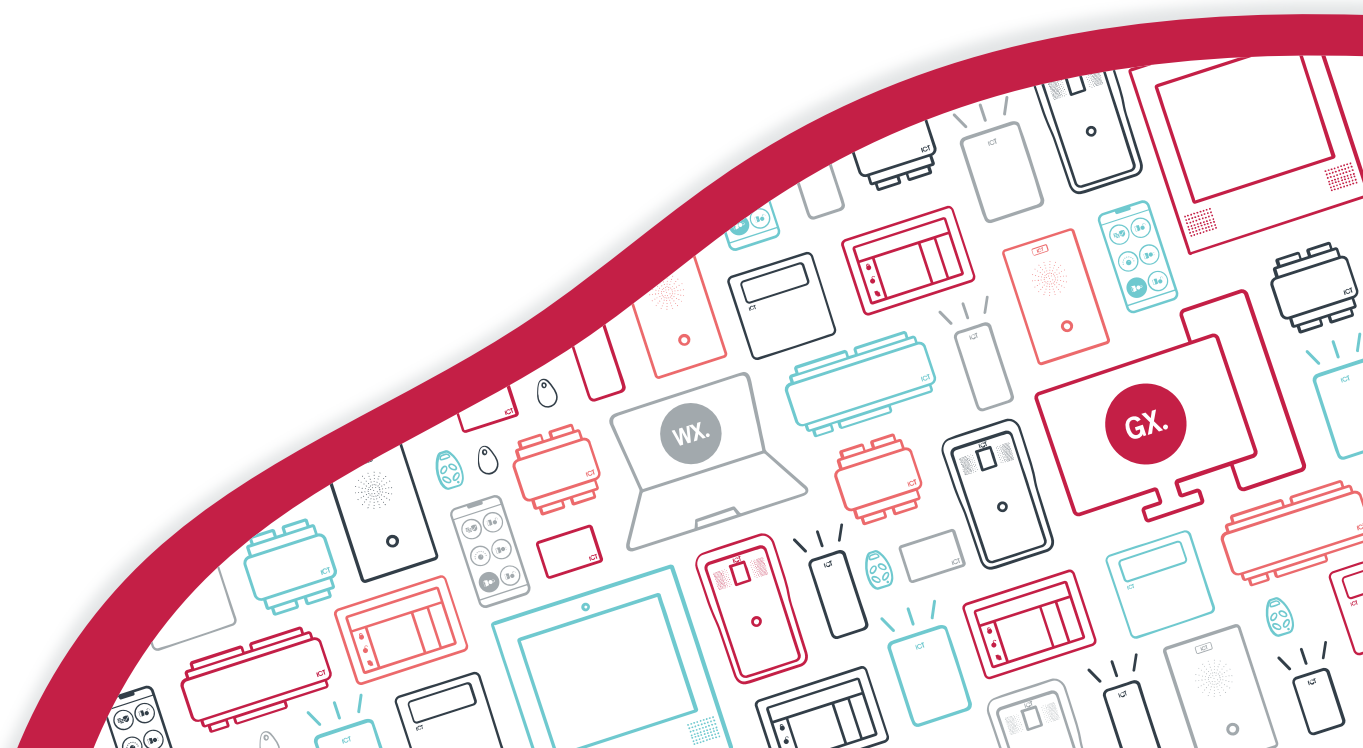
AN-206

# Door Interlocking in Protege GX

Application Note



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# Introduction

The door interlocking feature in Protege GX is used to create an isolation area that restricts simultaneous access, often to separate unsafe areas from safe areas or ensure clean air separation for controlled environments. It provides the means to keep the hazards contained within the hazardous environment, while ensuring a safe way for authorized people to gain access to that area.

Also known as a mantrap or sally port, door interlocking generally comprises a corridor with a door at each end, separating the hazardous area from the safe area. It ensures that only one of the doors can be opened at any given time, preventing a completely free path from being formed between the hazardous and safe areas.

Practical examples of door interlocks include:

- Wildlife enclosures
- Environmentally controlled rooms
- Secure facility entry points
- Prisons

# Prerequisites

## Software Requirements

| Software | Version | Notes |
|---|---|---|
| Protege GX software | N/A | Door interlocking is supported in all versions of Protege GX. |

## Hardware Requirements

The following controller modules support this functionality.

| Component | Version |
|---|---|
| PRT-CTRL-DIN | N/A |
| PRT-CTRL-DIN-1D | |

## Protege GX Licensing Requirements

| License | Order Code | Notes |
|---|---|---|
| Protege GX Door License | PRT-GX-DOR-1 | 1 license per door record |
| | PRT-GX-DOR-10 | |
| | PRT-GX-DOR-50 | |

# Programming Door Interlocking

To program door interlocking, you need to create an interlock door group and assign it to the controlled doors.

- The interlock door group contains all of the doors which control the interlocking function.
- When you assign the interlock door group to a door, that door is controlled by the interlock function. The controlled door cannot be accessed unless all of the doors in the interlock door group are closed and locked.
- A door can be part of the interlock door group without being controlled by it, and a door can be controlled by the interlock door group without being part of the group, but typically the same doors are both part of the interlock door group and controlled by it.
- This feature prevents the door from being unlocked by user access or operator control. It will not prevent the door from being unlocked by schedule, area or programmable function control. For example, a fire control programmable function can be used to unlock all interlocked doors when necessary.

## Create the Interlock Door Group

While interlocking typically involves two doors - one between the hazardous area and corridor, and the other between the corridor and safe area - it can be applied to any number of doors assigned to a door group.

