drop interactive user interface technique.
         3. The user shall have the functionality necessary for the processing of claims:

Selection of claims according to the required parameters;

Addition and deletion of additional material;

It shall be possible to record when additional information has been requested from the customer and to specify by what deadline the information will be expected;

Specification of the type of claim and other parameters;

Specification of the status of the review;

Specification of the decision and describing the reasons for the decision;

Control of the deadline for the decision.

* + - * 1. It shall be possible for a user with higher rights to approve or reject the decision on the claim.
        2. A user with administrator rights has the right to change the status of a claim by entering a comment on the changes made. For example – setting the reconsideration status of a claim, cancelling a claim, redirecting a claim in case it is linked to an incorrect post-payment noticen and other similar cases.
      1. **Response preparation**
         1. As a written reply is prepared for each claim, functionality for preparing replies shall be provided.
         2. It shall be possible to provide templates for responses which are automatically or semi-automatically filled in depending on the information available and the decision taken.
         3. It shall be possible to specify what information to include in the response.
         4. It shall be possible to control the timing of responses based on the source and whether the claim is first-time or repeated.
         5. There shall be a statute on compliance with the deadline for replies.
         6. It shall be possible to adjust the deadlines for both the examination of claims and the reply.
         7. Controller error recording and accounting.
         8. Statistics on recorded controller errors.
      2. **Debt recovery database**
         1. It shall include functionality to manage and control debt recovery.
      3. **Notices sent to CSDD**
         1. It shall be foreseen that the notices that will be made electronically shall be sent to CSDD for onward transmission by CSDD to the VEH owners. Therefore, it shall include functionality to manage and control this process.
         2. This section shall also include functionality for the management and control of the transmission of default reminders.
      4. **Payments/Unblocking payment section**
         1. It shall include a section to manage and control payments related to application of wheel-locking device.
         2. It shall include alert functionality for cases where a payment has been recorded in relation to an unlocking, but no such payment has been recorded in the accounts within a certain time period.
      5. **Classifiers**
         1. It shall include a section to manage the different classifiers.
      6. **User registration section**
         1. Given the extensive functionality of PNMS, there shall be a very broad scope for defining user roles.
      7. **Personal settings**
         1. It shall be possible to set and change a wide range of personal settings, such as setting and changing parameters for sending reminders.
      8. **PN template form** 
         1. It shall include a section where the information to be displayed in the PN and its layout can be managed and the types of PN can be defined.
      9. **Payments in** **the customer service centres of the Contracting Authority**
         1. It shall include a section where the personnel of the customer service centres of the Contracting Authority can retrieve limited information on the PN and record payments related to the PN.
      10. **Audit trails are recorded in the System**
      11. **Vehicle groups**
          1. It shall include functionality to create groups to which VEHs can be added according to different parameters, e.g., vehicles of the Contracting Authority. These groups will play a role in the processing of PNs.
      12. **Notice write-off section**
          1. It shall be possible to have the functionality to write off post-payment notices according to certain parameters, either automatically or manually.
      13. **Reports**
          1. It shall be possible to create different types of reports in this section, e.g., a financial report calculating the debt amount as of a given date.
      14. **Data exchange with the website/customer portal**
          1. It shall be possible to exchange data with the website so that VEH users can view the information related to the PN, make a payment or submit a claim.

1. **Technical requirements of the RPMS** 
   1. The RPMS is part of the PMS and interacts with other PMS systems and external resources, the Website of Contracting Authority, the Accounting System, CSDD, OCMA and GIS.



