IPMX Activity Group

&

JT-NM Tested Event

October 2022

Jack Douglass (PacketStorm)

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PacketStorm Communications, Inc.

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IPMX Activity Group

- Chairs:
  - Jack Douglass (PacketStorm)
  - Jean Lapierre (Matrox)
- Meeting:
  - Every week on Tuesday 8am PST
  - Next meeting is Tuesday Oct 18, 8:00am to 9:00am PT
  - Contact Jack Douglass or Bob Ruhl if you would like to join the IPMX Activity Group.
- 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
  - IPMX series of Technical Recommendations will be published as TR-10
- Working with JT-NM and AMWA

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IPMX Activity Group

Aaron Doughten (Sencore)	Charles Buysschaert (Intopix)	Jean-Baptiste Lorent (IntoPIX)	Phil Nguyen (Nextera)
Alain Bouchard (Matrox)	Chris Lapp (Cisco)	Jed Deame (Nextera Video)	Prinyar Boon (Phabrix)
Albert Faust (Arista)	Clark Williams (Christie Digital)	JJ Eynon (CNN)	Raul Diaz (Intel)
Andre Testa (Matrox)	Daniel BOUQUET (Analogway)	John Belstner (Intel)	Raymond Hermans (Adeas)
Andreas Hildebrand (ALC NetworX)	Danny Pierini (Matrox)	John Dale (Media Links)	Robert Welch (Arista)
Andrew Starks (Macnica)	David Chiappini (Matrox)	John Fletcher (BBC)	Ron Stites (Macnica)
Antoine Hermans (Adeas)	David Mitchinson (Appear TV)	Karl Johnson (Christie Digital)	Tadahiro Watanabe (Macnica)
Arnaud Germain (Intopix)	Gerard Phillips (Arista)	Karl Paulsen (Diversified)	Teiji Kubota (Macnica)
Ben Cope (Intel)	Greg Schlechter (Intel)	Marc Levy (Macnica)	Thomas True (NVIDIA)
Brad Gilmer (VSF)	Greg Stigall (Warner Media)	Mike Boucke (AJA)	Tim Bruylants (intopix)
Bob Ruhl (VSF)	Jack Douglass (PacketStorm)	Paulo Francisco (Evertz)	Wes Simpson (LearnIPvideo)
Cassidy Phillips (Imagine)	Jean Lapierre (Matrox)	Peter Brightwell (BBC)	

Project Status

- VSF TR10-0: Document Organization– Started work
- VSF TR-10-1: System Timing and Definitions document – Draft Posted on VSF website
- VSF TR-10-2: Video – Draft Posted on VSF website
- VSF TR-10-3: Audio – Near completion
- VSF TR-10-4: Ancillary Data – Near completion
- VSF TR-10-5: HDCP Key Exchange Protocol (HKEP) Copy Protection – Posted on VSF website
- VSF TR-10-6: Forward Error Correction (FEC) – Near completion
- VSF TR-10-7: Network Switch Minimum Requirements For IPMX – Near completion
- VSF TR-10-8: NMOS Requirements – Near completion
- VSF TR-10-9: Minimum Requirements to be IPMX – Similar to JT-NM TR-1001-1
- VSF TR-10-10: HDMI Info Frame – Started work
- VSF TR-10-11: Compressed Video – Near completion
- VSF TR-10-12: AES3 Transparent Transport (Audio) – Started work

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Project Status (Continued)

- Target completing and publishing IPMX documents by NAB (April 2023)
- Formal IPMX Interop
  - February / March 2023
  - Dirty Hands Interop
  - Purpose is to validate the IMPX Technical Requirements documents before final release.
- Location: TBD

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JT-NM Tested Event

- Riedel Communications
- Wuppertal, Germany
- August 22 to 26, 2022
- 105 Attendees

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JT-NM Tested Event

- Test Plans
  - SMPTE ST 2110
  - NMOS/TR-1001-1
  - Cybersecurity
- 35 vendors published their results in the final catalog.
- 84 products were tested against the ST 2110 test plan
- 63 Video devices
  - 44 devices were presented as a UHD capable
  - 39 Tx/Rx devices
  - 13 Rx devices
  - 11 Tx devices
- 17 Audio only devices
  - 13 Tx/Rx devices
- 11K tests executed in total

