



EMEA Bootcamp – 3rd Party AV Control

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L-Acoustics 2023

Paris, France



Top reasons to use AV Control Systems with L-Acoustics products



Customized
User Interfaces



PA/VA
monitoring



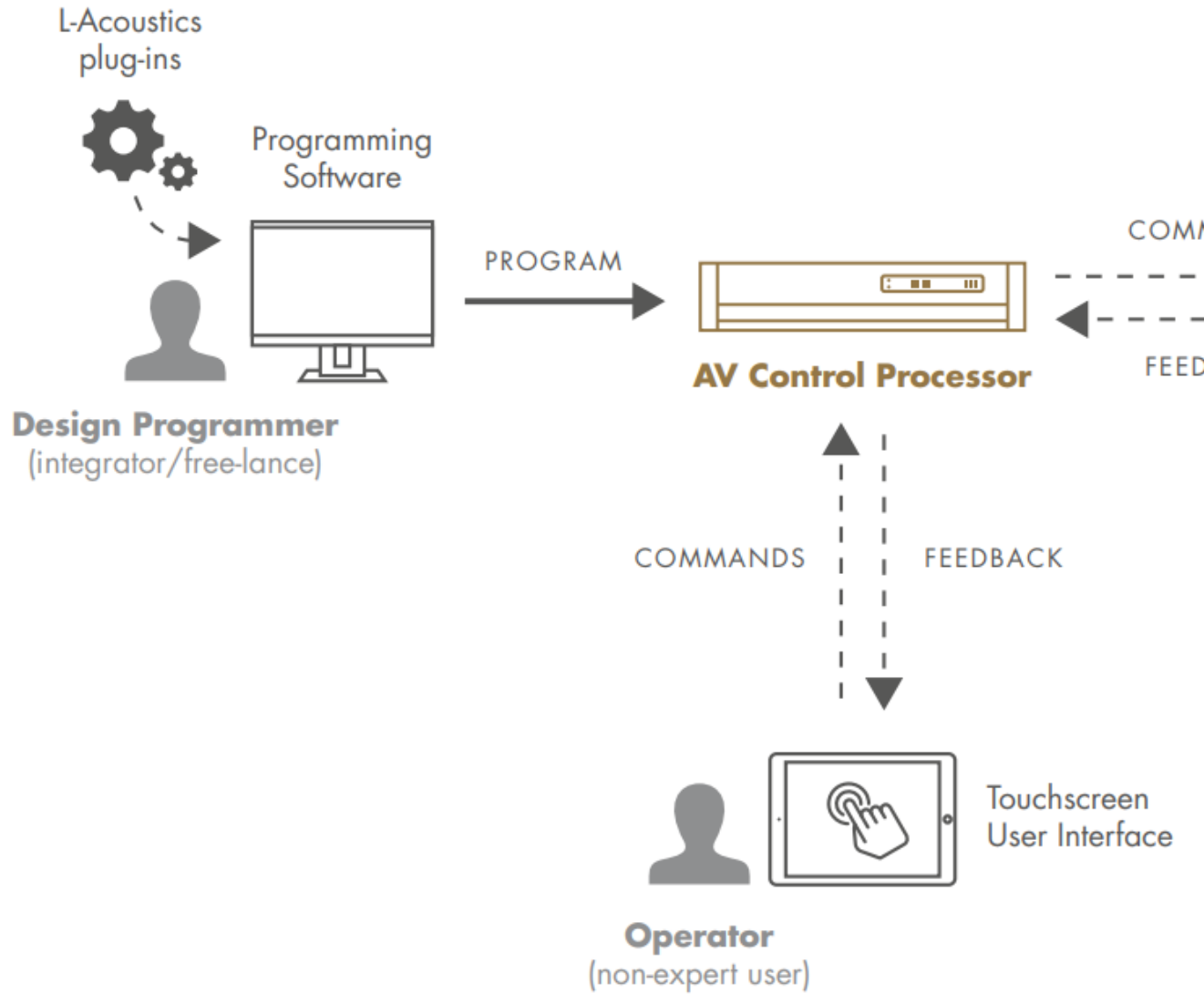
Combined control
with other equipment



Limit and control
access to advanced
parameters



End-user operations
without computers





Q-SYS

by L-Acoustics

- L-ISA Proc.
- P1
- LA7.16(i)
- LA2Xi
- LA12X
- LA4X
- LA8
- LA4

In Q-SYS Designer
Asset Manager



by L-Acoustics

- L-ISA Proc.
- P1
- LA7.16(i)
- LA2Xi
- LA12X
- LA4X
- LA8
- LA4

Download from
CRESTRON®
Application Market

Control4

by L-Acoustics

- LA2Xi
- LA12X
- LA4X

Download from
www.l-acoustics.com

SAVANT

by Savant &
L-Acoustics

- LA2Xi
- LA12X
- LA4X

Download from
www.l-acoustics.com

HTTP API

by L-Acoustics

- LC16D
- LS10
- L-ISA Proc.
- P1
- LA7.16(i)
- LA2Xi
- LA12X
- LA4X
- LA8
- LA4

Agreement
Document signature



Resources and documentation

Home > Resources > DOCUMENTATION CENTER

Documentation Center

LA2Xi

ARCHIVES SEE ALL CATALOG

Filters

Product specification

- Product spec sheet
- System spec sheet
- Architectural

1-20 results on 23 results

AV Control Systems

AV Control Systems English

DOWNLOAD

PDF 796kB 04/07/2023

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Amplification Reference

Amplification Reference

L-ACOUSTICS AV CONTROL SYSTEMS

FEATURE OVERVIEW

March 2023



INTRODUCTION

L-Acoustics sound systems integrate seamlessly with AV control solutions in both Pro Audio and Architectural (residential, hospitality, etc.) applications, leveraging the Ethernet connectivity of L-Acoustics electronics products as amplified controllers and audio processors.

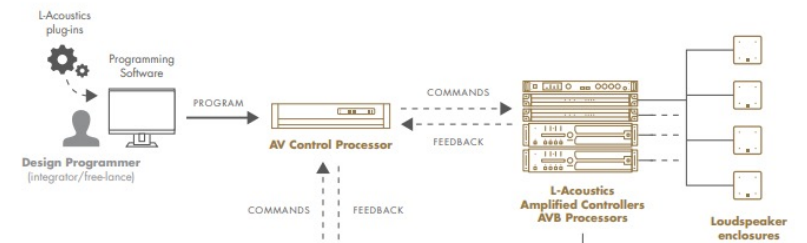
Typical venues and projects taking advantage of AV Control Systems:

- Sports venues
- Home Entertainment installations
- Cruise ships
- Performing Art Centers
- Theme Parks
- Hospitality
- Live & Night Clubs
- Houses of Worship

L-Acoustics partners with the major control system providers to elevate the experience of the end users, with the following example application:

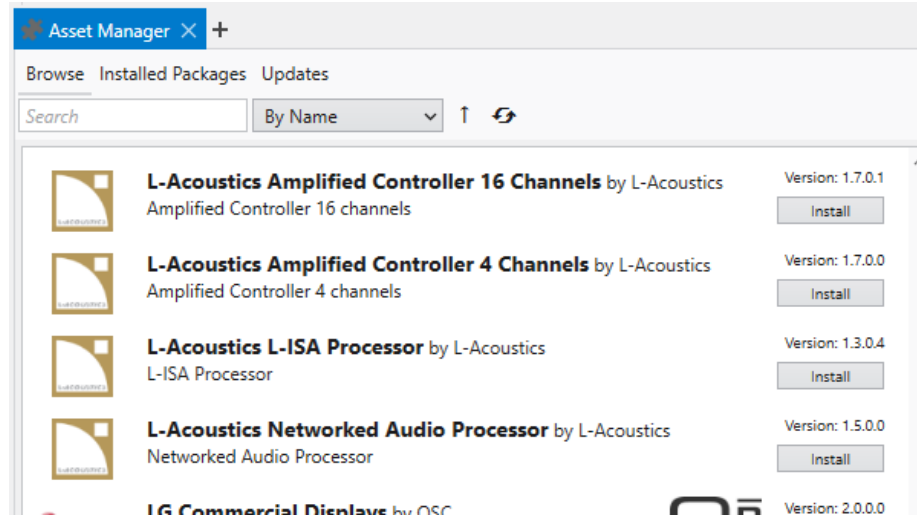
- controlling the sound system using touch screen interfaces
- integrating with home automation for a smooth AV experience
- automating the control of the loudspeaker system with pre-defined scenarios, system events or schedulers, and other AV components
- monitoring the health of the system and reporting faults
- managing sound system presets
- fulfilling Voice Alarm requirements for continuous monitoring of the venue
- other applications...

For each control platform, L-Acoustics provides plug-ins or drivers to be used within the project design software offered by the control system manufacturer.