* 1. It shall include an automated solution for the purchase and management of residents' cards.
  2. It shall be possible for a person to purchase a resident permit:
     1. via a self-service portal;
     2. by contacting customer service centres of the Contracting Authority with a submission to register to use the portal.
  3. It shall be possible to add scanned customer submissions to the customer profile.
  4. It shall include functionality to automatically add scanned customer submissions to DLX or another document management system.
  5. It shall be possible for the employee of the customer service centre of the Contracting Authority to register a customer.
  6. It shall be possible for a customer to apply for and purchase a resident permit on the website of the Contracting Authority using:
     1. Bank card;
     2. Internet banking;
     3. Upon receipt of an invoice;
     4. At the customer service centre;
  7. It shall include functionality for managing and controlling the resident permit and related processes.
  8. It shall include functionality to allow the customer to authorise the service using different authorisation tools (eParaksts (eSignature), internet banking, etc.).
  9. It shall provide functionality for e-mail and telephone number verification.
  10. System shall be able to retrieve the address of the customer's declared place of residence.
  11. System shall be able to identify the street section to which the address belongs.
  12. System shall be able to determine whether a particular street section or the right and left adjacent blocks of a particular street section contain a paid parking lot area.
  13. System shall be able to determine which street sections will fall within the right and left adjacent blocks of the street section of the customer's residence.
  14. System shall be able to retrieve data on whether the customer has a VEH driving licence of the appropriate category.
  15. System shall be able to retrieve data on vehicles owned by the customer.
  16. System shall be able to check the following conditions:
      1. in Zones A, B, C and D, no more than two resident permits may be issued per address, including no more than one resident permit for a vehicle with a gross vehicle weight of up to 3.5 tonnes owned, possessed or held by a natural person and registered in the name of a natural person in a register of another state, or for a vehicle with a gross vehicle weight of up to 3.5 tonnes used by a natural person, provided that the person holds a valid driving licence entitled to drive a vehicle of the relevant category;
      2. if the declared place of residence of a resident is in tariff zone R, only one resident permit shall be issued for the address in question and shall entitle to use the paid parking lot in the entire territory of the Old Riga.
  17. It shall be possible to select a VEH from the list provided (if the customer owns a VEH) or to enter the VEH number manually, if the conditions allow it.
  18. It shall be possible for the customer to specify the date from which the authorisation will take effect. In addition, a limit to the maximum number of days shall be provided.
  19. System shall be able to prepare and send an invoice for the purchase of a resident permit to the e-mail address provided by the customer or the relevant invoice information to the mobile telephone number provided by the customer.
  20. System shall be able to prepare and send an invoice regarding the purchase of a resident permit to the e-mail address provided by the customer or the relevant invoice information to the mobile telephone number provided by the customer.
  21. It shall include functionality to allow the customer to view the invoices sent and paid via the customer portal.
  22. It shall include functionality that allows the employee to manually or repeatedly send the invoice.
  23. It shall be provided that a natural person has the right to change the vehicle within the limits during the period of validity of the issued and paid resident permit.
  24. It shall include functionality for charging a fee for the processing of documents and data at the time of changing the vehicle of a resident permit.
  25. It shall include functionality to provide customers with information on changes to the layout of parking lot areas in case they affect the areas where residents are allowed to park their vehicles.
  26. It shall include functionality to ensure that the customer has the possibility to agree or disagree with parking lot changes. In case the customer does not agree, the system shall automatically recalculate the fee.
  27. It shall be possible to manually adjust the street sections where the customer is allowed to park the VEH.
  28. It shall include functionality to recalculate if a street section is changed to a lower or higher tariff zone.
  29. It shall include functionality to ensure that two-factor authentication is required if the customer authenticates to the portal with a password.
  30. The actions taken by the customer in the portal shall be traceable so that the customer service centre employee has information on what the customer has done and where difficulties have occurred.
  31. Customers will be able to register a driving licence issued in another country. In order to confirm the correctness of the information registered, the customer service centre employee will have to check the details of the driving licence when the customer comes to present the driving licence. Therefore, it shall be necessary to provide functionality for the approval of driving licence data at the customer service centre.
  32. The electronic proof of the issue of a resident permit should contain at least the following information:
      1. the application number of the resident permit in the information system;
      2. the national registration number of the vehicle for which the resident permit has been issued;
      3. the paid parking lot indicated for the use of the resident permit - streets, sections;
      4. the tariff zone of the paid parking lot indicated for the use of the resident permit;
      5. the start date of the validity of the resident permit;
      6. the expiry date of the validity of the resident permit;
      7. the name, surname, personal identity number, declared place of residence, telephone number and e-mail of the person to whom the resident permit has been issued;
      8. the legal basis for the issuance of the resident permit;
      9. the date of cancellation of the resident permit and the justification;
      10. the amount, date, time, method and place of payment of the payment made by the resident permit;
      11. the date, time and method of sending the information notice to the user;
      12. information on the refusal to issue the resident permit;
      13. information on the cancellation of the resident permit.
  33. **Internal user interface and functionality**
      1. **Resident permit section**
         1. It shall include a section where information on all purchased resident permits is available.
         2. It shall be possible to manually correct the information contained in the resident permit.
         3. It shall be possible to filter the information extensively.
         4. It shall be possible to export selected information.
      2. **Payments’ section**
         1. It shall include a section where payments made by customers for resident permits can be managed. It shall also be possible to add, correct and delete them.
         2. It shall be possible to notify the customer and the operator when an invoice has not been paid in full.
         3. It shall be possible to send a reminder e-mail if an invoice has been created but not paid within a certain period.
         4. It shall be possible to filter the information extensively.
         5. It shall be possible to export selected information.
      3. **Reports section**
         1. It shall provide for various types of reports, including financial reports.
      4. **Submissions section**
         1. It shall include a section to manage electronic or paper submissions submitted by customers for the issuance of a resident permit.
         2. It shall be possible to review the system's refusals to accept submissions (reasons for refusal).
         3. It shall be possible to manage partially completed submissions.
         4. It shall be possible to manage changes made by customers to a submission.
         5. It shall include functionality to ensure that scanned customer submissions, once added to the customer profile, are automatically registered in DocLogix or another document management system.
      5. **Customer register**
         1. It shall include a section where registered customer information can be managed.
      6. **Information notice section**
         1. It shall include a section containing:
            1. reports on information notices sent to customers;
            2. the possibility to manually send notices also with attachments individually and to certain groups according to different parameters.
         2. It shall be possible to send different types of notices and reminders to the customer.
         3. It shall be foreseen that after the payment of the resident permit, the customer will receive the necessary information by e-mail, including a map indicating the parking lots that the customer will be allowed to use.
      7. **Settings section**
         1. It shall include a section where the following functionality can be accessed:
            1. Resident permit tariff management
            2. Administrative cost management
            3. Restriction management of the number of resident permits issued in a given tariff zone.
            4. It shall be possible to limit the number of registrations in a given period.
            5. It shall be possible to change the conditions for granting a resident permit.
            6. It shall be possible to modify the limits for the indication of the start date of the resident permit.
            7. And other settings.
         2. **Personal settings section**
            1. It shall be possible to set and change a wide range of personal settings, such as setting and changing parameters for sending reminders.
         3. **Section of the customer service centres of Contracting Authority**
            1. It shall include a section for the employees of customer service centre of Contracting Authority.
         4. **External user interface and functionality**
            1. It shall provide an interface and functionality to enable the customer to purchase and manage resident permits.

