

**Skalierungs** **Raum**



VORTRAGENDER

**CLEMENS STURM**

Director Sales Engineering

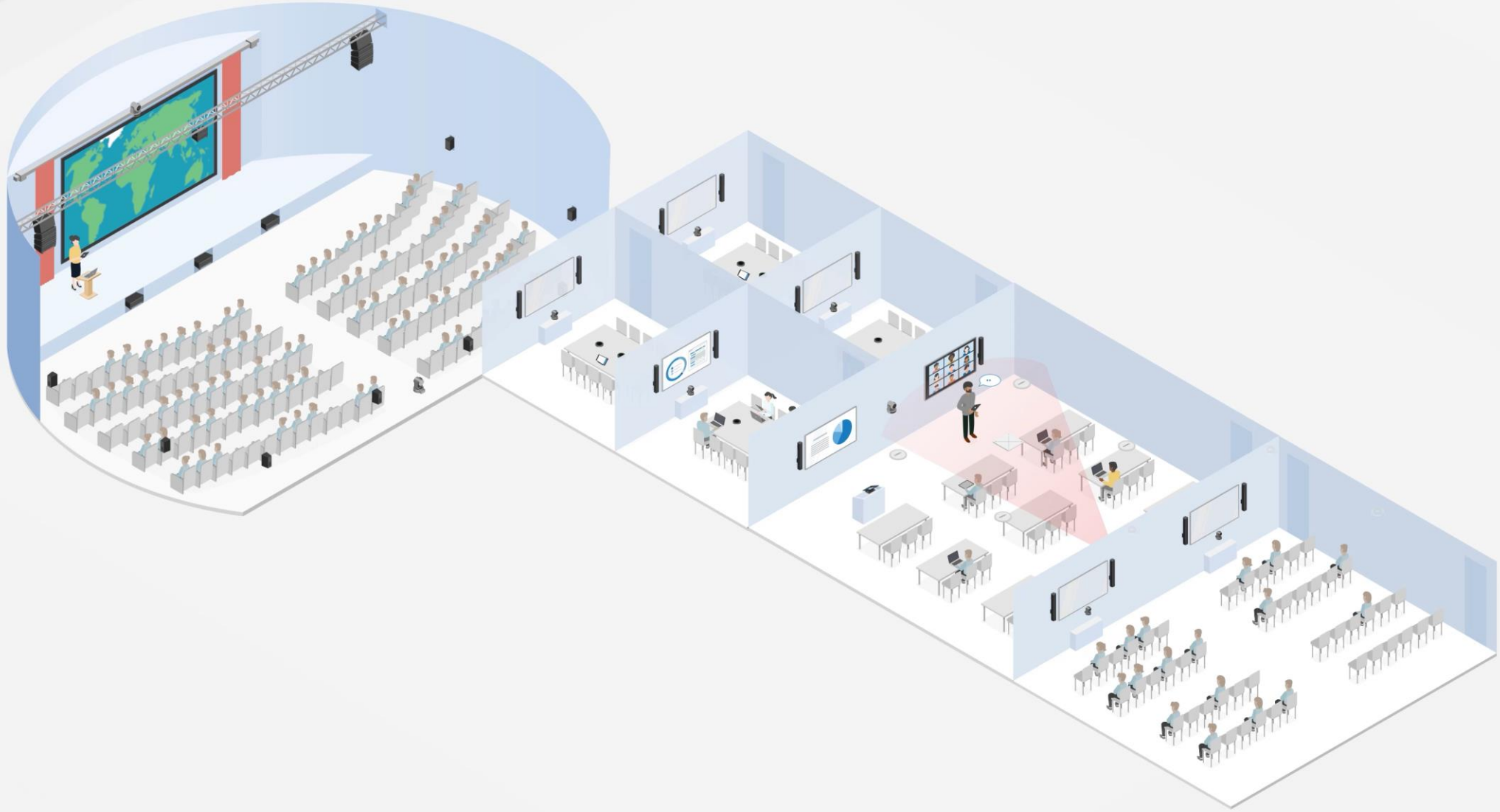


CO-PARTNER

**MIRKO MESSALL**

Application Engineer





## Core redundant

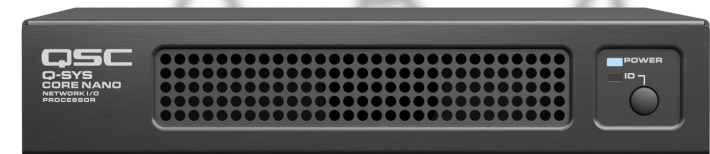
Zentrales System



VS.

## Core nicht redundant

Dezentrales System



The background features several large, light gray question marks and circles scattered across the white space. The text is centered in the middle of the page.

**Welche Fragen sollte  
man sich stellen**

A blue circle containing the number '1.' in white text, positioned at the top center of the slide. The background features several large, faint, light gray question marks scattered across the white space.

**Zentrale oder dezentrale  
Hardware-Infrastruktur?**

## 2 x dasselbe CORE Modell zentral verbaut



Design Elements

Inventory

- Default Location
  - Core 610 : Core-1
    - Backup : Core-2
    - Status
    - Loudspeaker Monitor
    - Serial Port

Properties Schematic Elements

Core Properties

|                        |                  |
|------------------------|------------------|
| Name                   | Core-1           |
| Location               | Default Location |
| Model                  | Core 610         |
| Is Redundant           | Yes              |
| Backup Name            | Core-2           |
| Network Receive Buffer | Default          |

Clocking

|              |          |
|--------------|----------|
| Sample Rate  | 48kHz    |
| Clock Source | Internal |

## X-Mal dasselbe CORE Modell dezentral verbaut (partitionierte Funktion)



File Edit View Tools Help

Design Elements

Inventory

- Default Location
  - Core Nano : Core-1
    - Status
    - Serial Port A
    - Serial Port B
    - Loudspeaker Monitor
    - HID Keyboard
    - HID Media
    - HID Conferencing
    - USB Input
    - USB Output

Properties Schematic Elements

Core Properties

|                        |                  |
|------------------------|------------------|
| Name                   | Core-1           |
| Location               | Default Location |
| Model                  | Core Nano        |
| Is Redundant           | No               |
| External USB Audio     | Disabled         |
| Network Receive Buffer | Default          |

USB Bridging

|                    |          |
|--------------------|----------|
| USB Bridge Name    | Core-1   |
| Zoom Compatibility | Disabled |
| USB Video Bridge   | Disabled |
| USB Audio Bridge   | Disabled |



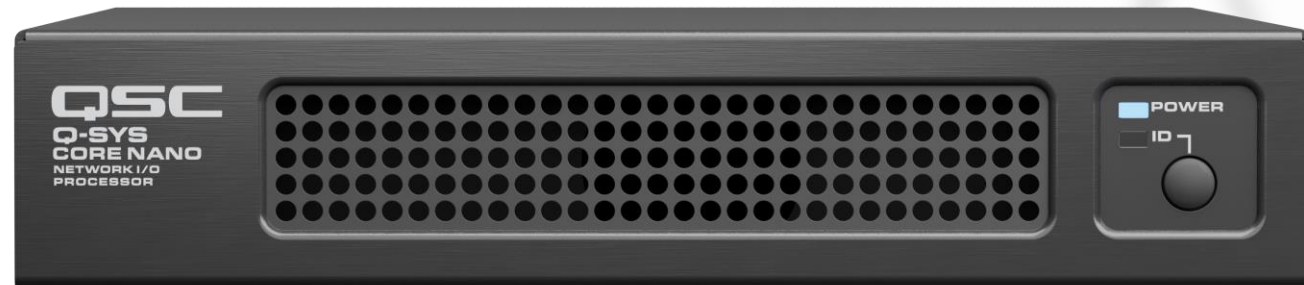


2.

