Post NAB 2022 – Video

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MediorNet Distributed Architecture

MediorNet IP

MediorNet TDM

- **One network infrastructure** for all Media essences as well as for **internal** and **external** signals
- Directly interface with **IP native facilities**

- Easy **use/operation** - no IP knowledge necessary
- **Routing** fabric and **processing** included

MedlorNet Distributed Architecture

	MN- TDM	MN- IP
Ability to **scale** your Inputs and Outputs for small to large systems **efficiently**	✓	✓
Important **savings** in **wiring** across the facility - few **fiber links** over tones of **copper**	✓	✓
No requirements for **additional Distributed Amplifiers** or **Embedders/De-embedders**	✓	✓
Format agnostic – can support any HD, 3G or UHD signals	✓	✓

Why is a
Distributed Architecture important ?

MediorNet TDM

Traditional SDI Routing Solution
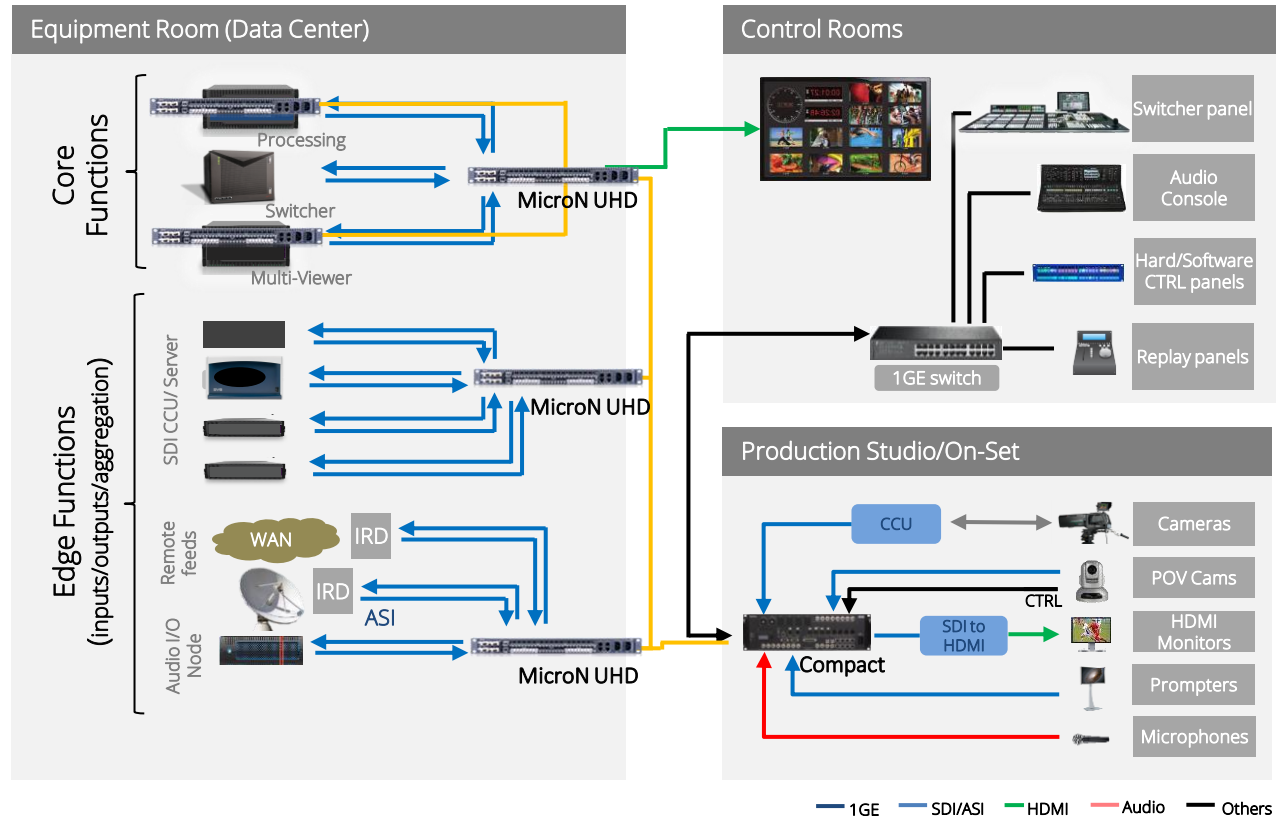
Remote

Cameras

GFX

Server

Multiviewer

Production Switcher

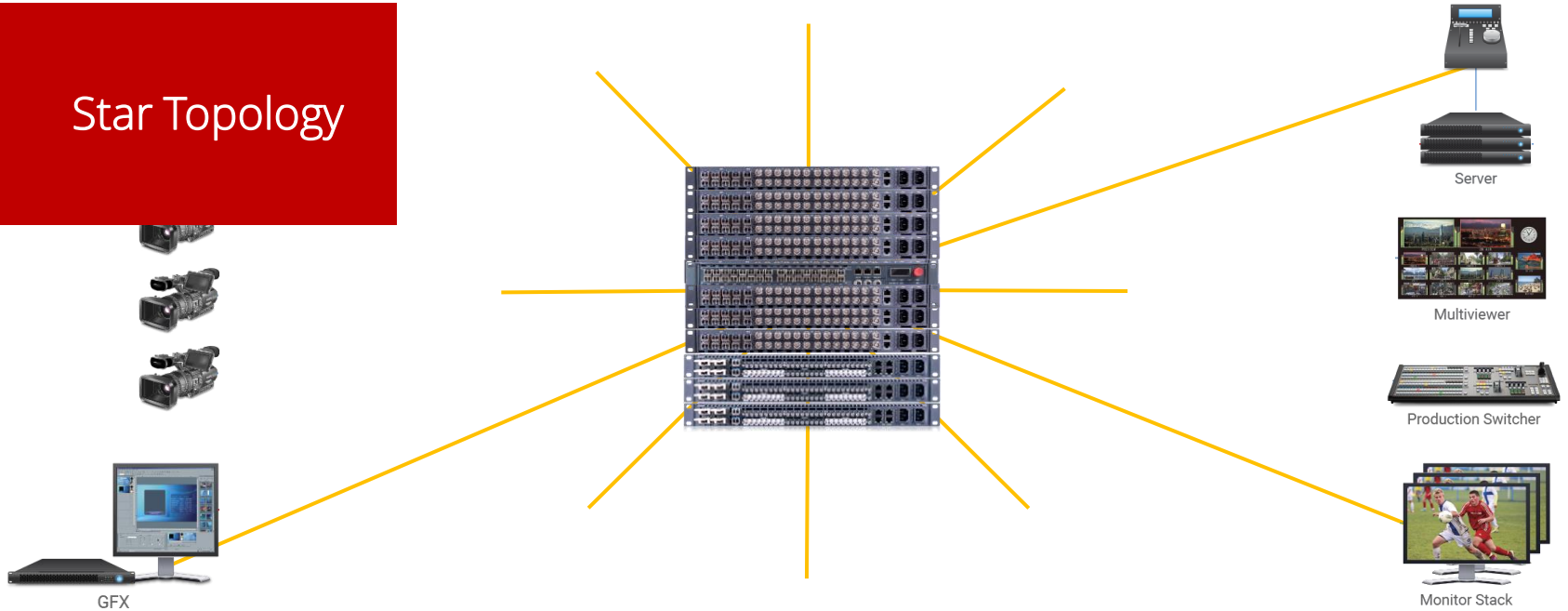Monitor Stack

MediorNet: Distributed SDI Routing Solution

- MediorNet MicroN / MicroN UHD for a distributed, flexible infrastructure

- With a significantly reduced amount of cabling

- Integrated processing reduces complexity and need for external devices

Equipment Room (Data Center)

