# Monitoring signal presence on Audio channels

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# Requirement

- Objective:
  - When connecting and routing streams and channels on the network it is useful to see if there is signal present on the channels that are routed.
- Usage:
  - The signal present indication can be used to prevent connecting a to live stream to an amplifier.
  - It can also be used to back trace an issue where a signal is expected but not seen.

# Constraints

- The signal present does not need a high update rate like a live meter, order of magnitude of once per second should be acceptable.
- A single bit per channel is sufficient as only signal present or not is communicated.
- The level for signal present is not governed by Milan specification but it should be high enough (for example -80dBFS) to not be activated by typical noise levels from ADC’s, preamps etc.
- It should not add too much (define) extra traffic to the network.

# Proposal

- As the requirement is to provide a signal present indication per channel in a stream, the requirement is to send 64 bits every second for a high-density stream with maximum 64 channels per stream.
- A mechanism to send unsolicited notifications of counters is already part of the ATDECC/Milan specification.
  - In Milan specification, for an active stream, such a counter PDU is already transmitted once a second due to the constant increment of the frames counter.
  - Both the STREAM_INPUT and STREAM_OUTPUT counter blocks have the ability define vendor specific counters.
  - It is proposed that 2 such counters can be reserved to represent a total of 64 signal present bits.

# Proposal (continued)

- As all 32 counters are always sent whether they are defined or not, this will not add any bandwidth to the communication.

- Our request is to add the following two more ENTITY_SPECIFIC counters in the STREAM_OUTPUT descriptor counters.
  - ENTITY_SPECIFIC_9
  - ENTITY_SPECIFIC_10
- Having these two extra counters will ensure that we need not use the ENTITY_SPECIFIC_1 to ENTITY_SPECIFIC_8 counters for this purpose as they might already have been used by some ProAV manufacturers.

### 7.4.42.2.5. STREAM_OUTPUT Descriptor Counters

The STREAM_OUTPUT descriptor counters are used to count events based on an outcoming stream's data AVTPDUs, see Annex E of IEEE Std 1722-2016.

The **counters_valid** bit field definitions for the STREAM_OUTPUT descriptor are defined in Table 7-158. It is used to count events based on an outgoing stream's data AVTPDUs, see Annex E of IEEE Std 1722-2016.

Table 7-158—**counters_valid field for STREAM_OUTPUT descriptor**

| Bit # | Bit Value | Symbol |
|---|---|---|
| 31 | $00000001_{16}$ | STREAM_START |
| 30 | $00000002_{16}$ | STREAM_STOP |
| 29 | $00000004_{16}$ | STREAM_INTERRUPTED |
| 28 | $00000008_{16}$ | MEDIA_RESET |
| 27 | $00000010_{16}$ | TIMESTAMP_UNCERTAIN |
| 26 | $00000020_{16}$ | TIMESTAMP_VALID |
| 25 | $00000040_{16}$ | TIMESTAMP_NOT_VALID |
| 24 | $00000080_{16}$ | FRAMES_TX |
| 23 to 8 | — | — |
| 7 | $01000000_{16}$ | ENTITY_SPECIFIC_8 |
| 6 | $02000000_{16}$ | ENTITY_SPECIFIC_7 |
| 5 | $04000000_{16}$ | ENTITY_SPECIFIC_6 |
| 4 | $08000000_{16}$ | ENTITY_SPECIFIC_5 |
| 3 | $10000000_{16}$ | ENTITY_SPECIFIC_4 |
| 2 | $20000000_{16}$ | ENTITY_SPECIFIC_3 |
| 1 | $40000000_{16}$ | ENTITY_SPECIFIC_2 |
| 0 | $80000000_{16}$ | ENTITY_SPECIFIC_1 |

The **counters_block** field contains a block of 32 counter values. Each counter value is a quadlet which contains an unsigned 32 bit integer value. The counters and their offsets in the **counters_block** field are defined in Table 7-159.

Table 7-159—**Counter offsets in counters_block for the STREAM_OUTPUT descriptor**

| Offset | Symbol | Meaning |
|---|---|---|
| 0 | STREAM_START | Increments when a stream is started. |
| 4 | STREAM_STOP | Increments when a stream is stopped. |
| 8 | STREAM_INTERRUPTED | Increments when Stream playback is interrupted. |
| 12 | MEDIA_RESET | Increments on a toggle of the **mr** bit in the Stream data AVTPDU. |
| 16 | TIMESTAMP_UNCERTAIN | Increments on a toggle of the **tu** bit in the Stream data AVTPDU. |
| 20 | TIMESTAMP_VALID | Increments on receipt of a Stream data AVTPDU with the **tv** bit set. |
| 24 | TIMESTAMP_NOT_VALID | Increments on receipt of a Stream data AVTPDU with **tv** bit cleared. |
| 28 | FRAMES_TX | Increments on each Stream data AVTPDU transmitted. |
| 32 to 92 | — | Reserved for future use. |
| 96 | ENTITY_SPECIFIC_8 | Entity specific counter #8. |
| 100 | ENTITY_SPECIFIC_7 | Entity specific counter #7. |
| 104 | ENTITY_SPECIFIC_6 | Entity specific counter #6. |
| 108 | ENTITY_SPECIFIC_5 | Entity specific counter #5. |
| 112 | ENTITY_SPECIFIC_4 | Entity specific counter #4. |
| 116 | ENTITY_SPECIFIC_3 | Entity specific counter #3. |
| 120 | ENTITY_SPECIFIC_2 | Entity specific counter #2. |
| 124 | ENTITY_SPECIFIC_1 | Entity specific counter #1. |

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