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VB440 Uncompressed Media Appliance

Monitoring, analysis & presentation of IP media streams

for studio production environments;

MCRs, OB Vans, centralized production & playout facilities

Outline

'Compressed Media' video service monitoring systems
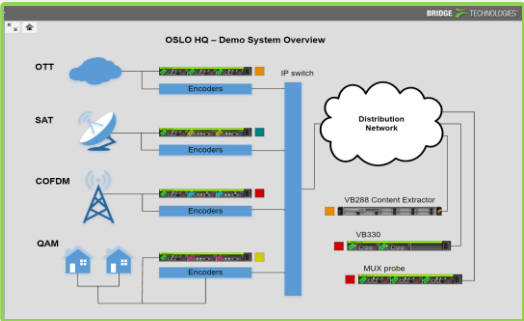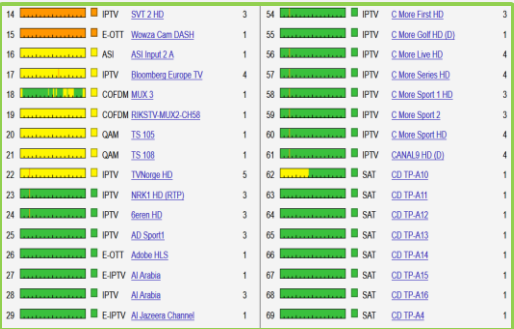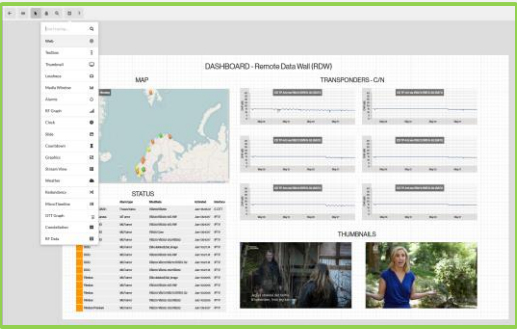
VB440 Introduction
'uncompressed media' appliance

Technical Highlights

- ST 2022-6 SDIoIP
- ST 2022-7 redundancy
- ST 2110-20/21/30/40
- AES 67
- NMOS IS-04/ 05/ 07
- PTP v2 SMPTE 2059 / IEEE 1588-2008
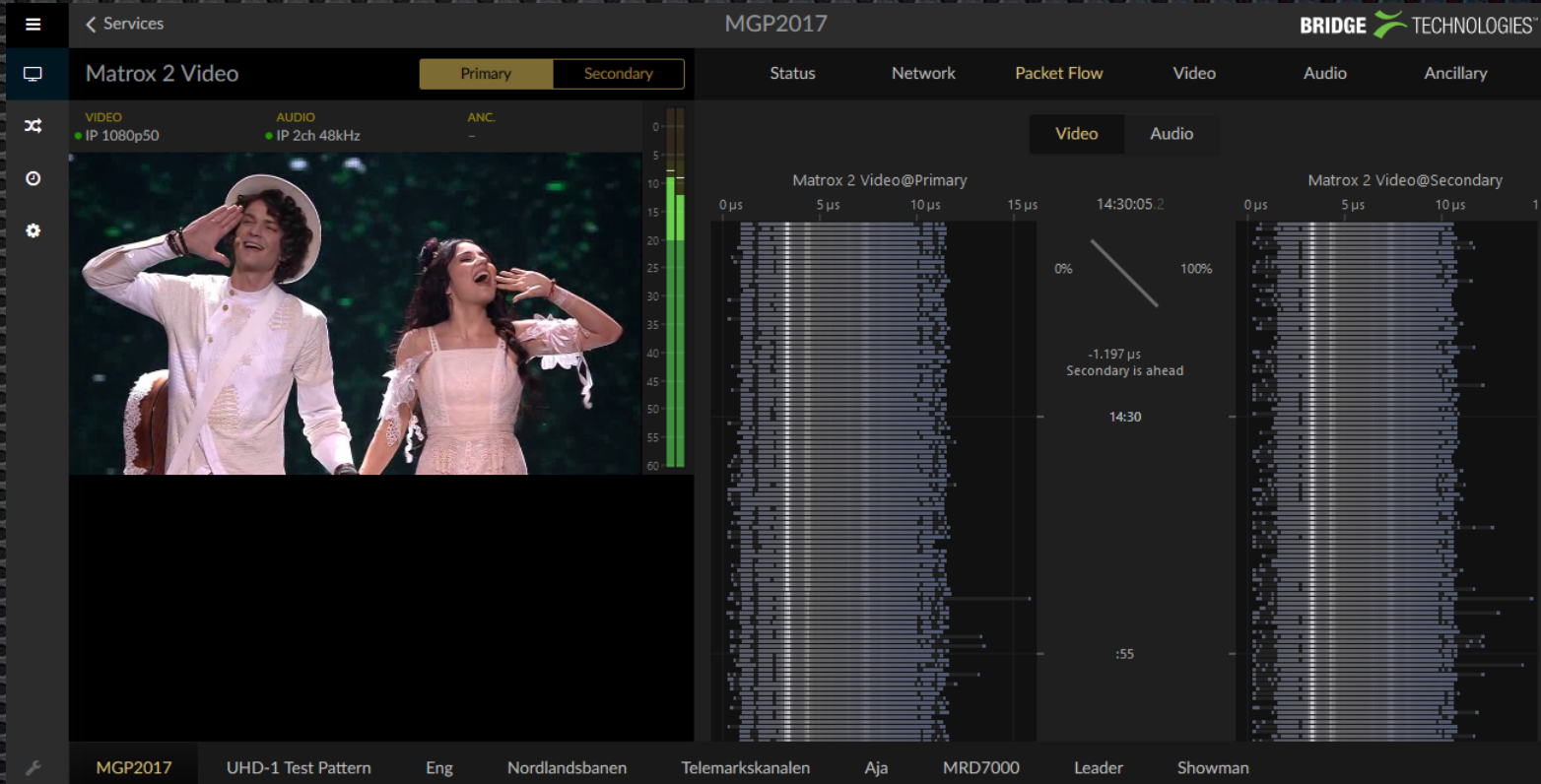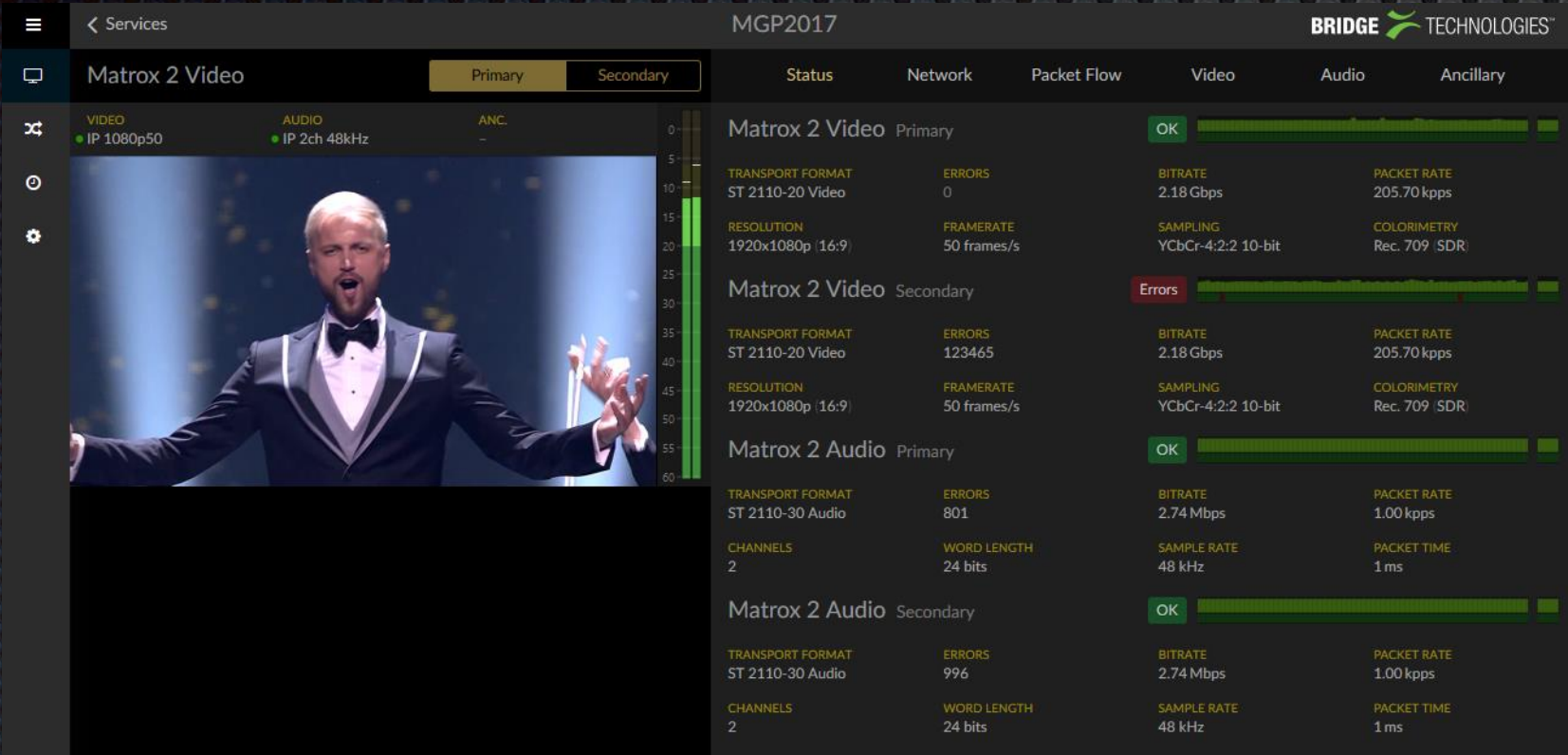- Flow PCAP capture