Core Functions

Processing

Switcher

Multi-Viewer

MicroN UHD

Edge Functions (inputs/outputs/aggregation)

SDI CCU/ Server

MicroN UHD

Remote feeds

WAN — IRD

IRD

ASI

Audio I/O Node

MicroN UHD

Control Rooms

Switcher panel

Audio Console

Hard/Software CTRL panels

Replay panels

1GE switch

Production Studio/On-Set

CCU

Cameras

POV Cams

CTRL

SDI to HDMI

HDMI Monitors

Compact

Prompters

Microphones

— 1GE — SDI/ASI — HDMI — Audio — Others

Distributed SDI Architecture

Star Topology

GFX

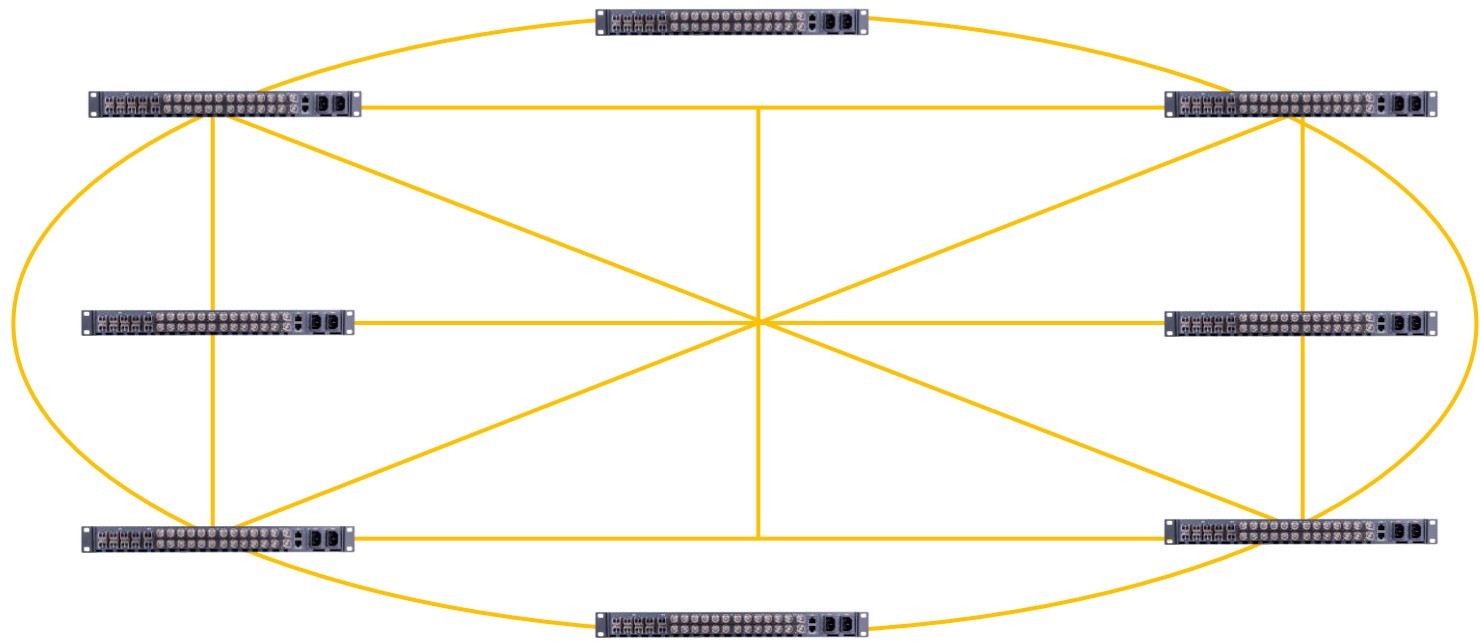Server

Multiviewer

Production Switcher

Monitor Stack

Distributed SDI Architecture

Ring Topology

Distributed SDI Architecture
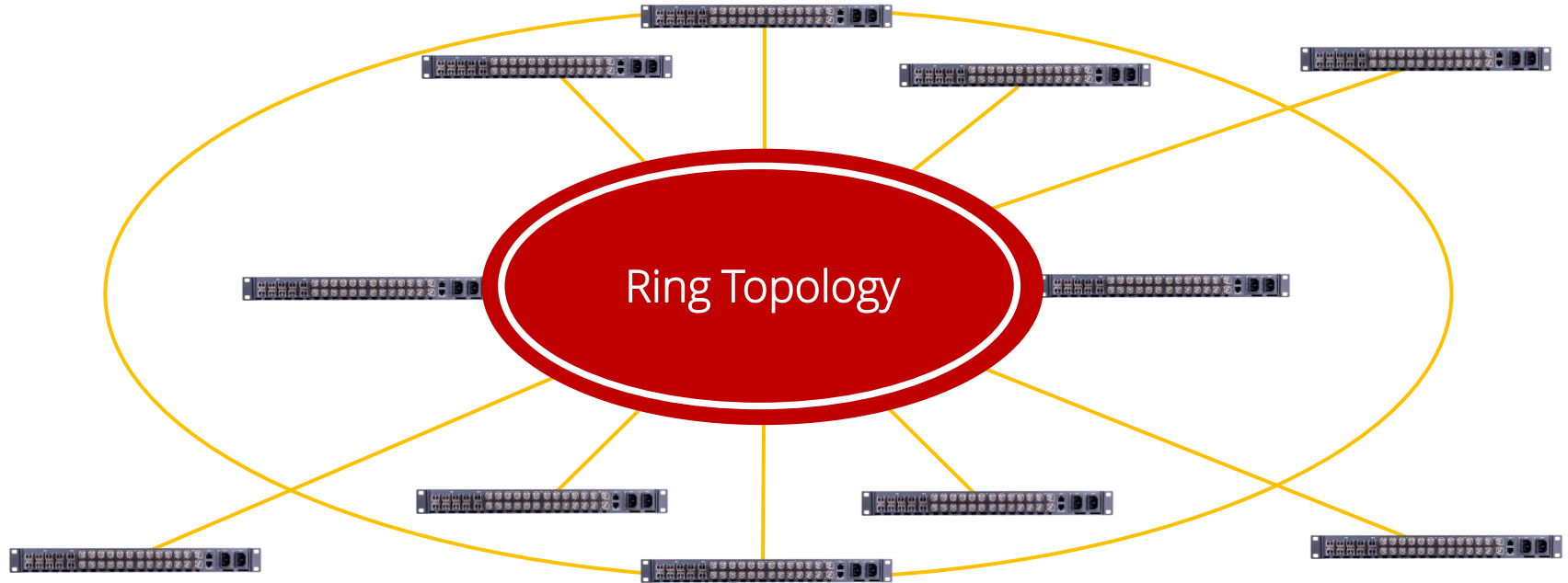
Long haul transport in MediorNet TDM

