Gate Integration Module Setup and User Guide

ACFA PSIM 1.1

Last update 05/03/2024

Table of Contents

1 List of Terms Used in Gate Integration Module Setup and User Guide

Access Control System (ACS): a hardware and software suite for access control and management.

Integrated system *ACS Gate*: a system, which integrates hardware and software. The system is used to manage access, to record and to keep track of vehicle movements, and to manage actuators at exit/entry points of stay. The system supports permanent and temporary passes and the access approval mode.

Axxon PSIM Server: a computer that has the **Server** installation version of the *Axxon PSIM* software package installed.

Controller: the main hardware device in the *Gate ACS*. This device enables receiving and processing the information signals that come from card readers, managing external actuators (for example, locks) by using built-in relays, and controlling security zones.

Time schedule - a set of any number of time intervals during a day (24 hours) defined for several days (1 to 366), and the time intervals during specific dates. Time schedule defines a schedule of access to the secured object.

2 Introduction into Gate Integration Module Setup and User Guide

On the page:

2.1 Purpose of the Document

The *Setup and User Guide for the Gate Integration Module* is a reference guide for administrators and operators of the *Gate* module. This module is part of access control systems (*ACS*) implemented based on the *ACFA PSIM* software package.

This Guide contains:

1. general information on the *Gate* integration module;
2. guidance on how to configure the *Gate* integration module;
3. guidance on how to work with the *Gate* integration module.

2.2 General Information on the Gate Integration Module

The *Gate* integration module is part of *ACS* systems based on *ACFA PSIM*. The module is used for:

1. configuring the *Gate ACS* (manufactured by Ravelin-LTD);
2. enabling interaction between the *Gate ACS* and *ACFA PSIM* (monitoring and management).

Note:

Detailed information on the *Gate* ACS can be found in the vendor documentation.

Before configuring the *Gate* integration module:

1. Install the *Gate ACS* hardware at the secure facility (refer to the *ACS Gate* reference documentation).
2. Connect the *Gate ACS* to the Server.

3 Supported hardware and licensing of the Gate integration module

Manufacturer	Ravelin Ltd. 197022, St.-Petersburg, Professor Popov's str., bld. 4 Tel: +7 (812) 327-50-32 E-mail: ravelin@ravelinspb.ru
Integration type	Low-level protocol
Equipment connection	RS-232, USB, Ethernet

Supported equipment

Equipment	Function	Features
Gate-4000 (all modifications)	Access controller	Connected readers: 2 Relay: 2 Max. capacity of key memory bank: 4072 Max. capacity of events memory bank: 4095 Max. number of controllers in network: 254 Max. time of key recognition 0,8s (for 4000 keys) RS-485/RS-422 interface
Gate-8000 (all modifications)	Access controller	Connected readers: 2 Relay: 2 Max. capacity of key memory bank:8000 Max. capacity of events memory bank: 8000 Max. number of controllers in network: 254 Max. time of key recognition 0,8s (for 4000 keys) RS-485/RS-422 interface
Gate-4000 Parking	Access controller	Connected readers: 2 Relay: 2 Max. capacity of key memory bank: 4072 Max. capacity of events memory bank: 4095 Max. number of controllers in network: 254 Max. time of key recognition 0,8s (for 4000 keys) RS-485/RS-422 interface

Equipment	Function	Features
Gate-8000-Ethernet	Access controller	Connected readers: 2 Relay: 2 Max. capacity of key memory bank: • two-door mode: 8167 • one-door, turnstile and gate mode: 16334 Max. capacity of events memory bank: 8192 Max. time of key recognition 0,6s (for 8000 keys) Interface of connected readers: Wiegand, 1-Wire (TM), ABA-2 Type of connection: Ethernet

Protection
For 1 controller.

4 Configuring the Gate Integration Module

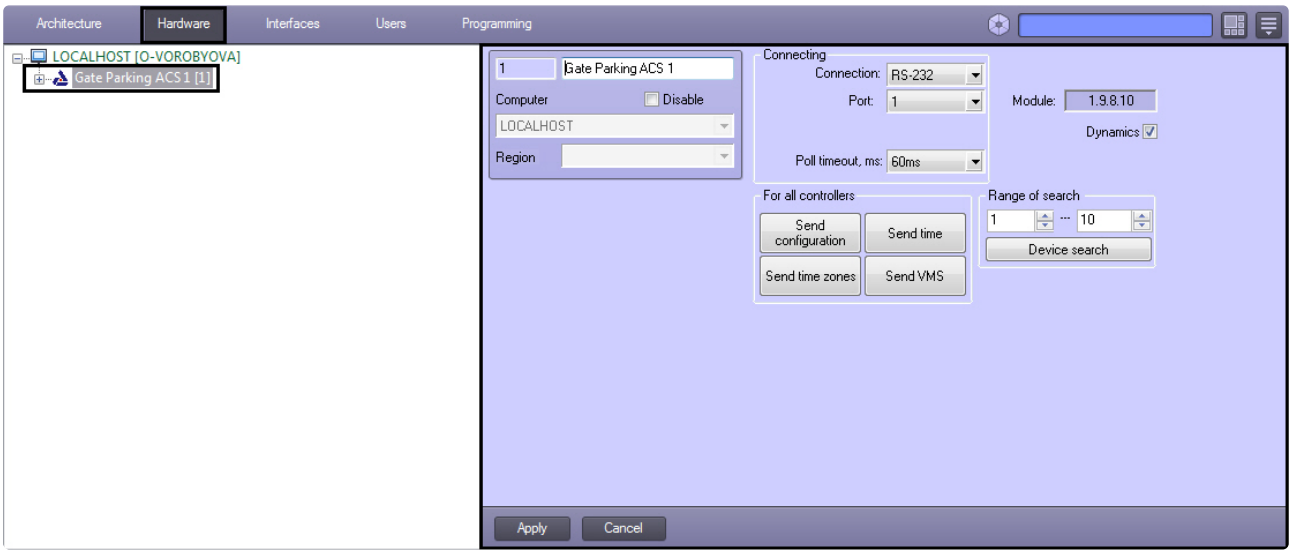
4.1 Steps to Configure the Gate Integration Module

To configure the *Gate* integration module:

1. Configure the *Gate* ACS's connection to the *Axxon PSIM* Server.
2. Automatically create the object tree.
3. Forward the *Gate* ACS's configuration to the controllers.
4. Configure the *Gate* controllers.
5. Set the access modes.
6. Configure the automatic reactions of *Gate* controllers.

