IPMX Activity Group

Internet Protocol Media Experience

March 2021

Jack Douglass (PacketStorm)
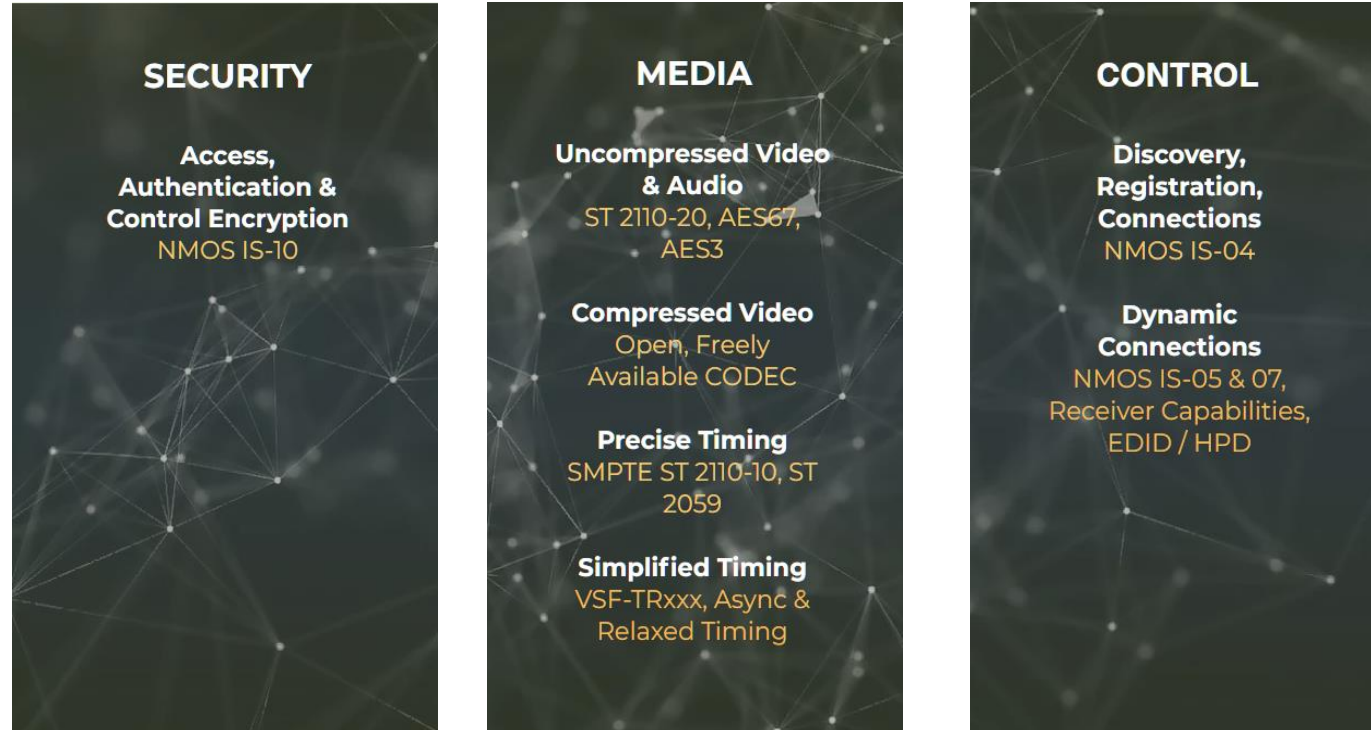
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PacketStorm
Communications, Inc.