- MediorNet TDM supports **any kind of topology**
- Various options of fiber optical modules to **bridge short and long distances**

CWDM, LWDM

MediorNet TDM

Product Highlights

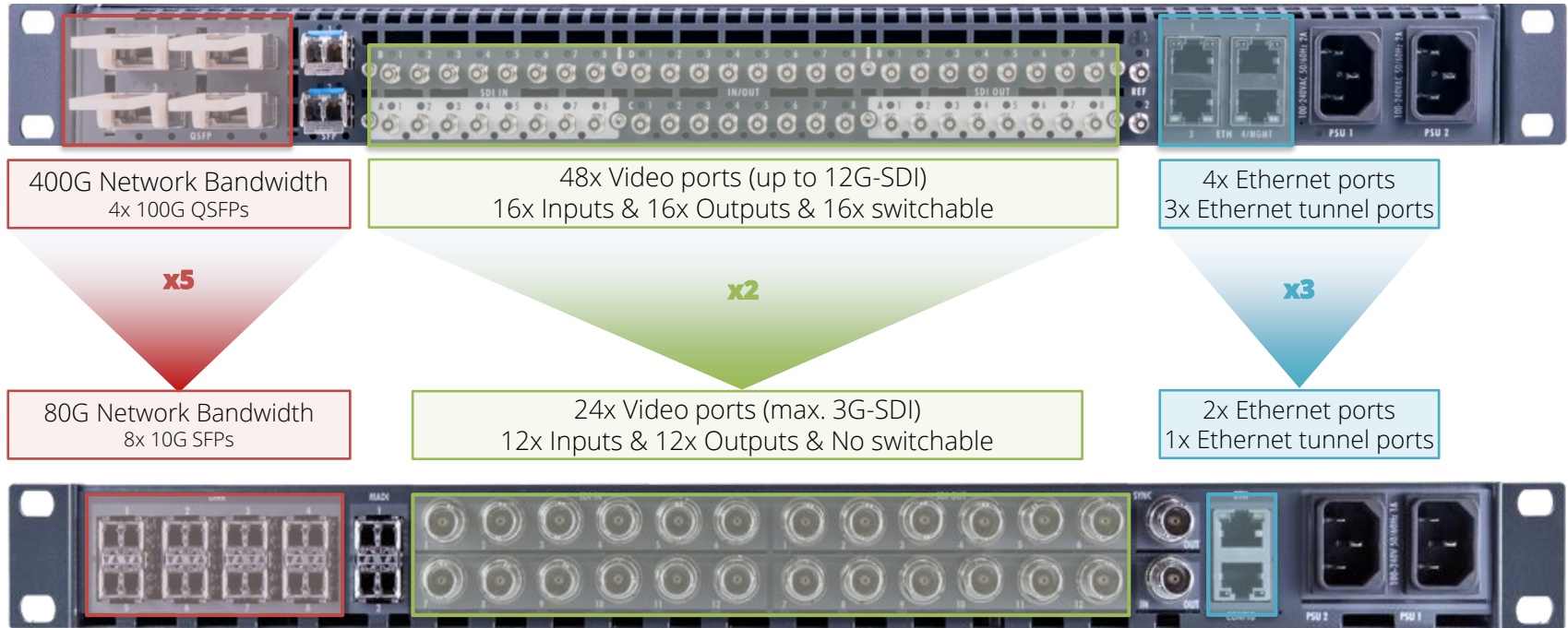# MediorNet TDM Product Portfolio
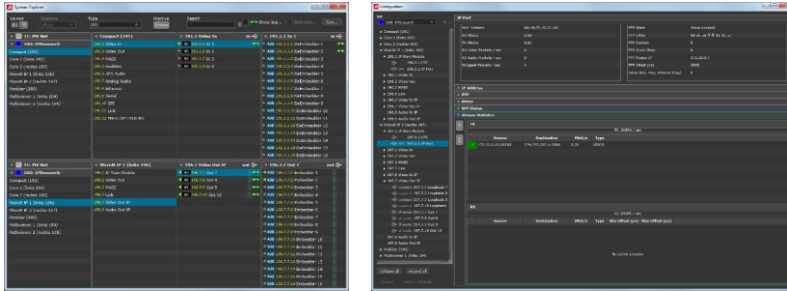
Compact

MicroN UHD

MetroN

MicroN

- **MicroN UHD** — UHD Signal Gateway and Processing Platform
  400G MediorNet Link capacity – up to 12G SDI (UHD) – 48 SDI in 1RU

- **MetroN** — MediorNet TDM Core Router
  320G MediorNet Switching – up to 64 MediorNet Links

- **MicroN** — 3G Signal Gateway and Processing Platform
  80G MediorNet Link capacity – up to 3G SDI – 24 SDI in 1RU

- **Compact Pro** — Multi-Format Stage-Box
  Flexible & ruggedized Fiber Options – 16 SDI – Various Audio, Video and Data Interfaces

MicroN UHD – Extended Capabilities

400G Network Bandwidth
4x 100G QSFPs

48x Video ports (up to 12G-SDI)
16x Inputs & 16x Outputs & 16x switchable

4x Ethernet ports
3x Ethernet tunnel ports

x5

x2

x3

80G Network Bandwidth
8x 10G SFPs

24x Video ports (max. 3G-SDI)
12x Inputs & 12x Outputs & No switchable

2x Ethernet ports
1x Ethernet tunnel ports

Easy Configuration & Control

Video Sources & Destinations   Audio Sources & Destinations   Macros

- MediorWorks allows easy configuration, monitoring and live operation

- Integrated powerful and easy MultiViewer editor

- Open and fully controllable by broadcast control systems via Ember+, Probel and SNMP