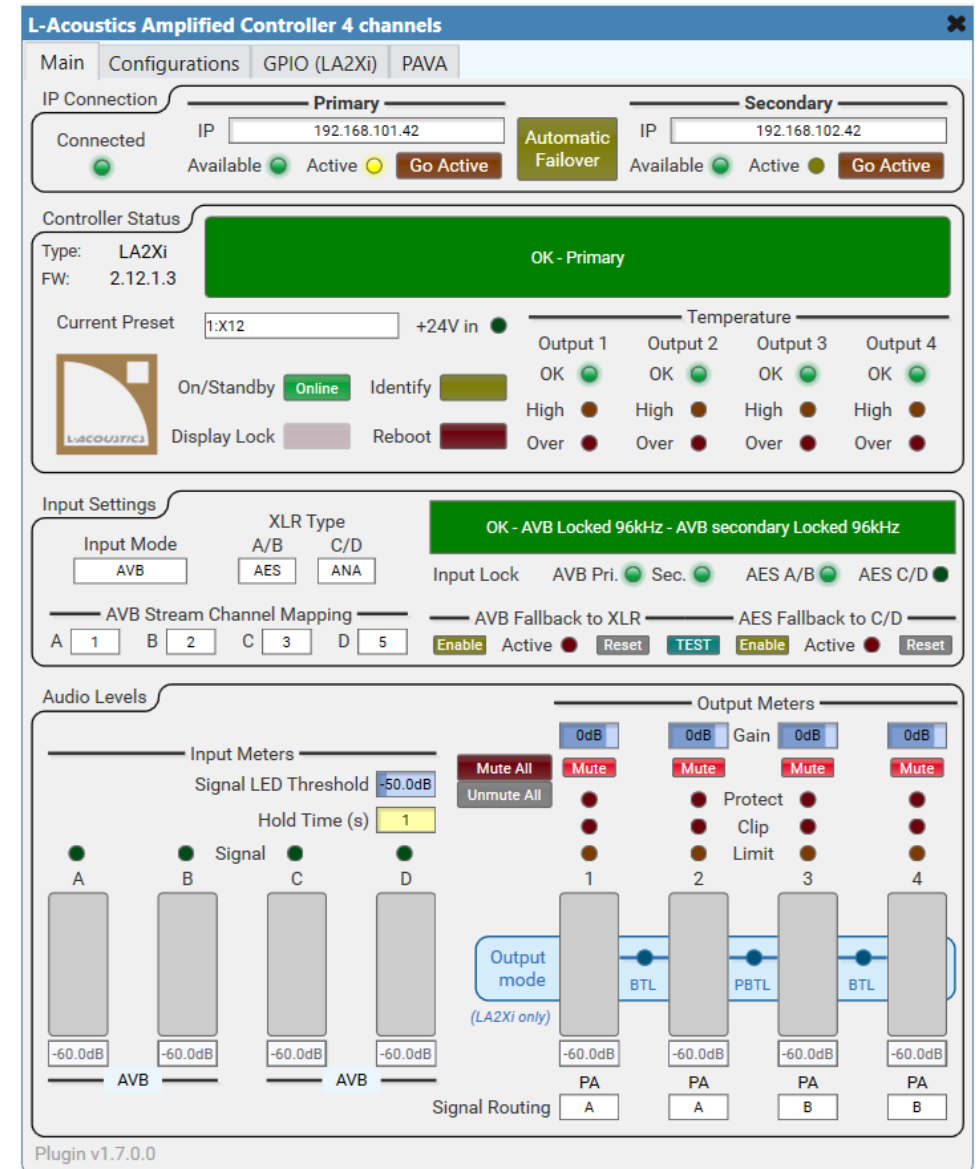
Q-SYS



Get L-Acoustics plugins from Q-SYS Designer Software.
L-Acoustics is a Q-SYS Technology Partner.

Just use the plugin as it is or create custom workflows and custom user interfaces.

Easy to use and popular.
Active online developer community.



Design Elements

Snapshot

Load Configuration

P1

LA4X

Layers



BALCONY

Source

SILENCE

LOUNGE

PROGRAM

Volume





VOICE ALARM # Monitoring



Input Status

Compromised - AVB and AES Fallbacks Active.
Using Analog Inputs C/D

Controller Status

OK

PAVA Status

OK



Q-SYS

Prices

Entrance fee: 2.5K€ (smallest Q-SYS Core Nano)

Touchscreens: starts at 1.7K€ (5")

Q-SYS Designer Software is free and can be used in emulation mode on a Windows machine.





CRESTRON



Download L-Acoustics modules from Crestron Application Market

Home | [FAQ](#) | [User Upload Guide](#) | [Blog](#)

Home > [Modules](#) > [Manufacturer](#) > [L](#) > L-Acoustics

Sort by: [Featured Items](#)

L-Acoustics

- Bose Professional
- Home Connect
- Keypad
- Modules
- IR Drivers
- GUIs and Themes
- GUI Resources
- PC Applications

L-Acoustics L-ISA Processor v1.2.0.2
\$0.00
Not Rated
[Add To Cart](#)

L-Acoustics Amplified Controller 16ch Basic v3.4.1.0
\$0.00
Not Rated
[Add To Cart](#)

L-Acoustics Amplified Controller Advanced v3.4.1.0
\$0.00
Not Rated
[Add To Cart](#)

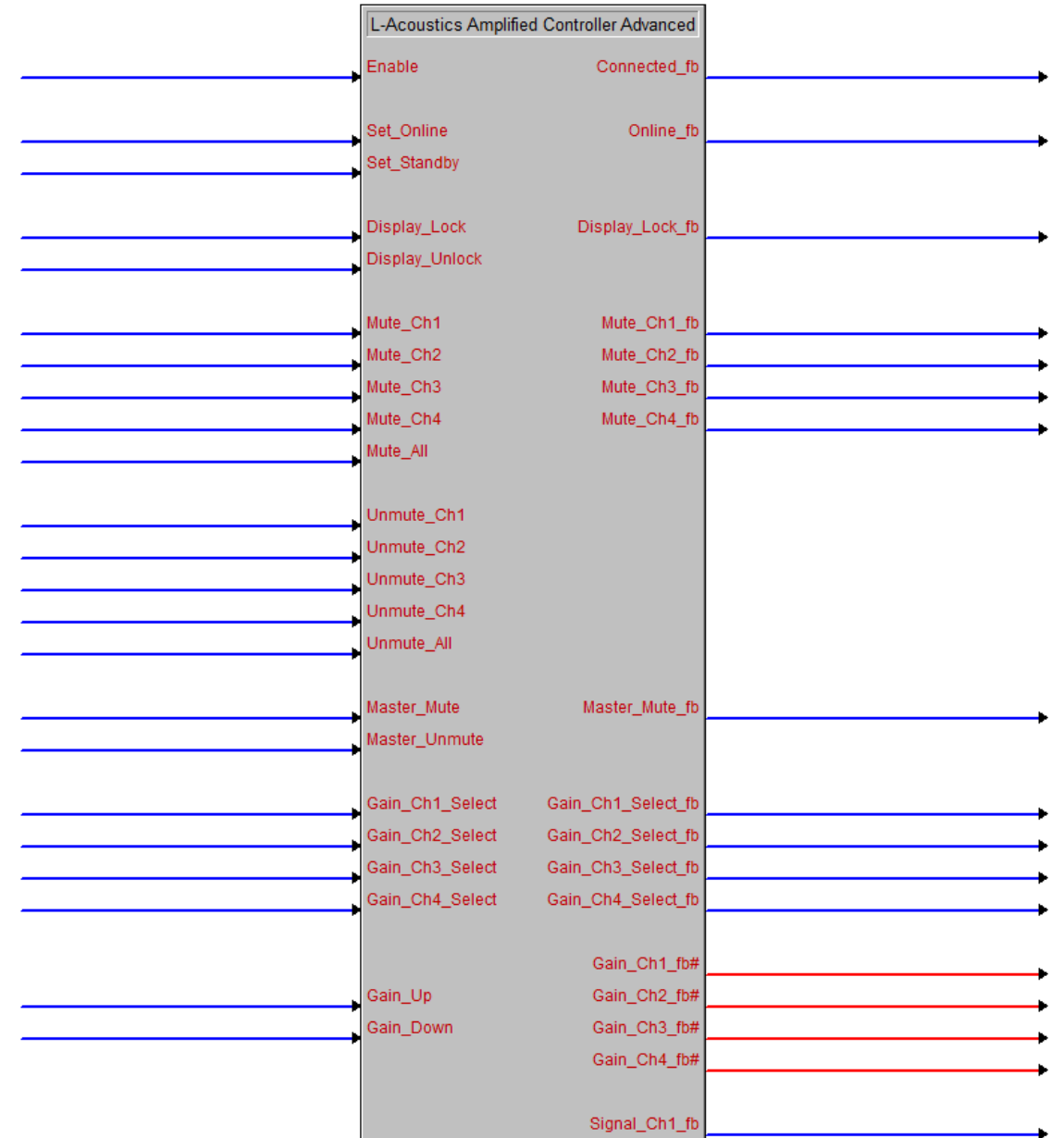
L-Acoustics Amplified Controller Basics v3.4.1.0
\$0.00
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L-Acoustics Amplified Controller 16ch Advanced v3.4.1.0
\$0.00
Not Rated
[Add To Cart](#)

L-Acoustics Networked Audio Processor v3.4.1.0
\$0.00
Not Rated
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New Products

- L-Acoustics L-ISA Processor v1.2.0.2
\$0.00
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- L-Acoustics Amplified Controller 16ch Basic v3.4.1.0
\$0.00
Not Rated
[Add To Cart](#)
- L-Acoustics Amplified Controller Advanced v3.4.1.0
\$0.00
Not Rated
[Add To Cart](#)
- L-Acoustics Amplified Controller Basics v3.4.1.0
\$0.00
Not Rated
[Add To Cart](#)

