



# EST4 UL 2572 Application Guide

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# Important information

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Installation in accordance with this manual, applicable codes, and the instructions of the authority having jurisdiction is mandatory.

While every precaution has been taken during the preparation of this manual to ensure the accuracy of its contents, Carrier assumes no responsibility for errors or omissions.

## Advisory messages

Advisory messages alert you to conditions or practices that can cause unwanted results. The advisory messages used in this document are shown and described below.

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**WARNING:** Warning messages advise you of hazards that could result in injury or loss of life. They tell you which actions to take or to avoid in order to prevent the injury or loss of life.

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**Caution:** Caution messages advise you of possible equipment damage. They tell you which actions to take or to avoid in order to prevent the damage.

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**Note:** Note messages advise you of the possible loss of time or effort. They describe how to avoid the loss. Notes are also used to point out important information that you should read.

# UL/ULC programming requirements

**NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHER INVOLVED PARTIES**

This product incorporates field-programmable software. In order for the product to comply with UL and ULC standards, certain programming features or options must be limited to specific values or not used at all as indicated in Table 8 below.

**Table 1: UL/ULC programming requirements**

<b>Programmable feature or option</b>	<b>Possible settings</b>	<b>Permitted UL settings</b>	<b>Permitted ULC settings</b>
RGD request timer	Timer off Timer set for 00:00 (mm:ss) Timer set for 00:01 to 10:00 (mm:ss)	Timer off Timer set for 00:01 to 10:00 (mm:ss)	Timer off Timer set for 00:01 to 10:00 (mm:ss)

# Chapter 1

# Introduction

## Summary

This chapter provides a brief introduction to an EST4 mass notification system.

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# Introduction

This application guide provides general installation and programming instructions for adding UL 2572 second edition mass notification (MNS) features to an EST4 fire alarm system.

By adding MNS features, you can use an EST4 fire alarm system to broadcast real-time instructions and information to occupants throughout the protected premises during an emergency event. Live-voice instructions, prerecorded messages, and visual signaling are used to notify occupants and to provide instructions in accordance with the approved emergency response plan.

This application guide was developed using EST4 V4.0 and FireWorks V9.0.

## Intended audience and purpose

The information in this application guide is intended for those trained and certified on EST4 and FireWorks operations, and programming.

The application examples in this application are designed to help you understand the system programming required for an EST4 mass notification system and may not reflect actual systems in the field. Your system hardware configuration and method of programming may be different. It is your responsibility to thoroughly test your system before it is commissioned.

## Related documents

Installation instructions and specifications for system components referenced in this manual are provided in their documentation either shipped with the product or on the My-Eddie website. For additional information, see the following:

- NFPA 72 *National Fire Alarm and Signaling Code 2019*
- UL 864 *Standard for Control Units and Accessories for Fire Alarm Systems, tenth edition*
- UL 2572 *Standard for Mass Notification Systems, second edition*
- CAN/ULC-S576-14 *Standard for Mass Notification System Equipment and Accessories*

## Security and data protection

UL 2572 second edition security and data protection levels are listed in the table below.

**Table 2: UL 2572 second edition security and data protection levels**

	<b>EST4</b>	<b>FireWorks</b>
Approved Security Function for FIPS PUB 140-2	No encryption employed	No encryption employed
Communication Security	0 [1][4]	Level 1
Stored Data Security	0 [1]	Level 0
Access Control Security	0 or 1 [2]	Level 2
Physical Security	1 [3]	Level 1
Audit Control	Not provided	Not provided

[1] Meets communication security level 1 only if 4-FWAL series firewall module employs a dedicated MNS connection, where only MNS events are permitted to be transmitted. All other non-MNS events must use another connection.

[2] Security is employed. Access by way of the front panel is controlled by a four-digit PIN (10000 PIN combinations). Access automatically times out after reaching the configured user time out period. The default setting is five minutes. Security level 1.

[3] Security is employed. Access is restricted by a locked cabinet door.

[4] In order to transmit MNS email, an EST4 email capable 4-FWAL series firewall module must be installed in the same secured room as the UL/ULC listed DRMNS email server.

## EST4 system requirements

### MNS Email

When configured for Mass Notification Service, the FireWorks / EST4 4-FWAL1/2/3/4 card are provided with connections via a primary port to a UL 2572 Listed DRMNS email server.

Transmit MNS events and fire events to separate accounts so that the appropriate authorities are dispatched.

The overall MNS System with FireWorks / EST4 4-FWAL1/2/3/4 card shall have a maximum of five email addresses that can connect to a UL 2572 Listed DRMNS email server.

### MNS IP Dialer, DACT, and Cellular Capture Modules (CCMs)

Transmit MNS events and fire events to separate accounts so that the appropriate authorities are dispatched.

When employing MNS service, you may use nonstandard CID codes. However, you must notify the central station of the nonstandard MNS CID codes so that the appropriate authorities can be informed.

Do not use a cellular connection to transmit MNS events. At the time of this release, cellular capture modules are not UL 2572 Listed.

# Operation

## General requirements

Mass notification systems typically perform notification operations in the following order of priority:

1. Special suppression activation
2. MNS signaling
3. Fire life safety signaling
4. Other property notification

Signals from the MNS system shall have the capability of overriding all other notification signals, except suppression, but whether MNS signals have priority over fire alarm signals must be determined by risk analysis.

Once MNS operation is activated, a trained operator must always maintain manual control over the system. Under manual control, automatic notification signals are prohibited from activating until MNS operation is manually reset. Life safety functions, such as remote/central station signaling, fan controls, and door controls, etc., are not prohibited from activating.

When MNS operation is activated:

- The MNS alarm event is displayed in the highest priority event queue and, depending on the system configuration, printed on the printer
  - The MNS alarm event active indicator is turned on
  - Fire alarm (clear) strobes are turned off and MNS alert (amber or other alternate color) strobes are turned on
- Note:** After MNS operation is activated, the fire alarm strobes are turned off using a higher priority command to prevent a new fire alarm event from turning them on. Fire annunciation resumes once MNS operation is reset.
- All zoned amplifier modules are switched to the Emergency audio channel and the selected MNS alarm event message is broadcast over the speakers.

At this point, the system is ready for the operator in attendance to select the appropriate prerecorded message or provide live voice instructions, as required.

For EST4 MNS applications:

- Live voice and prerecorded messages are on an all call, all zone basis
- Computers running FireWorks Remote Client are considered ancillary and may only be used for displaying events. They are not control locations and do not have command and control capabilities.

## Alarm Silence with active fire alarm points

If MNS signals have a higher priority than fire signals, pressing a control unit Alarm Silence button has no effect on the system because fire evacuation signals are suppressed during MNS operation. You must press the MNS Alarm Silence button to silence the system.

If fire evacuation signals have a higher priority than MNS signals, pressing a control unit Alarm Silence button silences the system only if there is an active fire alarm event. Lower priority MNS signals are silenced by pressing the MNS Alarm Silence button.



## Reset with active fire alarm points

If MNS operation is activated when there are active fire alarm points on the system, fire alarm evacuation messages may be heard while the system is resetting depending on the state of device that initiated the fire alarm. To prevent this, use the following procedure to reset the system:

1. Press Panel Silence.
2. Press Alarm Silence.
3. Press MNS Alarm Silence.
4. Press MNS Reset.
5. Press Reset.

## Fire Drill

Normal fire drill operation overrides MNS operation. To prevent this, program the system to autodisable the Fire Drill button on 4-LCD user interfaces when MNS operation is activated. If normal fire drill operation is needed, then implement an alternate operation that does not interfere with MNS operation.

## MNS prerecorded messages

When MNS operation is activated, the system broadcasts a prerecorded message based on the type of MNS event (e.g., evacuation, severe weather, chemical spill, etc.). The prerecorded MNS message can be interrupted at any time by broadcasting live-voice instructions. At the end of the live-voice message, the system must play a “standby” MNS message and provide the ability to manually initiate the previous prerecorded message or a new prerecorded message.

## MNS low priority alarm events

If the site risk analysis requires MNS low priority alarm events:

1. MNS low priority alarm events will have a lower priority than fire alarm events.
2. Fire alarm events will override MNS low priority alarm events.
3. If an MNS low priority alarm event is activated when a fire alarm event and Alarm Silence are both active in the system:
  - The MNS low priority alarm event will not override Alarm Silence
  - The MNS low priority alarm event will turn on an indicator labeled “Active MNS Low Priority Event Alarm” (or equivalent)
  - The MNS low priority alarm event will not be displayed on the LCD user interface
  - For MNS low priority event alarms on FireWorks workstations, assign the state-substate of the AND logic device used for MNS low priority alarm events to a virtual point set to the trouble activation type

## Intended sequence of operation

### Activating MNS alarm operation

1. Press the Request Control button to request control of the system. The indicator next to the button turns on when the button is pressed. Another indicator turns on when control is granted.
2. Press one of the MNS alarm event buttons to activate MNS alarm operation, play the MNS alarm event's prerecorded message, and activate the emergency Alert strobes. The indicator next to the button turns on when the button is pressed. The indicator for the MNS alarm event message turns on when the message is playing.

**Note:** Pressing the MNS alarm event button again does not cancel MNS alarm operation or stop the active MNS alarm event message. Once an MNS alarm event button is pressed, you can silence the active MNS alarm event message, play a different MNS alarm event message, broadcast live-voice instructions, or reset MNS alarm operation.

### Silencing MNS alarm event messages

1. Press the MNS Alarm Silence button to silence the active MNS alarm event message and play the MNS Alarm Silence event message. The indicator next to the button turns on when the button is pressed. The indicator for the active MNS alarm event message turns off and the indicator for the MNS Alarm Silence event message turns on. The MNS Alarm Silence button does not silence the emergency Alert strobes.

**Note:** Typically, the MNS Alarm Silence event message consists of a short beep every 30 seconds.

2. Press the MNS Alarm Silence again to cancel MNS Alarm Silence and resume playing the active MNS alarm event message or press a different MNS alarm event button to cancel MNS Alarm Silence and play a different MNS alarm event message.

### Broadcasting live-voice instructions

1. Press the MNS Page All button. The indicator next to the button turns on when the system is ready to page.
2. Press the microphone PTT button. While pressed, speak clearly into the microphone.
3. When you are finished, release the microphone PTT button. After you release the microphone PTT button, the system plays the MNS standby message and turns on the MNS standby message indicator. The MNS standby message continues to play until you press the microphone PTT button again or until you cancel page operation.

**Note:** Pressing the MNS Page All button again does not cancel page operation or stop the MNS standby message. To cancel page operation, press an MNS alarm event button.

### Resetting MNS alarm operation

1. Press the MNS Reset button to cancel MNS alarm operation and return the system to fire alarm operation.

# EST4 mass notification-specific project configuration options

## Node Silence Operations property

The Node Silence Operations property determines when the Panel Silence button on LCD user interfaces are operable during fire and mass notification alarm events.

Path: Project > Edit Properties > Operations category

Possible settings:

- Fire (the Panel Silence button is always operable)
- Mass Notification (the Panel Silence button is only operable when the node has control)

## Channel Priority property

The Channel Priority property specifies whether the Evacuation and Alert audio message playback channels used for fire alarm signaling have priority over the Emergency audio message playback channel used for mass notification alarm signaling.

Path: Project > Edit Properties > Audio category

Possible settings:

- Mass Notification Higher Priority than Fire
- Fire Higher Priority than Mass Notification

**Note:** In UL Listed applications, you may use either setting. For ULC Listed application options, refer to CAN/ULC-S576-14 *Standard for Mass Notification System Equipment and Accessories, Appendix A*.

## Request Timer property

The Request Timer property specifies how long the system waits before automatically granting control to the pending request that has the highest priority.

Path: Root > Device List > Notification Control Area > Edit Properties > Logics Configuration category

Possible settings:

- Timer off (check box not selected)

If no one has control of the NCA, the system immediately grants control to the first RGD device in the Request queue regardless of its priority.

If someone has control of the NCA, the system immediately grants control to the first, higher-priority RGD device in the Request queue but you must manually grant control to equal- or lower-priority RGD device requests.

- Timer on and set for 00:00 (mm:ss)

If no one has control of the NCA, the system immediately grants control to the first request regardless of its priority.

If someone has control of the NCA, the system immediately grants control to the next request regardless of its priority

**Note:** This setting violates UL/ULC control hierarchy requirements for ACU, LOC, and ECCU operator interfaces.

- Timer on and set for 00:01 to 10:00 (mm:ss)

If no one has control of the NCA, the system immediately grants control to the first RGD device in the Request queue regardless of its priority.

If someone has control of the NCA, the system grants control to the first, highest-priority RGD device request when the request timer expires.

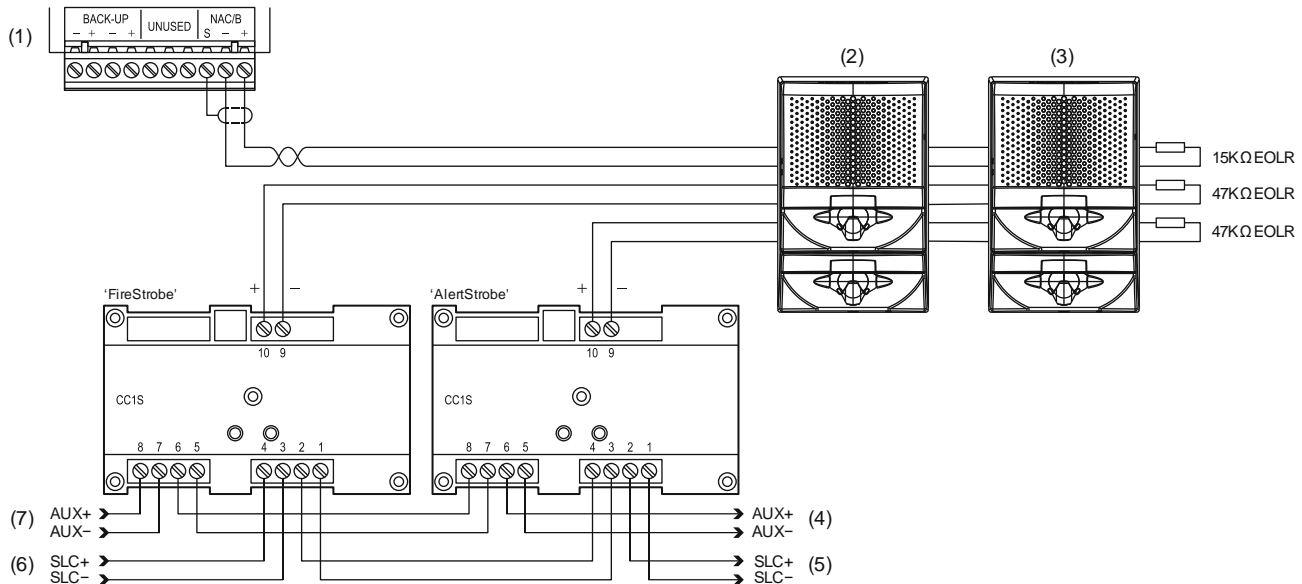
## Notification appliance circuits for mass notification applications

Figure 1 below shows a typical Class B notification appliance circuit used in mass notification applications. Use Genesis LED G4 series speaker-strobes and G4SE strobe expanders with FIRE and ALERT markings, or equivalent arrangement acceptable to the local authority having jurisdiction. In this example, signal synchronization is on a “per SLC” basis.

The example shown below is for illustrative purposes only. For more information, see the following:

- *Genesis LED G4S Series Wall Speaker-Strobe Installation Sheet* (P/N 3102656)
- *G4SE Genesis LED Strobe Expander Installation Sheet* (P/N 3102687)
- *EST4 Technical Reference Manual* (P/N 3102301)
- *BPS Series Fire Alarm Power Supply Technical Reference Manual* (P/N 3100485)
- *APS Series Fire Alarm Power Supply Technical Reference Manual* (P/N 3100970)

**Figure 1: Typical Class B notification appliance circuit**



- |   |   |
|---|---|
| (1) Zone amplifier                                  | (5) Signaling line circuit to next device   |
| (2) First notification appliance on the audio riser | (6) Signaling line circuit from previous device   |
| (3) Last notification appliance on the audio riser  | (7) From a power-limited 24 VDC power supply that is UL/ULC Listed for fire protective signaling systems. |
| (4) AUX riser to next device                        |   |

**Notes**

- All wiring is supervised and power-limited.
- For battery calculations, calculate strobe power by counting the number of fire strobes or the number of alert strobes, whichever is greater, but not both. Fire strobes and alert strobes are never on at the same time.
- To meet the requirements of UL 2572, any system that uses notification appliance circuits to connect to notification appliances without speakers must provide at least one regulated NAC circuit.

# Chapter 2

## Single network mass notification applications

### Summary

This chapter describes how to add basic mass notification features to a fire alarm system consisting of a single EST4 network. It is divided into three separate applications.

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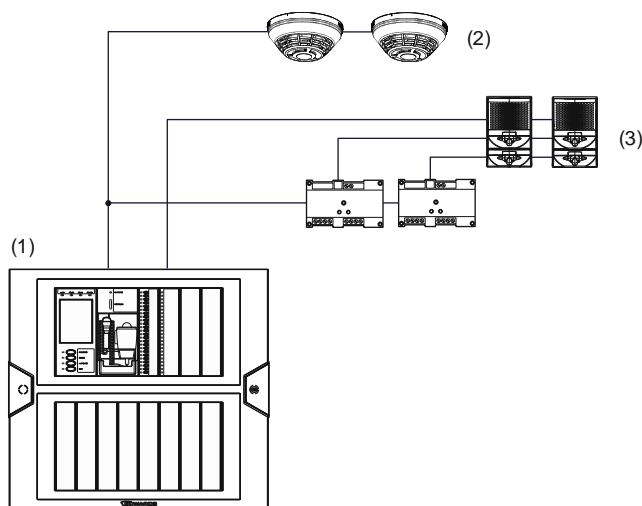
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## Application 1: Mass notification system with one control location

This topic describes how to add mass notification features to an EST4 fire alarm system with one control location. Figure 2 below shows an example EST4 mass notification system that uses a fire alarm control unit equipped with a microphone as an autonomous control unit (ACU).

