

# GreenMAX®

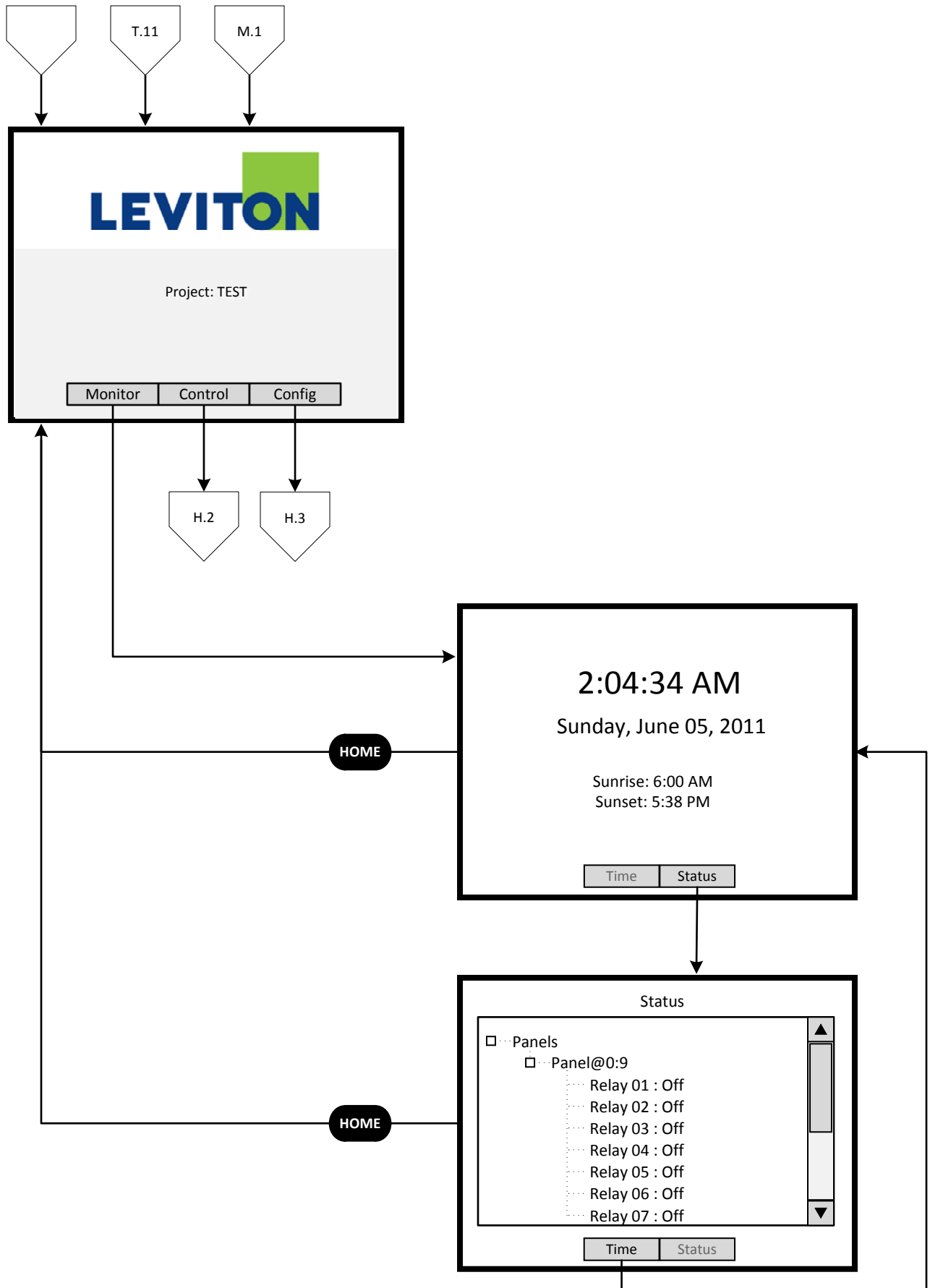
## Programming Manual

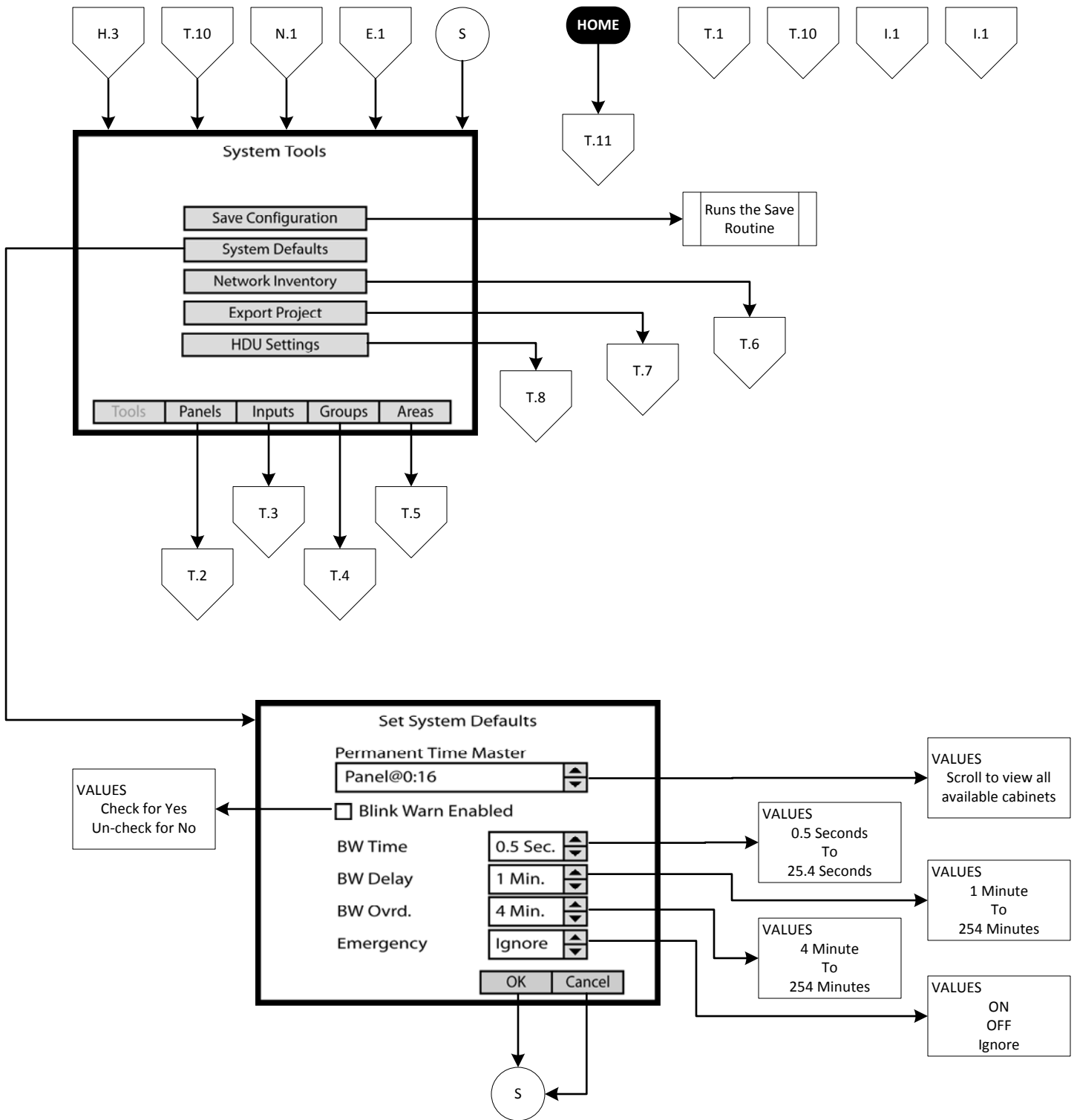


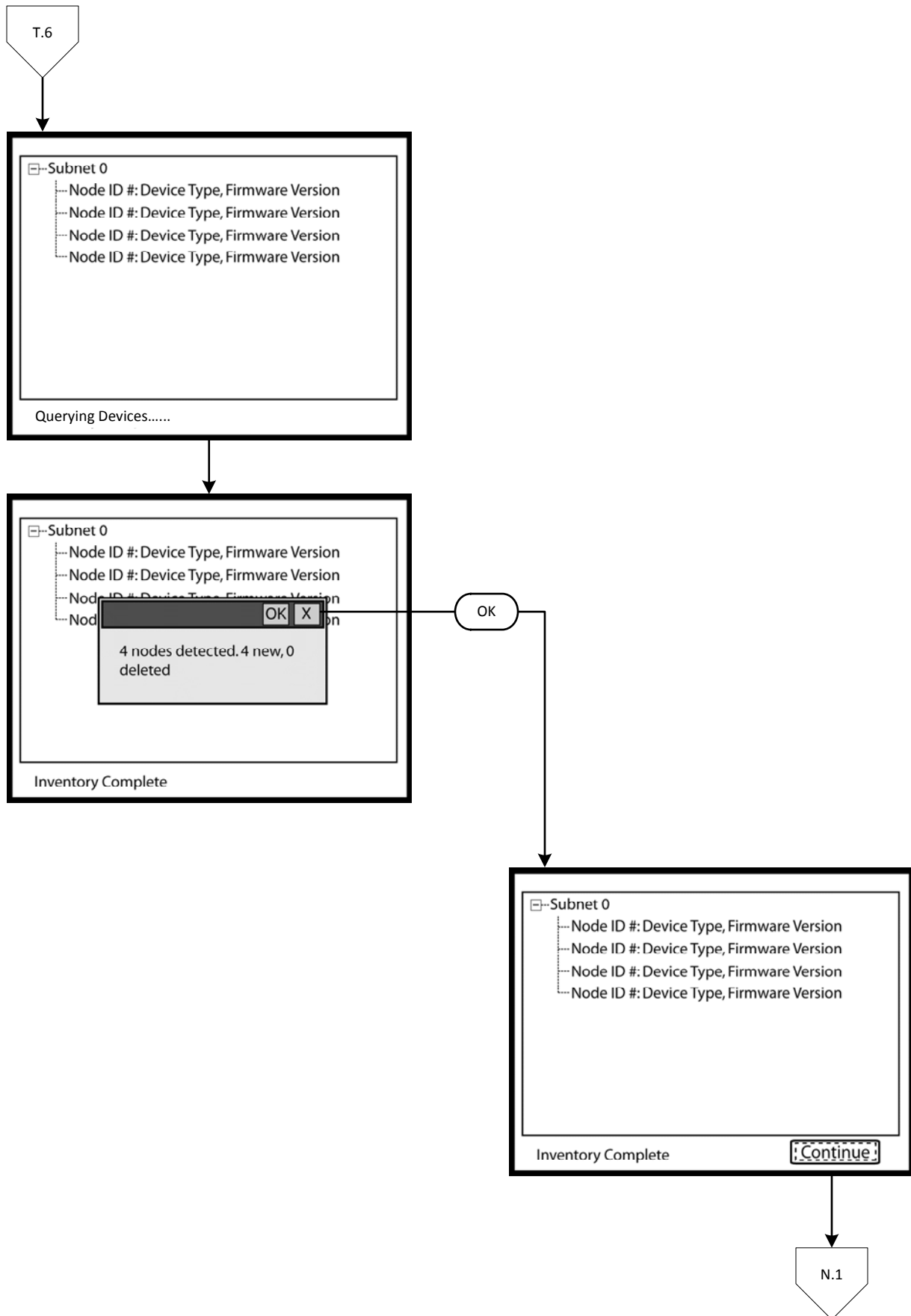
Built by the industry, for the industry.

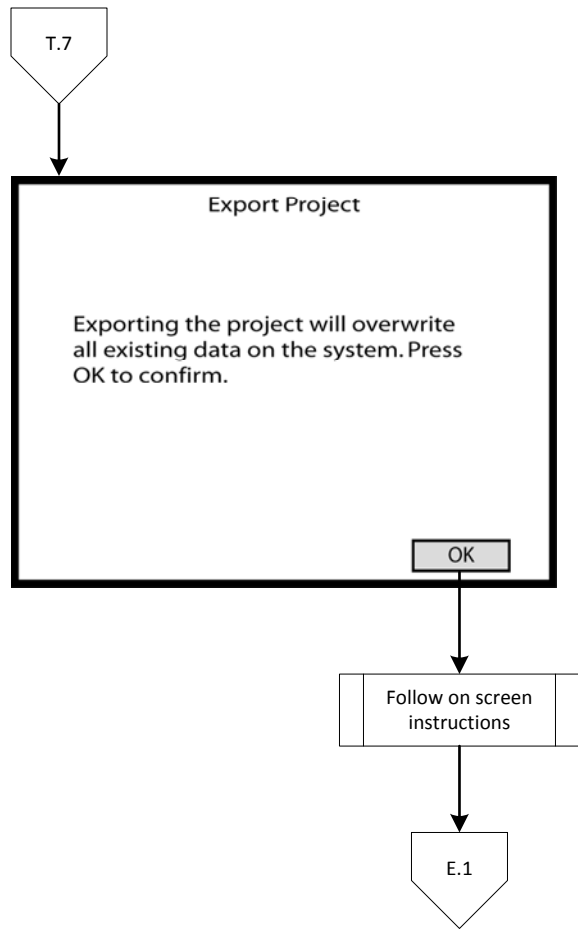
# GreenMAX Programming Manual

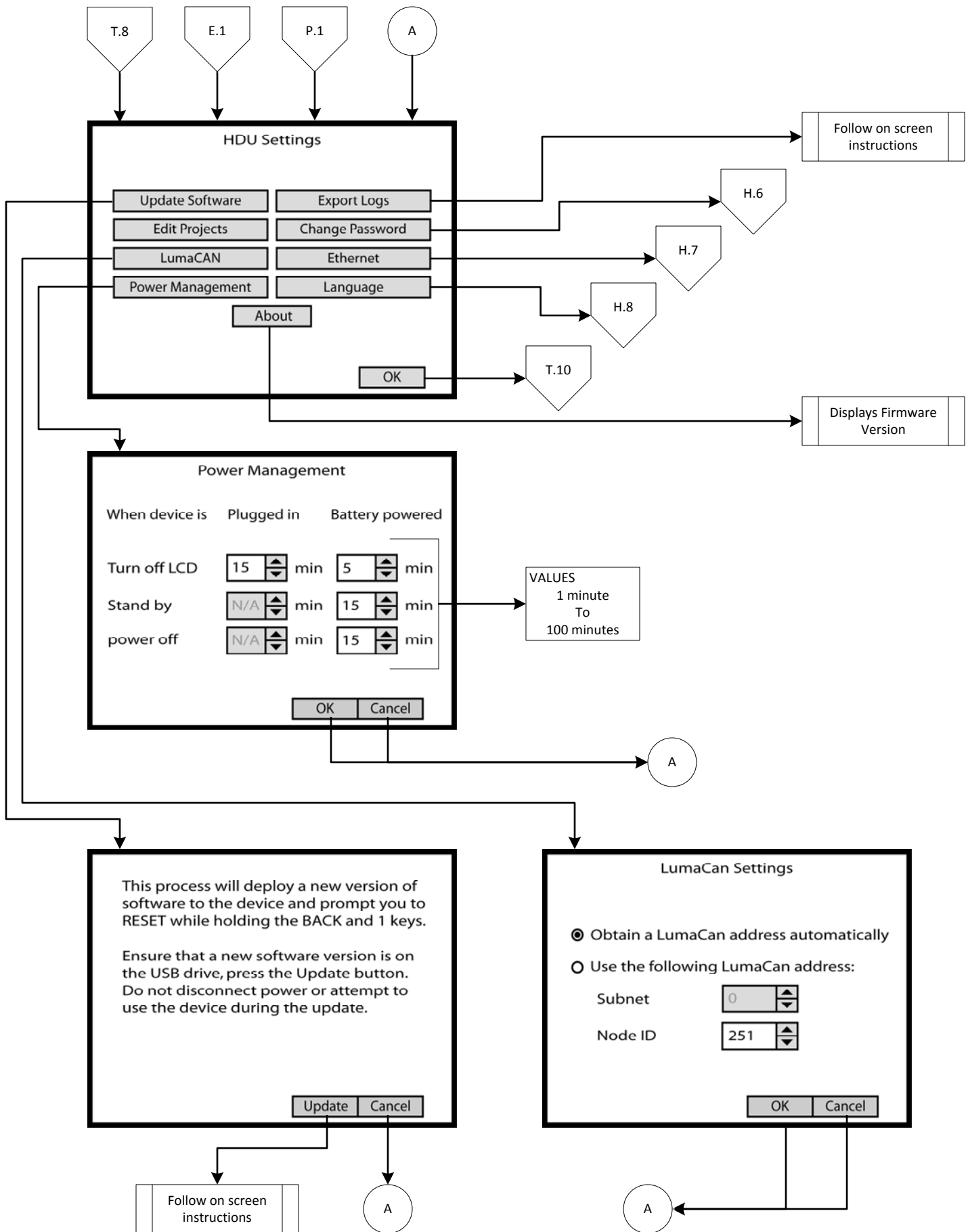
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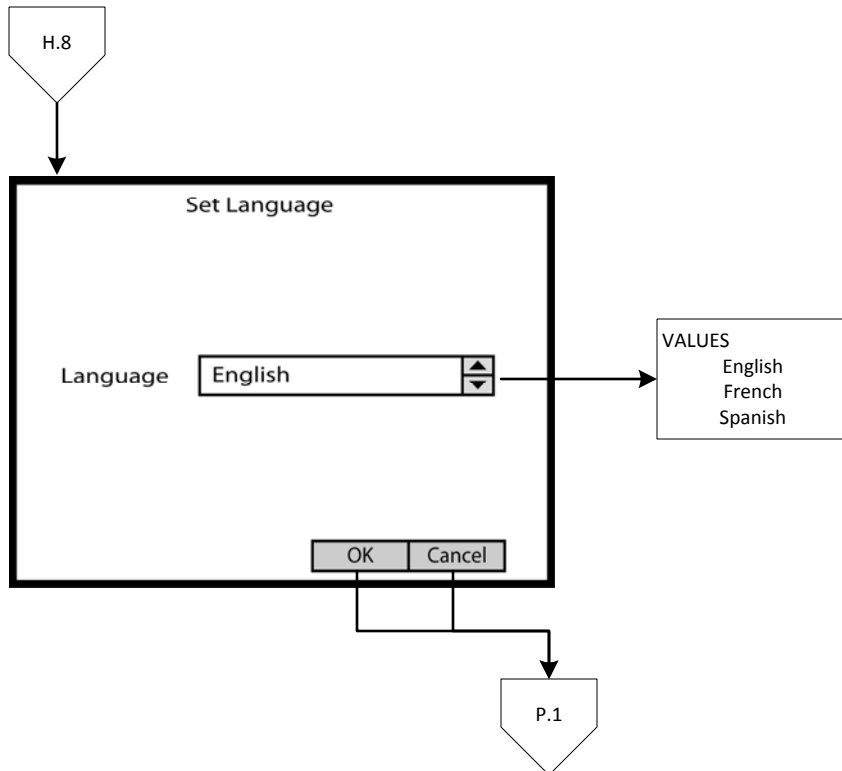
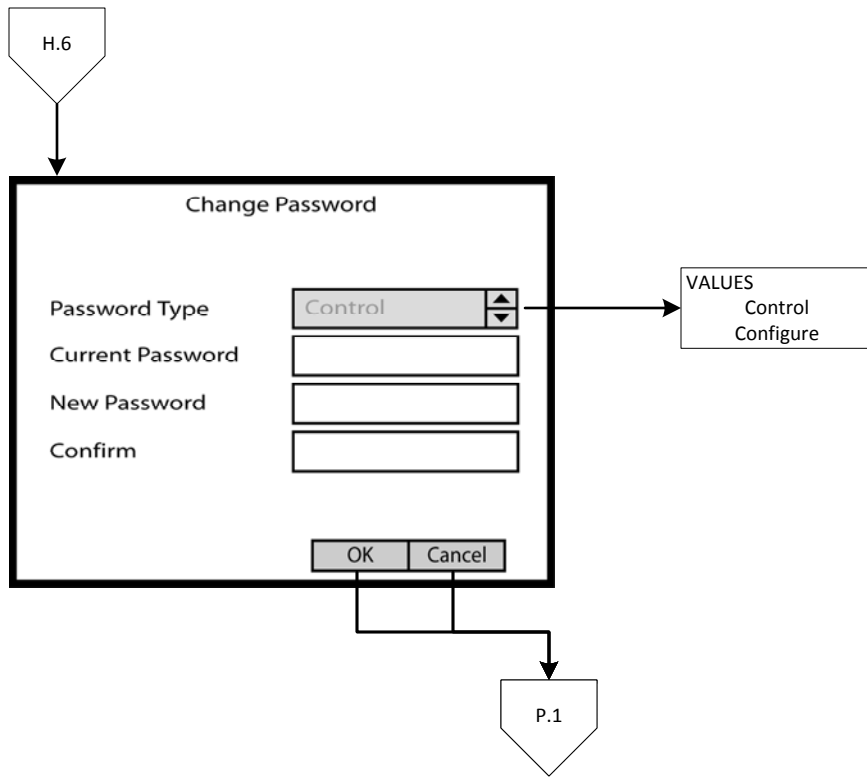




