

**BRIDGE**



**TECHNOLOGIES™**

## VB440 Appliance

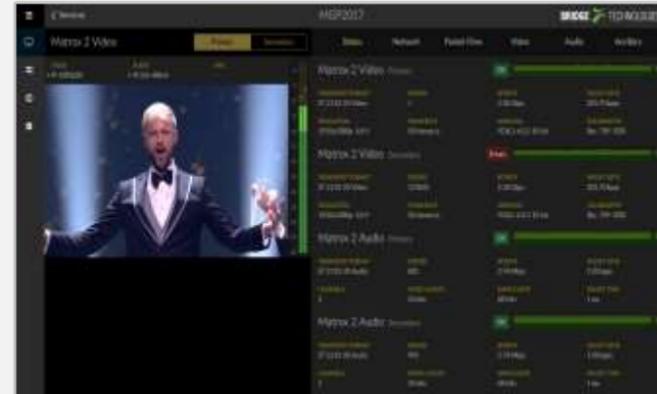
Monitoring, analysis & remote presentation  
for production, contribution & playout facilities

# Integrated Service Monitoring

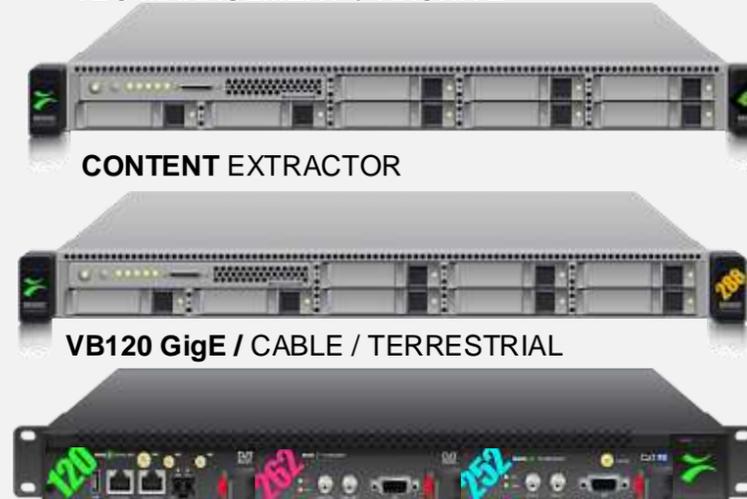
CAMERA CONTROL VIEW



EXPERT VIEW



VBC MANAGEMENT & ARCHIVE



RDW REMOTE DATA WALL



VB440 100G



VB330 10G



VB220 GigE / SATELLITE



MicroVB™



SOURCE



PRODUCTION



CONTRIBUTION



DISTRIBUTION



AQUISITION



OTT



ARCHIVING



# Example Broadcast

TERACOM  
Swedish Telecom and Services

TOWERCOM

dna

TELECOM  
ITALIA

NextGenTel

Lyse

Rai Way



kordia  
VOICE VIDEO DATA

JAZZTEL



PT

ҚАЗАҚТЕЛЕКОМ

emitel

Telefonica

TELMEX

telenor

ZON

ECHOSTAR

cabovisão

true  
visions

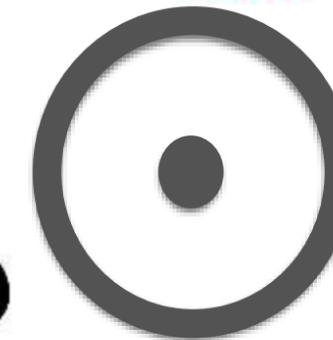
upc

VIASAT



tdf

Kabel Deutschland



com hem

eutelsat

CAT

ONO

Virgin  
media

# Example OTT



upc



# Example Production

## Playout, MCR & Contribution



## Live Production



# VB440 Eco-System Partners

## Strategic Partners

Leader



ARISTA

matrox®

NEC



SONY

RIEDEL



## Key Industry Associations



# VB440 Introduction - 1



# VB440 Introduction - 2



## VB440 hardware platform

COTS server

- . 1 RU Chassis
- . selected processor, motherboard
- . dual 100G network interface

## VB440 Application

Optimized RedHat OS & drivers

Capacity and Functionality Licenses

## 1. Monitoring & Alarming (40 Gbps – 80 Gbps)

- . ST 2110-20/21/30/40, ST 2022-6 SDIoIP,
- . 2022-7 redundant streams via dual interface
- . PTP v2 SMPTE 2059 / IEEE 1588-2008
- . NMOS IS-04/ 05/ 07 / 09 discovery & configuration

