



50 YEARS  
ENGINEERING  
THE FUTURE.

Kevin Broce – Key Accounts

# WELCOME TO LAWO!

50<sup>YEARS</sup>  
ENGINEERING  
THE FUTURE.



## LAWO Campus in Rastatt

- 8 Buildings
- 19000 sq ft.
- >8 Acres of land

Founded in 1970 in Rastatt  
100% Family-owned  
100% in-house production  
> 350 employees worldwide

# GLOBAL PRESENCE.

50<sup>YEARS</sup>  
ENGINEERING  
THE FUTURE.



- [LAWO - Google Maps](#)
- [570 Taxter Rd #140 - Google Maps](#)

# GLOBAL PRESENCE.

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THE FUTURE.



- 
- A world map with a blue and green color scheme, overlaid with a grid of red and white lines. Several circular callouts with the LAWO logo are placed over various cities. The cities labeled include TORONTO, ANTWERP, ZURICH, OSLO, GRIESHEIM, WIESBADEN, MUNICH, MOSCOW, and SANTIAGO DE CHILE. A yellow callout with 'ALC' is also visible near Griesheim.
- Lawo HQ in Germany: Management, R&D, Manufacturing
  - Lawo Sales & Support Offices in Canada, China, Nordic, Singapore, Switzerland, UK and USA
  - >130 Lawo Partners covering 50+ countries (70+ distributors & resellers; 50+ system integrators)

# OUR VISION.

50<sup>YEARS</sup>  
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LAWO – “We enable world class content production by leading innovation in media infrastructure, cloud and workflow solutions.”



# MADE IN GERMANY.

50<sup>YEARS</sup>  
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- Smart production lines with high vertical integration
- High-end in-house CNC
- High-end in-house SMD assembly (down to '0201'-sized components / 0.6x0.3mm)

# DRIVEN BY PEOPLE.

50<sup>YEARS</sup>  
ENGINEERING  
THE FUTURE.



> 350 passionate Employees worldwide



**Andreas Hilmer**  
CMO - Chief Marketing Officer

**Phil Myers**  
Chief Technology Officer

**Ulrich Schnabl**  
Chief Operating Officer

**Jamie Dunn**  
Chief Commercial Officer

**Claudia Nowak**  
Chief Financial Officer

**Christian Lukic**  
Chief Supply Chain Officer

A TRADITION IN INNOVATION.

50<sup>YEARS</sup>  
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THE FUTURE.



1970s

“LAWO GERÄTEBAU” – First analog & modular  
Broadcast Mixing Consoles and Routing Systems

