



Utilizing ST 2110 in ProAV Applications

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Audio/Visual Starts with Analog

- NTSC - The beginnings of A/V begin with broadcast video standard
 - Analog Audio using high impedance
 - Video was either transport directly as baseband analog signal or RF using NTSC RF channel....later Cable RF
 - Standards were copied because devices used them...
 - TV'S
 - SPEAKERS
 - AMPLIFIERS

Standards Organizations followed Broadcasters

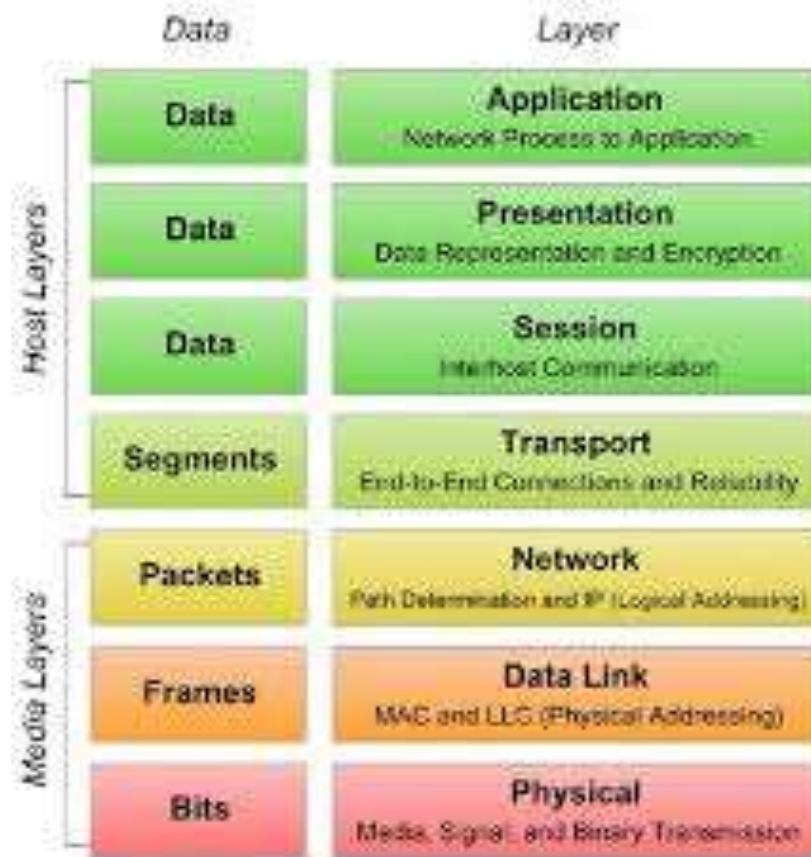
- Color TV was added and followed strict signal parameters
- Stereo TV followed guidelines
- Closed Captioning was added
- Analog transitioned to Digital (Serial Digital Interface – SDI)
- Standard Definition transition to High Definition
- Digital now transitioning to IP

Standards Organizations became the norm

- Society of Motion Picture and Television Engineers
- Institute of Electrical and Electronics Engineers
- Audio Engineering Society

Interoperability is the direct result

Open Systems Interconnection



SMPTE 2110

- Use SDI as the 'template'
- OSI as the rule set
- Users and Manufactures collaborate to create 2110
 - System and Timing
 - Video
 - Audio
 - Metadata

