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Installation and Configuration

AEOS Elevator Integration - Kone

Version 2

| 27-06-2018



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Contents

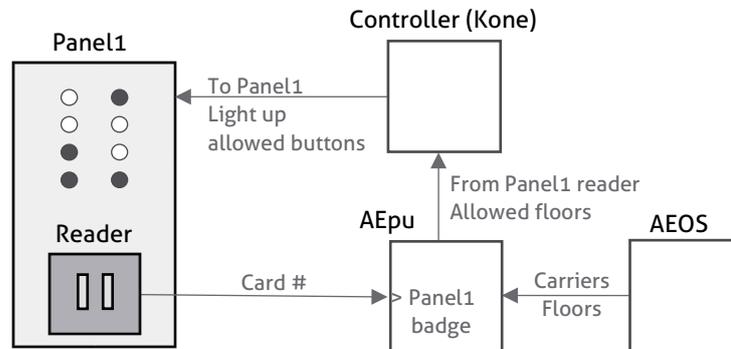
1. INTRODUCTION	4
1.1 TERMINOLOGY	5
1.2 THE ELEVATOR BUILDING PLAN	6
1.3 SELECTION OF DESTINATIONS	6
1.3.1 DESTINATION ACCESS AT PERSONAL, PER-LOCATION, PER-COP, OR GLOBAL LEVEL	7
1.3.2 ONLINE AND OFFLINE CONTROL	7
1.4 LICENSING IN AEOS	7
2. CONFIGURE THE ELEVATOR CONTROLLERS IN AEMON	8
2.1 ADD THE ELEVATOR COMPONENT TO AEMON	8
2.2 ADD THE IP ADDRESSES OF THE ELEVATOR GROUP CONTROLLERS	8
2.3 ADD THE LOCATIONS	9
2.4 ADD CALL TYPES	10
2.5 ADD LIFT CAPABILITIES	10
2.6 ADD ELEVATORS	11
2.7 SELECT THE FEATURE SET OF THE ELEVATOR TYPE	11
2.8 COPS	12
2.8.1 CONFIGURE THE GLOBAL DESTINATION CONTROL	12
2.8.2 ADD THE COPS	12
2.8.3 ADD THE DESTINATION CONTROL FOR EACH COP	13
2.9 DOPs	14
2.9.1 CONFIGURE THE GLOBAL DESTINATION CONTROL	14
2.9.2 ADD THE DOPs	14
2.9.3 ADD THE DESTINATION CONTROL FOR EACH DOP	15
2.10 TERMINALS	15
2.11 ADD ELEVATOR ROLES	16
2.12 DETERMINE WHICH FREE CAP FIELDS AEOS WILL USE FOR THE ELEVATOR COMMANDS	17
2.13 CONNECT THE ELEVATOR COMPONENT IN AEMON	18
3. CONFIGURING AEOS	19
3.1 ADDING FREE FIELDS	19
3.2 ASSIGNING VALUES TO THE DROP-DOWN LISTS OF THE FREE FIELDS	20
3.3 MAKE THE FREE FIELDS VISIBLE	22
3.4 ASSIGN THE FREE FIELDS TO THE CAP FIELDS	22
4. ADD ELEVATOR INFORMATION TO A CARRIER IN AEOS	23
5. TROUBLESHOOTING	24
5.1 EVENTS	24



1. Introduction

AEOS offers integration with Kone elevator control systems.

This integration can be simple, for example when you must present a valid badge inside the elevator before you can operate the control buttons in the elevator.



The integration can also be extended with advanced features. For example, when you enter the building and present your badge, the elevator control system can automatically call an elevator down for you and then bring you to the correct floor automatically. Or it can prevent groups of employees from going to specific floors.

This manual describes how to set up such a system:

- [Chapter 1](#) describes the general principles of elevator control in combination with an access control system such as AEOS.
- [Chapter 2](#) describes how to set up AEmon.
- [Chapter 3](#) describes how to set up AEOS.
- [Chapter 4](#) describes how to use add elevator information to carriers in AEOS once the system has been set up correctly.

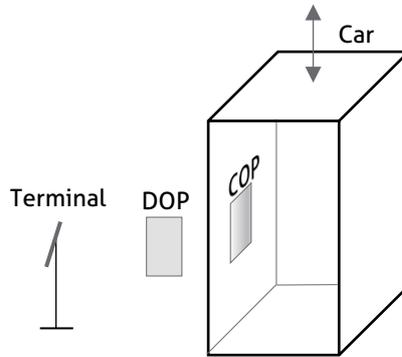


Read the technical documentation of your elevator manufacturer before you read this manual. This manual assumes that you are familiar with the elevator terminology and control systems that are in use in your building.



1.1 Terminology

The elevator terminology can be different between elevator manufacturers. Some of the most used terms are listed here. If a term is not listed or differs from the terminology used by your elevator manufacturer, refer to the documentation of your elevator manufacturer for the correct terminology.