1. Navigate to **Groups | Door Groups**.
2. Add a door group with a descriptive **Name**.
3. In the **Doors** section, click **Add**.
4. Multi-select (CTRL + click) all the doors that are required to be part of the interlock door group, then click **OK**.
5. If required, select a **Schedule** to define when each door is included in the group.
   When the schedule is valid the door is included in the group, and if unlocked will prevent access to doors controlled by this interlock door group. When the schedule is invalid the door is not included, and will not prevent access to controlled doors.

   Care should be taken when planning schedules for doors in interlock groups.
6. Click **Save**.

## Assign the Interlock Group to the Doors

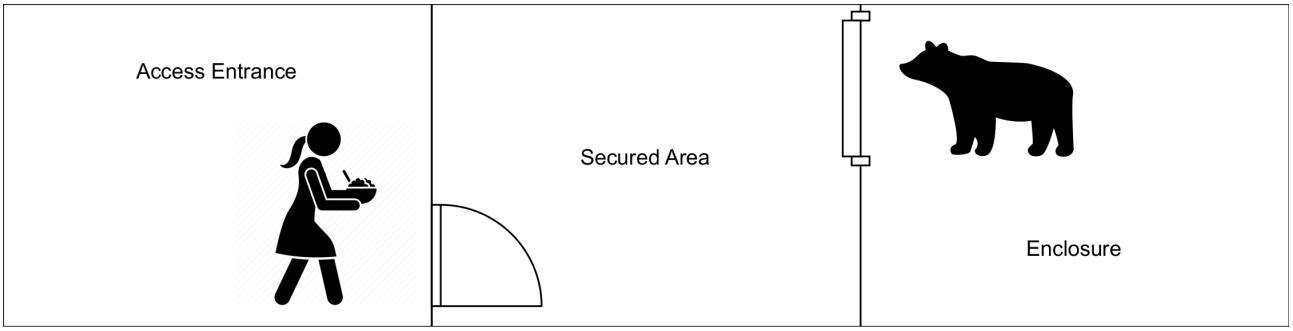
The interlock door group needs to be assigned to all doors that will be controlled by the interlock function.

1. Navigate to **Programming | Doors**.
2. Multi-select all the doors that will be controlled by the interlock function.
3. In the **Setup** section, set the **Interlock Door Group** to the door group programmed above.
4. Click **Save**.

When an interlock door group is assigned to a door, that door cannot be accessed unless all of the doors in the interlock door group are closed and locked.

# Programming Example

In this programming example we will configure a typical interlocking scenario where two doors create a secured area to restrict movement between primary areas.




To reduce the risk of animals escaping, sanctuary staff will only be able to open the outer door and access the secured area when the inner door is closed and locked, and once inside the secured area will only be able to open the inner door to the enclosure when the outer door is closed and locked.

## Before You Begin

To test this programming scenario you will need an operational Protege GX system with at least one controller online and two connected card readers configured for the door records below. The following records must be programmed before you begin:

- **Doors**: Enclosure Inner Door, Enclosure Outer Door
- **User**: Sanctuary Manager (with a valid card and access assigned)

## Programming

1. Create the interlock door group.
   - Navigate to **Groups | Door Groups** and add a group called Enclosure Interlock Door Group.
   - In the **Doors** section, **Add** the Enclosure Inner Door and the Enclosure Outer Door, then click **OK**.
   - Click **Save**.
2. Assign the interlock door group to the doors.
   - Navigate to **Programming | Doors**.
   - Multi-select the Enclosure Inner Door and the Enclosure Outer Door.
   - In the **Setup** section, set the **Interlock Door Group** to the Enclosure Interlock Door Group.
   - Click **Save**.

# Testing the Door Interlocking Scenario

Once the interlock door group and controlled doors are correctly configured we can test the operation.

To begin, ensure that both doors are **Closed, Locked**.

1. Present Sanctuary Manager's credential to the Enclosure Outer Door reader.
   The outer door should unlock and the following events should be produced:
   ```
   Door Enclosure Outer Door (DR1) Unlocked By Access
   User Sanctuary Manager (100:101) (UN1) Granted Entry To Enclosure Outer
   Door (DR1) Access Level Manager Access (AL1) Reading Mode Card Input
   ```
2. Wait for the door to lock, then present Sanctuary Manager's credential to the Enclosure Inner Door reader.
   The inner door should unlock and the following events should be produced:
   ```
   Door Enclosure Inner Door (DR2) Unlocked By Access
   User Sanctuary Manager (100:101) (UN1) Granted Entry To Enclosure Inner
   Door (DR2) Access Level Manager Access (AL1) Reading Mode Card Input
   ```
3. Wait for the door to lock, then right click on the Enclosure Outer Door record and select the **Unlock Latched** command.
4. With the outer door unlocked, present Sanctuary Manager's credential to the Enclosure Inner Door reader.
   The inner door should remain **Closed, Locked** and the following event should be produced:
   ```
   User Sanctuary Manager (100:101) (UN1) Entry Denied By Interlock Enclosure
   Inner Door (DR2
   ```
5. Right click on the Enclosure Outer Door record and select the **Lock** command.
6. With the outer door **Closed, Locked**, present Sanctuary Manager's credential to the Enclosure Inner Door reader.
   The inner door should unlock and the following events should be produced:
   ```
   Door Enclosure Inner Door (DR2) Unlocked By Access
   User Sanctuary Manager (100:101) (UN1) Granted Entry To Enclosure Inner
   Door (DR2) Access Level Manager Access (AL1) Reading Mode Card Input
   ```

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