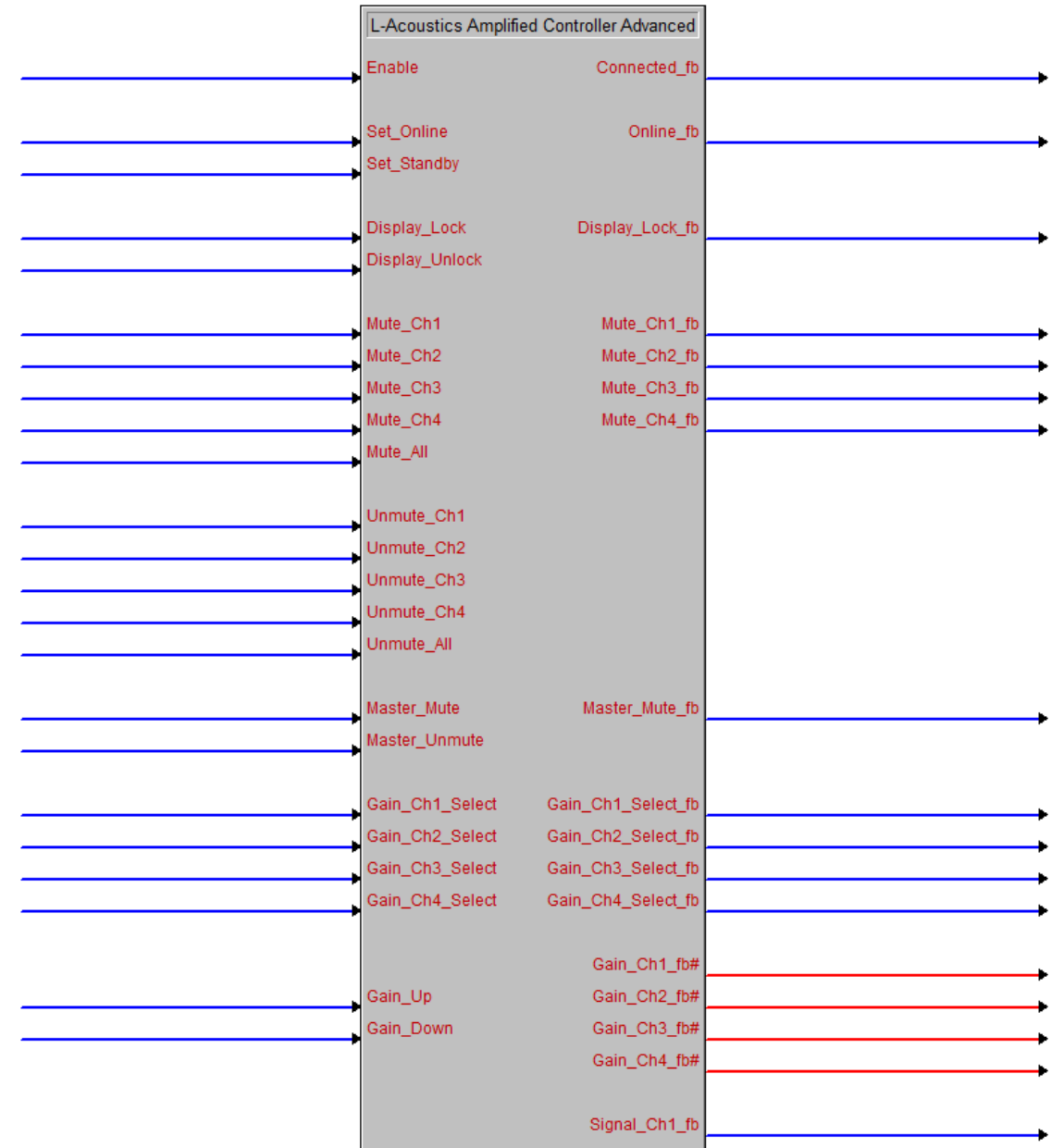




CRESTRON

Connect module wires to UI elements or logic in the program (need more advanced skills).

Tricky to program, but highly customizable and many Crestron programmers on the market.





CRESTRON

L-Acoustics Amplified Controller

Device Information
 IP 192.168.1.100
 Typ LA4X Pst 001:KARA

Status ● [Connect](#) [Disconnect](#)

Main Status ☀ Online 🌙 Standby [Display Lock](#)

Presets

Inputs

Outputs

Voice Alarm

Error Message

Device Type LA4X
 IP Address 192.168.1.100
 Current Preset 001:KARA

Firmware 2.9.3.4
 Communication Status
 SOCKET_STATUS_CONNECTED

[Clear Error](#)

L-Acoustics Amplified Controller

Device Information
 IP 192.168.1.100
 Typ LA4X Pst 001:KARA

Status ● [Connect](#) [Disconnect](#)

Main Status

Presets

Inputs

Outputs

Voice Alarm

Signal A B C D AVB XLR

XLR A/B AES ANALOG XLR C/D AES ANALOG

AVB Status ✓ Locked

XLR : AES Status
 A/B ✓ Locked
 C/D ✗ Error C/D input AES error

AVB Fallback Enable

AES Fallback Enable

Force Reset

L-Acoustics Amplified Controller

Device Information
 IP 192.168.1.100
 Typ LA4X Pst 001:KARA

Status ● [Connect](#) [Disconnect](#)

Main Status

Presets

Inputs

Outputs

Voice Alarm

	OUT 1	OUT 2	OUT 3	OUT 4
A	A	A	A	A
B	B	B	B	B
A+B	A+B	A+B	A+B	A+B
A-B	A-B	A-B	A-B	A-B
C	C	C	C	C
D	D	D	D	D
C+D	C+D	C+D	C+D	C+D
C-D	C-D	C-D	C-D	C-D
ABCD	ABCD	ABCD	ABCD	ABCD

Clip Limit Signal Gain Master Mute

Mute All Unmute All

LF HF LF HF
 OUT 1 OUT 2 OUT 3 OUT 4

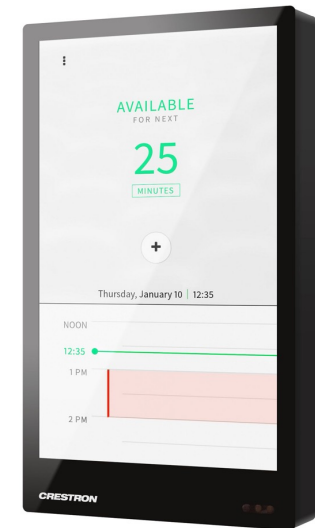


CRESTRON

Prices

Entrance fee: 1.2K€ (smallest controller RMC4)

Touch screens: starts at 1.3K€ (5")





HTTP API

Controlling L-Acoustics devices from custom platforms.

JSON model served through HTTP. Protected by user/password.

Disclosed to partners or customers on case by case requests (agreement document (Memorandum of Understanding) must be signed).

This HTTP API replaces the legacy SNMP Agent.

```
1 - {
2 -   "info": {
3 -     "name": "LA7.16i",
4 -     "firmware_version": "2.13.0.20",
5 -     "firmware_tag": "",
6 -     "firmware_date": "20231027",
7 -     "serial": "1680001388",
8 -     "mac": "00:1b:92:05:25:d5",
9 -     "avdecc_entity_id": "0x0000000000000000",
10 -    "unit_name": "LA7.16i",
11 -    "datetime": "2023-10-31T14:19:13"
12 -  },
13 -  "network": {
14 -    "redundancy": {
15 -      "select": true,
16 -      "active": true
17 -    },
18 -    "ip": {
19 -      "active": {
20 -        "primary": {
21 -          "address": "192.168.101.46",
22 -          "netmask": "255.255.255.0",
23 -          "gateway": "0.0.0.0"
24 -        },
25 -        "secondary": {
26 -          "address": "192.168.102.46",
27 -          "netmask": "255.255.255.0",
28 -          "gateway": "0.0.0.0"
29 -        }
30 -      },
31 -      "select": null
32 -    },
33 -    "audio": {
34 -      "active": "AES67"
35 -    }
36 -  },
37 -  "hmi": {
38 -    "identify": false,
39 -    "intensity": "NORMAL"
40 -  },
41 -  "ptp": {
```



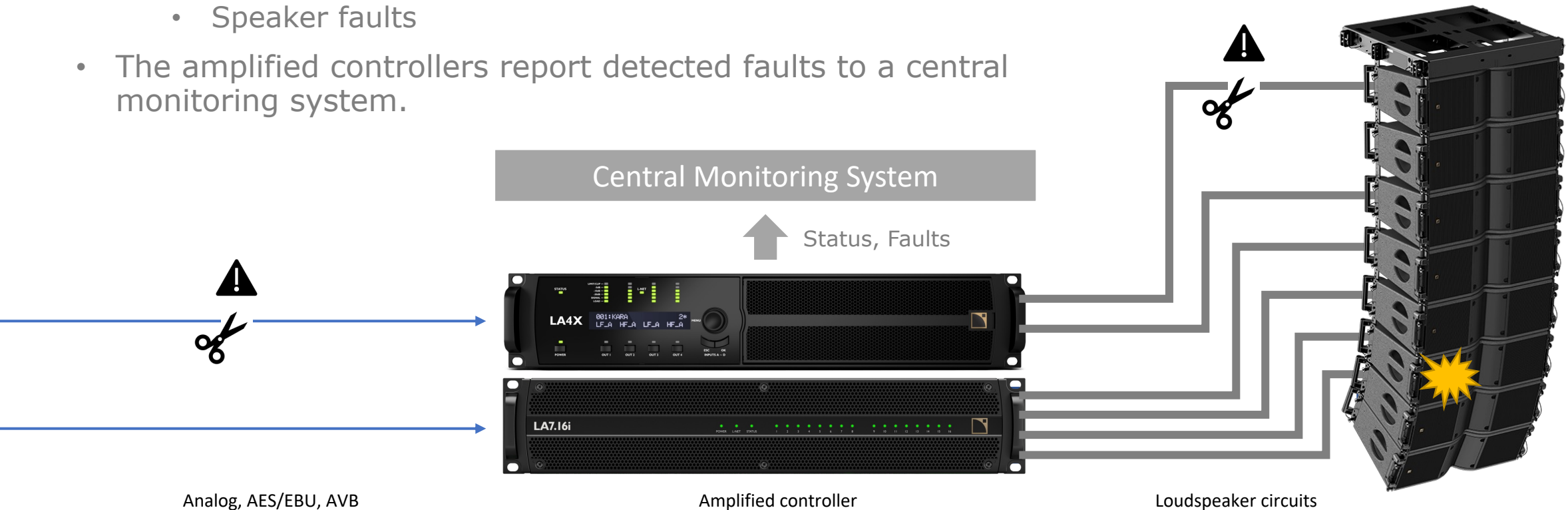

3rd Party Control concepts

- Voice Alarm system monitoring
- Configurations



Voice Alarm system monitoring

- Public Address Voice Alarm (PAVA) projects: when the L-Acoustics system is also used for Voice Alarm (emergency/evacuation messages)
- Sound system monitoring
 - inputs failures
 - amplifier failures
 - Speaker faults
- The amplified controllers report detected faults to a central monitoring system.





Voice Alarm system monitoring

- Inputs failure:
 - Analog inputs: report absence of pilot tone sine wave (typically 20-22 kHz) generated by the audio source
 - Digital inputs: report when input is not locked (AES/EBU, AVB) and/or pilot tone
- Amplified controller failure:
 - Internal health state
- Speaker faults:
 - Periodic sine pulses outside audible spectrum and measure impedance (typically at 16 Hz and 20-21 kHz)
 - Impedance too high → open circuit!
 - Impedance too low → short circuit!