**Welcher Core-Typ wird mindestens für die einzelnen Räume benötigt?**

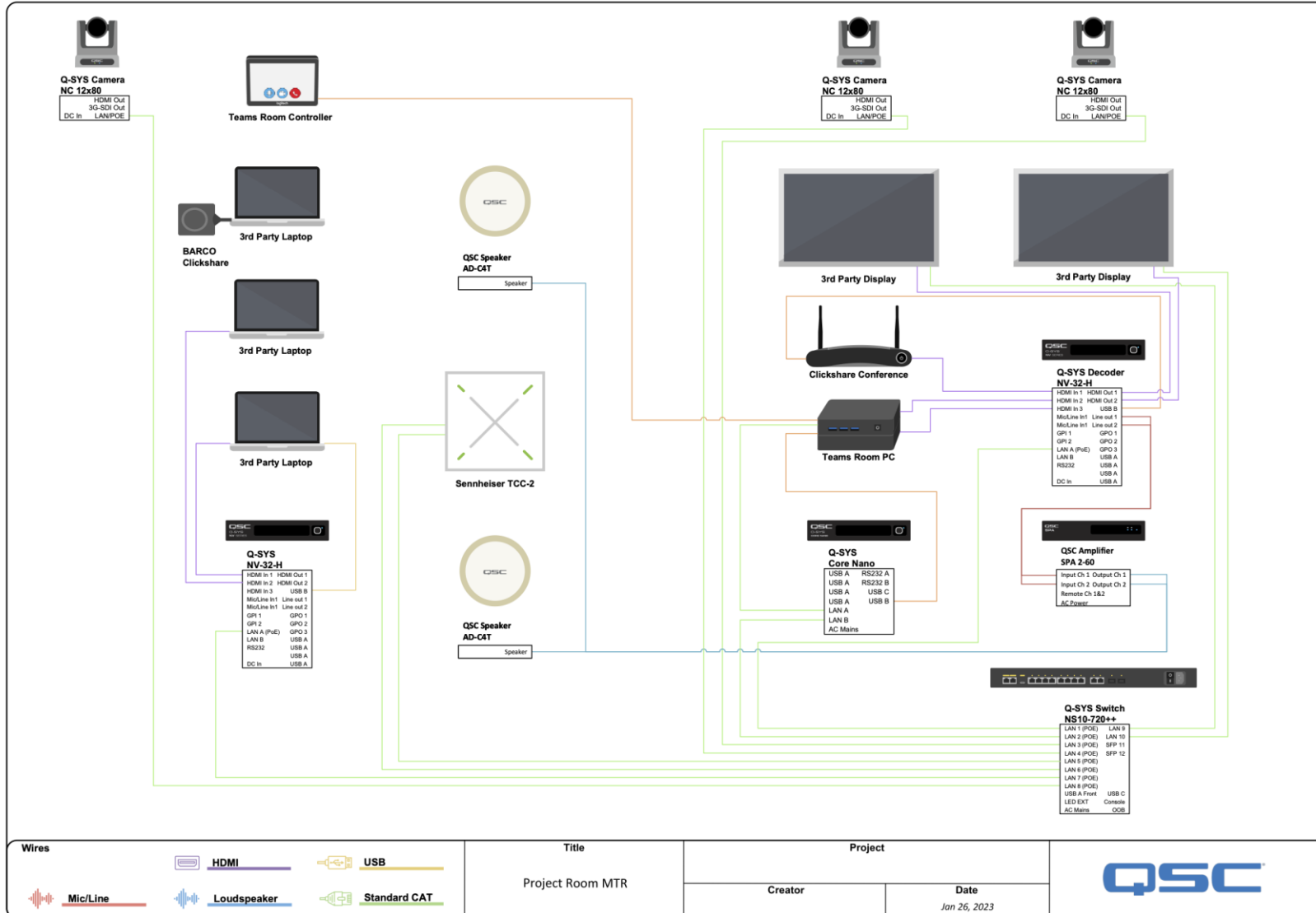
# Core Nano

Dezentrale Lösung



# Beispiel: Konferenzraum

## Frontansicht

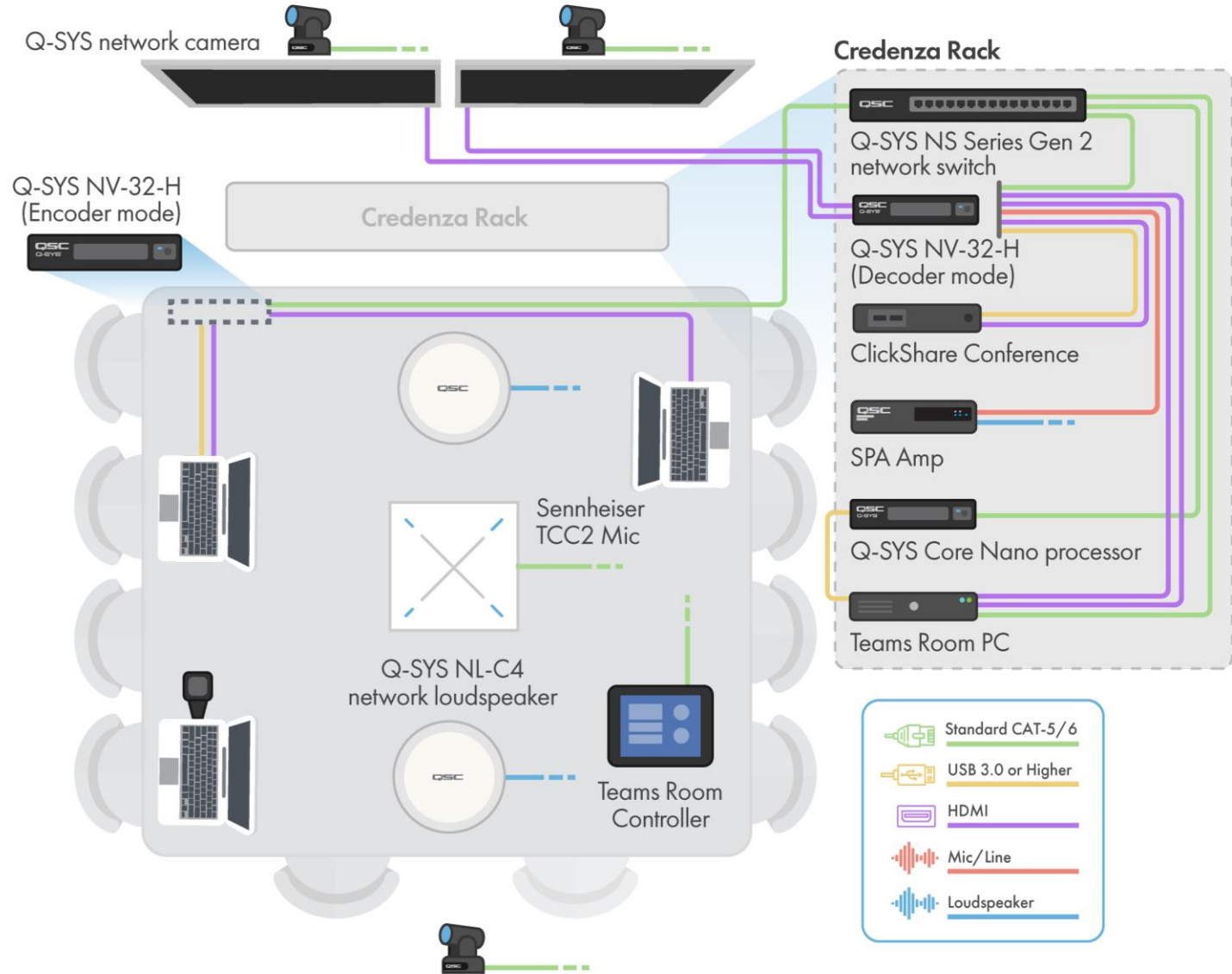


Konf 1...8



# Beispiel: Konferenzraum

## Draufsicht



# Core 610

Zentrale Lösung



3.

Wie viele **Audio-Netzwerkkanäle** pro  
**Raum UND/ODER** im **Gesamtsystem**?

# 64 x 64

Oder mit Licence:

# 128 x 128



**256 x 256**

Oder mit Licence:

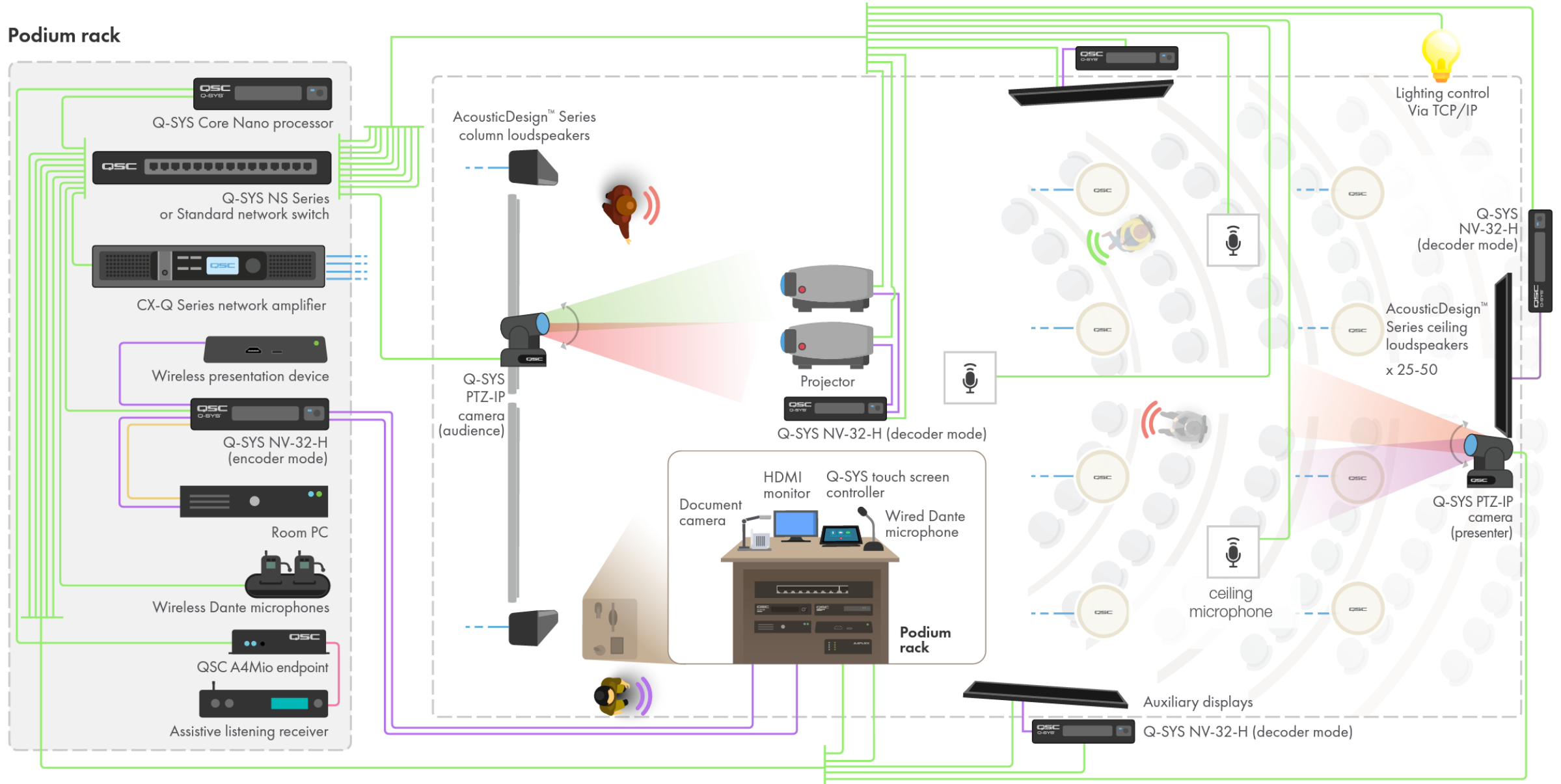
**384 x 384**





# Beispiel: Auditorium

## Podium rack





4.