**Figure 2: System diagram – Application 1**



- (1) Autonomous Control Unit/Fire Alarm Control Unit (ACU/FACU)
- (2) Automatic fire detection circuits
- (3) Notification appliance circuits

The ACU/FACU is the primary point of control for the system. It provides the hardware interfaces to the automatic fire detection system and the alarm signaling system, MNS-specific controls and indicators, and a paging microphone. See Figure 3 on page 13 for the ACU/FACU cabinet layout.

Notification appliance circuits consist of speakers for broadcasting live-voice instructions and prerecorded audio messages, amber or alternate color strobes for signaling mass notification alarm conditions, and clear strobes for signaling fire alarm/evacuation conditions. See Figure 1 on page 8.

### Notes

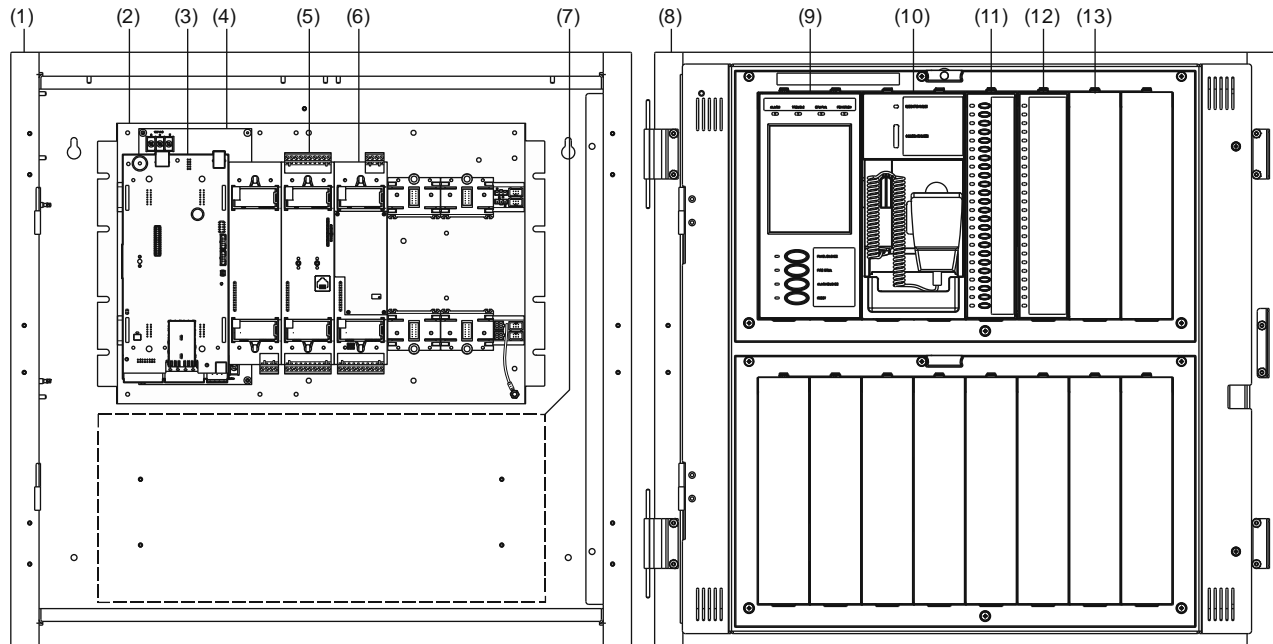
- Use separate control-display modules or other approved methods to indicate high priority MNS alarm events, low priority MNS alarm events, and fire alarm events, as required.
- For systems with more than one notification zone, provide a manual control to activate each zone and an indicator to indicate when each zone is active.

## ACU/FACU cabinet layout

Figure 3 below shows the cabinet layout for the autonomous control unit used in this application.

**Note:** The example shown below is for illustrative purposes only. Actual cabinet layouts may consist of this or other listed hardware.

**Figure 3: ACU/FACU cabinet layout**



### Hardware layer components

- (1) Cabinet backbox
- (2) 3-CHAS7 chassis
- (3) 4-CPU and 4-AUDTELS
- (4) Primary power supply
- (5) Signature SLC controller
- (6) Zone amplifier
- (7) Standby batteries

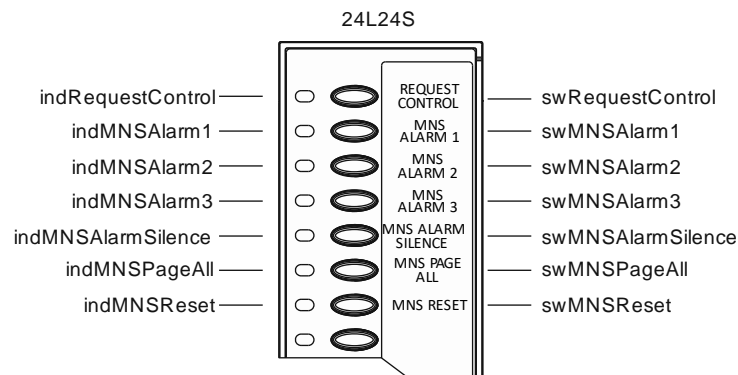
### Operator layer components

- (8) Cabinet inner door
- (9) 4-LCD user interface
- (10) 4-MIC paging microphone
- (11) 4-24L24S control-display module
- (12) 4-24L control-display module
- (13) 4-FIL blank filler plate (10X)

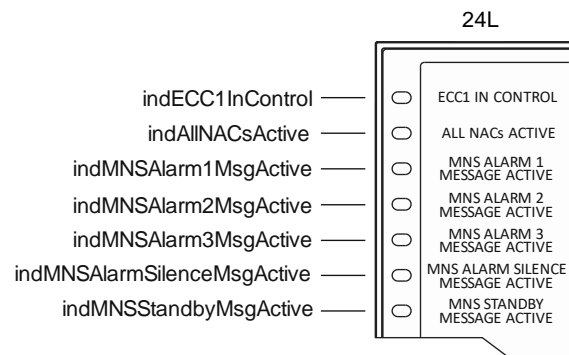


Figure 4 below and Figure 5 below show the configuration of the MNS control-display modules on the autonomous control unit's operator layer.

**Figure 4: ACU control-display module configuration (4-24L24S)**



**Figure 5: ACU control-display module configuration (4-24L)**



## Requirements

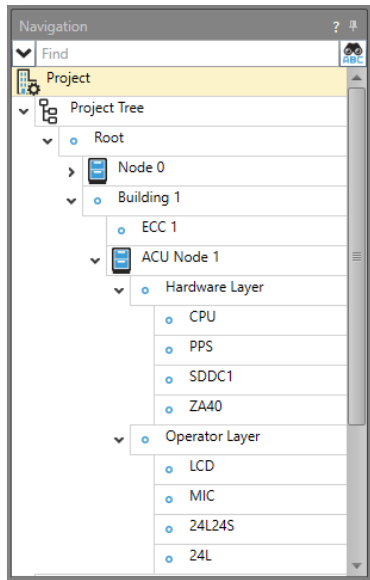
For this application, the ACU/FACU provides:

- A manual control to request control of the system and an indicator to indicate when control is requested
- A manual control to activate a prerecorded audio message for each type of mass notification alarm event identified in the emergency response plan and an indicator to indicate which mass notification alarm event is active (i.e., which button was pressed)
- A manual control to silence active mass notification alarm event messages and an indicator to indicate when MNS alarm silence is active
- A manual control to reset (unlatch) MNS alarm operation and return the system to fire alarm operation and an indicator to indicate when MNS reset is active
- A manual control to initiate paging throughout the protected premises and an indicator to indicate when paging can begin
- An indicator to indicate when the ACU is in control of the system
- An indicator to indicate when MNS notification appliance circuits are active

- An indicator to indicate which mass notification alarm event message is playing
- An indicator to indicate when the MNS standby message is playing
- An indicator to indicate when the MNS alarm silence message is playing

## Project configuration

1. Configure the project tree as shown below.



2. Add the AudioOutput device in Table 3 below to the Building 1 branch (path: Root\Building 1), and then assign it to the zone amplifier module on ACU Node 1's hardware layer.

**Table 3: AudioOutput device configuration**

Model	Configuration
AudioOutput	<b>Basic Configuration:</b> Label: AudioOut Location Text: Root\Building 1 Message Route: All Alternate Message Route: All

3. Add the SIGA-CC1S devices in Table 4 below to the Building 1 branch (path: Root\Building 1), and then assign them to the Signature SLC controller on ACU Node 1's hardware layer.

**Table 4: SIGA-CC1S device configuration**

Model	Configuration
SIGA-CC1S	<b>Basic Configuration:</b> Label: FireStrobe Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Device Configuration:</b> Device Type: Visible Stand-alone: Clear (not checked) Personality Code: (5) Signal – supervised output (Class B)
SIGA-CC1S	<b>Basic Configuration:</b> Label: AlertStrobe Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Device Configuration:</b> Device Type: Visible Stand-alone: Clear (not checked) Personality Code: (5) Signal – supervised output (Class B)

4. Add the EST4 Switch devices in Table 5 below to the Emergency Command Center branch (path: Root\Building 1\ECC 1), and then assign them to the 4-24L24S module on ACU Node 1's operator layer as shown in Figure 4 on page 14.

**Table 5: EST4 Switch devices – 4-24L24S on ACU**

Model	Configuration
EST4 Switch	<b>Basic Configuration:</b> Label: swRequestControl Location Text: Root\Building 1\ECC 1 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected
EST4 Switch	<b>Basic Configuration:</b> Label: swMNSAlarm1 Location Text: Root\Building 1\ECC 1 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected

Model	Configuration
EST4 Switch	<b>Basic Configuration:</b> Label: swMNSAlarm2 Location Text: Root\Building 1\ECC 1 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected
EST4 Switch	<b>Basic Configuration:</b> Label: swMNSAlarm3 Location Text: Root\Building 1\ECC 1 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected
EST4 Switch	<b>Basic Configuration:</b> Label: swMNSAlarmSilence Location Text: Root\Building 1\ECC 1 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected
EST4 Switch	<b>Basic Configuration:</b> Label: swMNSPageAll Location Text: Root\Building 1\ECC 1 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected
EST4 Switch	<b>Basic Configuration:</b> Label: swMNSReset Location Text: Root\Building 1\ECC 1 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected

5. Add the EST4 Indicator devices in Table 6 on page 18 to the Emergency Command Center branch (path: Root\Building 1\ECC 1), and then assign them to the 4-24L24S module on ACU Node 1's operator layer as shown in Figure 4 on page 14.

**Table 6: EST4 Indicator devices – 4-24L24S on ACU**

<b>Model</b>	<b>Configuration</b>
EST4 Indicator	<b>Basic Configuration:</b> Label: indRequestControl Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarm1 Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Red
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarm2 Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Red
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarm3 Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Red
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarmSilence Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Yellow
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSReset Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Yellow
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSPageAll Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green

6. Add the EST4 Indicator devices in Table 7 below to the Emergency Command Center branch (path: Root\Building 1\ECC 1), and then assign them to the 4-24L module on ACU Node 1's operator layer as shown in Figure 5 on page 14.

**Table 7: EST4 Indicator devices – 4-24L on ACU**

<b>Model</b>	<b>Configuration</b>
EST4 Indicator	<b>Basic Configuration:</b> Label: indECC1InControl Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indAllNACsActive Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarm1MsgActive Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarm2MsgActive Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarm3MsgActive Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarmSilenceMsgActive Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green

Model	Configuration
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSStandbyMsgActive Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green

7. Add the AudioMessage devices in Table 8 below to the Building 1 branch (path: Root\Building 1).

**Table 8: AudioMessage device configuration**

Model	Configuration
AudioMessage	<b>Basic Configuration:</b> Label: msgFireAlert Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Audio Clip: defined by user
AudioMessage	<b>Basic Configuration:</b> Label: msgFireEvacuation Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Audio Clip: defined by user
AudioMessage	<b>Basic Configuration:</b> Label: msgMNSAlarm1 Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Audio Clip: defined by user
AudioMessage	<b>Basic Configuration:</b> Label: msgMNSAlarm2 Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Audio Clip: defined by user
AudioMessage	<b>Basic Configuration:</b> Label: msgMNSAlarm3 Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Audio Clip: defined by user

Model	Configuration
AudioMessage	<b>Basic Configuration:</b> Label: msgMNSAlarmSilence Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Audio Clip: short beep every 30 seconds
AudioMessage	<b>Basic Configuration:</b> Label: msgMNSStandby Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Audio Clip: defined by user

8. Add the AudioChannel devices in Table 9 below to the Building 1 branch (path: Root\Building 1).

**Table 9: AudioChannel device configuration**

Model	Configuration
AudioChannel	<b>Basic Configuration:</b> Label: PageChannel Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Channel Type: Page Play Mode: FIFO  <b>Audio Channel Audio Message List members:</b> No members
AudioChannel	<b>Basic Configuration:</b> Label: FireEvacuationChannel Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Channel Type: Evacuation Play Mode: FIFO Queue Depth: 25 Queue Overflow: None Default Audio Message: leave blank  <b>Audio Channel Audio Message List members:</b> [Root\Building 1] msgFireEvacuation



Model	Configuration
AudioChannel	<b>Basic Configuration:</b> Label: FireAlertChannel Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Channel Type: Alert Play Mode: FIFO Queue Depth: 25 Queue Overflow: None Default Audio Message: leave blank  <b>Audio Channel Audio Message List members:</b> [Root\Building 1] msgFireAlert
AudioChannel	<b>Basic Configuration:</b> Label: MNSAlarmSilenceChannel Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Channel Type: Other Play Mode: FIFO Queue Depth: 25 Queue Overflow: None Default Audio Message: leave blank  <b>Audio Channel Audio Message List members:</b> [Root\Building 1] msgMNSAlarmSilence
AudioChannel	<b>Basic Configuration:</b> Label: MNSEmergencyChannel Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Channel Type: Emergency Play Mode: FIFO Queue Depth: 25 Queue Overflow: None Default Audio Message: leave blank  <b>Audio Channel Audio Message List members:</b> [Root\Building 1] msgMNSAlarm1 [Root\Building 1] msgMNSAlarm2 [Root\Building 1] msgMNSAlarm3 [Root\Building 1] msgMNSStandby

9. Add the And devices in Table 10 below to the Building 1 branch (path: Root\Building 1).

**Table 10: And device configuration**

Model	Configuration
And	<p><b>Basic Configuration:</b>  Label: andAllNACsActive  Location Text: Root\Building 1  Message Route: All  Alternate Message Route: All</p> <p><b>Logics Configuration:</b>  Activation Count: 1 (one count for each member)  Activation Event Type: Local Monitor</p> <p><b>Logic Group Member List members:</b>  Path: Root\Building 1\ACU Node 1\Hardware Layer\ZA40  Label: \$AmplifierChannel4 (MNSEmergencyChannel)  Queues to Activation Counter: Other</p>
And	<p><b>Basic Configuration:</b>  Label: andMNSAlarm1MsgSelect  Location Text: Root\Building 1  Message Route: All  Alternate Message Route: All</p> <p><b>Logics Configuration:</b>  Activation Count: 2 (1 + one count for each member)  Activation Event Type: Local Monitor</p> <p><b>Logic Group Member List members:</b>  Path: Root\Building 1\ACU Node 1\Hardware Layer\ZA40  Label: \$AmplifierChannel4 (i.e., MNSEmergencyChannel)  Queues to Activation Counter: Other</p>
And	<p><b>Basic Configuration:</b>  Label: andMNSAlarm2MsgSelect  Location Text: Root\Building 1  Message Route: All  Alternate Message Route: All</p> <p><b>Logics Configuration:</b>  Activation Count: 2 (1 + one count for each member)  Activation Event Type: Local Monitor</p> <p><b>Logic Group Member List members:</b>  Path: Root\Building 1\ACU Node 1\Hardware Layer\ZA40  Label: \$AmplifierChannel4 (i.e., MNSEmergencyChannel)  Queues to Activation Counter: Other</p>
And	<p><b>Basic Configuration:</b>  Label: andMNSAlarm3MsgSelect  Location Text: Root\Building 1  Message Route: All  Alternate Message Route: All</p> <p><b>Logics Configuration:</b>  Activation Count: 2 (1 + one count for each member)  Activation Event Type: Local Monitor</p> <p><b>Logic Group Member List members:</b>  Path: Root\Building 1\ACU Node 1\Hardware Layer\ZA40  Label: \$AmplifierChannel4 (i.e., MNSEmergencyChannel)  Queues to Activation Counter: Other</p>

Model	Configuration
And	<b>Basic Configuration:</b> Label: andMNSAlarmOn Location Text: MNS Alarm. Press MNS Reset to reset. Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Activation Count: 1 Activation Event Type: AND  <b>Logic Group Member List members:</b> No members
And	<b>Basic Configuration:</b> Label: andMNSStandbyMsgSelect Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Activation Count: 2 (1 + one count for each member) Activation Event Type: Local Monitor  <b>Logic Group Member List members:</b>  Path: Root\Building 1\ACU Node 1\Hardware Layer\ZA40 Label: \$AmplifierChannel4 (i.e., MNSEmergencyChannel) Queues to Activation Counter: Other

10. Add the CommandList devices in Table 11 below to the Building 1 branch (path: Root\Building 1).

**Table 11: CommandList device configuration – Application 1**

Model	Configuration
CommandList	<b>Basic Configuration:</b> Label: cIECC1CancelRequest Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cIECC1RequestControl Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cMNSAlarm1Off Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cMNSAlarm1On Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cMNSAlarm2Off Location Text: Root\Building 1 Message Route: All Alternate Message Route: All