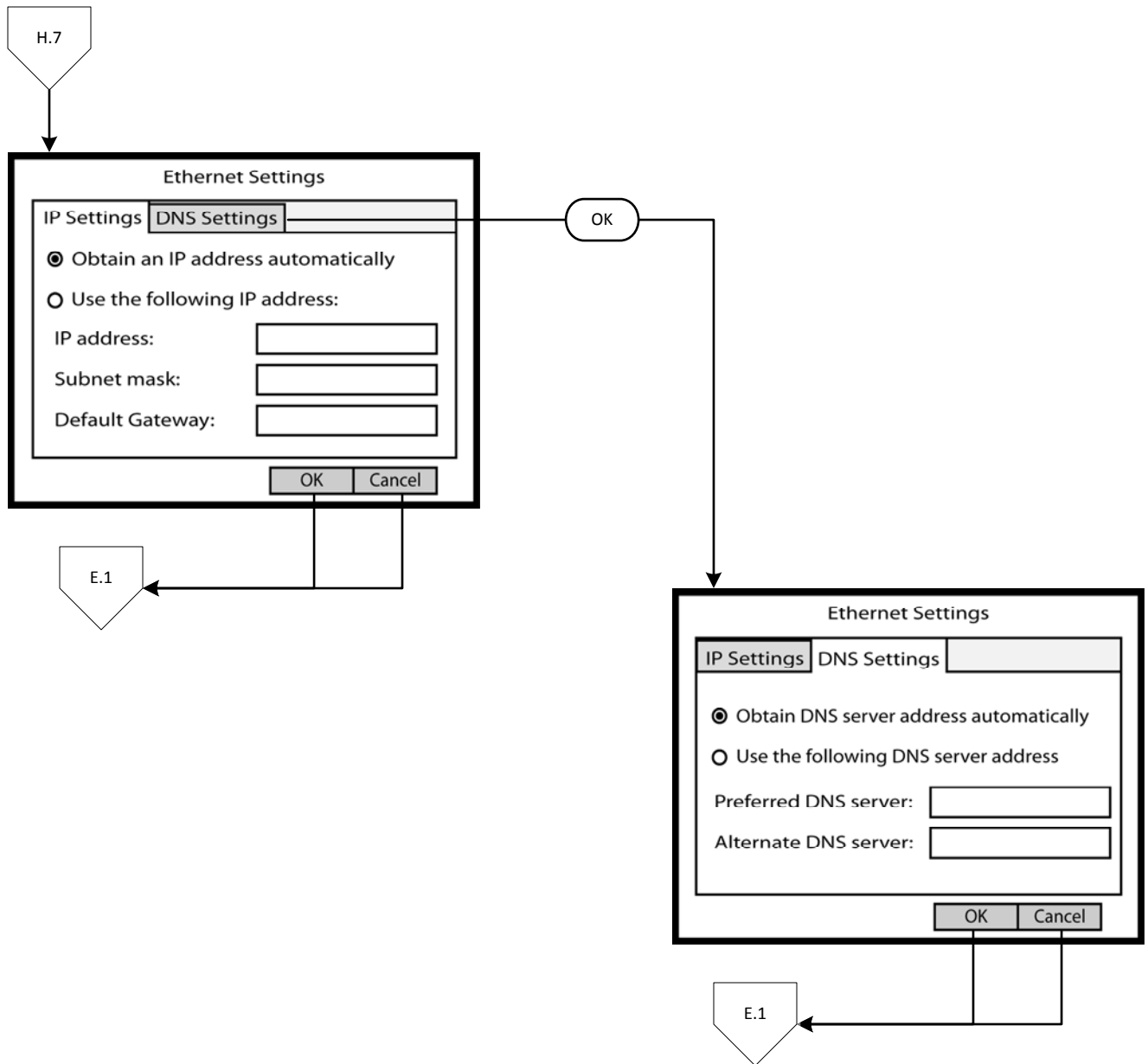


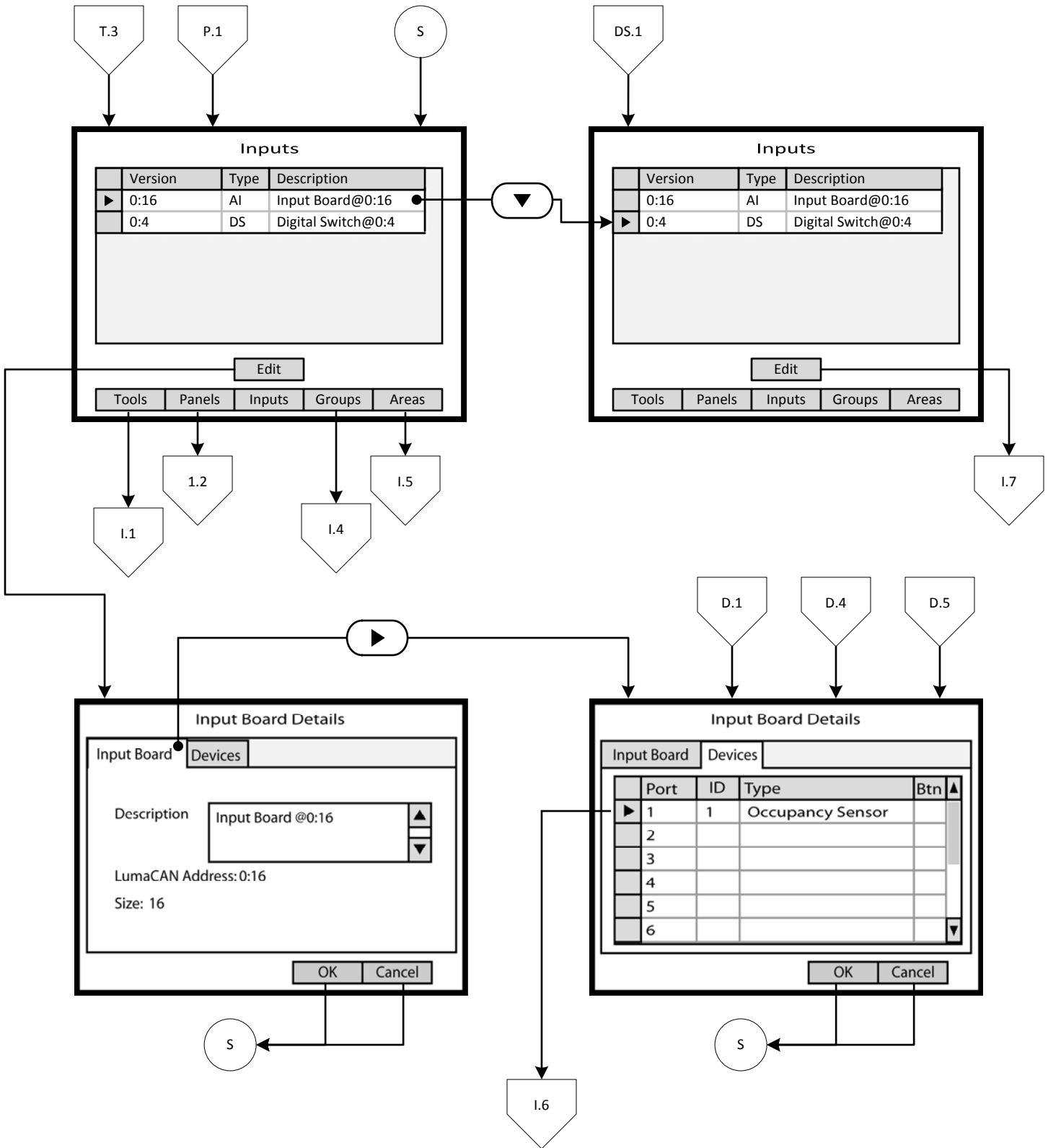


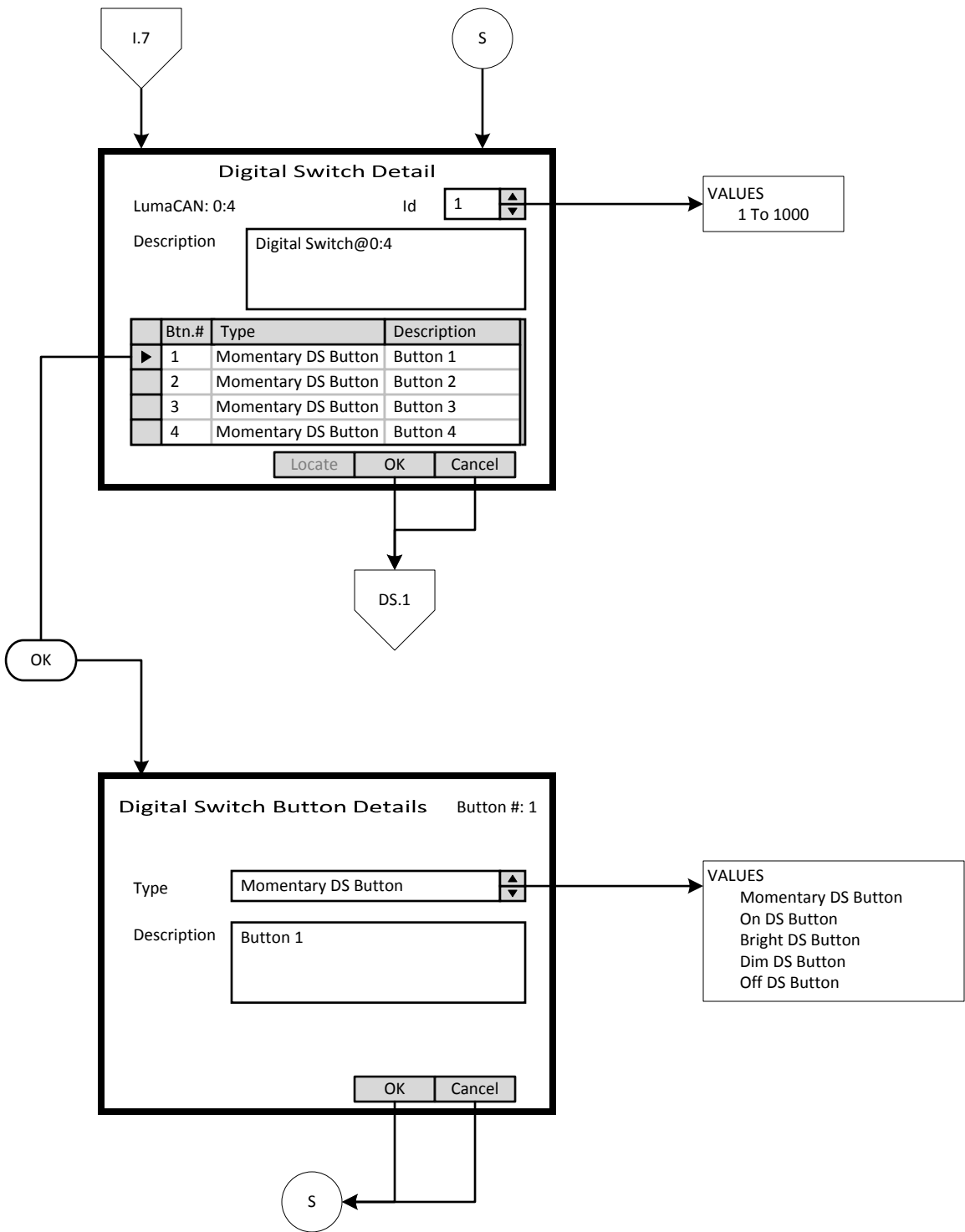


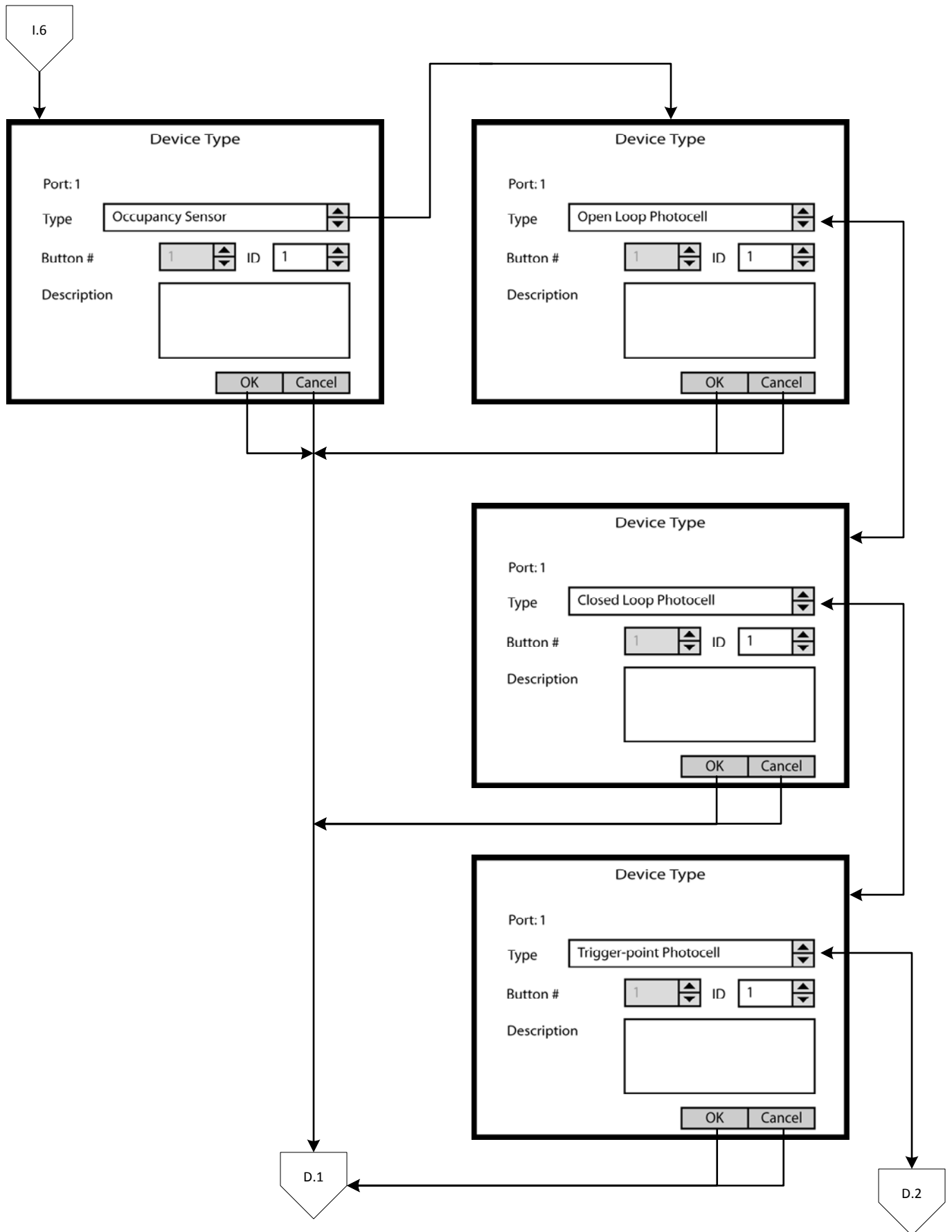












D.2

Device Type

Port: 1

Type

Button #  ID

Description

OK Cancel

Device Type

Port: 1

Type

Button #  ID

Description

OK Cancel

Device Type

Port: 1

Type

Button #  ID

Description

OK Cancel

Device Type

Port: 1

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Device Type

Port: 1

Type

Button #  ID

Description

OK Cancel

Device Type

Port: 1

Type

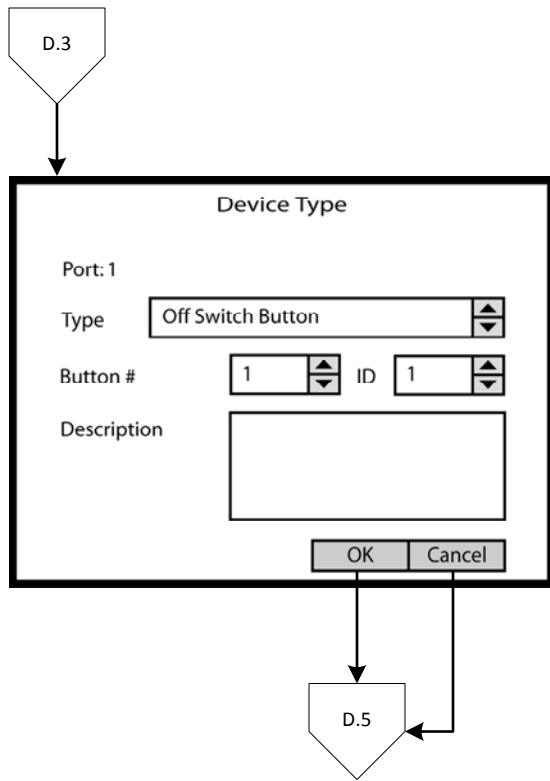
Button #  ID

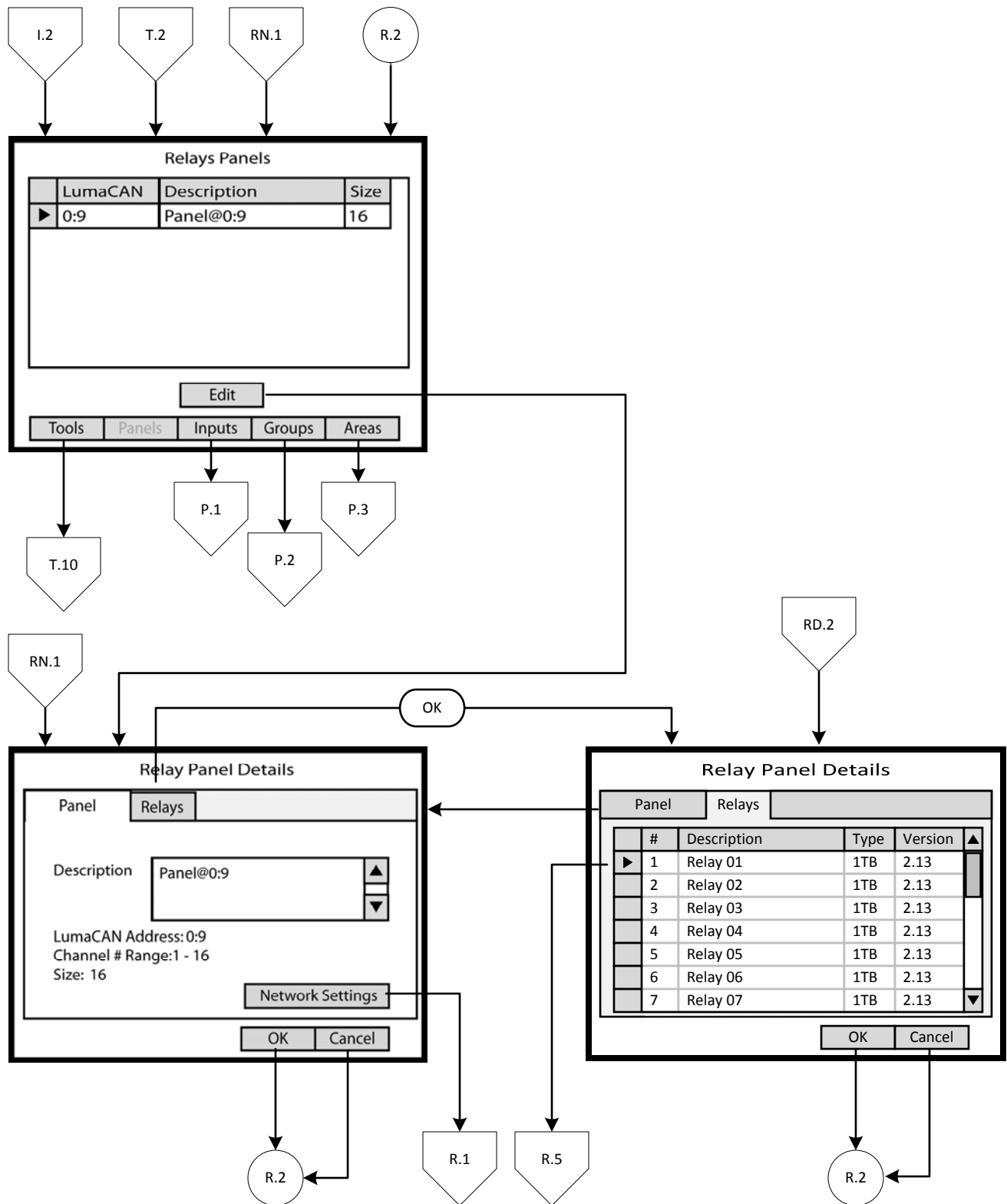
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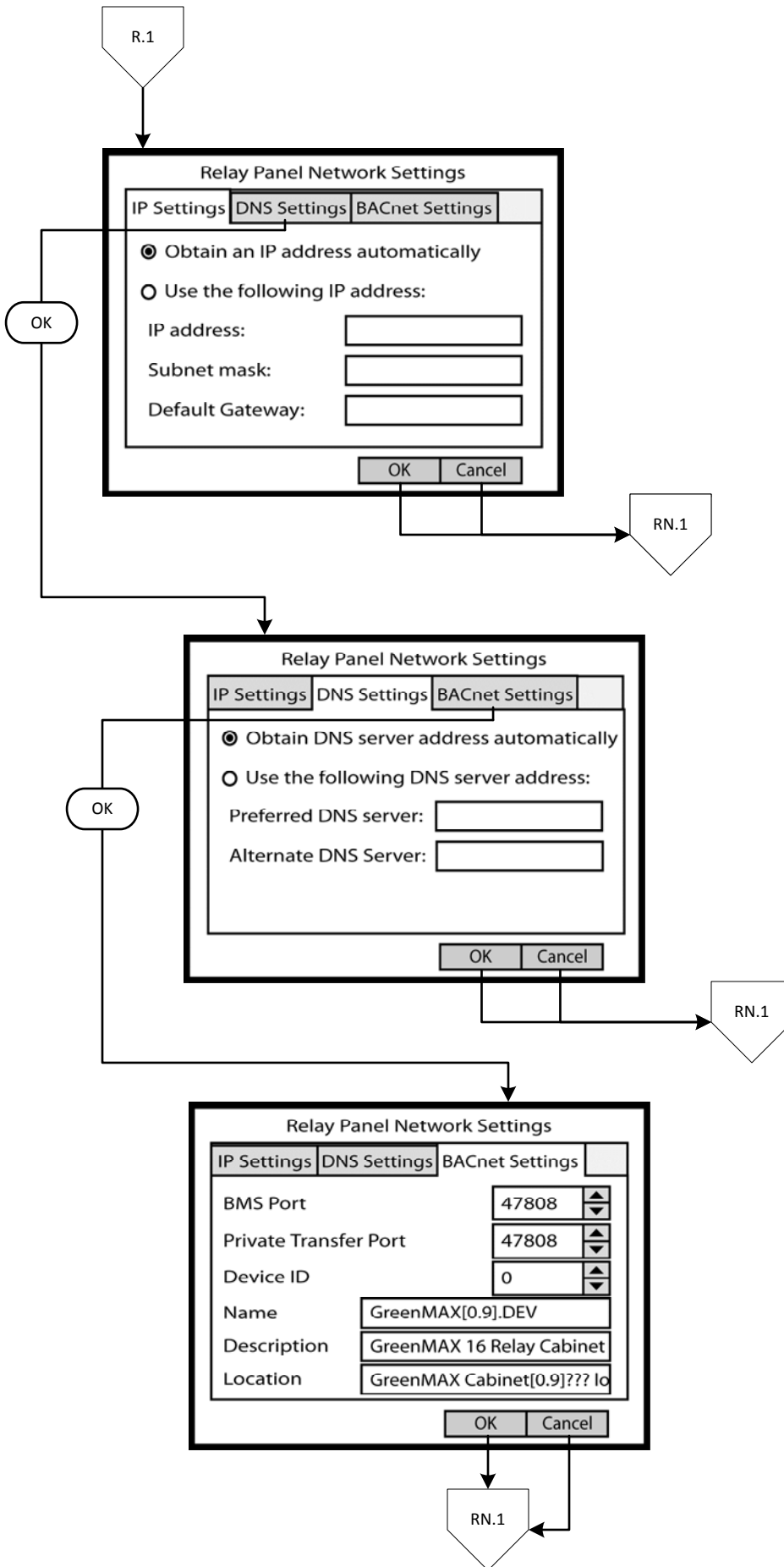
OK Cancel