Common elevator terminology

Term	Meaning
Car	The physical moving elevator body.
Source	The location or floor where you wait for the elevator to come.
Destination	The location or floor where you want to go.
COP	Car Operation Panel. The buttons inside the elevator to select the floor where you want to go.
LCS	Landing Call Station. Up and down buttons on the wall to call an elevator.
DOP	Destination Operator Panel. A panel on the wall, to call the elevator and to set the destination. Contrary to an LCS which can only call an elevator, a DOP has a detailed destination selector, you can set the exact location where you want to go.
Terminal	An elevator control panel that is installed not near an elevator but as part of an access point, for example on a turnstile. Terminals can automatically call an elevator down after a valid badge has been swiped and then automatically send the elevator to the home floor of the carrier. The display of the terminal shows which elevator is coming.
Elevator group	A group of elevators that belong to the same (group of) shafts. An elevator group is always close together, and all elevators of one group are called by the same LCS/DOP. Elevators on opposite sides of the same building do not belong to the same group. Per floor, a group of elevators can go to 2 locations only: front and rear. If there are more than 2 locations on the same floor, the extra locations need an extra elevator group.
EGC	Elevator Group Controller. The hardware controller that controls one elevator group. Each elevator group has its own EGC.
DCS	Destination Control System. All COPs, DOPs, terminals and group controllers together.
ACS	Access Control Server. In the case of AEOS, the AEOS server which sends the commands to the elevator group controller.



1.2 The elevator building plan

Before you can enter an elevator configuration in AEOS/AEmon, you must know the exact configuration of the elevators in your building.

The configuration information must include the following:

- The number of elevator groups and Elevator Group Controllers.
- The host names and/or the IP addresses of the Elevator Group Controllers.
- The number of elevators per group and their types (scenic/closed, freight, VIP).
- The floor numbers of the floors that can be accessed by the elevators.
- The locations that the elevators can go to. There can be 2 locations per floor, for example the front door of the elevator opens to the restaurant, and the rear door opens to the gym on the same floor.
- The number of COPs, DOPs, and terminals.

An elevator building plan table could look like this:

Floor Marking (in building)	Floor ID (Kone index)	Elevator Group 1		DOP Name	Location
		Elevator 1 (Lower) COP1	Elevator 2 (Higher) COP2		
6	8	-	Rear		CEO office
6	8	-	Front		Board of directors
5	7	-	Front, Rear		IT
4	6	-	Front, Rear		Engineering
3	5	R	Rear	DOP3	Gym
3	5	Front	Front	DOP2	Restaurant
2	4	Front, Rear	-	-	Finance
1	3	Front, Rear	-	-	Warehouse
G	2	Front, Rear		DOP1	Lobby
-1	1	Rear	-	-	Parking Guests
-1	1	Front	-	-	Parking Employees

1.3 Selection of destinations

For each location, it is possible to configure if certain people can go there. For example, only the board of directors and the CEO are allowed to select the CEO office as destination.

It is also possible to configure if people can go to a specific location from a specific source floor. For example, if the people from the warehouse are not allowed to use the restaurant, you can block the warehouse floor from selecting the restaurant as destination.



1.3.1 Destination access at personal, per-location, per-COP, or global level

There are 4 levels of destination control:

- Global. If a destination location has global access, everyone can select this location.
- Per COP. If an elevator physically cannot reach a location, remove that location from the list of allowed destinations for the COP in that elevator. Also, if a location can only be selected by specific persons, remove that location from all COPs, so the ACS can control access to that location.
- Per source location, for DOPs only. If a destination location has source location access, everyone present on the source location can select that destination location.
- Per person or role, controlled by the Access Control Server (ACS). In this case, a person must swipe an identifier (for example a badge) and the ACS determines whether or not this person can use a specific elevator, and which destinations this person is allowed to select. It is possible to define roles (for example 'employee of the engineering department') to easily assign a group of parameters to a group of people.



The calculation whether or not a person is allowed to select a specific destination, is an OR function of these 4 levels. If someone is allowed access by any of these 4 levels, access is allowed.

For this reason, use the global destination control only for floors that everybody must be able to select, for example the lobby or the restaurant. Use the source floor destination control only for groups of people that are always present on a specific floor. Use the ACS destination control for all other situations. This gives the most flexibility.

1.3.2 Online and offline control

You can configure the destination control for 2 situations:

- Online control. This is when the elevator controller is connected with the ACS server.
- Offline control. This is when the connection between the elevator controller and the ACS server is broken, for example because of a network failure.

Usually, offline control is set up so that everybody can select every destination, because the elevator cannot verify who is who. Or, in high-security environments, everybody can only select the lobby, for the same reason.

In other cases, online control and offline control are usually configured the same.