Model	Configuration
CommandList	<b>Basic Configuration:</b> Label: cIMNSAlarm2On Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cIMNSAlarm3Off Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cIMNSAlarm3On Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cIMNSAlarmOff Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cIMNSAlarmOn Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cIMNSAlarmSilenceOff Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cIMNSAlarmSilenceOn Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cIMNSPageAllOff Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cIMNSPageAllOn Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cIMNSResetOn Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cIMNSStandbyMsgEnable Location Text: Root\Building 1 Message Route: All Alternate Message Route: All

Model	Configuration
CommandList	<b>Basic Configuration:</b> Label: cIMNSStandbyOff Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: cIMNSStandbyOn Location Text: Root\Building 1 Message Route: All Alternate Message Route: All

11. Add the NotificationControlArea device in Table 12 below to the Building 1 branch (path: Root\Building 1).

**Table 12: NotificationControlArea device configuration – Application 1**

Model	Configuration
NotificationControlArea	<b>Basic Configuration:</b> Label: ncaBldg1 Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Telephone Riser: None Phone Off-Hook Timer: Off (check box not selected) Request Timer: Off (check box not selected) Preannounce Tone – Alarm: None Preannounce Tone – Nonalarm: None  <b>NCA Audio Channel List members:</b> [Root\Building 1] FireAlertChannel [Root\Building 1] FireEvacuationChannel [Root\Building 1] MNSAlarmSilenceChannel [Root\Building 1] MNSEmergencyChannel [Root\Building 1] PageChannel  <b>NCA Node List members:</b> [Root\Building 1] ACU Node 1  <b>Node Audio Channel List members:</b> Channel 1: [Root\Building 1] PageChannel Channel 2: [Root\Building 1] FireEvacuationChannel Channel 3: [Root\Building 1] FireAlertChannel Channel 4: [Root\Building 1] MNSEmergencyChannel Channel 5: [Root\Building 1] MNSAlarmSilenceChannel

12. Add the RequestGrantDeny device below to the Emergency Command Center branch (path: Root\Building 1\ECC 1).

**Table 13: RequestGrantDeny device configuration – ECC 1**

Model	Configuration
RequestGrantDeny	<b>Basic Configuration:</b> Label: rgdBldg1NCA Location Text: Root\Building 1\ECC 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Priority: 1 Notification Control Area: [Root\Building 1] ncaBldg1

13. Add the CommandCenter device below to the Emergency Command Center branch (path: Root\Building 1\ECC 1).

**Table 14: CommandCenter device configuration – ECC 1**

Model	Configuration
CommandCenter	<b>Basic Configuration:</b> Label: ccBldg1ECC1 Location Text: Building 1\ECC1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Notification Control Area: [Root\Building 1] ncaBldg1  <b>Command Center RGD List members:</b> [Root\Building 1\ECC 1] rgdBldg1NCA  <b>Command Center Node List members:</b> [Root\Building 1] ACU Node 1

## Programming

This section provides the rulescripts required to program the application.

1. Add the MNS Startup rulescript below to the root branch (path: Root).

### {MNS Startup rulescript}

```
@ Startup :
+AutoDisable .CommandList '[Building 1]clECC1CancelRequest' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm10ff' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm10n' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm20ff' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm20n' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm30ff' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm30n' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarmSilenceOff' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarmSilenceOn' ,
+AutoDisable .CommandList '[Building 1]clMNSPageAll0ff' ,
+AutoDisable .CommandList '[Building 1]clMNSPageAll0n' ,
```

```

+AutoDisable .CommandList '[Building 1]clMNSStandbyOff' ,
+AutoDisable .CommandList '[Building 1]clMNSStandbyOn' ,
+AutoDisable .CommandList '[Building 1]clMNSResetOn' ,
+AutoDisable .LocalMonitor '[Building 1\ACU Node 1\Operator
Layer\MIC]$MicrophonePushToTalk' ;

```

2. Add the MNS Alarm 1 rulescript below to the Building 1 branch (path: Root\Building 1).

#### **{MNS Alarm 1 rulescript}**

```

@ Switch .Switch '[+]swMNSAlarm1' :
+Activate .CommandList 'clMNSAlarm1On' ;

@ Activation .CommandList 'clMNSAlarm1On' :
+AutoDisable .CommandList 'clMNSAlarm1On' ,
+AutoEnable .CommandList 'clMNSAlarm1Off' ,
+Activate .CommandList 'clMNSAlarmOn' ,
+Activate .CommandList 'clMNSAlarm2Off' ,
+Activate .CommandList 'clMNSAlarm3Off' ,
+Activate .CommandList 'clMNSStandbyOff' ,
+Activate .CommandList 'clMNSPageAllOff' ,
+Activate .And 'andMNSAlarm1MsgSelect' ,
+Activate .CommandList 'clMNSAlarmSilenceOff' ,
+Steady .Indicator '[+]indMNSAlarm1' ;

@ Activation .CommandList 'clMNSAlarm1Off' :
+AutoDisable .CommandList 'clMNSAlarm1Off' ,
+AutoEnable .CommandList 'clMNSAlarm1On' ,
+Restore .And 'andMNSAlarm1MsgSelect' ,
+Off .Indicator '[+]indMNSAlarm1' ;

@ Activation .And 'andMNSAlarm1MsgSelect' :
MessageOn 'msgMNSAlarm1' ;

@ Confirmation .AudioMessage 'msgMNSAlarm1' :
Steady .Indicator '[+]indMNSAlarm1MsgActive' ;

```

3. Add the MNS Alarm 2 rulescript below to the Building 1 branch (path: Root\Building 1).

#### **{MNS Alarm 2 rulescript}**

```

@ Switch .Switch '[+]swMNSAlarm2' :
+Activate .CommandList 'clMNSAlarm2On' ;

@ Activation .CommandList 'clMNSAlarm2On' :
+AutoDisable .CommandList 'clMNSAlarm2On' ,
+AutoEnable .CommandList 'clMNSAlarm2Off' ,
+Activate .CommandList 'clMNSAlarmOn' ,
+Activate .CommandList 'clMNSAlarm1Off' ,
+Activate .CommandList 'clMNSAlarm3Off' ,
+Activate .CommandList 'clMNSStandbyOff' ,
+Activate .CommandList 'clMNSPageAllOff' ,
+Activate .And 'andMNSAlarm2MsgSelect' ,
+Activate .CommandList 'clMNSAlarmSilenceOff' ,
+Steady .Indicator '[+]indMNSAlarm2' ;

```

```

@ Activation .CommandList 'clMNSAlarm2Off' :
    +AutoDisable .CommandList 'clMNSAlarm2Off' ,
    +AutoEnable .CommandList 'clMNSAlarm2On' ,
    +Restore .And 'andMNSAlarm2MsgSelect' ,
    +Off .Indicator '[+]indMNSAlarm2' ;

@ Activation .And 'andMNSAlarm2MsgSelect' :
    MessageOn 'msgMNSAlarm2' ;

@ Confirmation .AudioMessage 'msgMNSAlarm2' :
    Steady .Indicator '[+]indMNSAlarm2MsgActive';

```

4. Add the MNS Alarm 3 rulescript below to the Building 1 branch (path: Root\Building 1).

**{MNS Alarm 3 rulescript}**

```

@ Switch .Switch '[+]swMNSAlarm3' :
    +Activate .CommandList 'clMNSAlarm3On' ;

@ Activation .CommandList 'clMNSAlarm3On' :
    +AutoDisable .CommandList 'clMNSAlarm3On' ,
    +AutoEnable .CommandList 'clMNSAlarm3Off' ,
    +Activate .CommandList 'clMNSAlarmOn' ,
    +Activate .CommandList 'clMNSAlarm10ff' ,
    +Activate .CommandList 'clMNSAlarm20ff' ,
    +Activate .CommandList 'clMNSStandbyOff' ,
    +Activate .CommandList 'clMNSPageAllOff' ,
    +Activate .And 'andMNSAlarm3MsgSelect' ,
    +Activate .CommandList 'clMNSAlarmSilenceOff' ,
    +Steady .Indicator '[+]indMNSAlarm3' ;

@ Activation .CommandList 'clMNSAlarm3Off' :
    +AutoDisable .CommandList 'clMNSAlarm3Off' ,
    +AutoEnable .CommandList 'clMNSAlarm3On' ,
    +Restore .And 'andMNSAlarm3MsgSelect' ,
    +Off .Indicator '[+]indMNSAlarm3' ;

@ Activation .And 'andMNSAlarm3MsgSelect' :
    MessageOn 'msgMNSAlarm3' ;

@ Confirmation .AudioMessage 'msgMNSAlarm3' :
    Steady .Indicator '[+]indMNSAlarm3MsgActive' ;

```

5. Add the MNS Alarm On rulescript below to the Building 1 branch (path: Root\Building 1).

**{MNS Alarm On rulescript}**

```

@ Activation .CommandList 'clMNSAlarmOn' :
    +AutoDisable .CommandList 'clMNSAlarmOn' ,
    +Activate .And 'andMNSAlarmOn' ;

@ Activation .And 'andMNSAlarmOn' :
    -Off .Indicator '[+]indMNSReset' ,
    Off Medium .Visible 'FireStrobe' ,
    On .Visible 'AlertStrobe' ,
    AudioOn 'AudioOut' From 'MNSEmergencyChannel' ,

```



```

AutoDisable .CommonControlSwitch '[ACU Node 1\Operator Layer\LCD]$Switch2' ,
AutoEnable .CommandList 'clMNSPageAllOn' ,
AutoEnable .CommandList 'clMNSAlarmSilenceOn' ,
AutoEnable .CommandList 'clMNSResetOn' ;

```

```

@ Activation .And 'andAllNACsActive' :
    Steady .Indicator '[+]indAllNACsActive' ;

```

```

@ Activation .CommandList 'clMNSAlarmOff' :
    +AutoEnable .CommandList 'clMNSAlarmOn' ,
    +Restore .And 'andMNSAlarmOn' ;

```

6. Add the MNS Alarm Silence rulescript below to the Building 1 branch (path: Root\Building 1).

#### **{MNS Alarm Silence rulescript}**

```

@ Switch .Switch '[+]swMNSAlarmSilence' :
    +Activate .CommandList 'clMNSAlarmSilenceOn' ,
    +Activate .CommandList 'clMNSAlarmSilenceOff' ;

```

```

@ Activation .CommandList 'clMNSAlarmSilenceOn' :
    +AutoDisable .CommandList 'clMNSAlarmSilenceOn' ,
    +AutoEnable .CommandList 'clMNSAlarmSilenceOff' ,
    +AudioOn 'AudioOut' From 'MNSAlarmSilenceChannel' ,
    +MessageOn 'msgMNSAlarmSilence' ,
    +AudioOff 'AudioOut' From 'MNSEmergencyChannel' ,
    +Steady .Indicator '[+]indMNSAlarmSilence' ;

```

```

@ Activation .CommandList 'clMNSAlarmSilenceOff' :
    +AutoDisable .CommandList 'clMNSAlarmSilenceOff' ,
    +AutoEnable .CommandList 'clMNSAlarmSilenceOn' ,
    +AudioOn 'AudioOut' From 'MNSEmergencyChannel' ,
    +AudioOff 'AudioOut' From 'MNSAlarmSilenceChannel' ,
    +MessageOff 'msgMNSAlarmSilence' ,
    +Off .Indicator '[+]indMNSAlarmSilence' ;

```

```

@ Confirmation .AudioMessage 'msgMNSAlarmSilence' :
    Off .Indicator '[+]indMNSAlarm1MsgActive' ,
    Off .Indicator '[+]indMNSAlarm2MsgActive' ,
    Off .Indicator '[+]indMNSAlarm3MsgActive' ,
    Off .Indicator '[+]indMNSStandbyMsgActive' ,
    Steady .Indicator '[+]indMNSAlarmSilenceMsgActive' ;

```

7. Add the ECC 1 MNS Page Controls rulescript below to the Building 1 branch (path: Root\Building 1).

#### **{ECC 1 MNS Page Controls rulescript}**

```

@ Switch .Switch '[ECC 1]swMNSPageAll' :
    +Activate .CommandList 'clMNSPageAllOn' ;

```

```

@ Activation .CommandList 'clMNSPageAllOn' :
    +AutoDisable .CommandList 'clMNSPageAllOn' ,
    +AutoEnable .CommandList 'clMNSPageAllOff' ,
    +AutoEnable .CommandList 'clMNSStandbyOn' ,
    +On .AudioSource '[ACU Node 1\Hardware Layer\CPU]$PageToEmergency' ,
    +AutoEnable .LocalMonitor '[ACU Node 1\Operator Layer\MIC]$MicrophonePushToTalk' ;

```

```
@ Confirmation .AudioSource '[ACU Node 1\Hardware Layer\CPU]$PageToEmergency' :
    Steady .Indicator '[+]indMNSPageAll' ;

@ Activation .CommandList 'clMNSPageAllOff' :
    +AutoDisable .CommandList 'clMNSPageAllOff' ,
    +AutoEnable .CommandList 'clMNSPageAllOn' ,
    +AutoDisable .CommandList 'clMNSStandbyOn' ,
    +Off .AudioSource '[ACU Node 1\Hardware Layer\CPU]$PageToEmergency' ,
    +AutoDisable .LocalMonitor '[ACU Node 1\Operator Layer\MIC]$MicrophonePushToTalk' ;
```

8. Add the MNS Reset rulescript below to the Building 1 branch (path: Root\Building 1).

#### **{MNS Reset rulescript}**

```
@ Switch .Switch '[+]swMNSReset' :
    +Activate .CommandList 'clMNSResetOn' ;

@ Activation .CommandList 'clMNSResetOn' :
    +On .Indicator '[+]indMNSReset' ,
    +Activate .CommandList 'clMNSAlarm10ff' ,
    +Activate .CommandList 'clMNSAlarm20ff' ,
    +Activate .CommandList 'clMNSAlarm30ff' ,
    +Activate .CommandList 'clMNSStandbyOff' ,
    +Activate .CommandList 'clMNSPageAllOff' ,
    +Activate .CommandList 'clMNSAlarmSilenceOff' ,
    +Activate .CommandList 'clECC1CancelRequest' ,
    +Activate .CommandList 'clMNSAlarmOff' ;
```

9. Add the MNS Standby rulescript below to the Building 1 branch (path: Root\Building 1).

#### **{MNS Standby rulescript}**

```
@ LocalMonitor .LocalMonitor '[ACU Node 1\Operator Layer\MIC]$MicrophonePushToTalk' :
    +Activate .CommandList 'clMNSStandbyOn' ;

@ Activation .CommandList 'clMNSStandbyOn' :
    +AutoDisable .CommandList 'clMNSStandbyOn' ,
    +Activate .CommandList 'clMNSAlarm10ff' ,
    +Activate .CommandList 'clMNSAlarm20ff' ,
    +Activate .CommandList 'clMNSAlarm30ff' ,
    +Activate .CommandList 'clMNSStandbyMsgEnable' ,
    +AutoEnable .CommandList 'clMNSStandbyOn' ;

@ Activation .CommandList 'clMNSStandbyMsgEnable' :
    +AutoDisable .CommandList 'clMNSStandbyMsgEnable' ,
    +Activate .And 'andMNSStandbyMsgSelect' ;

@ Activation .And 'andMNSStandbyMsgSelect' :
    MessageOn 'msgMNSStandby' ;

@ Confirmation .AudioMessage 'msgMNSStandby' :
    AutoEnable .CommandList 'clMNSStandbyOff' ,
    Steady .Indicator '[+]indMNSStandbyMsgActive' ;

@ Activation .CommandList 'clMNSStandbyOff' :
```

```
+AutoEnable .CommandList 'clMNSStandbyMsgEnable' ,
+Restore .And 'andMNSStandbyMsgSelect' ;
```

10. Add the RequestGrantDeny ECC1 rulescript below to the Building 1 branch (path: Root\Building 1).

**{RequestGrantDeny ECC1 rulescript}**

```
@ Switch .Switch '[ECC 1]swRequestControl' :
+Activate .CommandList 'clECC1RequestControl' ,
+Activate .CommandList 'clECC1CancelRequest' ;

@ Activation .CommandList 'clECC1RequestControl' :
+AutoDisable .CommandList 'clECC1RequestControl' ,
+AutoEnable .CommandList 'clECC1CancelRequest' ,
+Steady .Indicator '[ECC 1]indRequestControl' ,
+Start .RequestGrantDeny '[ECC 1]rgdBldg1NCA' ;

@ Activation .CommandList 'clECC1CancelRequest' :
+AutoDisable .CommandList 'clECC1CancelRequest' ,
+AutoEnable .CommandList 'clECC1RequestControl' ,
+Off .Indicator '[ECC 1]indRequestControl' ,
+Stop .RequestGrantDeny '[ECC 1]rgdBldg1NCA' ;

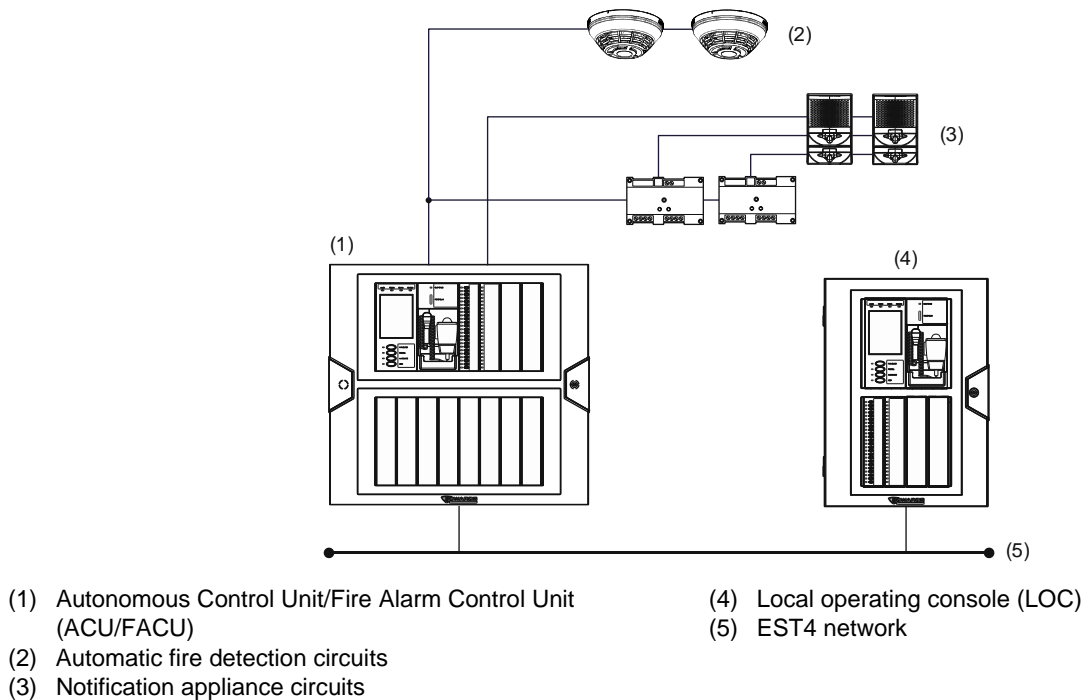
@ Granted .RequestGrantDeny '[ECC 1]rgdBldg1NCA' :
Steady .Indicator '[+]indECC1InControl' ;

@ Granted .NotificationControlArea 'ncaBldg1' :
AutoEnable .CommandList 'clMNSAlarm1On' ,
AutoEnable .CommandList 'clMNSAlarm2On' ,
AutoEnable .CommandList 'clMNSAlarm3On' ;
```

## Application 2: Mass notification system with two control locations

This topic describes how to add mass notification features to an EST4 fire alarm system with two control locations. Figure 6 below shows an example of an EST4 mass notification system that uses a fire alarm control unit equipped with a microphone as an local operating console (LOC).