Open/short circuit threshold depend on plenty of factors (cable length/gauge/quality, temperature, electrical probes, components tolerances, etc.)

→ A calibration session is required to determine these thresholds, using live measurements of the amplified controllers.



Configurations

- Same as a User Preset, but also includes Group Parameters

→ Allows to recall multiple system tunings without using LA Network Manager

- Saved inside device memory
- 10 memory slots in Amplified Controllers, 30 memory slots in P1
- Saved and loaded by 3rd-party controllers or Windows tool
- Erased on firmware update => keep backup of LA Network Manager sessions for recreating configurations.

Configuration

User Preset

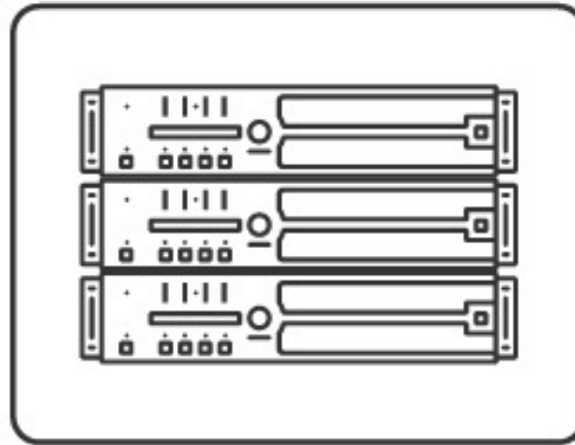
- Preset family (K1, K2, Kara II, A15, etc.)
- Preset parameters
 - Mute
 - Gain
 - Delay
 - Polarity
 - Routing (A, B, A+B, etc.)
- Group parameters
 - Group Gain
 - Group Delay
 - Array Morphing
 - EQ (IIR, FIR, AirComp)