Custom Display Mounts

Tabletop and 19' Rack
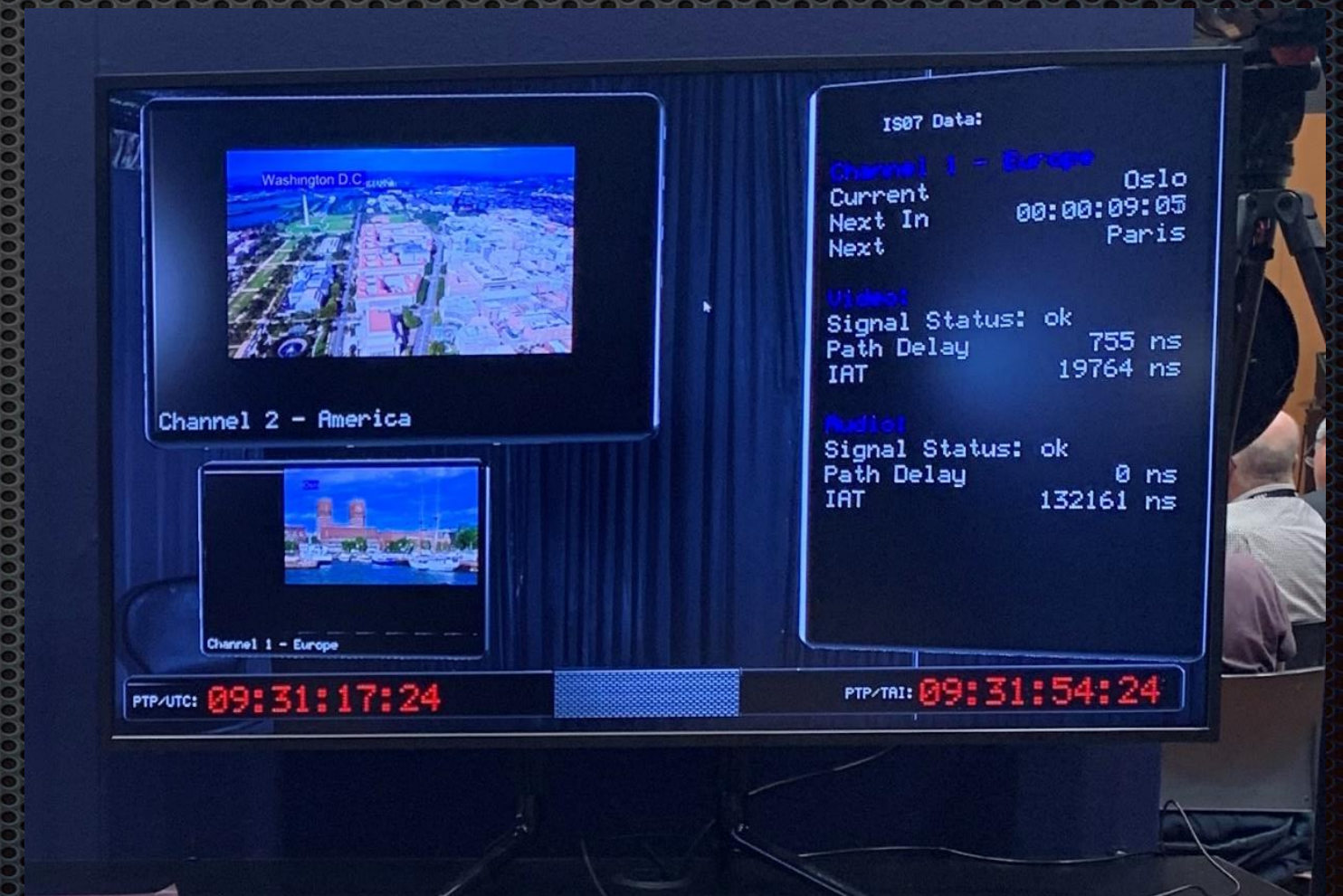for single or dual Interface View and Widglet displays

Instrument View

Web-based interfaces for network & production engineers
Detailed stream, network and picture Analytics