Figure 6: System diagram – Application 2



The ACU/FACU is the primary point of control for the system. It provides the hardware interfaces to the automatic fire detection system and to the alarm signaling system, MNS-specific controls and indicators, and a paging microphone. See Figure 7 on page 34 for the ACU/FACU cabinet layout.

The LOC is the secondary point of control for the system. It provides MNS-specific controls and indicators and a paging microphone. See Figure 8 on page 35 for the LOC cabinet layout.

Notification appliance circuits consist of speakers for broadcasting live-voice instructions and prerecorded audio messages, amber or alternate color strobes for signaling mass notification alarm conditions, and clear strobes for signaling fire alarm/evacuation conditions. See Figure 1 on page 8.

In this application, the ACU/FACU has priority over the LOC and the notification control area's request timer is turned off. This means that:

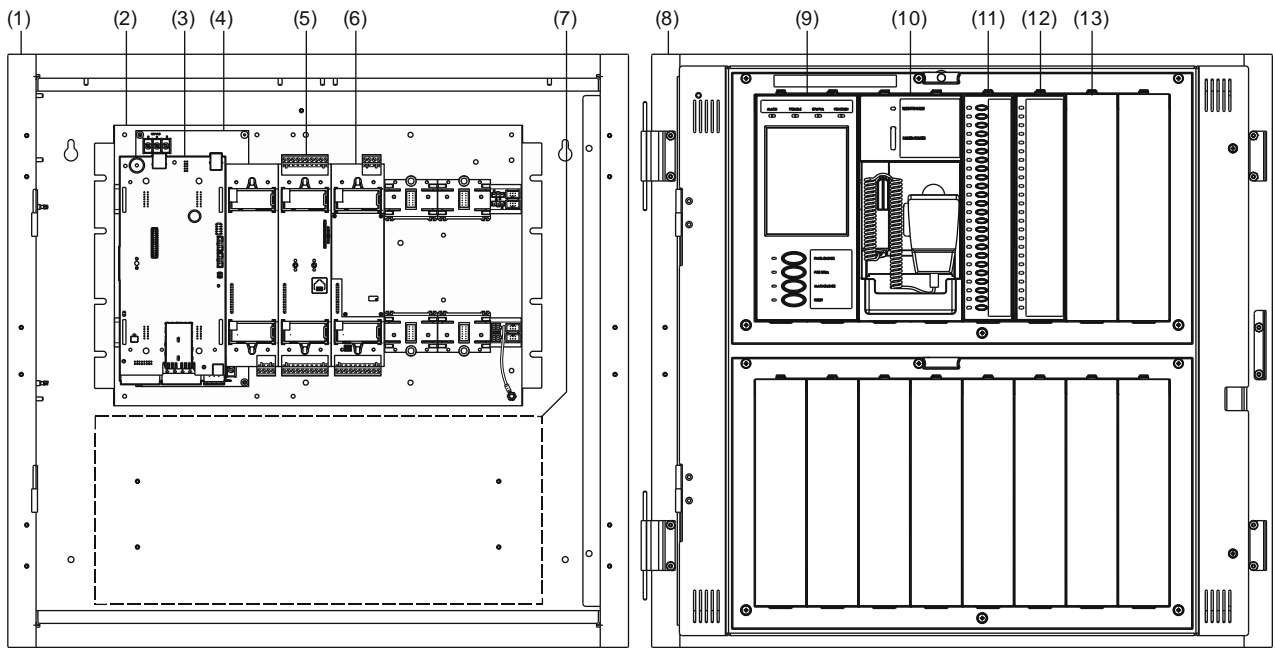
- If neither has control, the first one to request control is automatically granted control.
- If the ACU/FACU has control, the LOC must request control. The ACU/FACU may then either grant control to the LOC or deny control.
- If the LOC has control, the ACU/FACU automatically takes control when requested. The LOC does not have to grant control nor can it deny control.

## ACU/FACU cabinet layout

Figure 7 below shows the cabinet layout for the autonomous control unit used in this application.

**Note:** The example shown below is for illustrative purposes only. Actual cabinet layouts may consist of this or other listed hardware.

Figure 7: ACU/FACU cabinet layout



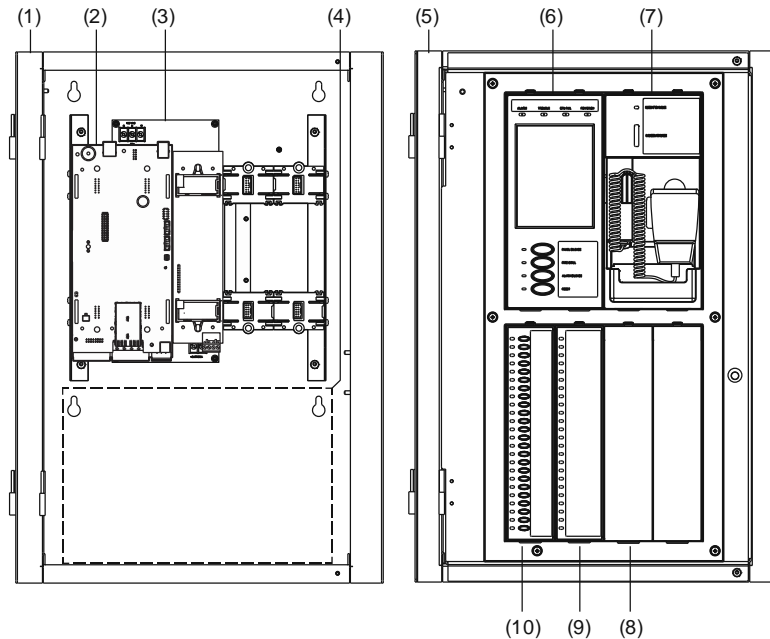
Hardware layer components	Operator layer components
(1) Cabinet backbox	(8) Cabinet inner door
(2) 3-CHAS7 chassis	(9) 4-LCD user interface
(3) 4-CPU and 4-AUDTELS	(10) 4-MIC paging microphone
(4) Primary power supply	(11) 4-24L24S control-display module
(5) Signature SLC controller	(12) 4-24L control-display module
(6) Zone amplifier	(13) 4-FIL blank filler plate (10X)
(7) Standby batteries	

## LOC cabinet layout

Figure 8 below shows the cabinet layout for the local operating console (LOC) used in this application.

**Note:** The example shown below is for illustrative purposes only. Actual cabinet layouts may consist of this or other listed hardware.

**Figure 8: LOC hardware component layout**



### Hardware layer components

- (1) Cabinet backbox
- (2) 4-CPU and 4-AUDTELS
- (3) Primary power supply
- (4) Standby batteries

### Operator layer components

- (5) Cabinet inner door
- (6) 4-LCD user interface module
- (7) 4-MIC paging microphone
- (8) 4-FIL blank filler plate (2X)
- (9) 4-24L control-display module
- (10) 4-24L24S control-display module

Figure 9 below and Figure 10 below show the configuration of the MNS control-display modules on the autonomous control unit's operator layer.

Figure 9: ACU control-display module configuration (4-24L24S)

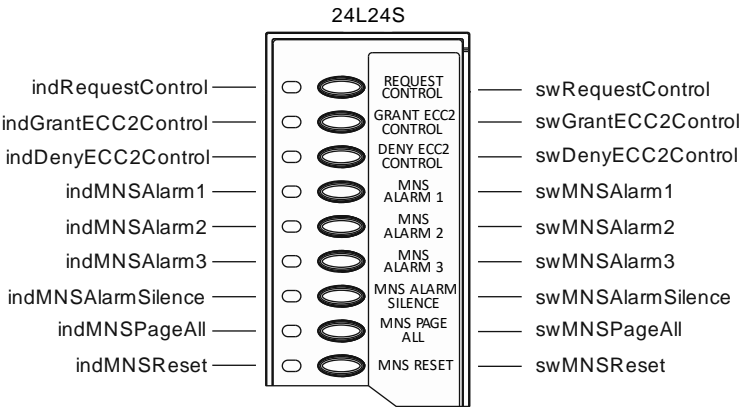


Figure 10: ACU control-display module configuration (4-24L)

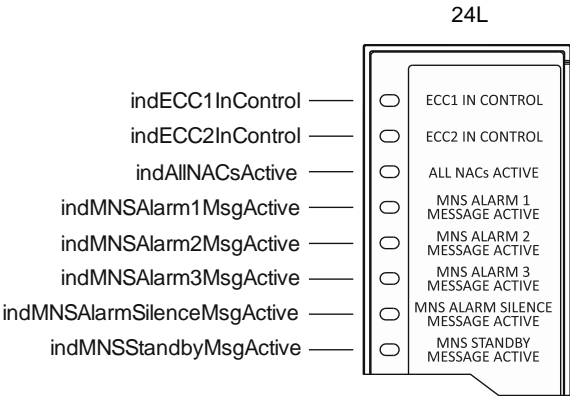
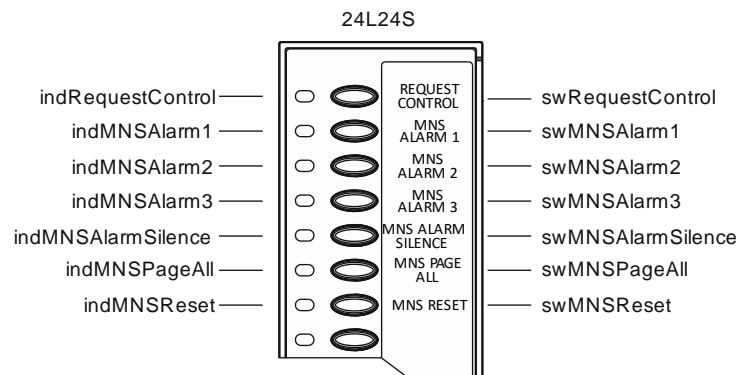
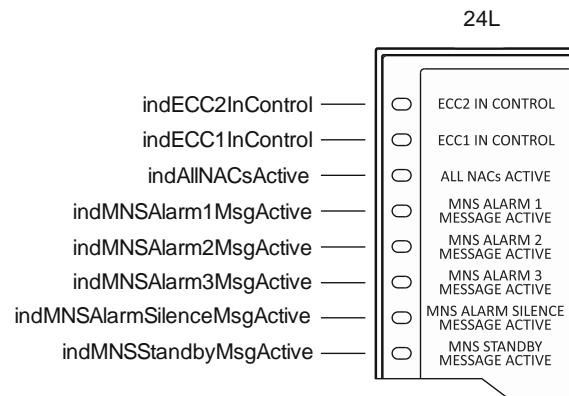


Figure 11 below and Figure 12 below show the configuration of the MNS control-display modules on the local operating console's operator layer.

**Figure 11: LOC control-display module configuration (4-24L24S)**



**Figure 12: LOC control-display module configuration (4-24L)**



## Requirements

For this application, in addition to the controls and indicators provided in Application 1 (see “Requirements” on page 14), the ACU/FACU must provide:

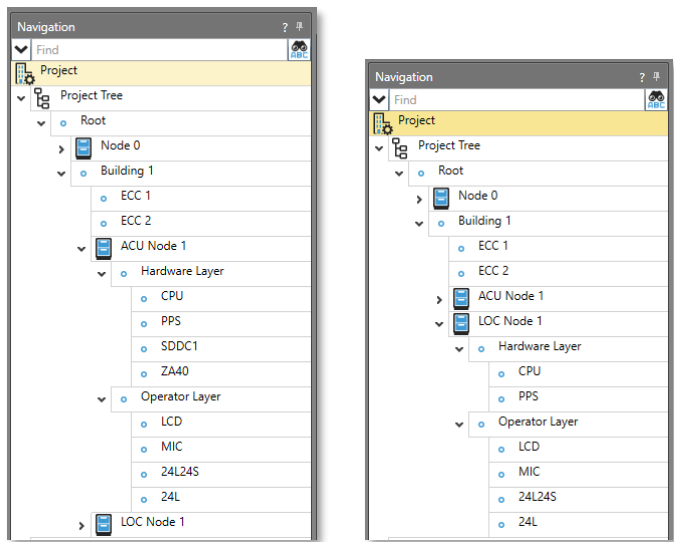
- A manual control to grant control of the system to the secondary point of control (LOC) and an indicator to indicate when control can be granted. See Figure 9 on page 36.
- A manual control to deny control of the system to the secondary point of control (LOC) and an indicator to indicate when control can be denied. See Figure 9 on page 36.
- An indicator to indicate when the LOC is in control of the system. See Figure 10 on page 36.

The LOC must provide the same controls and indicators as on the ACU except for grant and deny controls. See Figure 11 and Figure 12 above.



## Project configuration

1. Configure the project tree as shown below.



2. Add the AudioOutput device in Table 3 on page 15 to the Building 1 branch (path: Root\Building 1), and then assign it to the zone amplifier module on ACU Node 1's hardware layer.
3. Add SIGA-CC1S devices in Table 4 on page 16 to the Building 1 branch (path: Root\Building 1), and then assign them to the Signature SLC controller on ACU Node 1's hardware layer.
4. Add the EST4 Switch devices in Table 5 on page 16 and in Table 15 below to the primary Emergency Command Center branch (path: Root\Building 1\ECC 1), and then assign them to the 4-24L24S module on ACU Node 1's operator layer as shown in Figure 9 on page 36.

Table 15: EST4 Switch devices – 4-24L24S module on ACU

Model	Configuration
EST4 Switch	<b>Basic Configuration:</b> Label: swGrantECC2Control Location Text: Root\Building 1\ECC 1 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected
EST4 Switch	<b>Basic Configuration:</b> Label: swDenyECC2Control Location Text: Root\Building 1\ECC 1 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected

5. Add the EST4 Indicator devices in Table 6 on page 18 and in Table 16 below to the primary Emergency Command Center branch (path: Root\Building 1\ECC 1), and then assign them to the 4-24L24S module on ACU Node 1's operator layer as shown in Figure 9 on page 36.

**Table 16: EST4 Indicator devices – 4-24L24S module on ACU**

Model	Configuration
EST4 Indicator	<b>Basic Configuration:</b> Label: indGrantECC2Control Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indDenyECC2Control Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Red

6. Add the EST4 Indicator devices in Table 7 on page 19 and in Table 17 below to the primary Emergency Command Center branch (path: Root\Building 1\ECC 1), and then assign them to the 4-24L module on ACU Node 1's operator layer as shown in Figure 9 on page 36.

**Table 17: EST4 Indicator device – 4-24L24S module on ACU**

Model	Configuration
EST4 Indicator	<b>Basic Configuration:</b> Label: indECC2InControl Location Text: Root\Building 1\ECC 1 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green

7. Add the EST4 Switch devices in Table 18 below to the secondary Emergency Command Center branch (path: Root\Building 1\ECC 2), and then assign them to the 4-24L24S module on LOC Node 1's operator layer as shown in Figure 11 on page 37.

**Table 18: EST4 Switch devices – 4-24L24S module on LOC**

Model	Configuration
EST4 Switch	<b>Basic Configuration:</b> Label: swRequestControl Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected

Model	Configuration
EST4 Switch	<b>Basic Configuration:</b> Label: swMNSAlarm1 Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected
EST4 Switch	<b>Basic Configuration:</b> Label: swMNSAlarm2 Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected
EST4 Switch	<b>Basic Configuration:</b> Label: swMNSAlarm3 Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected
EST4 Switch	<b>Basic Configuration:</b> Label: swMNSAlarmSilence Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected
EST4 Switch	<b>Basic Configuration:</b> Label: swMNSPageAll Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected
EST4 Switch	<b>Basic Configuration:</b> Label: swMNSReset Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All  <b>Switch Configuration:</b> Switch Type: Momentary Switch Group: N/A Group: Not selected

8. Add the EST4 Indicator devices in Table 19 below to the secondary Emergency Command Center branch (path: Root\Building 1\ECC 2), and then assign them to the 4-24L24S module on LOC Node 1's operator layer as shown in Figure 4 on page 14.