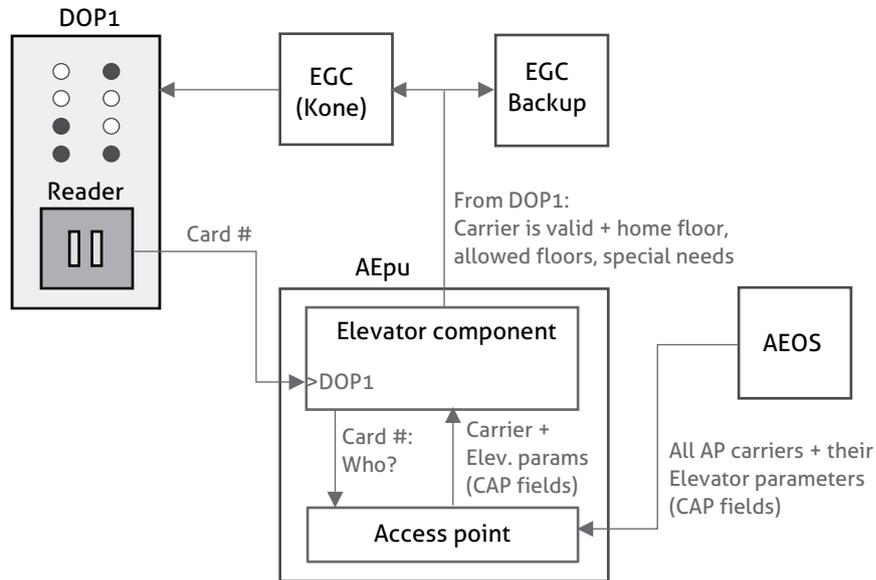
1.4 Licensing in AEOS

The licensing cost is based on the number of floors that are configured as location in each *Elevator* component in AEmon. If one floor has 2 locations (front and back), this floor is only counted once.

Each group controller must have its own *Elevator* component, so if two elevator groups serve the same floor, the floor is counted twice in the license because it is configured in two *Elevator* components.



2. Configure the elevator controllers in AEmon



2.1 Add the Elevator component to AEmon

For each Elevator Group Controller (EGC), add an **Elevator** component to the relevant AEPU in AEmon.



The AEPU with the **Elevator** component on it must have at least one access point where every carrier that is allowed to use the elevator has access. This will usually be the main entrance or an entry turnstile. Therefore, it is most convenient to put the Elevator components on the AEPU that controls that access point.

If it is not possible to put the Elevator components on the AEPU that controls the main entrance (or similar), you can create a dummy access point on the AEPU with the Elevator component, and allow all carriers entry to that access point.

1. In the **Configuration** tab, open the **Integrator** folder and drag the **Elevator** component into the graphical view.



2.2 Add the IP addresses of the Elevator Group Controllers

1. In AEmon, right-click on the **Elevator** component and select **Properties**.
2. Go to **Elevator service [...] > Kone ▼ > Access Control Config [...]**.
 - a. In the **Group Control Host 1** and **Group Control Host 2** fields, enter the host name or the IP address of the primary EGC and the backup EGC that are used for COP and DOP control.
 - b. In the **Group Control Port 1** and **Group Control Port 2** fields, enter the port number for communication between AEOS and the EGCs.



3. Go to **Elevator service [...]** > **Kone ▼** > **Call Giving Config [...]**.
 - a. If your system uses terminals (for example with turnstiles), enter the host name or the IP address of the EGCs that are used for terminal control in the **Group Control Host 1** and **Group Control Host 2** fields.
 The EGCs can be the same controllers as the ones used for access control (with the same names and IP addresses), but they can also be different controllers.
 - b. If your system does *not* use terminals, leave the **Group Control Host 1** and **Group Control Host 2** fields empty.
 - c. In the **Group Control Port 1** and **Group Control Port 2** fields, enter the port number for communication between AEOS and the EGCs for the terminals.
 If your system does *not* use terminals, you can leave these fields as they are, they will be ignored if the *Group Control Host* fields are empty.

2.3 Add the locations

Enter the locations as listed in the elevator building plan into AEmon.

1. In AEmon, right-click on the **Elevator** component and select **Properties**.
2. Go to **Elevator service [...]** > **Kone ▼** > **Locations [...]** > **Add**.

Floor id	Side	Name	Description
1	Front	PE	Parking Employees, Basement
1	Rear	PG	Parking Guests, Basement
2	Front/Rear	L	Lobby, Ground floor
3	Front/Rear	1	Warehouse, Floor 1
4	Front/Rear	2	Engineering, Floor 2
5	Front	3R	Restaurant, Floor 3
5	Rear	3G	Gym, Floor 3
6	Front/Rear	4	Finance, Floor 4
7	Front/Rear	5	IT, Floor 5
8	Front	DIR	Board of Directors, Floor 6
8	Rear	CEO	CEO Office, Floor 6

Locations example with the table of section 1.2 filled in

3. For each location that belongs to the selected controller, fill in these fields:

Parameter	Meaning
Floor id	The floor index is a number that Kone has assigned to a specific floor. This number can be different from the actual floor number as shown in the building.
Side	Enter the side of the elevator that opens to this location: front, rear or both (front/rear).
Name	This is the name of the location that AEOS must send to the EGC in a command string. You will later use this value in the fields that you configure in AEOS. Keep this name as short as possible. For example, you can use R for the restaurant, 2 for the second floor, and -1 or B for the basement.
Description	Here you can explain what the short name in the previous field means. So if you have entered 3R in the Name field, you can for example enter Floor 3, Restaurant as description.

4. Click **OK**.



2.4 Add call types

By default, these Kone call types are available for use in AEOS:

- 0: Normal
- 1: Handicap
- 2: Priority
- 3: Empty car
- 4: Space Allocation

If additional call types have been added to your system by Kone, you can insert them as follows:

1. Go to **Elevator service [...]** > **Kone ▼** > **Call Types [...]**.
2. Click **Add**.



You can only use one call type at the same time.

If you need more than one call type at the same time (for example, handicap and priority), or if you need to assign properties that have not been defined as call types (for example glass/non-glass), use lift capabilities (see 2.5) instead.