4.2 Configuring the Gate ACS's Connection

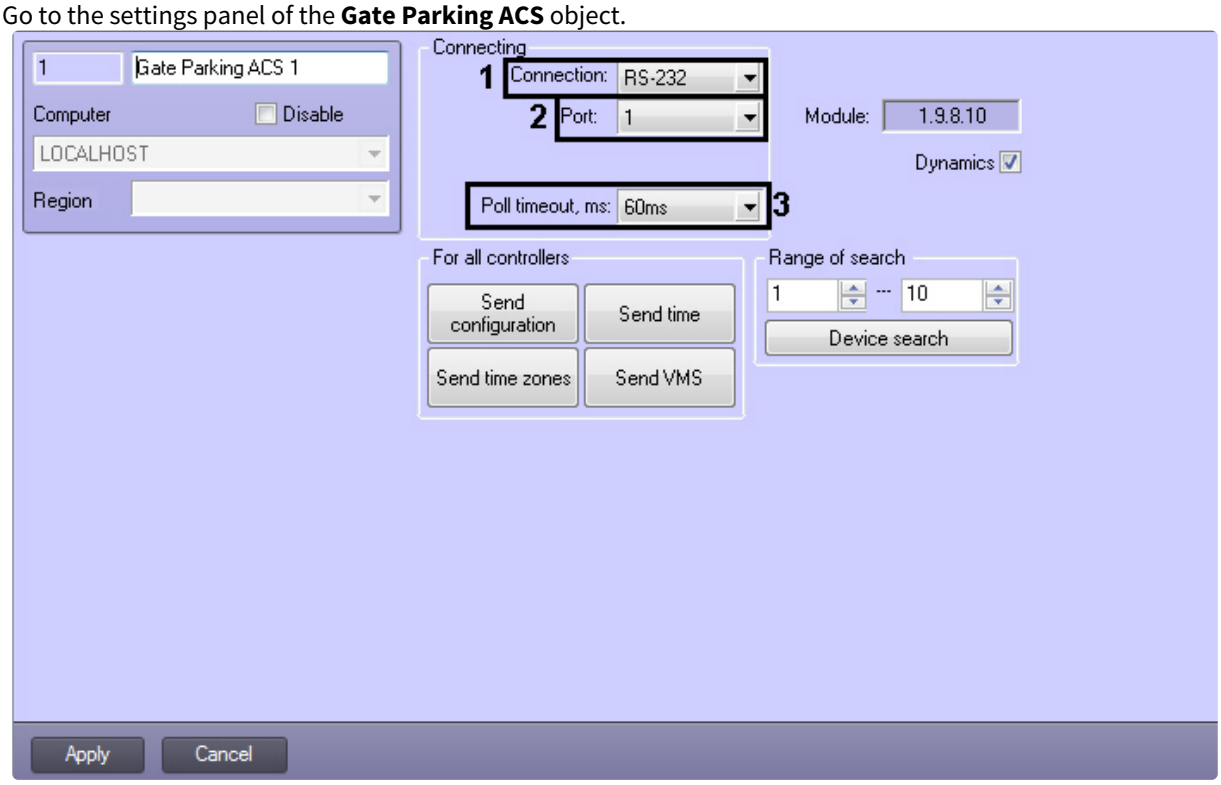
To configure the *Gate ACS*'s connection, use the relevant **Gate Parking ACS** object. To create this object, go to the **Settings** dialog box, click the **Hardware** tab, and select the parent **Computer** object.



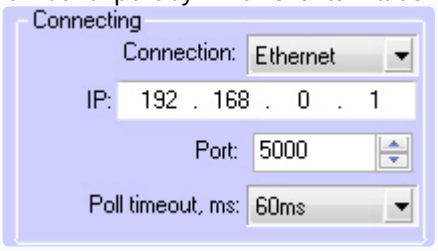
> **Note.**
>
> The **Module:** field shows the current version of the *Gate* integration module.

To configure the *Gate* integration module's connection:

1. Go to the settings panel of the **Gate Parking ACS** object.



2. From the **Connection:** drop-down list select the connection type of the *Gate ACS* and *Axxon PSIM* Server (**1**).
3. From the **Port:** drop-down list select the number of the COM port to connect to *Gate ACS* (**2**).

> **Note.**
>
> If the *Ethernet* connection type is selected it's required to specify the corresponding IP-address and number of port by which events will be received.
>
> 
>

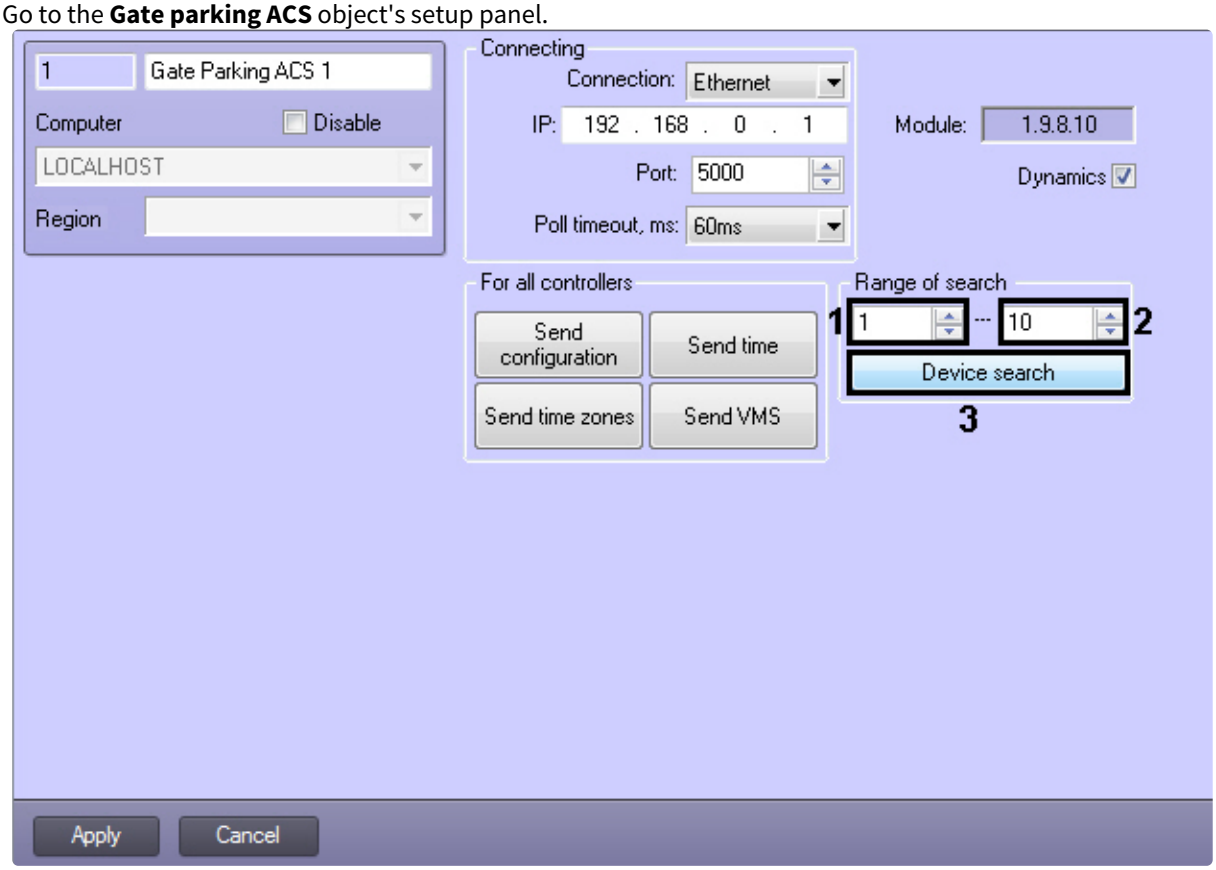
4. From the **Poll timeout, ms:** drop-down list select the time period in milliseconds between two consecutive polls of the device connection (**3**).
5. Click **Apply**.