**Nur Core Redundanz oder auch  
QLAN Netzwerk-Redundanz?**



QSYS-Helpfile 9.8 (online or offline)

**Note:** *The Core only establishes redundant Q-LAN audio and control streams with those peripherals that are configured in Q-SYS Designer as "Is Network Redundant" (using LAN B). This means that those peripherals not configured and physically wired to use both LAN ports cannot make use of network redundancy.*

# In Q-SYS Designer Software (v9.8)

## Netzwerk Redundanz

| CX-Q Amplifier Properties |                  |           |
|---------------------------|------------------|-----------|
| Name                      | Amplifier-1      |           |
| Location                  | Default Location | ▼         |
| Is Network Redundant      | Yes              | ▼         |
| Is Required               | Yes              | ▼         |
| Dynamically Paired        | No               | ▼         |
| Model                     | CX-Q 4K4 ▼       |           |
| Channel Configuration     | A B C D          | 4 Chann ▼ |
| Standalone Mode           | Off              | ▼         |

## Core Redundanz

The screenshot displays the Q-SYS Designer software interface. On the left, the 'Design Elements' tree shows a hierarchy under 'Inventory' > 'Default Location'. The selected element is 'Core Nano : Core-1', which has a 'Backup : Core-2' and a list of components: Status, Serial Port A, Serial Port B, Loudspeaker Monitor, HID Keyboard, HID Media, HID Conferencing, USB Input, and USB Output. On the right, the 'Properties' tab is active, showing 'Core Properties' for 'Core-1'. The properties include Name, Location, Model, Is Redundant, Backup Name, External USB Audio, Network Receive Buffer, USB Bridging (with sub-properties for Bridge Name, Zoom Compatibility, Video Bridge, and Audio Bridge).

| Core Properties        |                  |
|------------------------|------------------|
| Name                   | Core-1           |
| Location               | Default Location |
| Model                  | Core Nano        |
| Is Redundant           | Yes              |
| Backup Name            | Core-2           |
| External USB Audio     | Disabled         |
| Network Receive Buffer | Default          |
| USB Bridging           |                  |
| USB Bridge Name        | Core-1           |
| Zoom Compatibility     | Disabled         |
| USB Video Bridge       | Disabled         |
| USB Audio Bridge       | Disabled         |

# Welche QLAN Peripheriegeräte sind netzwerkredundanzfähig?

## Audio I/O

|                 |  |
|-----------------|--|
| I/O-22          | Small I/O Device, Provides 2 Mic/Line Inputs, 2 Line Outputs, 1 Speaker Output, Dual Ethernet Ports, GPIO                            |
| I/O-510i        | Core-510i in I/O mode, Accommodates 8 Audio Cards, Dual Ethernet Ports, 2 GPIO Ports   |
| I/O-Core 8 Flex | Core 8 Flex in I/O mode, Provides 8 Flex I/O Audio Channels, Dual Ethernet Ports, USB, 2 GPIO Ports                                  |
| I/O-Core 110f   | Core 110f in I/O mode, Provides 8 Mic/Line Inputs, 8 Line Outputs, 8 Flex I/O Audio Channels, Dual Ethernet Ports, USB, 2 GPIO Ports |
| I/O-Core Nano   | Core Nano in I/O mode, Provides Dual Ethernet Ports, USB   |
| I/O-Frame       | 1 RU I/O Device, Accommodates 4 Audio Cards, Dual Ethernet Ports, 1 GPIO Port  |

## Cinema

|        |   |
|--------|---|
| DCIO   | 1 RU Digital Cinema I/O Device, Provides Analog I/O, 16 AES/EBU Digital Inputs, Dual Ethernet Ports, GPIO                   |
| DCIO-H | 1 RU Digital Cinema I/O Device, Provides Analog I/O, 16 AES/EBU Digital Inputs, HDMI Audio Input, Dual Ethernet Ports, GPIO |

## Audio-Video I/O

I/O USB Bridge

I/O USB Bridge

| Model    | Channel | Description                |
|----------|---------|----------------------------|
| CX-Q     |         |                            |
| CX-Q 2K4 | 4       | 2000W Low & Hi-Z Amplifier |
| CX-Q 4K4 | 4       | 4000W Low & Hi-Z Amplifier |
| CX-Q 4K8 | 8       | 4000W Low & Hi-Z Amplifier |
| CX-Q 8K4 | 4       | 8000W Low & Hi-Z Amplifier |
| CX-Q 8K8 | 8       | 8000W Low & Hi-Z Amplifier |

# Welche QLAN Peripheriegeräte sind **NICHT** netzwerkredundanzfähig?



**NV32-H im Encoder/Decoder Mode**



**TSC-G2 und TSC-G3**



**Alle Q10's**



**Komplette Atterotech Portfolio**

5.

## **Geforderte Funktionalität der Räume**

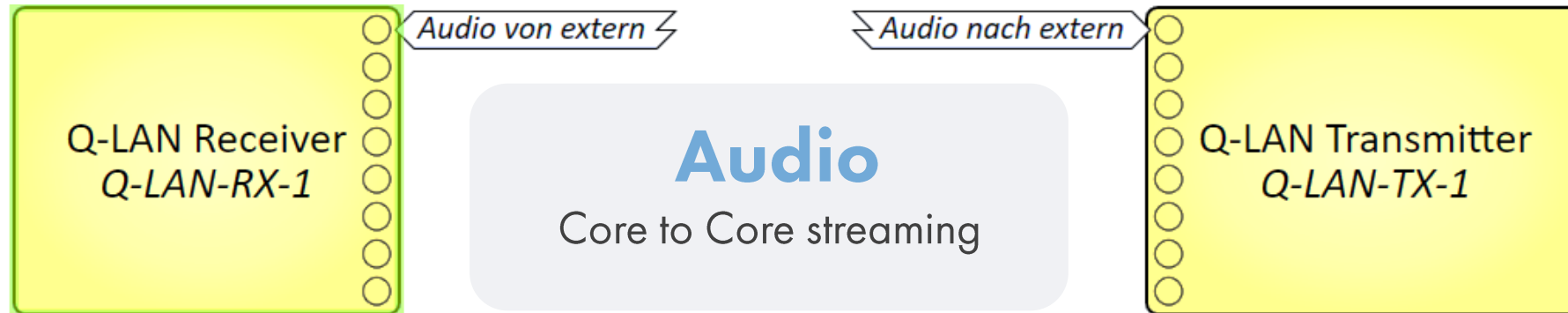
(Bsp.: Übertragung Raum zu Raum für A/V/C)