Thank you for your attention

Workflow

Amplified Controllers



LA Network Manager



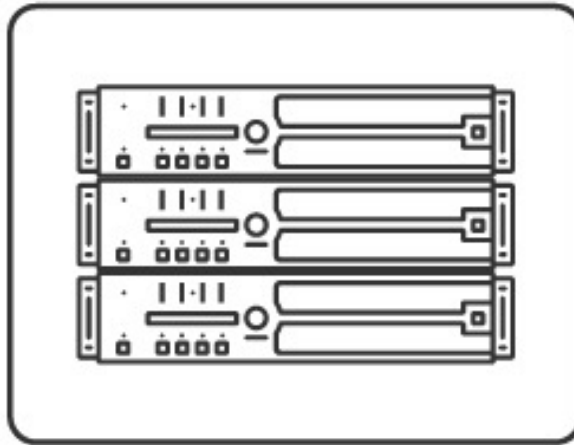
L-Acoustics
Engineer

Q-SYS™



1 Prepare session files

Amplified Controllers



LA Network Manager



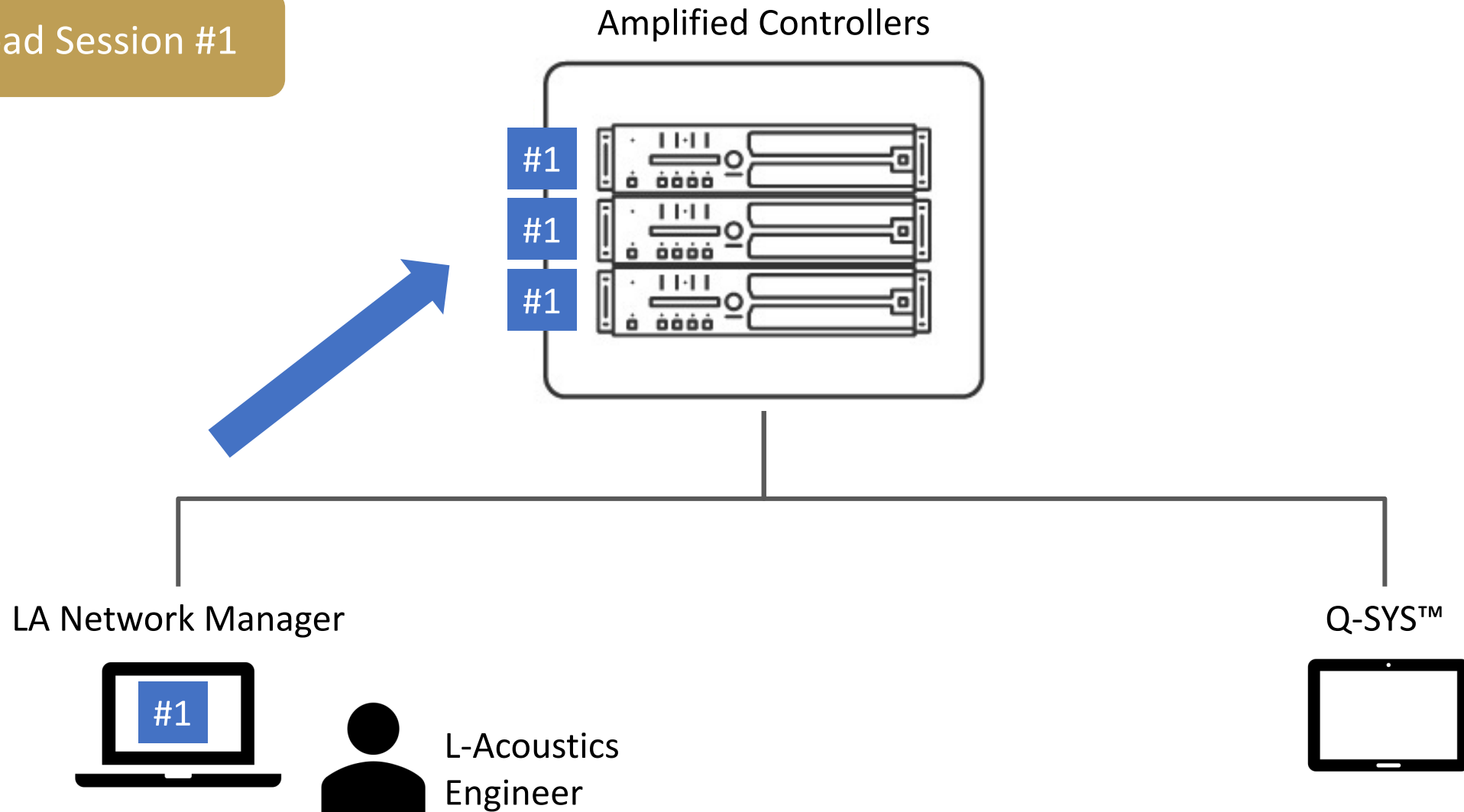
#1 #2 #3

L-Acoustics
Engineer