The *Gate ACS's* connection is now configured.

4.3 Automatically creating the Gate object tree

To automatically create the object tree, do the following::

1. Go to the **Gate parking ACS** object's setup panel.



2. Enter the controller's address range: in the **from** field, enter the first address in the range (**1**); in the **to** field, enter the last address (**2**)**.**
3. Click **Device search** (**3**).

This launches an automatic search for hardware-configured and connected *Gate* controllers. Objects corresponding to found controllers are automatically created in the object tree under the relevant *Gate ACS* object.

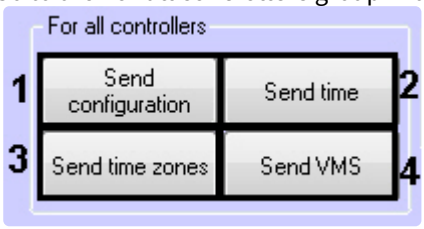
The *Gate ACS*'s object tree is now created.

4.4 Forwarding the Gate ACS's configuration to the controllers

Forwarding the configuration to all *Gate* controllers is described in this section. Also it is possible to forward the configuration to each controller separately (see the Managing the configuration of a Gate controller section).

To forward the *Gate ACS*'s configuration, do the following:

1. Go to the **For all controllers** group in the **Gate Parking ACS** object's setup panel.



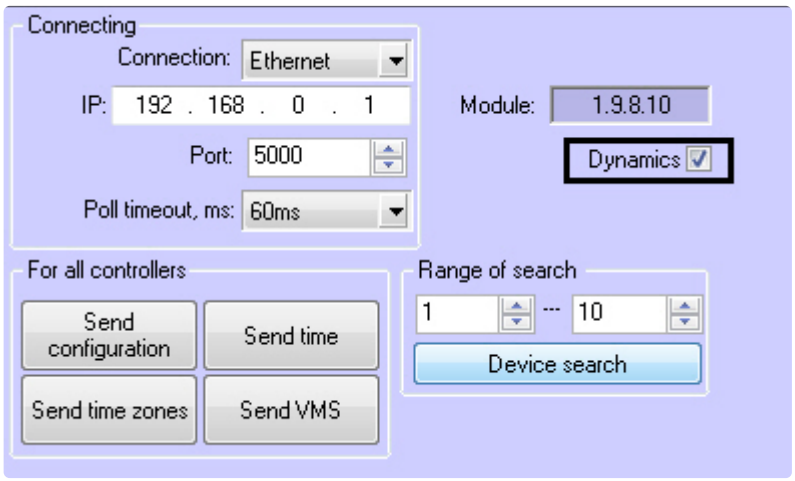
2. To forward the *Gate ACS*'s configuration to all the controllers, click **Send configuration** button (**1**).

> **Note:**
>
> This records the following in each controller's internal memory:
>
> a. the time zones;
> b. the data on the system's users;
> c. the user access levels.

3. To synchronize the time of all the controllers with the Server time, click **Send time** button (**2**).
4. To forward time zones to all controllers click **Send time zones** button (**3)**.
5. To forward data of the *Access Manager* module (users, access levels, time zones, etc.) click the **Send VMS** button (**4**).

Forwarding of the *Gate* configuration is completed.

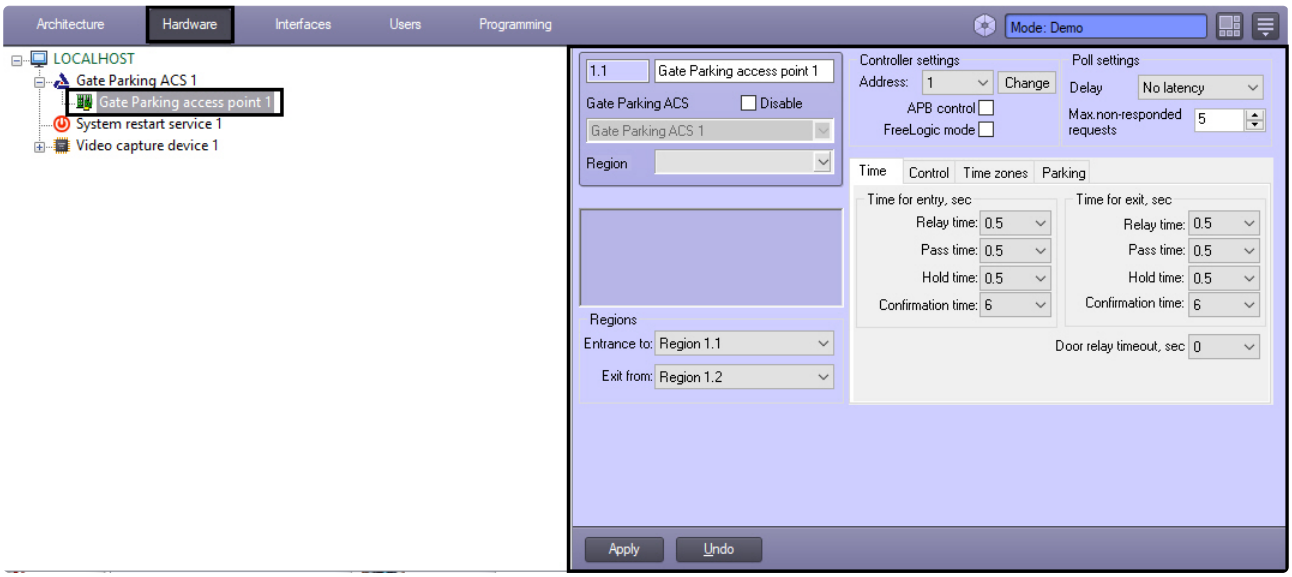
For automatically forwarding data of the *Access Manager* module to controller set the **Dynamics** checkbox and click the **Apply** button.