Widglets & APIs
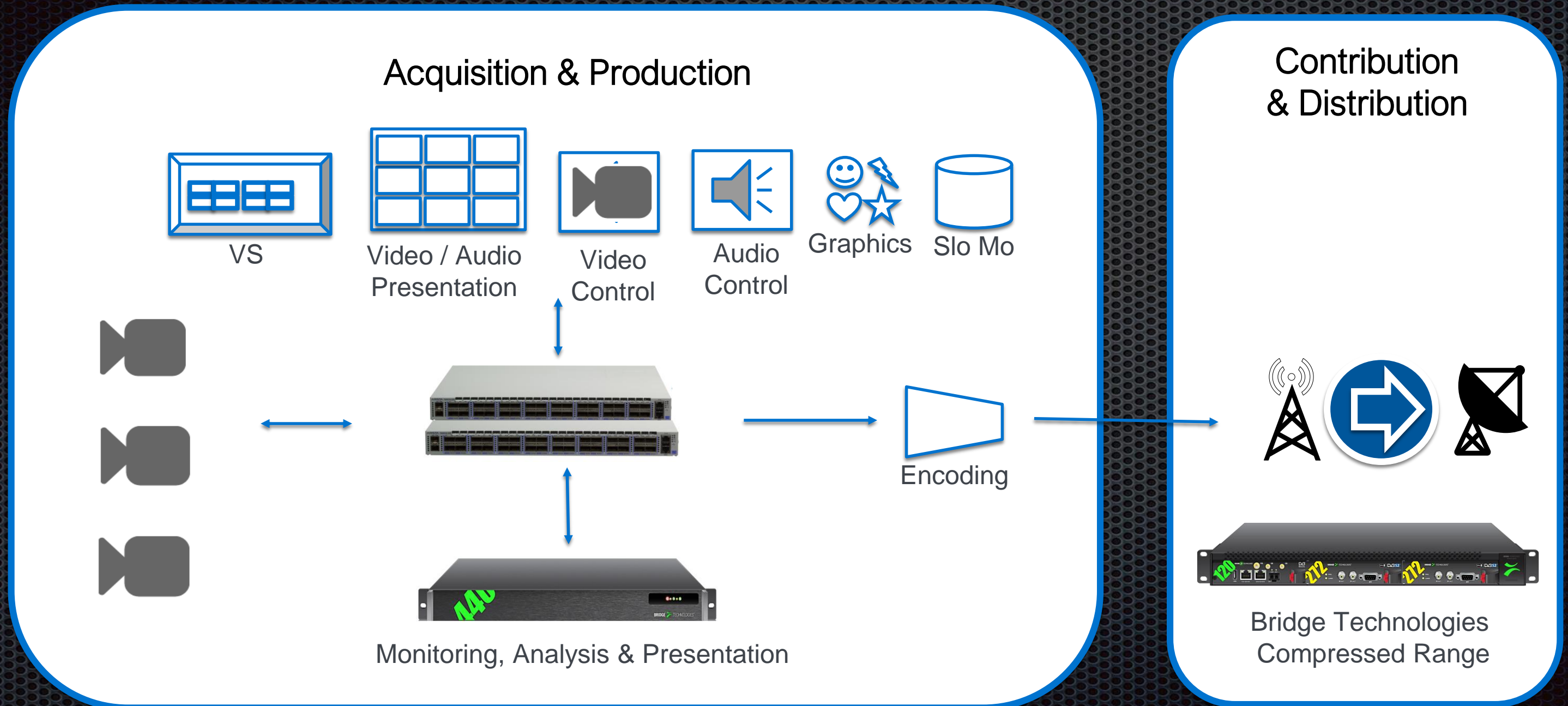
Enabling custom media presentation

VB440 Applications
(any IP based media facility)
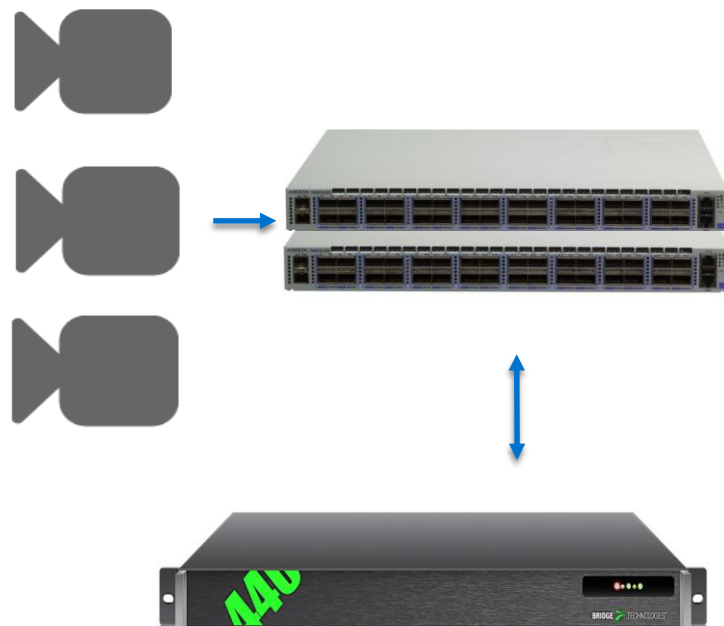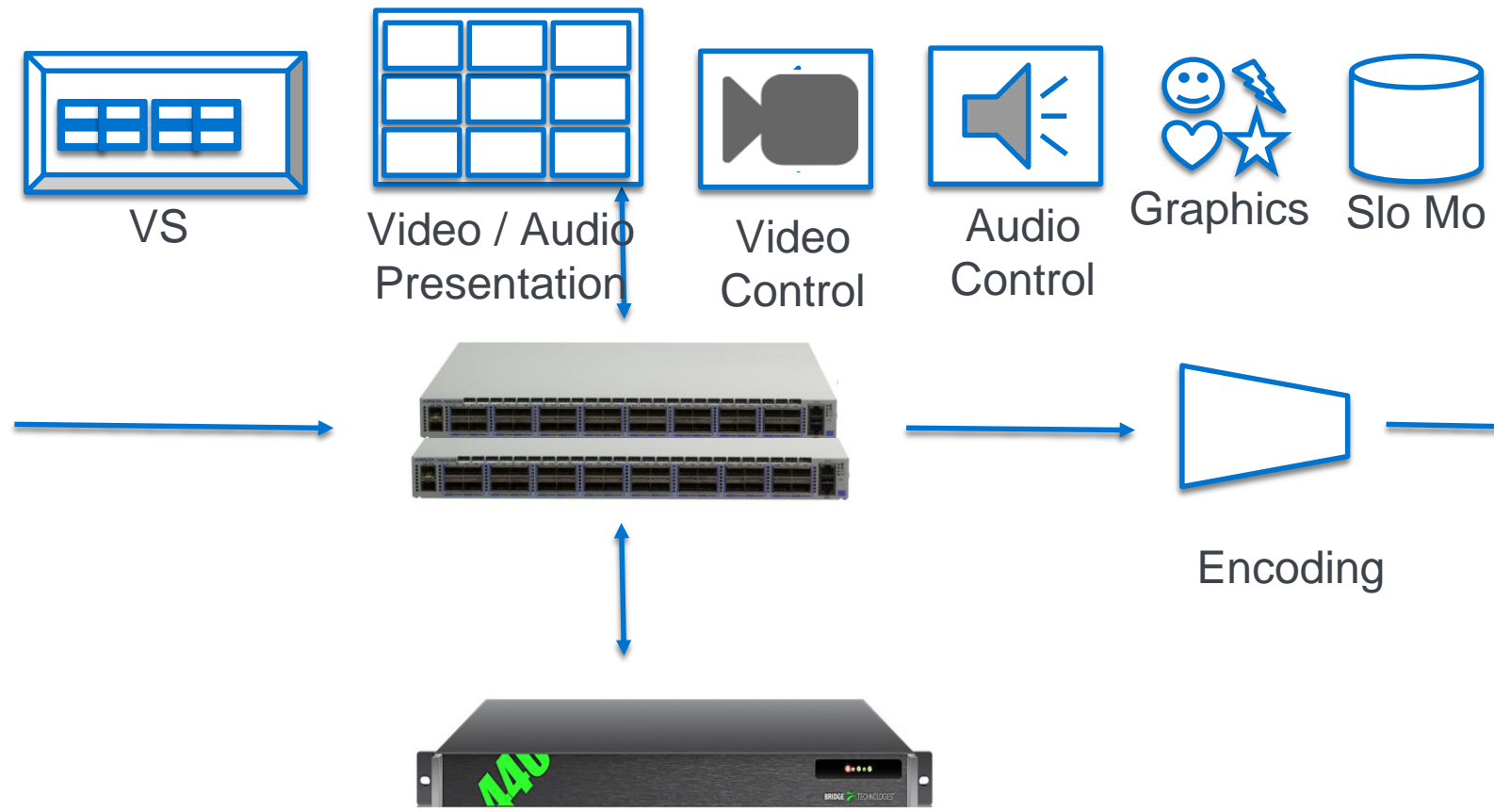
1. IP-Based MCRs / OB Vans