2.5 Add lift capabilities

If there are elevator properties that have not been defined by Kone as a call type, or if you need more than one call type at the same time, you can add them to AEOS as a lift capability. For example, you could add *Glass/Scenic* and *Closed/Non-scenic*, or *Wide door*, as a lift capability.

You are free to choose the names of the lift capabilities, as long as the names that you enter in AEOS later are exactly the same.

1. Go to **Elevator service [...]** > **Kone ▼** > **Lift Capabilities [...]**.
2. Click **Add**.
3. Enter the name of the lift capability.

Capability
Scenic (glass)
Not scenic (closed)
Fast
VIP
Wide door

Example with possible lift capabilities filled in



2.6 Add elevators

Add all elevators that belong to the group of this elevator group controller.

1. Go to **Elevator service [...]** > **Kone ▼** > **Lifts [...]**.
2. Click **Add**.
3. In the **Elevator Id** field, enter the elevator ID number that the elevator has in this group.
4. In the **Name** field, enter a name that identifies this elevator to you. For example *Lower*, *Handicap*, *VIP*, *West wing*, or just *A*.
5. In the **Capabilities** field, select the capabilities (see 2.5) of this elevator, if applicable. You can select multiple capabilities for one elevator.

Elevator id	Name	Capabilities
1	Lower	Not scenic (closed), Fast
2	Higher	Not scenic (closed)

Example with possible elevator properties filled in

2.7 Select the feature set of the elevator type

1. In AEmon, right-click on the **Elevator** component and select **Properties**.
2. Go to **Elevator service [...]** > **Kone ▼** > **Access Control Config [...]** > **Feature set [...]**.
3. From the drop-down list, select the feature set.

The feature set determines the other lines in this window. For example, conventional elevators do not have DOPs so the DOP lines are not shown when you select a conventional elevator. The rest of this chapter assumes that **DCS Hybrid Extended set** is selected as feature set, because this offers the most options.



2.8 COPs

1. Right-click on the **Elevator** component and select **Properties**.
2. Go to **Elevator service [...] > Kone ▼ > Access Control Config [...] > Feature Set [...]**.

2.8.1 Configure the global destination control

If a location has global access, it overrules the ACS-controlled access. For this reason, only use global access for locations that are completely unrestricted.

1. To configure the online destination control (see section 1.3.2), do as follows:
 - a. Go to **COP global default location access [...] > Online Default Access [...] > Default Access [...]**.
 - b. Select the **Destination** checkboxes of the locations that *everyone* is allowed to select from within *any* elevator, for example the lobby or the restaurant.

Location description	Destination
Parking Employees, Basement	<input type="checkbox"/>
Parking Managers, Basement	<input type="checkbox"/>
Lobby, Ground floor	<input checked="" type="checkbox"/>
Warehouse, Floor 1	<input type="checkbox"/>
Engineering, Floor 2	<input type="checkbox"/>
Restaurant, Floor 3	<input checked="" type="checkbox"/>
Gym, Floor 3	<input type="checkbox"/>
Engineering, Floor 4	<input type="checkbox"/>
IT, Floor 5	<input type="checkbox"/>
Board of Directors, Floor 6	<input type="checkbox"/>
CEO Office, Floor 6	<input type="checkbox"/>

- c. Click **OK**, then click **OK** again to close the **Property: Location access control** window.
2. To configure the offline destination control, do one of the following:
 - To set offline control the same as the online control setting, select the **Use Online as Offline** check box.
 - To set offline control different from the online control setting, clear the **Use Online as Offline** check box, go to **Offline Default Access** and follow the procedure that was described in the previous step, but now for the offline control setting.
3. Click **OK** to close the **Property: COP Global Default Access Mask** window.

2.8.2 Add the COPs



COPs that are added here, appear on the *Elevator* component as a badge input and indicator output with the name **cx**, where x is the elevator ID number of the COP (see 2.13).

1. Go to **COP configuration**.

Description	Value	Units
Operation Panels	Cops	<input type="text"/>
Operation Panel Timeout	5000	1000-30000ms
Lift group id	1	1-255

2. On the **Operation Panel Timeout** line, enter the allowed time to select a destination on the COP after offering a badge.
3. On the **Lift group id** line, enter the elevator group ID as identified by Kone on the elevator building plan.



4. Go to **Operation Panels [...] > Add**.
5. In the **Description** field, enter a description that identifies the COP to you, for example 'COP1 - Elevator 1'.
6. In the **Elevator Id** field, enter the elevator ID of the elevator where this COP is installed in.

Description	Elevator Id	Allowed destinations
COP1 - Elevator 1	1	Operation Panel Specific Access Mask <input type="button" value="..."/>
COP2 - Elevator 2	2	Operation Panel Specific Access Mask <input type="button" value="..."/>

2.8.3 Add the destination control for each COP

A COP is located inside an elevator. For this reason, a COP can never have a source floor, only a destination.

1. For each COP, click the [...] button in the **Allowed destinations** column.
2. Configure the online and offline COP destinations in the same way as you did with the global destinations in section 2.8.1.

For each COP, select all destinations that everyone is allowed to go to and that are physically possible to reach for the elevator that this COP is installed in. Do not select destinations where only specific people are allowed to go. These destinations will be controlled by the ACS.