JT-NM Tested Test Team

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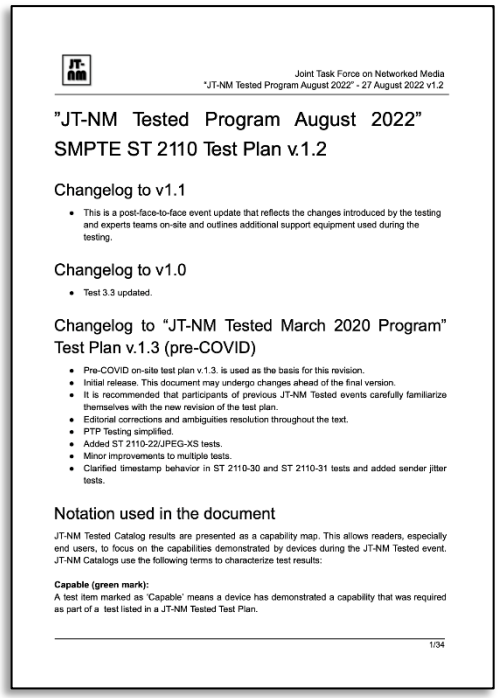
JT-NM Tested – SMPTE ST 2110

- Network Tests
- SMPTE ST 2110-20
- SMPTE ST 2110-22
- SMPTE ST 2110-30
- SMPTE ST 2110-31
- SMPTE ST 2110-40
- SMPTE ST 2022-7



Joint Task Force on Networked Media
"JT-NM Tested Program August 2022" - 27 August 2022 v1.2

"JT-NM Tested Program August 2022"
SMPTE ST 2110 Test Plan v.1.2

Changelog to v1.1

- This is a post-face-to-face event update that reflects the changes introduced by the testing and experts teams on-site and outlines additional support equipment used during the testing.

Changelog to v1.0

- Test 3.3 updated.

Changelog to "JT-NM Tested March 2020 Program" Test Plan v.1.3 (pre-COVID)

- Pre-COVID on-site test plan v.1.3. is used as the basis for this revision.
- Initial release. This document may undergo changes ahead of the final version.
- It is recommended that participants of previous JT-NM Tested events carefully familiarize themselves with the new revision of the test plan.
- Editorial corrections and ambiguities resolution throughout the text.
- PTP Testing simplified.
- Added ST 2110-22/JPEG-XS tests.
- Minor improvements to multiple tests.
- Clarified timestamp behavior in ST 2110-30 and ST 2110-31 tests and added sender jitter tests.

Notation used in the document

JT-NM Tested Catalog results are presented as a capability map. This allows readers, especially end users, to focus on the capabilities demonstrated by devices during the JT-NM Tested event. JT-NM Catalogs use the following terms to characterize test results:

Capable (green mark):
A test item marked as 'Capable' means a device has demonstrated a capability that was required as part of a test listed in a JT-NM Tested Test Plan.

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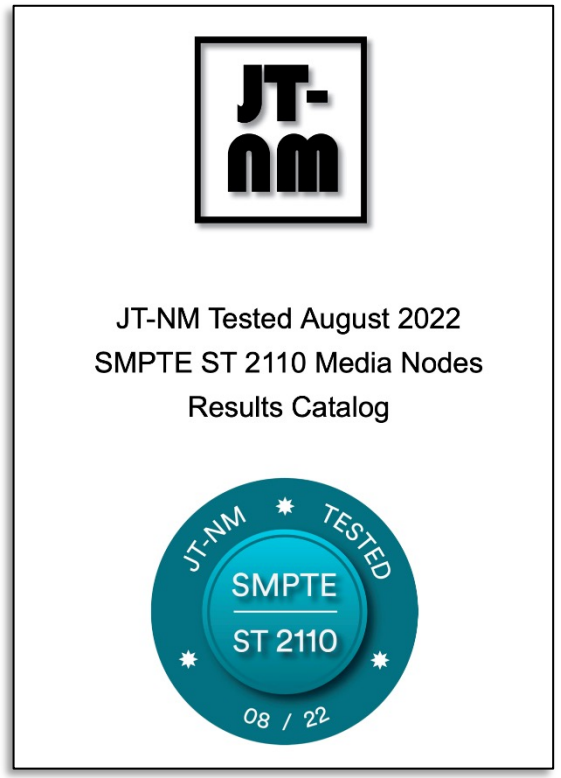