D.4

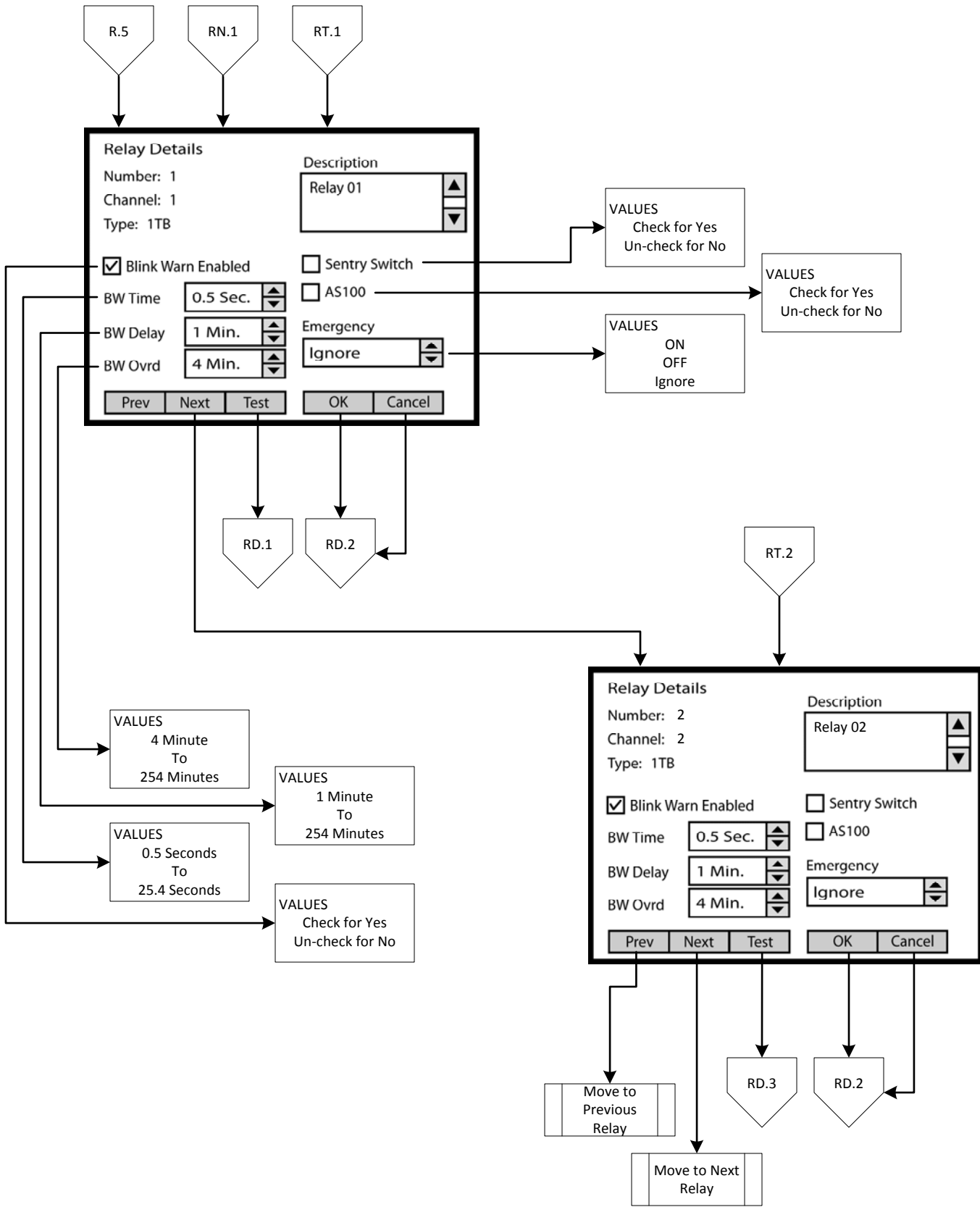
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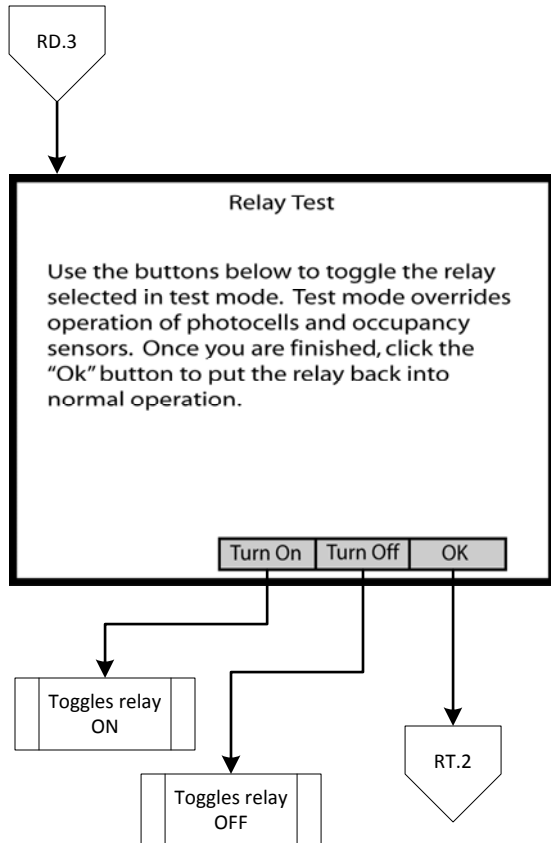
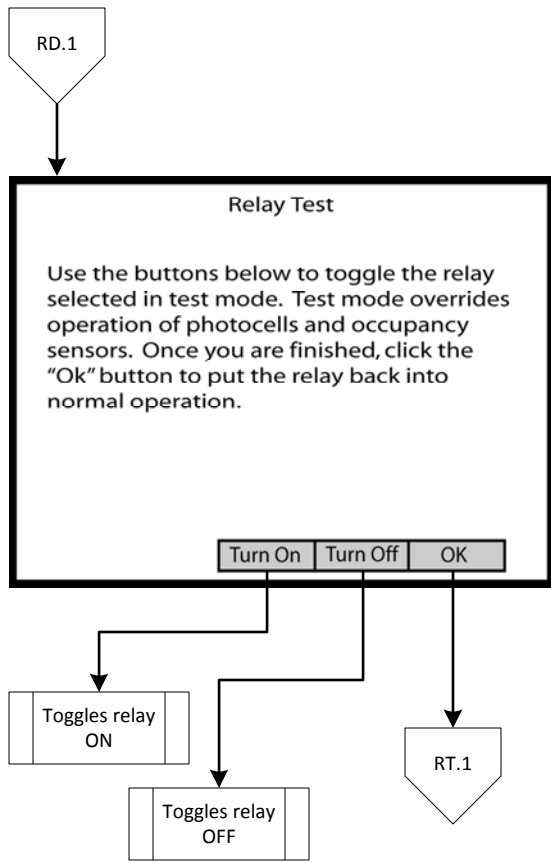