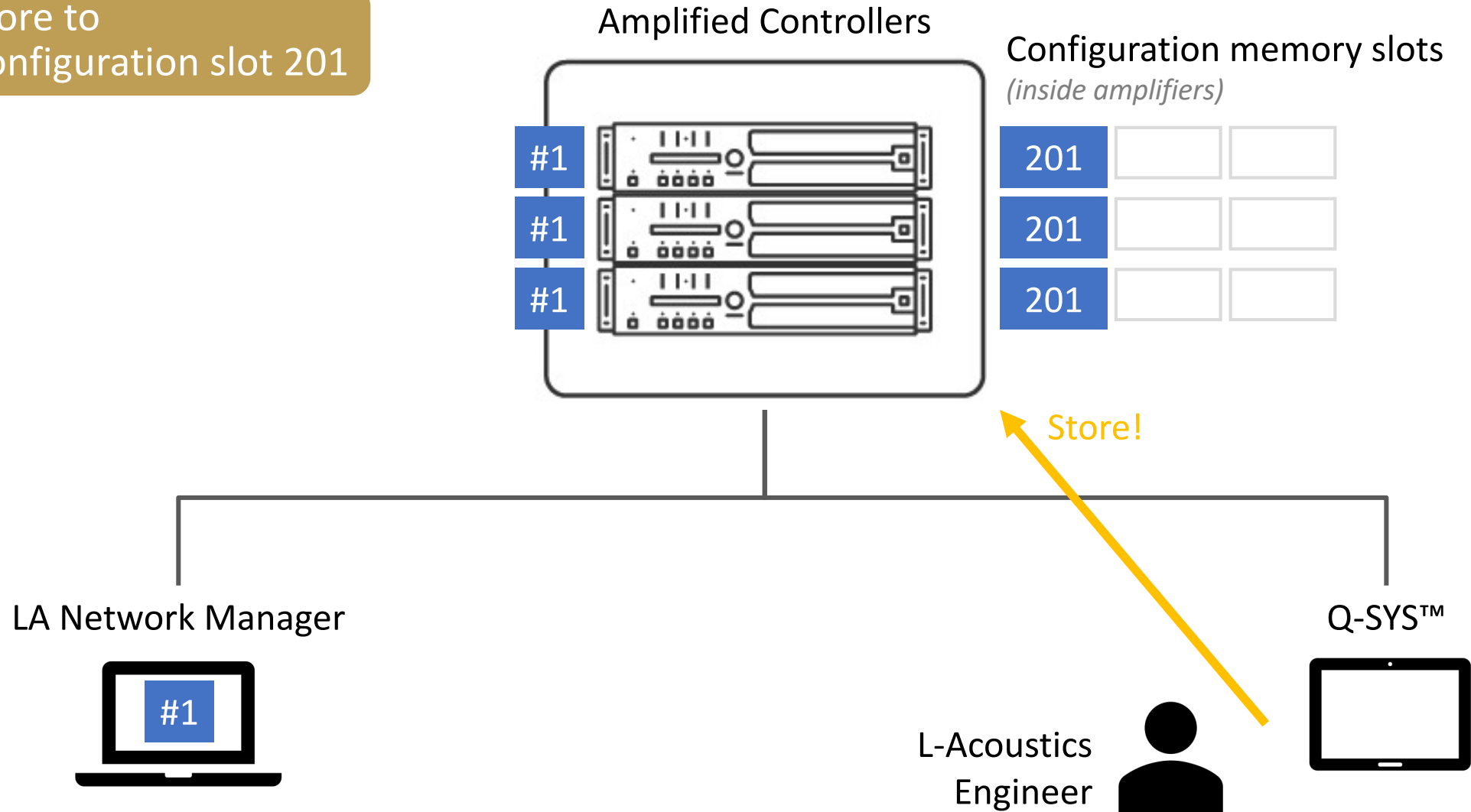
Q-SYS™



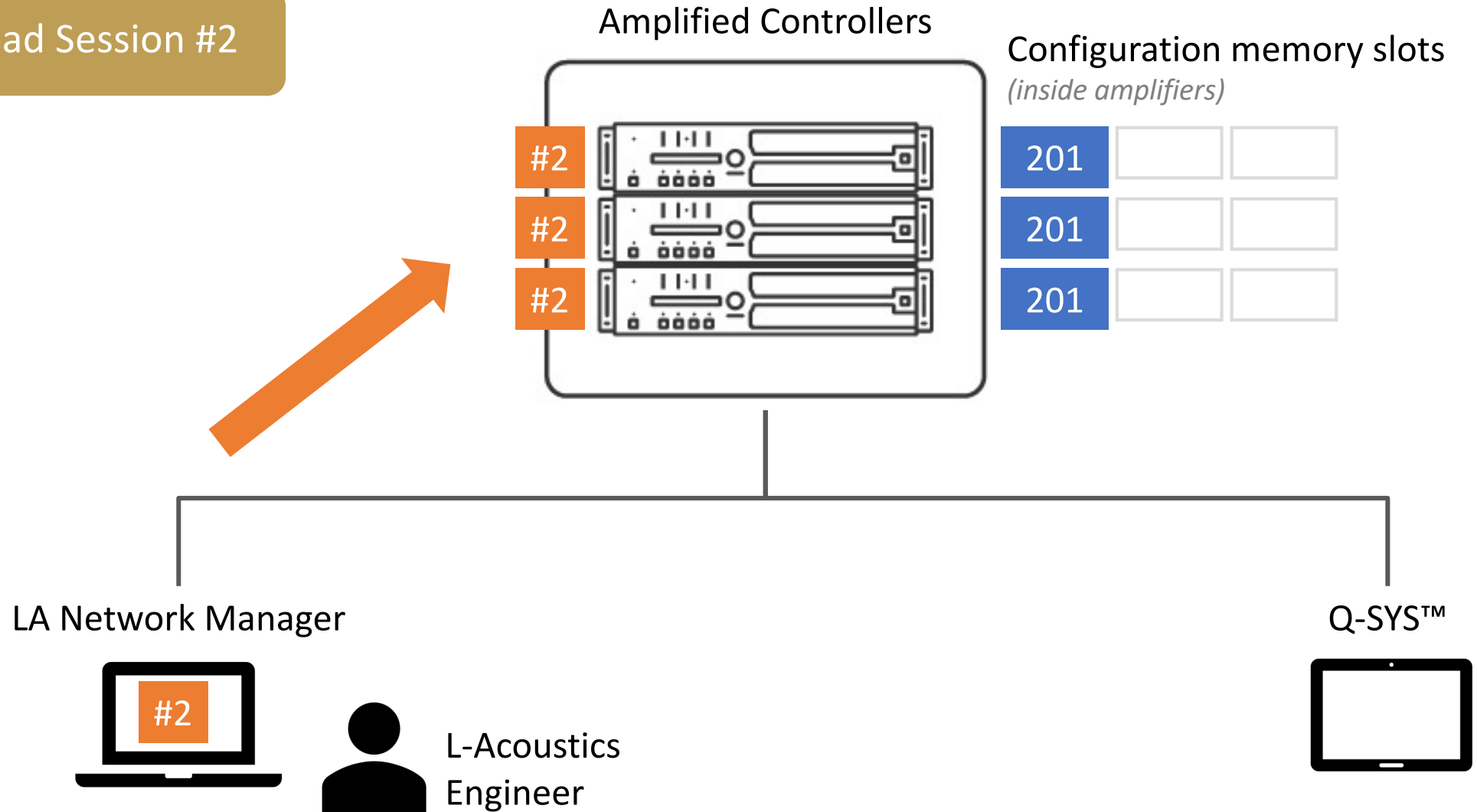
2 Load Session #1



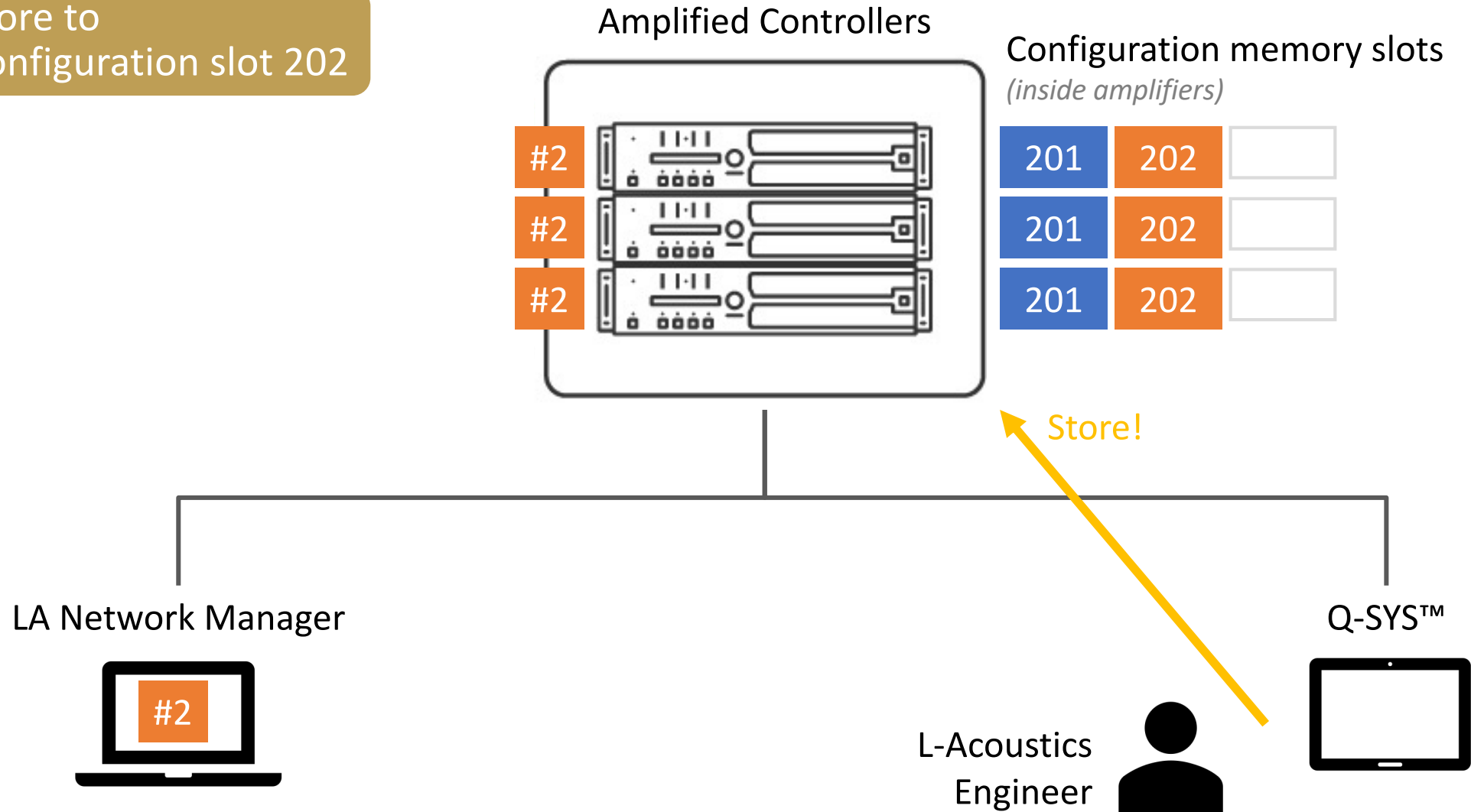
3 Store to Configuration slot 201



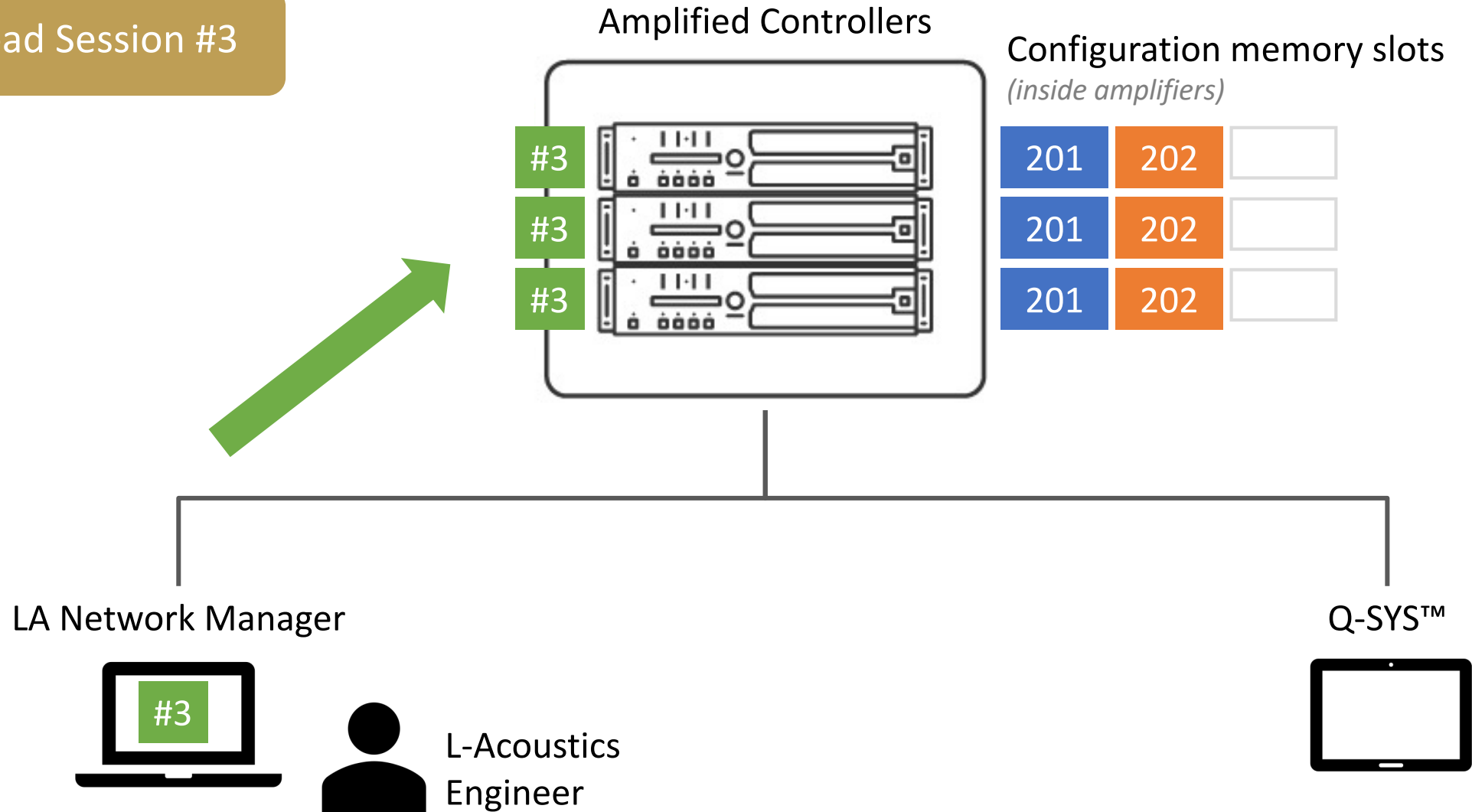
4 Load Session #2



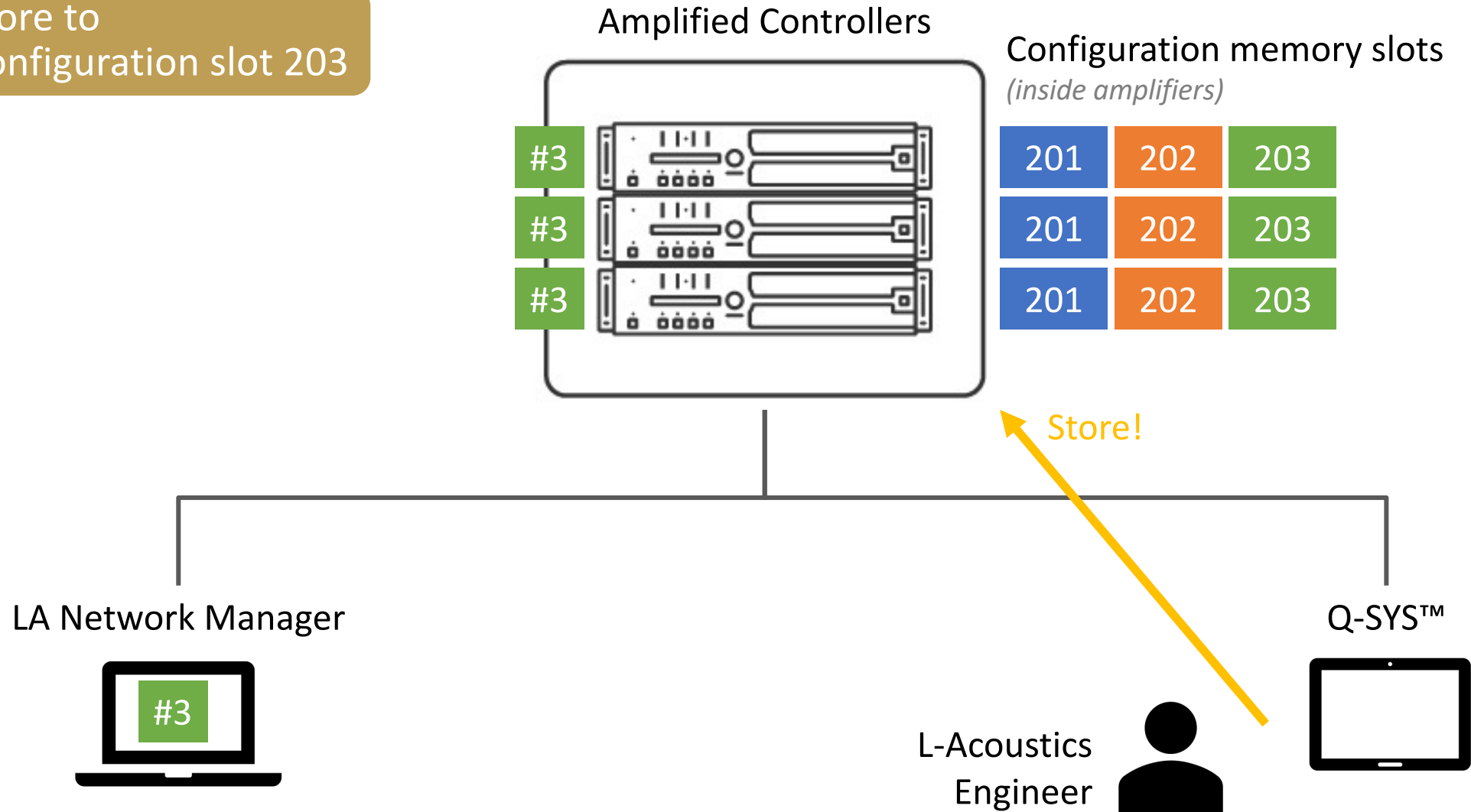