- MediorNet Control Application for Riedel's SmartPanel series (2300 series) we also provide a router control panel
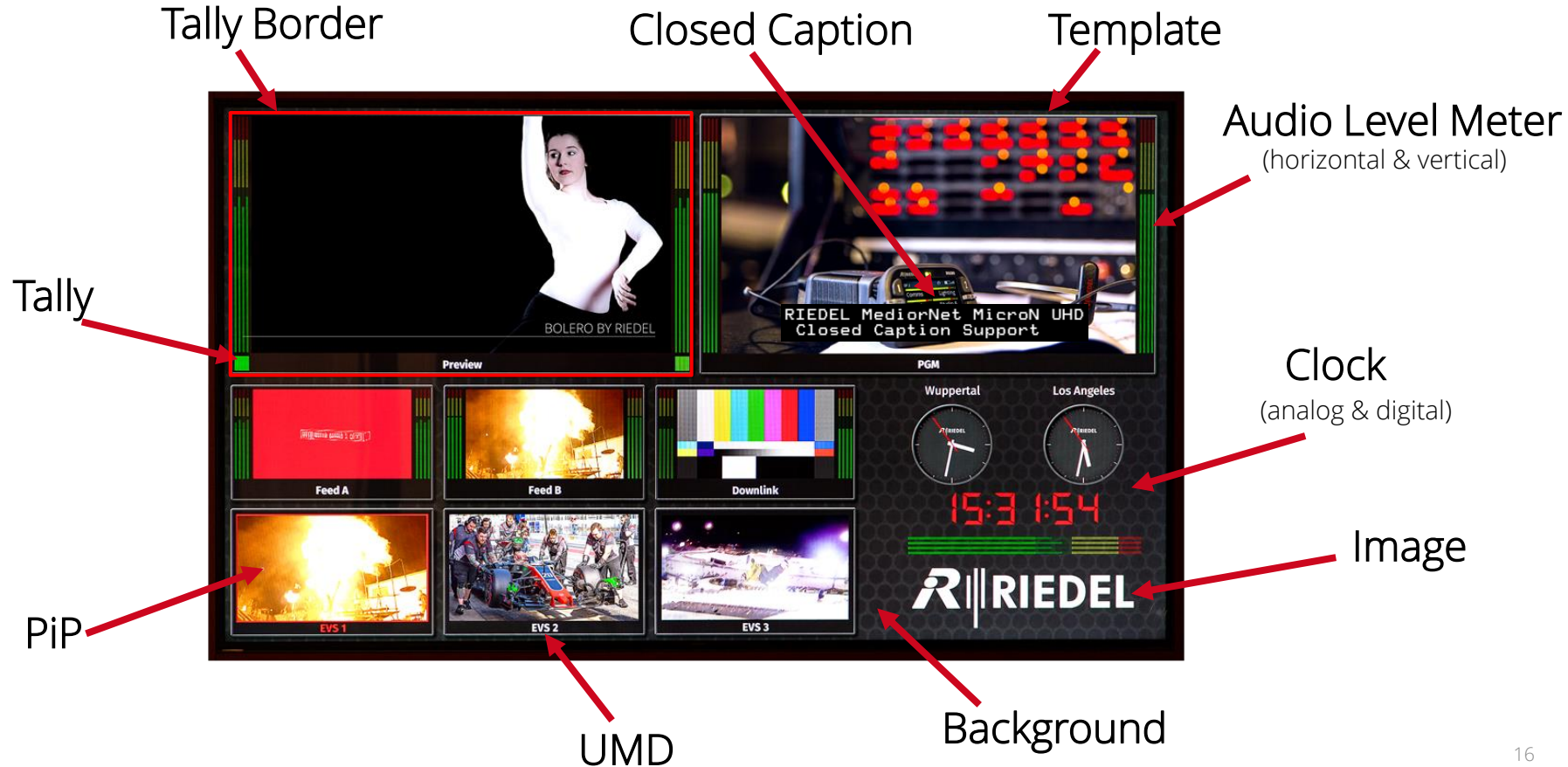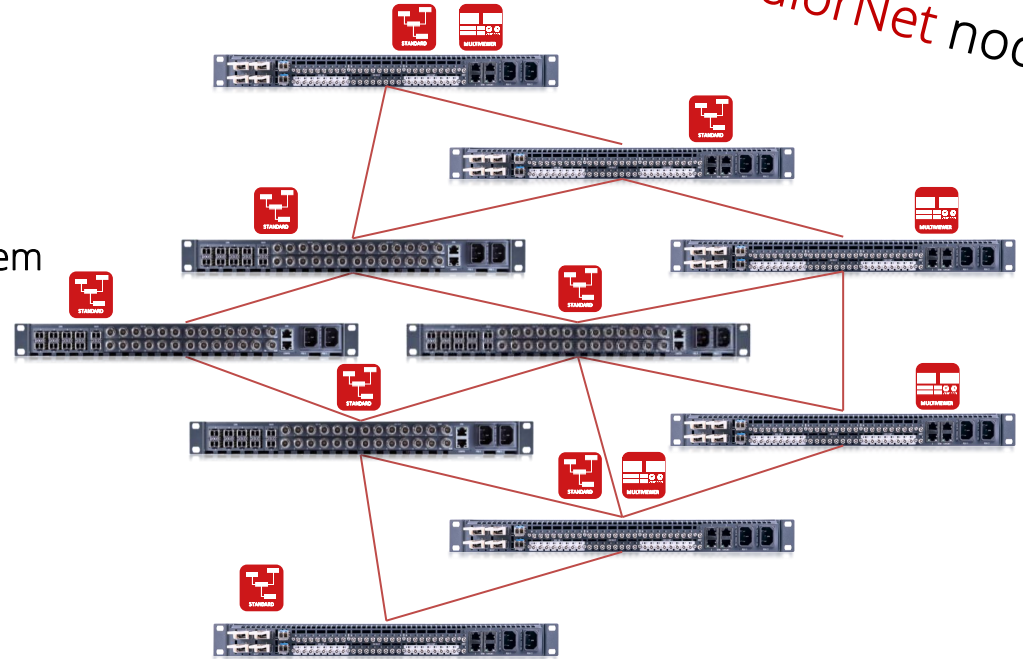
MediorNet TDM

Multiviewer

MediorNet MicroN UHD MultiViewer – Powerful Widget Library

Tally Border

Closed Caption

Template

Audio Level Meter
(horizontal & vertical)

Tally

Clock
(analog & digital)

Image

PiP

UMD

Background

MicroN UHD MediorNet MultiViewer App

It's a MediorNet node!