## 2. Concurrent Analysis & Remote Presentation Engines (2-8)

### Network Analysis

Packet Flow visualizations, Flow PCAP capture

Network behaviouralism (explain and predict)

### Low Latency Content Analysis

Video Waveform, Vectorscope and Diamond analysis

Audio (supports AES 67)

### Ancillary Data Analysis

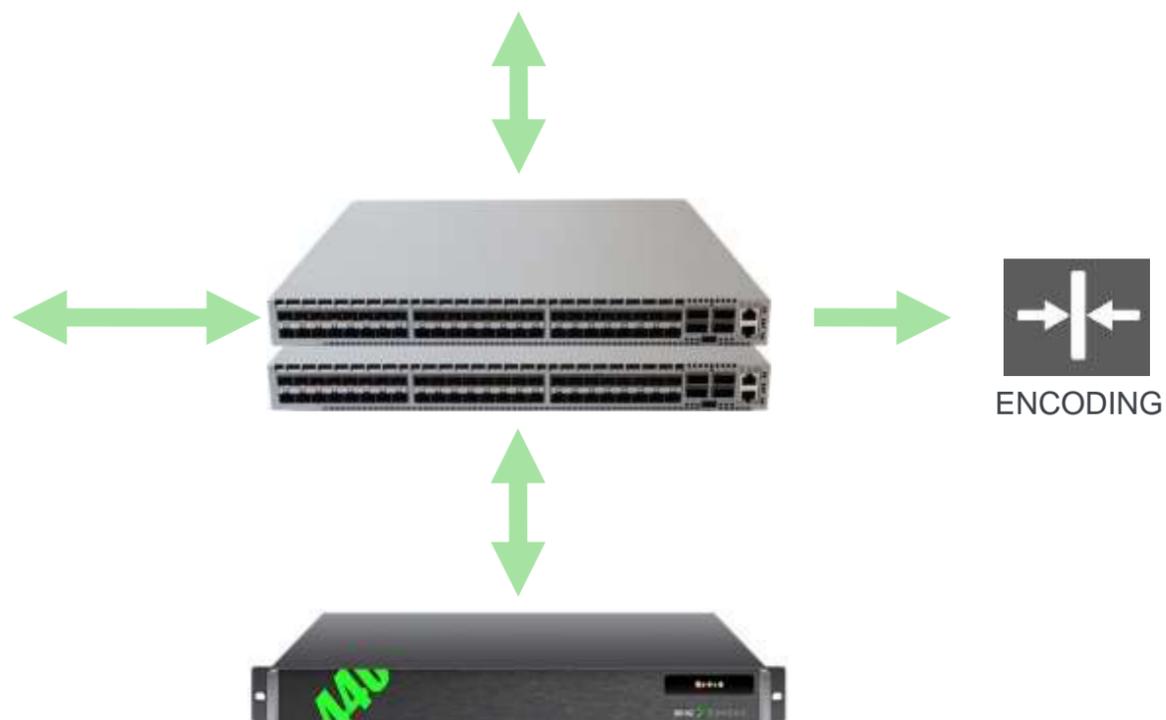
# VB440 Applications

(any IP based media facility)