5 Store to Configuration slot 202



6 Load Session #3

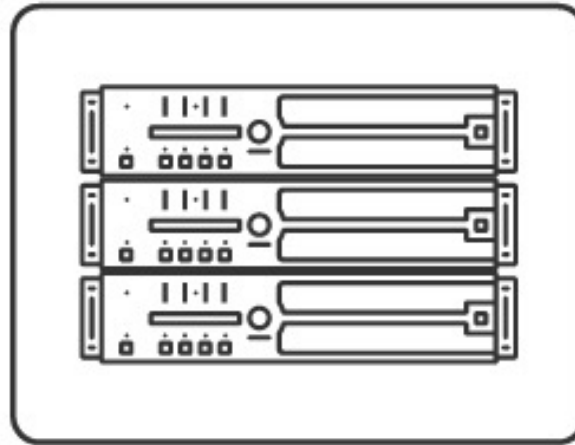


7 Store to Configuration slot 203



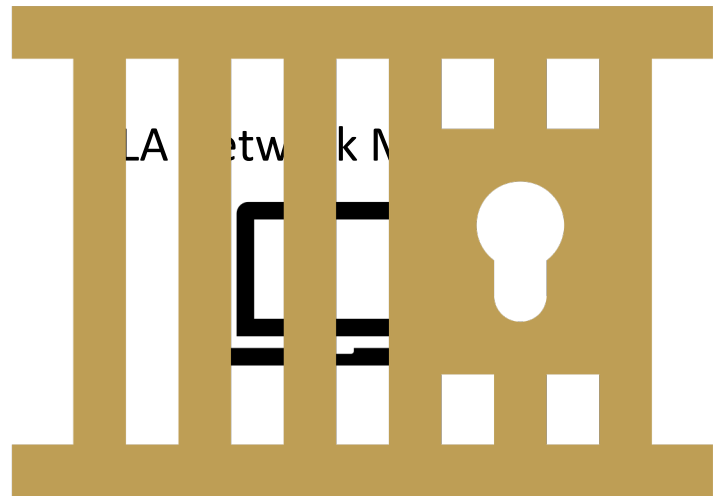
8 Disconnect LA Network Manager

Amplified Controllers

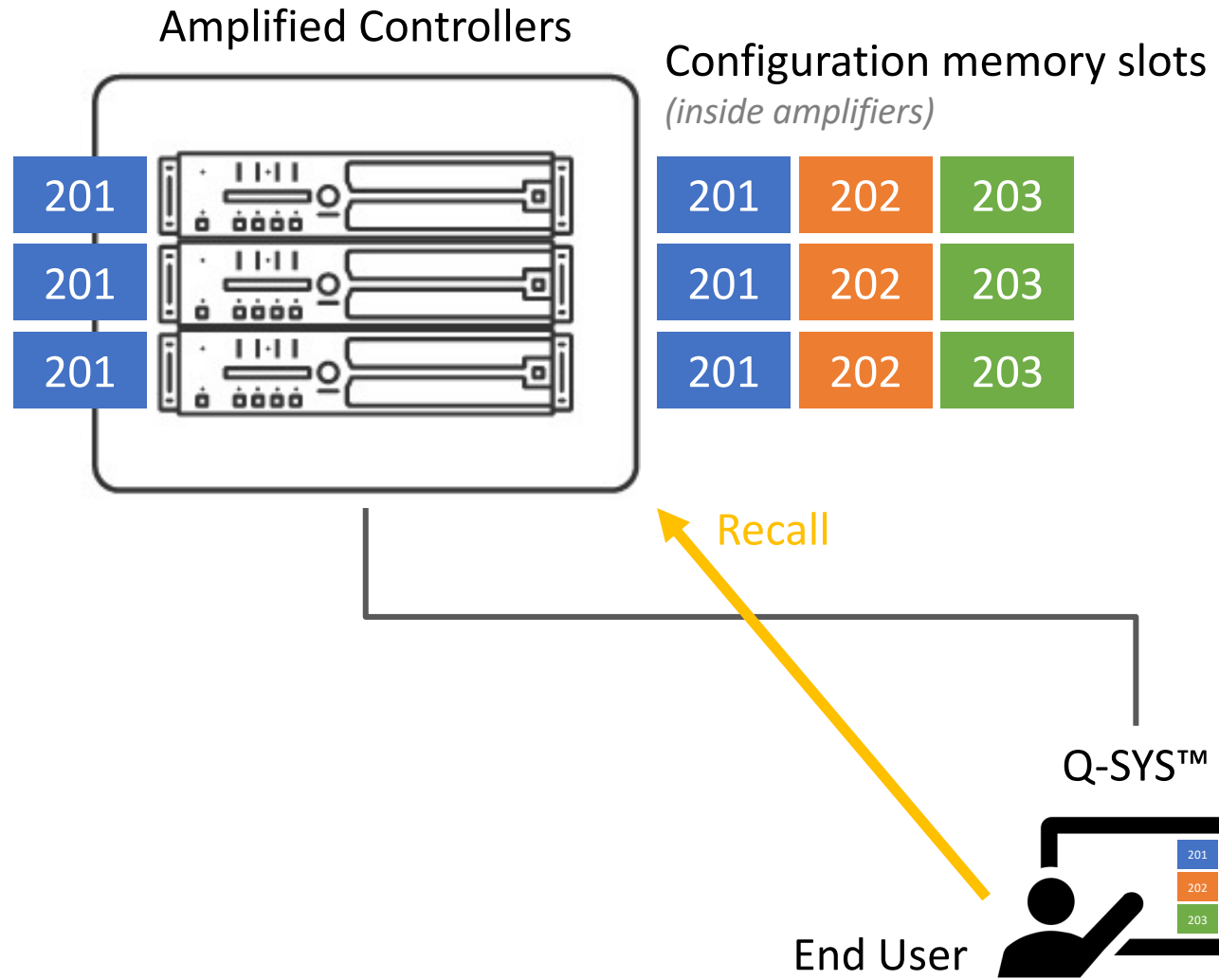


Configuration memory slots
(inside amplifiers)