# Vernetzung AV & C

10 x Core Nano dezentral

2 x Core 610 (zentral):  
Nicht relevant da ein QSD Design



# Video Systemlink

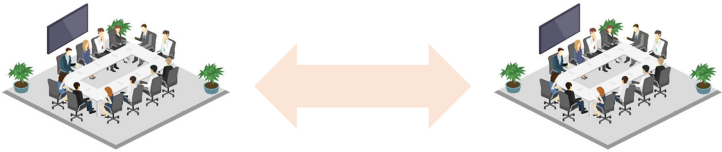
HDMI



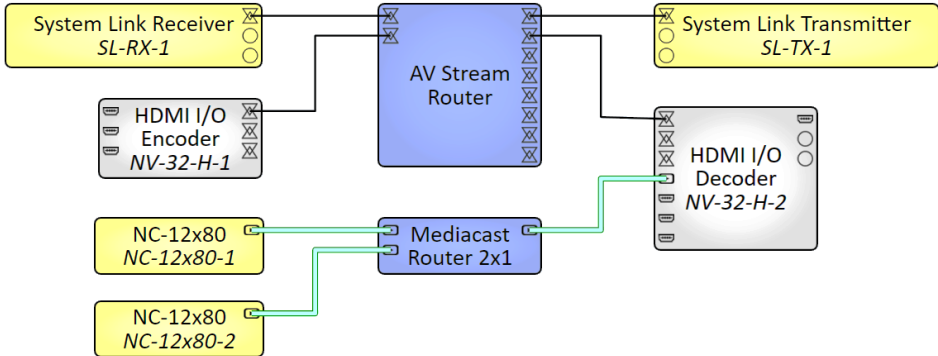
HDMI



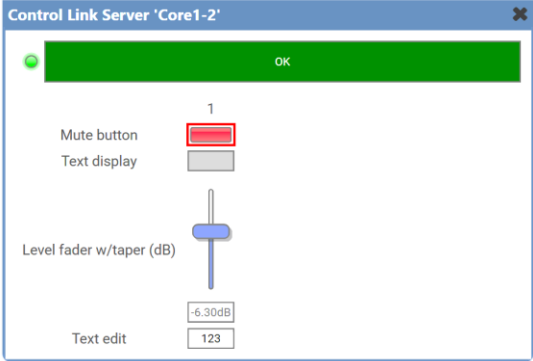
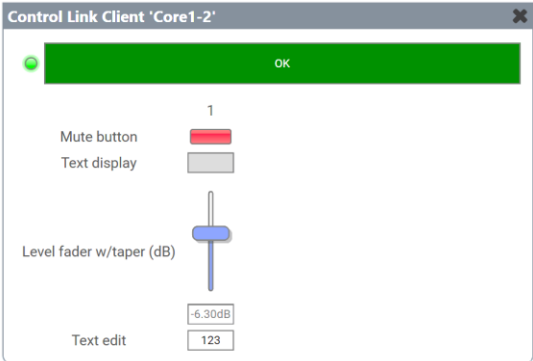
H264