# 1. IP-Based OB Vans, PCRs

## ACQUISITION & PRODUCTION

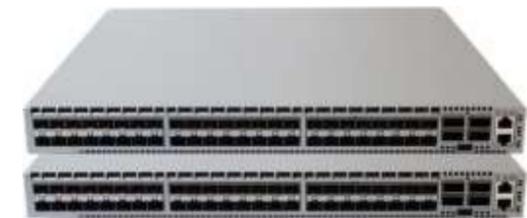


## CONTRIBUTION & DISTRIBUTION

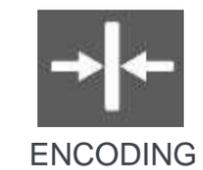


## 2. Centralised / Remote Production

### ACQUISITION



### PRODUCTION



### CONTRIBUTION & DISTRIBUTION



# 3. Contribution, MCRs, Playout Environments

2110 & 2022-6

## PLAYOUT WITH REGIONALISATION



STORAGE or LIVE STREAMING



Monitoring, Analysis & Presentation



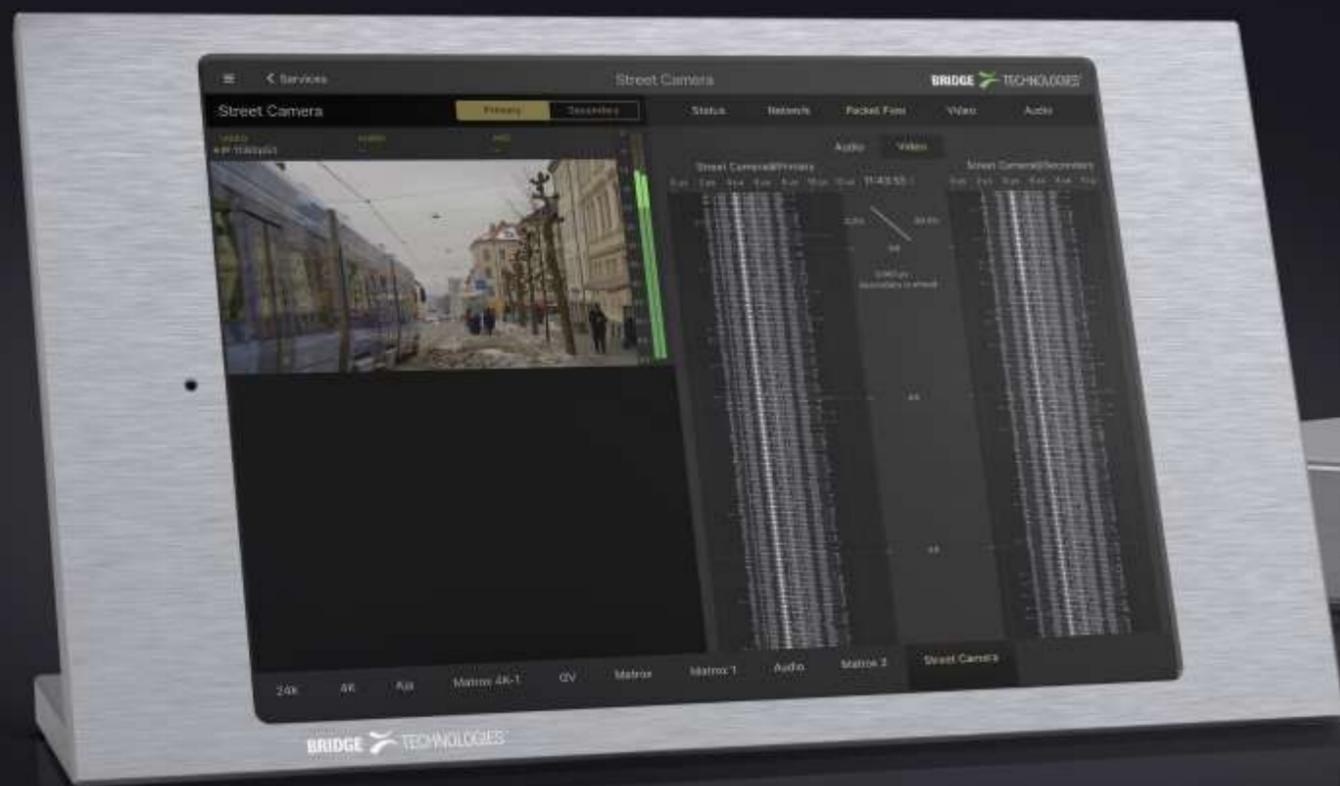
ENCODING



Compressed Range

## CONTRIBUTION & DISTRIBUTION

# VB440 Views & APIs



# Instrument View

Web-based interfaces for network & production engineers  
Analysis of stream, network and picture metrics

**MGP2017** BRIDGE TECHNOLOGIES

Services < Matrox 2 Video Primary Secondary

VIDEO: IP 1080p50 AUDIO: IP 2ch 48kHz ANC: -

Stream	Transport Format	Errors	Bitrate	Packet Rate
Matrox 2 Video Primary	ST 2110-20 Video	0	2.18 Gbps	205.70 kpps
Matrox 2 Video Secondary	ST 2110-20 Video	123465	2.18 Gbps	205.70 kpps
Matrox 2 Audio Primary	ST 2110-30 Audio	801	2.74 Mbps	1.00 kpps
Matrox 2 Audio Secondary	ST 2110-30 Audio	996	2.74 Mbps	1.00 kpps

RESOLUTION: 1920x1080p (16:9) FRAMERATE: 50 frames/s SAMPLING: YCbCr-4:2:2 10-bit COLORIMETRY: Rec. 709 SDR

CHANNELS: 2 WORD LENGTH: 24 bits SAMPLE RATE: 48 kHz PACKET TIME: 1 ms

**MGP2017** BRIDGE TECHNOLOGIES

Services < Matrox 2 Video Primary Secondary

VIDEO: IP 1080p50 AUDIO: IP 2ch 48kHz ANC: -

Matrix 2 Video@Primary Matrix 2 Video@Secondary

0% 100% -1.197 us Secondary is ahead 14:30

MGP2017 UHD-1 Test Pattern Eng Nordlandsbanen Telemarkskanalen Aja MRD7000 Leader Showman

