



AN-200

Geutebrück G-Core Integration with Protege GX

Application Note



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Introduction

The Protege GX G-Core Video Service provides a seamless integration between Protege GX and a Geutebrück G-Core DVR system, enabling you to control cameras and view live and historical video footage from a single, easy-to-use interface.

Cameras can be linked to doors, inputs, outputs and areas, allowing you to easily retrieve footage based on any change of status, such as when a PIR is triggered or a door is opened. An automatic popup can display a live video stream on any door event, allowing you to see when someone is at the door or when a door has been forced open.

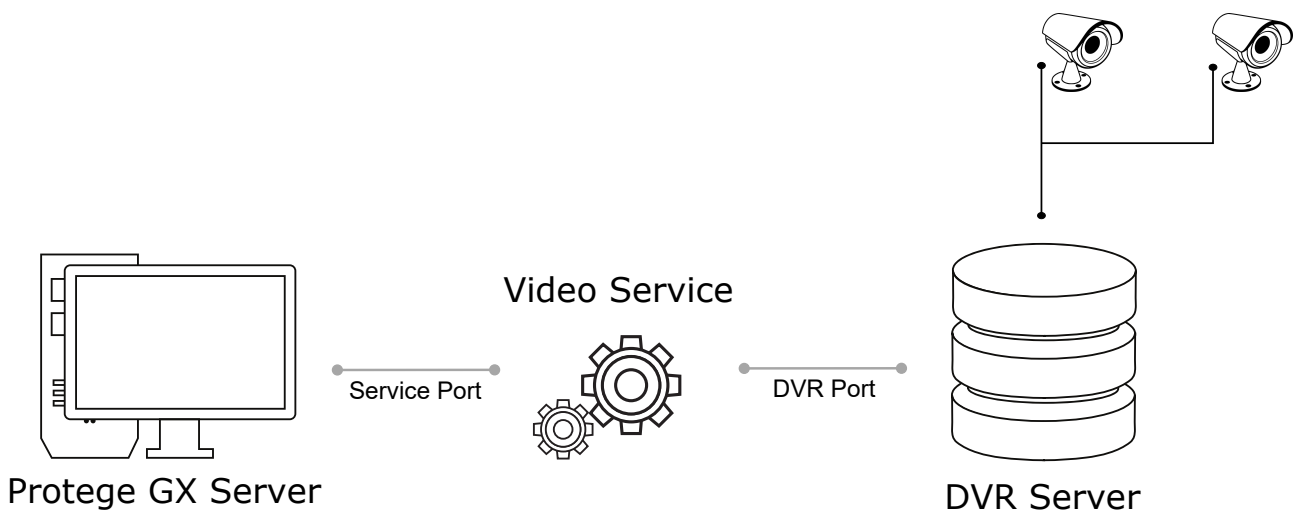
The included high level interface (HLI) enables the communication of PTZ triggers and alarm interfaces back to the DVR, providing bi-directional exchange of information. If desired, VMS events such as 'Motion Detected' can be monitored directly in Protege GX.

This integration also supports License Plate Recognition (LPR). When the Geutebrück G-Core system detects a license plate it can send that data to a Protege GX controller, allowing you to use license plates for access control in driveways or carparks.

The following instructions outline how to install the G-Core Video Integration service and configure DVRs, cameras and license plate recognition within Protege GX.

Integration Architecture

In this integration Protege GX communicates with the DVR server via the integration's *video service*. This service monitors the two systems and sends any camera commands from Protege GX to the DVR server, and continuously transfers any events triggered in the DVR system to Protege GX.



Ports

As shown in the diagram above, the video service communicates with Protege GX via the **Service Port**, and with the DVR server via the **DVR Port**. These ports are configured in the Protege GX DVR programming.

The DVR port is determined by the third-party VMS. If required, the service port can be customized when installing the video service. It is recommended to use the default ports where possible.

The default ports can be found in the Port Settings section of the Protege GX DVR programming instructions.

