



# VIDEO OVER IP

When to Use it and How to Get the Best of Both Worlds



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# WHO AM I?

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- Russell Trafford-Jones
- BBC – Siemens – Atos
- TSL – Systems Integrator
- V-Nova – Video compression
- Discovery/Eurosport - Olympics
- TechEx – Video over IP





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# TheBroadcastKnowledge.com

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- Aggregates all the Broadcast industry's webinars into one place
- Videos and Webinars on demand
- Helps you remember what you knew
- And learn what you now need



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# WHAT IS VIDEO OVER IP

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- Video, audio, metadata over IP
  - Multicast UDP: one to many streaming
  - Any resolution
  - Uncompressed video
  - Timing, registration and control are key.
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“ The AV Industry has been steeped in hardware based, point-to-point video distribution technologies for far too long. *-Mike Brandes, CTS*

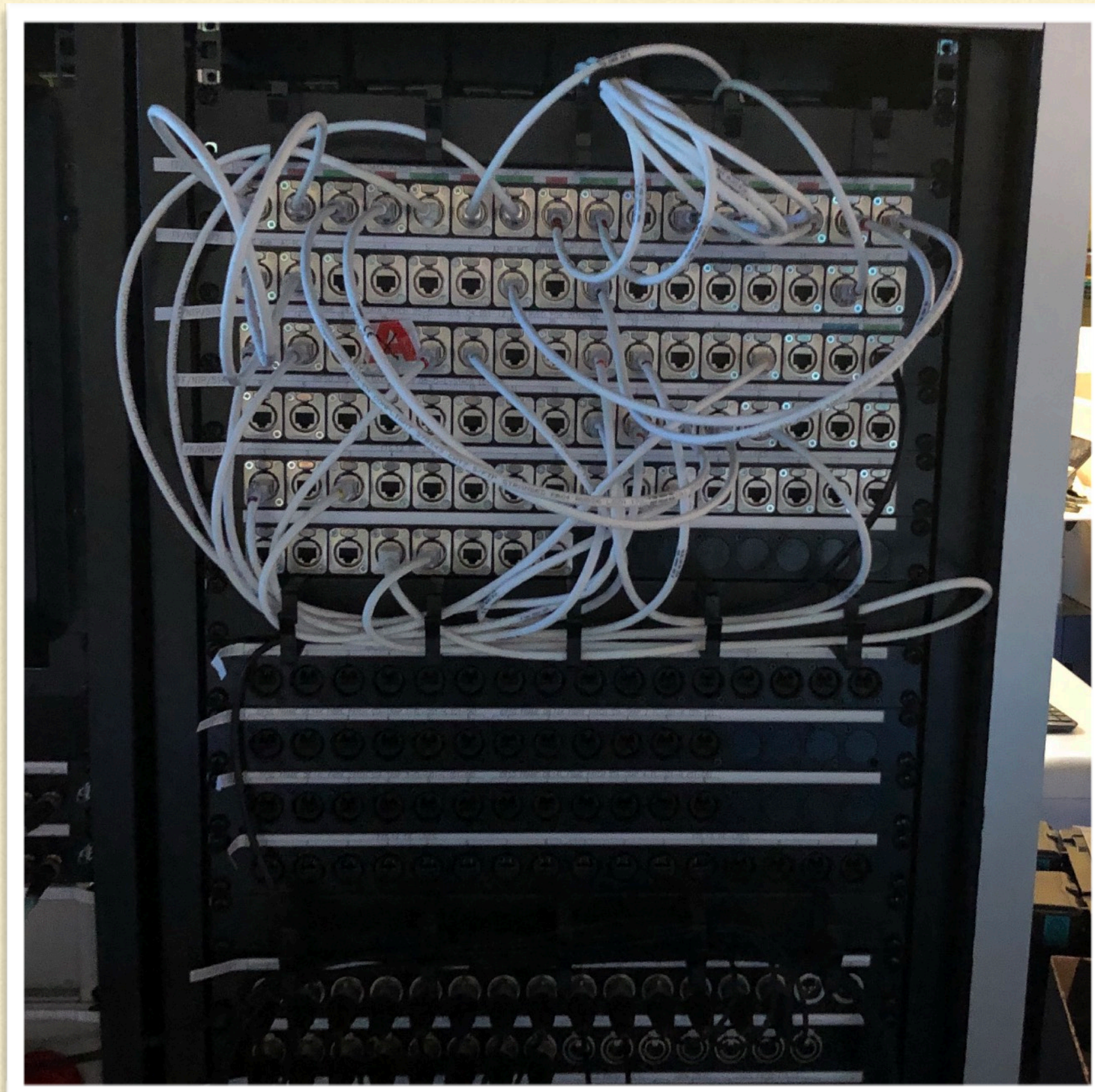
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# SMPTE 2110 - THE BENEFITS