1970

1980

1990

2000

2010

2020

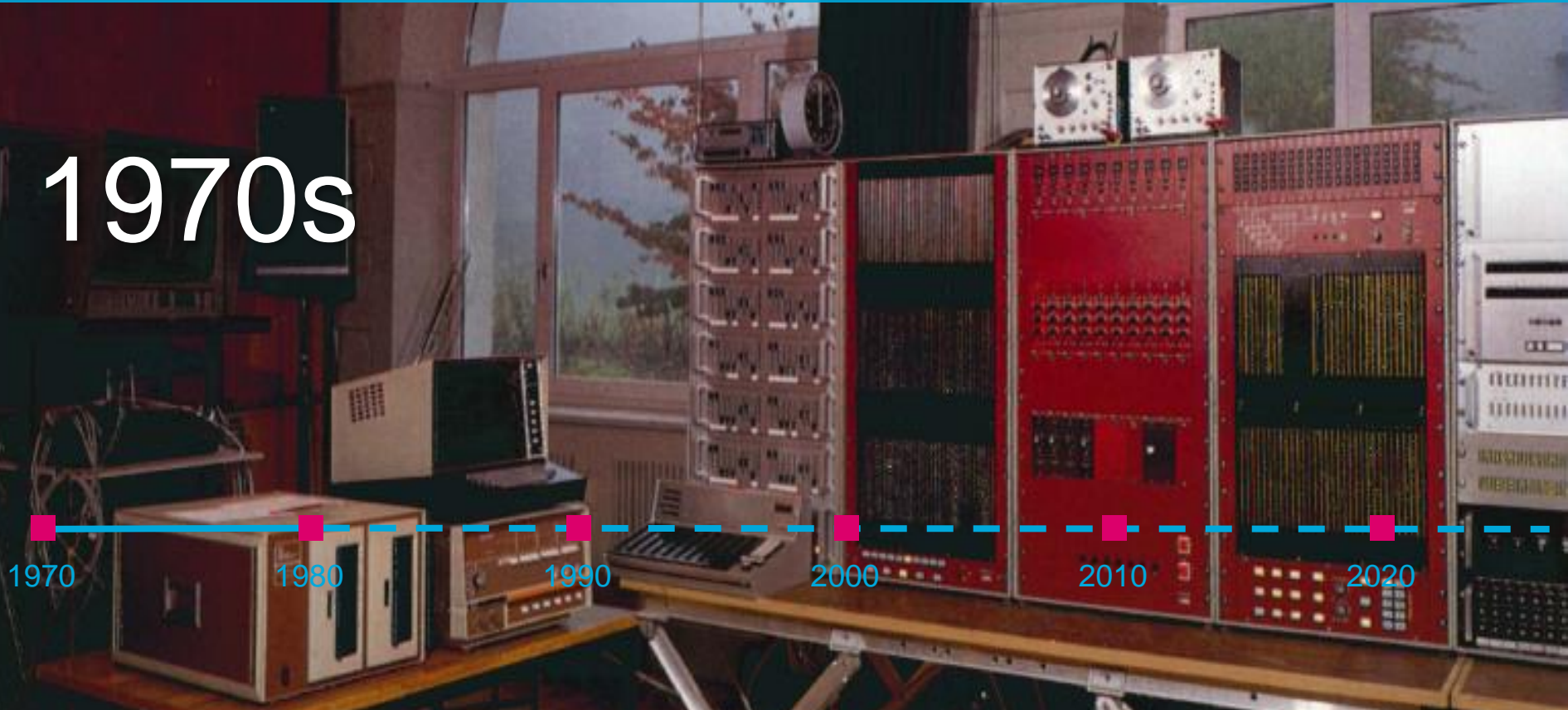


A TRADITION IN INNOVATION.

50<sup>YEARS</sup>  
ENGINEERING  
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1970s



1970

1980

1990

2000

2010

2020

# A TRADITION IN INNOVATION.

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# 1980s



Analog Broadcast Mixing Consoles  
Widely adopted by German Broadcasters

A TRADITION IN INNOVATION.

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# 1990s

Digital Mixing Systems &  
Digital Audio Routing Infrastructure via ATM

1970

1980

1990

2000

2010

2020

A TRADITION IN INNOVATION.

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ENGINEERING  
THE FUTURE.



2000s

Lawo starts global Operations and gains recognition at Major Broadcast Events

1970

1980

1990

2000

2010

2020

A TRADITION IN INNOVATION.

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**RAVENNA**  
*AES67 built-in*

Now with  
**ST2110!**

2010



RAVENNA Audio-over-IP standard

LAWO invests in development of IP technology for Broadcast Applications

1970

1980

1990

2000

2010

2020

A TRADITION IN INNOVATION.

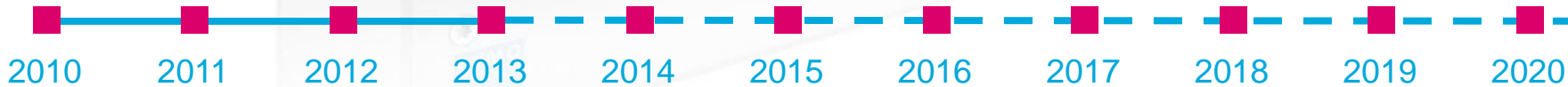
50<sup>YEARS</sup>  
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THE FUTURE.



2012

V\_\_pro8

First Video Product



# A TRADITION IN INNOVATION.

50 YEARS  
ENGINEERING  
THE FUTURE.



# 2014

World Cup Brazil and ASIAN Games Incheon  
First fully IP based Commentary Systems

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

A TRADITION IN INNOVATION.

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2015

LAWO becomes founding member of AIMS Alliance  
Paving the road towards SMPTE 2110

AIMS

2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

ALLIANCE FOR IP MEDIA SOLUTIONS



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2016

EURO 2016:

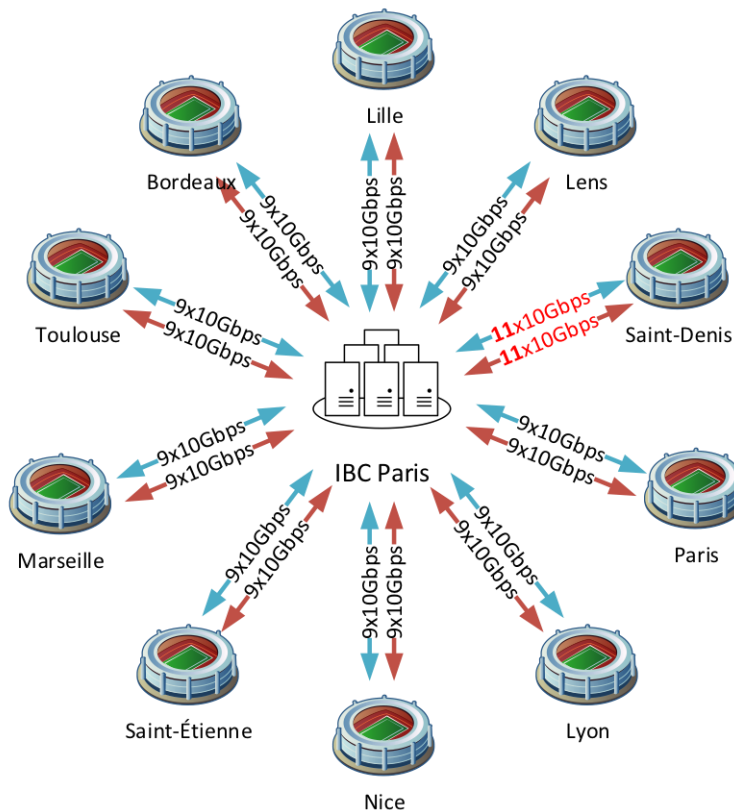
The first completely IP based, large scale  
Broadcast Production Sports Event !