Acquisition & Production

VS

Video / Audio Presentation

Video Control

Audio Control

Graphics

Slo Mo

Encoding

Monitoring, Analysis & Presentation

Contribution & Distribution

Bridge Technologies Compressed Range

1. Camera Painter Position (OBVan)

2. Centralised / Remote Production

Acquisition

Production

VS

Video / Audio
Presentation

Video
Control

Audio
Control

Graphics

Slo Mo

Encoding

Analysis & Presentation

Analysis & Presentation

Contribution
& Distribution

Bridge Technologies
Compressed Range

3. Playout Environments

Playout with regionalisation

Video Walls

VS   Graphics   Ad Insertion

Storage

Encoding

Analysis & Presentation

Contribution & Distribution

Bridge Technologies
Compressed Range
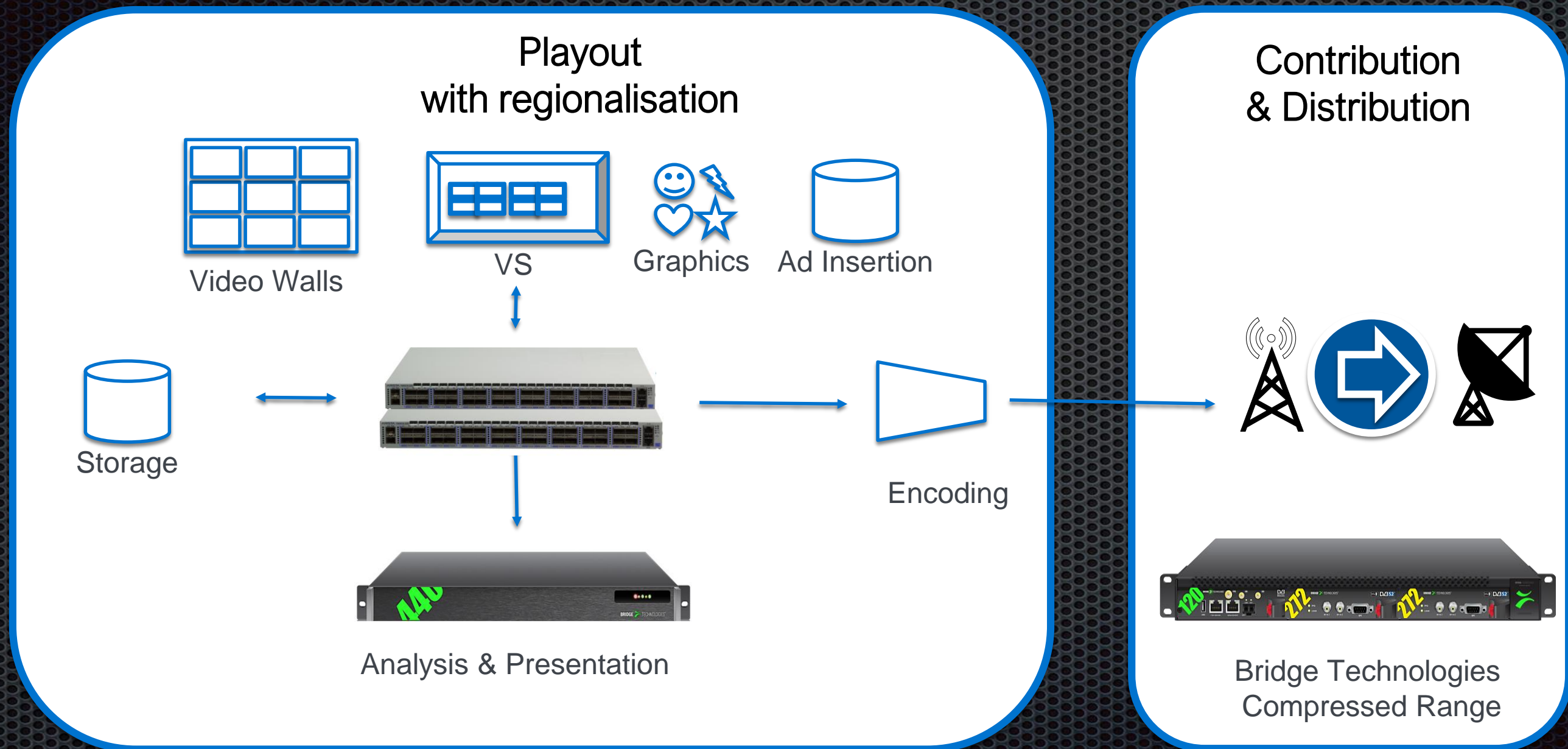
VB440 Setup, Key Features & Functionality

VB440 Menu

Flows

Service Monitoring & Analytics

    Status - Stream and Flow

    Network Behavior, Information and Packet Loss

    Packet Flow

    Video Picture Analytics

    Audio Loudness

PTP

Expert View – Setup, Alarming & Historical Performance

Menu & Flows

Flows

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Search...