Fully compatible with the **MediorNet ecosystem**

- Can be integrated to any MediorNet system
- Uses **any** in the system availably **video signal as source**
- MicroN UHD **hardware** can be **repurposed**
- **Flexible** licensing mechanism

MediorNet MultiViewer – Easy Configuration & Operation Workflow

- Full **Flexible Layout options**
- **Powerful** and easy use **configuration tool**
- Distributed **configuration storage**, system wide **counters** and **time code**
- Full **3rd party interfaces** control
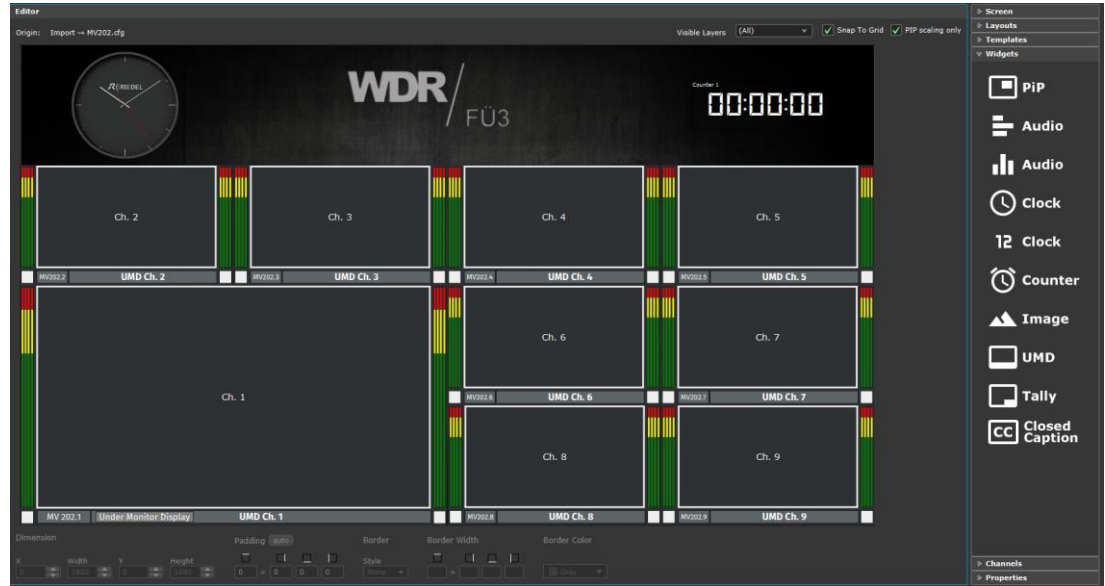
MicroN UHD MultiViewer

- Fully integrated in the MediorNet ecosystem

- Up to 36 PiPs on 8 MultiViewer Outputs

- Easy to use & flexible configuration tool

- Powerful MediorNet widget library

- Low noise operation
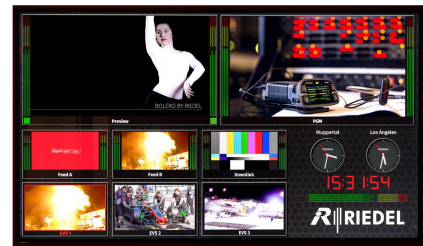
MediorNet **MicroN UHD**

MediorNet TDM

Processing

MediorNet TDM Video Processing

Integrated Signal Processing and Conversion

Frame Store & Synchronizer
Test Pattern Generator
Timecode Insertion
Caption

Embedder & De-embedder
Sample Rate Converter
Test tone Generator

MicroN Processing App

9x PiP & 2x Output MultiViewer

2x Up/Down/Cross Conversion

4x Color Correction

Integrated Signal Processing and Conversion

Riedel MediorNet TDM Key differentiating factors

Distributed Scalable Solution	Integrated Processing	Easy Operation	Less Cable & Extenders

- Easy to scale (add and remove devices)
- Flexibility
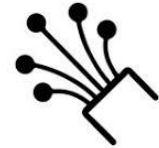
- Integrated Glue and MultiViewer
- Software definable hardware
- Processing as networked function

- Plug and play installation
- Integrated monitoring and control via MediorWorks
- Powerful 3rd party APIs for system integrations

- MediorNet devices close to equipment allow less cabling
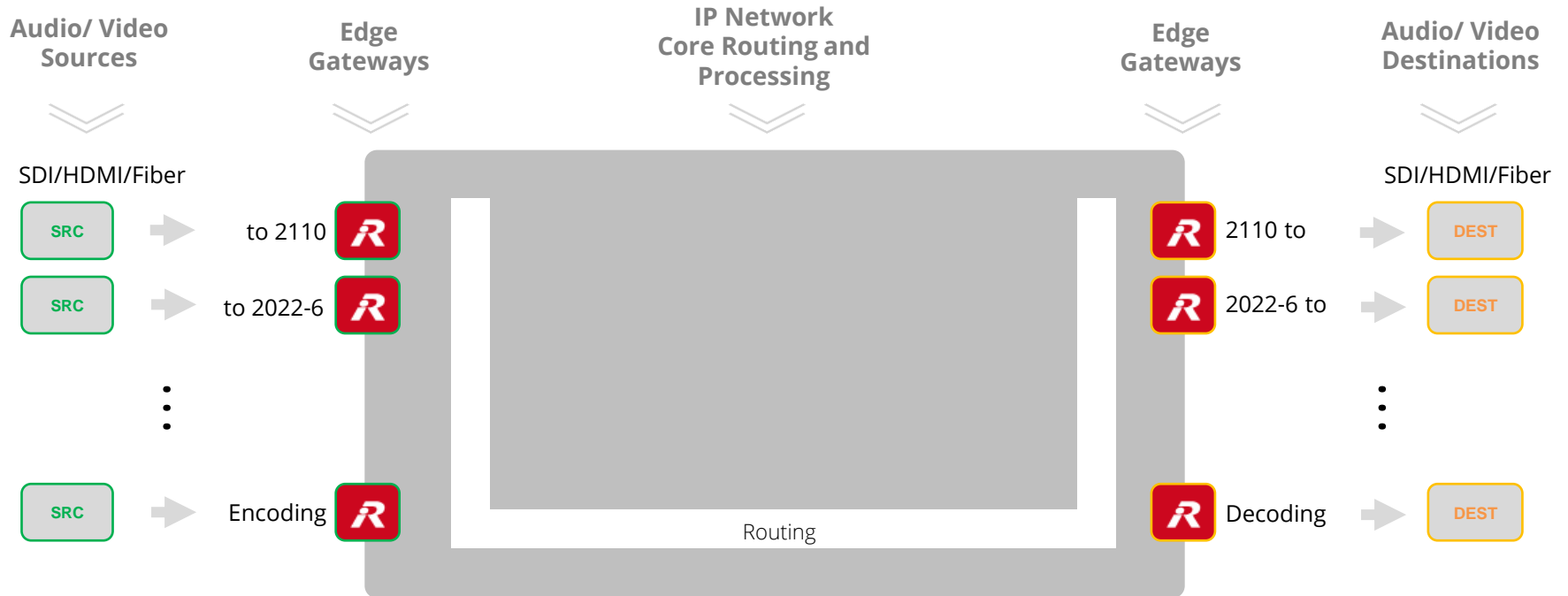- Fiber network reduces weight and allows higher distances