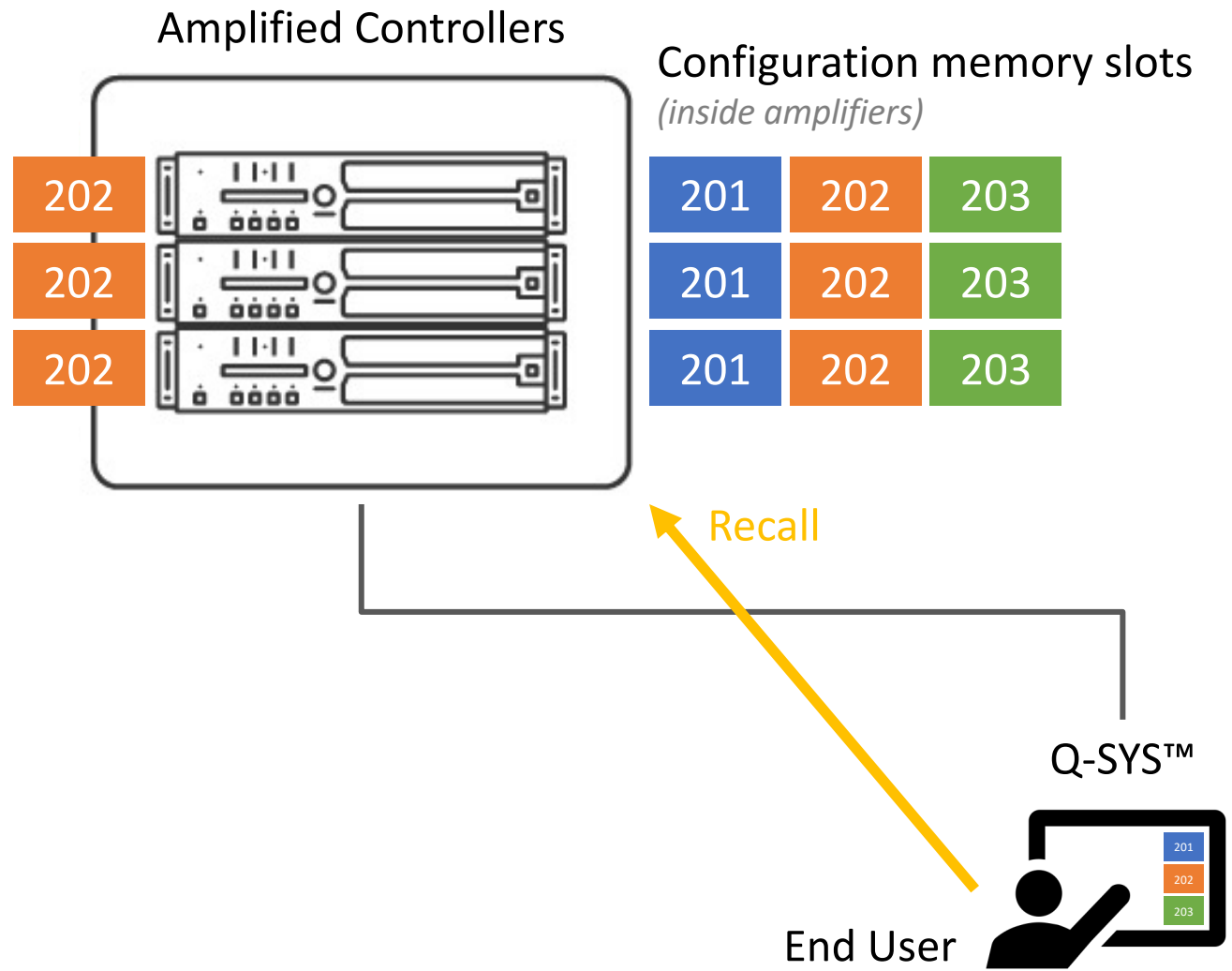
201	202	203
201	202	203
201	202	203



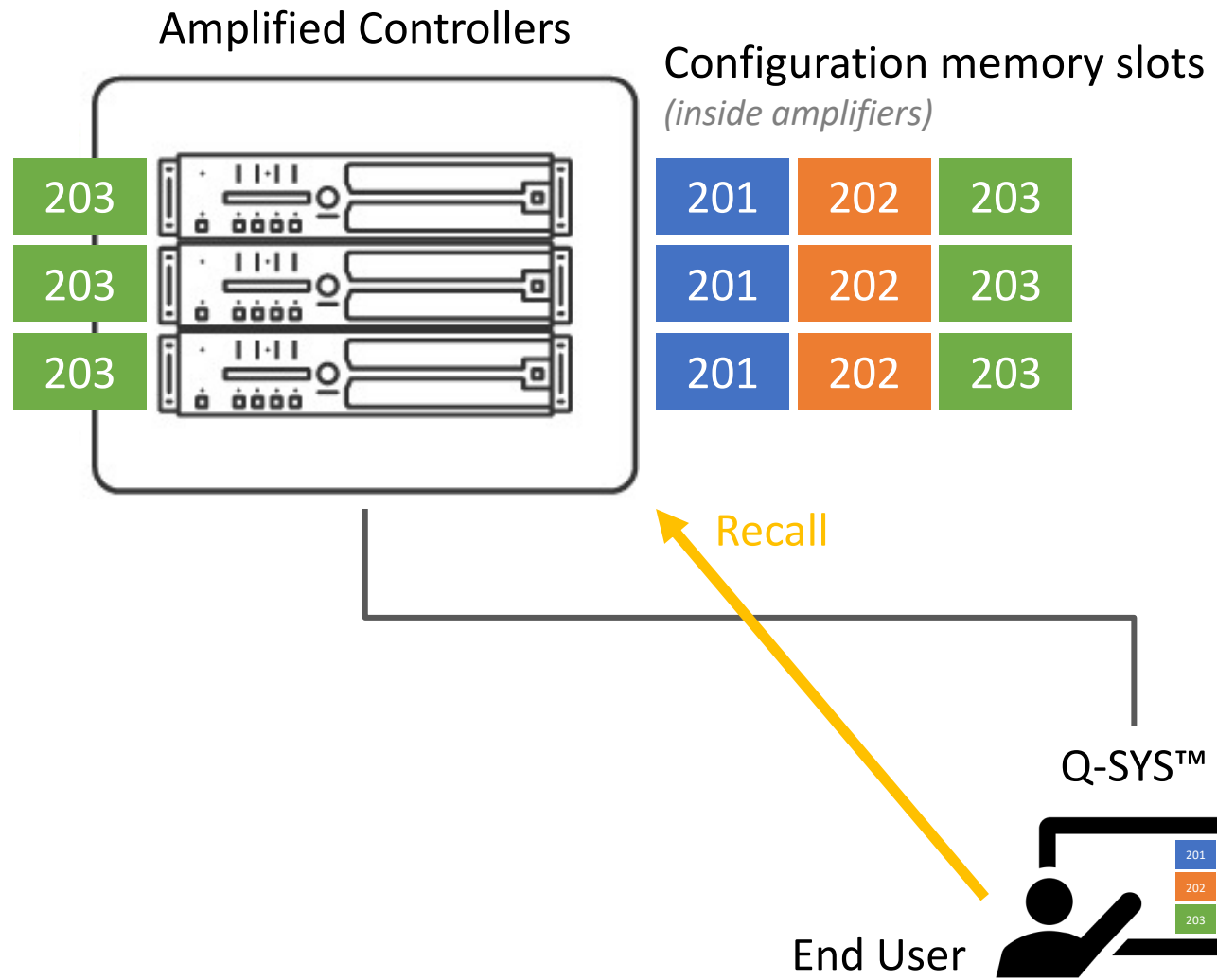
9 Use Q-SYS™ for recalling



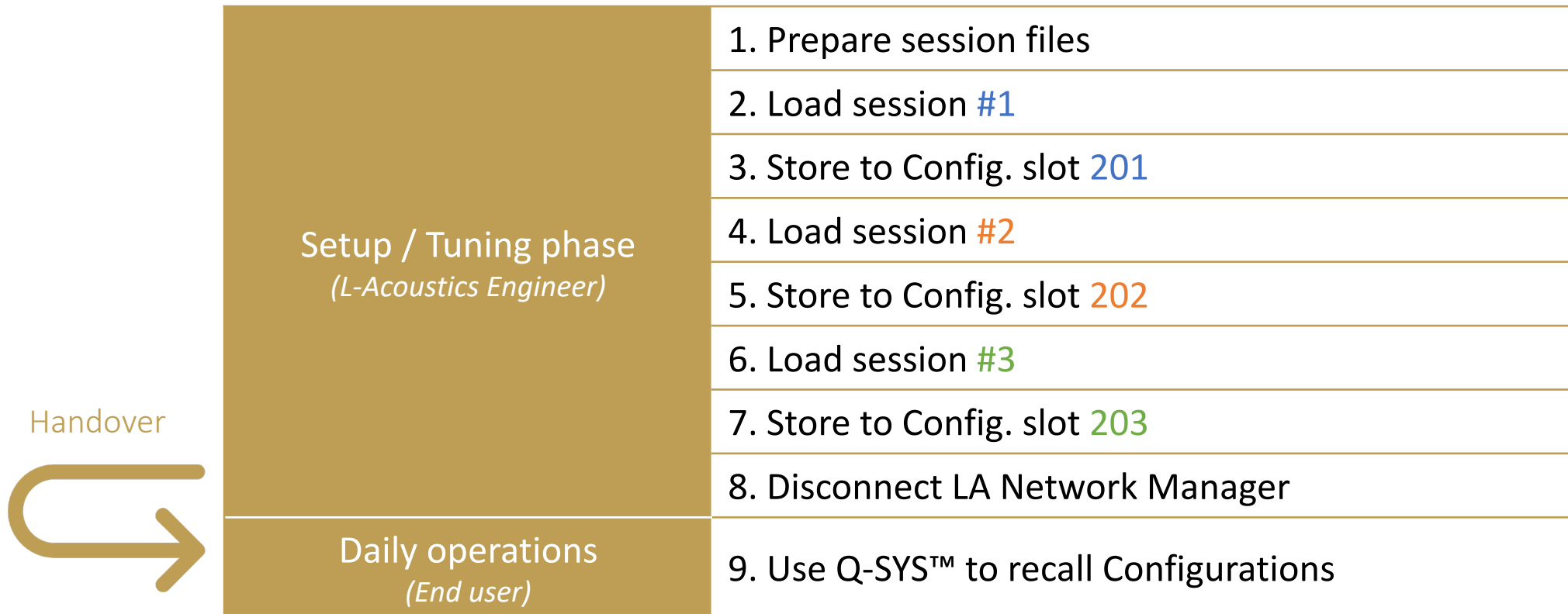
9 Use Q-SYS™ for recalling



9 Use Q-SYS™ for recalling



Configurations Workflow - Summary



Configurations Limitations

- Only 3 configuration slots per amplified controller
- If needed to open LA Network Manager, must load reference sessions file ('restore session' won't help)
- Need to restart the storing process on Firmware update or unit replacement
- Not released yet, should be firmware 2.9.8 with Q-SYS plug-in 1.2.2



Configurations

Amplified Controllers & P1



What is a Configuration ?

- Same as a User Preset, but also includes Group Parameters

→ Allows to recall multiple system tunings without using LA Network Manager

- Saved inside device memory
- 10 memory slots in Amplified Controllers, 30 memory slots in P1
- Loaded by 3rd-party controller

Configuration

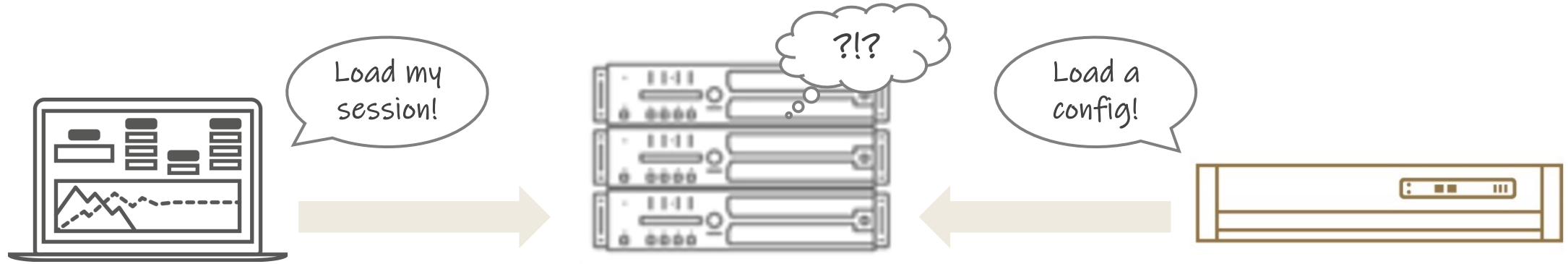
User Preset

- Preset family (K1, K2, Kara II, A15, etc.)
- Preset parameters
 - Mute
 - Gain
 - Delay
 - Polarity
 - Routing (A, B, A+B, etc.)
- Group parameters
 - Group Gain
 - Group Delay
 - Array Morphing
 - EQ (IIR, FIR, AirComp)



Cohabitation with LA Network Manager

- When LA Network Manager is connected, Configurations **must not be loaded**.
- When LA Network Manager is offline, Configurations can be loaded.



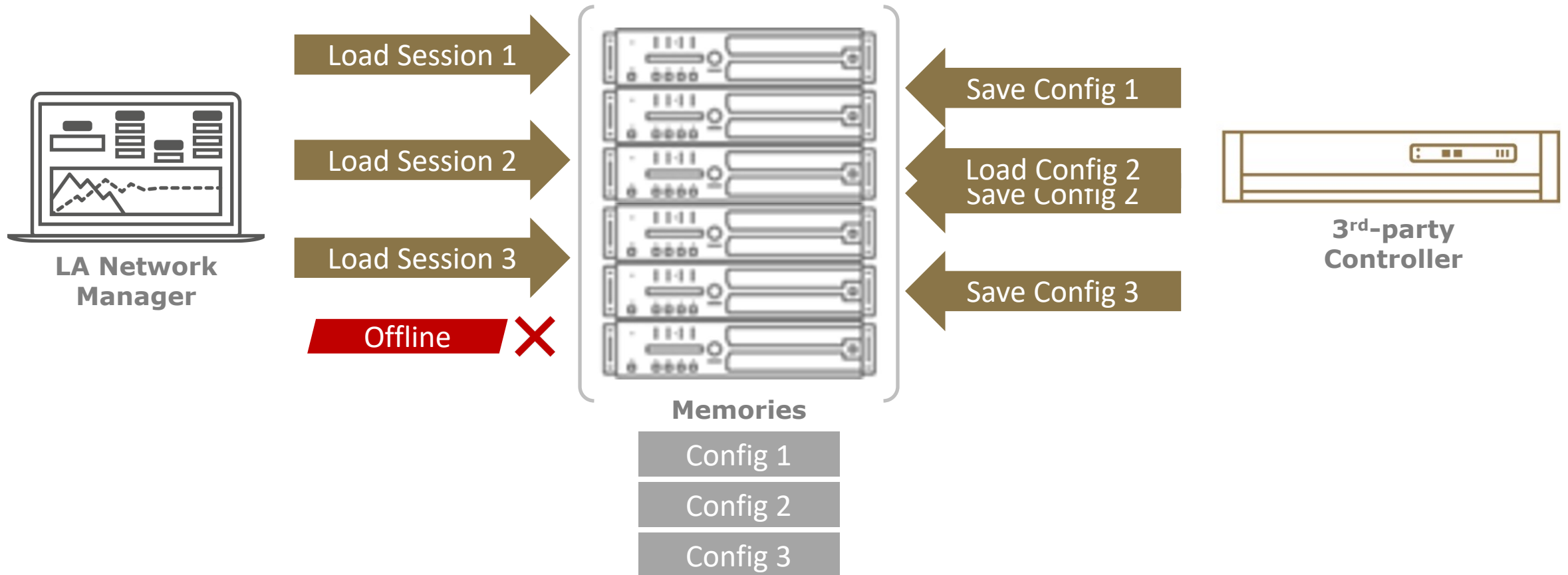
Workflow example: Guest System Engineer in a venue managed using Configurations

- **Normal days** / Configurations loaded for system tuning variants.
- **On special shows** / LA Network Manager is connected and used for tuning adjustments.
- **After the special show** / LA Network Manager closed and regular Configuration loaded for normal use.



Saving Configurations / Workflow

- Use LA Network Manager for loading session files one by one.
- Use 3rd-party controller for saving to amplified controllers memories.





Saving Configurations / Important notes

- Keep archives/backups of LA Network Manager session files. They will be needed for creating Configurations again.
- Configurations are **erased** from memory on Firmware Update and Reset to Factory.
- Do not save changes to Session file after creating a Configuration





Saving Configurations / Tools



Official plugins/modules

Load & Save Configurations

3rd-Party Controllers using

SNMP

can only Load Configurations

LA Configurations Tool

Load, Save & Manage Configurations



Saving Configurations / Tools

The screenshot shows the 'LA Configurations Tool v1.0.1' window. At the top, there are controls for 'Network Interface' (set to 'Eth Laptop') and 'IP Address' (set to '192.168.101.251'). A 'Scan' button shows '5 units'. Below are 'Select All', 'Select None', and 'Configuration slot' (set to '1 / 201') with a 'Load' button and 'Tuning 1' dropdown. A 'Save' button is also present. The main table lists configurations with columns for ID, IP Address, Type, Preset / Configuration, and 8 numbered columns (1-8) for status.

ID	IP Address	Type	Preset / Configuration	1	2	3	4	5	6	7	8
<input type="checkbox"/>	41	192.168.101.41	P1	00: DEFAULT							
<input type="checkbox"/>	42	192.168.101.42	LA2Xi	011: KARA II 70							
<input checked="" type="checkbox"/>	43	192.168.101.43	LA4X	201: Tuning 1	✓						
<input checked="" type="checkbox"/>	44	192.168.101.44	LA12X	202: Tuning 2	✓	✓					
<input checked="" type="checkbox"/>	45	192.168.101.45	LA8	202: Tuning 2	✓	✓					

LA Configurations Tool

Windows Utility Application

- Scan devices on the PC subnet
- Multi-selection
- See existing Configuration memories and current state
- Load only when LANWM is offline

- Available on SharePoint (TBC)

[07 APPLICATIONS PROJECT > INTERNAL TOOLS > LA CONFIGURATIONS TOOL \(TBC\)](#)

- Utility intended to be shared with customers using configurations with SNMP or UDP/IP