Feature Support

This integration allows you to:

- View live video footage from programmed cameras.
- View historic and archived video footage.
- Embed cameras into a status page.
- Link a camera to a door, input, output or area.
- View live or archived video footage directly from an event associated with a camera.
- Automatically launch a camera view window when specific types of events occur.
- Send PTZ preset commands to the VMS in response to a Protege GX event filter.
- Detect and assign license plate credentials to users for access control.
- View the following HLI events directly within Protege GX.
 - Camera Online/Offline
 - Camera Physical On/Off
 - Motion Detected
 - Sound Detected
 - Excess Body Temperature Detected
 - License Plate Detected
 - Low Disk Space

The following Geutebrück G-Core VMS actions are mapped to the corresponding Protege GX events.

Geutebrück G-Core VMS Action	Protege GX Event
Video sync detected	CameraOnlineEvent
Video sync failed	CameraOfflineEvent
Device Plugin State connected	CameraPhysicalOnlineEvent
Device Plugin State disconnected	CameraPhysicalOfflineEvent
GTectVMDAlarm, GTectADAlarm	MotionDetectedEvent
GTectADAlarmFinished, GTectVMDAlarmFinished	MotionCeasedEvent
Sensor audio alarm	CameraAudioDetected
Temperature Notification, Temperature Detection	TemperatureEvent
Imex capacity out of disk space	StorageEvent

Prerequisites

Software Requirements

All prerequisite software must be installed and operational, unless otherwise stated.

Software	Version	Notes
Protege GX software	4.3.298 or higher	
Protege GX G-Core Video Service	2.0.0.2 or higher	This service must be installed on the Protege GX server and every client machine that will use this integration. This document includes instructions for installing this service below (see page 8).
Geutebrück G-Core VMS	6.1.0.392	This is the only tested and supported version for this integration.
Microsoft .NET Framework	4.6.2 or higher	
Microsoft Visual C++	2013 Redistributable	

Supported cameras are determined by the Geutebrück G-Core system.

It is the responsibility of the installation professional to verify the version of the proposed third-party system and supported components with the version listed in this document. ICT will not accept responsibility for the failure to verify integrated system versions and requirements.

Protege GX Licensing Requirements

License	Order Code	Notes
Protege GX Camera License	PRT-GX-CAM-10	1 license required per camera programmed in Protege GX. A single camera is included with the Protege GX standard license.
	PRT-GX-CAM-50	The base Protege GX license includes an unlimited number of DVRs and DVR HLIs. HLIs allow bi-directional communication between Protege GX and the DVR system. Note that this is separate to the live and archived video display that is covered by a camera license.

Geutebrück DLL Files

Some additional Geutebrück DLL files are required to use this integration. Before you begin you must acquire the following files from ICT (available on the [ICT website](#)):

- GscActions.dll
- GscDBI.dll
- GscHelper.dll
- GscMediaPlayer.dll
- MscDBI.dll

Prior to version 4.3.336.1, these files were installed alongside the Protege GX software. After this version the files must be acquired and installed manually (see page 9).

Time Settings

DVR integrations rely on the time being accurately configured for both the hardware and the operating systems used in a site.

To ensure the system is keeping precise time, all devices should be set to synchronize with the same NTP time server. NTP servers work by sending accurate time information periodically to the system. Many corporate organizations have an NTP server running on the internal network, allowing you to simply enter the relevant IP address. Alternatively, you could use any public NTP server. Finding an NTP server relevant to your region is usually as simple as a quick web search.

The same time server should be used for the workstations, DVRs and controllers within the site. You can configure the time server for each computer in the Windows **Date and Time** settings, and set a time server for the controller in the **Sites | Controllers | Time update** settings in Protege GX.

Installing the Video Service

The Protege GX G-Core Video Service must be installed on the server and each client machine that uses the integration. You must have administrator rights on each computer to complete the installation.