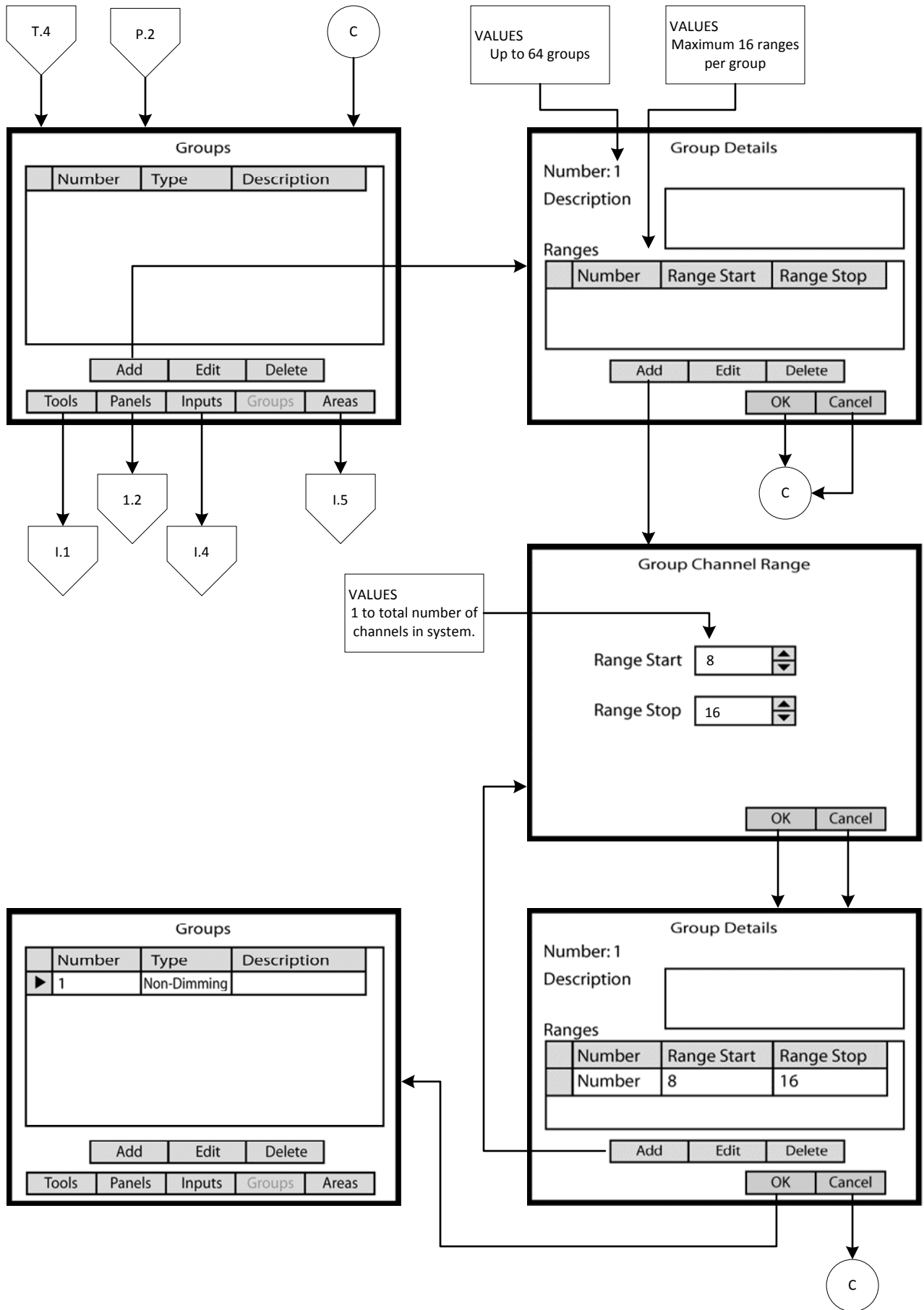


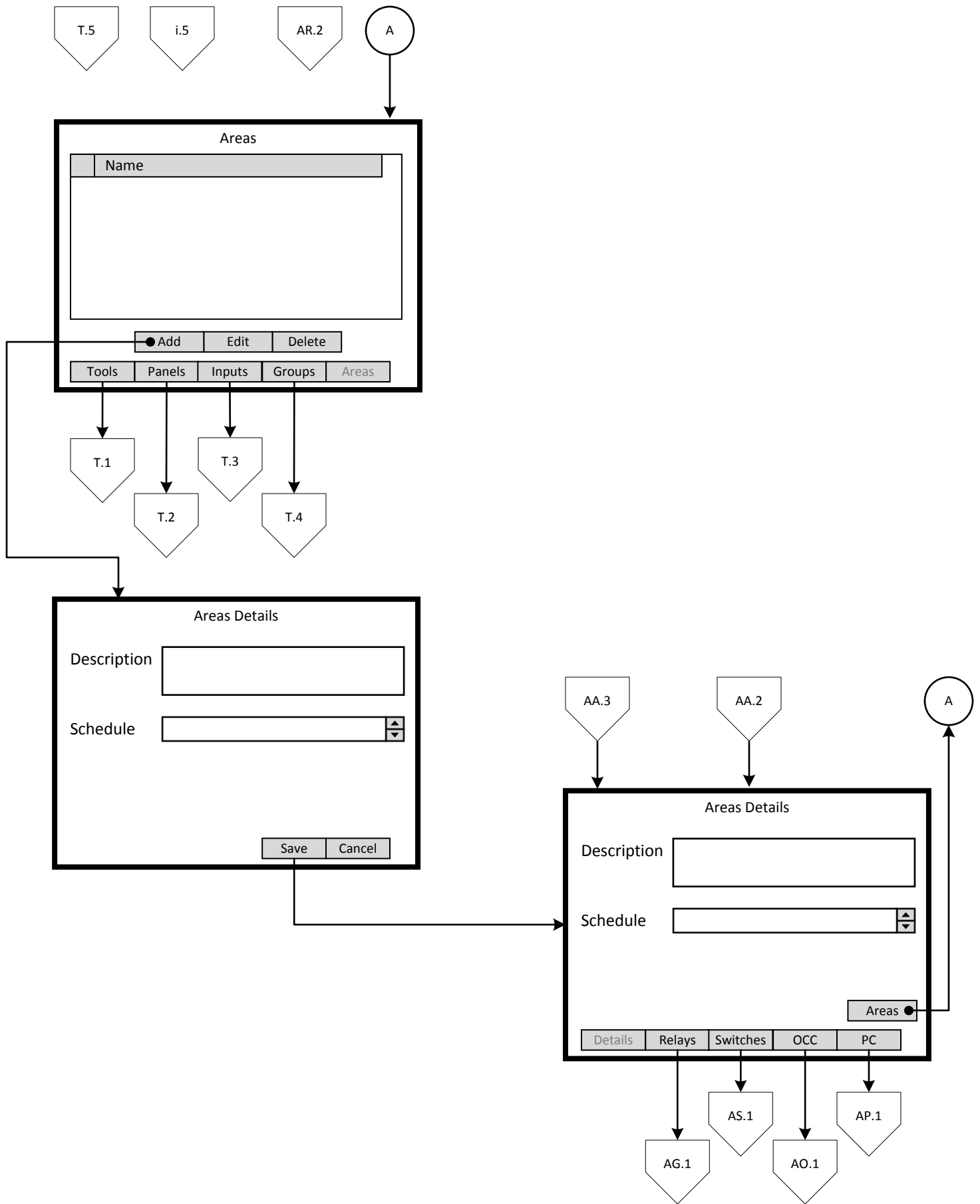


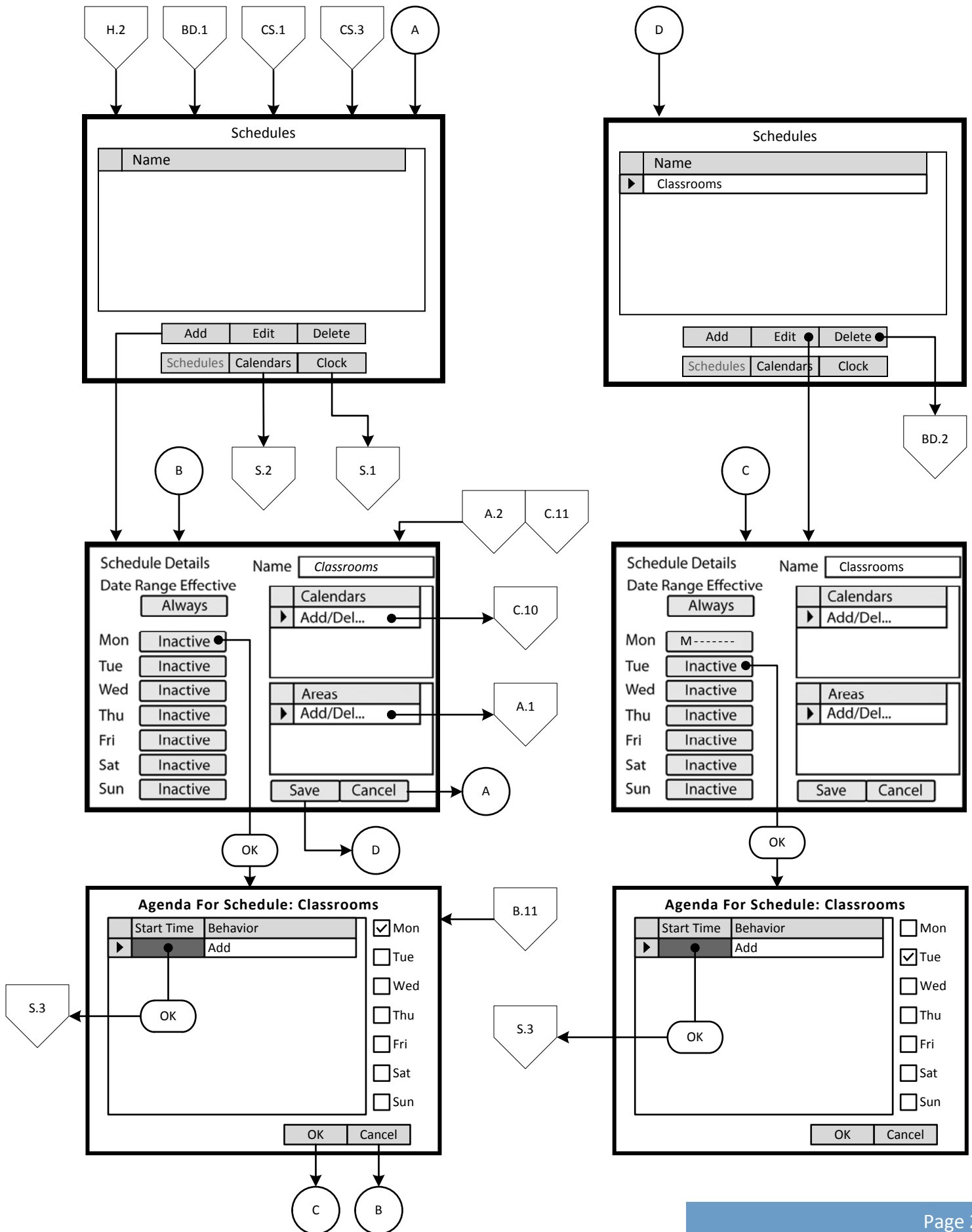


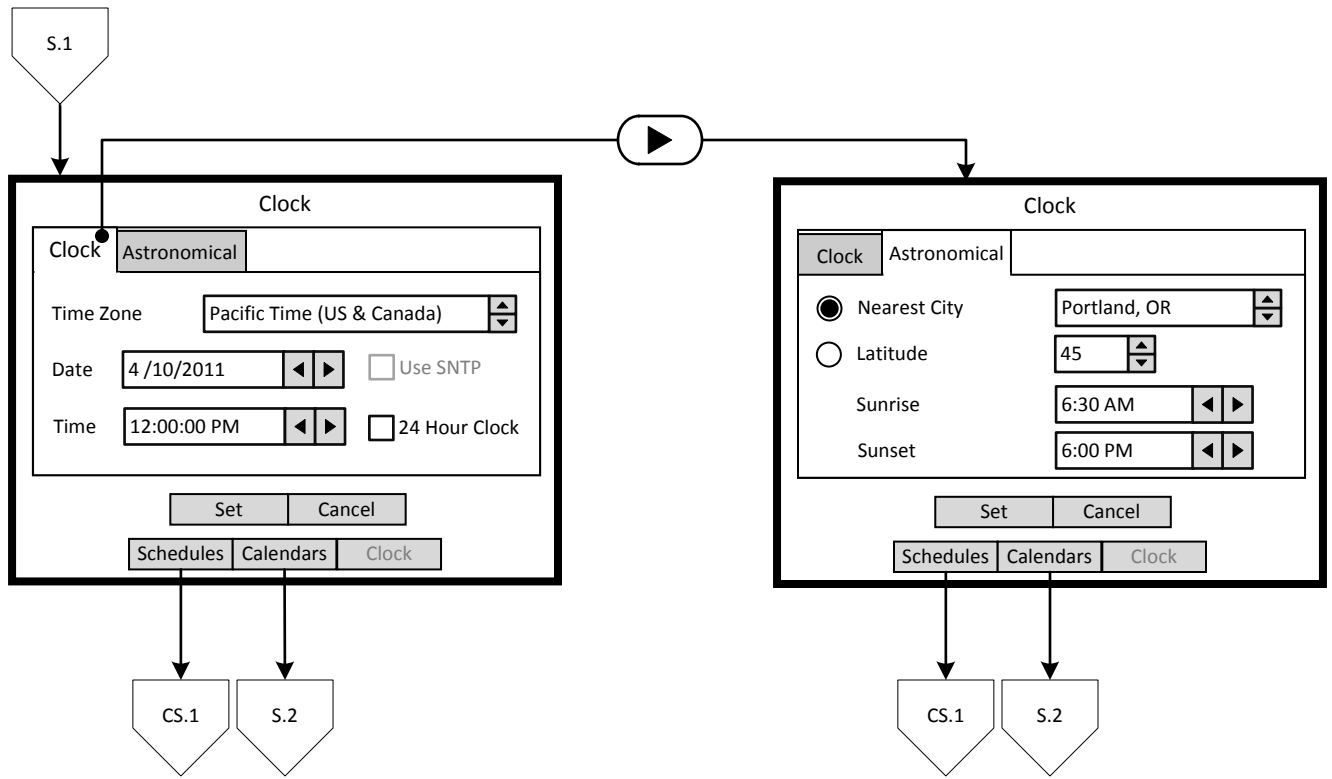


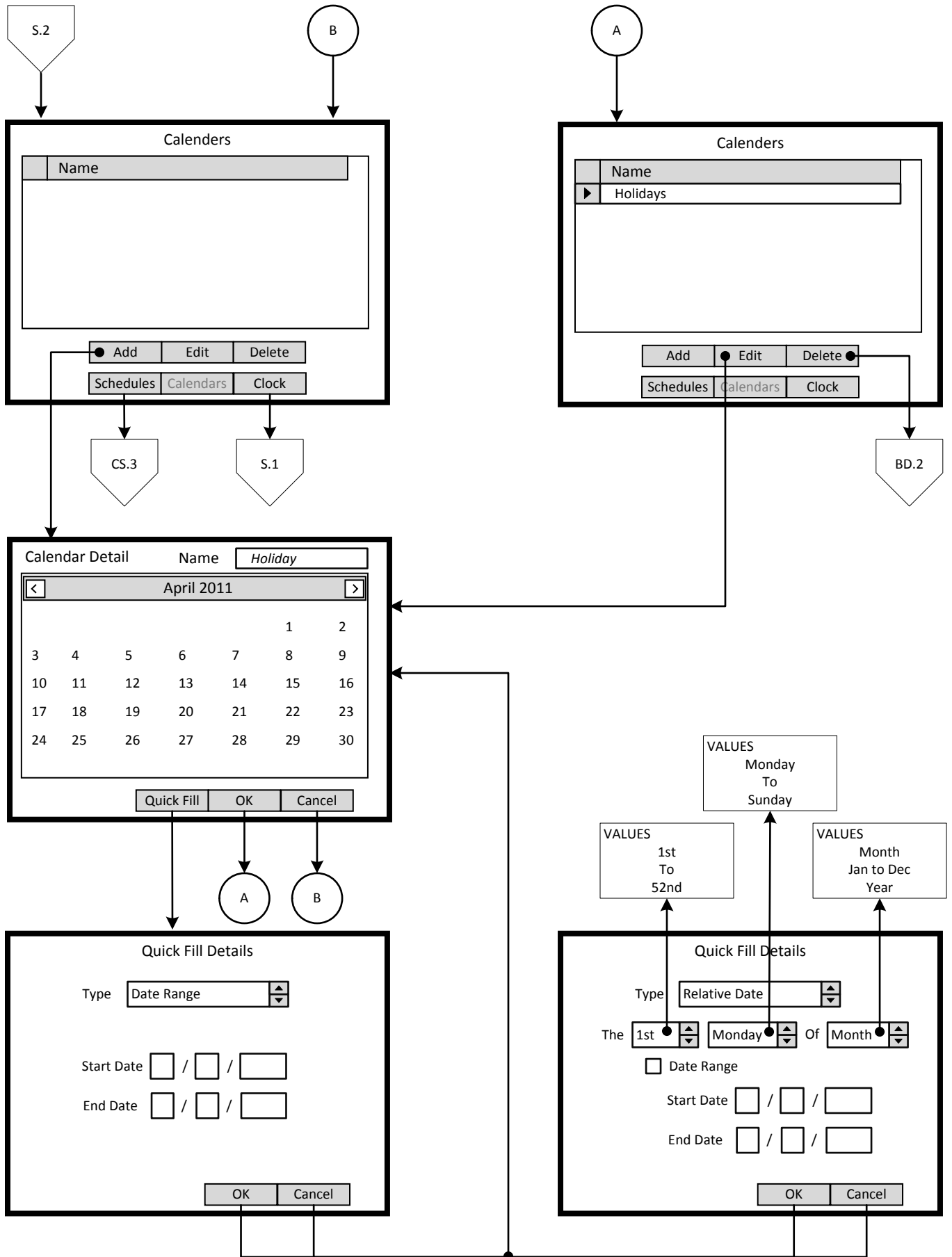


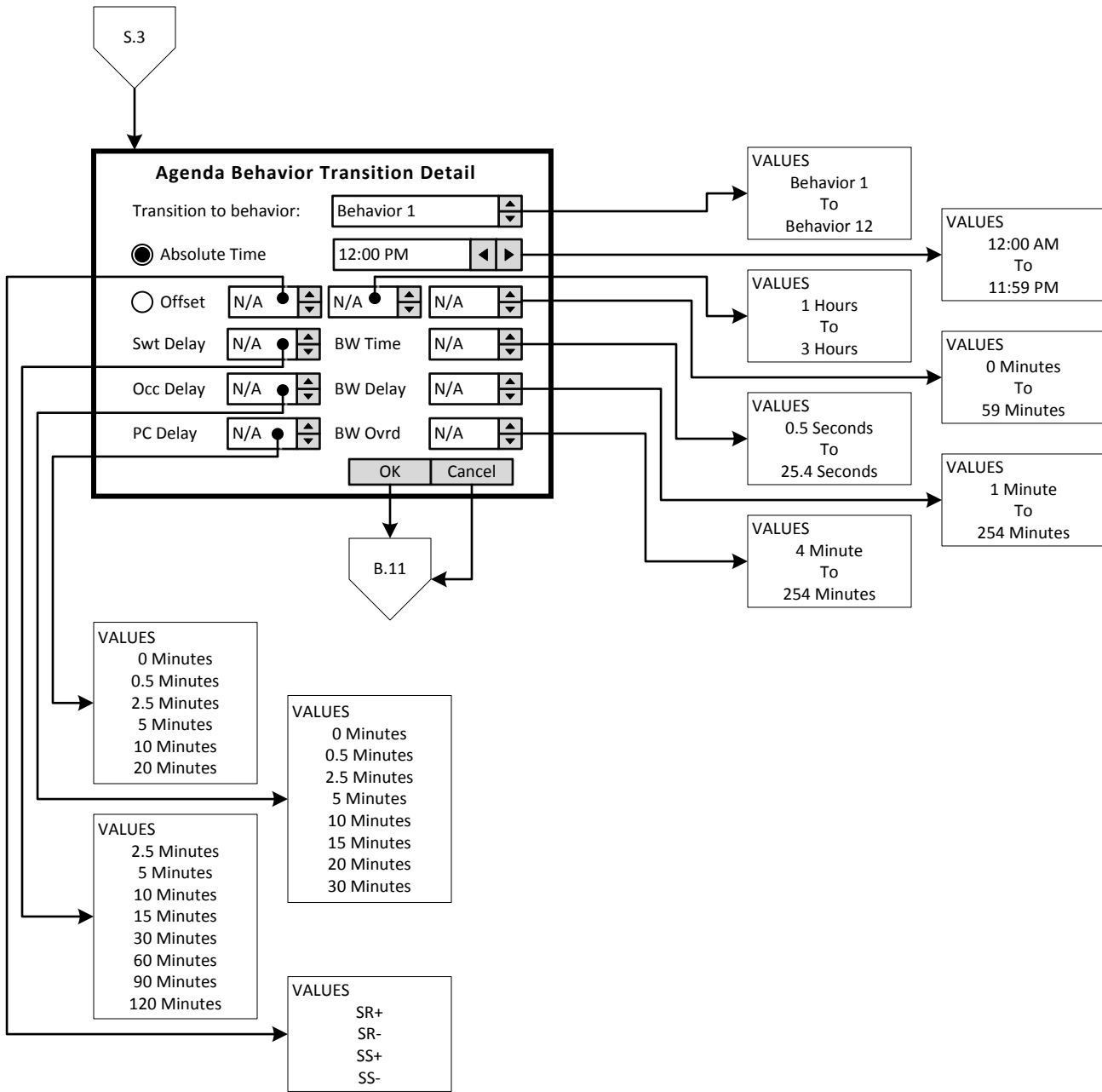




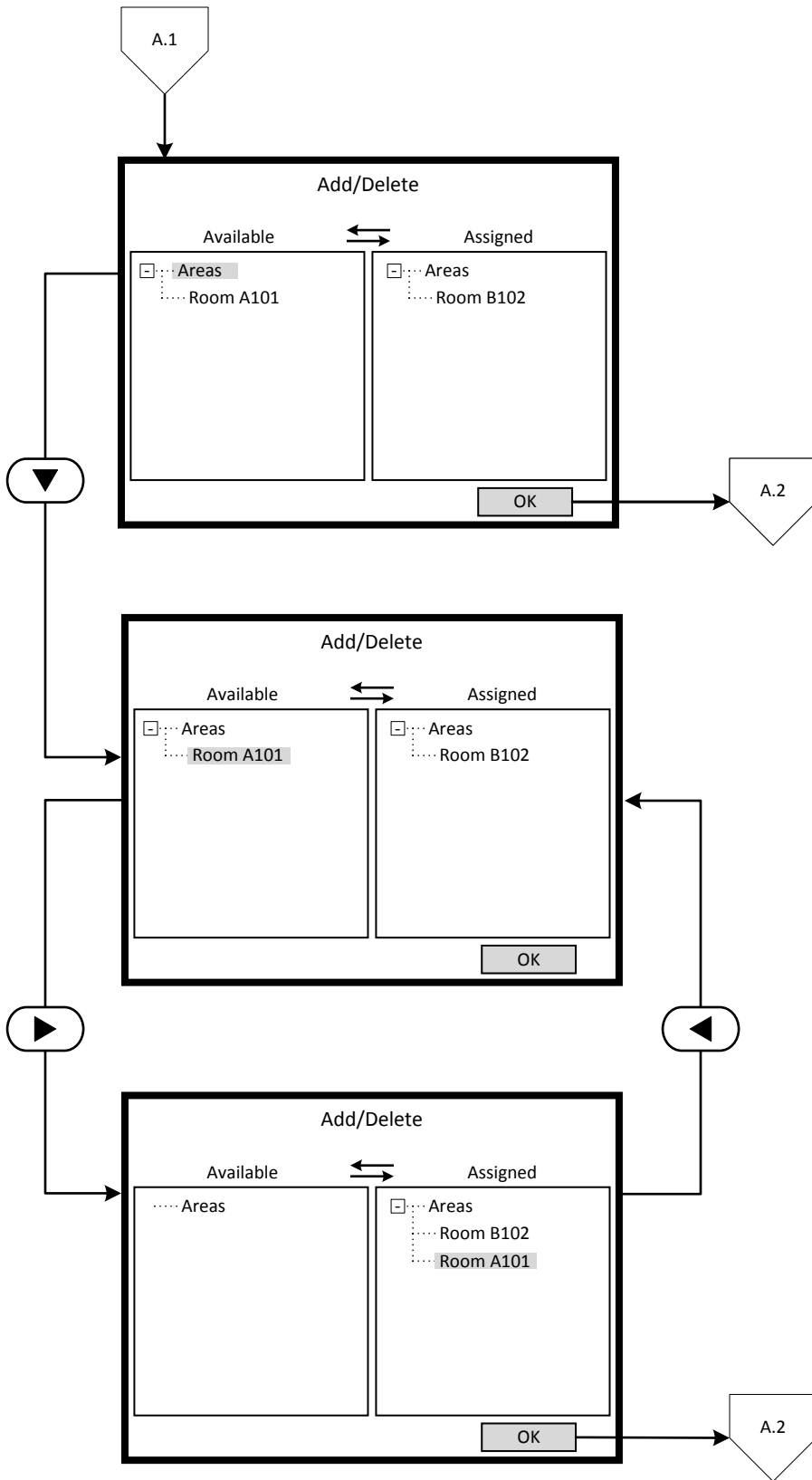


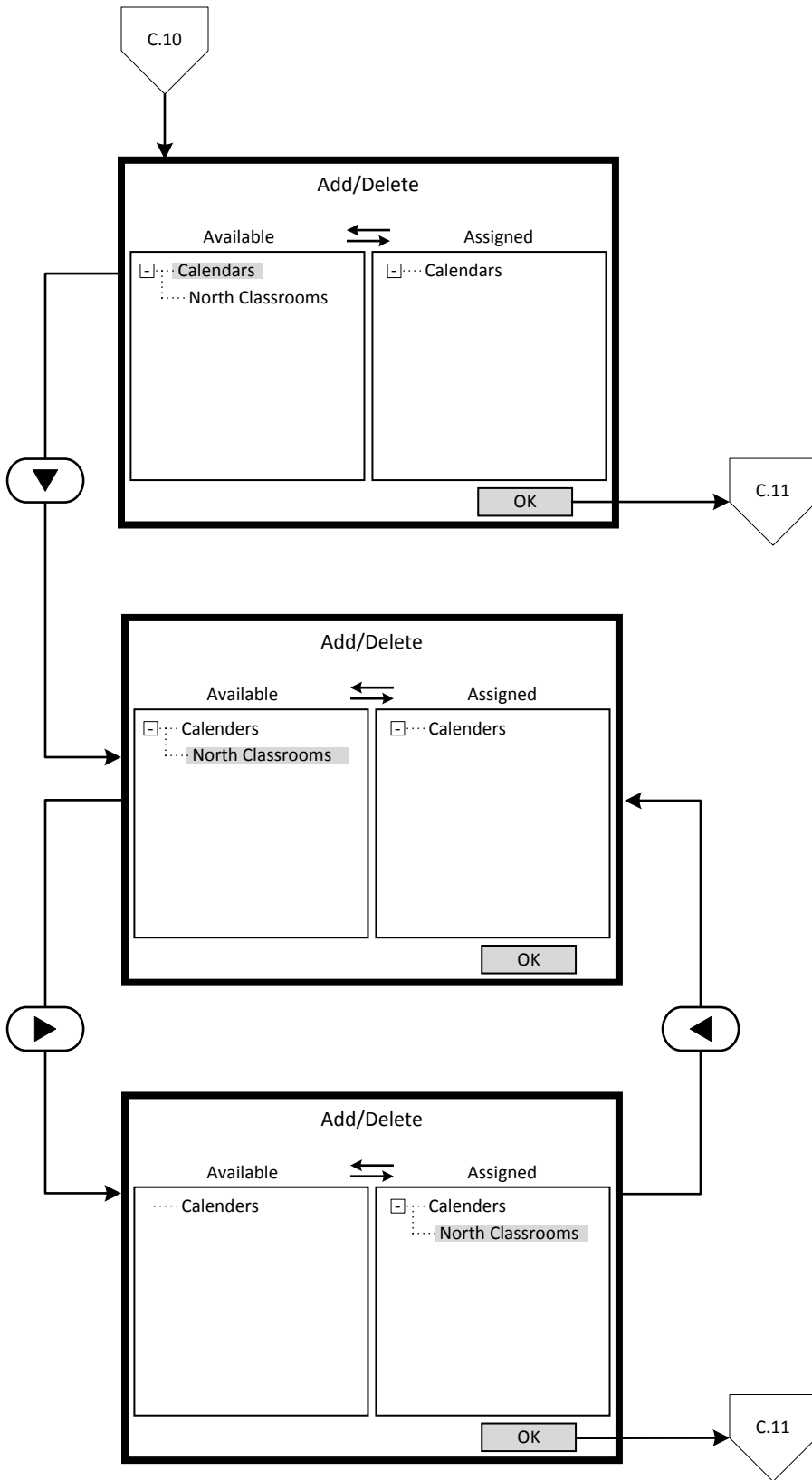


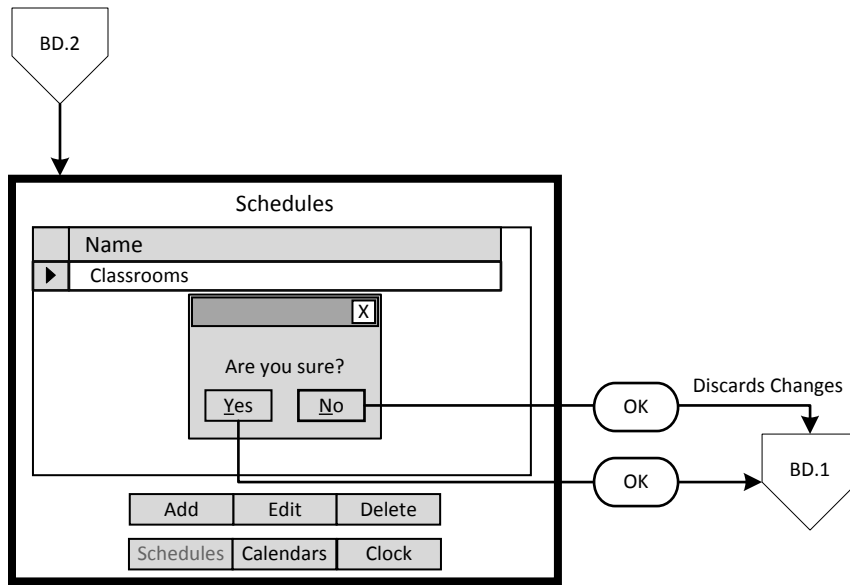


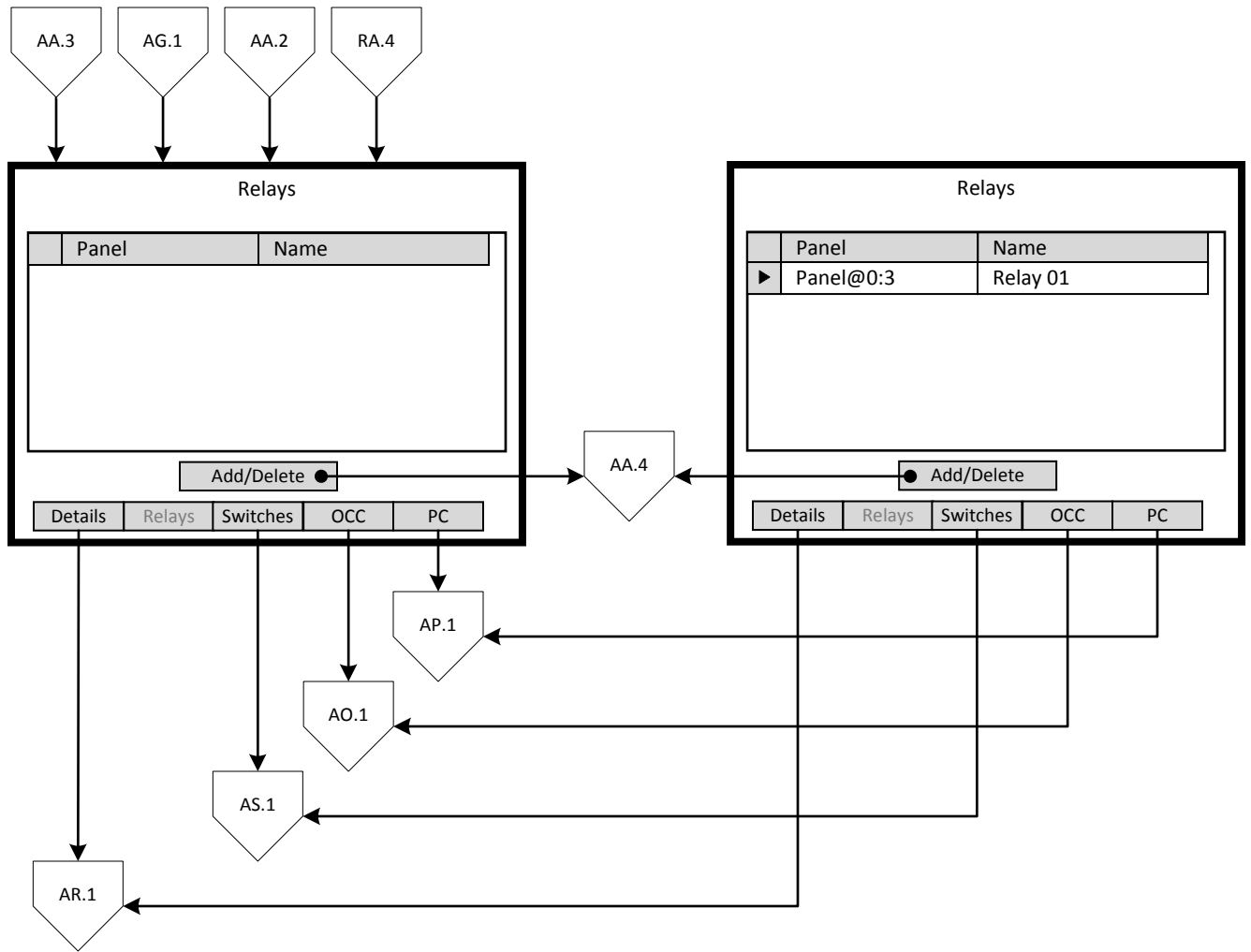


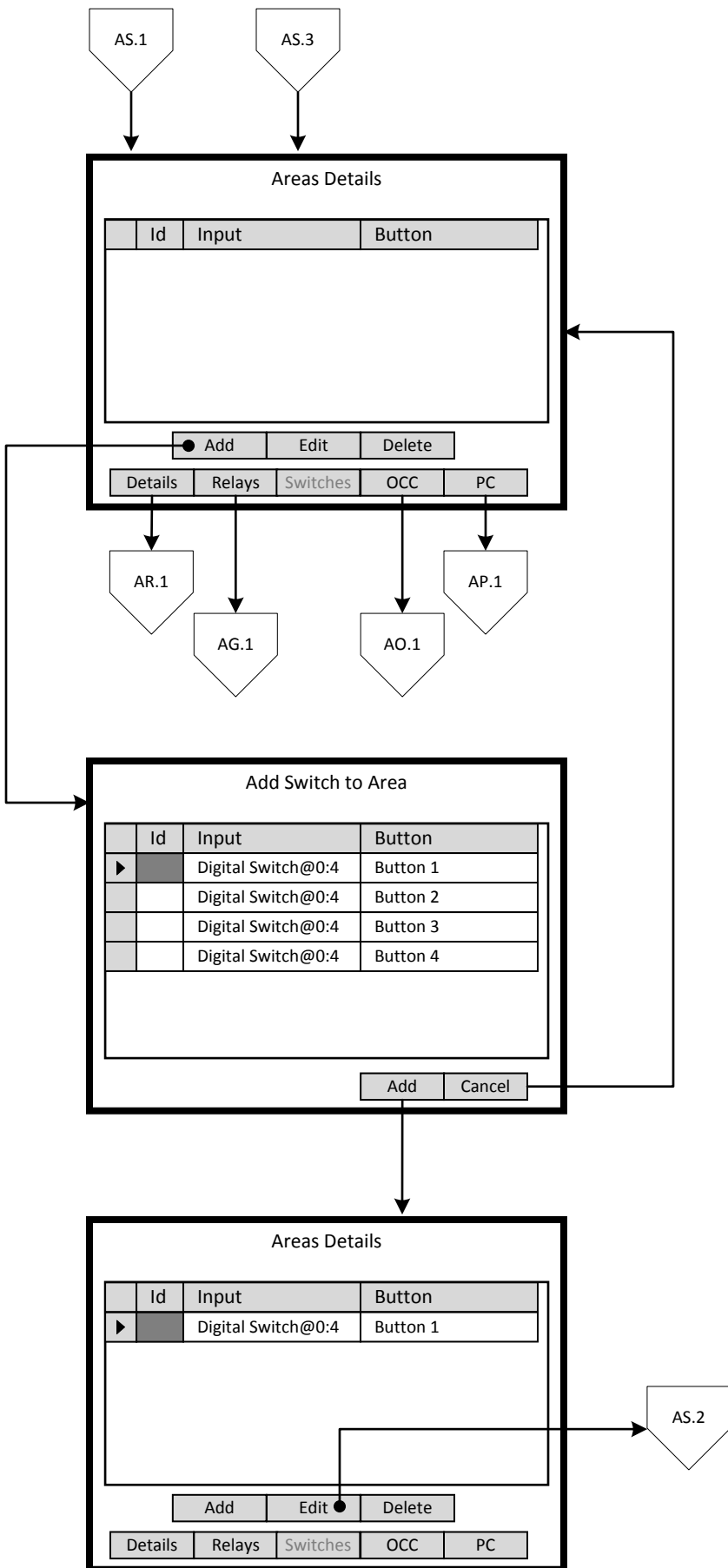


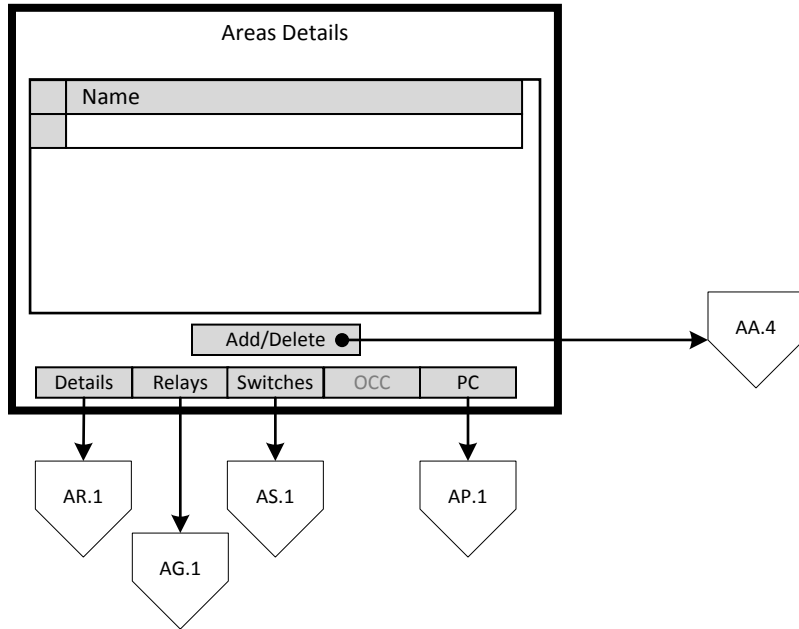
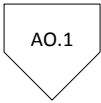


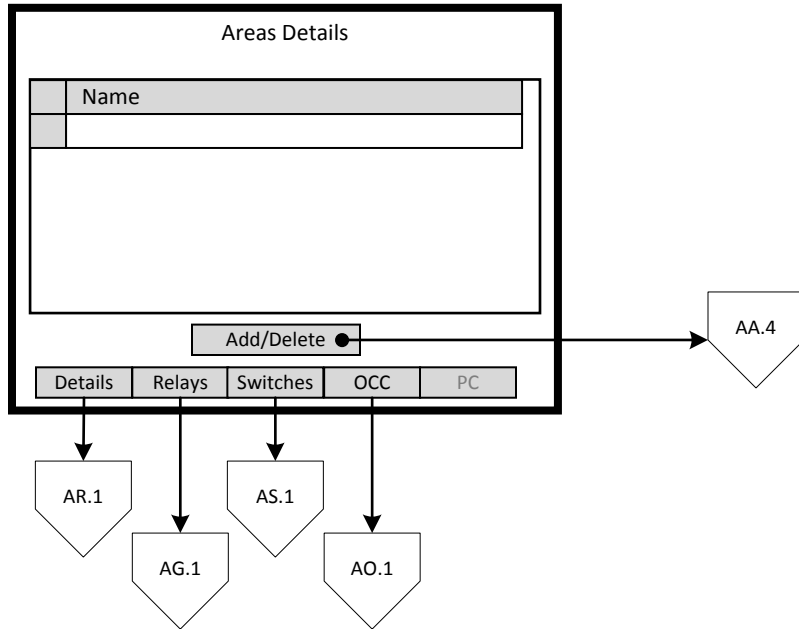
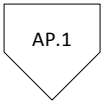


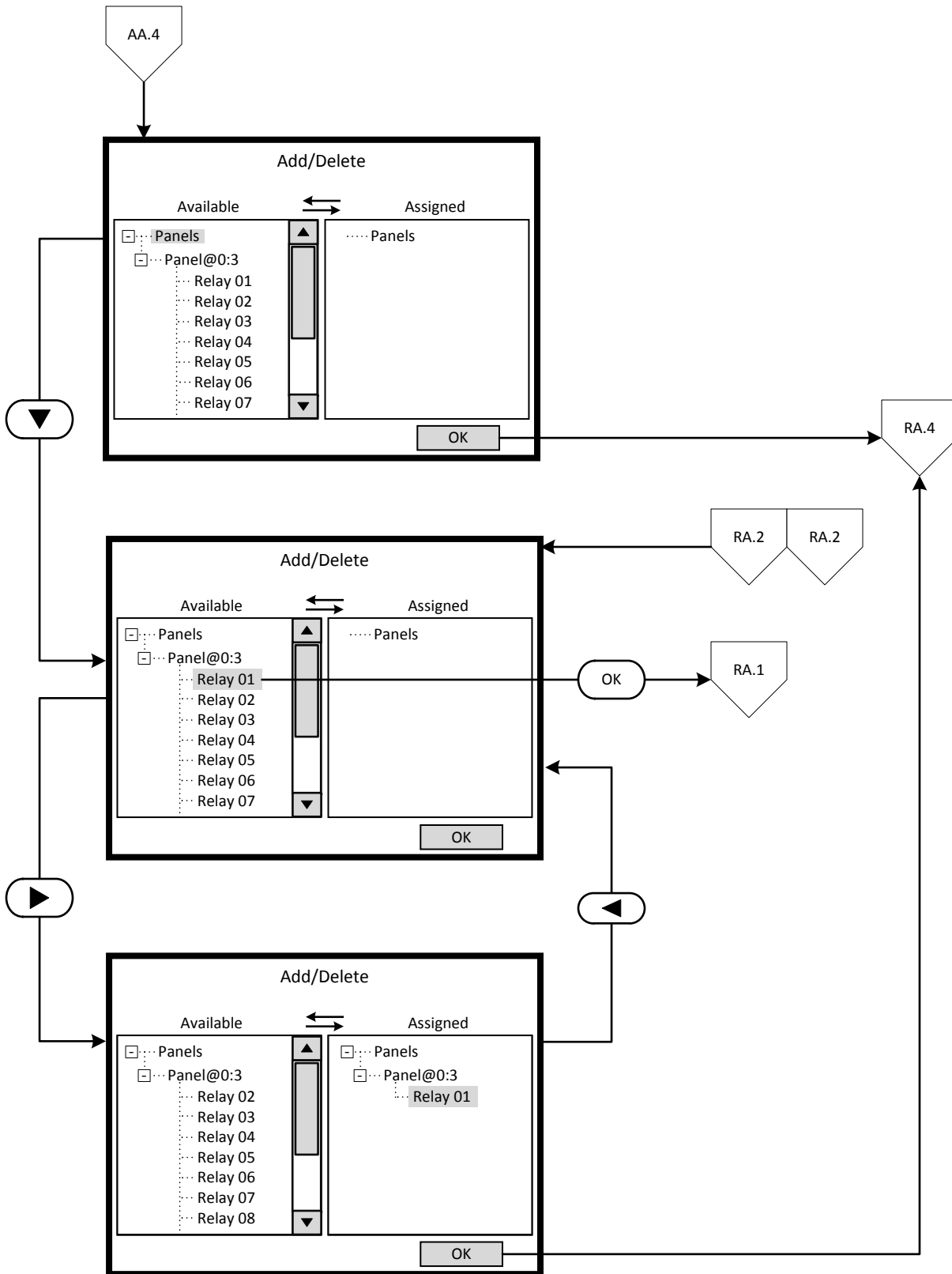




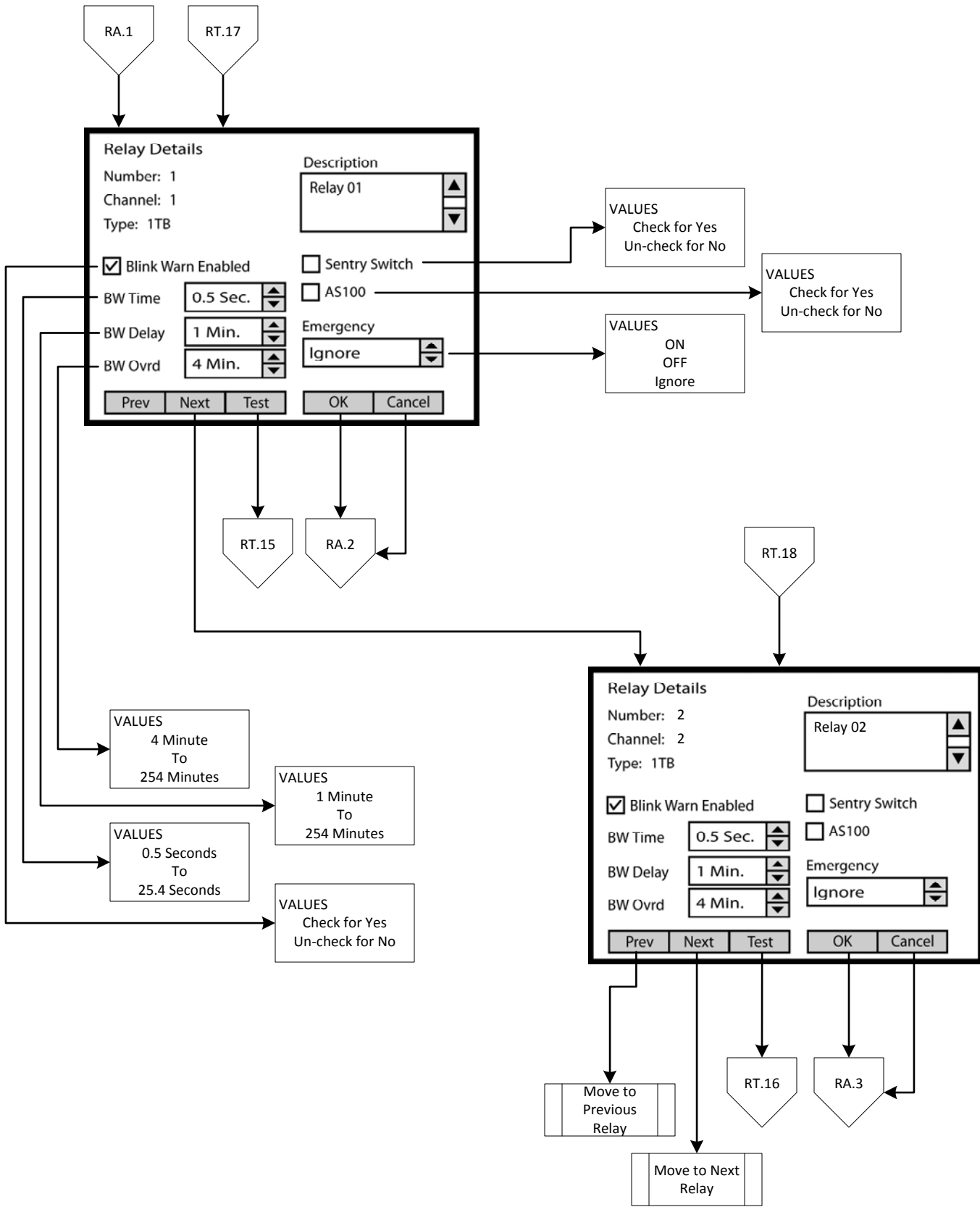


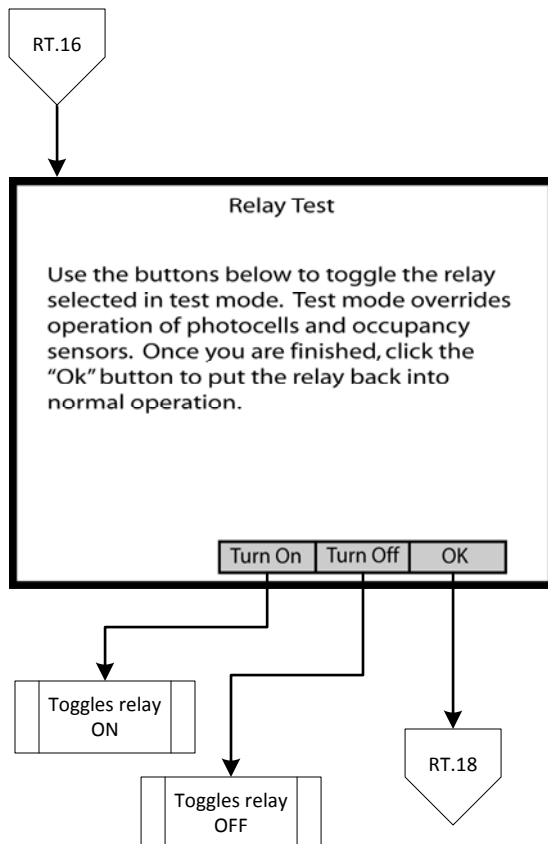