**Table 19: EST4 Indicator devices – 4-24L24S module on LOC**

<b>Model</b>	<b>Configuration</b>
EST4 Indicator	<b>Basic Configuration:</b> Label: indRequestControl Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarm1 Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Red
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarm2 Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Red
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarm3 Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Red
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarmSilence Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Yellow
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSReset Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Yellow

Model	Configuration
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSPageAll Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green

9. Add the EST4 Indicator devices in Table 20 below to the secondary Emergency Command Center branch (path: Root\Building 1\ECC 2), and then assign them to the 4-24L module on LOC Node 1's operator layer. See Figure 12 on page 37.

**Table 20: EST4 Indicator devices – 4-24L module on LOC**

Model	Configuration
EST4 Indicator	<b>Basic Configuration:</b> Label: indECC2InControl Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indECC1InControl Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indAllNACsActive Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarm1MsgActive Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarm2MsgActive Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green

Model	Configuration
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarm3MsgActive Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSAlarmSilenceMsgActive Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green
EST4 Indicator	<b>Basic Configuration:</b> Label: indMNSStandbyMsgActive Location Text: Root\Building 1\ECC 2 Message Route: None Alternate Message Route: None  <b>Indicator Configuration:</b> Indicator Color: Green

10. Add the AudioMessage devices in Table 8 on page 20 to the Building 1 branch (path: Root\Building 1).
11. Add the AudioChannel devices in Table 9 on page 21 to the Building 1 branch (path: Root\Building 1).
12. Add the And devices in Table 10 on page 23 to the Building 1 branch (path: Root\Building 1).
13. Add the CommandList devices in Table 11 on page 24 and in Table 21 below to the Building 1 branch (path: Root\Building 1).

**Table 21: CommandList device configuration – Application 2**

Model	Configuration
CommandList	<b>Basic Configuration:</b> Label: clECC2CancelRequest Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: clECC2RequestControl Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: clInhibitECC1Controls Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: clInhibitECC2Controls Location Text: Root\Building 1 Message Route: All Alternate Message Route: All

Model	Configuration
CommandList	<b>Basic Configuration:</b> Label: clGrantECC2Control Location Text: Root\Building 1 Message Route: All Alternate Message Route: All
CommandList	<b>Basic Configuration:</b> Label: clDenyECC2Control Location Text: Root\Building 1 Message Route: All Alternate Message Route: All

14. Add the NotificationControlArea device in Table 22 below to the Building 1 branch (path: Root\Building 1).

**Table 22: NotificationControlArea device configuration – Application 2**

Model	Configuration
NotificationControlArea	<b>Basic Configuration:</b> Label: ncaBldg1 Location Text: Root\Building 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Telephone Riser: None Phone Off-Hook Timer: Off (checkbox not selected) Request Timer: Off (checkbox not selected) Preannounce Tone – Alarm: None Preannounce Tone – Nonalarm: None  <b>NCA Audio Channel List members:</b> [Root\Building 1] FireAlertChannel [Root\Building 1] FireEvacuationChannel [Root\Building 1] MNSAlarmSilenceChannel [Root\Building 1] MNSEmergencyChannel [Root\Building 1] PageChannel  <b>NCA Node List members:</b> [Root\Building 1] ACU Node 1 [Root\Building 1] LOC Node 1  <b>ACU Node 1 - Node Audio Channel List members:</b> Channel 1: [Root\Building 1] PageChannel Channel 2: [Root\Building 1] FireEvacuationChannel Channel 3: [Root\Building 1] FireAlertChannel Channel 4: [Root\Building 1] MNSEmergencyChannel Channel 5: [Root\Building 1] MNSAlarmSilenceChannel  <b>LOC Node 1 - Node Audio Channel List members:</b> Channel 1: [Root\Building 1] PageChannel Channel 2: [Root\Building 1] FireEvacuationChannel Channel 3: [Root\Building 1] FireAlertChannel Channel 4: [Root\Building 1] MNSEmergencyChannel Channel 5: [Root\Building 1] MNSAlarmSilenceChannel

15. Add the RequestGrantDeny device in Table 13 on page 27 to the primary Emergency Command Center branch (path: Root\Building 1\ECC 1).
16. Add the RequestGrantDeny device in Table 23 below to the secondary Emergency Command Center branch (path: Root\Building 1\ECC 2).

**Table 23: RequestGrantDeny device configuration – ECC 2**

Model	Configuration
RequestGrantDeny	<b>Basic Configuration:</b> Label: rgdBldg1NCA Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Priority: 2 Notification Control Area: [Root\Building 1] ncaBldg1

17. Add the CommandCenter device in Table 14 on page 27 to the primary Emergency Command Center branch (path: Root\Building 1\ECC 1).
18. Add the CommandCenter device below to the secondary Emergency Command Center branch (path: Root\Building 1\ECC 2).

**Table 24: CommandCenter device configuration – Application 2 ECC 2**

Model	Configuration
CommandCenter	<b>Basic Configuration:</b> Label: ccBldg1ECC2 Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Notification Control Area: [Root\Building 1] ncaBldg1  <b>Command Center RGD List members:</b> [Root\Building 1\ECC 2] rgdBldg1NCA  <b>Command Center Node List members:</b> [Root\Building 1] LOC Node 1



## Programming

This section provides the rulescripts required to program the application.

1. Add the MNS Startup rulescript below to the root branch (path: Root).

### {MNS Startup rulescript}

```
@ Startup :
+AutoDisable .CommandList '[Building 1]clECC1CancelRequest' ,
+AutoDisable .CommandList '[Building 1]clECC2CancelRequest' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm1Off' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm1On' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm2Off' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm2On' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm3Off' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm3On' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarmSilenceOff' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarmSilenceOn' ,
+AutoDisable .CommandList '[Building 1]clMNSPageAllOff' ,
+AutoDisable .CommandList '[Building 1]clMNSPageAllOn' ,
+AutoDisable .CommandList '[Building 1]clMNSStandbyOff' ,
+AutoDisable .CommandList '[Building 1]clMNSStandbyOn' ,
+AutoDisable .CommandList '[Building 1]clMNSResetOn' ,
+AutoDisable .LocalMonitor '[Building 1\LOC Node 1\Operator
Layer\MIC]$MicrophonePushToTalk' ,
+AutoDisable .LocalMonitor '[Building 1\ACU Node 1\Operator
Layer\MIC]$MicrophonePushToTalk';
```

2. Add the MNS Alarm 1 rulescript on page 28 to the Building 1 branch (path: Root\Building 1).
3. Add the MNS Alarm 2 rulescript on page 28 to the Building 1 branch (path: Root\Building 1).
4. Add the MNS Alarm 3 rulescript on page 29 to the Building 1 branch (path: Root\Building 1).

5. Add the MNS Alarm On rulescript below to the Building 1 branch (path: Root\Building 1).

**{MNS Alarm On rulescript}**

```
@ Activation .CommandList 'clMNSAlarmOn' :
    +AutoDisable .CommandList 'clMNSAlarmOn' ,
    +Activate .And 'andMNSAlarmOn' ;

@ Activation .And 'andMNSAlarmOn' :
    -Off .Indicator '[+]indMNSReset' ,
    Off Medium .Visible 'FireStrobe' ,
    On .Visible 'AlertStrobe' ,
    AudioOn 'AudioOut' From 'MNSEmergencyChannel' ,
    AutoDisable .CommonControlSwitch '[ACU Node 1\Operator Layer\LCD]$Switch2' ,
    AutoDisable .CommonControlSwitch '[LOC Node 1\Operator Layer\LCD]$Switch2' ,
    AutoEnable .CommandList 'clMNSPageAllOn' ,
    AutoEnable .CommandList 'clMNSAlarmSilenceOn' ,
    AutoEnable .CommandList 'clMNSResetOn' ;

@ Activation .And 'andAllNACsActive' :
    Steady .Indicator '[+]indAllNACsActive' ;

@ Activation .CommandList 'clMNSAlarmOff' :
    +AutoEnable .CommandList 'clMNSAlarmOn' ,
    +Restore .And 'andMNSAlarmOn' ;
```

6. Add the MNS Alarm Silence rulescript on page 30 to the Building 1 branch (path: Root\Building 1).
7. Add the ECC1 MNS Page Controls rulescript on page 30 to the Building 1 branch (path: Root\Building 1).
8. Add the ECC2 MNS Page Controls rulescript below to the Building 1 branch (path: Root\Building 1).

**{ECC2 MNS Page Controls rulescript}**

```
@ Switch .Switch '[ECC 2]swMNSPageAll' :
    +Activate .CommandList 'clMNSPageAllOn' ;

@ Activation .CommandList 'clMNSPageAllOn' :
    +AutoDisable .CommandList 'clMNSPageAllOn' ,
    +AutoEnable .CommandList 'clMNSPageAllOff' ,
    +AutoEnable .CommandList 'clMNSStandbyOn' ,
    +On .AudioSource '[LOC Node 1\Hardware Layer\CPU]$PageToEmergency' ,
    +AutoEnable .LocalMonitor '[LOC Node 1\Operator Layer\MIC]$MicrophonePushToTalk' ;

@ Confirmation .AudioSource '[LOC Node 1\Hardware Layer\CPU]$PageToEmergency' :
    Steady .Indicator '[+]indMNSPageAll' ;

@ Activation .CommandList 'clMNSPageAllOff' :
    +AutoDisable .CommandList 'clMNSPageAllOff' ,
    +AutoEnable .CommandList 'clMNSPageAllOn' ,
    +AutoDisable .CommandList 'clMNSStandbyOn' ,
    +Off .AudioSource '[LOC Node 1\Hardware Layer\CPU]$PageToEmergency' ,
    +AutoDisable .LocalMonitor '[LOC Node 1\Operator Layer\MIC]$MicrophonePushToTalk' ;
```

9. Add the MNS Reset rulescript below to the Building 1 branch (path: Root\Building 1).

**{MNS Reset rulescript}**

```
@ Switch .Switch '[+]swMNSReset' :
+Activate .CommandList 'clMNSResetOn' ;

@ Activation .CommandList 'clMNSResetOn' :
+On .Indicator '[+]indMNSReset' ,
+Activate .CommandList 'clMNSAlarm10ff' ,
+Activate .CommandList 'clMNSAlarm20ff' ,
+Activate .CommandList 'clMNSAlarm30ff' ,
+Activate .CommandList 'clMNSStandbyOff' ,
+Activate .CommandList 'clMNSPageAllOff' ,
+Activate .CommandList 'clMNSAlarmSilenceOff' ,
+Activate .CommandList 'clECC1CancelRequest' ,
+Activate .CommandList 'clECC2CancelRequest' ,
+Activate .CommandList 'clMNSAlarmOff' ;
```

10. Add the MNS Standby rulescript below to the Building 1 branch (path: Root\Building 1).

**{MNS Standby rulescript}**

```
@ LocalMonitor .LocalMonitor '[ACU Node 1\Operator Layer\MIC]$MicrophonePushToTalk' :
+Activate .CommandList 'clMNSStandbyOn' ;

@ LocalMonitor .LocalMonitor '[LOC Node 1\Operator Layer\MIC]$MicrophonePushToTalk' :
+Activate .CommandList 'clMNSStandbyOn' ;

@ Activation .CommandList 'clMNSStandbyOn' :
+AutoDisable .CommandList 'clMNSStandbyOn' ,
+Activate .CommandList 'clMNSAlarm10ff' ,
+Activate .CommandList 'clMNSAlarm20ff' ,
+Activate .CommandList 'clMNSAlarm30ff' ,
+Activate .CommandList 'clMNSStandbyMsgEnable' ,
+AutoEnable .CommandList 'clMNSStandbyOn' ;

@ Activation .CommandList 'clMNSStandbyMsgEnable' :
+AutoDisable .CommandList 'clMNSStandbyMsgEnable' ,
+Activate .And 'andMNSStandbyMsgSelect' ;

@ Activation .And 'andMNSStandbyMsgSelect' :
MessageOn 'msgMNSStandby' ;

@ Confirmation .AudioMessage 'msgMNSStandby' :
AutoEnable .CommandList 'clMNSStandbyOff' ,
Steady .Indicator '[+]indMNSStandbyMsgActive' ;

@ Activation .CommandList 'clMNSStandbyOff' :
+AutoEnable .CommandList 'clMNSStandbyMsgEnable' ,
+Restore .And 'andMNSStandbyMsgSelect' ;
```

11. Add the RequestGrantDeny ECC1 rulescript below to the Building 1 branch (path: Root\Building 1).

**{RequestGrantDeny ECC1 rulescript}**

```
@ Switch .Switch '[ECC 1]swRequestControl' :
+Activate .CommandList 'clECC1RequestControl' ,
+Activate .CommandList 'clECC1CancelRequest' ;

@ Activation .CommandList 'clECC1RequestControl' :
+AutoDisable .CommandList 'clECC1RequestControl' ,
+AutoEnable .CommandList 'clECC1CancelRequest' ,
+Steady .Indicator '[ECC 1]indRequestControl' ,
+Start .RequestGrantDeny '[ECC 1]rgdBldg1NCA' ;

@ Activation .CommandList 'clECC1CancelRequest' :
+AutoDisable .CommandList 'clECC1CancelRequest' ,
+AutoEnable .CommandList 'clECC1RequestControl' ,
+Off .Indicator '[ECC 1]indRequestControl' ,
+Stop .RequestGrantDeny '[ECC 1]rgdBldg1NCA' ;

@ Granted .RequestGrantDeny '[ECC 1]rgdBldg1NCA' :
Steady .Indicator '[+]indECC1InControl' ,
Activate .CommandList 'clInhibitECC2Controls' ;

@ Activation .CommandList 'clInhibitECC2Controls' :
AutoDisable .Switch '[ECC 2]swMNSAlarm1' ,
AutoDisable .Switch '[ECC 2]swMNSAlarm2' ,
AutoDisable .Switch '[ECC 2]swMNSAlarm3' ,
AutoDisable .Switch '[ECC 2]swMNSAlarmSilence' ,
AutoDisable .Switch '[ECC 2]swMNSReset' ,
AutoDisable .Switch '[ECC 2]swMNSPageAll' ,
Off .Indicator '[ECC 2]indMNSAlarm1' ,
Off .Indicator '[ECC 2]indMNSAlarm2' ,
Off .Indicator '[ECC 2]indMNSAlarm3' ,
Off .Indicator '[ECC 2]indMNSAlarmSilence' ,
Off .Indicator '[ECC 2]indMNSReset' ,
Off .Indicator '[ECC 2]indMNSPageAll' ;

@ Granted .NotificationControlArea 'ncaBldg1' :
AutoEnable .CommandList 'clMNSAlarm1On' ,
AutoEnable .CommandList 'clMNSAlarm2On' ,
AutoEnable .CommandList 'clMNSAlarm3On' ;

@ Switch .Switch '[ECC 1]swGrantECC2Control' :
+Activate .CommandList 'clGrantECC2Control' ;

@ Activation .CommandList 'clGrantECC2Control' :
+AutoDisable .CommandList 'clECC1CancelRequest' ,
+AutoEnable .CommandList 'clECC1RequestControl' ,
+Off .Indicator '[ECC 1]indRequestControl' ,
+Start .NotificationControlArea 'ncaBldg1' ;

@ Switch .Switch '[ECC 1]swDenyECC2Control' :
+Activate .CommandList 'clDenyECC2Control' ;

@ Activation .CommandList 'clDenyECC2Control' :
+Activate .CommandList 'clECC2CancelRequest' ;
```