1. Run the Protege GX GCore Service.exe file to launch the Protege GX G-Core Video Service install wizard.
2. Click **Next**.
3. Select **Complete** for the installation type then click **Next**.
4. Click **Install**.
5. Enter the **Service Port Number** to be used for the integration (8070 is the default) and click **Next**.
6. Click **Finish**.
7. If the Windows Defender Firewall is on, you will see a Windows Security Alert popup indicating that some features of the integration service have been blocked.
To allow the service to function, check the boxes to allow the service to communicate on **Domain networks** and **Private networks** (or as appropriate for your installation). Then click **Allow Access**.

Check the Services are Running

The services used by the integration must be running for Protege GX to be able to communicate with the Geutebrück system.

1. Open the **Services** snap-in by:
 - Pressing the **Windows + R** keys
 - Typing **services.msc** into the search bar and pressing **Enter**
2. Scroll down and locate **Protege GX G-Core Video Service**.
3. Ensure the service has started automatically (check the **Status** column to confirm that it's 'Running'). If not, right-click the service and select **Start**.
4. Ensure **Protege GX DVR Service B** is running.

Installing the Geutebrück DLL Files

To enable the integration you must copy the Geutebrück DLL files acquired from ICT into the Protege GX installation directory on the Protege GX server and each client machine.

These files may already exist if you have upgraded from a previous version of Protege GX, but they are no longer included in the installation by default.

1. Locate and copy the following DLL files:
 - GscActions.dll
 - GscDBI.dll
 - GscHelper.dll
 - GscMediaPlayer.dll
 - MscDBI.dll
2. Navigate to the Protege GX installation directory. By default this is:
C:\Program Files (x86)\Integrated Control Technology\Protege GX
3. Paste the DLL files into this directory. Grant admin permissions when requested.
4. Repeat this process on the server and each client installation of Protege GX.

Programming Cameras in Protege GX

Port Settings

To configure the DVR in Protege GX you will need to enter the DVR port and service port settings, as described in the Integration Architecture section. It is recommended to use the default ports where possible.

- Default **DVR port**: 80
- Default **Service port**: 8070

Adding the DVR

From the main menu, navigate to **Monitoring | Setup | DVRs**. Add a DVR record and configure the following options:

1. Enter the **IP address** and **DVR port** of the DVR server.

The DVR port is determined by the third-party VMS and will depend on the configuration of the DVR itself.

2. Set the **DVR type** to Custom.
3. Set the **Service port** that was configured during the video service installation. This option is only visible once the **DVR type** is set to Custom.

The service port must be defined for the integration to work correctly. If necessary, it can be changed in the config file for the service.

4. Enable the **Monitor events from this DVR/NVR** option to start logging HLI events from the DVR in Protege GX. The operator can right click any HLI event to view the footage archived at the time the event was logged.

For camera motion events, the **Monitor events** option must be enabled in the camera settings in Protege GX. Note that motion detection must also be enabled for that camera in the VMS.

5. If required, enable the **Connect to this DVR/NVR on start up** option. When this option is enabled, Protege GX will send a login request to the DVR when the client starts up. Otherwise, Protege GX will not connect to the DVR until it needs to request a camera list or footage.
6. If logging in to the VMS requires authentication, enable **Logon required** and enter the **Username** and **Password** required to access the VMS.

Adding the Camera(s)

Once the DVR has been configured, you can add a record for each of the installed cameras, enabling you to view live and historical (archived) video feeds directly from a status page or floor plan.

1. From the main menu, navigate to **Monitoring | Setup | Cameras**. Add a new camera with a descriptive name.
2. Set the **Type** to DVR and select the **DVR** you created earlier.
3. On the **DVR camera name** row, select the [...] button to open the **Select camera** window.

The pipe character | is not permitted in the **DVR camera name**. You may need to change the camera's name in the third-party system.