> **Attention!**
>
> Dynamic sending of time zones and users are only supported. Dynamic sending of user access levels is not supported due to device characteristics.

4.5 Configure the Gate controller

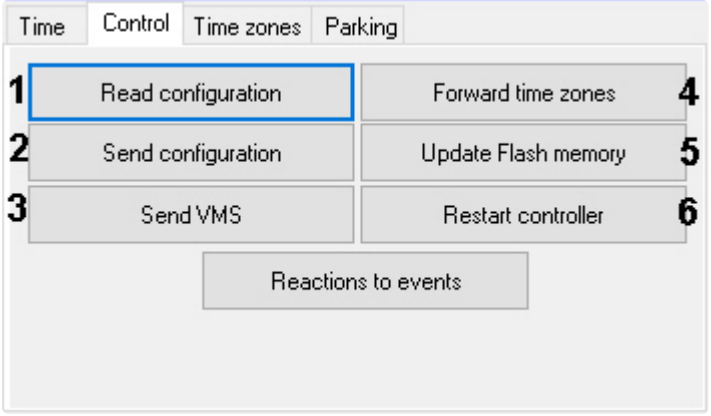
Settings of the *Gate* controllers is performed on the **Gate Parking access point object**'s settings panel created on basis of the **Gate Parking** object on the **Hardware** tab of the **System Settings** dialog box.



4.5.1 Managing the configuration of a Gate controller

For a *Gate* controller, configuration management includes the following actions on the **Control** tab:

1. Reading configuration of the *Gate* controller. To perform this action click the **Read configuration** button (**1**). To view the read configuration select the **Gate parking access point** object again



2. Forwarding configuration to the *Gate* controller. Click the **Send configuration** button to perform the forwarding (**2**).
3. Forwarding data of the Access Manager (users, access level, time zones, etc.). Click the **Send VMS** button to perform this action (**3**).
4. Forwarding time zones to the *Gate* controller. Click the **Send time zones** button to perform forwarding of time zones (**4**).
5. Updating the *Gate* controller's memory. To update the memory, click **Update Flash memory** (**5**).

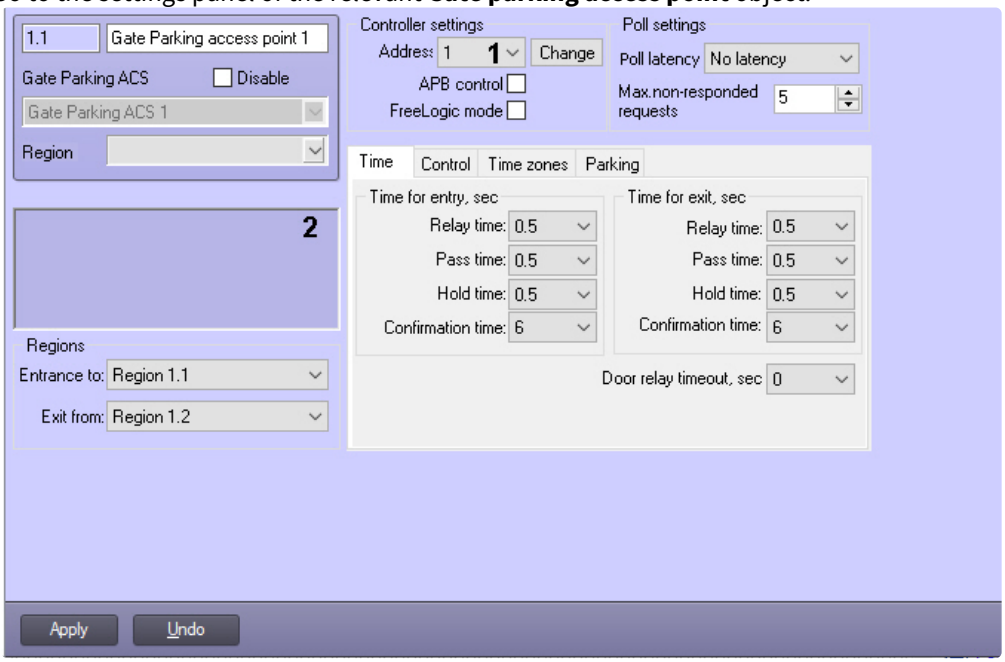
> **Attention!**
>
> Update the controller memory once per day. Use the ACFA PSIM's program or script for automatic memory update (see Appendix 1. Automatic updating the Flash memory of Gate controller section).

6. Restarting the controller. To restart the controller, click **Restart controller** (**6**).

4.5.2 Configure the connection of Gate controller

To configure the connection of a *Gate* controller, do the following:

1. Go to the settings panel of the relevant **Gate parking access point** object.



2. From the **Address** drop-down list select the controller address (**1**).
3. Click **Apply**.

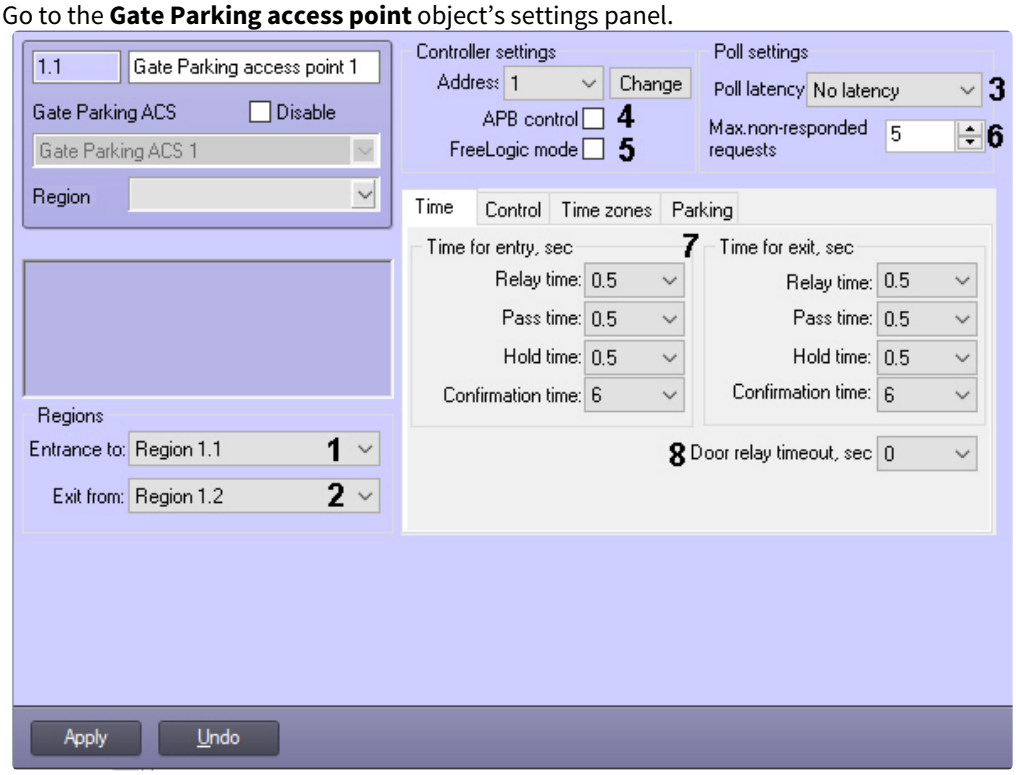
> **Note:**
>
> If the controller with specified address is connected to the Axxon PSIM Server, you will see the following controller parameters in the **Controller version** group (**2**):
>
> a. controller version;
> b. controller firmware version;
> c. controller operation mode.
>
> If the controller parameters are not shown, check the controller's connection to the computer (refer to the Gate ACS vendor documentation).