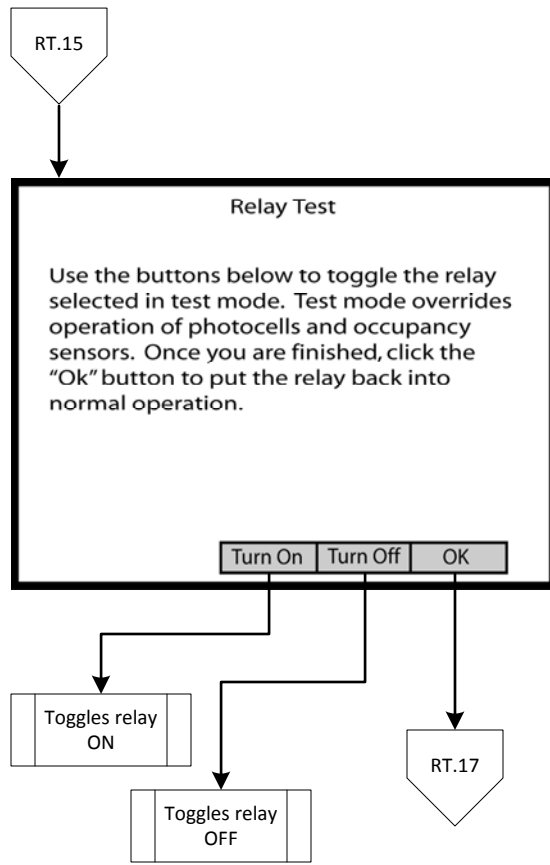


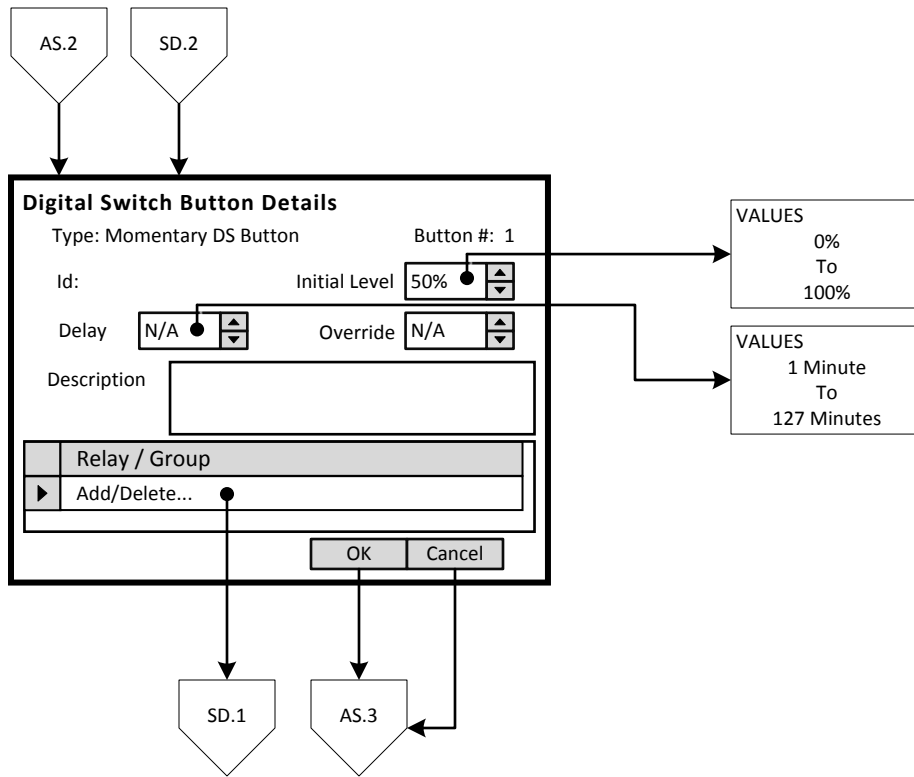


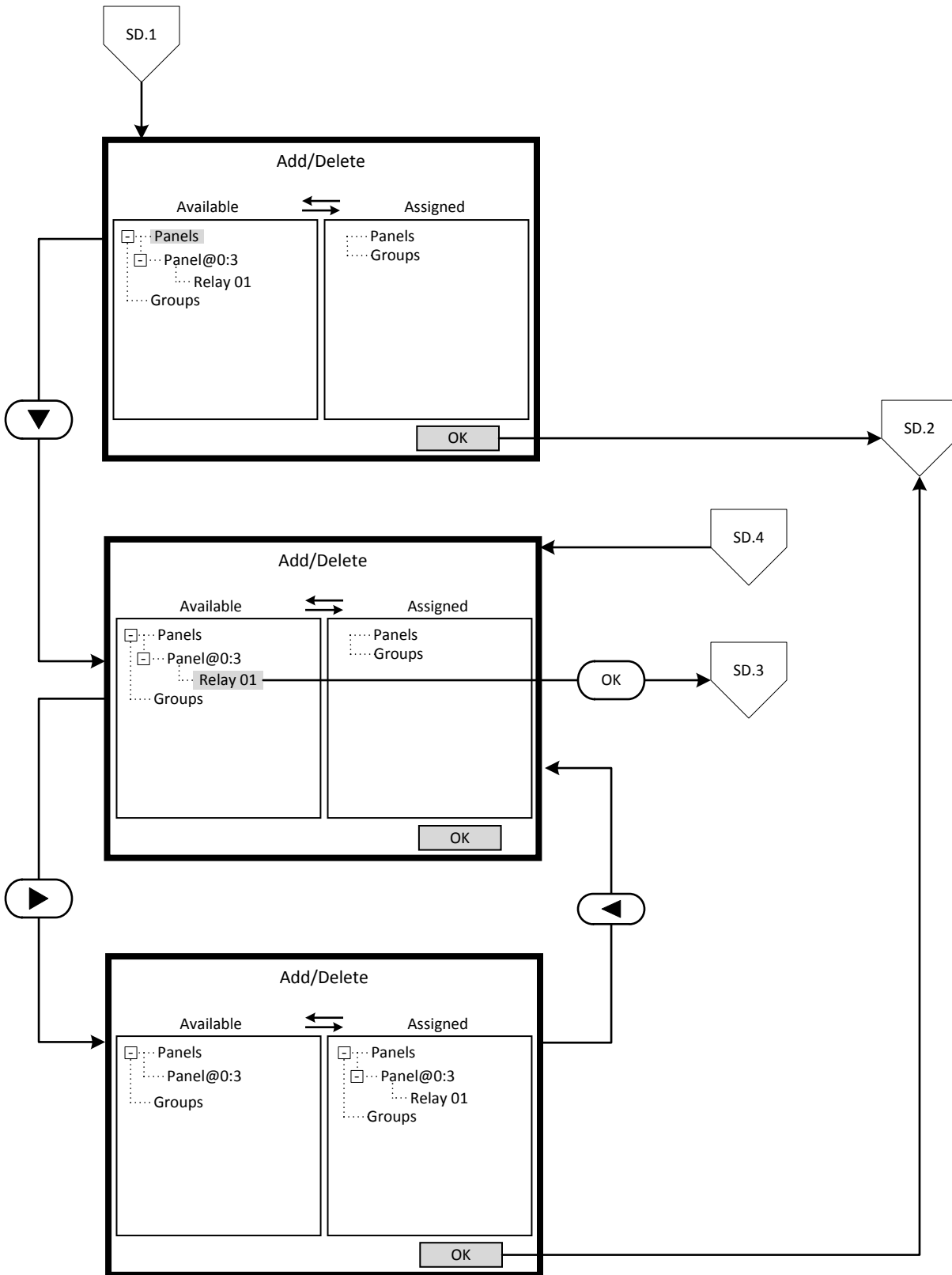


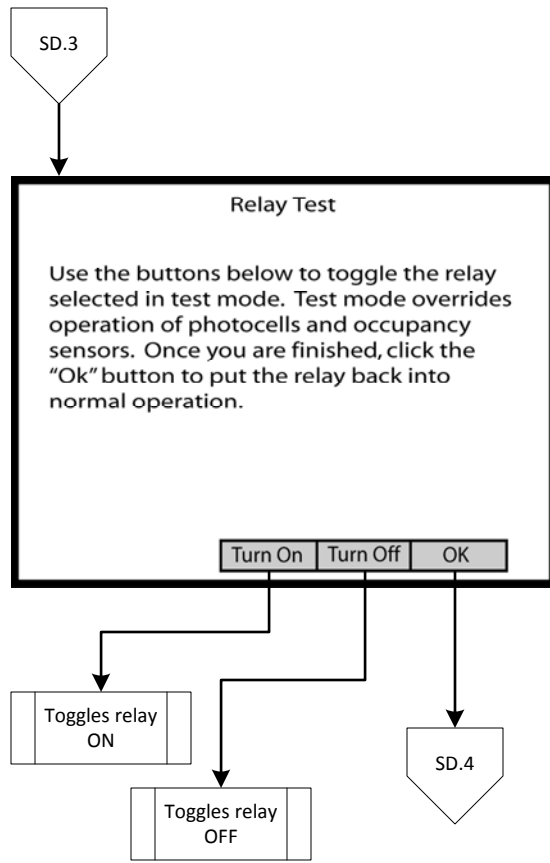












## Programming Concepts

The main phases of programming the GreenMAX are:

- Build Schedules
- Populate Low Voltage Inputs
- Configure Digital Switches
- Build Areas

### Overview of Schedules

Programming operation of the GreenMAX is based on running Schedules. A Schedule can be considered a default seven (7) day pattern of operation

The implementation of the features and functions of GreenMAX is driven by the Scheduling System. This powerful tool provides control of the interaction between system input devices and their associated relays. The list of input devices include occupancy sensors, photocells, and switches.