HDMI



# Control Core-Link Client/Server



## 2 X Core 610 zentral

**64 ohne SCL-Lizenz**  
**96 mit SCL-Lizenz**

**1 – QSD Design**

**keine**

**alle**

## PROS & CONS

max. AEC-Kanäle

Programmierung

Einschränkung bei  
Ausfall eines Cores

QSD-Design update

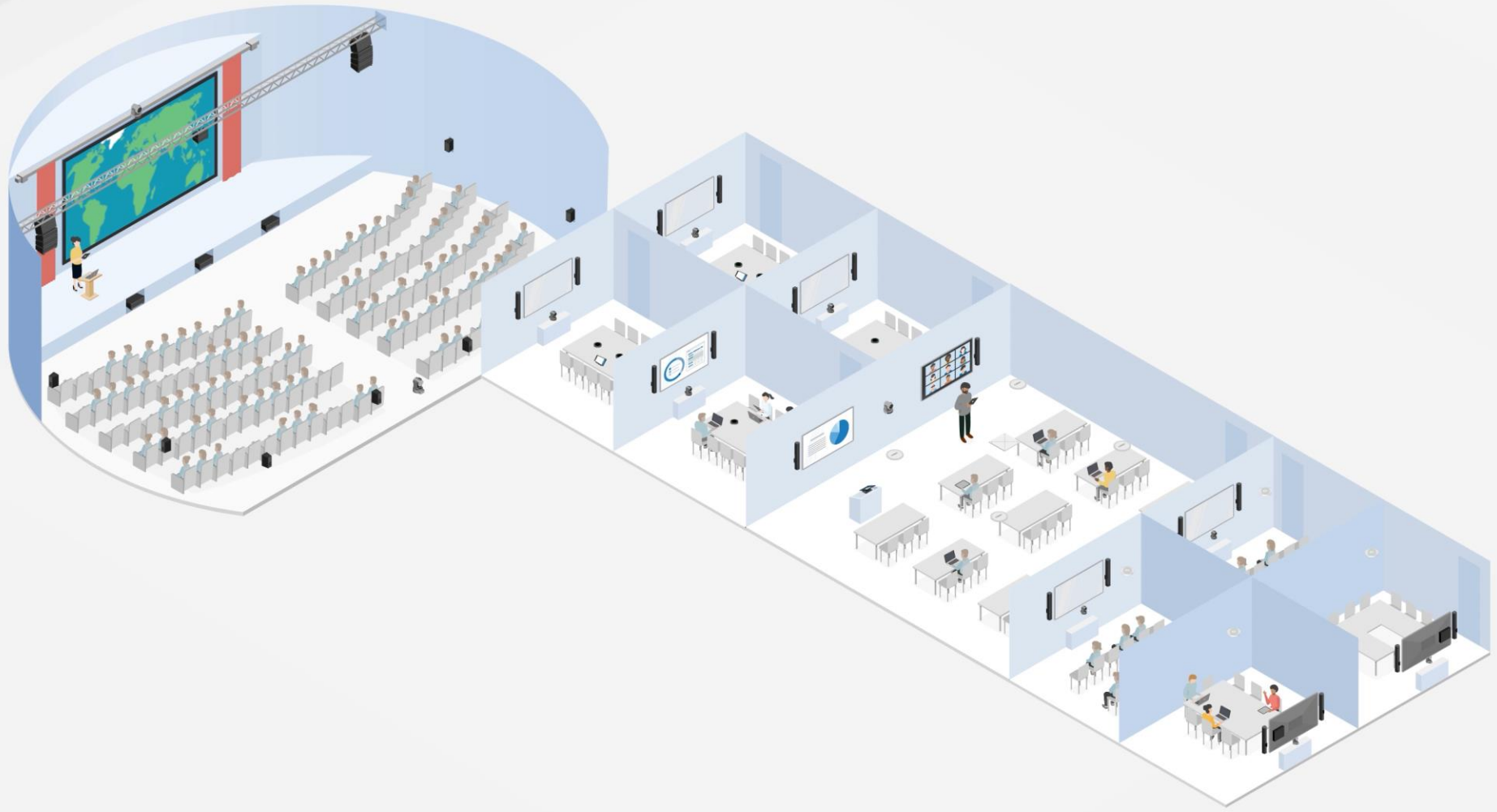
## 10 X Core Nano dezentral

**8 ohne SLCOL-8N-P - 80**  
**16 mit SLCOL-8N-P - 160**

**10 – QSD Designs**

