IEEE 1722.1 Whats Next

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Current Status

- IEEE 1722.1-2013 is done and published!

  - See mailing list for complimentary copy

  - Available for purchase at

    - http://www.techstreet.com/ieee/products/vendor_id/4697

What Next

- Mistakes and bugs

- Enhancements

- New Features

Mistakes and Bugs

- Memory Object Upload Protocol needs to be broken into segments for devices which can't fit whole image into RAM

- Advertising Entity State Machine and Advertising Interface State Machine both update the available_index. Only the Advertising Entity State Machine should be doing it

- Advertise Interface State Machine:

  - doAdvertise needs to be set to false in both INITIALIZE and ADVERTISE

  - remove setting of rcvdDiscover = FALSE in WAITING

Mistakes and Bugs

- Table 7.26, block_latency field description is incorrect.

- YYY in stream descriptions

- OPERATION_STATUS should not be optional when implementing memory object upload. If the device can not know the percentage done as it loads it still needs to send operation status messages (-1) until complete (1000)

Mistakes and Bugs

- 7.3.2.1.4 should be useful for 1722A AVTP Video streams

- INCREMENT/DECREMENT commands applied to SELECTORs as there is no index and there is no requirement that option values in the selector must be unique

- Need to update to changes in IEEE P1722a subtype definitions

  - Need to pull in the full headers

Enhancements

- ACQUIRE_ENTITY command needs a should that explains how to handle an ACQUIRE_ENTITY command from a second or third controller when one is currently in progress and waiting for CONTROLLER_AVAILABLE to time out.

Enhancements (cont)

- Unsolicited notifications needs a timeout mechanism to remove registered controllers when they are lost/killed without unregistering

  - Proposed: Send CONTROLLER_AVAILABLE at the same rate as the ADP ENTITY_AVAILABLE messages and if 3 in a row are missed the controller is removed.

- Add SET_MAX_TRANSIT_TIME and GET_MAX_TRANSIT_TIME commands for explicitly setting that number

Enhancements (cont)

- cr (controller request) bit to all commands which allows the entity to request the controller perform an action to set the appropriate thing

  - e.g. user changes a front panel know for the sample rate, entity sends SET_SAMPLING_RATE with u and rq set, controller can then call STOP_STREAMING on all of the connected entities, SET_SAMPLE_RATE on all of the entities that are connected to the streams for the entity that requested, and then START_STREAMING on all of the entities.

Enhancements (cont)

- Need to add ACMP_LISTENER_INVALID_CONNECTION, 18, "The AVDECC Listener is being asked to connect to something that it cannot listen to, e.g. it is being asked to listen to it's own AVDECC Talker stream."

- Add ACMP command that is sent from controller to cause talker to disconnect one or all listeners, even if listener is not running at the time

Enhancements (cont)

- Some listeners are unable to connect the same stream to more than one STREAM_INPUT unique id. This typically is not a common use case. We need an ACMP status field value like "LISTENER_NOT_CAPABLE_TO_LISTEN_TO_ONE_STREAM_MULTIPLE_TIMES" … but shorter...

Enhancements (cont)

- Clarify usage of sequence_id in OPERATION_STATUS unsolicited responses

- Clarify that if authentication is required for an entity then ACMP commands are protected as well. If discussion reveals that there needs to be an opion, add the appropriate option to ACQUIRE_ENTITY to allow the controller to lock down talkers and/or listeners

New Features

- Need a Memory Object Download Protocol

- Need a flag in the GET_AVB_INFO command which indicates the link status

- Add barometric pressure control

New Features (cont)

- Add controls to AVB_INTERFACE descriptor

- Add a new control type which is LINK_STATUS (like the MUTE or ENABLE, etc) which is link status, 0 being link down, 255 being link up

- Add a new control type which is link speed

New Features (cont)

- Need a way to show that a device can make connections from itself

- Specify a standard binary format of AEM suitable for flash programming

- Need a way to associate two different STREAM_INPUTs that are used in a redundant mode to receive streams via two different ethernet ports at the same time in a redundant manner. Same for STREAM_OUTPUTs

New Features (cont)

- Needs a CONTROLLER_AVAILABLE state machine to handle querying of controller availability. Specify that REGISTER_UNSOLICITED_NOTIFICATIONS also causes CONTROLLER_AVAILABLE state machine to be run to ensure that the registered controller is still alive. Need to synchronize CONTROLLER_AVAILABLE state machine to the ADP advertise state machines in some way so that the controller and entity always agree on the other's existence with no race conditions.

New Features (cont)

- Do we need a command to set the initialization vector for the AES-GCM session.