Below is an example of the COP destinations for the COPs in Elevator 1 and Elevator 2 of the example table in section 1.2:

Location description	Destination	Location description	Destination
Parking Employees, Basement	<input type="checkbox"/>	Parking Employees, Basement	<input type="checkbox"/>
Parking Guests, Basement	<input checked="" type="checkbox"/>	Parking Guests, Basement	<input type="checkbox"/>
Lobby, Ground floor	<input checked="" type="checkbox"/>	Lobby, Ground floor	<input type="checkbox"/>
Warehouse, Floor 1	<input type="checkbox"/>	Warehouse, Floor 1	<input type="checkbox"/>
Engineering, Floor 2	<input type="checkbox"/>	Engineering, Floor 2	<input type="checkbox"/>
Restaurant, Floor 3	<input checked="" type="checkbox"/>	Restaurant, Floor 3	<input checked="" type="checkbox"/>
Gym, Floor 3	<input checked="" type="checkbox"/>	Gym, Floor 3	<input checked="" type="checkbox"/>
Finance, Floor 4	<input type="checkbox"/>	Finance, Floor 4	<input type="checkbox"/>
IT, Floor 5	<input type="checkbox"/>	IT, Floor 5	<input type="checkbox"/>
Board of Directors, Floor 6	<input type="checkbox"/>	Board of Directors, Floor 6	<input type="checkbox"/>
CEO Office, Floor 6	<input type="checkbox"/>	CEO Office, Floor 6	<input type="checkbox"/>

Elevator 1

Elevator 2

Elevator 2 cannot reach the lobby or the parking, so these destinations are not selected for elevator 2.



2.9 DOPs

1. Right-click on the **Elevator** component and select **Properties**.
2. Go to **Elevator service [...] > Kone ▼ > Access Control Config [...] > Feature set [...]**.

2.9.1 Configure the global destination control

If a location has global DOP access, it overrules the ACS-controlled access. For this reason, only use global DOP access for locations that are completely unrestricted.

1. Go to **DOP global default location access [...]**.
2. Configure the online destination control and offline destination control in the same way as that you have done with the COPs (see 2.8.1).

Select the **Destination** checkboxes of the locations that *everyone* is allowed to select from *any* DOP, for example the lobby or the restaurant.

Select the **Source** checkboxes of the locations where DOPs are that *everyone* is allowed to use. Usually, all locations that have DOPs are selected here. Leave the checkboxes of locations that do not have a DOP empty.

Location description	Destination	Source
Parking Employees, Basement	<input type="checkbox"/>	<input type="checkbox"/>
Parking Managers, Basement	<input type="checkbox"/>	<input type="checkbox"/>
Lobby, Ground floor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Warehouse, Floor 1	<input type="checkbox"/>	<input type="checkbox"/>
Engineering, Floor 2	<input type="checkbox"/>	<input type="checkbox"/>
Restaurant, Floor 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Gym, Floor 3	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Engineering, Floor 4	<input type="checkbox"/>	<input type="checkbox"/>
IT, Floor 5	<input type="checkbox"/>	<input type="checkbox"/>
Board of Directors, Floor 6	<input type="checkbox"/>	<input type="checkbox"/>
CEO Office, Floor 6	<input type="checkbox"/>	<input type="checkbox"/>

2.9.2 Add the DOPs



DOPs that are added here, appear on the *Elevator* component as a badge input and indicator output with the name **fx-dy**, where x is the Kone floor index number, and y is the DOP ID number (see 2.13).

1. Go to **DOP configuration**.
2. On the **Operation Panel Timeout** line, enter the allowed time to select a destination on the DOP after offering a badge.
3. Go to **Operation Panels [...] > Add**.
4. In the **Description** field, enter a description that identifies the DOP to you, for example 'DOP1 – Ground Floor'.
5. In the **DOP Id** field, enter the DOP ID of the DOP.
All DOPs on the same floor must have different DOP IDs. DOPs on different floors can have the same DOP ID, usually 1.
6. In the **Location** field, select the location where this DOP is installed.

Description	Dop Id	Location	Allowed destinations
DOP1 - Ground floor	1	Lobby, Ground floor	Operation Panel ...
DOP2 - Restaurant, Floor 3	1	Restaurant, Floor 3	Operation Panel ...
DOP3 - Gym, Floor 3	2	Gym, Floor 3	Operation Panel ...



2.9.3 Add the destination control for each DOP

1. For each DOP, click the [...] button in the **Allowed destinations** column.
2. Configure the online and offline DOP destinations in the same way as you did with the global COP destinations in section 2.8.1.

For each DOP, select all destinations that everyone is allowed to go to from this location and that are physically possible to reach from the floor that this DOP is installed on. Do not select destinations where only specific people are allowed to go. These destinations will be controlled by the ACS.

For example, if all people are allowed to move freely between all office floors, all office DOPs could have all other office floors as allowed destination.

2.10 Terminals

Terminals (see 1.1) have their own separate elevator group controller (apart from COPs and DOPs). To enter the IP addresses of the elevator group controllers that are used for the terminals into AEmon, see section 2.2.

To add the terminals themselves to AEmon, do as follows.