Why is a Distributed Architecture important ?
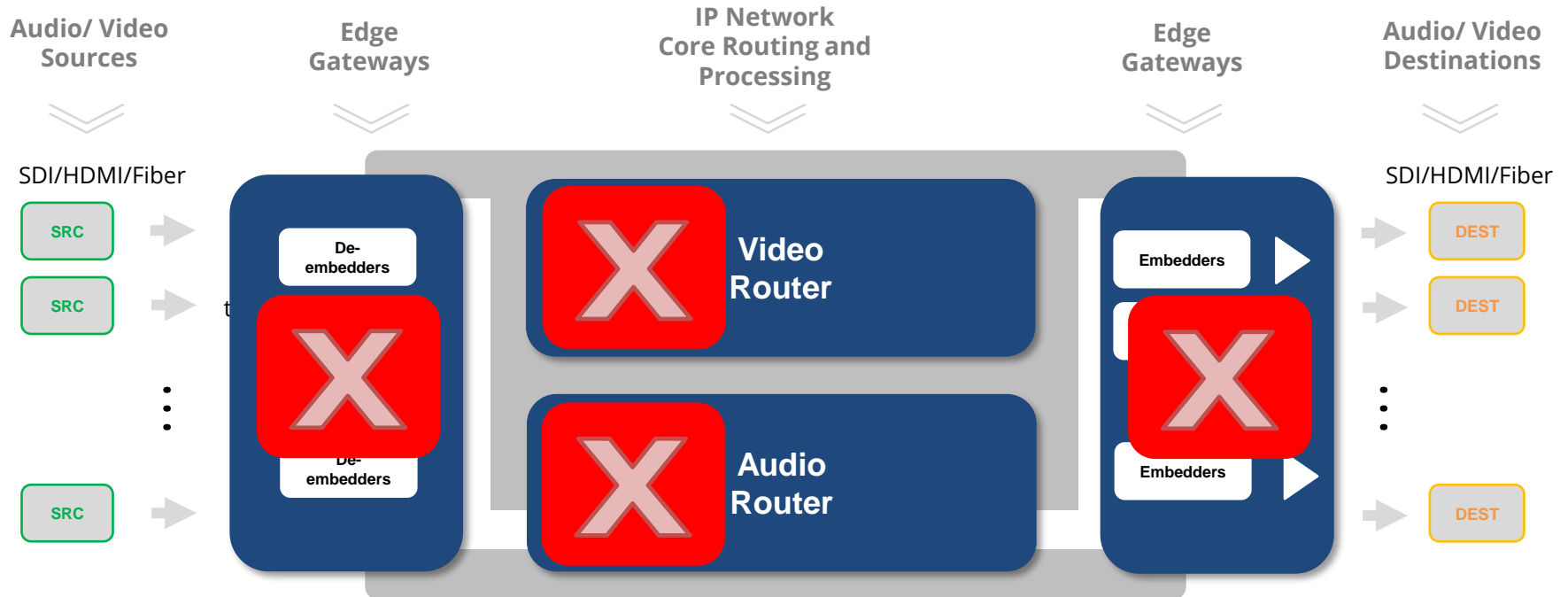
MediorNet IP

Riedel Proposition

A solution to **connect** your equipment into a core IP infrastructure

Audio/ Video Sources	Edge Gateways	IP Network Core Routing and Processing	Edge Gateways	Audio/ Video Destinations

SDI/HDMI/Fiber

SRC → to 2110

SRC → to 2022-6

SRC → Encoding

Routing

2110 to → DEST

2022-6 to → DEST

Decoding → DEST

SDI/HDMI/Fiber

Riedel Proposition

A solution to **connect** your equipment into a core **IP** infrastructure

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SDI/HDMI/Fiber

SRC → to 2110

SRC → to 2022-6

SRC → Encoding

Up/Down/Cross Conversion MultiViewer

Color Correction Audio Mapping

Routing

2110 to → DEST

2022-6 to → DEST

Decoding → DEST

SDI/HDMI/Fiber
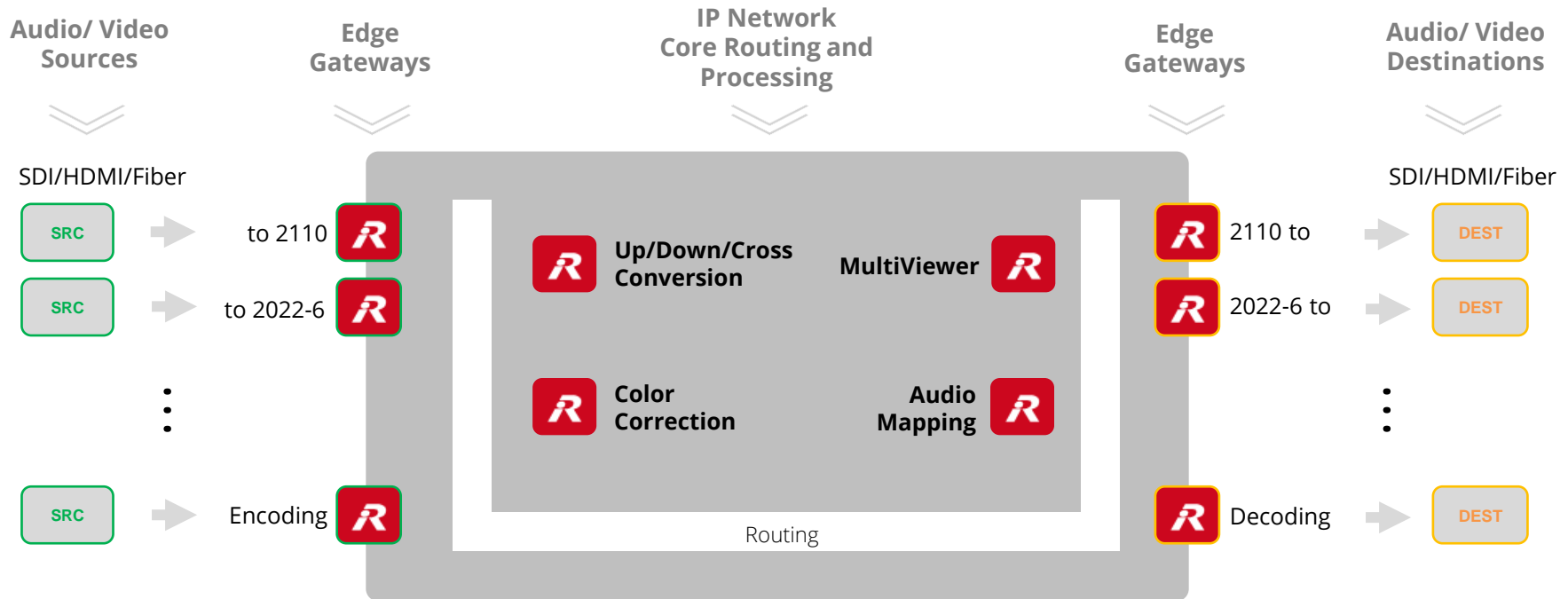
MediorNet IP

What makes Riedel
Proposition Unique ?

What sets us apart ?

