

IEEE 1722a

Assumptions

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Green Text = Agreed to at a Face 2 Face (was Blue or Red)

Black Text = Not Decided

Changes Marked with Red from last version

Subtype Assignment

- New subtypes
 - 0x02 AVTP Audio Format
 - 0x03 AVTP Video Format
 - 0x04 Control Streams (Automotive/TSCS)
 - 0x7a AVDECC Discovery
 - 0x7b AVDECC Enumeration and Control
 - 0x7c AVDECC Connection Management
 - 0x7d Media Clock Negotiation
- Clarify the C/D bit to make better use of the subtype field

Mac Address Assignment

- MCN needs MAC address (91:E0:F0:00:FF:01)
- 1722.1 has requested a block of 16k MAC addresses to be assigned by 1722a from the 1722 OUI (91:E0:F0:01:00:00 – 91:E0:F0:01:FF:FF)

Changes to current standard

- Redefine gateway info to only be valid for 61883 formats
- Gateway info field to be replaced by a protocol specific field that can be used in new protocols

AVTP Audio Format

- Support PCM audio
 - Support more channels
 - Simpler encode/decode
- Event Markers
- DTCP Support
- HDCP Support

AVTP Audio Format LPCM Format

- Timestamp in every packet
- Define a base required default format, a talker must support one of the formats, a listener must support both of the following:
 - 48k, 6 samples/packet, 32-bit sample size, 8 channels
 - 44.1k, 6 samples/packet, 32-bit sample size, 8 channels
- We may want to split the defaults up by market

AVTP Video

- Support MJPEG (RFC 2435)
- Support RAW sensor data
 - Verify whether this can be done via new IIDC formats.
- Support new native AVTP formats
- Event Markers
- DTCP Support
- HDCP Support

AVF Formats

- MJPEG
 - RFC 2435

Media Clock Negotiation

- Frequency multipliers to match 1722.1
 - 1.001, 1/1.001, 24/25, 25/24
- Clock Quality field(s) to be added between priority1 and priority2
 - Media Clock variance should be determined by PTPDEV (16 bit field)
 - gptp_clock_period field related to gPTP interval typically 8ns or 40ns (8 bit field)
- Required Crystal GUID to be added for informational purposes to MCN Advertise packet

Real Time Format Change (the HDMI problem)

- Include markers to indicate change
 - Prechange indication??
 - Format identifier??
 - Formats are prenegotiated
 - One bit could set to indicate a change is coming and then reset to indicate the change is here
- Required in AVTP audio/video formats
- Add bits to 61883 base formats
- Could this be used by the 802.1 multitalker problem??

Diagnostics

- Counters being considered
 - Missing sequence numbers
 - Sequence number breaks
 - Bad presentation times
 - Stream packets received
 - Missed stream packets counter on a per stream basis
 - Unexpected stream packets counter
 - Late arriving packets
 - Others??
- See presentation from Chris Pane
- <http://grouper.ieee.org/groups/1722/contributions/1722-cpane-debug-counters-and-variables-proposal.pdf>
- Still looking for more idea.

1722/1722a PICS

- 1722/**1722a** only (no 61883 specific PICS)
- Need PICS for AVTP audio/video
- Need PICS for MCN

DTCP/HDCP

- Include bit fields to support DTCP/HDCP
- The DTCP spec uses the high order 2 bits of the sy field to support DTCP
- AVTP formats will provide 4 bits to be used by DTCP and HCDP
- Add 1 bit from a reserved field to support HDCP in the 61883 formats
- 1722 will not work with the DTLA to get approval
- 1722 will only provide what is needed such that someone else could get formats approved by the DTLA

Automotive Support

- Automotive base format
 - Flexray Protocol
 - CAN Protocol
 - LIN Protocol
 - TSCS Protocol
- FlexRay synchronization ??

Low Latency Security/Encryption

- Informative Annex
- MacSec – per link encryption
- 802.1X – per LAN authentication
- DTCP – end to end AES 128 encryption
- How do I secure a live performance?
 - Class A Stream latency

Synchronization bits

- Need Synchronization Marker bits
- Currently M0 and M1
- Do we need more bits? Maybe 4 bits
- M0 used for format change
- M1 used to synchronize external events
- Can we add these same bits to the 61883 streaming formats?

New Sections

- 3-5 Changes as needed
- 6-7 No changes anticipated
- 8 AVTP Audio Format (Ashley)
- 9 AVTP Video Format (Dave)
- 10 Control Streams Format (Auto Subgroup)
 - 10.1 Flexray
 - 10.2 CAN
 - 10.3 LIN
 - 10.4 TSCS

New Annexes

- Annex D – MCN (normative) (Dave)
- Annex E – Diagnostics (informative) (Chris P)
- Annex F – PICS (normative) (Dave)
- Annex G – Marker Bits usage (informative)
 - HDMI Problem (synchronized format changes)
 - Needs contributions
- Annex H – Security (normative)
 - DRM Encryption (DTCP, HDCP)
 - Signed Packets (Jeff)

New Annexes

- Annex I – Other Security Issues (informative)
 - MacSec
 - 802.1X
 - Needs contributions
- Annex J – Video formats (informative) (Dave)
 - I-frame only H.264
 - Bayer data over IIDC
- Annex K –

Other items?

- Need a marker to indicate signed packets?
 - Allocate from version?
 - Allocate from subtype?
 - Other?

Goals?

- First draft in February