The *Gate* controller is now configured.

4.5.3 Configuring the Gate controller parameters

To configure the Gate controller, do the following:

1. Go to the **Gate Parking access point** object's settings panel.



2. From the **Entrance to:** drop-down list select the **Region** object corresponding to the area located on the side of exit reader (**1**).
3. From the **Exit from**: drop-down list select the **Region** object corresponding to the area located on the side of entry reader (**2**).
4. From the **Poll latency:** drop-down list select the controller poll latency (**3**).
5. Set the **APB control** checkbox to activate the antipassback (**4**).

> **Note.**
>
> Antipassback parameters can be reset for any user (see Appendix 2. Resetting antipassback (APB) parameters for a given user).

6. Set the **FreeLogic mode** checkbox to activate the reactions mode on which the controller can enable and disable exits when some specified events appear inside of controller (**5**).
7. Specify maximal number of unreplied requests (**6**). Connection with controller will be lost while exceeding this number.
8. From the **Door relay timeout** drop-down list select time interval in seconds between access card presenting and opening of door relay (**8**).
9. Go to the **Time** tab.
10. Configure the lock parameters for passes on entry and exit (**7**):
    a. From the **Relay time:** drop-down list select the time period in seconds during which the lock will be opened.

    > **Attention!**
    >
    > If the relay time equal to 0 the lock is failed to open by available ways: using the key, button or corresponding command.

    b. From the **Pass time:** drop-down list select the time period in seconds during which the user can open the door.

> **Note.**
>
> Access time and relay time start to count off from the moment of relay trigerring (i.e. lock opening), so the access time can't be less than relay time.

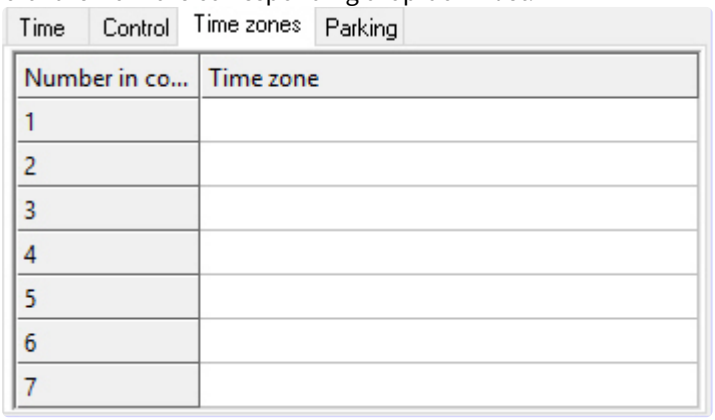
c. From the **Hold time:** drop-down list select the time period in seconds after door opening during which the door is to be closed.

> **Note.**
>
> If the door will not be closed after time of holding open expire then the Door not closed events is fixed. It is followed by signal and light indication till the door will be closed.

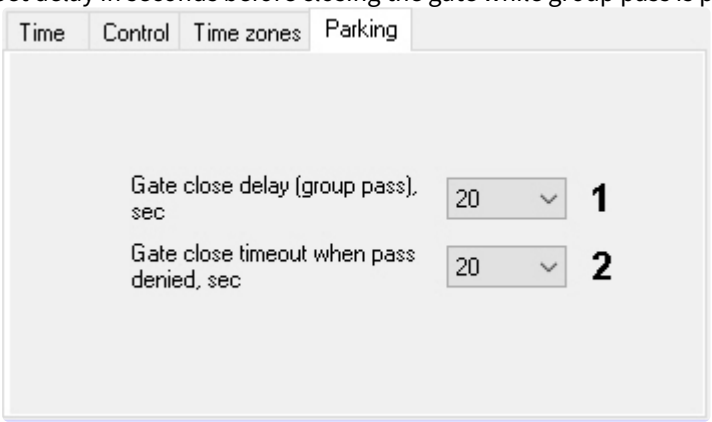
d. From the **Confirmation time:** drop-down list select the time period in seconds during which access is to be confirmed by card (see Configuring Gate access modes section).

> **Attention!**
>
> If the confirmation time is 0 the confirmation timeout is not limited.

11. Go to the **Time zones** tab and configure time zones in case of users have access level with time zone different from Always and Never. For each time zone of Gate controller select the time zone of the *ACFA PSIM* software from the corresponding drop-down list.



12. Go to the **Parking** tab.
13. Set delay in seconds before closing the gate while group pass is performed (1).



14. Set gate closing timeout in seconds when pass is denied (2).
15. Click the **Apply** button.

Configuring parameters of the *Gate* controller is completed.

4.5.4 Configuring Gate access modes

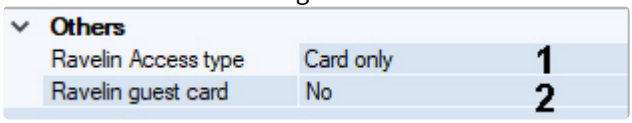
The *Gate ACS* supports four operation modes of user access card.

Card operation mode	**Description**
Card only	Only card is sufficient for access
Card and pin	Card is to be confirmed by PIN-code for access
Master	Only card is sufficient for access + it is confirmation card for access card of **Slave** type
Slave	Card is to be confirmed by confirmation card (**Master** type)

Set one or more of specified modes to users to configure the access modes.

To configure the access modes of users, do the following:

1. Go to the *Access Manager* module (see the Access Manager Module Settings and Operation Guide). Double-click the user to start editing. Locate the **Others** section in the dialog box opened.



2. From the **Ravelin Access type** drop-down list select the user access mode (**1**). If the mode is not selected the access will be granted according to the access level.
3. From the **Ravelin guest card** drop-down list select **Yes** if user is a guest (**2**).
4. Click the **Save** button.
5. To configure access modes for all users repeat steps 1-3 for each of them.
6. If the dynamic forwarding the controller configuration is set, the access modes will be enabled immediately. Otherwise forward the data of the Access Manager module to the *Gate* controller (see Managing the configuration of a Gate controller section).

