



The AIMS Roadmap - The Elements of Control

Scott Barella

CTO – PESA / Deputy Chairman, ProAV Working Group

Feb. 6, 2019

Task Force & AIMS



- Joint Task Force on Networked Media (JT-NM) leads the effort of Professional Studio Video and its transition to IP



Task Force & AIMS



- Joint Task Force on Networked Media (JT-NM) leads the effort of Professional Studio Video and its transition to IP



Implementation of the IP Standard

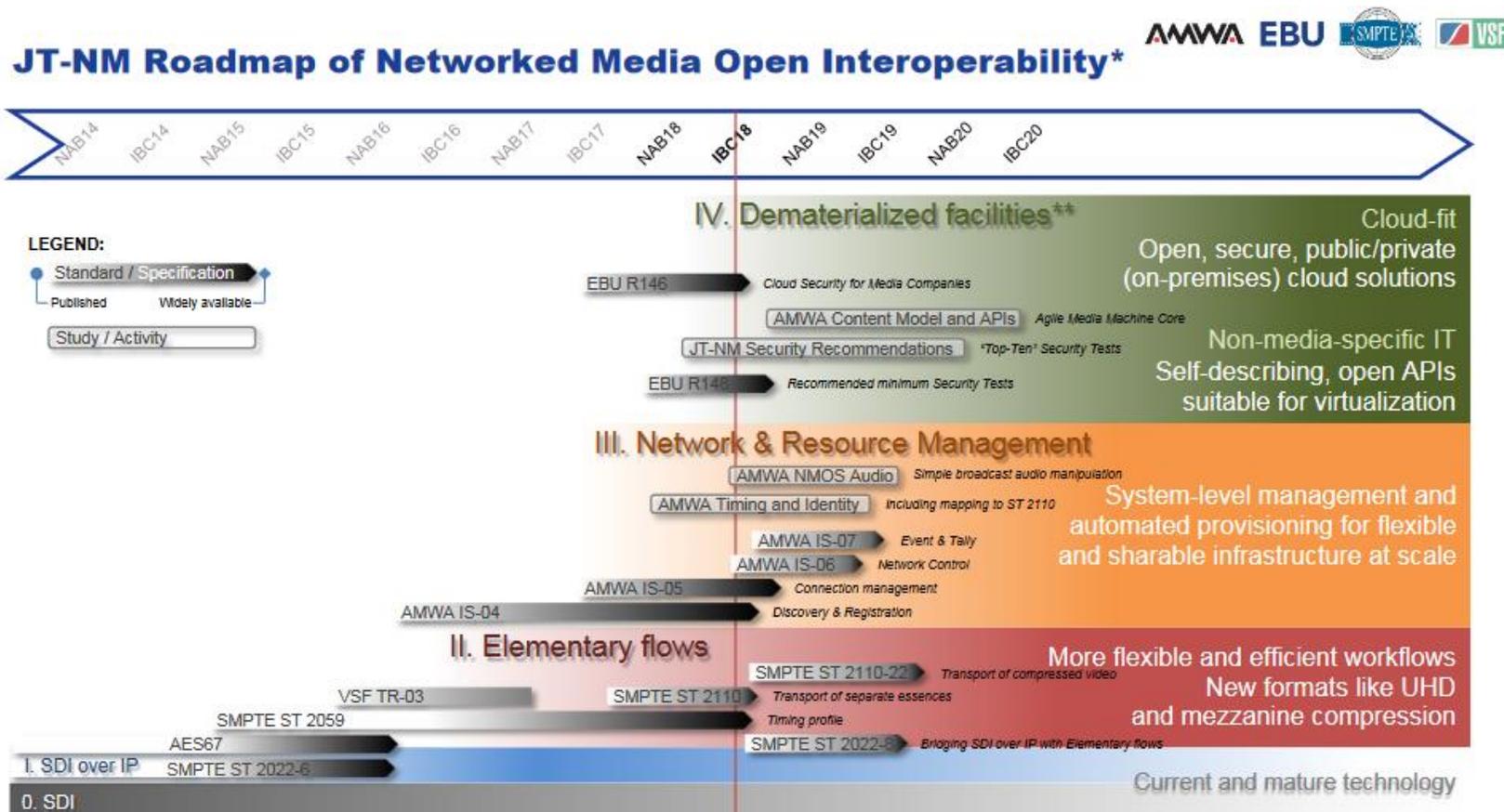
Control for IP Systems



- SMPTE 2110 covers the video, audio, metadata and the sync timing for synchronized switching
- It doesn't cover Control
- AIMS turned to AMWA to cover basic Registration and Discovery
 - Sender (Tx)??
 - Receiver (Rx)?
 - Video, Audio, Both?
 - DHCP IP Addressing
 - mDNS
 - Multicast Addressing