2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020



# EURO 2016 CONNECTION OVERVIEW



A TRADITION IN INNOVATION.

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2016

DORNA: MotoGP

IP Video, Audio, Control and Commentary by Lawo

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

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2018

NEP AUSTRALIA: ANDREWS HUB

World's largest IP Broadcast Installation based on Lawo V\_\_matrix



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THE FUTURE.



2019

SIC Portugal, Gamecreek USA, CCTV China, Medialaan Belgium, Eurosport...  
Lawo IP solutions become widely adopted



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THE FUTURE.



# 2020

Lawo celebrating its 50<sup>th</sup> Anniversary.  
Multiple large-scale IP installations to go live in 2020.

A horizontal timeline graphic with a blue line and pink square markers. The years 2010 through 2020 are listed below the line. The 2020 marker is highlighted with a larger pink square.

2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

# A TRADITION IN INNOVATION. 2020+

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# Clients

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accenture



CBS  
SPORTS



FOX



UNIVISION



TELEMUNDO

WEATHERGROUP



Bell Media



weatherscan





# 2022 Devoncroft Survey

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## 2022 Devoncroft Survey Innovation League Table



## 2022 Devoncroft Survey Quality League Table



# Industry Recognition

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## 2022 Devoncroft Survey Reliability League Table



## 2022 Devoncroft Survey Stability League Table



## 2022 Devoncroft Survey Vision of the Future League Table



## 2022 Devoncroft Survey Easy to Work With League Table






## 2022 Devoncroft Survey Great Customer Service League Table



2022 Global Brand Driver Leaders	
ARRI	Audio Technica
Genelec	Lawo
Neumann	Panasonic
Riedel	Sennheiser
Shure	Sony

 **DEVONCROFT**  
PARTNERS LLC

Source: Devoncroft 2022 Survey

## 2022 Devoncroft Survey Value for Money League Table



## AUDIO PRODUCTION CONSOLES



mc<sup>2</sup> 36  
All-in-One Audio  
Production Console



mc<sup>2</sup> 56  
Audio Production  
Console



mc<sup>2</sup> 96  
Grand Production  
Console





mc<sup>2</sup> series

Audio Production Consoles

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## RADIO CONSOLES



**crystal**  
Radio Broadcast Console



**ruby**  
Radio Broadcast Console



**diamond**



**RELAY VRX**  
PC-based Virtual Studio Console

## AUDIO PROCESSING, ROUTING & I/O



**Power Core**  
High-density modular IP DSP Audio Node



**Compact Engine**  
AES67 Audio Node with Onboard DSP

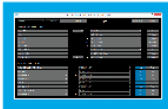
## RADIO SOFTWARE



**VisTool**  
PC-based GUI Building Software



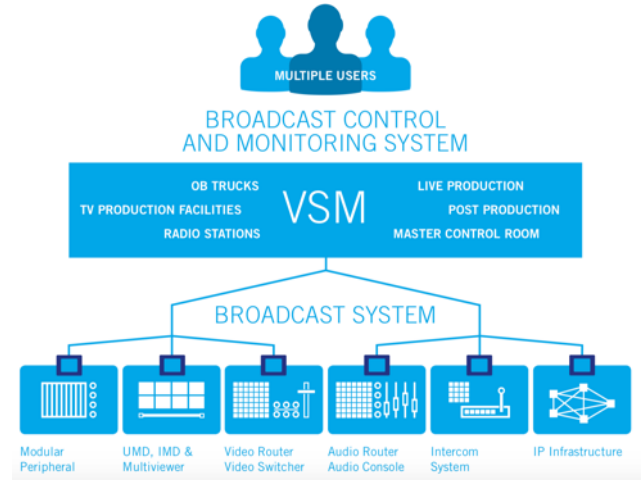
**RELAY VPB**  
PC-based Virtual Audio DSP Engine