Interoperability is the goal

IP = Flexibility for Video

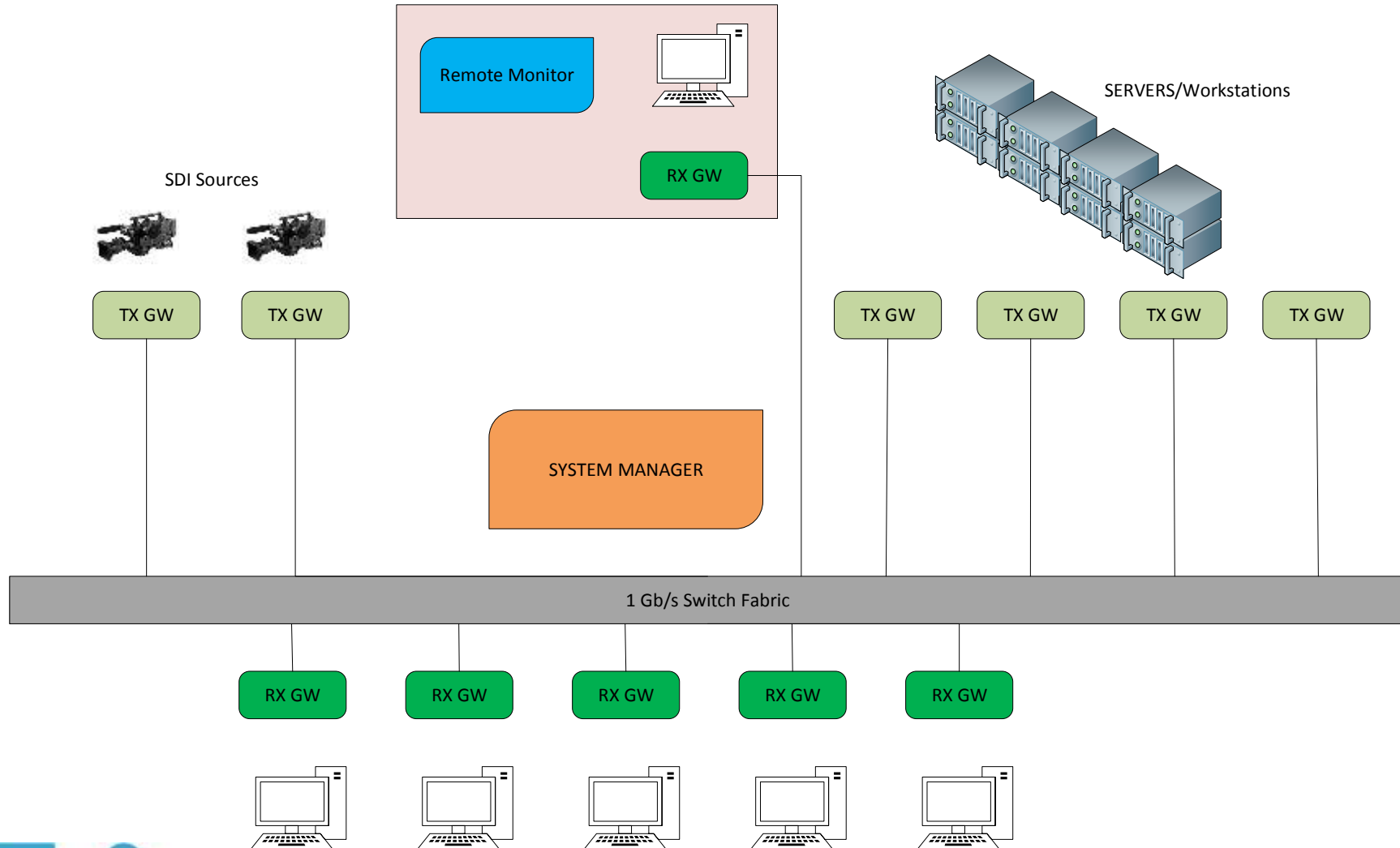
- Uncompressed Video BEGINS before compression
- MPEG Codecs began the Wild West
 - MPEG 2 with 100's of profiles
 - H.264 with 1000's of profiles
 - H.265
 - IP Codecs create unique pairs where Tx must have an Rx

Pro A/V Market for IP

- Video can be compressed using choice of registered Codecs
 - 2110-22 (J2K, VC-2, JPEG XS, MPEG...)
- Audio follows AES67
 - 2110-30
- VANC follows SDI
 - 2110 – 40
- HDCP 2.2/1/4
- USB

PESA KVM Example

- 2110-22 Video using J2K (TR-01)
- 2110-30 Audio for Audio
- 2110-10 PTP for time relevancy
- USB for HID devices
- HDCP for content protection





SMPTE 2110 is the template

Like it's analog roots, 2110 can be used for a lot of Pro A/V applications





Thank You

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