Show Unmonitored

|	Aja@Primary	● 8 days	ST 2022-6 SDI/IP	1920x1080p25	239.0.20.9:50020
	Aja@Secondary	● 8 days	ST 2022-6 SDI/IP	1920x1080p25	239.0.20.10:50020
	MRD7000 audio	● 9 days	ST 2110-30 Audio	16ch 48 kHz	239.192.0.201:10000
	MRD7000 video	● 9 days	ST 2110-20 Video	1920x1080p24	239.192.7.200:10000
	Matrox 1 Audio@Primary	● 9 days	ST 2110-30 Audio	2ch 48 kHz	239.0.30.1:50030
	Matrox 1 Video@Primary	● 9 days	ST 2110-20 Video	1920x1080p50	239.0.20.1:50020
	Matrox 2 Audio@Primary	● 9 days	ST 2110-30 Audio	2ch 48 kHz	239.0.30.3:50030
	Matrox 2 Audio@Secondary	● 9 days	ST 2110-30 Audio	2ch 48 kHz	239.0.30.4:50030
	Matrox 2 Video@Primary	● 9 days	ST 2110-20 Video	1920x1080p50	239.0.20.3:50020
	Matrox 2 Video@Secondary	● 9 days	ST 2110-20 Video	1920x1080p50	239.0.20.4:50020
	Matrox 3 Anc@Primary	● 9 days	ST 2110-40 Anc.		239.0.40.5:50040

Services

Services

🖥	Aja	Aja@Primary, Aja@Secondary
🖥	MRD7000	MRD7000 audio, MRD7000 video
🖥	TestGrp	MRD7000 audio, MRD7000 video, Waterfall Audio
🖥	Nordlandsbanen	Matrox 1 Audio@Primary, Matrox 1 Video@Primary
🖥	MGP2017	Matrox 2 Audio@Primary, Matrox 2 Audio@Secondary, Matrox 2 Video@Primary, Matrox 2 Video@Secondary
🖥	Blender	Matrox 3 Anc@Primary, Matrox 3 Audio@Primary, Matrox 3 Audio@Secondary, Matrox 3@Primary, Matrox 3@Secondary
🖥	UHD-1 Test Pattern	Matrox 3 Audio@Primary, Signal Generator@Primary
🖥	Telemarkskanalen	Matrox 4 Anc@Primary, Matrox 4 Anc@Secondary, Matrox 4 Audio@Primary, Matrox 4 Audio@Secondary, Matrox 4 Video@Primary, Matrox 4 Video@Secondary
🖥	Waterfall	Waterfall Audio, Waterfall UHD Video

Aja   MRD7000   TestGrp   Nordlandsbanen   MGP2017   Blender   UHD-1 Test Pattern   Telemarkskanalen   Waterfall

Service Menu
Status – Service & Flows
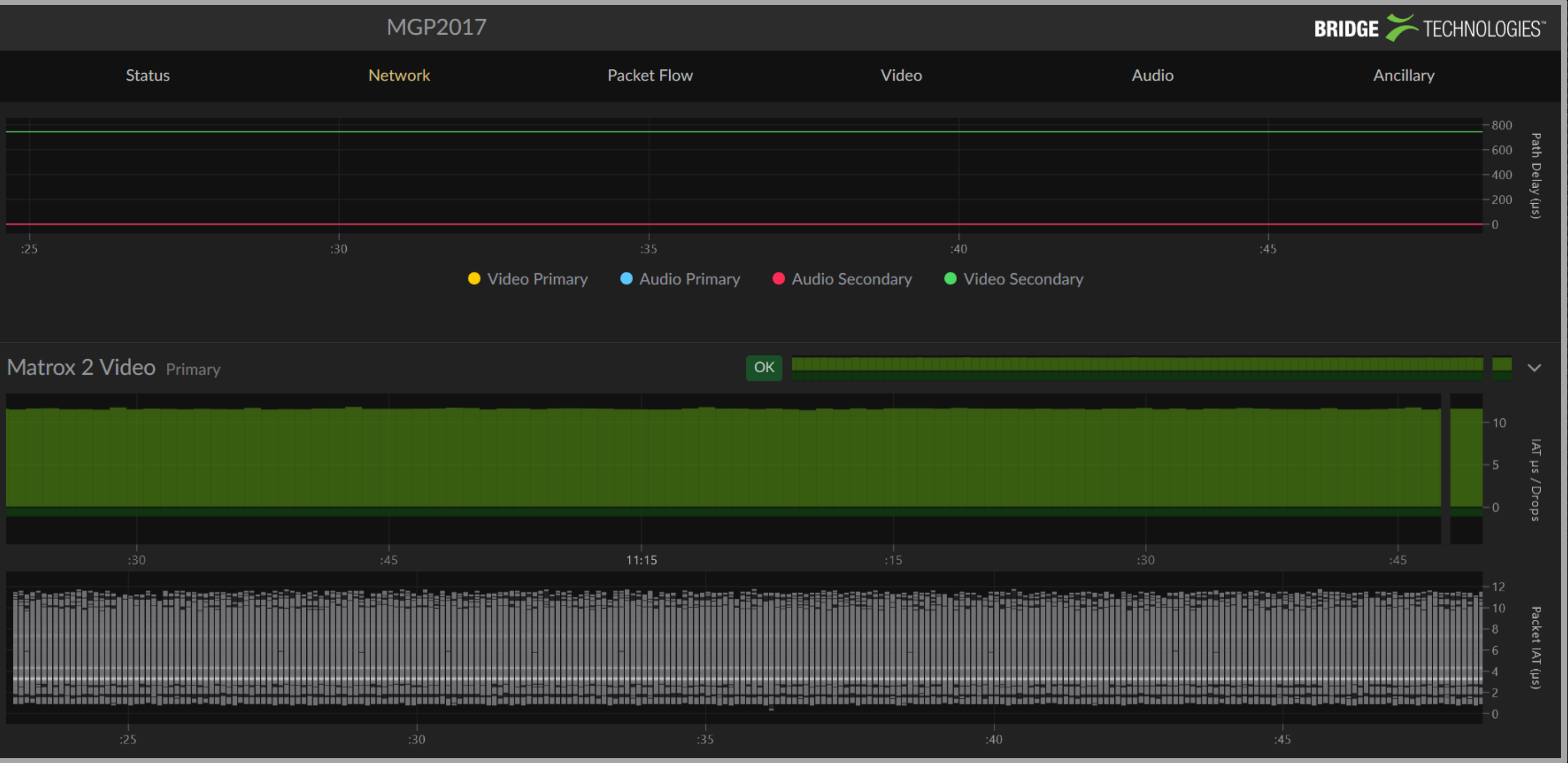
Network Information – Path Delay & IAT

Network Information – Stream Info

TRANSPORT FORMAT	**SIGNAL**	**IP ADDRESS**	**INTERFACE**
ST 2110-20 Video	4 days	239.0.20.3:50020	Primary up
ERRORS	**PACKET LOSS**	**MALFORMED HEADERS**	**QUEUE OVERFLOWS**
336191	336191	–	–
FEC STATUS	**IP SOURCE**	**MAC SOURCE**	**IP TTL**
–	10.100.0.90	00:20:fc:32:00:c2	128
AVG IAT	**MIN IAT**	**MAX IAT**	**IP DSCP**
4.665 μs	0.013 μs	772.578 ms	25
AVG BITRATE	**MIN BITRATE**	**MAX BITRATE**	**AVG PACKET RATE**
2.18 Gbps	1.83 Gbps	2.54 Gbps	205.70 kpps
AVG DELAY	**MIN DELAY**	**MAX DELAY**	**RTP PAYLOAD TYPE**
744 μs	-174255 μs	47.022 ms	96