1. **Functional requirements of PLAS** 
   1. PLAS is part of the PMS and interacts with other PMS systems and external resources, the Website and GIS.



* 1. **Requirements of the parking lot accounting**
     1. It shall include functionality for managing and accounting for parking lots and the infrastructure therein.
     2. It shall include functionality to manage changes made to the accounting.
     3. It shall include functionality to display parking objects and their infrastructure on an interactive map.
     4. It shall include functionality to add, edit and delete parking objects and their infrastructure on the interactive map.
     5. It shall include functionality to allow the exchange of information between the website and other systems.
     6. It shall include functionality to alert users to changes related to the layout of parking lots and the infrastructure therein.
     7. It shall include functionality to control the various deadlines and to send related information notifications to users.
     8. It shall include functionality to allow for the timing of certain entries in the view.
     9. It shall include functionality to allow the attachment of files of different types/formats.
     10. It shall be possible to record at least the following information about parking lots and the infrastructure therein:
         1. Street name;
         2. Street section from;
         3. Street section to;
         4. Section side (even, odd, right, left);
         5. Number of parallel parking lot spaces;
         6. Number of perpendicular parking lot spaces;
         7. Number of angled parking lot spaces;
         8. Total number of parking lot spaces;
         9. Parking lot space area m2;
         10. Parking lot position (on the carriageway, on the sidewalk, partly on the sidewalk);
         11. Road signs displayed (number, type);
         12. ECEs displayed;
         13. Restrictions – Hydrants, yellow crosses, disabled parking lot spaces, goods deliveries, (these parking lot spaces are not included in the total number and area of parking lots. Informative);
         14. Presence/absence of markings;
         15. Type of pavement;
         16. Reserved parking lot spaces;
         17. Comment;
         18. Date of changes;
         19. Author of the changes;
         20. Files.
     11. It shall be possible to filter the information extensively.
     12. It shall be possible to export selected information.
  2. **Use of parking lots**
     1. **Coordinated parking lots**
        1. It shall provide functionality to allow the accounting, management and control of coordinated occupied parking lots.
        2. It shall include functionality to manage changes made to the accounting.
        3. It shall include functionality to allow the display of coordinated occupied parking lots on an interactive map.
        4. It shall provide functionality to add, edit and delete coordinated occupied parking lots on the interactive map.
        5. It shall include functionality to allow the exchange of information between the website and other systems.
        6. It shall include functionality to alert users to changes related to coordinated occupied parking lots.
        7. It shall include functionality to send regular (at least once a day) information on coordinated occupied parking lots to parking lot controllers. It shall be foreseen that in case of any changes related to the coordinated occupied parking lots, the parking lot controller whose work task includes an object with coordinated occupied parking lots receives an information notice about the changes in the work application.
        8. It shall include functionality to control the various deadlines and to send related information notifications to users.
        9. It shall include functionality to allow for the timing of certain entries in the view.
        10. It shall include functionality for the generation and management of estimates.
        11. It shall include functionality to allow the attachment of files of different types/formats.
        12. It shall include functionality to allow the recording of estimates in DLX or another document management system.
        13. It shall include functionality to allow the recording of estimates in the Accounting system.
        14. It shall be possible to record at least the following information on coordinated parking lots:
            1. Street;
            2. Street section;
            3. House number:
            4. Number of spaces;
            5. Date;
            6. Time from;
            7. Time up to;
            8. Tariff zone;
            9. Customer;