4. The window should display a list of cameras connected to the selected DVR. Highlight the camera you want to use and click **Select**.
5. Set the required display options:

- **Show sidebar controls in status page:** When this option is enabled, PTZ controls are displayed by default when the camera feed is viewed on a status page. When this option is disabled the control sidebar can be opened but will not be displayed by default.
 - **Stretch image:** When this option is enabled the camera image will be stretched to fill the tile where it is displayed. This may not preserve the aspect ratio.
 - **Floor plan:** The floor plan the camera belongs to. This allows you to right click on a camera event in the event log and open the floor plan associated with the camera.
6. Enable the **Monitor events** option if you wish to log HLI events from the DVR system. This setting must be used in conjunction with the **Monitor events from this DVR** option of the DVR record. It enables certain camera events, such as motion detected, to be logged from the DVR/NVR. The operator can then right click the event and select the camera to view the footage archived from the time the event was logged.

Linking a Camera to a Record

Linking a camera to a record enables you to view a live or archived feed by right clicking a record or any associated event. Cameras can be linked to doors, inputs, outputs or areas, allowing you to track any status changes, such as when a PIR is triggered or an area is disarmed.

If an event has a camera associated with it, a small yellow camera icon appears to the left of the event. Right-clicking the event allows you to view the archived footage from the camera at the time the event was logged.

If the door auto camera popup settings are enabled, Protege GX will automatically display a window with the live camera feed whenever a door event is triggered, or if a door is forced open.

1. Select the door, input, output or area you wish to link the camera to (from the appropriate **Programming** menu).
2. In the **General** tab, scroll down to **Graphics**. Set the **Camera** which is monitoring that physical space. For doors, you can set a **Camera (entry)** and **Camera (exit)**. Depending on where the camera is located, you may wish to use the same camera for both entry and exit, or select a different camera for each.
3. For doors, you can set the following **Auto popup options**:
 - **Auto camera popup on any door event:** When enabled, displays a popup window showing a live camera feed when any door event is triggered.
 - **Auto camera popup on door forced event:** When enabled, displays a popup window showing a live camera feed when a forced door event is triggered.
 - Select the **Camera** to be displayed in the popup window.
4. Save your changes.
5. To view the camera feed, right click on the record in the programming window or status list and click the **Camera** button. Right click any events associated with that record to view either live footage or archived footage from the time of the event.

Including a Camera in a Status Page

A camera can also be included in a status page for live viewing of video footage while monitoring a site.

1. Open the **Status page editor (Monitoring | Setup | Status page editor)**. Select an existing status page to update, or create a new status page by clicking **Add** and choosing a layout.
2. Select the panel where you wish to display the camera and set the **Type** to Camera.
3. For the **Record**, select the camera that you wish to display.
4. Save your changes.

5. Navigate to **Monitoring | Status page view** to view the camera feed on your status page. Click the arrow button on the upper right of the panel to display PTZ arrows, which can be used to pan, tilt and zoom a PTZ camera.

You can also include camera HLI events on a status page. You can do this by including a panel that displays All Events. Alternatively, you can create an event report that displays only camera HLI events, and display that on the status page:

1. Navigate to **Events | Event filters** and create a new event filter which will filter for camera HLI events.
2. In the **Event types** tab, disable **Include all event types**.
3. Click **Add** and expand the **All PC events** section. Scroll down to the Camera events, select the desired HLI events and drag and drop them onto the main window. **Save** the event filter.
4. Navigate to **Reports | Setup | Event** and create a new event report to display the HLI events.
5. **Add** the event filter created above.
6. Finally, to display the event report on a status page, navigate to **Monitoring | Setup | Status page editor**. Select an existing status page to update or create a new status page.
7. Select a panel and set the **Type** to Event windows. Set the **Record** to the event report created above.
8. Save your changes and navigate to **Monitoring | Status page view** to view the events on your status page. You can right click the events to open the camera window to the time of the event.

Note: Some HLI events require the corresponding camera feature to be enabled in the VMS (such as motion detection).

Programming Camera Actions

Actions in Protege GX are triggered in response to particular events, as defined by an event filter. There are two actions related to cameras: sending PTZ commands and popping up a camera feed window.

Send PTZ Command on Event

Through the HLI, Protege GX can send PTZ commands to connected cameras in response to particular events. This allows the system to physically move PTZ cameras to preset positions to get the best view of the situation.