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- Flexibility
  - Scale
  - Cabling
  - Cost
  - Separate Essences
  - Any resolution - future proof
  - Can simplify workflows (deserialise)
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# USE CASES

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# BBC CARDIFF

Brand new building, for the BBC's Welsh HQ.  
Broadcast infrastructure based on SMPTE 2110





# BLOOMBERG

New facility opened October 2017  
2022-6 based





# NEP'S EN3

USA's first SMPTE 2110 truck  
IP Core





# TIMELINE'S ALL-IP TRUCK

UHD HDR IP Truck

Triple expanding trailer





# QVC JAPAN

24/7 365 days a year, UHD programming  
All IP

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To just talk about ‘replacing  
SDI with IP’ is far too  
simplistic and doesn’t take  
advantage of what can be  
done

*-Matthew Goldman, SMPTE*

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# BE CAUTIOUS AND INVEST

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- At some point, using IP is going to make sense
- Better to gradually grow your competence slowly
- Small investment as part of a traditional ROI





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# FOR ENGINEERS

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- There is no 'system diagram' for IP
- You need test tools and probes
- You need to understand networking



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# THINGS TO REMEMBER

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- IP Core with SDI on edge, or SDI core with IP on edge
  - Needs 'dedicated' network
  - Audio only, to start with (2110-30)
  - 2110 has different sections which is like a menu
  - Often, inside equipment it's an SDI box
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I used to go to vendors to get magic for my workflows, now we come up with the magic ourselves and the vendors help implement it

*- John Honeycutt , Discovery, Inc.*

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# AJA CONVERTERS

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- Low cost
- Easy to display ST 2110 on AV equipment



# SENCORE SDI-IP CONVERTERS



- SDI to/from IP
- 2022-6 and 2110 formats supported
- Also available for OpenGear chassis as a card



# ROSS VIDEO ULTRIX



- Combined Router/Matrix and Multiviewer
- IP, HDMI, SDI all in one box
- Audio Routing
- IP Gateway



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# WHICH ISLANDS MAKE SENSE?

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- Matrix/Routers
  - Vision Mixers
  - Recorders
  - Audio
  - Cameras (plus multiviewers)
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# RESOURCES

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- The Broadcast Knowledge
- IABM IP Showcase videos
- SMPTE Virtual Classroom
- Bruce's Shorts

A banner for "The Broadcast Knowledge" with a background image of a control room console with various buttons and sliders.

The Broadcast Knowledge

A banner for "Understanding SMPTE ST 2110" with a background of a network diagram. The text is in a blue, sans-serif font. Below the main title is the subtitle "Standards for Professional Media Over Managed IP Networks" and at the bottom, "Virtual Classroom Course" in a smaller, italicized font.

Understanding  
SMPTE ST 2110  
Standards for Professional  
Media Over Managed  
IP Networks  
*Virtual Classroom Course*



# RESOURCES

- <https://thebroadcastknowledge.com>
- <https://www.theiabm.org/ip-showcase-presentations/>
- <https://www.smpte.org/education/courses>
- Season 4: <https://mrmxf.com/shorts/>
- Season 1-3: <http://tiny.cc/BruceShorts/>



The Broadcast Knowledge



BRUCE'S  
SHORTS



Understanding  
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THANK YOU

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