**RELAY VSC**  
PC-based Virtual Sound Card

## VSM

## The IP Broadcast Control System



## BROADCAST CONTROL & IP ORCHESTRATION



**VSM**  
THE IP Broadcast  
Control System



**vsmSOUL**  
Seamless Orchestration  
and Unification Layer



**vsmTALLY**  
Multi-Studio Tally  
Management System



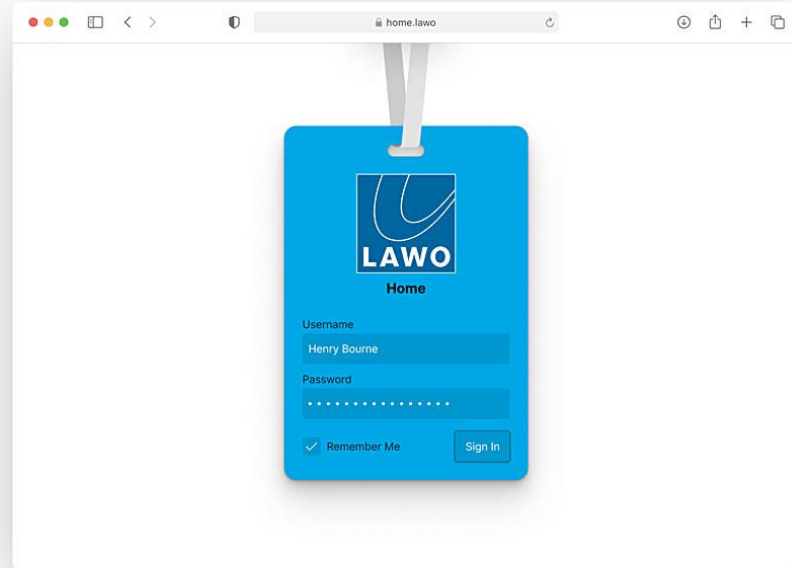
**vSNMP**  
SNMP and Alarm  
Management System




**vsmGEAR**  
Hardware Control  
Panels & Interfaces



**vsmPANEL**  
Customizable Software  
Control Panel



## Managing both Lawo and external devices

 Home

Devices Filters

Stream Routing

Signal Ownership Groups





Snapshots


Health

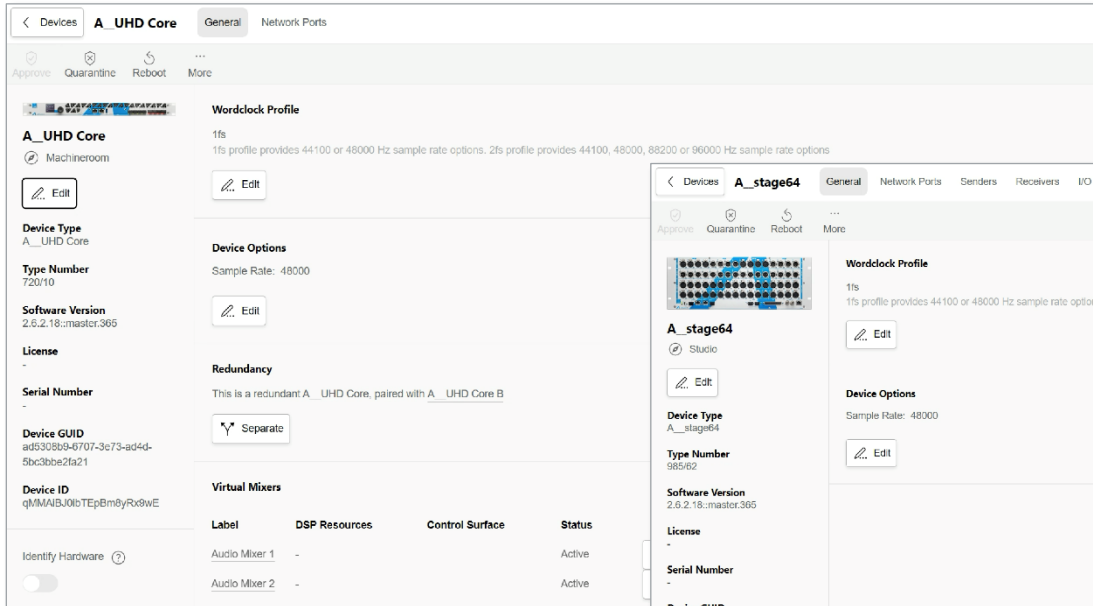
Files

Settings

**Devices**

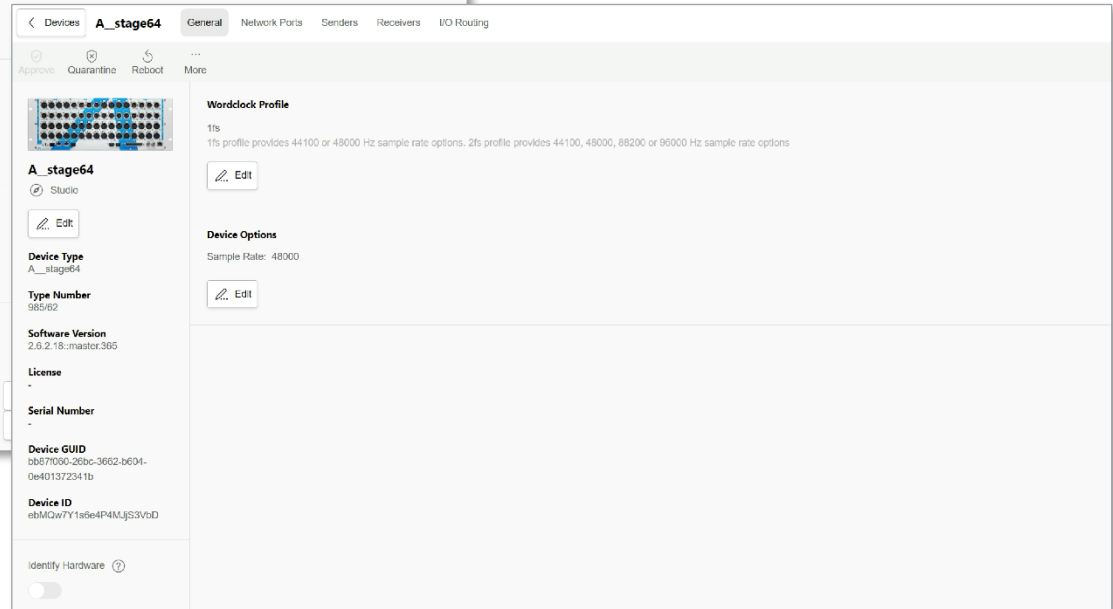
+ New App  Approve  Quarantine  Reboot  More