The main building blocks of programming the Scheduling System:

- Agendas
- Behaviors
- Exception Calendars
- Schedules
- Astronomical Clock
- Time/Date Clock

## Definitions

Agenda	A pattern of Behaviors or list of Behavior Transitions that cover a 24 hour period. Each Agenda provides a maximum of 24 transitions for that period. Time between Transitions can be as short as one minute apart.
Behavior	A predefined control scheme that, when applied to an Area, establishes the interactive priorities among the input devices in that Area. Certain behaviors can change device settings at the time of Transition. The system will stay in the last Behavior until the next Transition is triggered.
Behavior Transition	A point in time that an Agenda triggers an operational change to new Behavior. The transition will only occur in an Area that is assigned to the schedule.
Exceptions Calendar	This is a list of dates that requires specific Agenda that is a departure from the scheduled default Agenda. For example, a list of Holidays that require a unique Agenda.
Schedule	This is a series of seven Agendas corresponding with the days of the week. It is the fundamental or default week that will routinely function. Agendas for dates listed on the Exceptions Calendar will override the default Agenda for that day.
Low Voltage Inputs	Devices that interface with the controlled environment to detect the presence or absence of conditions or people. Devices include occupancy sensors, photocells, low voltage switches, and contact closures. These devices connect to a port on the Low Voltage input card and operate at +24vdc. The input signals from the devices are measured at 0 to +10vdc and can be analog or binary.
Analog Input	This is a signal from a device that will vary in voltage directly proportional to devices' measured detection value. For example, a photocell is used to measure the light level in a space. Full range or maximum light level at the photocell will measure +10vdc and conversely no light level will be 0vdc.
Binary Input	This is a signal from a device that will only have two state or measured voltage levels. Typically these values will be +10vdc (full On signal) or 0vdc (Off signal). An occupancy sensor provides this type of signal, On when occupant is present or Off when no occupant is sensed.
Astronomical Clock	This timing feature tracks the Sunset and Sunrise in the Northern hemisphere as it seasonally changes. The times change or update on a weekly basis. This allows Behavior Transitions based on Sunset and Sunrise times. Offsets from these times are also programmable.
Time/Date Clock	This is the main system clock used to coordinate all Behavior Transitions.

## Definitions

Digital Switch	A manual control switch station that connects to the system via the LumaCan network. They are available in one, two, and four button configurations. Each button on the Digital Switch is programmable for a variety of functions and features.
LumaCan	This is the communication network platform that interconnects all components in the system.
Low Voltage Input Board	This board provides the connection of Low Voltage devices to the system. This board is available in two sizes, 8 and 16 independent inputs.

### Programming Exercise: Classroom

This exercise will be used to demonstrate the steps required to program a GreenMAX system. A school has been selected as the setting for this exercise.

The following details apply to this exercise:

- There are multiple classrooms in the school that will operate on the same schedule.
- All exterior lights will operate on their own schedule.

#### Classroom Schedule

##### **Monday to Friday**

8:00am	Teaching Time	Lights will be controlled by their respective devices: Occupancy Sensors – 10 minute delay Photocells – 35 footcandle target Digital Switches – On/Off, no delay, no blink warn	B10
5:00pm	Janitor Mode	Lights will be controlled by: Occupancy Sensors only – 20 minute delay	B5
11:00pm	OFF sweep	Lights will be turned OFF	B7
11:01pm	Security	Lights will be controlled by: Occupancy Sensors only – 1 minute delay	B5

##### **Saturday & Sunday**

8:00am	Janitor Mode	Lights will be controlled by: Occupancy Sensors only – 20 minute delay	B5
11:00pm	OFF sweep	Lights will be turned OFF	B7
11:01pm	Security	Lights will be controlled by: Occupancy Sensors only – 1 minute delay	B5

#### **Exceptions**

April 11 to April 15, each year

11:01pm	Security	Lights will be controlled by: Occupancy Sensors only – 1 minute delay	B5
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#### Exterior Schedule

SS +30m	Turn ON	Lights will be turned ON	B6
SR +30m	Turn OFF	Lights will be turned OFF	B7



Key  
 <Add> On screen button.  
 -Name- Label of onscreen entry field  
 NEXT Button on keypad

**Step 1: Create a Schedule**

Programming operation of the GreenMAX is based on running Schedules. A Schedule can be considered a default seven (7) day pattern of operation.

The following rules apply:

- An Area requires a Schedule to operate.
- Only one Schedule can be assigned to an Area.
- A Schedule can be assigned to multiple Areas.
- Schedules reside in the GreenMAX system and can be accessed through the Handheld Display Unit (HDU).

**Step 1.1**

To create a Schedule, enter the <Control> section of the Handheld Display Unit (HDU) software.

Understanding the Screen

There are three sections of the HDU software. The sections under the buttons are:

<Monitor> - Used to check the system time/date, relay status

<Control> - Access Scheduling

<Config> - Configuration of system including set-up of Areas

**Step 1.2**

The first <Control> HDU screen lists the existing Schedules available in your GreenMAX System. The screen shown indicates that there are no Schedules available or created.

By navigating to <Add> and pressing OK, this will initiate the creation of a Schedule.

Other Options

To modify an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <Edit> and press OK, to initiate the modification of the selected Schedule.

To delete an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <Delete> and press OK, to erase the selected Schedule.

**Step 1.3**

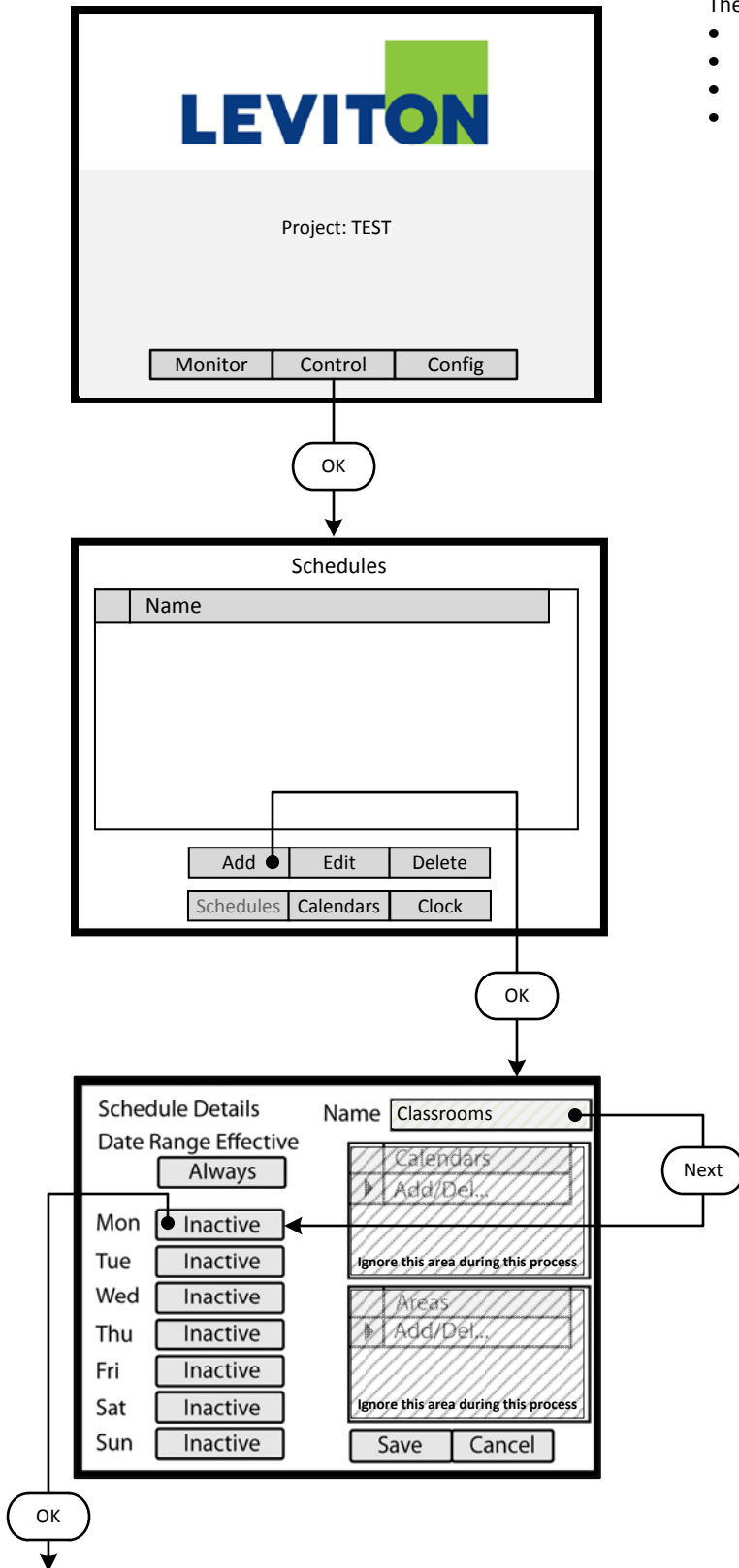
The screen is entered with the -Name- field highlighted. Enter the desired name of your Schedule using the alpha numeric keypad of the HDU. When complete, press the NEXT button on the navigation keypad. The cursor will advance to the <Monday> button.

Understanding the Screen

The label value of "Inactive" shown on the <Monday> button indicates that there is currently no Behavior transitions programmed for this day. The same is true for all days, Monday through Sunday, of this schedule.

There are no Exception Calendars associated with this Schedule.

This Schedule has not been assigned to any Areas.



- Key  
 <Add> On screen button.  
 -Name- Label of onscreen entry field  
 NEXT Button on keypad

**Agenda For Schedule: Classrooms**

Start Time	Behavior
▶ ●	Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

OK Cancel

OK

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 1

Absolute Time 12:00 PM  
 Offset N/A N/A N/A  
 Swt Delay N/A BW Time N/A  
 Occ Delay N/A BW Delay N/A  
 PC Delay N/A BW Ovrd N/A

OK Cancel

Next

Next

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 10

Absolute Time 8:00 AM  
 Offset N/A N/A N/A  
 Swt Delay N/A BW Time N/A  
 Occ Delay 10 BW Delay N/A  
 PC Delay N/A BW Ovrd N/A

OK Cancel

Next

**Step 1.4**

The screen is entered at the first line of the Agenda. There are a total of 24 Behavior Transition times available per day. Clicking OK will advance to the Behavior Transition Detail screen.

Understanding the Screen

*This Agenda only applies to Monday, as shown here.*

<OK> - Will save the settings or changes

<Cancel> - Will discard the changes

**Step 1.5**

The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consultate the Behavior chart in the Manual for descriptions. For this example change to Behavior 10.

Understanding the Screen

<Offset> provides access to Sunrise and Sunset settings for Astronomical clock times.

-BW Time-, -BW Delay-, -BW Ovrd- - These are the Blinkwarn settings that apply to this Behavior Transition only. They will override the Global Blinkwarn Settings set in the System Settings section.

**Step 1.6**

Use a combination of the UP and DOWN arrows as well as the NEXT button to change the time to 8:00 AM. When complete, use the NEXT button to navigate to the -Occ Delay- field. Adjust this setting to 10 minutes.

Understanding the Screen

-Swt Delay- is used if the switch in the associated Area is to function as a Timed Off switch. This is the amount of time the lights will stay On after a button press, and before they will turn Off.

-Occ Delay- This is the amount of time the lights will stay On after the occupancy sensor does not detect occupancy and before they will turn Off.

-PC Delay- This is the amount of time the lights will stay On after the photocell trigger point is exceeded and before they will turn Off.

- Key
- <Add> On screen button.
- Name- Label of onscreen entry field
- NEXT Button on keypad

**Agenda For Schedule: Classrooms**

Start Time	Behavior
8:00 AM	Behavior 10
	Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

OK Cancel

OK

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 1

Absolute Time 12:00 PM

Offset N/A N/A N/A

Swt Delay N/A BW Time N/A

Occ Delay N/A BW Delay N/A

PC Delay N/A BW Ovrld N/A

OK Cancel

Next

Next

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 5

Absolute Time 5:00 PM

Offset N/A N/A N/A

Swt Delay N/A BW Time N/A

Occ Delay 20 BW Delay N/A

PC Delay N/A BW Ovrld N/A

OK Cancel

Next

Next

**Step 1.7**

Navigate to the Add line of the list, in this case the second line. Click OK to advance to the Behavior Transition Detail screen.

Understanding the Screen

*This Agenda only applies to Monday, as shown here. A transition to Behavior 10 will occur Monday at 8:00 AM.*

**Step 1.8**

The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consultate the Behavior chart in the Manual for descriptions. For this example change to Behavior 5.

**Step 1.9**

Use a combination of the UP and DOWN arrows as well as the NEXT button to change the time to 5:00 PM. When complete, use the NEXT button to navigate to the -Occ Delay- field. Enter the value of 20 minutes.

- Key
- <Add> On screen button.
- Name- Label of onscreen entry field
- NEXT Button on keypad

**Agenda For Schedule: Classrooms**

Start Time	Behavior
8:00 AM	Behavior 10
5:00 PM	Behavior 5
▶	Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

OK Cancel

OK

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 1

Absolute Time 12:00 PM

Offset N/A N/A N/A

Swt Delay N/A BW Time N/A

Occ Delay N/A BW Delay N/A

PC Delay N/A BW Ovrd N/A

OK Cancel

Next

Next

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 7

Absolute Time 11:00 PM

Offset N/A N/A N/A

Swt Delay N/A BW Time N/A

Occ Delay N/A BW Delay N/A

PC Delay N/A BW Ovrd N/A

OK Cancel

Next

**Step 1.10**

Navigate to the Add line of the list, in this case the second line. Click OK to advance to the Behavior Transition Detail screen.

Understanding the Screen

*This Agenda only applies to Monday, as shown here. A transition to Behavior 10 will occur Monday at 8:00 AM. A transition to Behavior 5 will occur Monday at 11:00 PM.*

**Step 1.11**

The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consultate the Behavior chart in the Manual for descriptions. For this example change to Behavior 7.

**Step 1.12**

Use a combination of the UP and DOWN arrows as well as the NEXT button to change the time to 11:00 PM. When complete, use the NEXT button to navigate to the <OK> onscreen button.

- Key
- <Add> On screen button.
- Name- Label of onscreen entry field
- NEXT Button on keypad

**Agenda For Schedule: Classrooms**

Start Time	Behavior	
8:00 AM	Behavior 10	<input checked="" type="checkbox"/> Mon
5:00 PM	Behavior 5	<input type="checkbox"/> Tue
11:00 PM	Behavior 7	<input type="checkbox"/> Wed
▶	●	Add
		<input type="checkbox"/> Thu
		<input type="checkbox"/> Fri
		<input type="checkbox"/> Sat
		<input type="checkbox"/> Sun

OK Cancel

OK

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 1

Absolute Time 12:00 PM

Offset N/A N/A N/A

Swt Delay N/A BW Time N/A

Occ Delay N/A BW Delay N/A

PC Delay N/A BW Ovrđ N/A

OK Cancel

Next

Next

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 5

Absolute Time 11:01 PM

Offset N/A N/A N/A

Swt Delay N/A BW Time N/A

Occ Delay 1 BW Delay N/A

PC Delay N/A BW Ovrđ N/A

OK Cancel

Next

Next

**Step 1.13**

Navigate to the Add line of the list, in this case the second line. Click OK to advance to the Behavior Transition Detail screen.

Understanding the Screen

*This Agenda only applies to Monday, as shown here.  
 A transition to Behavior 10 will occur Monday at 8:00 AM.  
 A transition to Behavior 5 will occur Monday at 5:00 PM.  
 A transition to Behavior 7 will occur Monday at 11:00 PM.*

**Step 1.14**

The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consultate the Behavior chart in the Manual for descriptions. For this example change to Behavior 5.

**Step 1.15**

Use a combination of the UP and DOWN arrows as well as the NEXT button to change the time to 11:01 PM. When complete, use the NEXT button to navigate to the -Occ Delay- field. Adjust this setting to 1 minute.

- Key
- <Add> On screen button.
- Name- Label of onscreen entry field
- NEXT Button on keypad

**Agenda For Schedule: Classrooms**

Start Time	Behavior
8:00 AM	Behavior 10
5:00 PM	Behavior 5
11:00 PM	Behavior 7
11:01 PM	Behavior 5
▶	Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

Next

**Agenda For Schedule: Classrooms**

Start Time	Behavior
8:00 AM	Behavior 10
5:00 PM	Behavior 5
11:00 PM	Behavior 7
11:01 PM	Behavior 5
▶	Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

Next  
OK

**Agenda For Schedule: Classrooms**

Start Time	Behavior
8:00 AM	Behavior 10
5:00 PM	Behavior 5
11:00 PM	Behavior 7
11:01 PM	Behavior 5
▶	Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

**Step 1.16**

To apply this Agenda or pattern of Behavior to each day of the week press Next to advance to the Day column.

Understanding the Screen

*This Agenda only applies to Monday, as shown here.  
 A transition to Behavior 10 will occur Monday at 8:00 AM.  
 A transition to Behavior 5 will occur Monday at 5:00 PM.  
 A transition to Behavior 7 will occur Monday at 11:00 PM.  
 A transition to Behavior 5 will occur Monday at 11:01 PM.*

**Step 1.17**

Press Next to the -Tuesday- check box.  
 Press -OK- to check the box, this will add Tuesday to the active list.

Repeat this button press combination to fill all check boxes (Mon thru Fri)

**Step 1.18**

Use a combination of the NEXT and OK to fill in the Tuesday through Friday check boxes.

Understanding the Screen

*This Agenda only applies to Monday through Friday.  
 A transition to Behavior 10 will occur Monday at 8:00 AM.  
 A transition to Behavior 5 will occur Monday at 5:00 PM.  
 A transition to Behavior 7 will occur Monday at 11:00 PM.  
 A transition to Behavior 5 will occur Monday at 11:01 PM.*

Key  
 <Add> On screen button.  
 -Name- Label of onscreen entry field  
 NEXT Button on keypad

**Step 1.19**

To save the Schedule, press the NEXT button on the navigation keypad to advance to the <Save> button.

Understanding the Screen

The label value of "Inactive" shown on the <Saturday> and <Sunday> button indicates that there are currently no Behavior transitions programmed for this day.

The "MTWTF--" on the <Monday> through <Friday> indicate that the same Agenda applies to each of these days.

There are no Exception Calendars associated with this Schedule.

This Schedule has not been assigned to any Areas.

**Step 1.20**

The Classrooms Schedule must be modified to include a specific Agenda for both Saturday and Sunday. Highlight the Classroom Schedule on the list of available Schedules in the GreenMAX system. Navigate to the <Edit> button by pressing NEXT and then press OK.

Other Options

To add a new Schedule, navigate to <Add> and press OK, to initiate the addition of a Schedule.

To delete an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <Delete> and press OK, to erase the selected Schedule.

OK

**Step 1.21**

The screen is entered in the -Name- button highlighted. Navigate by pressing the NEXT button on the navigation keypad to advance to the <Saturday> button.