12. Add the RequestGrantDeny ECC2 rulescript below to the Building 1 branch (path: Root\Building 1).

**{RequestGrantDeny ECC2 rulescript}**

```
@ Switch .Switch '[ECC 2]swRequestControl' :
    +Activate .CommandList 'clECC2RequestControl' ,
    +Activate .CommandList 'clECC2CancelRequest' ;

@ Activation .CommandList 'clECC2RequestControl' :
    +AutoDisable .CommandList 'clECC2RequestControl' ,
    +AutoEnable .CommandList 'clECC2CancelRequest' ,
    +Steady .Indicator '[ECC 2]indRequestControl' ,
    +Start .RequestGrantDeny '[ECC 2]rgdBldg1NCA' ;

@ Activation .CommandList 'clECC2CancelRequest' :
    +AutoDisable .CommandList 'clECC2CancelRequest' ,
    +AutoEnable .CommandList 'clECC2RequestControl' ,
    +Off .Indicator '[ECC 2]indRequestControl' ,
    +Stop .RequestGrantDeny '[ECC 2]rgdBldg1NCA' ;

@ Requested .RequestGrantDeny '[ECC 2]rgdBldg1NCA' :
    FastBlink .Indicator '[ECC 1]indGrantECC2Control' ,
    FastBlink .Indicator '[ECC 1]indDenyECC2Control' ,
    AutoEnable .CommandList 'clGrantECC2Control' ,
    AutoEnable .CommandList 'clDenyECC2Control';

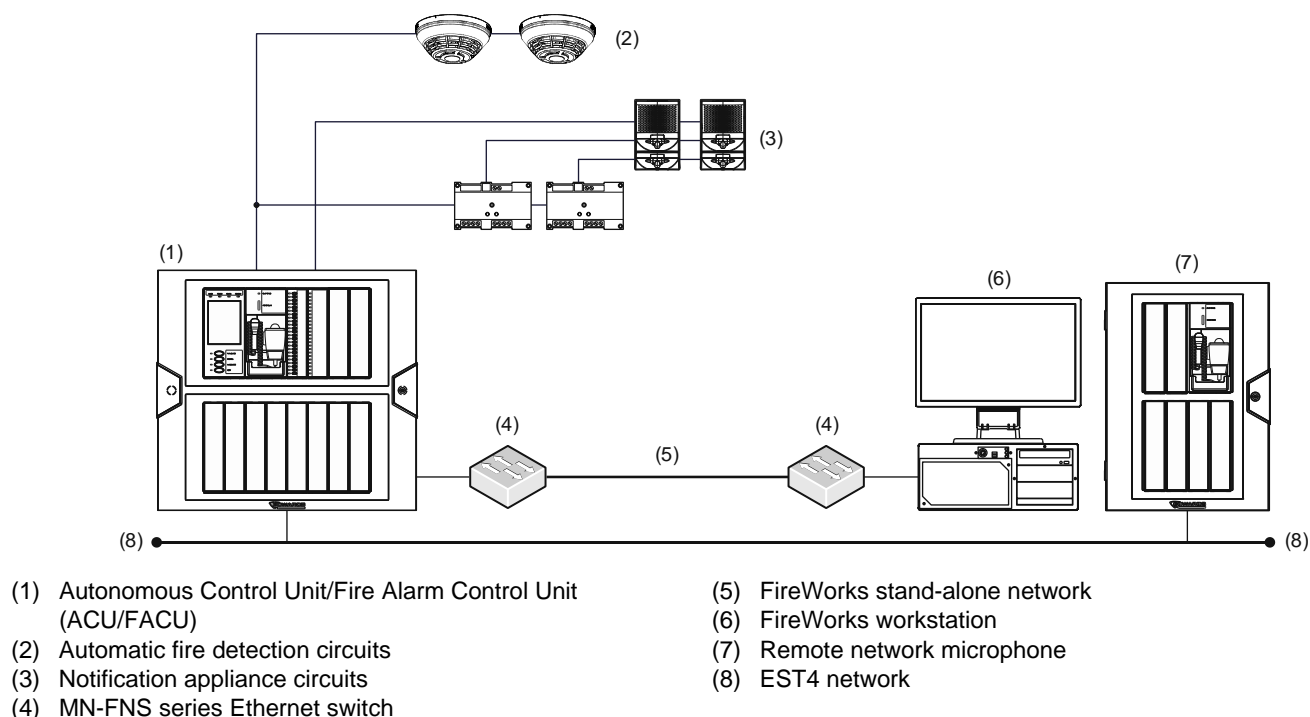
@ Granted .RequestGrantDeny '[ECC 2]rgdBldg1NCA' :
    Steady .Indicator '[+]indECC2InControl' ,
    Activate .CommandList 'clInhibitECC1Controls';

@ Activation .CommandList 'clInhibitECC1Controls' :
    AutoDisable .Switch '[ECC 1]swMNSAlarm1' ,
    AutoDisable .Switch '[ECC 1]swMNSAlarm2' ,
    AutoDisable .Switch '[ECC 1]swMNSAlarm3' ,
    AutoDisable .Switch '[ECC 1]swMNSAlarmSilence' ,
    AutoDisable .Switch '[ECC 1]swMNSReset' ,
    AutoDisable .Switch '[ECC 1]swMNSPageAll' ,
    Off .Indicator '[ECC 1]indMNSAlarm1' ,
    Off .Indicator '[ECC 1]indMNSAlarm2' ,
    Off .Indicator '[ECC 1]indMNSAlarm3' ,
    Off .Indicator '[ECC 1]indMNSAlarmSilence' ,
    Off .Indicator '[ECC 1]indMNSReset' ,
    Off .Indicator '[ECC 1]indMNSPageAll' ;
```

## Application 3: Mass notification system with FireWorks as a second control location

This topic describes how to add mass notification features to an EST4 fire alarm system with FireWorks as a second control location. Figure 13 below shows an example of an EST4 mass notification system that uses FireWorks combined with a local-powered remote network microphone as the local operating console (LOC).

**Figure 13: System diagram – Application 3 with local-powered remote network microphone**



The ACU/FACU is the primary point of control for the system. It provides the hardware interfaces to the automatic fire detection system and the alarm signaling system and provides MNS-specific controls and indicators. See Figure 15 on page 53 for the ACU/FACU cabinet layout.

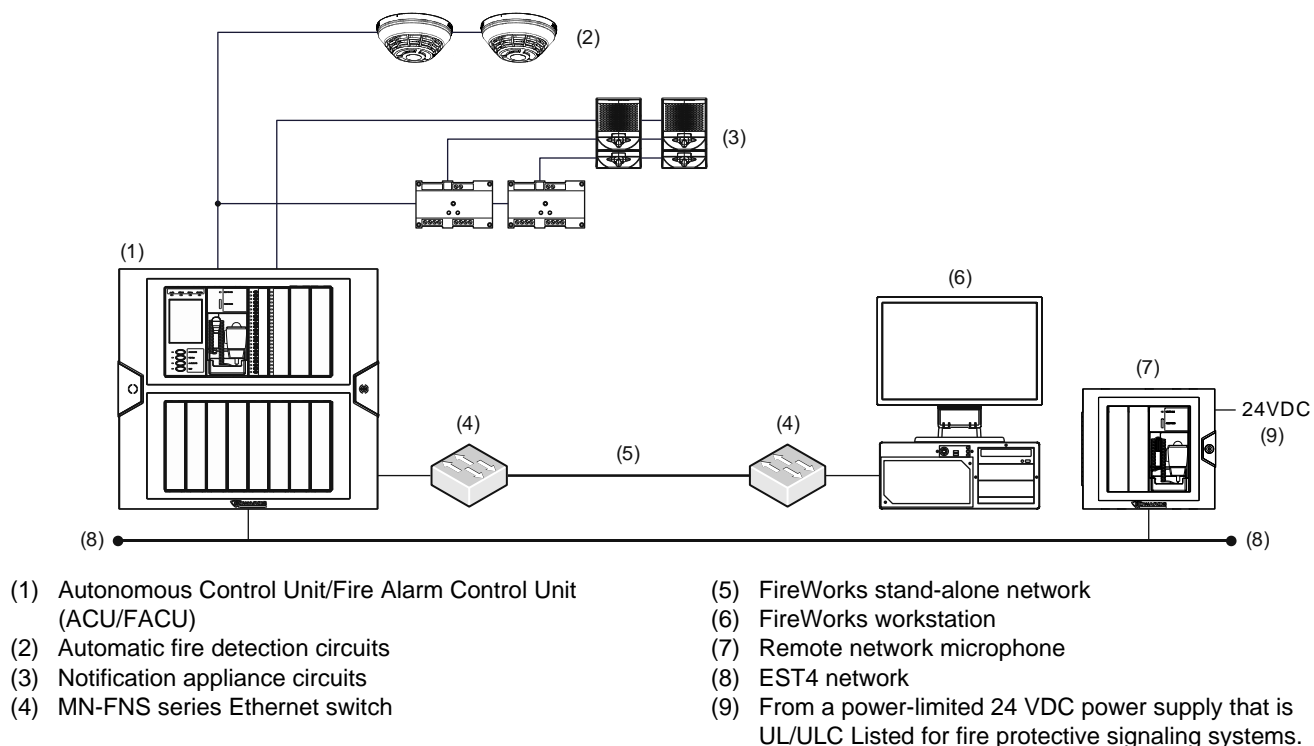
The FireWorks workstation is the secondary point of control for the system. It provides MNS-specific controls and indicators and is deployed immediately adjacent to a local-powered remote network microphone. Together they make up the local operating console (LOC). See Figure 16 on page 54 for the remote network microphone's cabinet layout.

**Note:** The FireWorks workstation can use a local or a remote Ethernet connection to any control unit on the EST4 network with a 4-FWAL1/2/3/4 card. Connections from the FireWorks workstation to the control unit or to an Ethernet switch must be in the same room, within 20 ft. (6.1 m), and enclosed in conduit or equivalent protection against mechanical injury.

Notification appliance circuits consist of speakers for broadcasting live-voice instructions and prerecorded audio messages, amber or alternate color strobes for signaling mass notification alarm conditions, and clear strobes for signaling fire alarm/evacuation conditions. See Figure 1 on page 8.

Figure 14 below shows an example of an EST4 mass notification system that uses FireWorks combined with a remote-powered remote network microphone as the local operating console (LOC).

**Figure 14: System diagram – Application 3 with remote-powered remote network microphone**



The ACU/FACU is the primary point of control for the system. It provides the hardware interfaces to the automatic fire detection system and the alarm signaling system and provides MNS-specific controls and indicators. See Figure 15 on page 53 for the ACU/FACU cabinet layout.

The FireWorks workstation is the secondary point of control for the system. It provides MNS-specific controls and indicators and is deployed immediately adjacent to a remote-powered remote network microphone. Together they make up the local operating console (LOC). See Figure 16 on page 54 for the remote network microphone's cabinet layout.

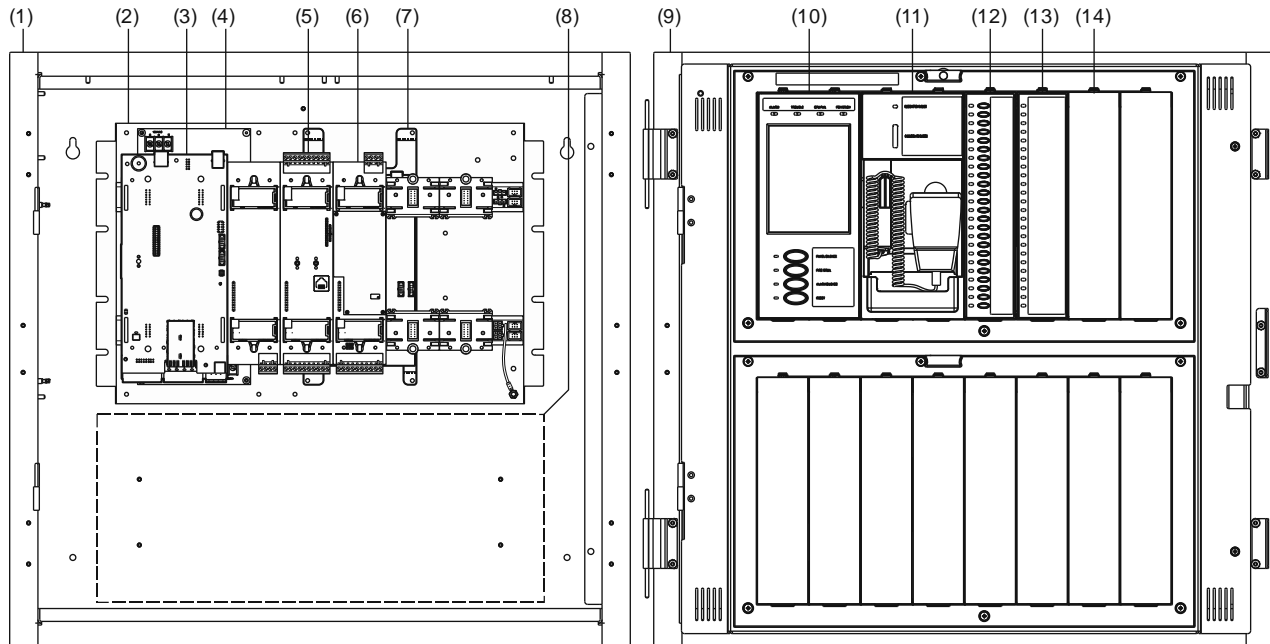
**Note:** The FireWorks workstation can use a local or a remote Ethernet connection to any control unit on the EST4 network with a 4-FWAL1/2/3/4 card. Connections from the FireWorks workstation to the control unit or to an Ethernet switch must be in the same room, within 20 ft. (6.1 m), and enclosed in conduit or equivalent protection against mechanical injury.

## ACU/FACU cabinet layout

Figure 15 below shows the cabinet layout for the autonomous control unit used in this application.

**Note:** The example shown below is for illustrative purposes only. Actual cabinet layouts may consist of this or other listed hardware.

**Figure 15: ACU/FACU cabinet layout**



### Hardware layer components

- (1) Cabinet backbox
- (2) 3-CHAS7 chassis
- (3) 4-CPU and 4-AUDTELS
- (4) Primary power supply
- (5) Signature SLC controller
- (6) Zone amplifier
- (7) 4-FWAL series card and 4-BRKT-CB
- (8) Standby batteries

### Operator layer components

- (9) Cabinet inner door
- (10) 4-LCD user interface
- (11) 4-MIC paging microphone
- (12) 4-24L24S control-display module
- (13) 4-24L control-display module
- (14) 4-FIL blank filler plate (10X)

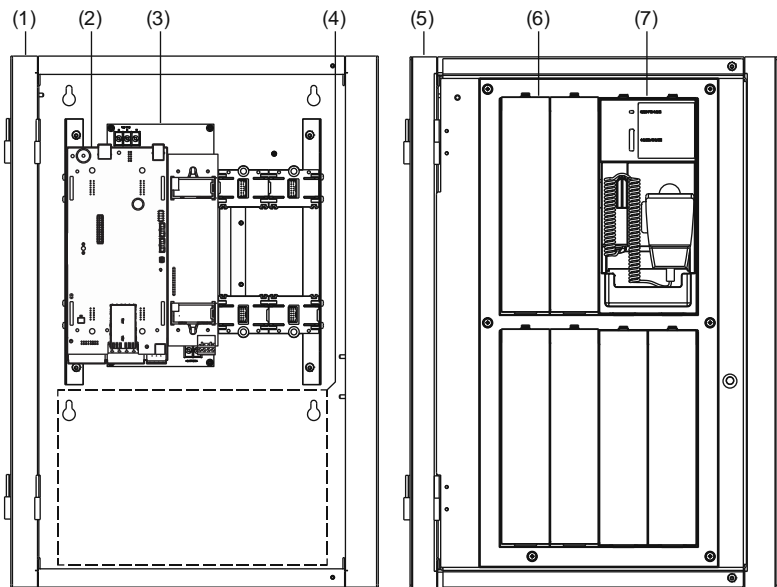


## Remote network microphone cabinet layout

Figure 16 below shows the cabinet layout for the local-powered remote network microphone used in this application.

**Note:** The example shown below is for illustrative purposes only. Actual cabinet layouts may consist of this or other listed hardware.

**Figure 16: Cabinet layout for a local-powered remote network microphone**



### Hardware layer components

- (1) Cabinet backbox
- (2) 4-CPU and 4-AUDTELS
- (3) Primary power supply
- (4) Standby batteries

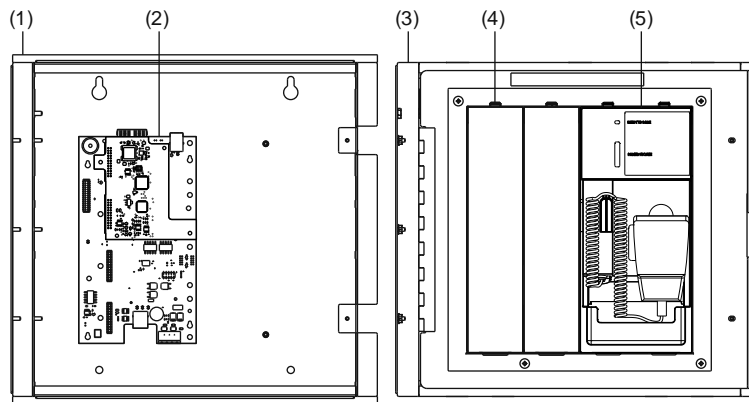
### Operator layer components

- (5) Cabinet inner door
- (6) 4-FIL blank filler plate (6X)
- (7) 4-MIC paging microphone

Figure 17 below shows the cabinet layout for a typical remote-powered remote network microphone.

**Note:** The example shown below is for illustrative purposes only. Actual cabinet layouts may consist of this or other listed hardware.

**Figure 17: Cabinet layout for a remote-powered remote network microphone**



#### Hardware layer components

- (1) Cabinet backbox
- (2) 4-ANNCPU and 4-ANNAUDEL

#### Operator layer components

- (3) Cabinet inner door
- (4) 4-FIL blank filler plate (2X)
- (5) 4-MIC paging microphone

Figure 18 below and Figure 19 below show the configuration of the MNS control-display modules on the autonomous control unit’s operator layer.

Figure 18: ACU control-display module configuration (4-24L24S)

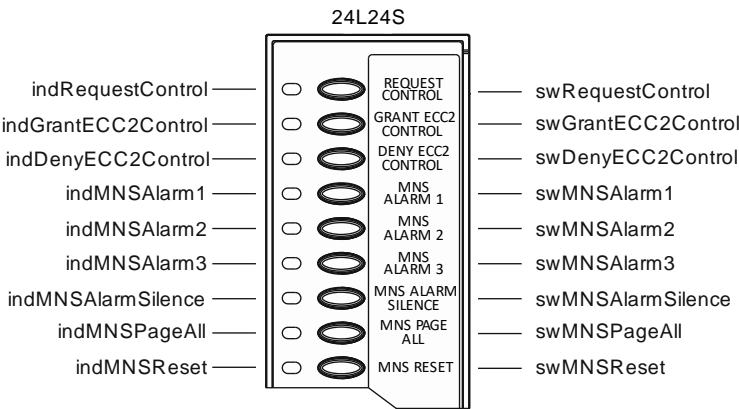


Figure 19: ACU control-display module configuration (4-24L)

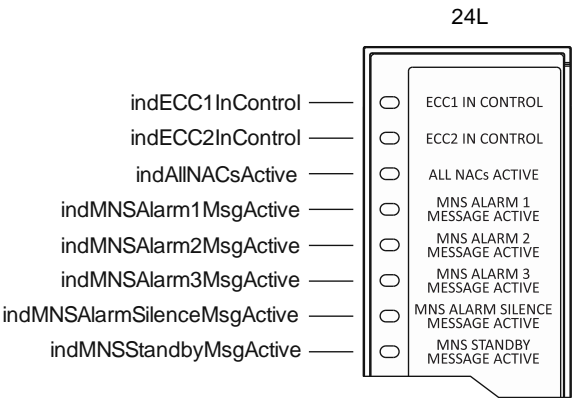


Figure 20 below shows an example of a FireWorks MNS controls map.