Use of **SFP** Form-Factor with

Miniaturised hardware

Benefits:

- ✓ Space, Cabling, Power & Cost saving
- ✓ Increased agility with flexible hardware
  I/Os and software-defined functionality

What sets us apart ?

Edge Devices

Versatile hardware

Benefits:
- ✓ Space, Cabling, Power & Cost saving
- ✓ Increased agility with flexible hardware
- ✓ I/Os and software-defined functionality

RIEDEL

MN IP Key differentiating factors

Modular Approach	**Small Form Factor Technology**	**Low Power Consumption**	**Less Cable & Extenders**

- ✓ Software-Defined Solution
- ✓ 2 channels per device
- ✓ Low failure block
- ✓ SDI, HDMI & Fiber I/O's

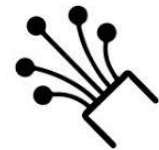- ✓ 64 Channels in a single rack unit
- ✓ "0" rack space with edge devices
- ✓ Light weight solution

- ✓ Saving up to 60% of the energy
- ✓ Low emission
- ✓ Low operational costs

- ✓ Distributed Network
- ✓ Use fiber all the way to the devices

MediorNet IP

MN IP MultiViewer

REM 1 | REM 2 | REM 3 | REM 4

MULTIVIEWER 4 x 1 | MULTIVIEWER 9 x 1 | MULTIVIEWER 16 x 1

REM 9 | REM 10

GRX 1 | GRX 2 | CGEN 1 | PLAY 1

GRX 3 | GRX 4 | CGEN 2 | PREV

MN IP MultiViewer

Available as 4, 9 and 16 ST2110 inputs and one MultiViewer output

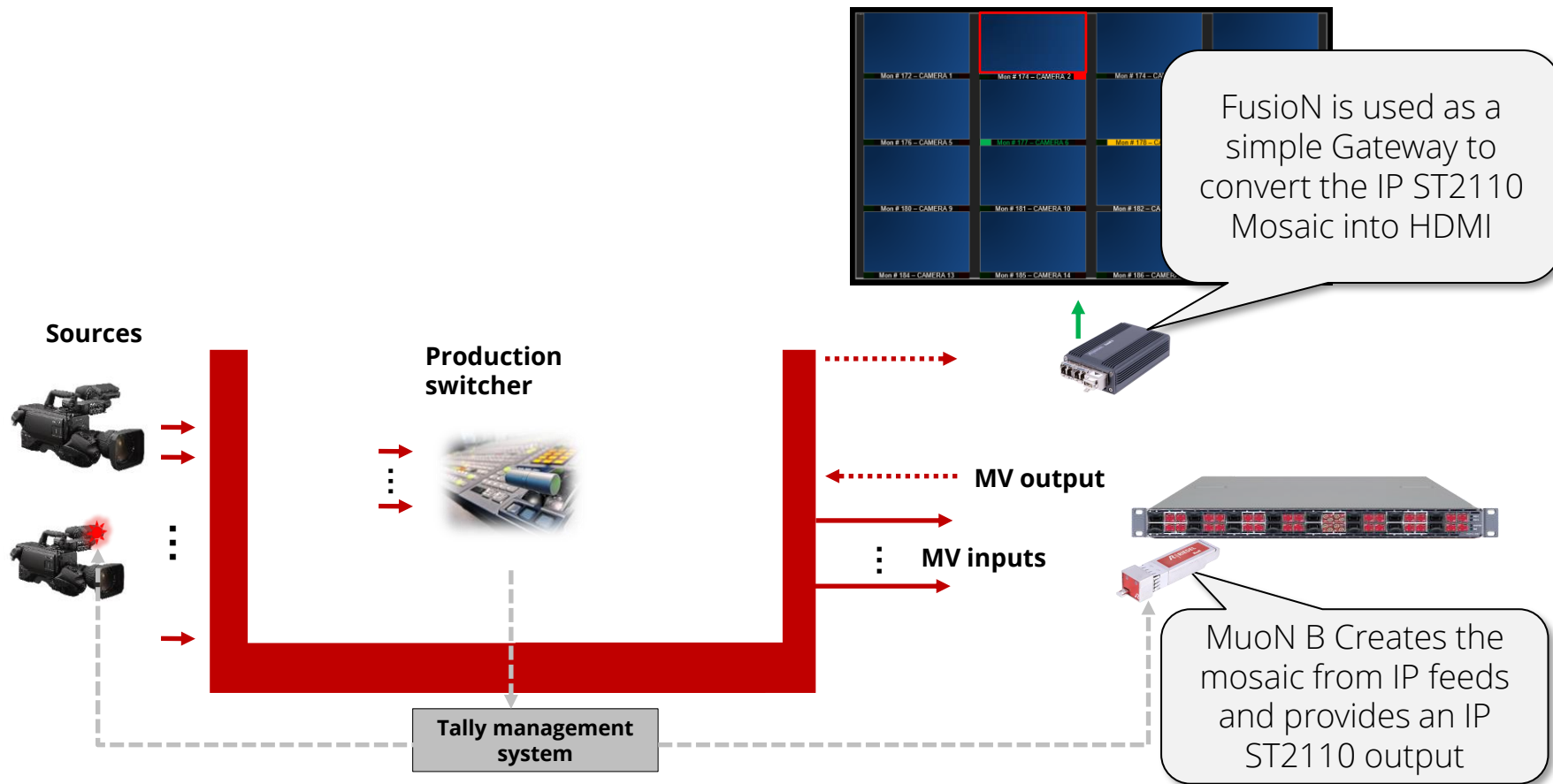High quality image scaling

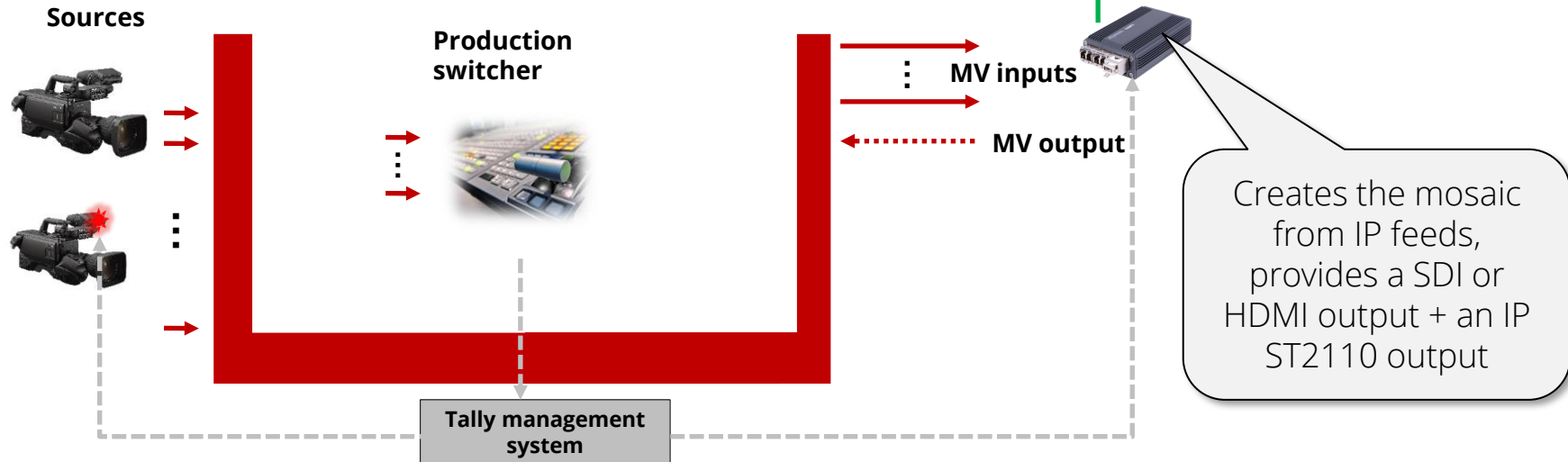Highest density in the market

APP can be used with MuoN B or FusioN

Comprehensive tally and dynamic label support

MultiViewer at the core (MuoN B)

Sources

Production switcher

Tally management system

MV output

MV inputs

FusioN is used as a simple Gateway to convert the IP ST2110 Mosaic into HDMI

MuoN B Creates the mosaic from IP feeds and provides an IP ST2110 output

MultiViewer as a standalone (FusioN)

Sources

Production switcher

MV inputs

MV output

Tally management system

Creates the mosaic from IP feeds, provides a SDI or HDMI output + an IP ST2110 output

Mon # 172 – CAMERA 1 | Mon # 174 – CAMERA 2 | Mon # 174 – CAMERA 3 | Mon # 175 – CAMERA 4