1. Right-click on the **Elevator** component and select **Properties**.
2. Go to **Elevator service [...] > Kone ▼ > Call Giving Config [...] > Terminal configuration [...] > Add**.
3. In the **Description** field, enter a description that identifies the terminal to you, for example 'Terminal1 – Main Entrance'.
4. In the **Terminal Id** field, enter the terminal ID of the terminal.
All terminals on the same floor must have different terminal IDs. Terminals on different floors can have the same terminal ID, usually 1.
5. In the **Destination call type** field, enter the default call type for this terminal. For example: a terminal that is installed on an extra wide access door that is used for wheelchairs, could have the default call type *handicap*. The ACS can later overrule the default call type with a personal call type per carrier, if necessary.
6. In the **Location** field, select the location where this terminal is installed.
7. In the **Lift capabilities** field, enter the default lift capabilities for this terminal. For example: a terminal that is installed on a fast-lane VIP turnstile, could have the default lift capability *VIP*. The ACS can later add additional lift capabilities per carrier, if necessary.

Description	Terminal Id	Destination call type	Location	Lift capabilities
Turnstile 1	1	Normal	Lobby, Ground floor	<input type="checkbox"/>
Turnstile 2	2	Normal	Lobby, Ground floor	<input type="checkbox"/>
Fast lane	3	Priority	Lobby, Ground floor	VIP, Fast <input type="checkbox"/>
Wide access door	4	Handicap	Lobby, Ground floor	Wide door <input type="checkbox"/>



2.11 Add elevator roles

It is possible to define roles (for example 'employee of the engineering department') to easily assign a group of elevator parameters to a group of people in AEOS.

These roles are *Elevator* user roles for elevator settings. They are not the same as the user roles in AEOS.



Personal adjustments for a specific carrier overrule the role settings of that carrier.

For example, if an employee of the engineering department is handicapped, the employee can have the role *Engineering* and have an additional personal *Handicapped* parameter.

1. Right-click on the **Elevator** component and select **Properties**.
2. Go to **Elevator service [...] > Kone ▼ > Roles [...] > Add**.

Role name	Default source access	Allowed locations	Home location	Calltype	Lift capabilities
Engineering	<input checked="" type="checkbox"/>	Default location access	Engineering, Floor 2	Normal	
Finance	<input checked="" type="checkbox"/>	Default location access	Finance, Floor 4	Normal	
IT	<input checked="" type="checkbox"/>	Default location access	IT, Floor 5	Normal	
Warehouse	<input checked="" type="checkbox"/>	Default location access	Warehouse, Floor 1	Normal	
Directors	<input checked="" type="checkbox"/>	Default location access	Board of Directors, Floor 6	Priority	VIP, Fast
Guest	<input type="checkbox"/>	Default location access	No Location	Normal	
Disabled Guest	<input type="checkbox"/>	Default location access	No Location	Handicap	Wide door
Claustrophobic Guest	<input type="checkbox"/>	Default location access	No Location	Empty Car	Scenic (glass)

3. For each role, fill in these fields:

Parameter	Meaning
Role name	Enter a name that identifies this role, for example <i>Employee</i> , <i>Guest</i> , or <i>Engineering</i> .
Default source access checkbox	Select this checkbox if people with this role are allowed to call elevators to all locations. This would usually be the case for employees. For guests, it could for example not be allowed to call elevators to locations that they are not supposed to be in alone, such as office locations. In that case, clear the Default source access checkbox and select the allowed source floors in the Allowed locations window.
Allowed locations	In this window, select all destination locations that people with this role are allowed to go to. If the Default source access checkbox is cleared, select here the allowed source locations where the people with this role can call an elevator to. If the Default source access checkbox is selected, the source selections in this window are ignored. People with this role can then call elevators to all locations.
Home location	Select the location where people in this role normally work.
Calltype	Select the Kone calltype. You can only select one calltype.
Lift capabilities	Select the special needs lift capabilities for this role. For example, handicapped guests could have an elevator with a <i>Wide door</i> capability. You can select multiple lift capabilities simultaneously.



2.12 Determine which free CAP fields AEOS will use for the elevator commands

AEOS can use 1 to 5 free fields for elevator control. You can use just one field with all commands in that single field, but you can also use multiple fields with specific commands divided over these fields.

For AEOS it does not matter if you use just one or multiple fields, you can do what is most convenient.



For AEOS end-users, it is most convenient if you use one field specific for the role parameter, and one specific field for each additional parameter that must be modified in addition to the role. You can then make those fields drop-down list in AEOS. This makes it easier to assign elevator parameters to carriers.

1. Right-click on the **Elevator** component and select **Properties**.
2. To use a single free CAP field for all commands, select the same CAP field in all 5 **Cap attr** lines:

Elevator service	NOTE
Cap attr for home location	PagerNumber
Cap attr for allowed floors	PagerNumber
Cap attr for tag	PagerNumber
Cap attr for lift capabilities	PagerNumber
Cap attr for role	PagerNumber
Events enabled	<input type="checkbox"/>



Cap attr for tag is used for the Kone Calltype parameter (see 2.4).

It does not matter to AEOS which CAP field you select, as long as this CAP field can be assigned as free field in AEOS, and the same CAP field is not in use by any other non-elevator control in AEmon. In the example above, the **PagerNumber** field is selected, but any of the fields below can be selected as well:

- PagerNumber
- ATUserLevel
- ATUserNumber
- ATUserAreas
- ATUserName
- ATUserValidWeekdays
- ATUserCode
- smartCardKey

All the other CAP fields that you can select here in AEmon, cannot be assigned to free fields in AEOS. Therefore you cannot use those fields for elevator control.