**Figure 20: FireWorks MNS controls map**



## Requirements

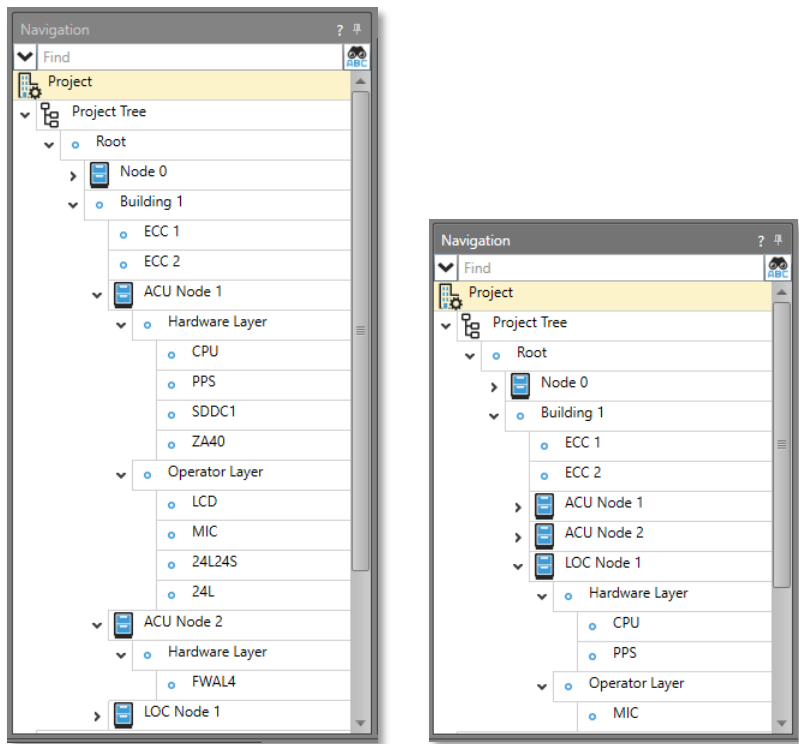
For this application, in addition to the controls and indicators provided in Application 1 (see “Requirements” on page 14), the ACU/FACU must provide:

- A manual control to grant control of the system to the secondary point of control (LOC) and an indicator to indicate when control can be granted. See Figure 18 on page 56.
- A manual control to deny control of the system to the secondary point of control (LOC) and an indicator to indicate when control can be denied. See Figure 18 on page 56.
- An indicator to indicate when the LOC is in control of the system. See Figure 19 on page 56.

The LOC must provide the same controls and indicators as on the ACU except for grant and deny controls. See Figure 20 above.

# Project configuration

1. Configure the project tree as shown below.



2. Add the AudioOutput device in Table 3 on page 15 to the Building 1 branch (path: Root\Building 1) and then assign it to the zone amplifier module on ACU Node 1’s hardware layer.
3. Add SIGA-CC1S devices in Table 4 on page 16 to the Building 1 branch (path: Root\Building 1) and then assign them to the Signature SLC controller on ACU Node 1’s hardware layer.
4. Add the EST4 Switch devices in Table 5 on page 16 and in Table 15 on page 38 to the primary Emergency Command Center branch (path: Root\Building 1\ECC 1), and then assign them to the 4-24L24S module on ACU Node 1’s operator layer as shown in Figure 18 on page 56.
5. Add the EST4 Indicator devices in Table 6 on page 18 and in Table 16 on page 39 to the primary Emergency Command Center branch (path: Root\Building 1\ECC 1), and then assign them to the 4-24L24S module on ACU Node 1’s operator layer as shown in Figure 18 on page 56.
6. Add the EST4 Indicator devices in Table 7 on page 19 and in Table 17 on page 39 to the primary Emergency Command Center branch (path: Root\Building 1\ECC 1), and then assign them to the 4-24L module on ACU Node 1’s operator layer as shown in Figure 19 on page 56.
7. Add the LogicalOutput devices in Table 25 below to the secondary Emergency Command Center branch (path: Root\Building 1\ECC 2).

Table 25: LogicalOutput device configuration

Model	Configuration
LogicalOutput	<b>Basic Configuration:</b> Label: IoAllINACsActive Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All

Model	Configuration
LogicalOutput	<b>Basic Configuration:</b> Label: IoECC1InControl Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoECC2InControl Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSAlarm1 Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSAlarm1Active Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSAlarm1MsgActive Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSAlarm2 Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSAlarm2Active Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSAlarm2MsgActive Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSAlarm3 Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSAlarm3Active Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSAlarm3MsgActive Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All

Model	Configuration
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSAlarmSilence Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSAlarmSilenceActive Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSAlarmSilenceMsgActive Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSPageAll Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSPageAllActive Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSReset Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSResetActive Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoMNSStandbyMsgActive Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoRequestControl Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All
LogicalOutput	<b>Basic Configuration:</b> Label: IoRequestControlActive Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All

8. Add the AudioMessage devices in Table 8 on page 20 to the Building 1 branch (path: Root\Building 1).
9. Add the AudioChannel devices in Table 9 on page 21 to the Building 1 branch (path: Root\Building 1).
10. Add the And devices in Table 10 on page 23 to the Building 1 branch (path: Root\Building 1).

11. Add the CommandList devices in Table 11 on page 24 and in Table 21 on page 43 to the Building 1 branch (path: Root\Building 1).
12. Add the NotificationControlArea in Table 26 below to the Building 1 branch (path: Root\Building 1).

**Table 26: NotificationControlArea device configuration – Application 3**

Model	Configuration
NotificationControlArea	<p><b>Basic Configuration:</b>  Label: ncaBldg1  Location Text: Root\Building 1  Message Route: All  Alternate Message Route: All</p> <p><b>Logics Configuration:</b>  Telephone Riser: None  Phone Off-Hook Timer: Off (checkbox not selected)  Request Timer: Off (checkbox not selected)  Preannounce Tone – Alarm: None  Preannounce Tone – Nonalarm: None</p> <p><b>NCA Audio Channel List members:</b>  [Root\Building 1] FireAlertChannel  [Root\Building 1] FireEvacuationChannel  [Root\Building 1] MNSAlarmSilenceChannel  [Root\Building 1] MNSEmergencyChannel  [Root\Building 1] PageChannel</p> <p><b>NCA Node List members:</b>  [Root\Building 1] ACU Node 1  [Root\Building 1] ACU Node 2  [Root\Building 1] LOC Node 1</p> <p><b>ACU Node 1 - Node Audio Channel List members:</b>  Channel 1: [Root\Building 1] PageChannel  Channel 2: [Root\Building 1] FireEvacuationChannel  Channel 3: [Root\Building 1] FireAlertChannel  Channel 4: [Root\Building 1] MNSEmergencyChannel  Channel 5: [Root\Building 1] MNSAlarmSilenceChannel</p> <p><b>ACU Node 2 - Node Audio Channel List members:</b>  None</p> <p><b>LOC Node 1 - Node Audio Channel List members:</b>  Channel 1: [Root\Building 1] PageChannel  Channel 2: [Root\Building 1] FireEvacuationChannel  Channel 3: [Root\Building 1] FireAlertChannel  Channel 4: [Root\Building 1] MNSEmergencyChannel  Channel 5: [Root\Building 1] MNSAlarmSilenceChannel</p>

13. Add the RequestGrantDeny device in Table 13 on page 27 to the primary Emergency Command Center branch (path: Root\Building 1\ECC 1).
14. Add the RequestGrantDeny device in Table 23 on page 45 to the secondary Emergency Command Center branch (path: Root\Building 1\ECC 2).



15. Add the CommandCenter device in Table 27 below to the primary Emergency Command Center branch (path: Root\Building 1\ECC 1).

**Table 27: CommandCenter device configuration – Application 3 ECC 1**

Model	Configuration
CommandCenter	<b>Basic Configuration:</b> Label: ccBldg1ECC1 Location Text: Root\Building 1\ECC 1 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Notification Control Area: [Root\Building 1] ncaBldg1  <b>Command Center RGD List members:</b> [Root\Building 1\ECC 1] rgdBldg1NCA  <b>Command Center Node List members:</b> [Root\Building 1] ACU Node 1 [Root\Building 1] ACU Node 2

16. Add the CommandCenter device in Table 28 below to the secondary Emergency Command Center branch (path: Root\Building 1\ECC 2).

**Table 28: CommandCenter device configuration – Application 3 ECC 2**

Model	Configuration
CommandCenter	<b>Basic Configuration:</b> Label: ccBldg1ECC2 Location Text: Root\Building 1\ECC 2 Message Route: All Alternate Message Route: All  <b>Logics Configuration:</b> Notification Control Area: [Root\Building 1] ncaBldg1  <b>Command Center RGD List members:</b> [Root\Building 1\ECC 2] rgdBldg1NCA  <b>Command Center Node List members:</b> [Root\Building 1] LOC Node 1

## Programming

### EST4 programming

This section provides the rulescripts required to program the EST4 fire alarm system for this application.

1. Add the MNS Startup rulescript below to the root branch (path: Root).

#### {MNS Startup rulescript}

@ Startup :

```
+AutoDisable .CommandList '[Building 1]clECC1CancelRequest' ,
+AutoDisable .CommandList '[Building 1]clECC2CancelRequest' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm10ff' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm10n' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm20ff' ,
```

```

+AutoDisable .CommandList '[Building 1]clMNSAlarm20n' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm30off' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarm30n' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarmSilenceOff' ,
+AutoDisable .CommandList '[Building 1]clMNSAlarmSilenceOn' ,
+AutoDisable .CommandList '[Building 1]clMNSPageAllOff' ,
+AutoDisable .CommandList '[Building 1]clMNSPageAllOn' ,
+AutoDisable .CommandList '[Building 1]clMNSStandbyOff' ,
+AutoDisable .CommandList '[Building 1]clMNSStandbyOn' ,
+AutoDisable .CommandList '[Building 1]clMNSResetOn'
+AutoDisable .LocalMonitor '[Building 1\LOC Node 1\Operator
Layer\MIC]$MicrophonePushToTalk';
+AutoDisable .LocalMonitor '[Building 1\ACU Node 1\Operator
Layer\MIC]$MicrophonePushToTalk';

```

2. Add the MNS Alarm 1 rulescript below to the Building 1 branch (path: Root\Building 1).

#### {MNS Alarm 1 rulescript}

```

@ Switch .Switch '[+]swMNSAlarm1' :
+Activate .CommandList 'clMNSAlarm10n' ;

@ Confirmation .LogicalOutput '[+]loMNSAlarm1' :
+Activate .CommandList 'clMNSAlarm10n' ,
+Delay 00:02 ,
+Off .LogicalOutput '[+]loMNSAlarm1' ;

@ Activation .CommandList 'clMNSAlarm10n' :
+AutoDisable .CommandList 'clMNSAlarm10n' ,
+AutoEnable .CommandList 'clMNSAlarm10off' ,
+Activate .CommandList 'clMNSAlarmOn' ,
+Activate .CommandList 'clMNSAlarm20off' ,
+Activate .CommandList 'clMNSAlarm30off' ,
+Activate .CommandList 'clMNSStandbyOff' ,
+Activate .CommandList 'clMNSPageAllOff' ,
+Activate .CommandList 'clMNSAlarmSilenceOff' ,
+Activate .And 'andMNSAlarm1MsgSelect' ,
+Steady .Indicator '[+]indMNSAlarm1' ,
+On .LogicalOutput '[+]loMNSAlarm1Active' ;

@ Activation .CommandList 'clMNSAlarm10off' :
+AutoDisable .CommandList 'clMNSAlarm10off' ,
+AutoEnable .CommandList 'clMNSAlarm10n' ,
+Restore .And 'andMNSAlarm1MsgSelect' ,
+Off .Indicator '[+]indMNSAlarm1' ,
+Off .LogicalOutput '[+]loMNSAlarm1Active' ;

@ Activation .And 'andMNSAlarm1MsgSelect' :
MessageOn 'msgMNSAlarm1' ;

@ Confirmation .AudioMessage 'msgMNSAlarm1' :
Steady .Indicator '[+]indMNSAlarm1MsgActive' ,
On .LogicalOutput '[+]loMNSAlarm1MsgActive' ;

```

3. Add the MNS Alarm 2 rulescript below to the Building 1 branch (path: Root\Building 1).

**{MNS Alarm 2 rulescript}**

```
@ Switch .Switch '[+]swMNSAlarm2' :
    +Activate .CommandList 'clMNSAlarm2On' ;

@ Confirmation .LogicalOutput '[+]loMNSAlarm2' :
    +Activate .CommandList 'clMNSAlarm2On' ,
    +Delay 00:02 ,
    +Off .LogicalOutput '[+]loMNSAlarm2';

@ Activation .CommandList 'clMNSAlarm2On' :
    +AutoDisable .CommandList 'clMNSAlarm2On' ,
    +AutoEnable .CommandList 'clMNSAlarm2Off' ,
    +Activate .CommandList 'clMNSAlarmOn' ,
    +Activate .CommandList 'clMNSAlarm10ff' ,
    +Activate .CommandList 'clMNSAlarm30ff' ,
    +Activate .CommandList 'clMNSStandbyOff' ,
    +Activate .CommandList 'clMNSPageAllOff' ,
    +Activate .CommandList 'clMNSAlarmSilenceOff' ,
    +Activate .And 'andMNSAlarm2MsgSelect' ,
    +Steady .Indicator '[+]indMNSAlarm2' ,
    +On .LogicalOutput '[+]loMNSAlarm2Active' ;

@ Activation .CommandList 'clMNSAlarm2Off' :
    +AutoDisable .CommandList 'clMNSAlarm2Off' ,
    +AutoEnable .CommandList 'clMNSAlarm2On' ,
    +Restore .And 'andMNSAlarm2MsgSelect' ,
    +Off .Indicator '[+]indMNSAlarm2' ,
    +Off .LogicalOutput '[+]loMNSAlarm2Active' ;

@ Activation .And 'andMNSAlarm2MsgSelect' :
    MessageOn 'msgMNSAlarm2' ;

@ Confirmation .AudioMessage 'msgMNSAlarm2' :
    Steady .Indicator '[+]indMNSAlarm2MsgActive' ,
    On .LogicalOutput '[+]loMNSAlarm2MsgActive' ;
```

4. Add the MNS Alarm 3 rulescript below to the Building 1 branch (path: Root\Building 1).

**{MNS Alarm 3 rulescript}**

```
@ Switch .Switch '[+]swMNSAlarm3' :
    +Activate .CommandList 'clMNSAlarm3On' ;

@ Confirmation .LogicalOutput '[+]loMNSAlarm3' :
    +Activate .CommandList 'clMNSAlarm3On' ,
    +Delay 00:02 ,
    +Off .LogicalOutput '[+]loMNSAlarm3' ;

@ Activation .CommandList 'clMNSAlarm3On' :
    +AutoDisable .CommandList 'clMNSAlarm3On' ,
    +AutoEnable .CommandList 'clMNSAlarm30ff' ,
    +Activate .CommandList 'clMNSAlarmOn' ,
    +Activate .CommandList 'clMNSAlarm10ff' ,
```

```

+Activate .CommandList 'clMNSAlarm20ff' ,
+Activate .CommandList 'clMNSStandbyOff' ,
+Activate .CommandList 'clMNSPageAllOff' ,
+Activate .CommandList 'clMNSAlarmSilenceOff' ,
+Activate .And 'andMNSAlarm3MsgSelect' ,
+Steady .Indicator '[+]indMNSAlarm3' ,
+On .LogicalOutput '[+]loMNSAlarm3Active' ;

```

```

@ Activation .CommandList 'clMNSAlarm30ff' :
+AutoDisable .CommandList 'clMNSAlarm30ff' ,
+AutoEnable .CommandList 'clMNSAlarm30n' ,
+Restore .And 'andMNSAlarm3MsgSelect' ,
+Off .Indicator '[+]indMNSAlarm3' ,
+Off .LogicalOutput '[+]loMNSAlarm3Active' ;

```

```

@ Activation .And 'andMNSAlarm3MsgSelect' :
MessageOn 'msgMNSAlarm3' ;

```

```

@ Confirmation .AudioMessage 'msgMNSAlarm3' :
Steady .Indicator '[+]indMNSAlarm3MsgActive' ,
On .LogicalOutput '[+]loMNSAlarm3MsgActive' ;

```

5. Add the MNS Alarm On rulescript below to the Building 1 branch (path: Root\Building 1).

#### **{MNS Alarm On rulescript}**

```

@ Activation .CommandList 'clMNSAlarmOn' :
+AutoDisable .CommandList 'clMNSAlarmOn' ,
+Activate .And 'andMNSAlarmOn' ;

@ Activation .And 'andMNSAlarmOn' :
-Off .Indicator '[+]indMNSReset' ,
-Off .LogicalOutput '[+]loMNSResetActive' ,
Off Medium .Visible 'FireStrobe' ,
On .Visible 'AlertStrobe' ,
AudioOn 'AudioOut' From 'MNSEmergencyChannel' ,
AutoDisable .CommonControlSwitch '[ACU Node 1\Operator Layer\LCD]$Switch2' ,
AutoEnable .CommandList 'clMNSPageAllOn' ,
AutoEnable .CommandList 'clMNSAlarmSilenceOn' ,
AutoEnable .CommandList 'clMNSResetOn' ;

@ Activation .And 'andAllNACsActive' :
Steady .Indicator '[+]indAllNACsActive' ,
On .LogicalOutput '[+]loAllNACsActive' ;

@ Activation .CommandList 'clMNSAlarmOff' :
+AutoEnable .CommandList 'clMNSAlarmOn' ,
+Restore .And 'andMNSAlarmOn' ;

```

6. Add the MNS Alarm Silence rulescript below to the Building 1 branch (path: Root\Building 1).

#### **{MNS Alarm Silence rulescript}**

```

@ Switch .Switch '[+]swMNSAlarmSilence' :
+Activate .CommandList 'clMNSAlarmSilenceOn' ,
+Activate .CommandList 'clMNSAlarmSilenceOff' ;