⬇ Capture

Packet Flow
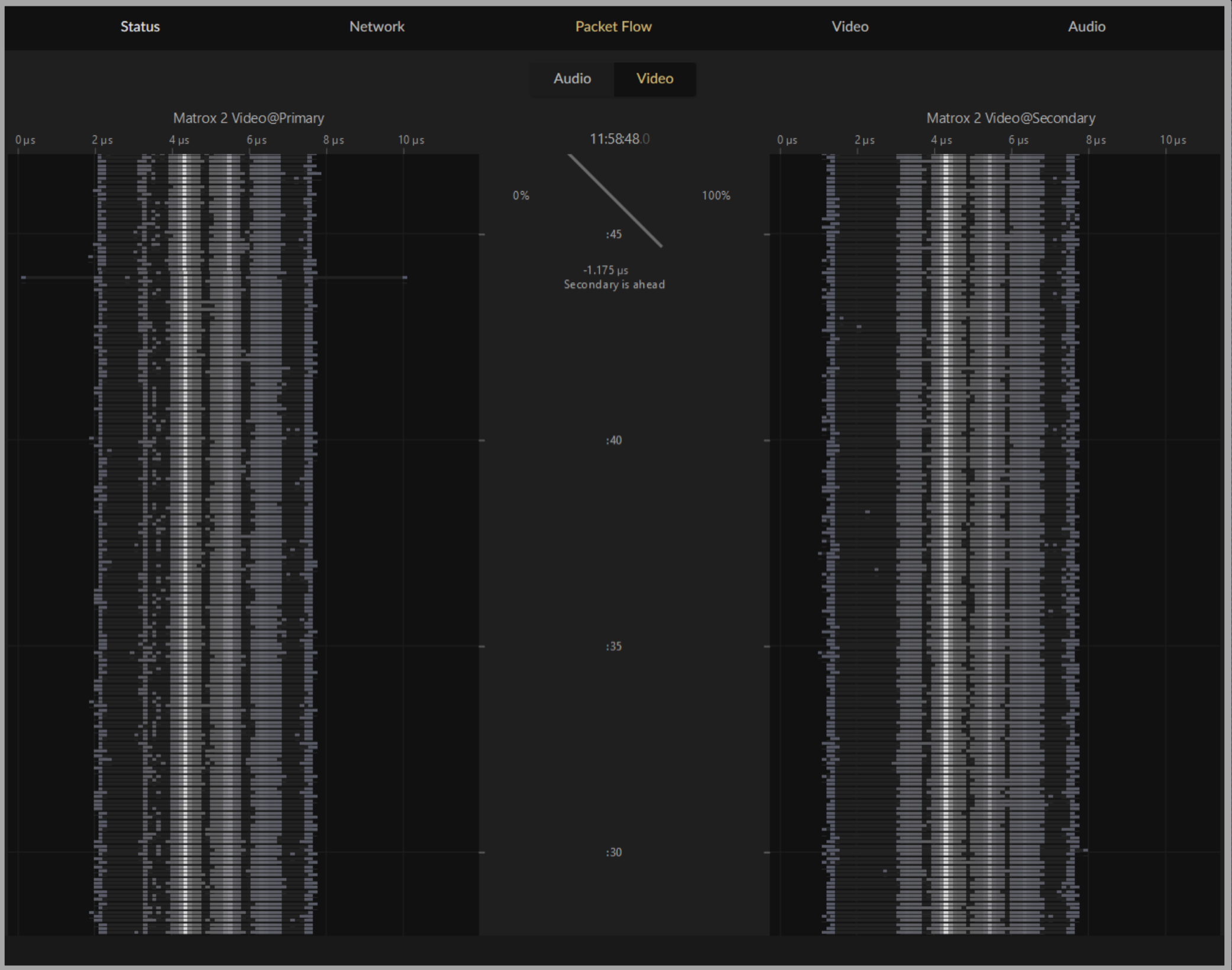
Picture & audio analysis
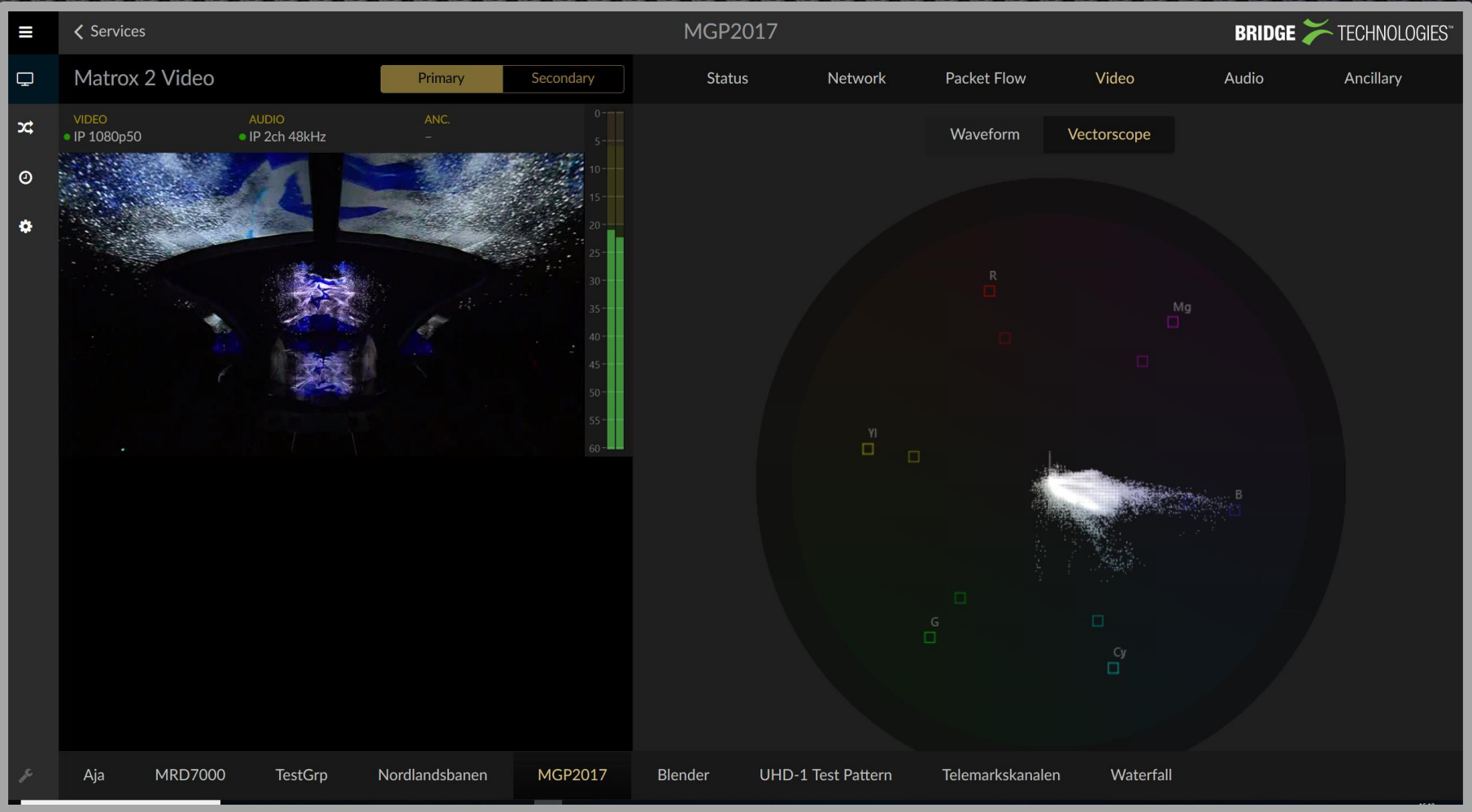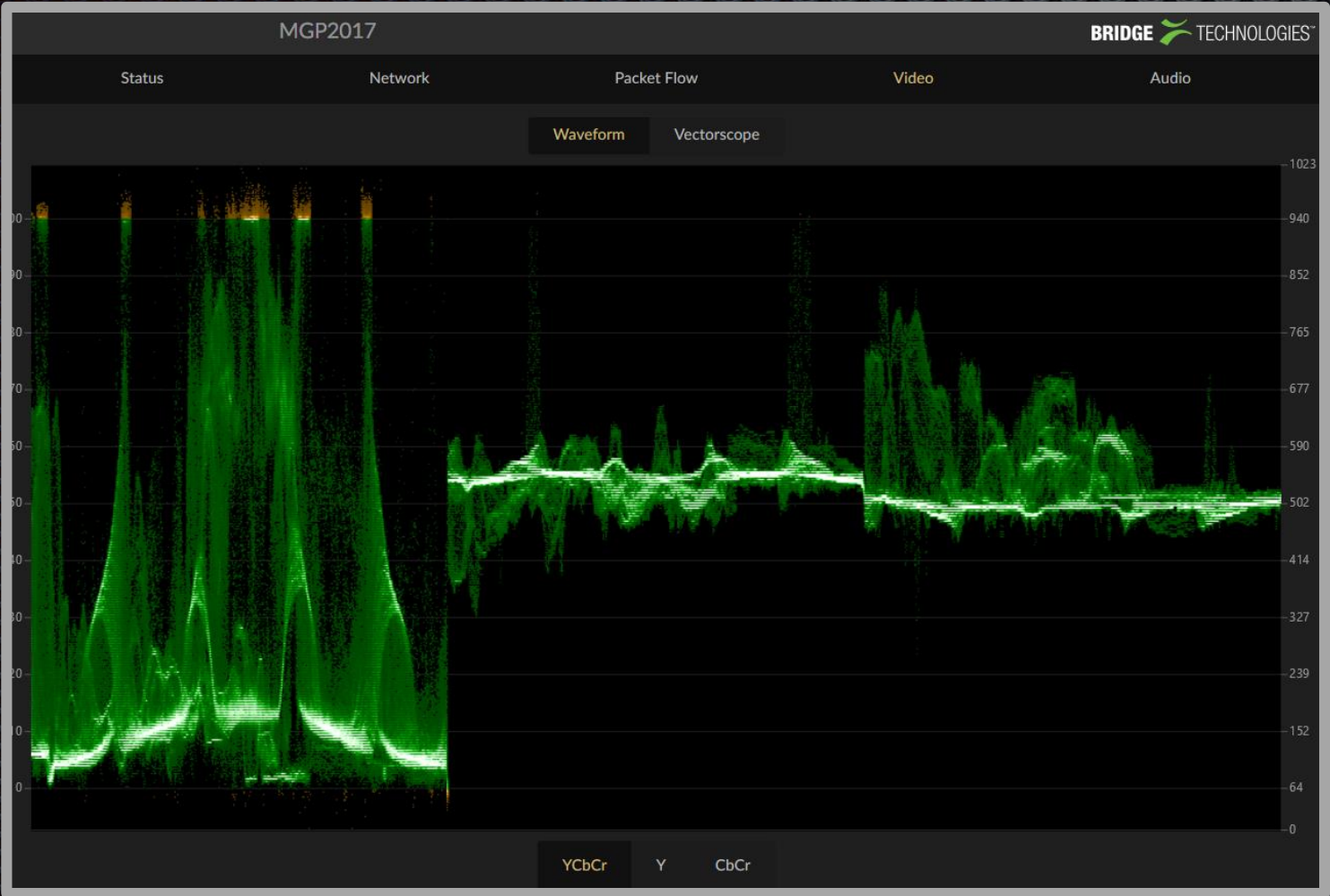
PTP timing

