

IEC 61883 compatible Transport of Time-Sensitive Audio/Video Streams Audio/Video over IEEE 802 and IETF IP Networks

Boilerplate Draft PAR version 0.03

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Title (2.1)

Draft: IEEE Standard for Transport of Time-Sensitive Audio/Video Streams over IEEE 802 Networks.

Misc

- Number of people expected to work on standard (5.1)
 - 30
- Stakeholders (5.6)
 - Developers and Users of bridged LAN and end-point systems supporting audio/video applications.

PAR Scope (5.2)

- This standard specifies the protocol, data encapsulations and procedures used to ensure that audio and video based end stations can communicate and interoperate using standard lower layer networking services that meet the requirements for time sensitive applications.
- This standard will leverage concepts of IEC 61883 streams as currently defined for IEEE 1394 networks.
- **This standard is intended to work across all IEEE 802 networks that can meet the QOS requirements for time sensitive data.**
- For operation using Ethernet Layer 2 services, it specifies the use of 802.1AS, 802.1Qat, 802.1Qav.
- This standard will define operations that will not preclude operation using Internet Protocol Layer 3 services, such as RTP, UDP and IP.

PAR Scope (5.3)

Is the completion of this document contingent upon the completion of another document?

- Yes, this standard uses
 - IEEE Standard for Local and Metropolitan Area Networks - Timing and Synchronization for Time-Sensitive Applications in Bridged Local Area Networks (802.1AS)
 - IEEE Standard for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks - Amendment 9: Stream Reservation Protocol (SRP) (P802.1Qat)
- Yes, this standard refers to
 - IEEE Standard for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks - Amendment 11: Forwarding and Queuing for Time-Sensitive Streams (P802.1Qav)

PAR Purpose (14)

- <<Current text>> This standard enables stations attached to bridged LANs that meet the respective jitter, wander, and time synchronization requirements for time-sensitive applications to communicate and interoperate for audio and video streams using a common packet format and similar abstracted stream setup, control and teardown protocols.
- << Meeting notes: Not happy with current text. Kevin Stanton to send new proposed text to Alan Bartky to edit into the next version>>

PAR Reason (5.4)

- A great deal of work and effort of late has been applied to the development and specification of 802 based networks that provide networking services for real time applications. To further the work and to provide maximum interoperability of real-time audio and video streaming applications, additional protocol definition is needed above layer 2
- Unfortunately for end stations wishing to provide real time audio and video applications, there are numerous protocol mechanisms and formats often based on specifics of the lower level network protocol specifics.
- For IEEE 1394 bus based networks, a working implementation exists today that meets most of the needs for real-time audio and video streams and that is embodied in the IEC 61883 series standards.
- Unfortunately for both IEEE 802 and IETF Internet Protocol technologies, the IEC 61883 series of standards uses in both its mechanisms and formats specific low level services and functions in IEEE 1394 that are different and/or not provided by IEEE 802 or IETF Internet Protocol.
- With all of the above, the reason for a new standard is to provide a more common set of protocol encapsulations and mechanisms by starting with 61883 type of protocol encapsulations and mechanisms and modifying them to accommodate alternate lower layer protocols besides IEEE 1394.

5.5 Need for the Project

- Most if not all entertainment media going forward is in digital form. Audio and video streaming and interactive applications over bridged LANs need to be enhanced to have comparable real-time performance of legacy out-of-band analog media distribution. There is significant vendor and end-user interest and market opportunity to simplify and come up with a more common method for handling real-time audio video services (e.g. home consumer electronics, professional A/V applications, etc). The use of more common audio video transport over multiple network types will realize operational and equipment cost benefits.
- **This standard defines a class of protocols to work over IEEE 802 Layer 2 networks.** This will enable better end-to-end interoperability of audio and video streaming protocols by defining more common operations that are less tied to the specifics of IEEE 1394. There are currently multiple methods based on media and/or network type and the goal of this effort is for the case of adding 61883 type services to achieve more commonality and interoperability.