**1 Raum**

**1 Raum**



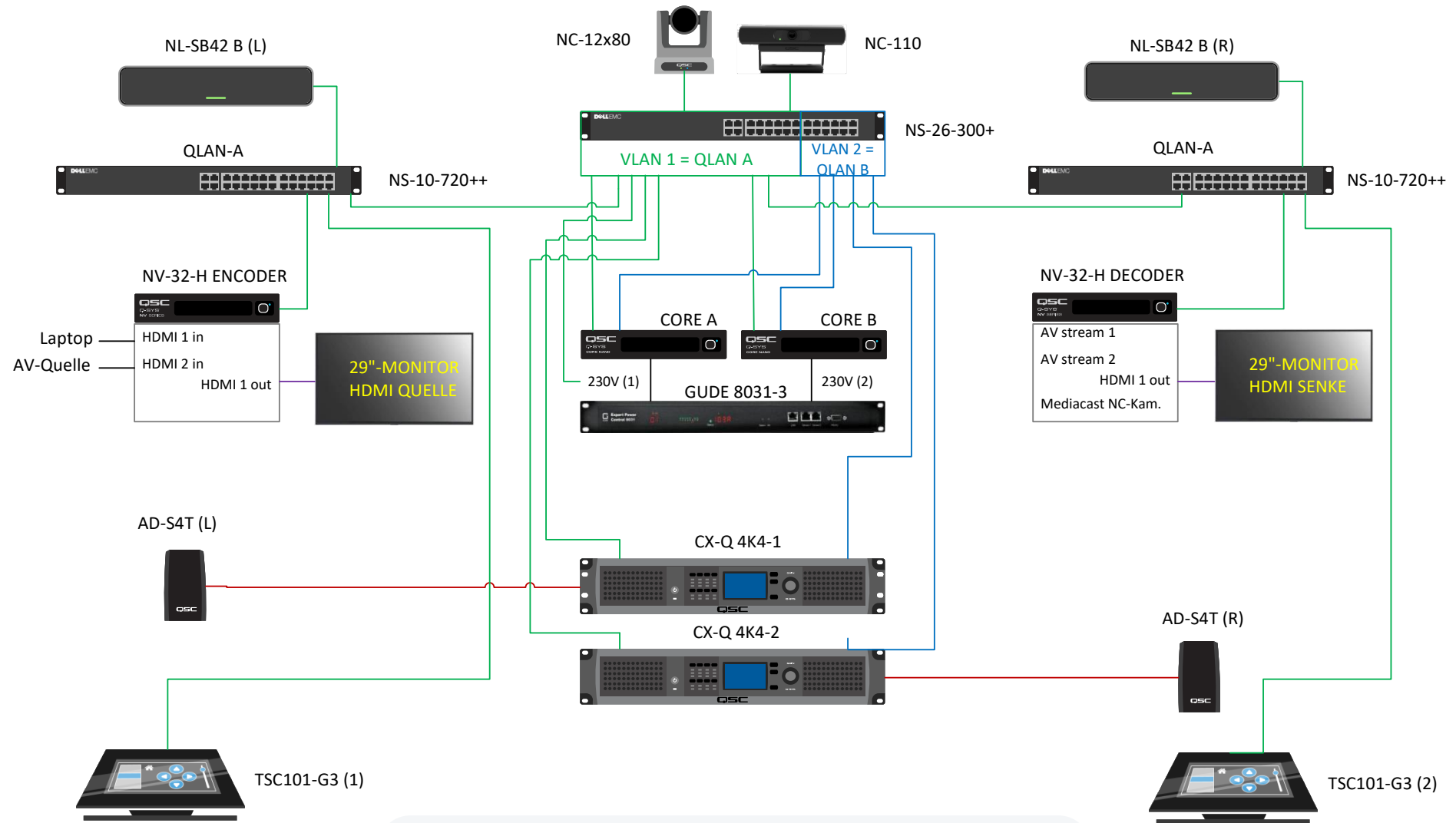
# Redundanz Demo

## Core Redundanz

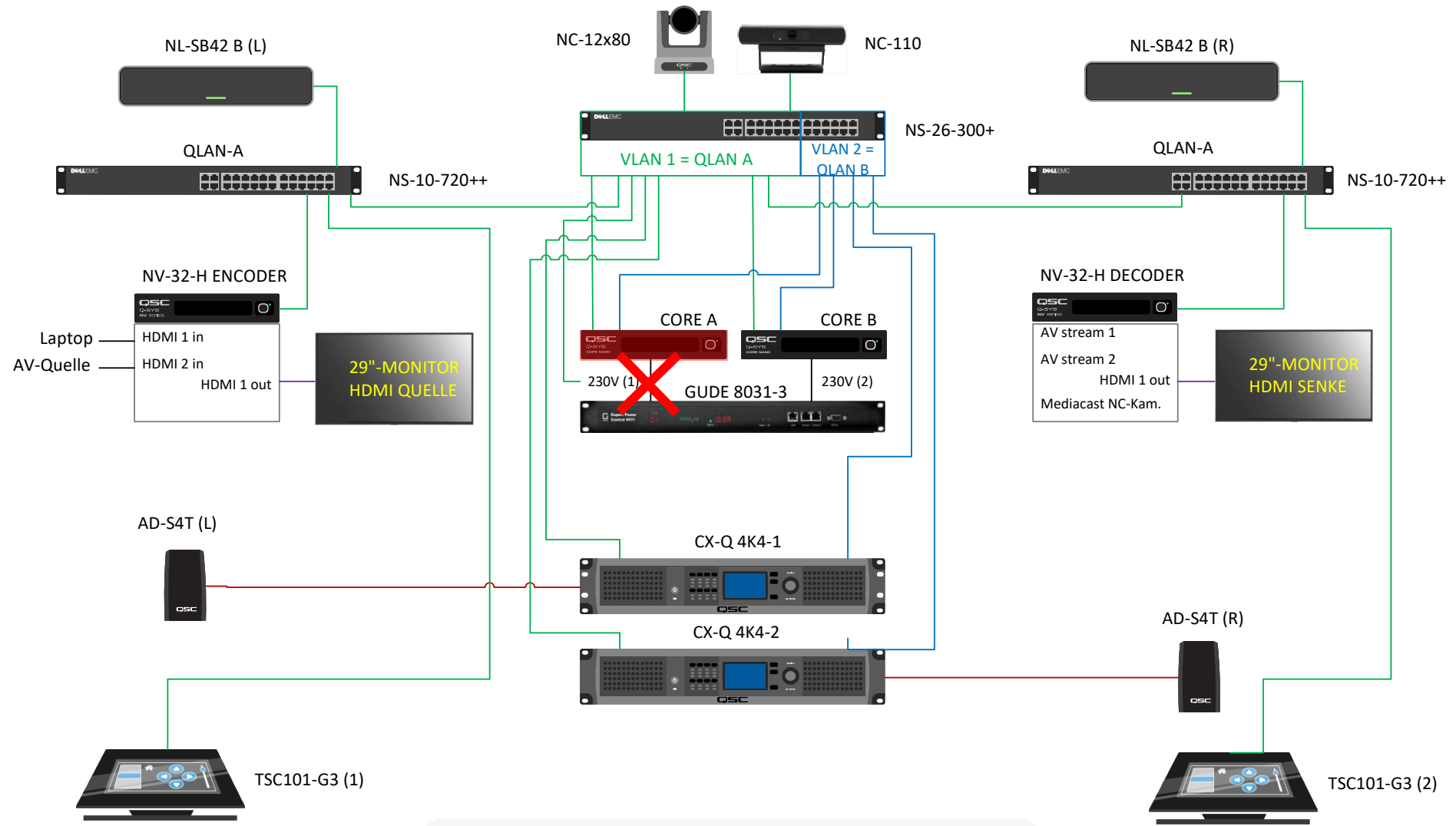
- 1. Power off Core A**  
(Quelle Mediastream NC-110)
- 2. Power off Core A**  
(Quelle Mediastream NC-110)
- 3. Pull LAN A – Amp 1**
- 4. Pull LAN A – Core B**  
(Quelle Audiofileplayer – Audio AD-S4T vs. NL-SB42)
- 5. Power off Core B**  
(Quelle AV stream 2)