Before you begin, ensure that any cameras have PTZ enabled and the PTZ preset commands are programmed in the VMS. Note down the **Command string** for each PTZ preset that you wish to use. This is usually the name or index of the PTZ preset in the VMS.

See the documentation for your VMS for information on programming PTZ presets and viable command strings. These cannot be programmed directly in Protege GX.

1. Navigate to **Monitoring | Setup | PTZ commands** and create a new PTZ command.
2. Under **Configuration**, select the **Camera** which the command will be sent to, and type the **Command string** that will be sent to the DVR.
3. Navigate to **Events | Actions** and create a new action.
4. Set the **Event filter** to define the events that will trigger the action. If required, click the ellipsis [...] button to break out the event filter programming window and create a relevant event filter.
5. Select the **PTZ command** created above.
6. Click **Save**.

Pop Up Camera Window on Event

Actions can be used to automatically trigger a live popup window when specific events occur, such as when a door is left open or when an area alarm is triggered.

1. Navigate to **Events | Actions** and create a new action.
2. Set the **Type** to Popup camera window.
3. Set the **Event filter** to define the events that will trigger the action. If required, click the ellipsis [...] button to break out the event filter programming window and create a relevant event filter.
4. Select which camera to use. You can choose from:
 - Default camera associated with event
 - Door entry camera
 - Door exit camera
 - Select camera from list
5. Click **Save** to create the action.

Programming Custom DVR Actions

Protege GX can send custom command strings to connected DVRs in response to selected Protege GX events.

See the documentation for your DVR system for available custom actions and corresponding command strings.

To program custom DVR actions:

1. Navigate to **Events | Actions** and create a new action.
2. Set the **Type** to Custom DVR Action.
3. Set the **Event filter** to define the events that will trigger the action. If required, click the ellipsis [...] button to break out the event filter programming window and create a relevant event filter.
4. Select the **DVR** that the custom action command will be sent to.
5. Enter the **Command string** that will be sent to the DVR when the defined Protege GX action occurs.

Command strings are determined by the DVR system and its supported actions.

6. Click **Save**.

Enabling Camera Popups on Alarm

Operator alarms send a popup window to Protege GX operators (such as security guards) when selected events occur in the system. Along with the event information, you can also include a camera popup window which displays footage from the camera associated with the relevant door, area, input or output.

This approach is similar to using the **Popup camera window** action but has the additional benefit that the camera popup obeys alarm routing rules, allowing it to be routed to particular workstations and passed on if it is not acknowledged. It may also be more efficient to program if the alarms are already being used in the system.

For more information on programming alarms, see Application Note 332: Setting up Event Notifications in Protege GX.

1. Assign cameras to doors, areas, inputs and outputs as required (see page 11).
2. Navigate to **Events | Alarms** and create a new alarm.
3. Set the **Event filter** to define the events that will trigger the alarm. If required, click the ellipsis [...] button to break out the event filter programming window and create a relevant event filter.
4. Enable **Allow camera popup**.
5. Click **Save**.

Now when an alarm popup appears, if any device associated with the alarm has a camera assigned to it that camera window will pop up as well.

The Camera Window

The camera window displays a split view showing archived and live camera footage. It can be opened by right clicking on a record or event associated with a camera.

- The **top left pane** displays a 5 second looping video centered 2 seconds either side of the time of the event.
- The **top right pane** displays a 30 second controllable window centered 15 seconds either side of the time of the event. Drag the slider to adjust the image to any point within the 30 second period.
- The **main lower pane** displays the live camera view.
 - The **Archive view controls** allow you to select any date and time in the past.
 - The **Live view controls** provide PTZ camera control buttons, allowing you to physically control a PTZ enabled camera.
- The options on the **right** provide control over the main view:
Select the tab on the side to switch between the two views as required.

Configuring G-Core LPR Integration with Protege GX

When combined with the credential types feature within Protege GX, the G-Core integration enables you to take advantage of License Plate Recognition or Number Plate Recognition (LPR or NPR) technology to provide user identification and access control.