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Network Status

Status	Network Interface	Speed	Receive Bitrate	PTP State	Time
up	MGMT1 (em1)	1 Gbps	19 kbps		
up	MGMT2 (em2)	1 Gbps	6 kbps		
up	Primary (p6p1)	100 Gbps	36.3 Gbps	● Slave	2019-06-05 16:09:18
down	Secondary (p6p2)	–			2019-06-05 16:09:18

PTP Clocks

Domain	Preference	Grand Master	Clock Identity	Vendor	Time Delta	Time Source	Clock Class	Accuracy	Network
127	1 ★	00:09:0d:ff:fe:00:df:20	24:8a:07:ff:fe:7e:3e:c8	Mellanox Technolog...	0.2 μs	GPS (32)	● Synchronized (6)	± 100 ns (33)	Primary
127	2	00:09:0d:ff:fe:00:df:20	24:8a:07:ff:fe:7e:3e:c8	Mellanox Technolog...	0.2 μs	GPS (32)	● Synchronized (6)	± 100 ns (33)	Secondary

★ denotes the currently elected clocks

Expert View
Overview

Expert View
Setup

Edit Multicast   ✕

| General | SSM | ETR | Uncompressed |

Property	Value	Description
Name	Matrox 2 Video@Seconda	Identifier for referring to this stream
Group Names	MGP2017	Groups that this stream belongs to
Address	239.0.20.4	Multicast/unicast address
Port	50020	Multicast/unicast port
Ethernet thresholds	VB440 Training ▼	Defined in Multicasts/Ethernet thresh.
VBC thresholds	Default ▼	Defined in Setup/VBC thresh
Join stream	✔	Check to monitor stream
Join interface	p6p1 - Primary ▼	On which interface to monitor stream
Page	Page 1 ▼	On which page to display stream