<input type="checkbox"/> Label ↓	Location	Status	Admissions	Device Type
<input type="checkbox"/> <a href="#">.edge blade 1</a>	Machineroom	✓ Online	Approved	.edge
<input type="checkbox"/> <a href="#">.edge blade 2</a>	Studio	✓ Online	 Partially approved	.edge
<input type="checkbox"/> <a href="#">A__stage64</a>	Studio	✓ Online	Approved	A__stage64
<input type="checkbox"/> <a href="#">A__UHD Core A</a>	Machineroom	✓ Online	Approved	A__UHD Core (Redundant with <a href="#">A__UHD Core B</a> )
<input type="checkbox"/> <a href="#">A__UHD Core B</a>	Machineroom	✓ Online	Approved	A__UHD Core (Redundant with <a href="#">A__UHD Core A</a> )
<input type="checkbox"/> <a href="#">Audio Mixer 1</a>	Machineroom	✓ Online	Approved	Virtual Mixer in <a href="#">A__UHD Core A</a> and <a href="#">A__UHD Core B</a>
<input type="checkbox"/> <a href="#">Audio Mixer 2</a>	Machineroom	✓ Online	Approved	Virtual Mixer in <a href="#">A__UHD Core A</a> and <a href="#">A__UHD Core B</a>
<input type="checkbox"/> <a href="#">Home App Server</a>	Machineroom	✓ Online	-	App Server
<input type="checkbox"/> <a href="#">PowerCore Machineroom</a>	Machineroom	✓ Online	Approved	PowerCore Ver2 (710/11)
<input type="checkbox"/> <a href="#">ThirdPartyDevice</a>	Machineroom	✓ Online	-	ThirdPartyVirtual
<input type="checkbox"/> <a href="#">V__matrix C100</a>	Machineroom	✓ Online	Approved	V__Matrix C100



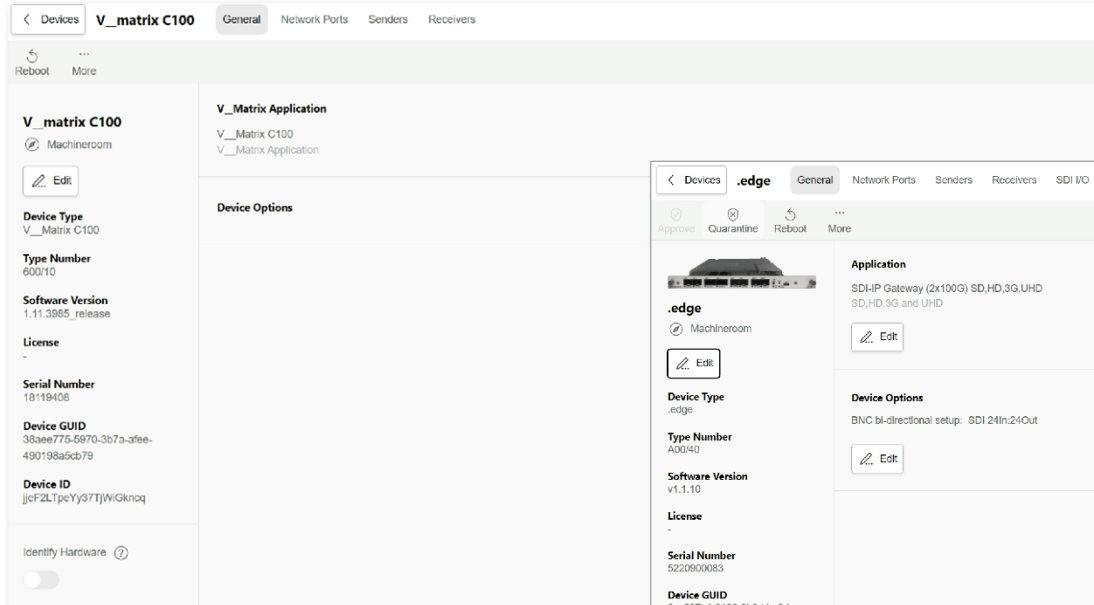
The screenshot shows the configuration page for the 'A\_UHD Core' device. The page is divided into several sections:

- General:** Includes a 'Wordclock Profile' section with a '1fs' profile and an 'Edit' button. Below it is the 'Device Options' section with 'Sample Rate: 48000' and an 'Edit' button.
- Redundancy:** A section stating 'This is a redundant A\_UHD Core, paired with A\_UHD Core B' and a 'Separate' button.
- Virtual Mixers:** A table with columns for 'Label', 'DSP Resources', 'Control Surface', and 'Status'. It lists 'Audio Mixer 1' and 'Audio Mixer 2', both with 'Active' status.
- Device Information:** Lists 'Device Type' (A\_UHD Core), 'Type Number' (720/0), 'Software Version' (2.6.2.18::master.365), 'License' (-), 'Serial Number' (-), 'Device GUID' (ads308b9-6707-3c73-ad4d-56c3b6e2fa21), and 'Device ID' (qMMAIBJ0ibTEpBm8yRx9wE).
- Actions:** Includes an 'Identify Hardware' button with a question mark icon and a toggle switch.



The screenshot shows the configuration page for the 'A\_stage64' device. The page is divided into several sections:

- General:** Includes a 'Wordclock Profile' section with a '1fs' profile and an 'Edit' button. Below it is the 'Device Options' section with 'Sample Rate: 48000' and an 'Edit' button.
- Device Information:** Lists 'Device Type' (A\_stage64), 'Type Number' (985/62), 'Software Version' (2.6.2.18::master.365), 'License' (-), 'Serial Number' (-), 'Device GUID' (bb67f090-26bc-3662-b604-0e401372341b), and 'Device ID' (ebMQw7Y1s6e4P4MJ5S3VbD).
- Actions:** Includes an 'Identify Hardware' button with a question mark icon and a toggle switch.



The screenshot shows the configuration page for a V\_matrix C100 device. The breadcrumb navigation is < Devices V\_matrix C100. The tabs are General, Network Ports, Senders, and Receivers. The left sidebar contains a Reboot button, a More button, and a list of devices with an Edit button for V\_matrix C100. The main content area is divided into two sections: V\_Matrix Application and Device Options. The V\_Matrix Application section shows the device name and application. The Device Options section is currently empty.

< Devices **V\_matrix C100** General Network Ports Senders Receivers

Reboot ... More

**V\_matrix C100**

Machineroom

Edit

**Device Type**  
V\_Matrix C100

**Type Number**  
800/10

**Software Version**  
1.11.3865\_release

**License**  
-

**Serial Number**  
18119406

**Device GUID**  
38aee776-6870-3b7a-afee-490198a5cb79

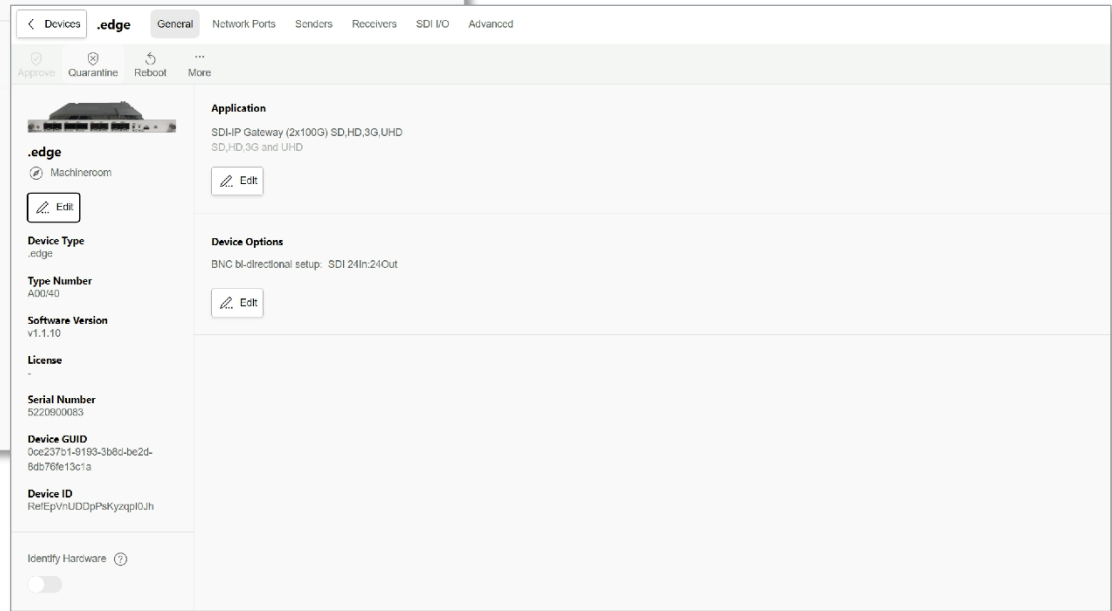
**Device ID**  
jjeF2LTpcYy87TjWjGknoq

Identify Hardware ?