In this integration, the G-Core system sends license plate data to the integration service, which passes it to the Protege GX controller as an ASCII credential. The controller recognizes each camera by the specific TCP/IP port assigned to it in the configuration of the integration service. In this way, each camera can act similarly to a card reader, providing full access and reporting capabilities.

This section provides the information required for configuring credential types and smart readers within Protege GX. Refer to the Geutebrück G-Core documentation for further details and any programming steps for the G-Core system.

Prerequisites

Beyond the prerequisites for the Geutebrück G-Core Video Service (see page 6), the following are required to implement LPR credential types:

- A Protege GX controller with firmware version 2.08.766 or higher or higher.
- One third party smart reader license (product code: PRT-GX-TPR-IF), applied to the relevant Protege GX SSN, for each camera that will operate in this integration.
- The G-Core system must be configured to send license plate data to the Protege GX G-Core Video Service over the service port (see page 8).

Programming Scenario

This application note will use a basic programming scenario to demonstrate how to set up license plate recognition in the Protege GX system. In this scenario, there is a carpark area with two boom gates: one for entry and one for exit. There are two cameras (entry and exit), which will be used to grant users access based on their license plate details.

Configuring the Reader Expander

The controller's onboard reader expander must be configured to receive incoming data over the ethernet network. Each camera in the integration will send data to the controller over a specific TCP/IP port.

1. Select the controller's onboard reader expander and enable the ethernet port by setting the following:
 - **Ethernet network type:** Third party generic
 - **Ethernet port:** The first TCP/IP port that the controller will listen on to receive LPR data from the integration service. The command below will allow the controller to listen over a range of ports above this value. Therefore, you should select a range that will not interfere with any other communications used by the controller (e.g. reporting services).

For this scenario, we will set the **Ethernet port** to 9000.

2. Expand the **Commands** section and enter the following command:

```
SmartReaderPortOffset = true
```

This command allows the controller to receive ethernet data over a range of ports above the one set above. The controller will listen on every port equal to the **Ethernet port** + the **Configured address** of each smart reader associated with the ethernet port (see below).

This allows the data from each camera to be sent to the controller over a unique TCP/IP port so that the controller can distinguish between them.

These ports are used by the integration service to send data to the controller. There is no need to configure the cameras themselves to report LPR data over these ports.

3. Click **Save**. Wait for the programming to be downloaded to the controller, then right click on the reader expander record and click **Update module**.

Creating the Smart Readers

In this integration, each camera is represented by a smart reader. A smart reader acts like a regular card reader, which receives credential data and sends it on the controller to validate access. In this case, the data is received from the integration service and sent to the controller over the ethernet connection.

For our scenario, it is first necessary to create two smart readers associated with the controller's ethernet port. At a later point these will be configured to control the carpark gates based on LPR credentials.

Smart reader records cannot be saved unless the appropriate licenses have been applied to the server SSN. One third-party reader license (product code: PRT-GX-TPR-IF) is required per smart reader.

1. Navigate to **Expanders | Smart readers** and **Add** a new smart reader record. We will call it Carpark Camera Entry.
2. Set the **Expander address** to the Physical address of the controller's onboard reader expander configured above.
3. Set the **Expander port** to Ethernet.
4. Set the **Configured address** to 1.
This address will represent the first (entry) camera. The controller will expect to receive data from this camera over a TCP/IP port equal to the **Ethernet port** configured above plus this value. In this scenario, the first camera's data will be transmitted over port 9001.
5. Click **Save**.
6. Repeat the above to create the second smart reader (camera) with the following settings:
 - **Name:** Carpark Camera Exit
 - **Expander address:** The Physical address of the onboard reader expander
 - **Expander port:** Ethernet
 - **Configured address:** 2

The controller will expect to receive data from this camera over port 9002.

7. Click **Save**.

The **Reader** tab is configured at a later stage.