- Key  
 <Add> On screen button.  
 -Name- Label of onscreen entry field  
 NEXT Button on keypad

**Agenda For Schedule: Classrooms**

Start Time	Behavior
▶	● Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

OK Cancel

OK

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 1

Absolute Time 12:00 PM

Offset N/A N/A N/A

Swt Delay N/A BW Time N/A

Occ Delay N/A BW Delay N/A

PC Delay N/A BW Ovrđ N/A

OK Cancel

Next

Next

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 5

Absolute Time 8:00 AM

Offset N/A N/A N/A

Swt Delay N/A BW Time N/A

Occ Delay 10 BW Delay N/A

PC Delay N/A BW Ovrđ N/A

OK Cancel

Next

Next

**Step 1.22**

The screen is entered at the first line of the Agenda. There are a total of 24 Behavior Transition times available per day. Clicking OK will advance to the Behavior Transition Detail screen.

Understanding the Screen

*This Agenda only applies to Saturday, as shown here.*

<OK> - Will save the settings or changes

<Cancel> - Will discard the changes

**Step 1.23**

The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consultate the Behavior chart in the Manual for descriptions. For this example change to Behavior 5.

Understanding the Screen

*<Absolute Time> setting for a specific time of the day to trigger a Behavior Transition.*

**Step 1.24**

Use a combination of the UP and DOWN arrows as well as the NEXT button to change the time to 8:00 AM. When complete, use the NEXT button to navigate to the -Occ Delay- field. Adjust this setting to 10 minutes.

Understanding the Screen

*-Occ Delay- This is the amount of time the lights will stay On after the occupancy sensor does not detect occupancy and before they will turn Off.*



- Key
- <Add> On screen button.
- Name- Label of on screen entry field
- NEXT Button on keypad

**Agenda For Schedule: Classrooms**

Start Time	Behavior
8:00 AM	Behavior 5
▶	Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

OK

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 1

Absolute Time 12:00 PM

Offset N/A N/A N/A

Swt Delay N/A BW Time N/A

Occ Delay N/A BW Delay N/A

PC Delay N/A BW Ovrđ N/A

Next

Next

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 7

Absolute Time 11:00 PM

Offset N/A N/A N/A

Swt Delay N/A BW Time N/A

Occ Delay 1 BW Delay N/A

PC Delay N/A BW Ovrđ N/A

Next

**Step 1.25**

Navigate to the Add line of the list, in this case the second line. Click OK to advance to the Behavior Transition Detail screen.

Understanding the Screen

*This Agenda only applies to Saturday, as shown here. A transition to Behavior 5 will occur at 8:00 AM.*

**Step 1.26**

The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consultate the Behavior chart in the Manual for descriptions. For this example change to Behavior 7.

Understanding the Screen

*<Absolute Time> setting for a specific time of the day to trigger a Behavior Transition.*

**Step 1.27**

Use a combination of the UP and DOWN arrows as well as the NEXT button to change the time to 11:00 PM. When complete, use the NEXT button to navigate to the -OK- field

- Key
- <Add> On screen button.
- Name- Label of onscreen entry field
- NEXT Button on keypad

**Agenda For Schedule: Classrooms**

Start Time	Behavior
8:00 AM	Behavior 5
11:00 PM	Behavior 7
▶	Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

OK

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 1

Absolute Time 12:00 PM

Offset N/A N/A N/A

SwT Delay N/A BW Time N/A

Occ Delay N/A BW Delay N/A

PC Delay N/A BW Ovrd N/A

Next

Next

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 5

Absolute Time 11:01 PM

Offset N/A N/A N/A

SwT Delay N/A BW Time N/A

Occ Delay 1 BW Delay N/A

PC Delay N/A BW Ovrd N/A

Next

Next

**Step 1.28**

Navigate to the Add line of the list, in this case the third line. Click OK to advance to the Behavior Transition Detail screen.

Understanding the Screen

*This Agenda only applies to Saturday, as shown here. A transition to Behavior 5 will occur at 8:00 AM. A transition to Behavior 7 will occur at 11:00 PM.*

**Step 1.29**

The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consultate the Behavior chart in the Manual for descriptions. For this example change to Behavior 5.

Understanding the Screen

*<Absolute Time> setting for a specific time of the day to trigger a Behavior Transition.*

**Step 1.30**

Use a combination of the UP and DOWN arrows as well as the NEXT button to change the time to 11:01 PM. When complete, use the NEXT button to navigate to the -Occ Delay- field. Adjust this setting to 1 minute.

- Key
- <Add> On screen button.
- Name- Label of onscreen entry field
- NEXT Button on keypad

**Agenda For Schedule: Classrooms**

Start Time	Behavior
8:00 AM	Behavior 5
11:00 PM	Behavior 7
11:01 PM	Behavior 5
▶	Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

Next

**Agenda For Schedule: Classrooms**

Start Time	Behavior
8:00 AM	Behavior 5
11:00 PM	Behavior 7
11:01 PM	Behavior 5
▶	Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

Next

OK

**Agenda For Schedule: Classrooms**

Start Time	Behavior
8:00 AM	Behavior 5
11:00 PM	Behavior 7
11:01 PM	Behavior 5
▶	Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

**Step 1.31**

To apply this Agenda or pattern of Behavior to each day of the week press Next to advance to the Day column.

Understanding the Screen

*This Agenda only applies to Monday, as shown here.  
 A transition to Behavior 5 will occur Monday at 8:00 AM.  
 A transition to Behavior 7 will occur Monday at 11:00 PM.  
 A transition to Behavior 5 will occur Monday at 11:01 PM.*

**Step 1.32**

Press Next to the -Sunday- check box.  
 Press OK to check the box, this will add Sunday to the active list.

**Step 1.33**

Navigate to the <OK> button to return to the Schedule detail screen.

Understanding the Screen

*This Agenda only applies to Saturday and Sunday.  
 A transition to Behavior 5 will occur Monday at 8:00 AM.  
 A transition to Behavior 7 will occur Monday at 11:00 PM.  
 A transition to Behavior 5 will occur Monday at 11:01 PM.*

Key  
 <Add> On screen button.  
 -Name- Label of on screen entry field  
 NEXT Button on keypad

Schedule Details		Name
Date Range Effective	Always	Classrooms
Mon	MTWTF--	Calendars
Tue	MTWTF--	▶ Add/Del...
Wed	MTWTF--	
Thu	MTWTF--	Areas
Fri	MTWTF--	▶ Add/Del...
Sat	- - - - - SS	
Sun	- - - - - SS	
		Save ● Cancel



### Step 1.34

To save the Schedule, press the NEXT button on the navigation keypad to advance to the <Save> button.

#### Understanding the Screen

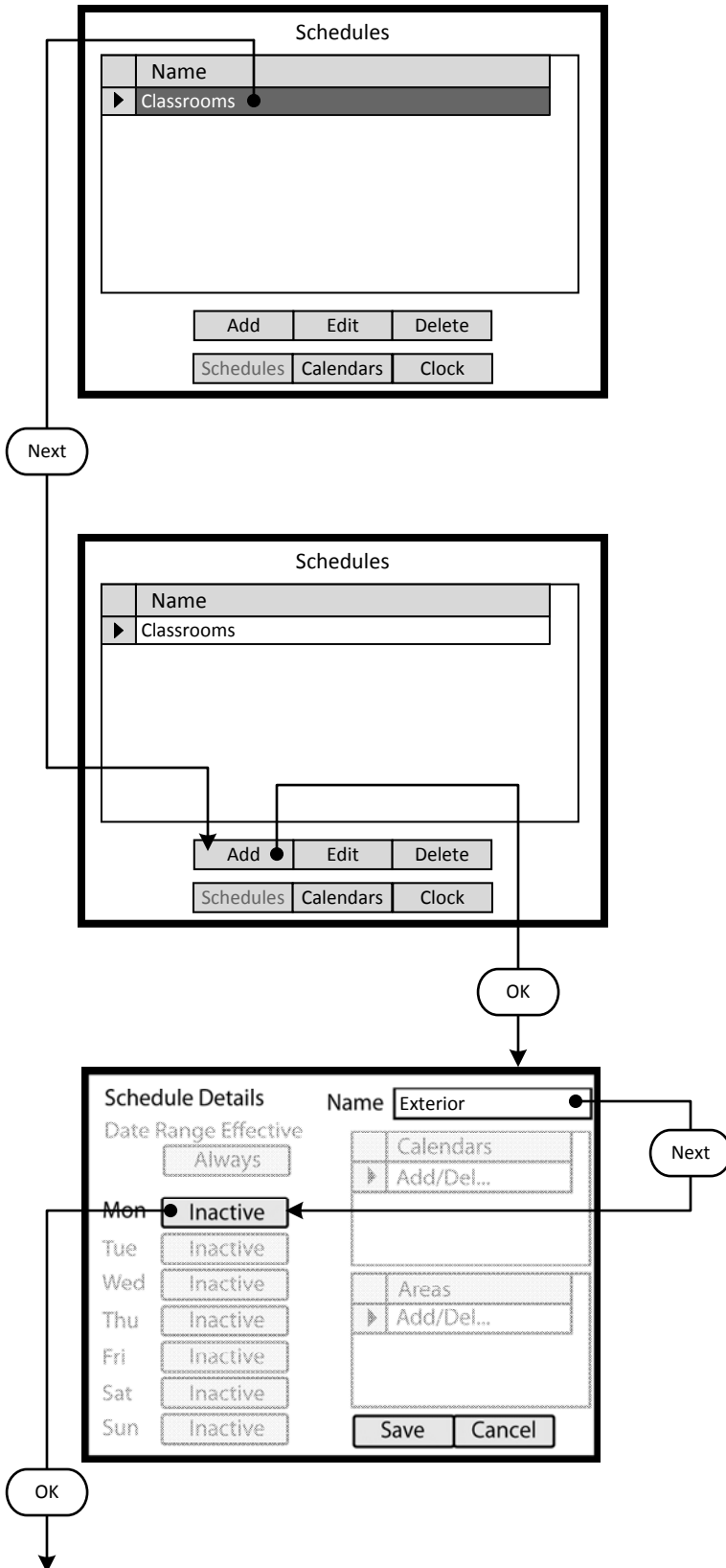
The label value of "MTWTF--" on the <Monday> through <Friday> indicates that the same Agenda applies to each of these days.

The label value of "- - - - - SS" shown on the <Saturday> and <Sunday> button indicates that a specific Agenda applies to both of these days. This Agenda is different than the other days of the week.

There are no Exception Calendars associated with this Schedule.

This Schedule has not been assigned to any Areas.

Key  
 <Add> On screen button.  
 -Name- Label of onscreen entry field  
 NEXT Button on keypad



**Step 1.35**

The second schedule named Exterior must be created to accommodate the exterior lighting for Monday through Sunday. Navigate to the <Add> button by pressing NEXT and then press OK.

Other Options

To modify an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <Edit> and press OK, to initiate the modification of the selected Schedule.

To delete an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <Delete> and press OK, to erase the selected Schedule.

**Step 1.36**

Navigate to the <Add> button by pressing NEXT and then press OK.

**Step 1.37**

The screen is entered in the -Name- button highlighted. Navigate by pressing the NEXT button on the navigation keypad to advance to the <Monday> button.

- Key  
 <Add> On screen button.  
 -Name- Label of onscreen entry field  
 NEXT Button on keypad

**Agenda For Schedule: Exterior**

Start Time	Behavior
▶ ●	Add

Mon  
 Tue  
 Wed  
 Thu  
 Fri  
 Sat  
 Sun

OK Cancel

OK

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 1

Absolute Time 12:00 PM  
 Offset N/A N/A N/A  
 Swt Delay N/A BW Time N/A  
 Occ Delay N/A BW Delay N/A  
 PC Delay N/A BW Ovrdd N/A

OK Cancel

Next

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 6

Absolute Time 12:00 AM  
 Offset N/A N/A N/A  
 Swt Delay N/A BW Time N/A  
 Occ Delay N/A BW Delay N/A  
 PC Delay N/A BW Ovrdd N/A

OK Cancel

**Step 1.38**

The screen is entered at the first line of the Agenda. There are a total of 24 Behavior Transition times available per day. Clicking OK will advance to the Behavior Transition Detail screen.

Understanding the Screen

*This Agenda only applies to Monday, as shown here.*

<OK> - Will save the settings or changes

<Cancel> - Will discard the changes

**Step 1.39**

The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consultate the Behavior chart in the Manual for descriptions. For this example change to Behavior 6.

Understanding the Screen

<Offset> provides access to Sunrise and Sunset settings for Astronomical clock times.

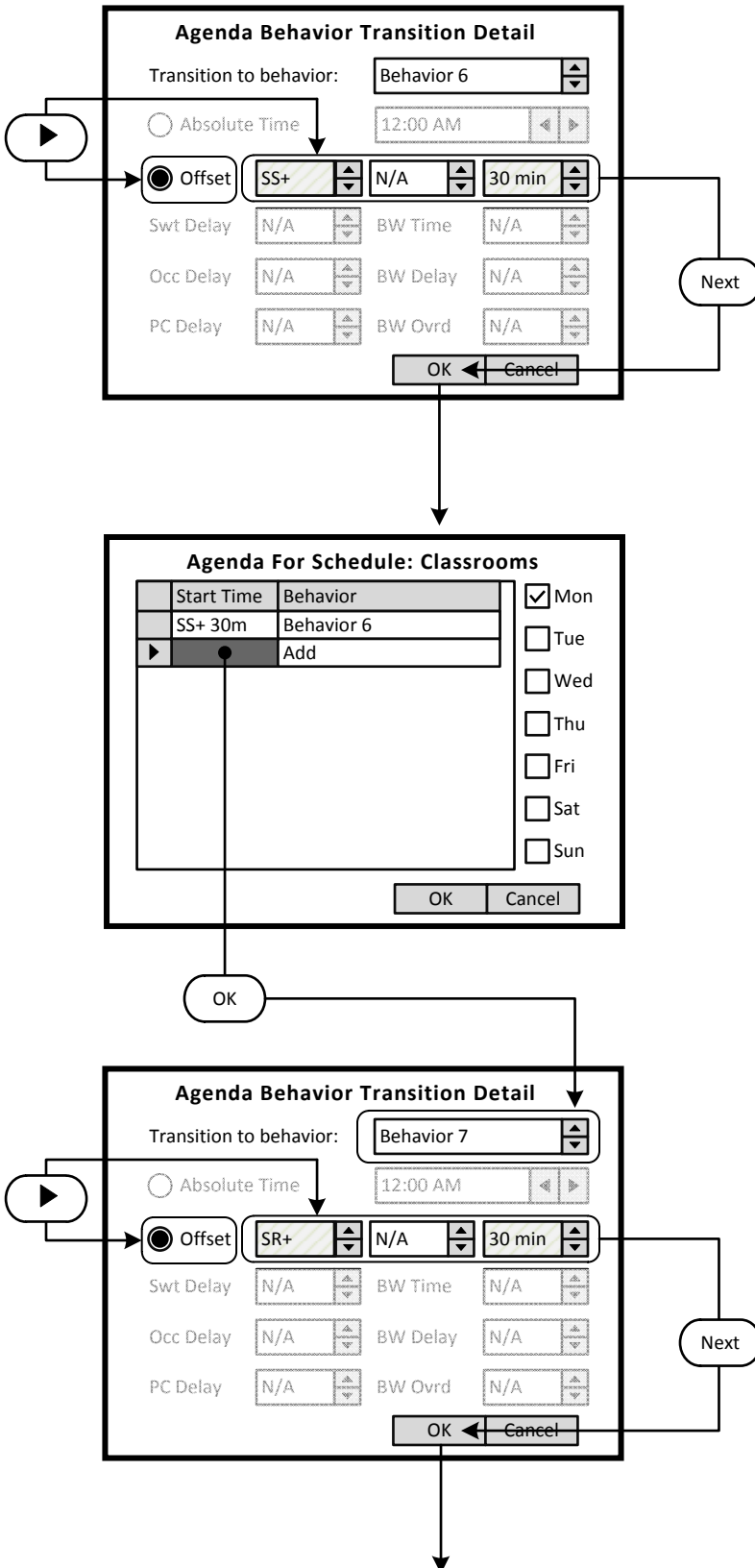
-BW Time-, -BW Delay-, -BW Ovrdd- - These are the Blinkwarn settings that apply to this Behavior Transition only. They will override the Global Blinkwarn Settings set in the System Settings section.

**Step 1.40**

Use the NEXT button to navigate to the -Absolute Time- check button.

Use the DOWN arrow to move to the -Offset- check button. Press OK to activate the -Offset- setting.

- Key
- <Add> On screen button.
- Name- Label of onscreen entry field
- NEXT Button on keypad



**Step 1.41**

The Exterior Schedule requires the lights to turn On 30 minutes after Sunset.

Use the RIGHT arrow to navigate to the **-SS+** list. Use the UP and DOWN arrows to select; sunrise plus a time value after (SR+), sunrise minus a time value before (SR-), sunset plus a time value after (SS+), sunset minus a time value before (SS-).

Use the RIGHT arrow to move to the **-Hour-** list box. Use the UP and DOWN arrows to set time offset in hours.

Use the RIGHT arrow to move to the **-Minutes-** list box. Use the UP and DOWN arrows to set time offset in minutes.

Use the NEXT button on the keypad to navigate to the **-OK-** button when finished.

**Step 1.42**

Navigate to the Add line of the list, in this case the second line. Click OK to advance to the Behavior Transition Detail screen.

Understanding the Screen

*This Agenda only applies to Monday, as shown here. A transition to Behavior 6 will occur 30 minutes after Sunset.*

**Step 1.43**

The Exterior Schedule requires the lights to turn Off 30 minutes after Sunrise.

Use the RIGHT arrow to navigate to the **-SS+** list. Use the UP and DOWN arrows to select; sunrise plus a time value after (SR+), sunrise minus a time value before (SR-), sunset plus a time value after (SS+), sunset minus a time value before (SS-).

Use the RIGHT arrow to move to the **-Hour-** list box. Use the UP and DOWN arrows to set time offset in hours.

Use the RIGHT arrow to move to the **-Minutes-** list box. Use the UP and DOWN arrows to set time offset in minutes.

Use the NEXT button on the keypad to navigate to the **-OK-** button when finished.

- Key
- <Add> On screen button.
- Name- Label of onscreen entry field
- NEXT Button on keypad

**Agenda For Schedule: Classrooms**

Start Time	Behavior
SS+ 30m	Behavior 6
SR+ 30m	Behavior 7
▶	Add

Mon
  Tue
  Wed
  Thu
  Fri
  Sat
  Sun

OK

**Agenda For Schedule: Classrooms**

Start Time	Behavior
SS+ 30m	Behavior 6
SR+ 30m	Behavior 7
▶	Add

Mon
  Tue
  Wed
  Thu
  Fri
  Sat
  Sun

Next

OK

**Agenda For Schedule: Classrooms**

Start Time	Behavior
SS+ 30m	Behavior 6
SR+ 30m	Behavior 7
▶	Add

Mon
  Tue
  Wed
  Thu
  Fri
  Sat
  Sun

**Step 1.44**

Navigate to the -Mon- check box by pressing NEXT.

Understanding the Screen

*This Agenda only applies to Monday, as shown here.  
A transition to Behavior 6 will occur 30 minutes after Sunset.*

**Step 1.45**

Navigate to the -Tue- check box by pressing NEXT.  
Press OK to check the box.  
Repeat these steps to fill check all boxes.

**Step 1.46**

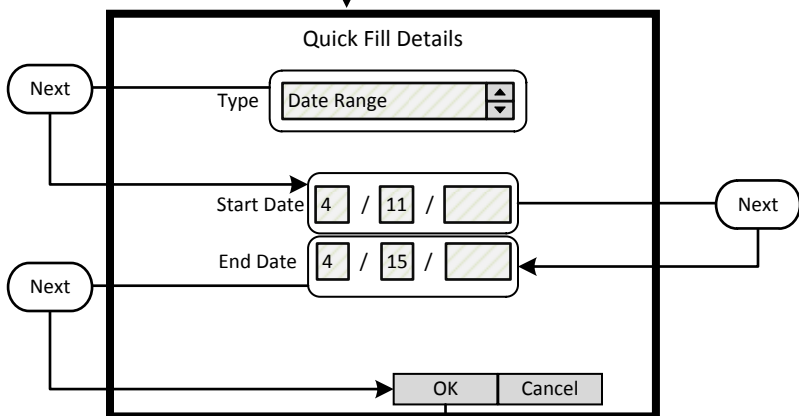
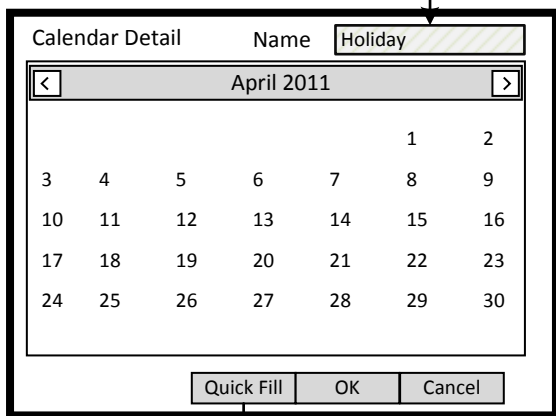
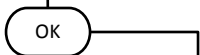
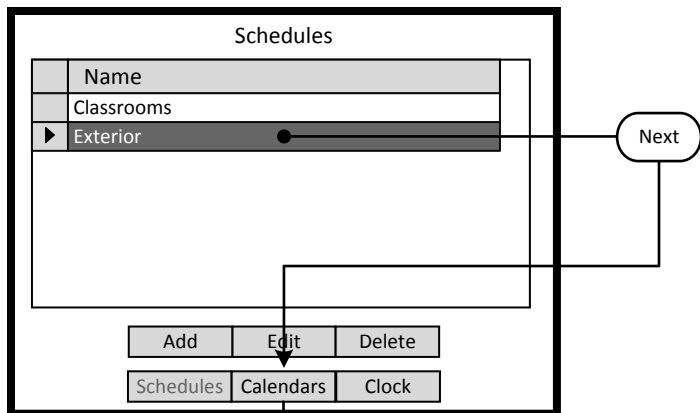
Navigate to the -OK- onscreen button by pressing NEXT.  
Press OK to save settings and return to the Schedules screen.