- Advance Media Workflow Association and NMOS
 - Networked Media Open Specifications
 - Interface Specification 04/05
 - After basic addressing, the ‘broadcast control’ needs more of the ‘stack’
 - Goal is to achieve a ‘full stack’ of control elements

JT-NM Roadmap



The Media Node Pyramid

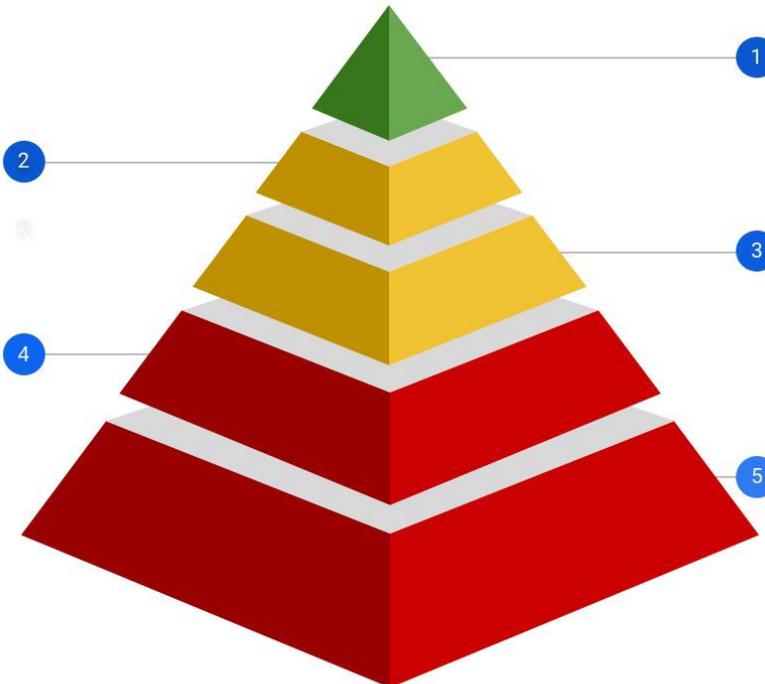
The Minimum Stack of endpoint technologies to build and manage an IP-based media facility

Time and Sync

- PTPv2 configurable within SMPTE and AES profiles
- Multi-interface PTP redundancy
- Synchronisation of audio, video and data essences

Configuration and Monitoring

- IP assignment: DHCP
- Open configuration management - e.g., API, config file, SSH CLI, etc.
- Open monitoring protocol - e.g., syslog, agent, SNMPv3, etc.



Media Transport

- Single link video SMPTE ST 2110-20
- Software-friendly SMPTE ST 2110-21 Wide video receivers
- Universal, multichannel and low latency audio SMPTE ST 2110-30 Level C
- Stream protection with SMPTE ST 2022-7

Discovery and Connection

- Discovery and Registration: AMWA IS-04
- Connection Management: AMWA IS-05
- Audio mapping: AMWA IS-08 (in dev.)
- Topology discovery: LLDP