**SDI** BRIDGE TECHNOLOGIES

Services < Aja

VIDEO: SDI/IP 1080p59 AUDIO: SDI/IP 16ch 48k ANC: SDI/IP

Waveform Vectorscope Diamond

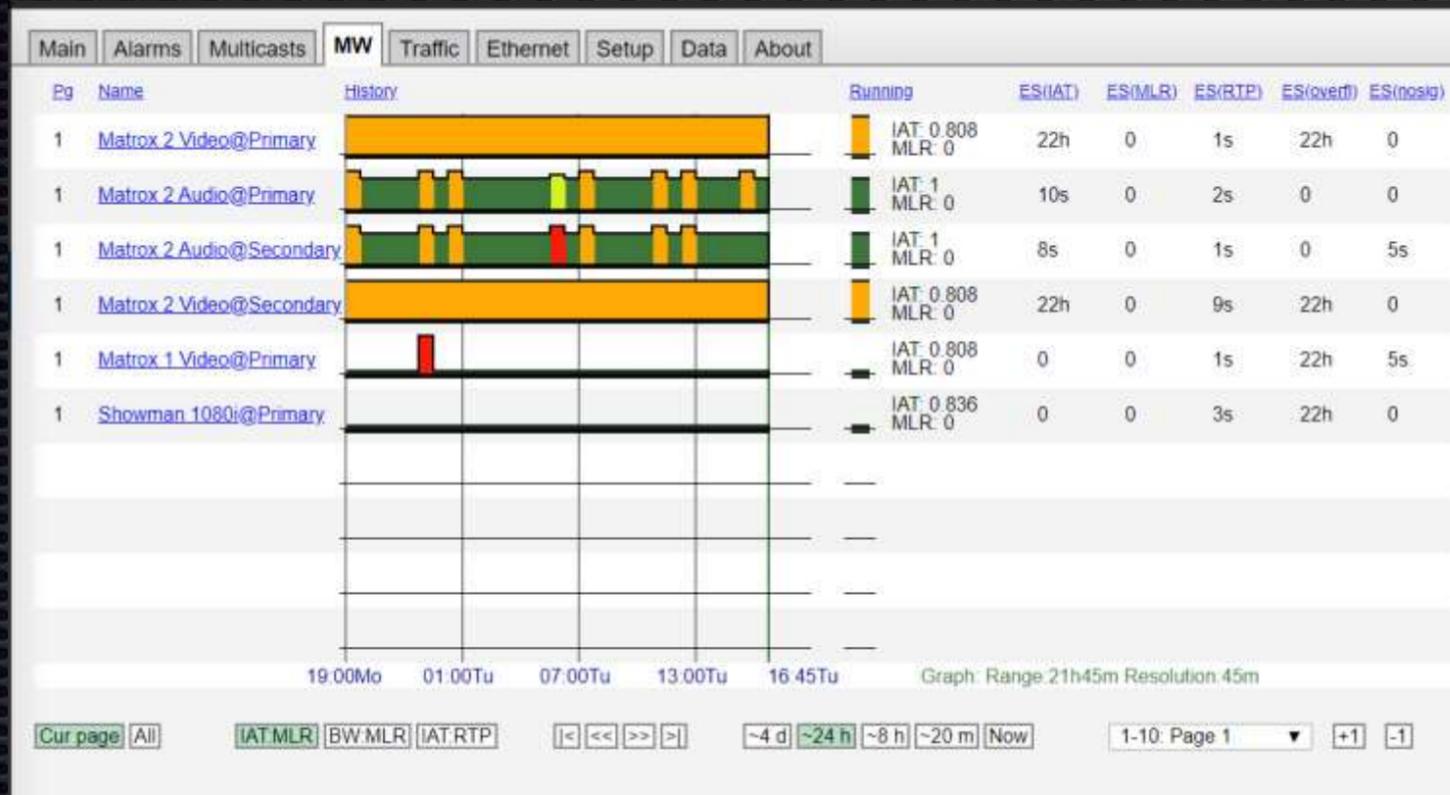
00:01:03:0

Y CbCr YCbCr RGB

MGP2017 MRD7000 SDI Showman Showman 1 Showman 2 Telemarkskanalen

# Expert View

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



The screenshot displays the 'All alarms' section of the Expert View interface. It features a table with columns for '#', 'Status', 'Col', 'Time', 'Type', 'Stream', and 'Description'. The table lists various alarm events, including 'Active' and 'Event' types, with details on the time, type, stream, and description of each event.