Company name;

Type of customer (legal, private);

Contact information:

Name;

Surname;

Telephone number;

E-mail address;

Justification (application, order, letter of guarantee, etc.);

Document file (various formats);

Type (construction, filming, container, material off-loading, bus parking, event, etc.);

Comments;

Date of changes;

Person who made changes;

Estimate number;

Tariff;

Estimate amount;

Estimate preparation date.

* + - 1. It shall be possible to filter the information extensively.
      2. It shall be possible to export selected information.
    1. **Information from controllers**
       1. It shall include functionality to view the information sent by the controllers, from the work application, for the inspection of the coordinated occupied parking lots (comments and photos). It shall be possible to automatically link the information sent to the specific parking lot agreement record in the System.
       2. It shall be possible to filter the information extensively.
       3. It shall be possible to export selected information.
    2. **Reserved parking lot spaces**
       1. It shall provide functionality to allow the accounting, management and control of Reserved paid parking lots.
       2. It shall include functionality for the determination of the tariffs for Reserved paid parking lots.
       3. It shall include functionality to manage changes made to the accounting.
       4. It shall include functionality to allow the display of Reserved paid parking lots on an interactive map.
       5. It shall provide functionality to add, edit and delete Reserved paid parking lots on the interactive map.
       6. It shall include functionality to allow the exchange of information between the website and other systems.
       7. It shall include functionality to alert users to changes related to reserved paid parking lots.
       8. It shall include functionality to control the various deadlines and to send related information notifications to users.
       9. It shall include functionality to allow the attachment of files of different types/formats.
       10. It shall be possible to record at least the following information on coordinated parking lots:
           1. Parking lot user:

Company name;

Contact person;

Telephone;

E-mail;

* + - * 1. Parking lot address;
        2. Number of parking lot spaces;
        3. Contract:

Contract date;

Contract number;

Contract end date.

* + - * 1. User card printing number;
        2. Number of reserved parking lot spaces;
        3. Users;
        4. Number of user cards;
        5. Validity period of user cards;
        6. Street;
        7. Street section from;
        8. Street section to;
        9. Date from;
        10. Date up to;
        11. Deed date;
        12. Deed number;
        13. Document file (various formats);
        14. Comments;
        15. Date of changes;
        16. Person who made changes.
      1. It shall be possible to filter the information extensively.
      2. It shall be possible to export selected information.
  1. **ECE**
     1. **ECE Register**
        1. It shall provide functionality for the accounting, management and control of Electronic Control Equipment (ECE).
        2. It shall include functionality to allow the display of ECE on an interactive map.
        3. It shall provide functionality to add, edit and delete ECE on the interactive map.
        4. It shall include functionality to manage changes made to the accounting.
        5. It shall include functionality to allow the exchange of information between the website and other systems.
        6. It shall include functionality to alert users to changes related to ECE.
        7. It shall include functionality to control the various deadlines and to send related information notifications to users.
        8. It shall include functionality to allow the attachment of files of different types/formats.
        9. It shall be possible to record at least the following information on ECE:
           1. Chassis number;
           2. Body number;
           3. Model;
           4. Tariff zone;
           5. Connection:

Connection type;

Connection accounting type (meter, non-accounting);

Connection capacity;

Connection agreement;

Switchgear number;

Contract number;

Contract date;

Connection fee;

Connection agreement number;

Connection agreement date;

Contacts;

* + - * 1. GPS coordinates;
        2. ECE components (accounting);
        3. Information stickers (type, number);
        4. ECE version;
        5. Date of installation;
        6. Date of dismantling;
        7. Address;
        8. Street section from;
        9. Street section to;
        10. Document file (various formats);
        11. Comments;
        12. Date of changes;
        13. Person who made changes.
    1. It shall provide functionality for the recording of vandalism incidents and related documentation and material.
    2. It shall be possible to filter the information extensively.
    3. It shall be possible to export selected information.
  1. **ECE damage register**
     1. It shall provide functionality for the accounting, management and control of ECE damages.
     2. It shall include functionality to manage changes made to the accounting.
     3. It shall provide functionality for a technician (including outsourced) to make the necessary notes on the handling of ECE and on the repair of ECE damage.
     4. It shall include an interactive dashboard displaying the status of all ECEs (operational, non-operational, long-term non-operational, etc.).
     5. It shall include functionality to allow the display of ECE damage on an interactive map.
     6. It shall include functionality to allow the exchange of information between the website and other systems.
     7. It shall be possible to record at least the following information on ECE damage:
        1. Date and time of damage report;
        2. Date and time of damage registration;
        3. Source of damage report;
        4. Damage characteristics;
        5. VEH number;
        6. Comment;
        7. Date and time of technician notification;
        8. Detected damage;
        9. Actions taken;
        10. Comment;
        11. Name of the replaced spare part;
        12. Number of the replaced spare part;
        13. Date and time of damage rectification.
     8. It shall be possible to filter the information extensively.
     9. It shall be possible to export selected information.
  2. **Definition of resident sections**
     1. As resident permits will be issued for the street section where the customer's declared place of residence is registered and will also apply to the street sections on the right and left adjacent blocks where the paid parking lots are located, the functionality to define the street sections adjacent to each street section should be reviewed.
     2. It shall be provided functionality for defining temporary changes, e.g., if a section is closed for a period of time for repair works, it shall be possible to define another adjacent section for a fixed period of time instead of that section.
     3. It shall include functionality to manage changes made to the accounting.
     4. It shall include functionality to display each street section and its adjacent street sections on an interactive map.
     5. It shall include functionality to add, edit and delete a street segment and adjacent street segments in the interactive map.
     6. It shall include functionality to alert users to changes in the linking of street segments.
     7. It shall include functionality to control the various deadlines and to send related information notifications to users.
     8. It shall be possible to record at least the following information:
        1. Street name;
        2. Street section from;
        3. Street section to;
        4. Tariff zone;
        5. Validity period;
        6. Adjacent street sections:
           1. Adjacent street section;
           2. Adjacent street section from;
           3. Adjacent street section to;
           4. Validity period;
        7. Comments.
     9. It shall be possible to filter the information extensively.
     10. It shall be possible to export selected information.
  3. **Reports section**
     1. Various types of reports, including financial reports shall be provided.
  4. **Personal settings section**
     1. It shall be possible to set and change a wide range of personal settings, for example setting and changing parameters for sending reminders.
  5. **User settings section**
     1. It shall be possible to set user rights.