Mon # 176 – CAMERA 5 | Mon # 177 – CAMERA 6 | Mon # 178 – CAMERA 7 | Mon # 179 – CAMERA 8
Mon # 180 – CAMERA 9 | Mon # 181 – CAMERA 10 | Mon # 182 – CAMERA 11 | Mon # 183 – CAMERA 12
Mon # 184 – CAMERA 13 | Mon # 185 – CAMERA 14 | Mon # 186 – CAMERA 15 | Mon # 187 – CAMERA 16

MN IP MultiViewer

- Simple 4, 9 or 16 PiP MultiViewer

- Integrated nicely into an IP ST2110 system

- Savings of space – 512 inputs & 32 outputs in a single RU space

- IP Gateway + MultiViewer in ONE Edge Device

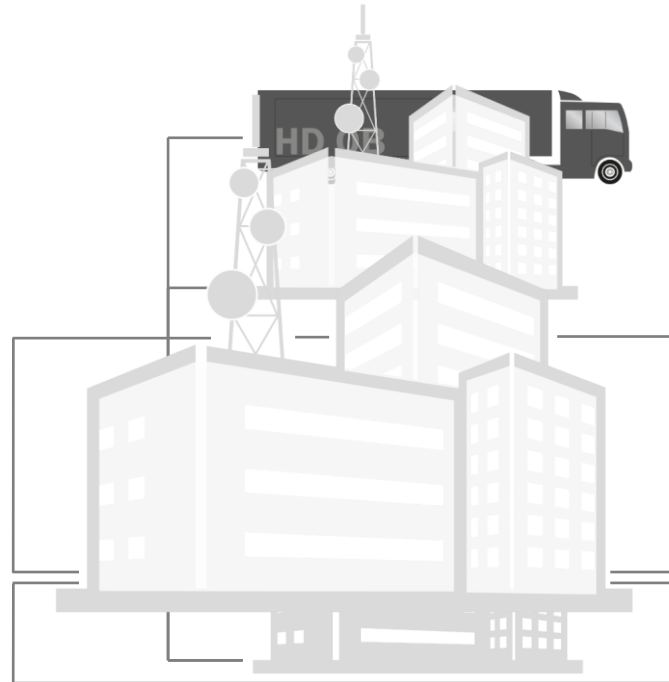- Software-defined platforms

MediorNet IP

Remote Production and Contribution with JPEG-XS or JPEG-2000

Low Bandwidth Signal Distribution

- Remote production
- Interfacility contribution
- Within the production facility

IP or SDI, HD - 3G or UHD signals

Can't compromise on image quality

Transmission Delay is crucial

Remote Production and Contribution with JPEG-XS or JPEG-2000

- Smallest form-factor in the market
  - 64 CODEC in a single RU
  - 2 channels Edge Device
- IP and SDI I/Os

JPEG-XS

- ST2110-22 (TR-08)
- HD/3G/UHD signals
- 12:1 Visually lossless
- ~ 0.350ms processing delay

J2K
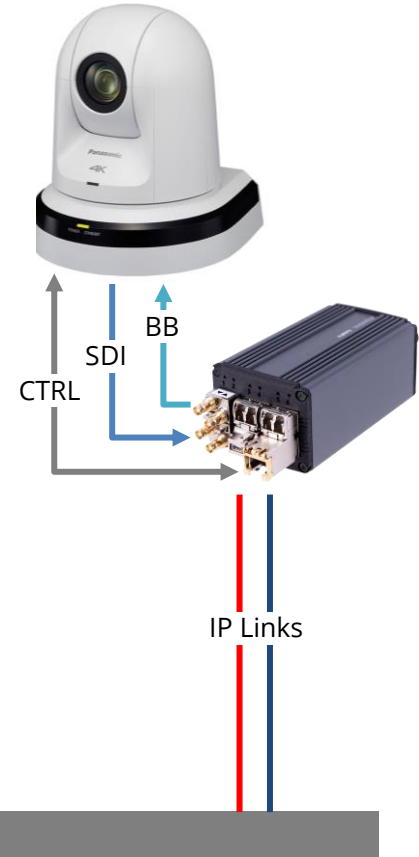
- ST2022-2 (TR-01)
- HD/3G signals
- 20:1 Visually lossless
- ~ 44ms Processing delay

POV camera

- All in one FusioN 6 POV camera support:
  - UHD SDI input
  - Genlock output
  - PTZ control bridge
  - ST2110 Uncompressed

MN IP Encode/Decode solutions

- Integrated nicely into an IP ST2110 system

- Visually loss-less and low processing delay

- Small foot print - 64 CODECs in a single RU space

- Can be installed at the edge within the FusioN or in the VirtU-32 frame

- Software-defined platforms can be repurposed as desired

IP and SDI Image Processing

MN IP solution

MuoN B25

VirtU-32

UDC APP Feature reach solutions:

IP — IP to IP ST2110

HD-3G-UHD capable

Up/Down/Cross conversion

Color Correction

Important benefits:

✓ 32 Converters in a single RU

✓ Software-defined Platform

✓ Multiple functions in one chassis

✓ Cost savings (space & power)

Thank you!