3. To use multiple free CAP fields for specific commands, select different CAP fields in the **Cap attr** lines. The example below uses 4 different CAP fields:

Elevator service	NOTE
Cap attr for home location	ATUserValidWeekdays
Cap attr for allowed floors	ATUserNumber
Cap attr for tag	ATUserName
Cap attr for lift capabilities	ATUserName
Cap attr for role	PagerNumber
Events enabled	<input type="checkbox"/>



2.13 Connect the Elevator component in AEmon

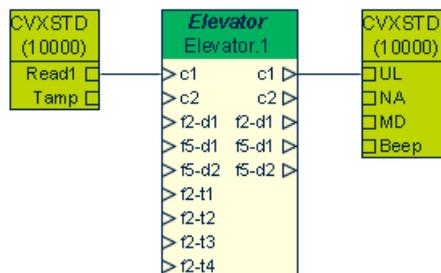
All configured COPs and DOPs have an input and an output on the Elevator control.

The name of a COP is **cx**, where x is the elevator ID number of the COP.

The name of a DOP is **fx-dy**, where x is the Kone floor index number, and y is the DOP ID number.

The name of a terminal is **fx-ty**, where x is the Kone floor index number, and y is the Terminal ID number.

1. Connect the input to a badge output of a reader.
2. Connect the output to an indicator input, similar to an *unli* output.



A terminal does not have an indicator output, because the terminal itself can show carriers their access status.



3. Configuring AEOS

We highly recommend to use elevator roles (see 2.11) that define default elevator parameters for groups of people. This makes it much easier for the end-user to assign the elevator parameters in AEOS. This chapter assumes that you have set up elevator roles in AEmon.

3.1 Adding free fields

Add the free fields to AEOS so that they match the CAP fields that have been setup in AEmon (see 2.12). For more information on free fields, see the *Free Fields* section in the AEOS User manual.

It is most logical to put the field that includes the role parameter at the top, because all other separate parameters overwrite the role value for that parameter. For example, if a *Role* defines the allowed locations as the lobby, and floor 1, 2 and 3, and the *Locations* parameter specifies only the lobby, the carrier will only be allowed to go to the lobby.

1. In AEOS, go to **Administration > Maintenance > Free fields > Free field categories** and add an **Elevator** category for the **Person** carrier type.
2. Go to **Free Fields** and click **New**.

Field name	Data type	Sequence ▲	Free Field Category	Length	Write	Lookup field	Is CAP field
<u>Role</u>	String	1	Elevator	20	✓	✓	✓
<u>Home location</u>	String	2	Elevator	20	✓	✓	✓
<u>Allowed locations</u>	String	3	Elevator	20	✓	✓	✓
<u>Special needs</u>	String	4	Elevator	30	✓	✓	✓

Free fields example

3. Enter at least these parameters (see also the example above):

Parameter	Value
Default name	Enter a name that agrees with the parameters that you will enter in this field. For example, if you use only one field for all elevator parameters, give it the name <i>Elevator</i> or <i>Elevator parameters</i> . If you only use it for the <i>Role</i> parameter, give it the name <i>Role</i> .
Data type	String
Sequence	If you use more than one free field, the <i>Sequence</i> value determines the order in which these fields appear on the screen.
Free Field Category	Elevator
Length	Enough characters for the longest possible parameter sequence (see also 4). For fields that combine several elevator parameters this will be longer than for fields that are used for only one parameter.
Write checkbox	Selected
Lookup field checkbox	Selected, if you want to use this field as a drop-down list. We highly recommend to use drop-down lists, because otherwise persons at the reception



Parameter	Value
	must enter codes such as L=[PE, L, 1, 2, R] in this field when they announce carriers.
Is CAP field checkbox	Selected

- Click **OK**.
- Repeat from step 2 to add more free fields.

3.2 Assigning values to the drop-down lists of the free fields



This only applies to free fields that have their **Lookup field** checkbox selected.

- Go to **Administration > Maintenance > Free fields > Free fields lookup**.
- Select a free field and click **New**.
- In the **Value** field, enter the human-readable value that will be shown in AEOS, for example *Lobby, 2nd Floor, or Handicapped*.
- In the **External value** field, enter the code that the elevator controller needs for this function, for example L=[L, 2] or C=[Scenic (glass)].
- Click **OK**.

The elevator controller codes have the following syntax:

Parameter	Syntax
Role of the carrier. You can only specify one role.	R=[Guest] R=[Engineering]
Home floor / home location of the carrier.	H=[3]
Destination locations that the carrier can go to.	L=[L, 1, 2, 3, R]
Tag of the carrier. With Kone, this is used for the CallType parameter. You can only specify one tag.	T=[Handicap] T=[Priority]
Lift capabilities. You can specify multiple lift capabilities.	C=[Wide door, Scenic]

The values between brackets in the **External value** field must be *exactly the same* as they were entered in AEmon (see for example sections 2.3 and 2.11). The values are also case sensitive.

If several parameters use the same CAP field in AEmon, you can enter them in the **External value** field with a comma in between, for example:

T=[Handicap], C=[Wide door, VIP]

A space after a comma is optional, but can be added for readability.