Understanding the Screen

*This Agenda applies to Monday through Sunday.  
A transition to Behavior 6 will occur 30 minutes after Sunset.  
A transition to Behavior 7 will occur 30 minutes after Sunrise.*



Key  
 <Add> On screen button.  
 -Name- Label of onscreen entry field  
 NEXT Button on keypad



**Step 1.47**

There are now two Schedules available in the system for two different uses and patterns of behavior. To add an Exceptions Calendar to the schedule, navigate to the <Calendars> button and press OK.

To navigate to the Home screen press the HOME button.

Other Options

To modify an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <Edit> and press OK, to initiate the modification of the selected Schedule.

To delete an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <Delete> and press OK, to erase the selected Schedule.

To adjust the system clock, navigate to <Clock> and press OK.

**Step 1.48**

The Exception Calendar can be custom named. This Calendar is to be named -Holiday- and will include April 11 through April 15. A specific pattern of behavior will run on these dates. To add a range of dates to the Exceptions Calendar, navigate to the <Quick Fill> button and press OK.

Understanding the Screen

This Exception Calendar has no highlighted dates. To view dates in May, navigate to <>> (right) by pressing the NEXT button. Press OK to select. To view dates in March, navigate to <<< (left) by pressing the NEXT button. Press OK to select.

To select a specific date on the Calendar, press the NEXT button to move into the date fields. Use the arrow buttons to move to the desired date. Press OK to select.

**Step 1.49**

The selected method of date entry is -Date Range-, the other mode is -Relative Date-. Navigate to and enter the -Start Date-. Fields are provided for month, day, and year. A specific pattern of behavior will run on these dates. To accept changes navigate to the <OK> button and press OK.

Understanding the Screen

This Exception Calendar will include the dates between April 11 and April 15. Since the year field has been left blank, these dates will apply each year moving forward. The dates will be highlighted on the calendar named -Holiday-.

To abandon changes, navigate to the <Cancel> button and press OK.

To erase entries in a field use the CLEAR button on the keypad.

- Key
- <Add> On screen button.
- Name- Label of onscreen entry field
- NEXT Button on keypad

Calendar Detail      Name:

< April 2011 >

					1	2
3	4	5	6	7	8	9
10	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Quick Fill    OK    Cancel

OK

Schedules

Name	
▶ Classrooms	
Exterior	

Add    Edit ●    Delete

Schedules    Calendars    Clock

Next

Schedule Details      Name:

Date Range Effective:

Mon	MTWTF--
Tue	MTWTF--
Wed	MTWTF--
Thu	MTWTF--
Fri	MTWTF--
Sat	-----SS
Sun	-----SS

Calendars	
▶ Add/Del...	

Areas

▶ Add/Del...

Save ●    Cancel

Next

Next

**Step 1.50**

The Exception Calendar named Holiday has highlighted dates from April 11 through April 15. No behavior patterns have been specified, this is done in the Schedule Detail screen. To add additional range of dates to the Exceptions Calendar, navigate to the <Quick Fill> button and press OK.

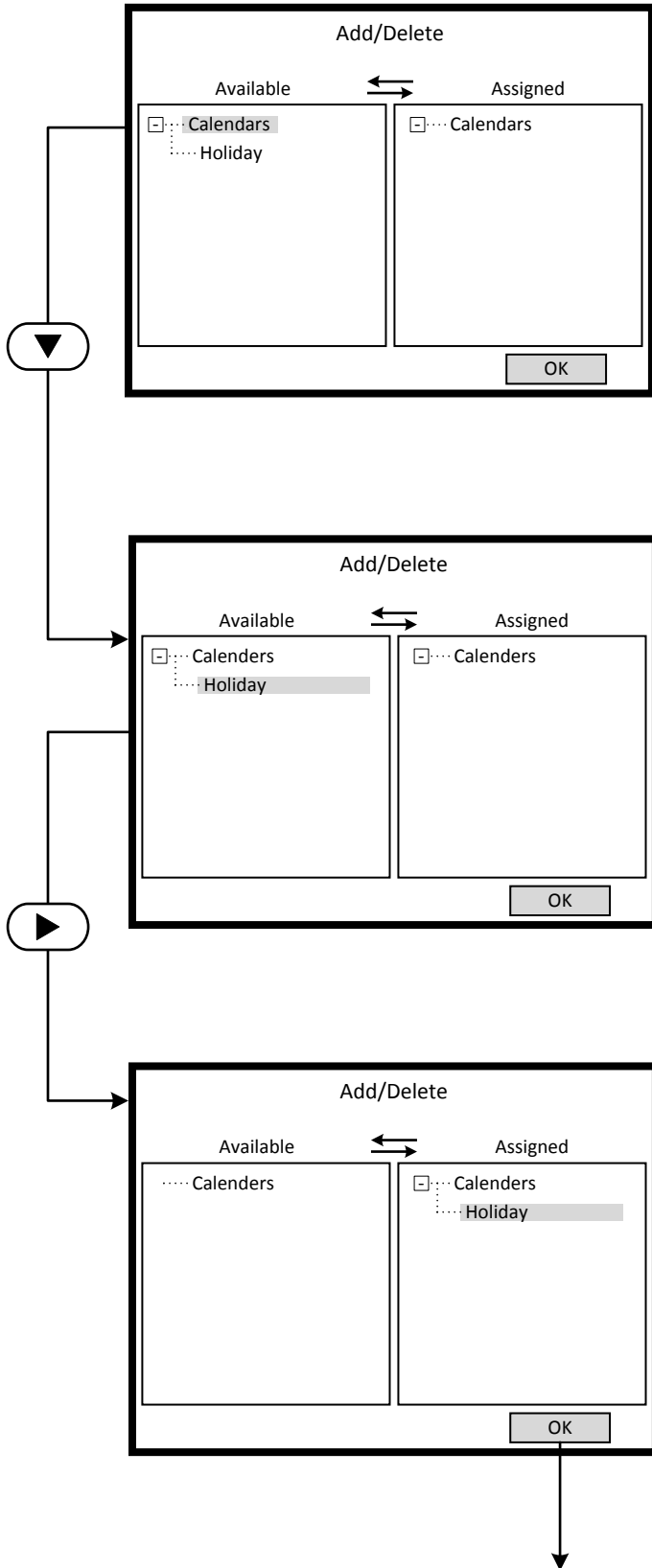
**Step 1.51**

Once the dates have been added to the Exceptions Calendar, the Calendar can be added to a Schedule. Select the Schedule from the list of two Schedules available in the system. To add an Exceptions Calendar to the schedule, navigate to the <Edit> button and press OK.

**Step 1.52**

To add an Exception Calendar to the Schedule, press the NEXT button on the navigation keypad to advance to the -Add/Del- field. Press OK to select.

Key  
 <Add> On screen button.  
 -Name- Label of onscreen entry field  
 NEXT Button on keypad



**Step 1.53**

The Exception Calendar named Holiday can be viewed on the list of Available Calendars. Each Exception Calendar that is created appears on the list. Multiple Exception Calendars can be added to a schedule. Exception Calendars can be Assigned Schedules.

The desired Exception Calendar must be moved from the Available list, on the left side of the screen, to the Assigned list on the right.

**Step 1.54**

Use the DOWN arrow to highlight the desired Exceptions Calendar.

**Step 1.55**

Use the RIGHT arrow to move the highlighted Exceptions Calendar to the Assigned List. Reversing the procedure will un-assign the Calendar.

- Key
- <Add> On screen button.
- Name- Label of onscreen entry field
- NEXT Button on keypad

**Schedule Details**

Date Range Effective:

Mon:  Tue:   
 Wed:  Thu:   
 Fri:  Sat:   
 Sun:

Name:

**Calendars**

**Areas**

**Agenda For Calendar: Holiday**

	Start Time	Behavior
<input type="button" value="▶"/>		Add

**Step 1.52**

The Holiday Exception Calendar is now listed as assigned to the Schedule. Press the OK button on the navigation keypad to create or edit the **-Holiday-** Agenda.

**Step 1.44**

Navigate to the **-Mon-** check box by pressing NEXT.

Understanding the Screen

*This Agenda only applies to Monday, as shown here.  
 A transition to Behavior 6 will occur 30 minutes after Sunset.*

Key  
 <Add> On screen button.  
 -Name- Label of onscreen entry field  
 NEXT Button on keypad

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 1

Absolute Time 12:00 PM

Offset N/A N/A N/A

Swt Delay N/A BW Time N/A

Occ Delay N/A BW Delay N/A

PC Delay N/A BW Ovrđ N/A

OK Cancel

Next  
 Next

**Agenda Behavior Transition Detail**

Transition to behavior: Behavior 5

Absolute Time 11:01 PM

Offset N/A N/A N/A

Swt Delay N/A BW Time N/A

Occ Delay 1 BW Delay N/A

PC Delay N/A BW Ovrđ N/A

OK Cancel

Next

Next

OK

**Agenda For Calendar: Holiday**

Start Time	Behavior
11:01 PM	Behavior 5
▶	Add

OK Cancel

**Step 1.29**

The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consultate the Behavior chart in the Manual for descriptions. For this example change to Behavior 5.

Understanding the Screen

<Absolute Time> setting for a specific time of the day to trigger a Behavior Transition.

**Step 1.30**

Use a combination of the UP and DOWN arrows as well as the NEXT button to change the time to 11:01 PM. When complete, use the NEXT button to navigate to the -Occ Delay- field. Adjust this setting to 1 minute.

**Step 1.44**

Navigate to the -Mon- check box by pressing NEXT.

Understanding the Screen

This Agenda only applies to Monday, as shown here. A transition to Behavior 6 will occur 30 minutes after Sunset.

- Key
- <Add> On screen button.
  - Name- Label of onscreen entry field
  - NEXT Button on keypad

**Schedule Details**      Name:

Date Range Effective:

Mon:       **Calendars**

Tue:       ▶ **Holiday**

Wed:       Add/Del...

Thu:       **Areas**

Fri:       ▶ **Add/Del...**

Sat:

Sun:

OK

**Schedules**

Name
▶ Classrooms
Exterior

Home

**LEVITON**

Project: TEST

**Step 1.52**

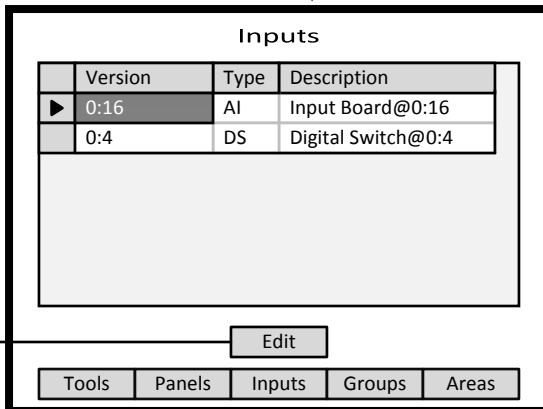
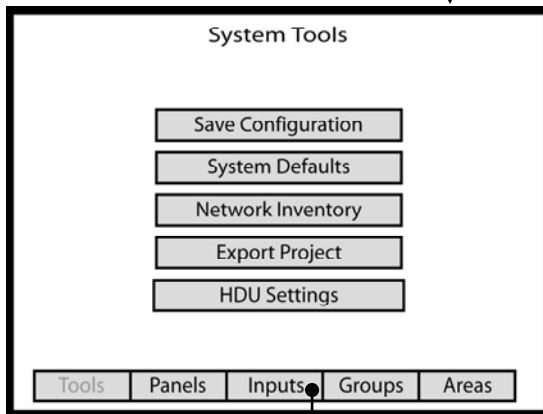
The Holiday Exception Calendar is now listed as assigned to the Schedule. Press the OK button on the navigation keypad to create or edit the -Holiday- Agenda.

**Step 1.51**

Once the dates have been added to the Exceptions Calendar, the Calendar can be added to a Schedule. Select the Schedule from the list of two Schedules available in the system. To add an Exceptions Calendar to the schedule, navigate to the <Edit> button and press OK.

**Programming Exercise: Classroom**

-Name- Label of onscreen entry field  
 NEXT Button on keypad



**Step 2: Configure Devices**

The GreenMAX can be configured to handle a wide variety of input devices. These devices operate at +24vdc and are wired to an input terminal on the Low Voltage (AI) board. Each terminal port must be configured to match the device and its expected functionality.

The following Low Voltage input devices can be connected to the system:

- Occupancy sensors.
- Photocells.
- Switches.
- Contact closures.

**Step 2.1**

The configuration steps of the Low Voltage Input Card is performed in the <Config> section of the HDU software.

Understanding the Screen

There are three sections of the HDU software. The other two sections under the buttons are:

- <Monitor> - Used to check the system time, relay status
- <Control> - Access Scheduling

**Step 2.2**

Use a combination of the UP and DOWN arrows as well as the NEXT button to navigate to the <Inputs> onscreen button. Press OK to select.

**Step 2.3**

The Network Inventory will provide a listing of all system Input devices. This includes both Low Voltage Input Boards (AI) and Digital switches.

Understanding the Screen

There are two Input Devices in this system.

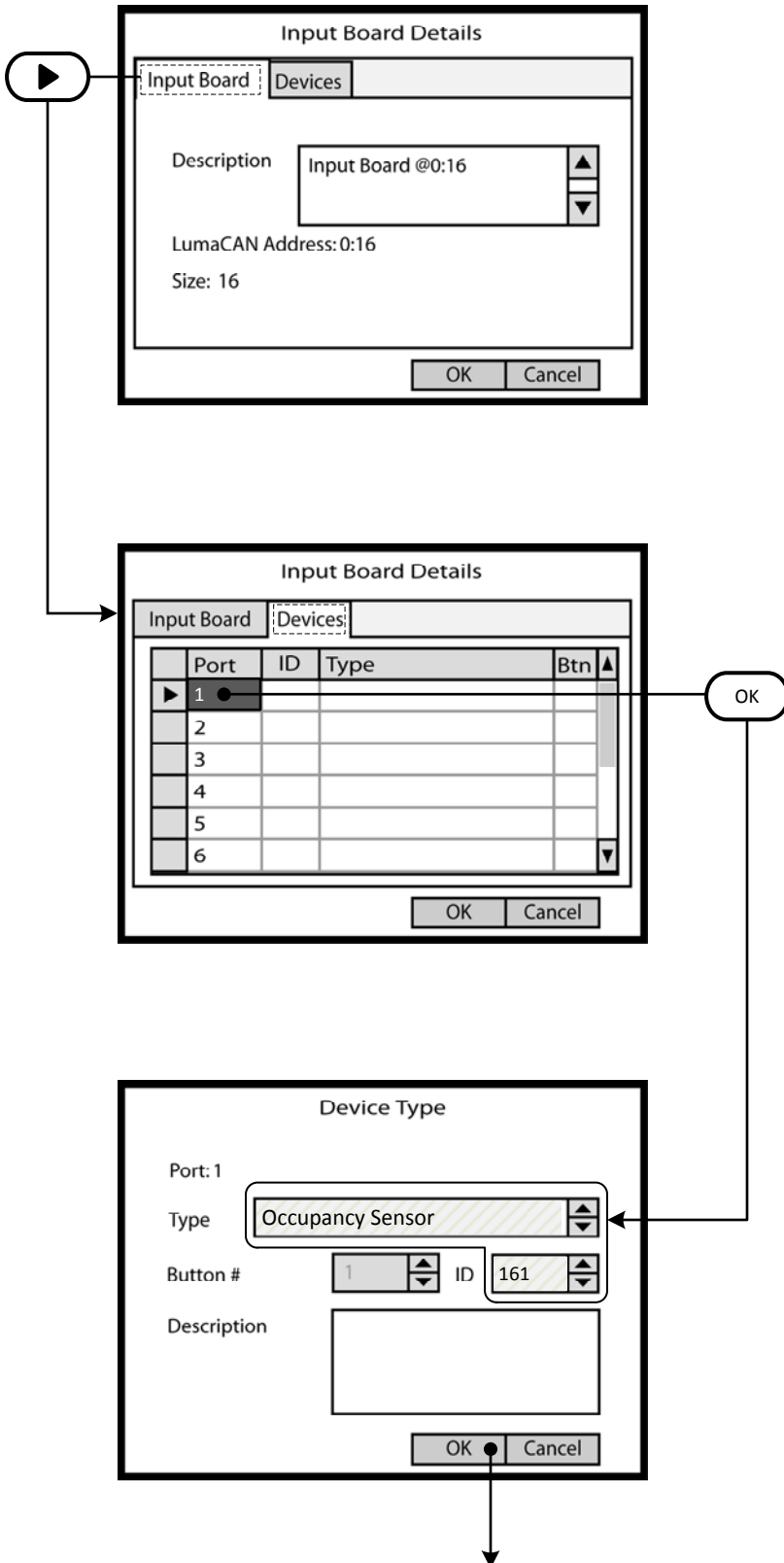
There is a 16 input AI board at address ID 16.

There is a 4 button Digital Switch at address ID 4.

Description of the onscreen buttons:

- <Edit> selecting this onscreen button will allow editing of the highlighted device in the list.
- <Tools> use to navigate to the System Tools screen.
- <Panels> use to navigate to the Relay Panel Detail Screen
- <Groups> use to navigate to the Group building screen
- <Areas> use to navigate to the Areas configuration screen

- Key
- <Add> On screen button.
- Name- Label of on screen entry field
- NEXT Button on keypad



**Step 2.4**

The Input Board Detail screen displays the number of inputs, the LumaCan address ID and the **-Description-** field. Enter job specific description in this field. Once the correct information is entered, use the RIGHT arrow to move to the **-Devices-** tab at the top of the screen.

*Understanding the Screen*

The other onscreen buttons are:  
 <OK> - Used to accept the entries  
 <Cancel> - Used to discard entries

**Step 2.5**

The **-Devices-** tab reveals a list of the Input Ports on the AI Board being configured. Ports are numbered sequentially in quantities of 8 or 16. No data entry can be made on this screen. Highlight the Input Port number and press OK to enter the editing screen.

Use the UP or DOWN arrows on the keypad to navigate up or down the list. The scroll bar to the right indicates position on the list.

If the wrong device type appears on the list, highlight the Input Port number and press CLEAR on the keypad.

*Understanding the Screen*

No devices have been configured for this AI board.  
 The onscreen buttons are:  
 <OK> - Used to accept the entries  
 <Cancel> - Used to discard entries

**Step 2.6**

The Device Type screen is used to select the type of device that is wired to the input port. Use the UP and DOWN arrows on the keypad to display the desired device. The Description field should be used to document the location of the device.

*Understanding the Screen*

The **-Button #-** is available for display purposes only and does not have any configuration value.  
 The **-ID-** is available for display purposes only and does not have any configuration value. It can be used to match the numbering on project drawings. Maximum value is 1000.



Key  
 <Add> On screen button.  
 -Name- Label of on screen entry field  
 NEXT Button on keypad

Input Board Details				
Input Board		Devices		
Port	ID	Type	Btn	
1	161	Occupancy Sensor		
▶ 2	162	Closed Loop Photocell		
3	163	Trigger Photocell		
4	164	Occpancy Sensor		
5	232	Momentary Switch	1	
6	232	Momentary Switch	2	▼

OK Cancel

### **Step 2.7**

The fully populated Input Board Detail screen will look as shown here. The Input Ports can be configured in any order as necessary.

#### Understanding the Screen

*The ID numbers are for information purposes.*

*The Momentary Switch has two buttons. Each button is wired to an individual port.*

Key  
 <Add> On screen button.  
 -Name- Label of onscreen entry field  
 NEXT Button on keypad

**Inputs**

Version	Type	Description
0:16	AI	Input Board@0:16
▶ 0:4	DS	Digital Switch@0:4

Edit

Tools   Panels   **Inputs**   Groups   Areas

OK

**Digital Switch Detail**

LumaCAN: 0:4      Id

Description

Btn.#	Type	Description
▶ 1	Momentary DS Button	Button 1
2	Momentary DS Button	Button 2
3	Momentary DS Button	Button 3
4	Momentary DS Button	Button 4

Locate   OK   Cancel

Next

Next

OK

**Digital Switch Button Details**      Button #: 1

Type

Description

OK   Cancel

Next

**Step 2.8**

The Inputs lists a Digital Switch at ID 4. This is a 4 button Digital Switch used for Dimming control. Highlight the device and move the indicator to the appropriate device line. Use the UP and DOWN arrows to move about the list. Use NEXT to navigate to the <Edit> button.

**Step 2.9**

The Digital Switch Detail screen provides an ID setting for informational purposes and a description field. These fields fill the list on the previous screen. Button function must be configured. Highlight the Button number and press OK to enter the editing screen.

Use the UP or DOWN arrows on the keypad to navigate up or down the list.

**Step 2.10**

The Digital Switch Button Details screen is used to configure the individual button function and to name the button. Use the UP and DOWN arrows on the keypad to display the desired button function.

The Description field should be used to document the function of the individual buttons.

Understanding the Screen

- The type options are:
- Momentary DS Button
  - On DS Button
  - Bright DS Button
  - Dim DS Button
  - Off DS Button

- Key
- <Add> On screen button.
- Name- Label of on screen entry field
- NEXT Button on keypad

**Digital Switch Detail**

LumaCAN: 0:4                      Id

Description

Btn.#	Type	Description
▶ 1	On DS Button	Button 1
2	Bright DS Button	Button 2
3	Dim DS Button	Button 3
4	Off DS Button	Button 4

OK

**Inputs**

	Version	Type	Description
	0:16	AI	Input Board@0:16
▶	0:4	DS	Dimming Zone 1

**Step 2.11**

This illustration shows the recommended configuration for a Digital Switch used for dimming control application. The button Type fields should match those shown. Each field should be adjusted individually. Button descriptions are entered on the Button Detail Screen shown previous.

Use the UP or DOWN arrows on the keypad to navigate up or down the list.

Use NEXT and BACK to navigate between sections on the screen.

Understanding the Screen

The ID number are for information purposes and can be used to match assigned project switch numbers.

**Step 2.12**

The Inputs list has a Digital Switch at ID 4 and is described as Dimming Zone 1.

Use the UP and DOWN arrows to move about the list. Use NEXT to navigate to the <Areas> button.