VSF

VIDEO SERVICES FORUM

IPMX Activity Group

- Chairs:
  - Jack Douglass (PacketStorm)
  - Jean Lapierre (Matrox)
- Meeting:
  - Every week on Tuesday 8am PST
  - Next meeting is Tuesday March 9, 2021, 8:00am to 9:00am PST
- IPMX – Internet Protocol Media Experience
  - Set of Technical Recommendations to enable the carriage of compressed and uncompressed video, audio and data over IP networks for the ProAV market
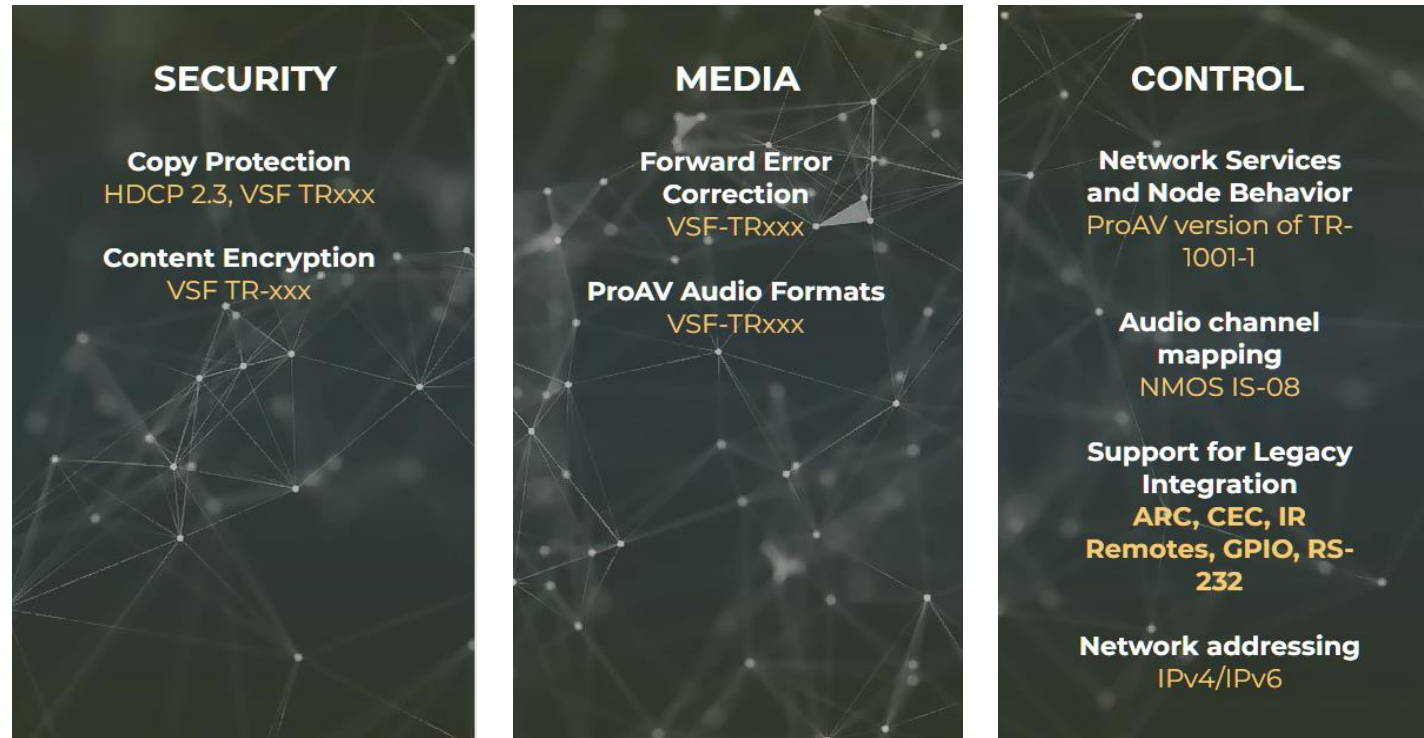- Working with JT-NM and AMWA