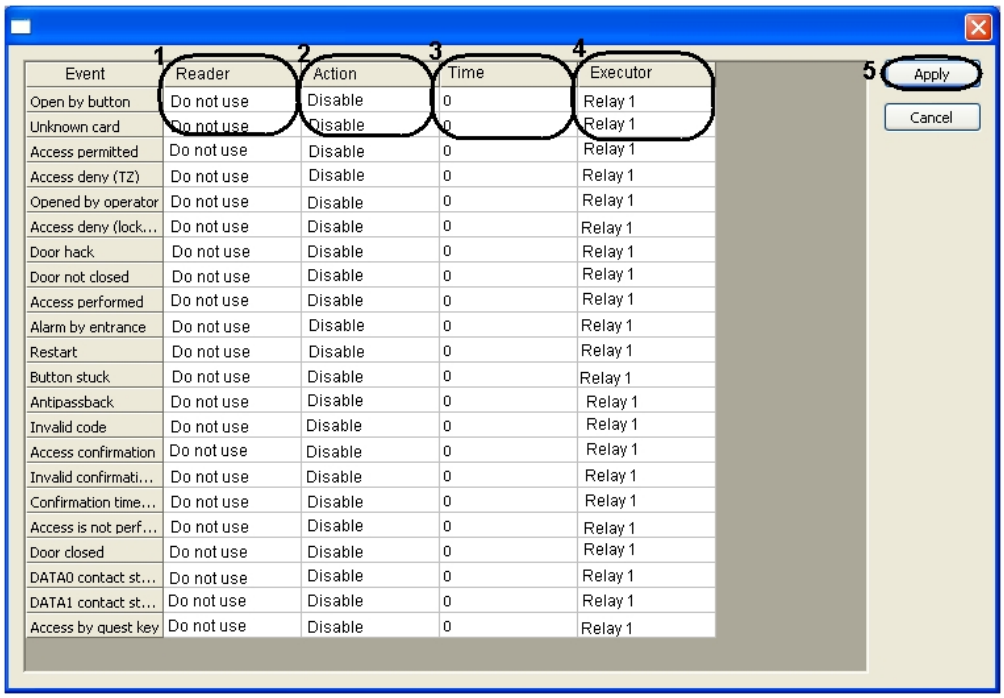
Configuring of access modes is completed.

4.5.5 Configuring Gate reactions

It is possible to enable or disable (permanently or on time from 1 to 255 seconds) one from eight controlled exits when some event is received if the reaction mode is activated in the system. Some executive or warning device can be connected to this exit.

To configure reactions, do the following:

1. Go to the **Control** tab on the **Gate parking access point** object's settings panel and click the **Reaction on events** button.



2. The list of events for which reactions can be configured is presented in the relevant column. To set reaction on the event, do the following:
3. From the corresponding list select reader on which the event is to be performed (**1**).

> **Note.**
>
> Reader 1 – reader on entry, Reader 2 – reader on exit.

4. Select the performed action (**2**).
5. Set the action performing time in the range from 1 to 255 seconds in the **Time** column (**3**).
6. Select the exit which is to be enabled or disabled in the **Executive** column (**4**).
7. Click the **Apply** button (**5**).
8. Click the **Apply** button on the **Gate Parking** access point object's settings panel.
9. Forward configuration to the controller (see the Managing the configuration of a Gate controller section).

Configuring of reactions is completed.

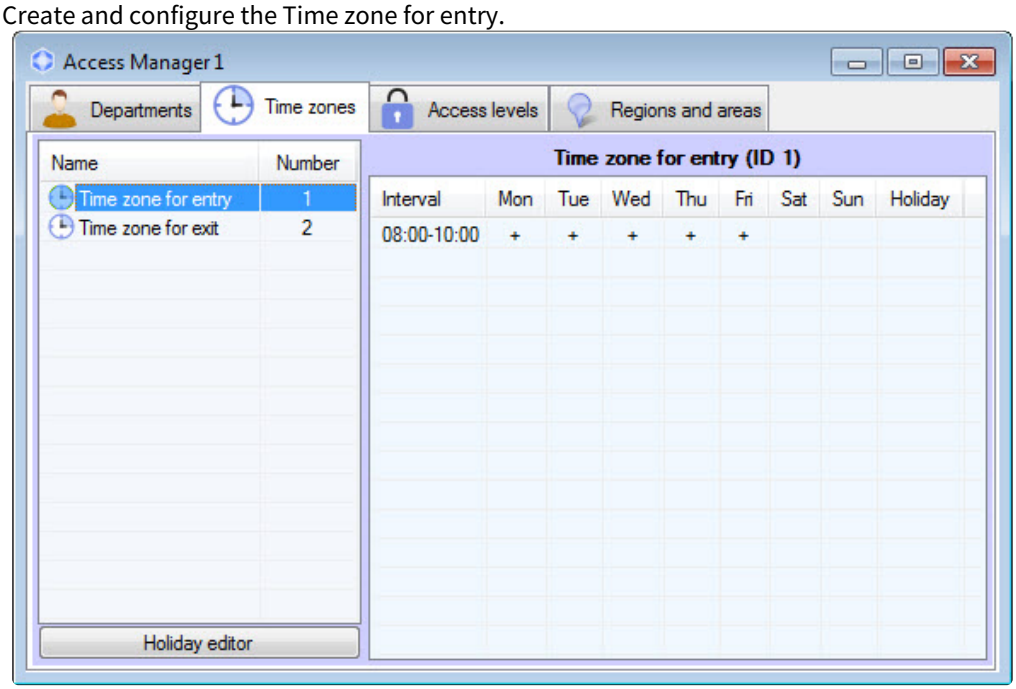
4.5.6 Specifics of the user access levels configuration

It is possible to restrict access level of the *Gate* users for providing access only through one reader of controller.