JT-NM Tested August 2022
SMPTE ST 2110 Media Nodes
Results Catalog

JT-NM TESTED SMPTE ST 2110 08 / 22

https://jt-nm.org/jt-nm_tested/

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JT-NM Tested – NMOS/TR-1001-1

- Startup Behavior
- Secure Communication (BCP-003-01)
- Node API & Registration Behavior (IS-04)
- Connection Management (IS-05)
- Audio Channel Mapping (IS-08)
- System Parameters (IS-09)
- Receiver Capabilities (BCP-004-01)
- NMOS Registry Tests

Joint Taskforce on Networked Media
JT-NM Tested August 2022 Program
NMOS/TR-1001 Test Plan v1.2

JT-NM Tested August 2022 Program
NMOS/TR-1001 Test Plan v1.2

Changelog to v1.1, 4 September 2022

- This is a post-face-to-face event update that reflects the changes introduced by the testing and experts teams on-site and outlines additional support equipment used during the testing
- Minor typos fixed

Changelog to v1.0, 21 August 2022

- Added details about NMOS Testing Tool Configuration and an example of UserConfig.py
- Added a link to scripts generateCA and generateCerts
- Clarified some warning exceptions with the NMOS Test Suite
- Corrected the note in section C. Controller allowing embedded Registry in a Controller

Changelog to "JT-NM Tested March 2020 Program" NMOS/TR-1001 Test Plan v1.4", 11 July 2022

- JT-NM Tested March 2020 Program" NMOS/TR-1001 Test Plan v1.4 is used as the basis for this revision.
- Initial release. This document may undergo changes ahead of the final version.
- Participants of previous JT-NM Tested events carefully familiarise themselves with the new revision of the test plan.
- Editorial corrections and ambiguities resolution throughout the text.
- Replaced manual test plan for Media Nodes' Discovery of System Parameters and the Registry with the applicable automated test cases of the NMOS Testing Tool.
- Added test for BCP-003-01 Secure Communication
- Added test for BCP-004-01 Receiver Capabilities.
- Adapted Controller test with using the new test suite for Controllers.

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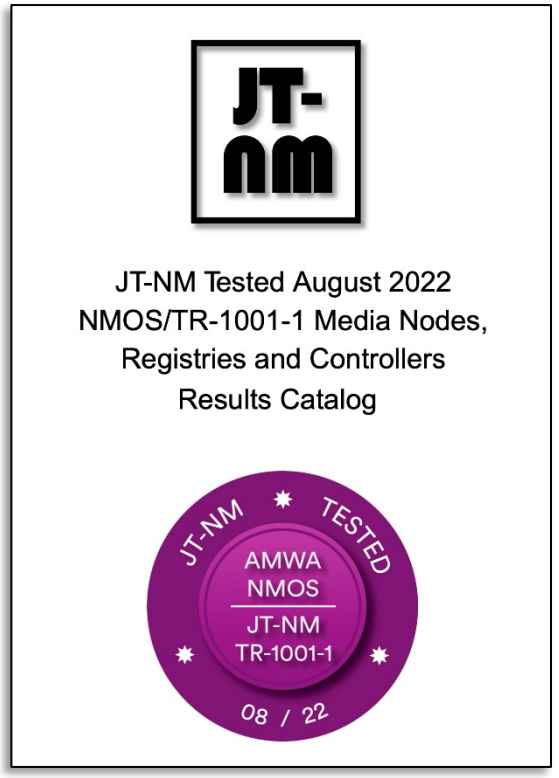

JT-NM Tested August 2022
NMOS/TR-1001-1 Media Nodes,
Registries and Controllers
Results Catalog

JT-NM TESTED
AMWA NMOS
JT-NM TR-1001-1
08 / 22

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End of Slides

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