Interoperability testing and certification

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Standards development

Ideally, describes an already-working system

More ideally, describes use of already-working and well-established standards

Integration is still hard

Language is still hard

Standards testing

Existing standards may have already been tested

Demonstration of independent implementations

Plug tests and other developer interaction

Standards revisions - AES67-2013, 2015, 2018

Protocol implementation conformance statement (PICS)

AES67 PICS excerpt

H.2.4.3 Transport layer

6.3-1	Does the device use Real-time Transport Protocol as defined in RFC 3550?	**6.3**		M	Yes [ ] No [ ]
6.3-2	Does the device operate in accordance with RTP Profile for Audio and Video Conferences with Minimal Control as defined in RFC 3551?	**6.3**		M	Yes [ ] No [ ]
6.3-3	Does the device use the default port allocated for RTP: 5004?	**6.3**		O	Yes [ ] No [ ]
6.3-4	Does the device use the default port allocated for RTCP: 5005?	**6.3**	Devices are not required to implement RTCP	O	Yes [ ] No [ ]
6.3-5a	Is the device capable to use for RTP or RTCP any other port different from the default ports, either fixed or configurable through the management interface or another method?	**6.3**		O	Yes [ ] No [ ]
6.3-5b	If different ports are used, indicate which:				
6.3-6	Does the device use UDP as defined in RFC 768 for transport of RTP?	**6.3**		M	Yes [ ] No [ ]
6.3-7	Does the RTP payload size not exceed 1440 bytes, (when no contributing source (CSRC) identifiers or header extensions are included)?	**6.3**	-	M	Yes [ ] No [ ]
6.3-8	Does the sender not include contributing source	**6.3**		O	Yes [ ] No [ ]

Protocol implementation conformance statement

One row for every compliance statement - may, should, shall…

Requirement level

Supported response

Other notes - port numbers, channel counts...

AES67 excerpt

6.3 Transport layer

The transport layer provides end-to-end communications between devices on a network. The layer handles issues of packet loss and reordering and implements multiplexing so that a single network connection can serve multiple applications on the end station.

Devices shall use Real-time Transport Protocol as defined in RFC 3550. Devices shall operate in accordance with RTP Profile for Audio and Video Conferences with Minimal Control as defined in RFC 3551. Devices should use the default ports allocated for RTP: 5004 for RTP and 5005 for RTCP (see RFC 3551, section 8). Senders may use other or additional ports. Receivers shall support use of other or additional ports by corresponding senders.

Devices shall use UDP as defined in RFC 768 for transport of RTP.

Fragmentation is undesirable and, under this standard, receivers are not required to perform reassembly (6.1). The standard 1500-byte Ethernet MTU is assumed. To prevent fragmentation through a standard Ethernet infrastructure when using IPv4, and to assure future compatibility with IPv6, the maximum allowed RTP payload size shall be 1440 bytes.

NOTE 1 On connections offering lower MTU than Ethernet's 1500 bytes, senders may wish to use a smaller maximum payload than specified here.

AES67 PICS excerpt

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6.3-3	Does the device use the default port allocated for RTP: 5004?	**6.3**		O	Yes [ ] No [ ]
6.3-4	Does the device use the default port allocated for RTCP: 5005?	**6.3**	Devices are not required to implement RTCP	O	Yes [ ] No [ ]
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PICS applications

Development testing - Test plan based on PICS (and other things)

Plug test - Program development based on subset of the PICS

Certification testing - Test development based on mandatory PICS items

Interoperability assessment - Comparison of optional PICS items and notes

Certification testing vs. self-certification

Heavy weight vs. light weight

Waterfall vs. agile

Guarantee vs. agreement

Arbitrated vs. collaborative