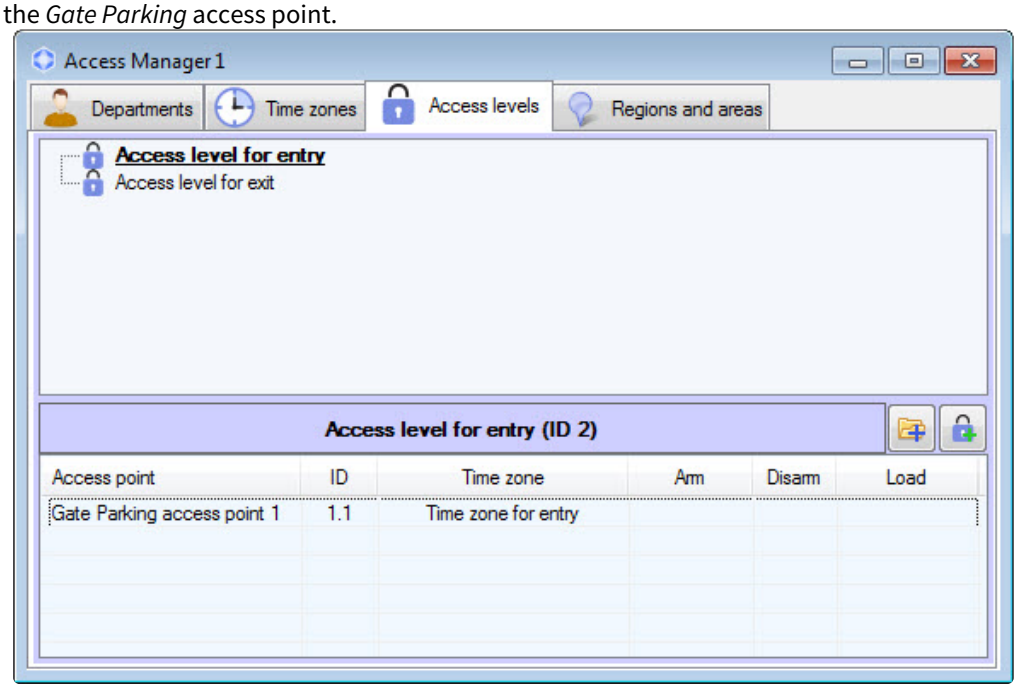
Switch over controller to **Two-door pass** (it is set by connecting straps, see documentation for controller) and configure time zones in such a way as to the first interval referred to the first reader and the second interval referred to the second reader.

For example, to grant access only by the first reader to employee which have the **Access level for entry** and grant access only by the second reader to employee which have the **Access level for exit**, make the following settings in the Access Manager module (see Creation of a time zone in the Access Manager software module and Creating access levels sections):

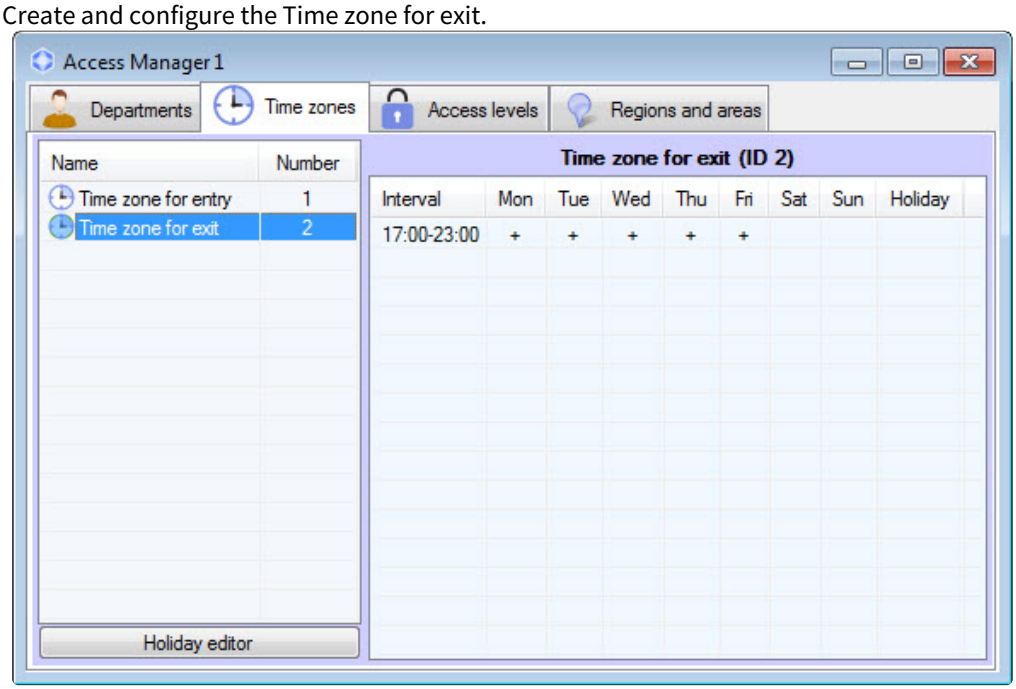
1. Create and configure the Time zone for entry.



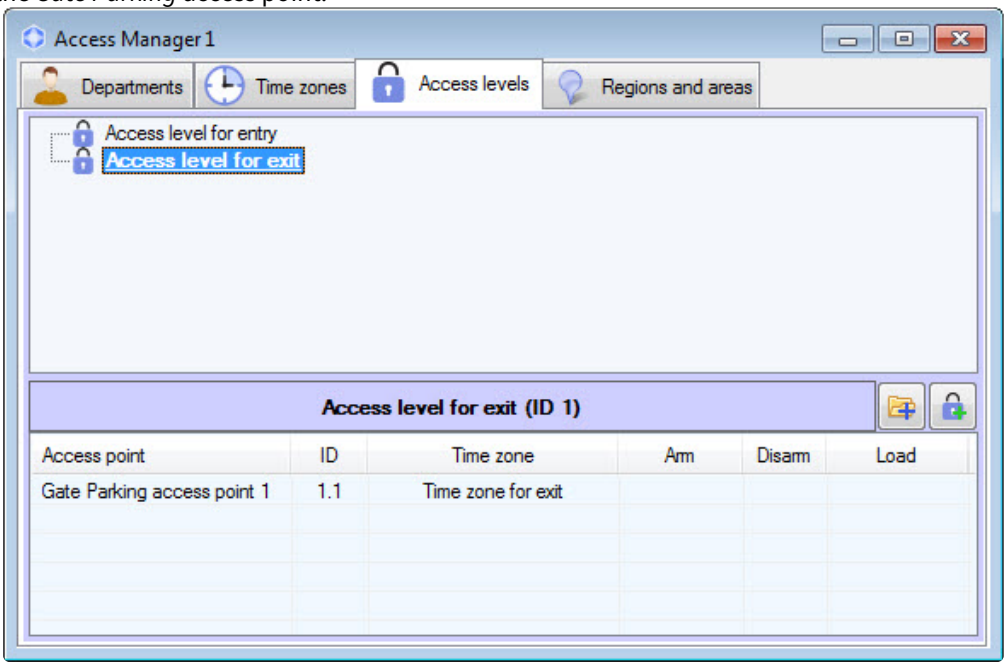
2. Create and configure the Access level for entry by specifying the previously created Time zone for entry for the *Gate Parking* access point.