You can specify parameters in addition to a role. These additional parameters will overwrite the role setting for that parameter. For example: R=[Guest], L=[L, 1, 2, 3]



Carriers can always go to their home floor, even when this floor is not defined as a destination location.

Example values for *Role*

See section 2.11 for the *Elevator* role definitions that are used in this example.

Value ▲	External value
<u>Directors</u>	R=[Directors]
<u>Employee Engineering</u>	R=[Engineering]
<u>Employee Finance</u>	R=[Finance]
<u>Employee IT</u>	R=[IT]
<u>Employee Warehouse</u>	R=[Warehouse]
<u>Visitor</u>	R=[Guest]

Example values for *Home location*

See section 2.3 for the *Elevator* locations that are used in this example.

Value ▲	External value
<u>CEO office, Floor 6</u>	H=[CEO]
<u>Directors, Floor 6</u>	H=[DIR]
<u>Engineering, Floor 2</u>	H=[2]
<u>Finance, Floor 4</u>	H=[4]
<u>IT, Floor 5</u>	H=[5]
<u>Lobby</u>	H=[L]
<u>Restaurant, Floor 3</u>	H=[3R]
<u>Warehouse, Floor 1</u>	H=[1]

Example values for *Allowed locations*

See section 2.3 for the *Elevator* locations that are used in this example.

Value ▲	External value
<u>All</u>	L=[PG,PE,L,1,2,3R,3G,4,5,DIR,CEO]
<u>Lobby and restaurant</u>	L=[L,R]
<u>Lobby only</u>	L=[L]
<u>Offices + Parking</u>	L=[PE,PG,L,1,2,3R,4,5]

Example values for *Special needs*

See sections 2.4 and 2.5 for the *Elevator* call types (T) and lift capabilities (C) that are used in this example.

Value ▲	External value
<u>Claustrophobic</u>	T=[Empty Car], C=[Scenic (glass)]
<u>Handicapped</u>	T=[Handicap], C=[Wide door]
<u>None</u>	T=[Normal]
<u>VIP</u>	T=[Priority], C=[VIP, Fast]



3.3 Make the free fields visible

Before you can use the new elevator fields in the edit screens of the applicable carriers, you must make them visible in those screens first.

1. Go to **Management > System users > Maintain user role**.
2. Click the user role for the AEOS users who will later add the elevator information to the carriers.
3. Go to the **Configuration** tab.
4. In the **Category and name** column, scroll down to **Contractor**.
5. Set the **Edit value** of the free fields that you have created to **Read/write**.
6. Repeat the previous step for the **Employee** and **Visitor** category.

Category and name	Edit value
Contractor - Reset input for search	Read only
Contractor - Role	Read/write
Contractor - Save columns settings	Read only

7. In the **Person** category, set the free fields to **Read only**.
8. Click **OK**.
9. If you want to activate free fields for another user role, click that user role and do the above steps again.
10. After you have configured all user roles, log out of AEOS and log in again to activate the new configuration.

3.4 Assign the free fields to the CAP fields

1. Go to **Administration > Maintenance > Free fields > Free field CAP assignments**.
2. Assign the free fields that you have just created to the CAP fields that you have assigned in AEmon.

Elevator service	NOTE
Cap attr for home location	ATUserValidWeekdays
Cap attr for allowed floors	ATUserNumber
Cap attr for tag	ATUserName
Cap attr for lift capabilities	ATUserName
Cap attr for role	PagerNumber
Events enabled	<input type="checkbox"/>

Selection in AEmon. *Tag and lift capabilities use the same CAP field.*

Carrier attribute ▼	Field name
Smart card key	
Pager number	Elevator-Role
Alphatronics valid weekdays	Elevator-Home location
Alphatronics user number	Elevator-Allowed locations
Alphatronics user name	Elevator-Special needs
Alphatronics user level	
Alphatronics user code	
Alphatronics user areas	

Selection in AEOS. *Special needs combines the tag and lift capabilities parameters of AEmon.*

3. Click **OK**.



4. Add elevator information to a carrier in AEOS

1. In AEOS, open the settings for a carrier.
2. Go to the **Elevator** section.
3. From the **Role** drop-down list, select the role for this carrier.

Depending on how this role was defined, the role already may include the correct home location, allowed locations and special needs requirements, if any.

Elevator	
Role	Directors
Home location	CEO office, Floor 6
Allowed locations	All
Special needs	VIP

If there are elevator settings for this carrier that are different from the selected role, or if you do not know the exact elevator settings of a role, you can select additional personal settings in the other fields of the **Elevator** section. For example, if an employee of the engineering department is handicapped, the employee can have the role *Engineering* and have an additional *Handicapped* setting in the **Special needs** field.



5. Troubleshooting

5.1 Events

The Elevator AEbc generates the following events for troubleshooting.

Event	Meaning
BadgeAccessElevatorEvent – 1690	Authorized badge on an elevator.
ElevatorStatusEvent – 1691	Device is connected (again).
ElevatorStatusEvent – 1692	Device is not connected (connection lost).
BadgeNoAccessElevatorEvent - 1693	Unauthorized badge – no location authorizations. Carrier is known but has no access to any floor.
BadgeNoAccessElevatorEvent - 1694	Unauthorized badge – no access authorizations. Carrier unknown.
BadgeNoBookingElevatorEvent - 1696	No floor button was pushed within time, after a valid badge was presented.



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