**V\_Matrix Application**

V\_Matrix C100  
V\_Matrix Application


**Device Options**



The screenshot shows the configuration page for an .edge device. The breadcrumb navigation is < Devices .edge. The tabs are General, Network Ports, Senders, Receivers, SDI I/O, and Advanced. The left sidebar contains buttons for Approve, Quarantine, Reboot, and More, and a list of devices with an Edit button for .edge. The main content area is divided into three sections: Application, Device Options, and License. The Application section shows the device name and application. The Device Options section shows the device type, type number, software version, and license. The License section shows the serial number, device GUID, and device ID.

< Devices **.edge** General Network Ports Senders Receivers SDI I/O Advanced

Approve Quarantine Reboot ... More



**.edge**

Machineroom

Edit

**Device Type**  
.edge

**Type Number**  
A00/40

**Software Version**  
v1.1.10

**License**  
-

**Serial Number**  
522080083

**Device GUID**  
0ce237b1-8193-3b8d-be2d-8db76fe13c1a

**Device ID**  
RelEpvnuDDpPskYzzp10.jh

Identify Hardware ?

**Application**

SDI-IP Gateway (2x100G) SD,HD,3G,UHD  
SD,HD,3G and UHD

Edit

**Device Options**

BNC bi-directional setup: SDI 24In:24Out

Edit

# Home

One centralized management platform

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The screenshot displays the LAWO Home management platform interface, which is divided into several functional areas:

- Home Overview:** A central dashboard showing a list of devices with columns for Label, Location, Status, Admissions, and Device type.
- Devices View:** A detailed view of the device list, including a 'Health' section with a table of system issues.
- Sources View:** A view for managing audio sources, showing a list of sources and their associated 'Essence' (audio tracks).
- Destinations View:** A view for managing audio destinations, showing a list of destinations and their associated 'Essence'.
- Health View:** A detailed view of system health, showing a table of issues with columns for Type, Location, Originator, Issue, and Timestamp.

Type	Location	Originator	Issue	Timestamp
Stream Routing	10.1.235.56		Network latency: 2.45s	2023-03-27 15:31:51
Signal Ownership Groups	Ether	App Server / green control [mgmt]	Ethernet: interface down	2023-03-23 16:00:56
Snapshots	10.1.235.56		Network latency: 3.34s	2023-03-17 14:32:15
Health	Machineroom	A__UHD Core B / Voltage PSU1 12V0	Hardware: 0 V is too low	2023-03-17 12:04:43
Files	Machineroom	A__UHD Core B / Fan PSU1	Hardware: 0 RPM is too low	2023-03-17 12:04:41
Settings	Machineroom	A__UHD Core B / PSU1	Hardware: Warning	2023-03-17 12:04:41
	Machineroom	A__UHD Core A / Voltage PSU1 12V0	Hardware: 0 V is too low	2023-03-17 11:56:18
	Machineroom	A__UHD Core A / Fan PSU1	Hardware: 0 RPM is too low	2023-03-17 11:56:19
	Machineroom	A__UHD Core A / PSU1	Hardware: Warning	2023-03-17 11:56:16
	Machineroom	C100 Machineroom / yellow control [MGMT]	Ethernet: interface down	2023-03-14 13:36:34