1. **SYSTEM MAINTENANCE, WARRANTY AND CHANGE REQUESTS**
   1. **Maintenance**
      1. During the maintenance period, the Tenderer shall update the versions of the System, make security improvements and adjustments if the legislation of the Republic of Latvia or the European Union changes, or the System does not comply with any of the legal requirements.
      2. The Tenderer shall carry out the maintenance of the System in accordance with and following the Contracting Authority's guidelines with specific application categories and their priorities. (Maintenance shall include Category 1 and Category 5 applications – failure and consultation).
   2. **Warranty**
      1. The Tenderer shall maintain the warranty for 2 (two) years from the date of signature of the Transfer and Acceptance Deed. The Contractor shall implement the warranty within the time limits set out in the Technical Specification, fully remedying the problems and/or deficiencies, including errors, recorded in the Warranty Application, at its own expense and with its own forces.
      2. The Tenderer shall provide the guarantee in accordance with and following the Contracting Authority's guidelines with specific categories of applications and their priorities. (Guarantee shall cover Category 2, 3 and 4 applications – errors and inaccuracies).
   3. **Change requests**
      1. The Tenderer shall ensure that change requests are executed in accordance with and following the Contracting Authority's guidelines with specific categories of applications and their priorities. (Category 6 applications)
      2. The Tenderer shall provide the preparation of the implementation proposal (work task) for Category 6 applications free of charge.
      3. The work task for the change request shall be agreed and approved by the Contracting Authority.
      4. The planned scope of work for changes and System development applications (Category 6) shall not exceed 20% of the Contract Amount.
   4. **Contracting Authority's guidelines**
      1. Failure – problem causing complete shutdown of the System and/or unavailability of functions (**Category 1 – Maintenance**);
      2. Restricting error – a problem caused by a System software error or malfunction that results in a significant loss of functionality and there is no known workaround, but it is possible to continue operation in a restricted mode **(Category 2 – Warranty);**
      3. Non-restricting error – a problem that causes minimal loss of features and/or functions, the impact on the System is minor or inconvenient (**Category 3 – Warranty);**
      4. Inaccuracy – a problem that causes no potential damage and is considered a System software bug, inaccuracy, or malfunction that causes minor impact on the operation of the System (**Category 4 – Warranty);**
      5. Consultation – a situation where the Contracting Authority needs support to resolve specific issues or to obtain additional information about the System and its functionality, including training on the System, and preliminary assessment of changes (**Category 5 – Maintenance);**
      6. Changes – a request to make changes or to add functionality, documentation or other additional work to the System, other than the categories described above (**Category 6 – Change request).**
   5. **Guidelines for processing applications**
      1. The Tenderer shall provide centralised handling of applications, problems and defects, for the deliverables developed during the validity period of the Contract, within the business hours of the business day (between 7:30 a.m. and 4:30 p.m.) via the following channels:
         1. calls to a specified contact telephone number or e-mails to a specified e-mail address;
      2. upon receival, the ticket shall be registered in the Tickets System of the Tenderer, stating the time of the ticket and providing a registration confirmation by sending a reply e-mail.
      3. The Contracting Authority shall be provided with an access to the Contracting Authority's tickets registered in the Tickets System of the Tenderer.
      4. Only the Contracting Authority shall be eligible to take the decision on changing the ticket category from a lower category to Category 1 or Category 2 and to initiate its handling outside the standard business hours.
      5. The remediation of reported problems and/or handling of submitted tickets shall be carried out in accordance with the mode of operation set out in the Technical Specification and in accordance with the following minimum response, workaround, and full remediation times:
         1. response time – the period of time from receipt of the ticket, when the full ticket information is provided or recorded, until the submission of the response time reply, which shall include at least the following information: an explanation of the cause of the problem (if known), an explanation of how the problem will be addressed and resolved or information provided, a timeframe and/or plan for the implementation of the workaround and/or the remediation, the actions required and/or to be taken to help contain the problem or minimise its impact;
         2. the target time for delivery of the permanent solution or resolution time and the target time for delivery of the workaround – means the period of time between the receipt and acknowledgement of the response time reply and the moment when the provider has provided a solution after which the problem reported can no longer be repeated or has taken action to downgrade the ticket in question to a lower category;
         3. the response time for a **Category 1** ticket is a maximum of 2 hours per business day within business hours with completion of the workaround within 4 hours per business day and delivery of the permanent solution within a maximum of 24 business hours;
         4. the response time for a **Category 2** ticket is a maximum of 4 hours per business day within business hours with completion of the workaround within 8 hours per business day and delivery of the permanent solution within a maximum of 24 business hours;
         5. the response time for a **Category 3** ticket is a maximum of 8 hours per business day within business hours with completion of the workaround within 24 business hours and delivery of the permanent solution within a maximum of 48 business hours;
         6. the response time for **a Category 4** ticket is no more than 2 business days, with delivery of the permanent solution within a maximum of 3 business days;
         7. the response time for **a Category 5** ticket is no more than 3 business days;
         8. the response time for **a Category 6** ticket is no more than 5 business days, including a preparation of a proposal containing a description of the solution and an assessment of the workload. If the Tenderer has requested additional information from the Contracting Authority for the preparation of the tender, the counting of business days shall be suspended until the Contracting Authority has provided the Tenderer with the requested information.