Expert View
Comparative network performance
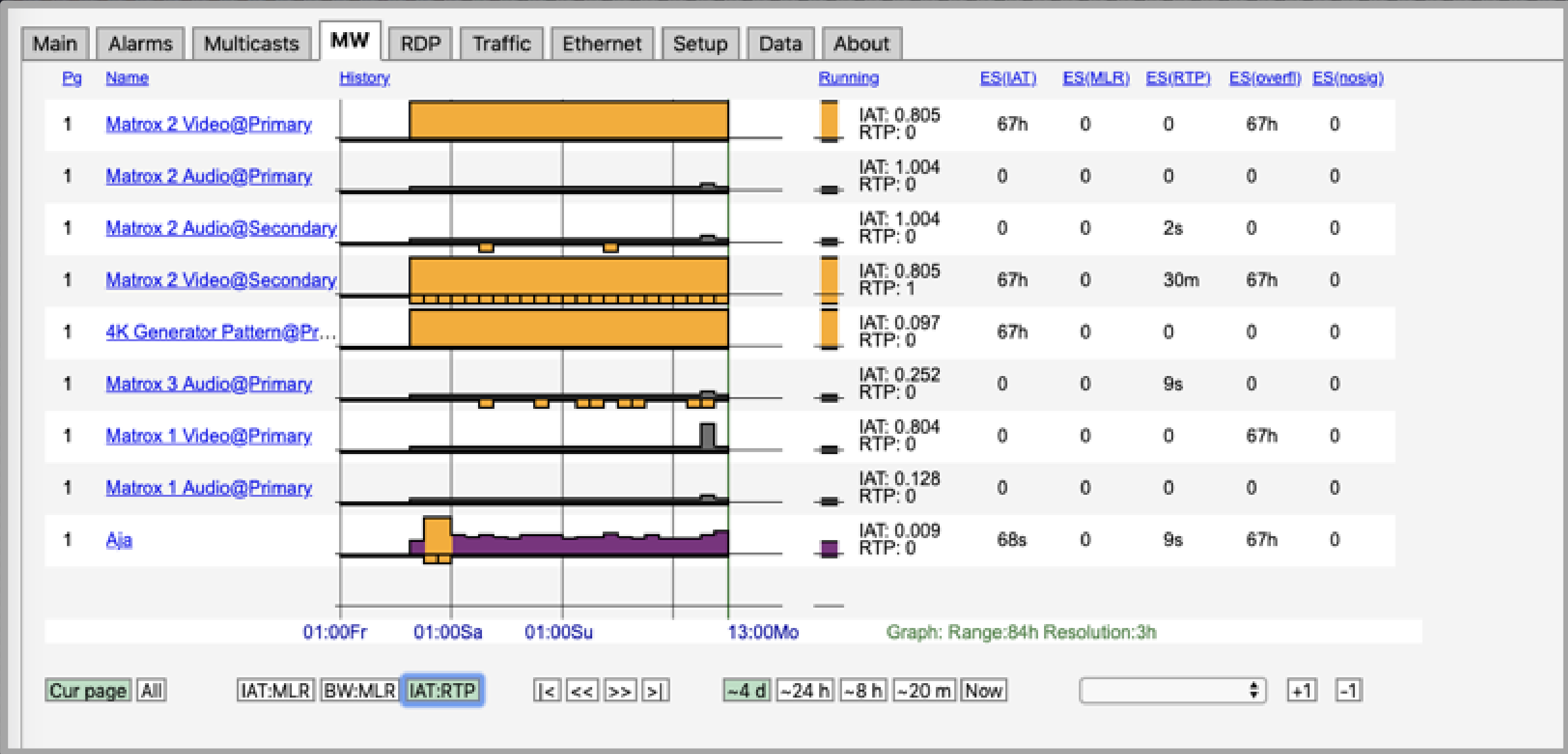
4 Day historical view
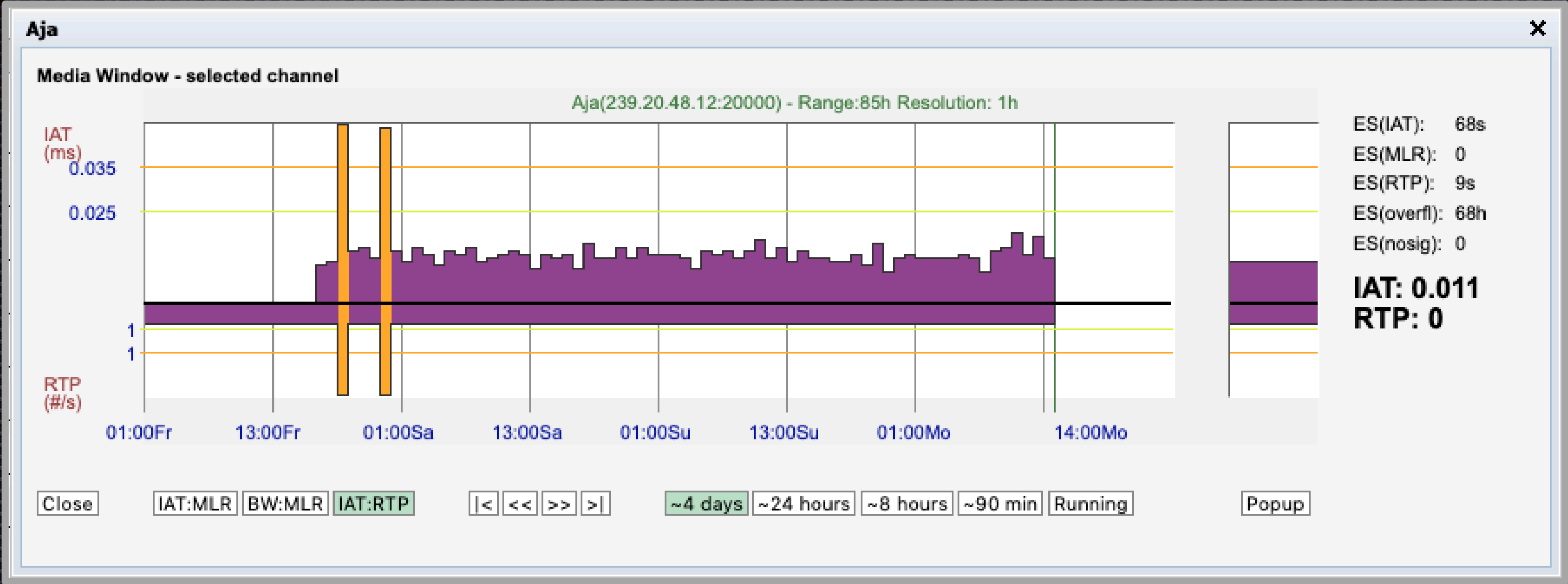
RTP performance analysis

Alarm Tables & Summaries

Order Codes

VB4 SERIES	
VB440-APPLIANCE	High-Performance appliance for Instrument View analytics of ST2110 and ST2022-6, capable of dual stream analysis of complete ST2022.7 redundancy analysis. - Dual 100G QSFP interfaces for 10G, 25G, 40G, 50G 100G connectivity. - 40Gbps data rate - Two simultaneous Instrument View (IV) users.
VB440-40Gbps- OPT	Additional 40Gbps, for a total 80 Gbps data rate
INSTRUMENT VIEW (IV)	
IV-OPT	Additional IV license (max 6 / 8 total)
VB4 SERIES SW MAINTENANCE	
VB-SW3	Additional 3 - Year Software Maintenance with Access to ALL new versions of Software (total 4 years)
VB-SW5	Additional 5 - Year Software Maintenance with Access to ALL new versions of Software (total 6 years)

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of IP media streams
for studio production environments

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