## Netzwerkredundanz

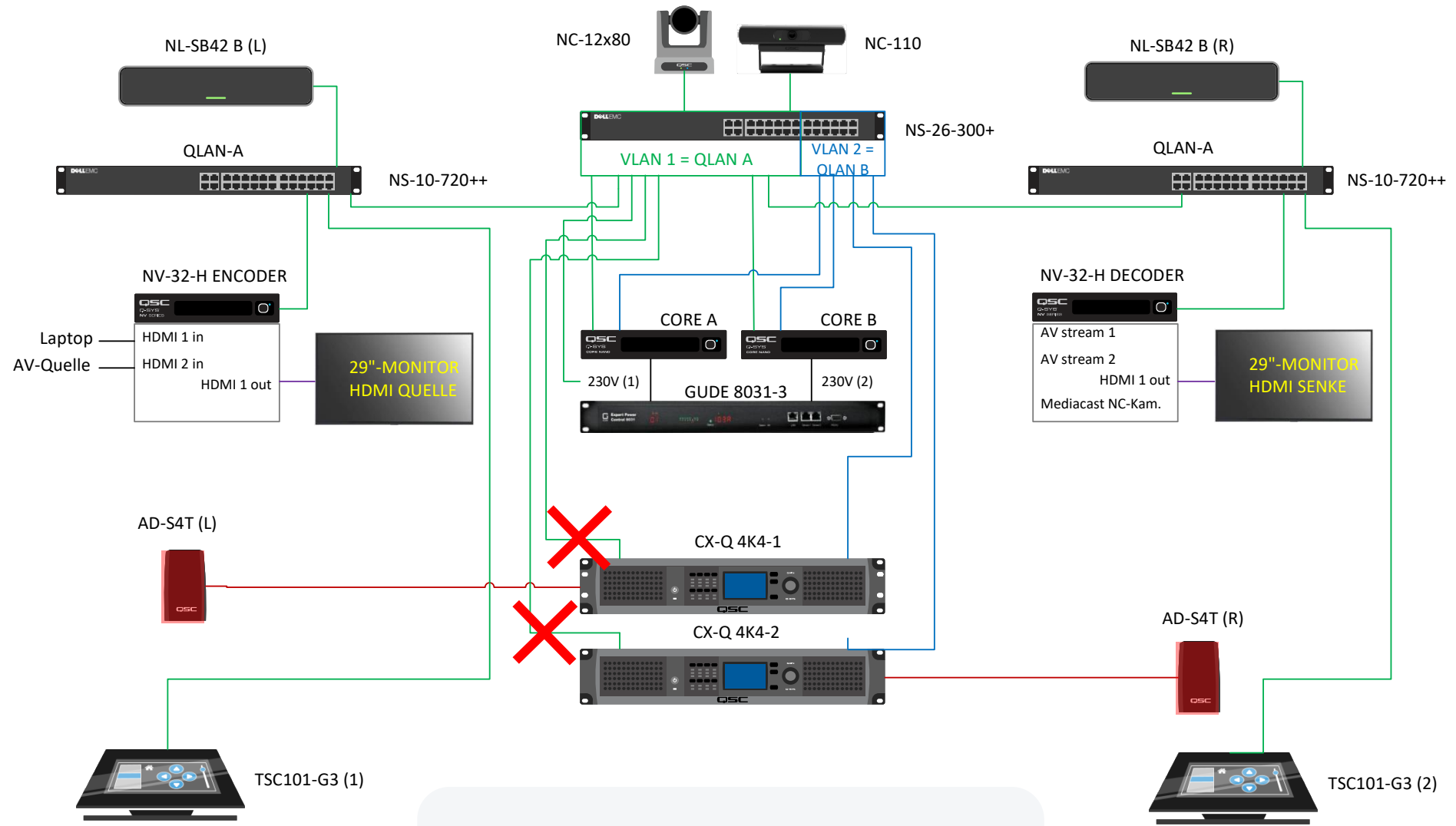
- 3. Pull LAN A – Amp 1**
- 4. Pull LAN A – Core B**  
(Quelle Audiofileplayer – Audio AD-S4T vs. NL-SB42)