JT-NM ProAV Technology Roadmap – Phase 1

SECURITY

Access,
Authentication &
Control Encryption
NMOS IS-10

MEDIA

Uncompressed Video
& Audio
ST 2110-20, AES67,
AES3

Compressed Video
Open, Freely
Available CODEC

Precise Timing
SMPTE ST 2110-10, ST
2059

Simplified Timing
VSF-TRxxx, Async &
Relaxed Timing

CONTROL

Discovery,
Registration,
Connections
NMOS IS-04

Dynamic
Connections
NMOS IS-05 & 07,
Receiver Capabilities,
EDID / HPD

Phase 1 focuses on secure control, essence transport, timing, and connection management. The work in this phase consists of identifying existing standards and specifications that can be applied to the A/V over IP effort, and creating new standards and specifications if required. JT-NM stresses the use of existing work over creation of new technology, if possible. As an example, the ProAV user requirements specify simplified timing, as compared to the timing approach currently taken in the SMPTE ST 2110/PTP for professional applications.
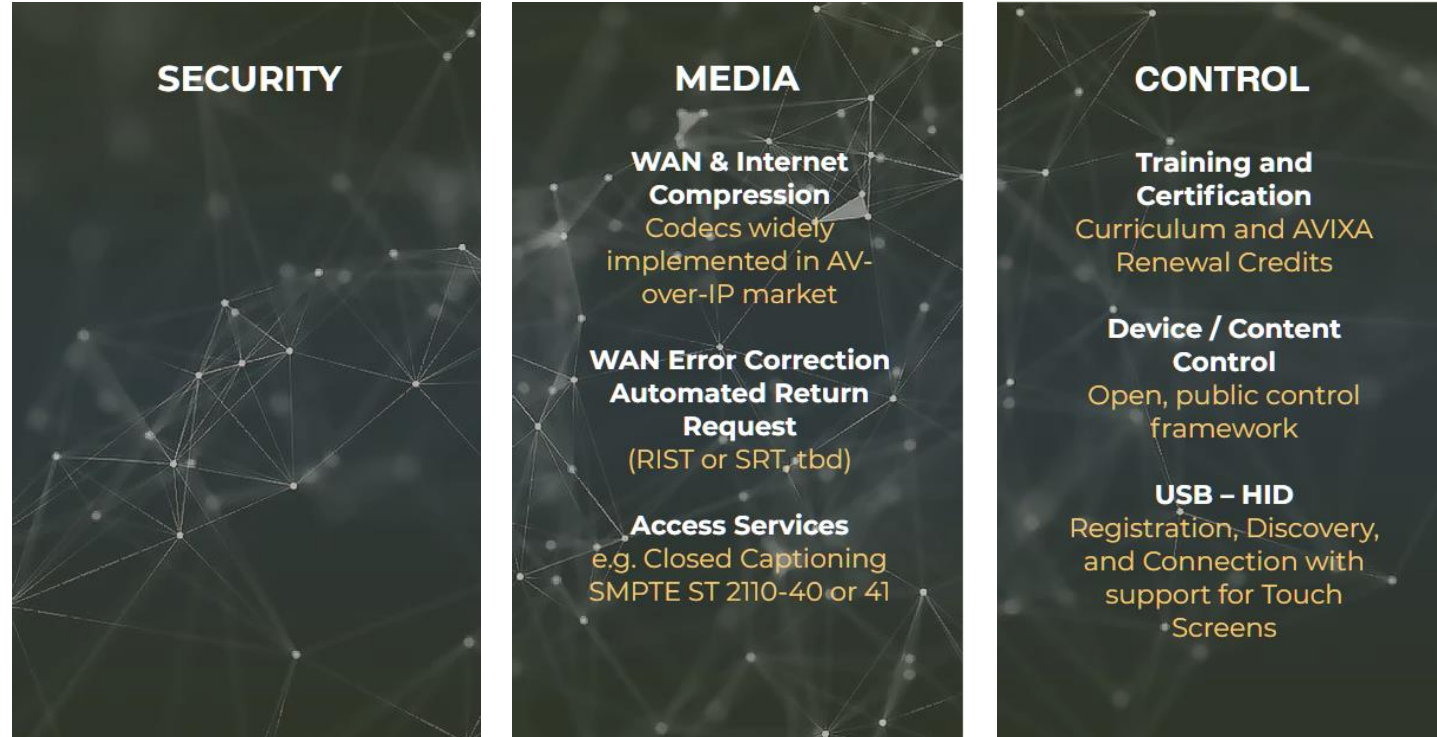
JT-NM ProAV Technology Roadmap: https://www.jt-nm.org/proav-roadmap.

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JT-NM ProAV Technology Roadmap – Phase 2

SECURITY

Copy Protection
HDCP 2.3, VSF TRxxx

Content Encryption
VSF TR-xxx

MEDIA

Forward Error Correction
VSF-TRxxx

ProAV Audio Formats
VSF-TRxxx

CONTROL

Network Services and Node Behavior
ProAV version of TR-1001-1

Audio channel mapping
NMOS IS-08

Support for Legacy Integration
ARC, CEC, IR Remotes, GPIO, RS-232

Network addressing
IPv4/IPv6

Phase 2 builds on basic functionality by adding additional functionality as required by the ProAV user Requirements. As with Phase 1, this phase seeks to identify existing standards and specifications, if possible.

JT-NM ProAV Technology Roadmap: https://www.jt-nm.org/proav-roadmap.

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JT-NM ProAV Technology Roadmap – Phase 3

SECURITY

MEDIA

WAN & Internet Compression
Codecs widely implemented in AV-over-IP market

WAN Error Correction Automated Return Request
(RIST or SRT, tbd)

Access Services
e.g. Closed Captioning SMPTE ST 2110-40 or 41

CONTROL

Training and Certification
Curriculum and AVIXA Renewal Credits

Device / Content Control
Open, public control framework

USB – HID
Registration, Discovery, and Connection with support for Touch Screens

Phase 3 adds elements critical for ProAV WAN applications, and support for access services such as Closed Captioning.

JT-NM ProAV Technology Roadmap: https://www.jt-nm.org/proav-roadmap.

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Additional IPMX Related Work

- Network Switch Minimum Requirements For IPMX
  - Document that would assist system designers in the selection switches that would have sufficient resources to successfully deploy an IPMX network installation.

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