Security

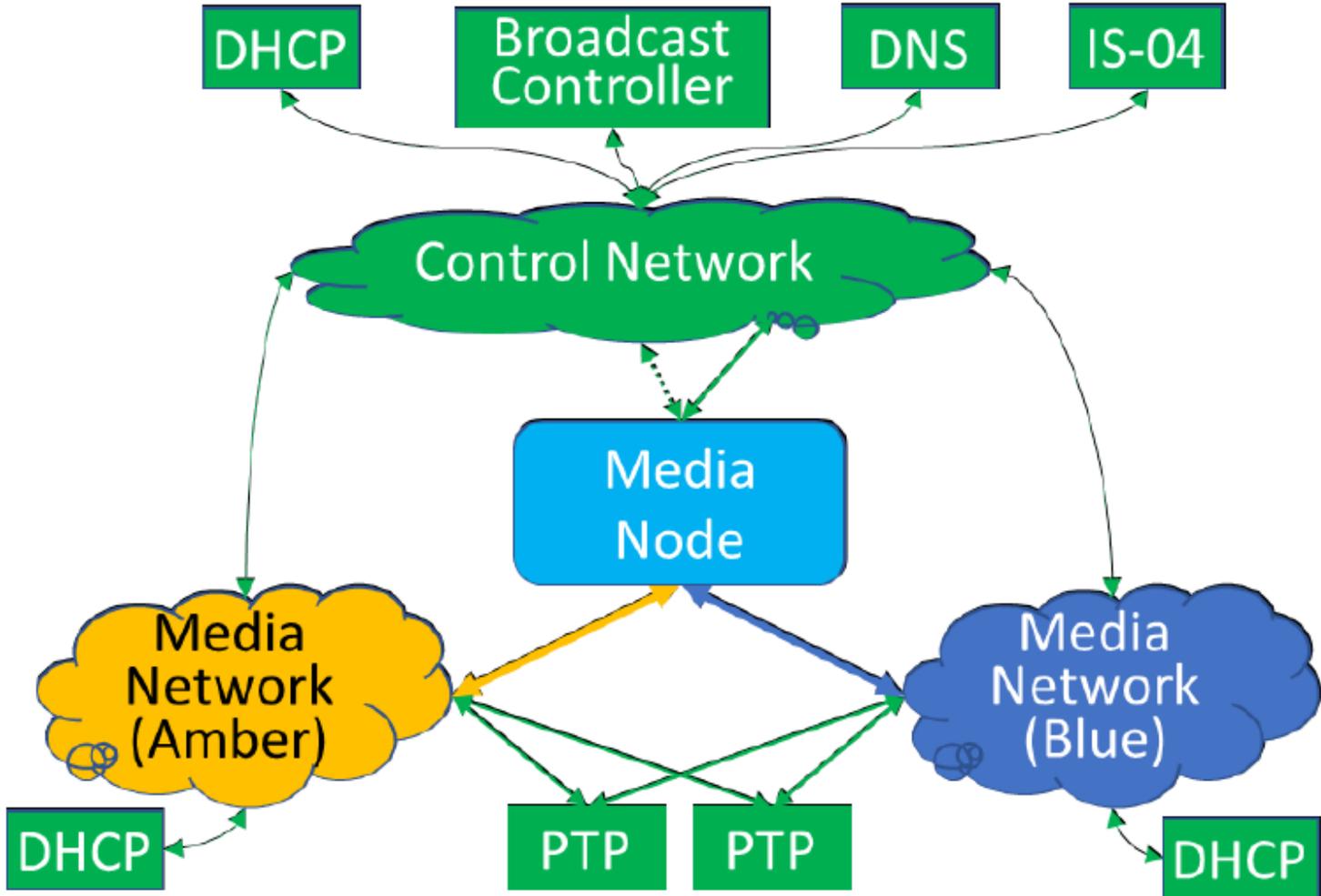
- EBU R 148 Security Tests
- EBU R 143 Security Safeguards
- Secure HTTPS API calls

Widely available

Partially available

Rarely available

Basic Network Components



Full Stack initiative



- AMWA IS-04/05/06 effort of standardization of control elements
 - Allows user to implement full control
 - Allows users to offer code - freely distributed for additive control elements
 - Use of common API sets from vendors participating



Power of Collaboration



- Many users contribute so that all users can benefit
- Proprietary methods confine solutions

2110-22 (Compressed Video)

- Generically defined to include other compression codecs
- Registration method is being worked on to include a variety of codec choices
- Mainly focused on Mezzanine-type light compression methods
- Can be used for others

HDCP and other ProAV needs



- Gaps can be filled with solutions from vendors
- Audio compression can be used with 2110-31
- Metadata and other 'associated' data can be 2110-40/41

AIMS = Open Standards for ProAV



- ProAV Working Group
 - Members can join and collaborate
 - Closely aligned to SMPTE
 - Closely aligned with AMWA
 - Closely aligned with VSF



Thank you

Scott Barella

Scott.barella@pesa.com