**Core A/B softwarebasierte  
Umschaltung, Quelle AV2**

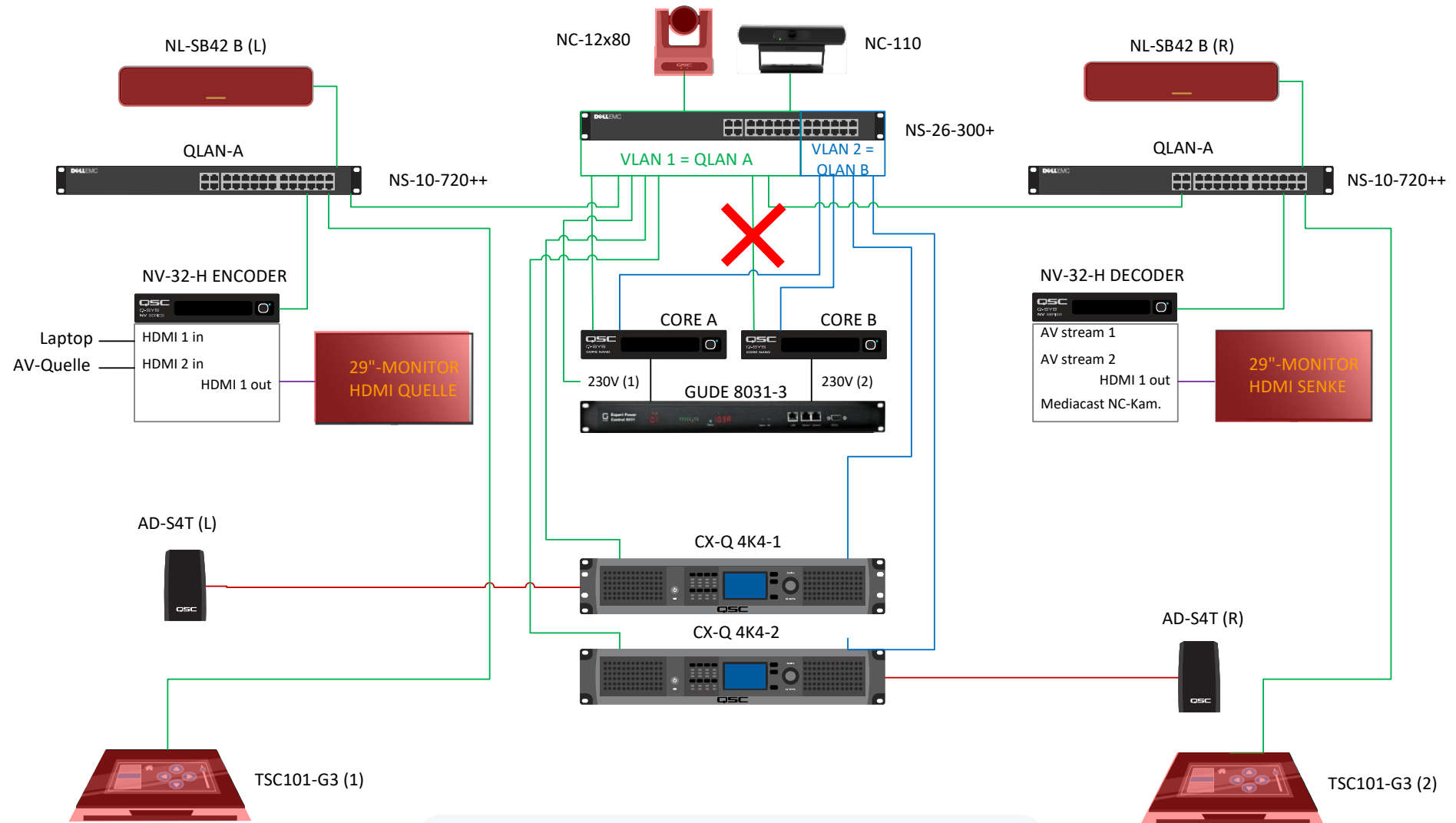


**Core A Power Off**

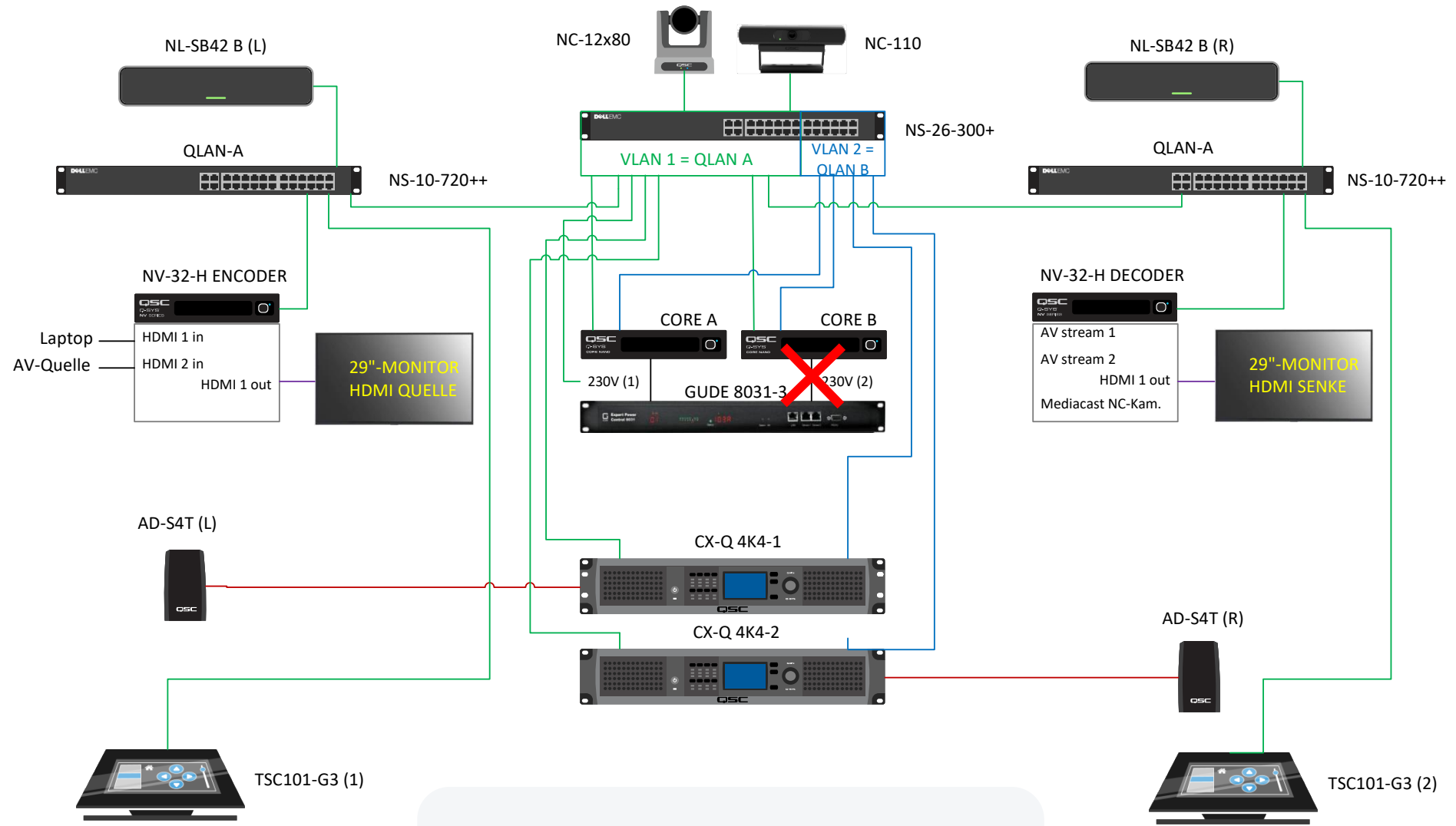


**Core A wieder power on**  
**Core B aktiv**





**Core B verliert QLAN-A**



**Core B power off (230V)**  
**Core A wird aktiv**

**Skalierungs** **Raum**