#	Status	Col	Time	Type	Stream	Description
1	Active	■	Feb 24 18:34:42	ETH	MRD7000_audio	No signal
2	Event	■	Feb 25 16:55:52	ETH	Showman 1080p@Primary	RTP Packet drops:1
3	Event	■	Feb 25 16:08:15	ETH	Showman 1080p@Primary	RTP Packet drops:1
4	Event	■	Feb 25 15:58:39	ETH	Matrox 2 Audio@Primary	RTP Packet drops:590
5	Event	■	Feb 25 15:56:36	ETH	Matrox 4 Video@Primary	RTP Packet drops:20668
6	Event	■	Feb 25 15:54:00	ETH	MRD7000_video	RTP Packet drops:1
7	Event	■	Feb 25 15:33:40	ETH	Showman 1080p@Primary	RTP Packet drops:1
8	Event	■	Feb 25 14:55:30	ETH	Matrox 4 Video@Secondary	RTP Packet drops:1
9	Event	■	Feb 25 14:29:48	ETH	Matrox 2 Video@Secondary	RTP Packet drops:1
10	Event	■	Feb 25 14:24:56	ETH	Matrox 2 Video@Secondary	RTP Packet drops:30747
11	Event	■	Feb 25 14:24:55	ETH	Matrox 4 Audio@Secondary	RTP Packet drops:724
12	Event	■	Feb 25 14:20:39	ETH	Matrox 4 Video@Secondary	RTP Packet drops:1
13	Event	■	Feb 25 14:18:20	ETH	Showman 1080p@Primary	RTP Packet drops:1
14	Event	■	Feb 25 13:58:29	ETH	Matrox 1 Video@Primary	RTP Packet drops:65535
15	Event	■	Feb 25 12:51:34	ETH	Showman 1080i@Primary	RTP Packet drops:1
16	Event	■	Feb 25 12:40:55	ETH	MRD7000_video	RTP Packet drops:1
17	Event	■	Feb 25 11:18:47	ETH	Matrox 4 Video@Secondary	RTP Packet drops:1
18	Event	■	Feb 25 10:39:03	ETH	Matrox 2 Video@Secondary	RTP Packet drops:1
19	Event	■	Feb 25 08:08:46	ETH	Matrox 2 Video@Secondary	RTP Packet drops:1
20	Event	■	Feb 25 07:44:54	ETH	Matrox 2 Audio@Primary	RTP Packet drops:65
21	Event	■	Feb 25 07:24:26	ETH	Matrox 4 Video@Secondary	RTP Packet drops:1
22	Event	■	Feb 25 07:16:24	ETH	Showman 1080p@Primary	RTP Packet drops:1
23	Event	■	Feb 25 06:02:52	ETH	Matrox 4 Audio@Secondary	RTP Packet drops:934
24	Event	■	Feb 25 06:02:51	ETH	Matrox 4 Video@Secondary	RTP Packet drops:9009
25	Cleared	■	Feb 25 06:00:50	ETH	Matrox 2 Audio@Secondary	No signal (Feb 25 06:00:46 - Feb 25 06:00:50)

# Widglets & API Views

Enabling custom media presentation

The control panel features several widgets:

- Channel 2 - America:** A large video window showing a map of Washington D.C. with the text "Washington D.C. 2011".
- Channel 1 - Europe:** A smaller video window showing a scenic view of a European city.
- IS07 Data:** A text display showing channel and audio status:

```
IS07 Data:  
Channel 1 - Europe  
Current      Oslo  
Next In     00:00:09:05  
Next        Paris  
  
Video:  
Signal Status: ok  
Path Delay   755 ns  
IAT          19764 ns  
  
Audio:  
Signal Status: ok  
Path Delay   0 ns  
IAT          132161 ns
```
- Time Displays:** Two digital clocks at the bottom show "PTP/UTC: 09:31:17:24" and "PTP/TRI: 09:31:54:24".

The video wall displays a multi-camera production of a violinist:

- Main View:** A large central window labeled "Camera 1B" showing a close-up of the violinist.
- Thumbnail Views:** A row of five smaller windows labeled "Camera 1" through "Camera 5" showing different angles of the performance.
- Waveforms:** Below the thumbnails are five audio waveform displays, each corresponding to a camera's audio feed. A hand is pointing at the first waveform.
- Brand:** The "SAMSUNG" logo is visible at the bottom center of the screen.

# OB Van / Remote production example



# VB440 Appliance

Monitoring, analysis & presentation  
for production, contribution & playout facilities

Thank You !



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