3. Create and configure the Time zone for exit.



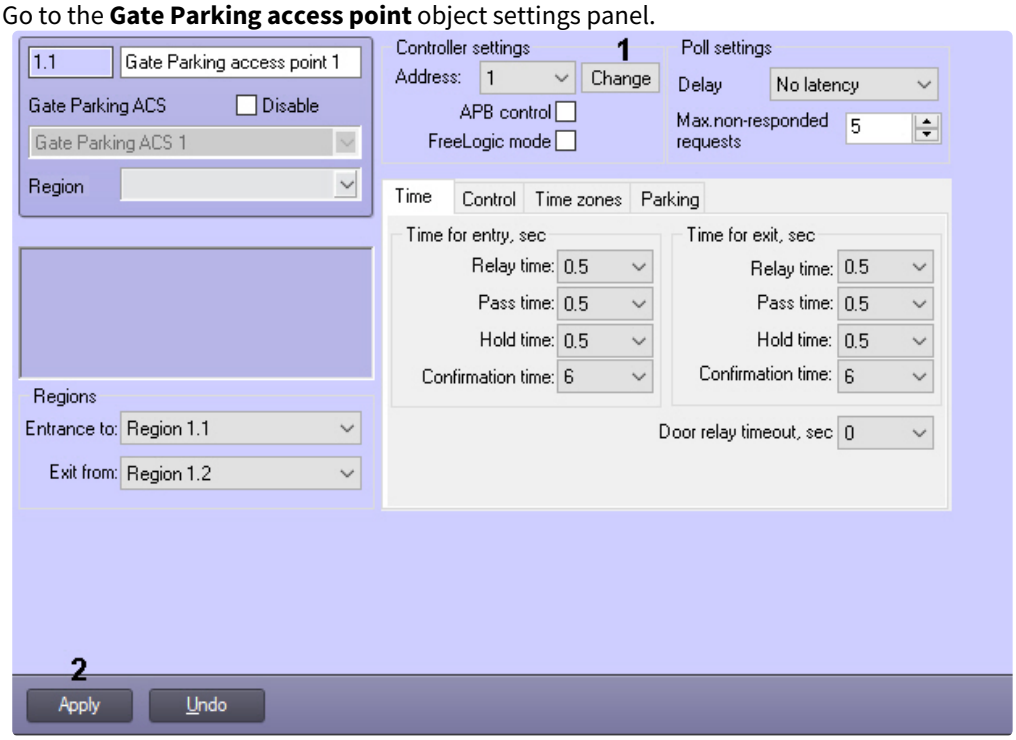
4. Create and configure the Access level for exit by specifying the previously created Time zone for exit for the *Gate Parking* access point.



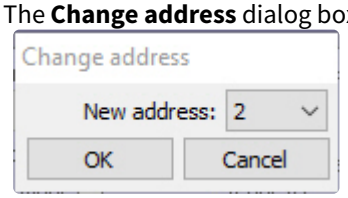
4.5.7 Changing address of the Gate controller

To change *Gate* controller address, proceed as follows:

1. Go to the **Gate Parking access point** object settings panel.



2. Click the **Change** button next to the **Address** drop-down list (**1**).
3. The **Change address** dialog box for setting the new address opens.



4. Select new address in the drop-down list and click **OK**.
5. Click **Apply** to save new address in the *Axxon PSIM* software database (2).
6. Send configuration to the controller to apply settings on the hardware level (see Managing the configuration of a Gate controller).

The *Gate* controller address is now changed.

5 Working with the Gate Integration Module

5.1 General Information on Working with the Gate Integration Module

To work with the *Gate* integration module, use the following interface objects:

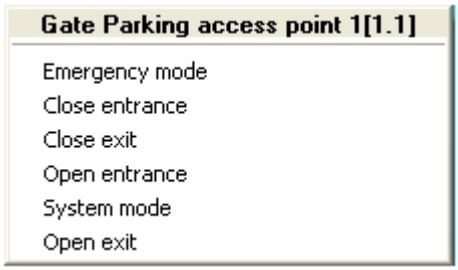
1. **Map**.
2. **Event viewer**.

The information on how to configure these interface objects can be found in Axxon PSIM Software package: Administrator's Guide.

The information on how to work with these interface objects can be found in Axxon PSIM Software package: Operator's Guide.

5.2 Managing Gate controller

To manage a *Gate* controller, go to the **Map** window and use the menu of the relevant ***Gate Parking* controller** object.



Gate Parking controller menu functions are given in the table.

Menu item	**Executed function**
System mode	Switches the *Gate* controller to system (main) mode
Emergency mode	Switches the *Gate* controller to emergency mode
Close entrance	Close the opened entrance
Close exit	Close the opened exit
Open entrance	Open entrance for **Relay time**
Open exit	Open exit for **Relay time**

6 Appendix 1. Automatic updating the Flash memory of Gate controller

6.1 General information on automatic updating the Flash memory of Gate controller

Automatic updating the Flash memory of *Gate* controller can be performed using the programming functional of *ACFA PSIM*:

1. Programs in the embedded programming language of *ACFA PSIM*.
2. Script in the JavaScript language.

Detailed information on how to write programs and scripts in *ACFA PSIM* is given in *Axxon PSIM* Software Package: Programming Guide and *Axxon PSIM* Software Package: Programming Guide (Jscript).

6.2 Example of program for automatic updating the Flash memory of Gate controller

For automatic updating the Flash memory of *Gate* controller use the following program:

```
OnTime (W,D,X,Y,"00","00","10")

{

// program will function every day at 00 hours 00 minutes and 10 seconds

DoReact("RAVELIN_SINGLE","1.1","UPDATE_FLASH");

//The Flash memory update in the Gate controller with the «1.1» ID

}
```

7 Appendix 2. Resetting antipassback (APB) parameters for a given user

Resetting antipassback (APB) parameters for a given user is performed using a script sending simulated entrance/ exit commands to the Gate controller:

1. emulation of entrance (i.e. user entering the "In" region): the **SIMULATE_ENTER** command of the **RAVELIN_SINGLE** access point object. The **person_id** parameter is to contain user **id**in the Axxon PSIM software.
2. emulation of exit (i.e. user entering the "Out" region): the **SIMULATE_EXIT** command of the same object with the same parameter.
   These commands can only be executed for a single-door controller or a turngate.

Example:

```
// generating entrance
if(Event.SourceType == "MACRO" && Event.SourceId == "1" && Event.Action == "RUN") {
DoReactStr("RAVELIN_SINGLE","1.1","SIMULATE_ENTER","person_id<1>");
}
// generating exit
if(Event.SourceType == "MACRO" && Event.SourceId == "2" && Event.Action == "RUN") {
DoReactStr("RAVELIN_SINGLE","1.1","SIMULATE_EXIT","person_id<1>");
}
```