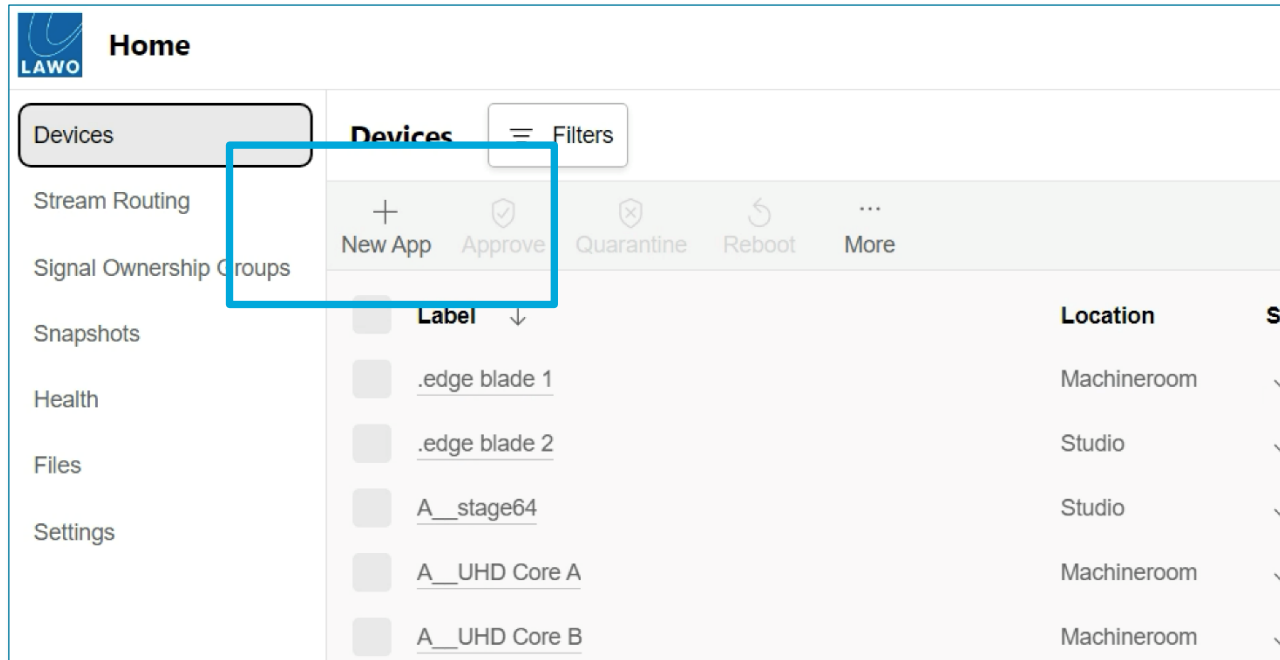


# 2022 .edge IP Gateway released

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# 2023 Video Processing Software Based “Home Apps”



The screenshot displays a software interface with a 'Home' dashboard. On the left is a navigation menu with items: Devices, Stream Routing, Signal Ownership Groups, Snapshots, Health, Files, and Settings. The 'Devices' menu item is highlighted. The main content area is titled 'Devices' and includes a 'Filters' button. Below this is a toolbar with icons for '+ New App', a checkmark 'Approve', a shield with an 'X' 'Quarantine', a refresh 'Reboot', and a three-dot 'More' menu. A table below the toolbar lists devices with columns for 'Label', 'Location', and 'Status'. A red box highlights the 'New App' button and the 'Label' column header.

Label	Location	Status
.edge blade 1	Machineroom	✓
.edge blade 2	Studio	✓
A_stage64	Studio	✓
A_UHD Core A	Machineroom	✓
A_UHD Core B	Machineroom	✓

# Cloud Native Technology



## Key Services:

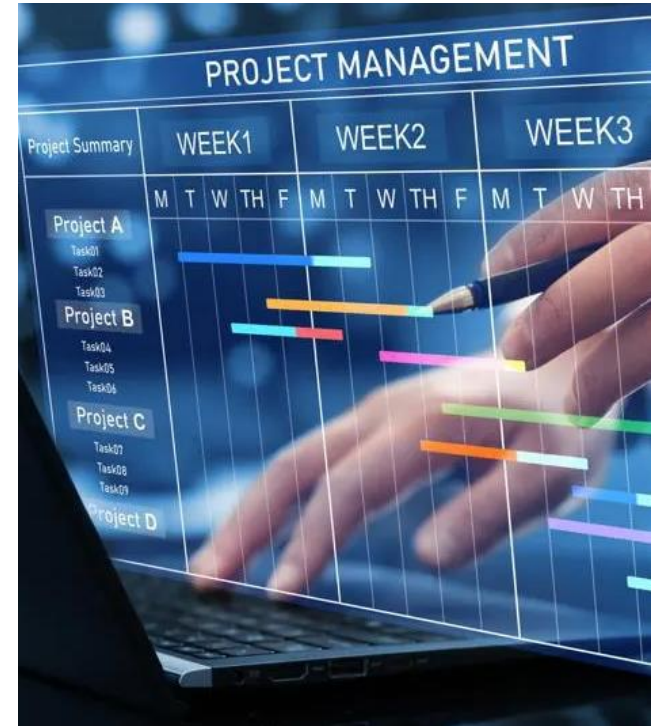
System Consultancy and Architecture

System Delivery

Program/Project Management

Customer Support

Management Leadership



# Lawo CARE 4 SLA

## Extended Warranty

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THE FUTURE.



Features	Platinum	Gold	Silver	Extended Warranty* (up to product age of 7 years)
24/7 Hotline	Yes	Yes	No	No
Spares Shipping	Same business day <sup>1</sup>	Within 10 business days	As available	As available
FOC Loaner during repairs	Yes	Yes	No	No
Charged Spare Rental	—	—	Yes <sup>2</sup>	Yes <sup>2</sup>
Spares FOC Shipping <sup>3</sup>	Yes	Yes	No	No
Repair Services	Charged	Charged	Charged	Covered
Leased On-site Spares Program	Yes	No	No	No
FOC SW Updates, Upgrades, Patches, Fixes	Yes	Yes	Yes	N/A
Included On-site Service Days <sup>4,5</sup>	Yes	Yes	No	No
Additional Service Days Discount	30%	20%	10%	N/A
Severity 1, 2 Response Time	1 hr.	1 hr.	1 hr. <sup>6</sup>	N/A
Severity 3 Response Time	1 Business Day	1 Business Day	1 Business Day	N/A
Severity 4 Response Time	2 Business Days	2 Business Days	2 Business Days	N/A

# Lawo CARE 4 SLA Extended Warranty

50<sup>YEARS</sup>  
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THANK YOU!



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