Creating the LPR Credential Type

The integration service sends LPR data to the controller in ASCII format. First we need to create a credential type that allows the controller to interpret this data and use it for access decisions. The credential type must also be assigned to the smart readers so they can match the incoming data to the correct format.

1. Navigate to **Sites | Credential types**.
2. **Add** a new credential type. We will call it LPR.
3. Set the **Format** to ASCII.
4. Enable the **Unique value** option.
5. Click **Save**.

Creating the Door Type

A door type must be used to set the LPR credential type as a valid credential for the boom gate doors.

1. Navigate to **Programming | Door types**.
2. **Add** a new door type. We will call this Carpark Boom Gate.
3. In the **Entry** section, set the following:
 - **Entry reading mode:** Custom
 - **Entry credential types:** Click **Add** and add the LPR credential type.
4. In the **Exit** section, set the following:
 - **Exit reading mode:** Custom
 - **Exit credential types:** Click **Add** and add the LPR credential type.
5. Click **Save**.

Optionally, a **Fallback door type** such as Card and PIN may be assigned to this door type to give users an alternative method of opening the boom gates. In this case, the door records created below may be assigned to standard reader expander ports as well as a smart reader so that they are associated with card readers.

Creating the Doors

Now we can create two door records to represent the entry and exit boom gates for the carpark.

1. Navigate to **Programming | Doors**. Select the relevant **Controller** in the toolbar.
2. **Add** a new door record. We will call this door Carpark Gate Entry.
3. Set the **Door type** to Carpark Boom Gate (created above).
4. In the **Outputs** and **Inputs** tabs, enter the various outputs and inputs used by this boom gate. For example, automatic gates typically include a **Beam input** that ensures that the gate will not close when there is a car under the arm.
5. Configure any other settings required for this door. For example, the **Area inside door** should be set to the carpark area.
6. Click **Save**.
7. Repeat the above steps to create the Carpark Gate Exit door.

Configuring the Smart Readers

Now the smart readers that were created above can be configured to interpret license plate (ASCII) credentials and control the carpark gates.

1. Navigate to **Expanders | Smart readers** and select the Carpark Camera Entry smart reader created above.
2. In the **Reader** tab, set the **Reader one door** to Carpark Gate Entry. Ensure that the **Reader one location** is set to Entry.
3. Scroll down to the **Reader credential match types** section. Click **Add** and select the LPR credential type. Click **Ok**.
4. Click **Save**.
5. Select the Carpark Camera Exit smart reader and configure the following settings in the **Reader** tab:
 - **Reader one door:** Carpark Gate Exit
 - **Reader one location:** Exit

- **Reader credential match types:** LPR

6. Click **Save**.

Assigning Access to Users

For users to access the carpark gates, the doors must be assigned to their access levels. In this case, it is also necessary to assign a license plate credential to each user, just as you would a card number or PIN.

To assign door access to users:

1. Navigate to **Groups | Door groups** and create a new door group called Carpark Gates.
2. Add both Carpark Gate Entry and Carpark Gate Exit to the door group. Click **Save**.
3. Navigate to **Users | Access levels** and assign the new door group to all access levels that require access to the carpark.

To assign license plate credentials to users:

1. Navigate to **Users | Users**.
2. Select a user who requires a license plate credential. Scroll down to the **Credentials** section.
3. Click **Add** to add a new credential and set the **Credential type** column to LPR.
4. Enter the user's license plate into the **Credential** field.
5. In the **Access levels** tab, ensure that the user is assigned an access level with access to the carpark gates, as configured above.
6. Click **Save**. Repeat for all required users.

The ICT Data Sync Service could be used to synchronize license plate data with a third-party system. For more information, see the ICT Data Sync Service Integration Guide.

For our testing scenario below, we will grant carpark access to user Brett Lamb, who has the license plate ABC123.

Configuring the Video Service for LPR

1. Stop the **Protege GX G-Core Video Service**.
2. Browse to the video service installation directory, by default C:\Program Files (x86)\Integrated Control Technology\GXVideoService_GCore.
3. Open the **GXVideoService_GCore.exe.config** file in a text editor.