```

```

@ Confirmation .LogicalOutput '[+]loMNSAlarmSilence' :
+Activate .CommandList 'clMNSAlarmSilenceOn' ,
+Activate .CommandList 'clMNSAlarmSilenceOff' ,
+Delay 00:02 ,
+Off .LogicalOutput '[+]loMNSAlarmSilence';

@ Activation .CommandList 'clMNSAlarmSilenceOn' :
+AutoDisable .CommandList 'clMNSAlarmSilenceOn' ,
+AutoEnable .CommandList 'clMNSAlarmSilenceOff' ,
+AudioOn 'AudioOut' From 'MNSAlarmSilenceChannel' ,
+MessageOn 'msgMNSAlarmSilence' ,
+AudioOff 'AudioOut' From 'MNSEmergencyChannel' ,
+Steady .Indicator '[+]indMNSAlarmSilence' ,
+On .LogicalOutput '[+]loMNSAlarmSilenceActive' ;

@ Activation .CommandList 'clMNSAlarmSilenceOff' :
+AutoDisable .CommandList 'clMNSAlarmSilenceOff' ,
+AutoEnable .CommandList 'clMNSAlarmSilenceOn' ,
+AudioOn 'AudioOut' From 'MNSEmergencyChannel' ,
+AudioOff 'AudioOut' From 'MNSAlarmSilenceChannel' ,
+MessageOff 'msgMNSAlarmSilence' ,
+Off .Indicator '[+]indMNSAlarmSilence' ,
+Off .LogicalOutput '[+]loMNSAlarmSilenceActive';

@ Confirmation .AudioMessage 'msgMNSAlarmSilence' :
Off .Indicator '[+]indMNSAlarm1MsgActive' ,
Off .Indicator '[+]indMNSAlarm2MsgActive' ,
Off .Indicator '[+]indMNSAlarm3MsgActive' ,
Off .Indicator '[+]indMNSStandbyMsgActive' ,
Off .LogicalOutput '[+]loMNSAlarm1MsgActive' ,
Off .LogicalOutput '[+]loMNSAlarm2MsgActive' ,
Off .LogicalOutput '[+]loMNSAlarm3MsgActive' ,
Off .LogicalOutput '[+]loMNSStandbyMsgActive' ,
Steady .Indicator '[+]indMNSAlarmSilenceMsgActive' ,
On .LogicalOutput '[+]loMNSAlarmSilenceMsgActive' ;

```

7. Add the ECC1 MNS Page Controls rulescript below to the Building 1 branch (path: Root\Building 1).

#### **{ECC1 MNS Page Controls rulescript}**

```

@ Switch .Switch '[ECC 1]swMNSPageAll' :
+Activate .CommandList 'clMNSPageAllOn' ;

@ Activation .CommandList 'clMNSPageAllOn' :
+AutoDisable .CommandList 'clMNSPageAllOn' ,
+AutoEnable .CommandList 'clMNSPageAllOff' ,
+AutoEnable .CommandList 'clMNSStandbyOn' ,
+On .AudioSource '[ACU Node 1\Hardware Layer\CPU]$PageToEmergency'
+AutoEnable .LocalMonitor '[ACU Node 1\Operator Layer\MIC]$MicrophonePushToTalk';

@ Confirmation .AudioSource '[ACU Node 1\Hardware Layer\CPU]$PageToEmergency' :
Steady .Indicator '[+]indMNSPageAll' ,
On .LogicalOutput '[+]loMNSPageAll' ;

```

```
@ Activation .CommandList 'clMNSPageAllOff' :
+AutoDisable .CommandList 'clMNSPageAllOff' ,
+AutoEnable .CommandList 'clMNSPageAllOn' ,
+AutoDisable .CommandList 'clMNSStandbyOn' ,
+Off .AudioSource '[ACU Node 1\Hardware Layer\CPU]$PageToEmergency' ,
+AutoDisable .LocalMonitor '[ACU Node 1\Operator Layer\MIC]$MicrophonePushToTalk';
```

8. Add the ECC2 MNS Page Controls rulescript below to the Building 1 branch (path: Root\Building 1).

**{ECC2 MNS Page Controls rulescript}**

```
@ Confirmation .LogicalOutput '[+]loMNSPageAll' :
+Activate .CommandList 'clMNSPageAllOn' ,
+Delay 00:02 ,
+Off .LogicalOutput '[+]loMNSPageAll' ;

@ Activation .CommandList 'clMNSPageAllOn' :
+AutoDisable .CommandList 'clMNSPageAllOn' ,
+AutoEnable .CommandList 'clMNSPageAllOff' ,
+AutoEnable .CommandList 'clMNSStandbyOn' ,
+On .AudioSource '[LOC Node 1\Hardware Layer\CPU]$PageToEmergency'
+AutoEnable .LocalMonitor '[LOC Node 1\Operator Layer\MIC]$MicrophonePushToTalk';

@ Confirmation .AudioSource '[LOC Node 1\Hardware Layer\CPU]$PageToEmergency' :
Steady .Indicator '[+]indMNSPageAll' ,
On .LogicalOutput '[+]loMNSPageAll' ;

@ Activation .CommandList 'clMNSPageAllOff' :
+AutoDisable .CommandList 'clMNSPageAllOff' ,
+AutoEnable .CommandList 'clMNSPageAllOn' ,
+AutoDisable .CommandList 'clMNSStandbyOn' ,
+Off .AudioSource '[LOC Node 1\Hardware Layer\CPU]$PageToEmergency' ,
+AutoDisable .LocalMonitor '[LOC Node 1\Operator Layer\MIC]$MicrophonePushToTalk' ;
```

9. Add the MNS Reset rulescript below to the Building 1 branch (path: Root\Building 1).

**{MNS Reset rulescript}**

```
@ Switch .Switch '[+]swMNSReset' :
+Activate .CommandList 'clMNSResetOn' ;

@ Confirmation .LogicalOutput '[+]loMNSReset' :
+Activate .CommandList 'clMNSResetOn' ,
+Delay 00:02 ,
+Off .LogicalOutput '[+]loMNSReset' ;

@ Activation .CommandList 'clMNSResetOn' :
+On .Indicator '[+]indMNSReset' ,
+On .LogicalOutput '[+]loMNSResetActive',
+Activate .CommandList 'clMNSAlarm10ff' ,
+Activate .CommandList 'clMNSAlarm20ff' ,
+Activate .CommandList 'clMNSAlarm30ff' ,
+Activate .CommandList 'clMNSStandbyOff' ,
+Activate .CommandList 'clMNSPageAllOff' ,
+Activate .CommandList 'clMNSAlarmSilenceOff' ,
+Activate .CommandList 'clECC1CancelRequest' ,
```

```
+Activate .CommandList 'clECC2CancelRequest',
+Activate .CommandList 'clMNSAlarmOff' ;
```

10. Add the MNS Standby rulescript below to the Building 1 branch (path: Root\Building 1).

**{MNS Standby rulescript}**

```
@ LocalMonitor .LocalMonitor '[ACU Node 1\Operator Layer\MIC]$MicrophonePushToTalk' :
+Activate .CommandList 'clMNSStandbyOn' ;

@ LocalMonitor .LocalMonitor '[LOC Node 1\Operator Layer\MIC]$MicrophonePushToTalk' :
+Activate .CommandList 'clMNSStandbyOn' ;

@ Activation .CommandList 'clMNSStandbyOn' :
+AutoDisable .CommandList 'clMNSStandbyOn' ,
+Activate .CommandList 'clMNSAlarm10ff' ,
+Activate .CommandList 'clMNSAlarm20ff' ,
+Activate .CommandList 'clMNSAlarm30ff' ,
+Activate .CommandList 'clMNSStandbyMsgEnable' ,
+AutoEnable .CommandList 'clMNSStandbyOn' ;

@ Activation .CommandList 'clMNSStandbyMsgEnable' :
+AutoDisable .CommandList 'clMNSStandbyMsgEnable' ,
+Activate .And 'andMNSStandbyMsgSelect' ;

@ Activation .And 'andMNSStandbyMsgSelect' :
MessageOn 'msgMNSStandby' ;

@ Confirmation .AudioMessage 'msgMNSStandby' :
AutoEnable .CommandList 'clMNSStandbyOff' ,
Steady .Indicator '[+]indMNSStandbyMsgActive' ,
On .LogicalOutput '[+]loMNSStandbyMsgActive' ;

@ Activation .CommandList 'clMNSStandbyOff' :
+AutoEnable .CommandList 'clMNSStandbyMsgEnable' ,
+Restore .And 'andMNSStandbyMsgSelect' ;
```

11. Add the RequestGrantDeny ECC1 rulescript below to the Building 1 branch (path: Root\Building 1).

**{RequestGrantDeny ECC1 rulescript}**

```
@ Switch .Switch '[ECC 1]swRequestControl' :
+Activate .CommandList 'clECC1RequestControl' ,
+Activate .CommandList 'clECC1CancelRequest' ;

@ Activation .CommandList 'clECC1RequestControl' :
+AutoDisable .CommandList 'clECC1RequestControl' ,
+AutoEnable .CommandList 'clECC1CancelRequest' ,
+Steady .Indicator '[ECC 1]indRequestControl' ,
+Start .RequestGrantDeny '[ECC 1]rgdBldg1NCA' ;

@ Activation .CommandList 'clECC1CancelRequest' :
+AutoDisable .CommandList 'clECC1CancelRequest' ,
+AutoEnable .CommandList 'clECC1RequestControl' ,
+Off .Indicator '[ECC 1]indRequestControl' ,
```

```

+Stop .RequestGrantDeny '[ECC 1]rgdBldg1NCA' ;

@ Granted .RequestGrantDeny '[ECC 1]rgdBldg1NCA' :
    Steady .Indicator '[+]'indECC1InControl' ,
    On .LogicalOutput '[+]'loECC1InControl',
    Activate .CommandList 'clInhibitECC2Controls' ;

@ Activation .CommandList 'clInhibitECC2Controls' :
    AutoDisable .LogicalOutput '[ECC 2]loMNSAlarm1' ,
    AutoDisable .LogicalOutput '[ECC 2]loMNSAlarm2' ,
    AutoDisable .LogicalOutput '[ECC 2]loMNSAlarm3' ,
    AutoDisable .LogicalOutput '[ECC 2]loMNSAlarmSilence' ,
    AutoDisable .LogicalOutput '[ECC 2]loMNSReset' ,
    AutoDisable .LogicalOutput '[ECC 2]loMNSPageAll' ,
    Off .LogicalOutput '[ECC 2]loMNSAlarm1Active' ,
    Off .LogicalOutput '[ECC 2]loMNSAlarm2Active' ,
    Off .LogicalOutput '[ECC 2]loMNSAlarm3Active' ,
    Off .LogicalOutput '[ECC 2]loMNSAlarmSilenceActive' ,
    Off .LogicalOutput '[ECC 2]loMNSResetActive' ,
    Off .LogicalOutput '[ECC 2]loMNSPageAllActive' ;

@ Granted .NotificationControlArea 'ncaBldg1' :
    AutoEnable .CommandList 'clMNSAlarm1On' ,
    AutoEnable .CommandList 'clMNSAlarm2On' ,
    AutoEnable .CommandList 'clMNSAlarm3On' ;

@ Switch .Switch '[ECC 1]swGrantECC2Control' :
    +Activate .CommandList 'clGrantECC2Control' ;

@ Activation .CommandList 'clGrantECC2Control' :
    +AutoDisable .CommandList 'clECC1CancelRequest' ,
    +AutoEnable .CommandList 'clECC1RequestControl' ,
    +Off .Indicator '[ECC 1]indRequestControl' ,
    +Start .NotificationControlArea 'ncaBldg1' ;

@ Switch .Switch '[ECC 1]swDenyECC2Control' :
    +Activate .CommandList 'clDenyECC2Control' ;

@ Activation .CommandList 'clDenyECC2Control' :
    +Activate .CommandList 'clECC2CancelRequest' ;

```



12. Add the RequestGrantDeny ECC2 rulescript below to the Building 1 branch (path: Root\Building 1).

**{RequestGrantDeny ECC2 rulescript}**

```
@ Activation .CommandList 'clECC2RequestControl' :
+AutoDisable .CommandList 'clECC2RequestControl' ,
+AutoEnable .CommandList 'clECC2CancelRequest' ,
+On .LogicalOutput '[ECC 2]loRequestControlActive' ,
+Start .RequestGrantDeny '[ECC 2]rgdBldg1NCA' ;

@ Activation .CommandList 'clECC2CancelRequest' :
+AutoDisable .CommandList 'clECC2CancelRequest' ,
+AutoEnable .CommandList 'clECC2RequestControl' ,
+Off .LogicalOutput '[ECC 2]loRequestControlActive' ,
+Stop .RequestGrantDeny '[ECC 2]rgdBldg1NCA' ;

@ Requested .RequestGrantDeny '[ECC 2]rgdBldg1NCA' :
FastBlink .Indicator '[ECC 1]indGrantECC2Control' ,
FastBlink .Indicator '[ECC 1]indDenyECC2Control' ,
AutoEnable .CommandList 'clGrantECC2Control' ,
AutoEnable .CommandList 'clDenyECC2Control' ;

@ Granted .RequestGrantDeny '[ECC 2]rgdBldg1NCA' :
On .LogicalOutput '[ECC 2]loRequestControlActive' ,
Steady .Indicator '[+]indECC2InControl' ,
On .LogicalOutput '[+]loECC2InControl' ,
Activate .CommandList 'clInhibitECC1Controls' ;

@ Activation .CommandList 'clInhibitECC1Controls' :
AutoDisable .Switch '[ECC 1]swMNSAlarm1' ,
AutoDisable .Switch '[ECC 1]swMNSAlarm2' ,
AutoDisable .Switch '[ECC 1]swMNSAlarm3' ,
AutoDisable .Switch '[ECC 1]swMNSAlarmSilence' ,
AutoDisable .Switch '[ECC 1]swMNSReset' ,
AutoDisable .Switch '[ECC 1]swMNSPageAll' ,
Off .Indicator '[ECC 1]indMNSAlarm1' ,
Off .Indicator '[ECC 1]indMNSAlarm2' ,
Off .Indicator '[ECC 1]indMNSAlarm3' ,
Off .Indicator '[ECC 1]indMNSAlarmSilence' ,
Off .Indicator '[ECC 1]indMNSReset' ,
Off .Indicator '[ECC 1]indMNSPageAll' ;
```

## FireWorks programming

1. Import the EST4 project file into FireWorks System Builder.
2. In Map Browser, create a map pool, and then add the MNS Controls map shown in Figure 20 on page 57 to the map pool.
3. On the MNS Controls map, add a Command TSA around the following buttons:

Button	Command TSA label
Request Control	RequestControl
MNS Alarm 1	MNSAlarm1
MNS Alarm 2	MNSAlarm2

Button	Command TSA label
MNS Alarm 3	MNSAlarm3
MNS Alarm Silence	MNSAlarmSilence
MNS Page All	MNSPageAll
MNS Reset	MNSReset

4. On the MNS Controls map, create a Device TSA around the following indicators:

Indicator	Device TSA label
Request Control	RequestControlActive
MNS Alarm 1	MNSAlarm1Active
MNS Alarm 2	MNSAlarm2Active
MNS Alarm 3	MNSAlarm3Active
MNS Alarm Silence	MNSAlarmSilenceActive
MNS Page All	MNSPageAllActive
MNS Reset	MNSResetActive
ECC 2 In Control	ECC2InControl
ECC 1 In Control	ECC1InControl
MNS Alarm 1 Msg Active	MNSAlarm1MsgActive
MNS Alarm 2 Msg Active	MNSAlarm2MsgActive
MNS Alarm 3 Msg Active	MNSAlarm3MsgActive
MNS Alarm Silence Msg Active	MNSAlarmSilenceMsgActive
MNS Standby Msg Active	MNSStandbyMsgActive
All NACs Active	AllNACsActive

5. In Command Browser, do the following:

Create an Activate Device command for the command lists below, and then assign them to a command set.

Command label	Devices to receive command	Assign to command set
ActivateECC2RequestControl	Node 1: cIECC2RequestControl	ECC2RequestControl
ActivateECC2CancelRequest	Node 1: cIECC2CancelRequest	ECC2RequestControl

Assign the ECC2RequestControl command set to the RequestControl command TSA.

6. In Command Browser, create an Activate Output command for the logical outputs below, and then assign them to their respective command TSAs.

Command label	Devices to receive command	Assign to TSA
ActivateMNSAlarm1	Node 1: IoMNSAlarm1	MNSAlarm1
ActivateMNSAlarm2	Node 1: IoMNSAlarm2	MNSAlarm2
ActivateMNSAlarm3	Node 1: IoMNSAlarm3	MNSAlarm3
ActivateMNSAlarmSilence	Node 1: IoMNSAlarmSilence	MNSAlarmSilence

Command label	Devices to receive command	Assign to TSA
ActivateMNSPageAll	Node 1: IoMNSPageAll	MNSPageAll
ActivateMNSReset	Node 1: IoMNSReset	MNSReset

7. In Command Browser, assign the logical outputs below to their respective device TSAs.

Logical output	Assign to TSA
IoRequestControlActive	RequestControlActive
IoMNSAlarm1Active	MNSAlarm1Active
IoMNSAlarm2Active	MNSAlarm2Active
IoMNSAlarm3Active	MNSAlarm3Active
IoMNSAlarmSilenceActive	MNSAlarmSilenceActive
IoMNSPageAllActive	MNSPageAllActive
IoMNSResetActive	MNSResetActive
IoECC2InControl	ECC2InControl
IoECC1InControl	ECC1InControl
IoMNSAlarm1MsgActive	MNSAlarm1MsgActive
IoMNSAlarm2MsgActive	MNSAlarm2MsgActive
IoMNSAlarm3MsgActive	MNSAlarm3MsgActive
IoMNSAlarmSilenceMsgActive	MNSAlarmSilenceMsgActive
IoMNSStandbyMsgActive	MNSStandbyMsgActive
IoAllNACsActive	AllNACsActive

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