

HARMAN

Media Clock Streams

Version 2

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Requirements

- **Provide a mechanism for supplying media clock timing information with minimal bandwidth usage**
- **Supports all audio and video clock rates**
- **No “null data” needs to be sent**
- **Transmission rate is not fixed**
 - i.e. packets do not need to be transmitted at same speed as class A streams

How do I know I want it?

- **We need a way to easily know if a particular media clock stream is one we want to recover from.**
- **Provide nominal frequency**
 - Option 1: The `clock_frequency` and `clock_multiplier` fields of MCN could be used to specify an exact nominal frequency.
 - ~~Option 2: A `nominal_sample_rate` field similar to that of AVTP Audio could be used. Provides quicker decision, but limits available frequencies even if we add more than what's in AVTP Audio.~~
- **Clock Domain**
 - Would it be useful to have a `domain_id` field (like in MCN) to differentiate by clock domain?
- **Stream ID**
 - Needed to differentiate from potential other media clock streams of the same frequency.

- **Use avtp_timestamp**

- Same as the timestamp used for AVTP audio or 61883-6, etc.
- Based on 802.1AS time
- Doesn't matter if presentation time is added as long as all packets use the same method

- ~~“Edge” bit(s)?~~

- ~~– It would be nice to have one or two bits that indicate if the timestamped sample was sampled on the positive or negative (or both?) edge of the media clock.~~
 - ~~• Useful for phase alignment~~

- **Create timestamp_interval field to hold number of samples between timestamp packets**
 - Media clock period = $(ts_2 - ts_1) / \text{timestamp_interval}$
- **Use sequence number so missed packets are easily noticed and don't influence frequency calculation/averaging.**
- **Two methods for reducing the amount of packets**
 - Option 1: multiple timestamps per packet. A listener may choose to only use a subset.
 - Option 2: one timestamp per packet, but the rate could somehow be adjusted so that at first many packets are sent to increase lock speed, then less once lock is attained
 - Use something like 802.1AS Signaling messages for new listeners to request rate increase?

Other Questions



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- **Best effort 1722 control packet**
 - Should some kind of higher priority be used so that they are sent before normal best effort?

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WHERE SOUND MATTERS

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