Files in this directory require administrator permissions to edit. You may need to open the file as an administrator using an application like Notepad++, or make a copy in a different directory to edit and replace the original.

4. In the **<LPR>** section, enter an **<add>** element for each camera that will be used by the integration. For our scenario, it would be configured as follows:

```
<LPR>
  <add CameraID="1" ControllerIP="192.168.1.113" ControllerPort="9001" />
  <add CameraID="2" ControllerIP="192.168.1.113" ControllerPort="9002" />
</LPR>
```

- **CameraID:** The channel ID as programmed in the G-Core VMS.
- **ControllerIP:** The IP address of the controller that the license plate data from that camera will be sent to. The integration service can send data to multiple controllers.

- **EthernetPort:** The TCP/IP port that the integration service will use to send data from this camera to the controller. This must be equal to the controller's **Ethernet port** (see page 15) + the **Configured address** of the smart reader (see page 16).

If the integration service maps two cameras to the same port, the controller will consider them a single smart reader.

5. Save the updated file and restart the G-Core Video Service.

Testing the LPR Integration

For this testing example, we have programmed building manager Brett Lamb with the license plate credential ABC123. To test the integration, we will model him entering and leaving the carpark.

1. Brett Lamb drives towards the boom gate. The Carpark Camera Entry captures his license plate and sends it to G-Core, which sends it to the integration service.
2. The integration service translates the license plate data to ASCII and sends it to the controller over port 9001.
3. The controller receives the credential and evaluates whether the user is allowed access. You should see the following events in the Protege GX event log:

```
User Brett Lamb (UN1) Granted Entry To Carpark Gate Entry (DR22) Access  
Level Manager (AL1) Using Credentials : ABC123  
Door Carpark Gate Entry (DR22) Unlocked By Access
```

4. The carpark entry boom gate opens.
 5. When Brett Lamb leaves work, he approaches the Carpark Camera Exit. G-Core sends the license plate data to the integration service, which sends it to the controller over port 9002.
 6. You should see the following events in the Protege GX event log:
- ```
User Brett Lamb (UN1) Granted Exit From Carpark Gate Exit (DR23) Access
Level Manager (AL1) Using Credentials : ABC123
Door Carpark Gate Exit (DR23) Unlocked By Access
```
7. After hours, an unknown vehicle with license plate ABC124 approaches the boom gate. G-Core identifies and passes the plate to the integration service, which passes it on to the controller.

8. The controller does not recognize the license plate and denies access. The following event is logged in Protege GX:

```
Read raw credential data At Smart Reader 'Carpark Camera Entry' (SR0),
Door 'Carpark Gate Entry' (DR22) : ABC124 (Raw: 0x41, 0x42, 0x43, 0x31,
0x32, 0x34)
```

If required, an operator can right click on this event on a floor plan or status page and assign it to a user.

# Release History

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This release history covers changes to the video integration service beginning from version 1.0.1.2.

It is assumed that the installation is using the prerequisite version of Protege GX (see page 6). Fixes and features in the integration service may not be available with earlier versions of Protege GX.

## Version 2.0.0.1

- Updated the service to support Geutebrück G-Core software version 6.1.0.392.

Older Geutebrück G-Core VMS versions may no longer be supported. Ensure that you upgrade all component versions to those specified in the [Prerequisites](#) (see page 6).

- Added the following new HLI events:
  - Camera Audio Detected
  - Excess Body Temperature Detected

## Version 2.0.0.2

- Resolved an issue where the camera list from G-Core failed to appear in Protege GX, with a certification error displayed in the service logs..

# Known Issues

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- The following events currently do not appear in Protege GX and are not saved to the events database:
  - 58002: DVR/NVR Storage Alarm
  - 58003: DVR/NVR Temperature Alarm
  - 58011: DVR/NVR Alarm
  - 58013: DVR/NVR Generic Event

This is under development and will be resolved in a future version of Protege GX.

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