Topic

- ☐ For all:
  - ☐ Establishing AV cloud
    do this on a per port basis
    - ☐ Must be full duplex, else legacy port
    - ☐ LLDP (802.1ab)
      This is a protocol to learn the characteristics of a device on the other end of a link
      Only implement the minimum, plus announce support for time synch and AV
      - ☐ If multiple peers, legacy port
        If multiple links announce, then there must be an unmanaged bridge in the way
      - ☐ If peer not AV-enabled, then legacy port
        Probably going to link time-synch and AV bridging together, but may have to do separately since some on standards committee may want it that way
    - ☐ Start up time synch
      - ☐ Do grand master selection
        Needs validation ... current 1588 assumes IP connectivity and slow convergence
      - ☐ Exchange first messages (synch/followup/delay request [maybe rdelay])
      - ☐ If delay between two peers greater than "reasonable" cable delay (a few usec), then legacy port
        Some kind of buffer in the way .... likely an unmanaged bridge
    - ☐ If all those OK, then we have an AV port
  - ☐ Keeping connection up
    - ☐ Time synch/grandmaster selection has some persistence
      Most uncertain part of protocol .. need to validate current 1588 and remap to 802
- ☐ For NIC
  - ☐ Maintaining timing
    - ☐ If clock slave, synch clock using 1588v2 802/layer 2 protocol
    - ☐ if clock master, provide clock using 1588v2 802/layer 2 protocol
  - ☐ Establishing connection
    - ☐ SRP for registration from listener to talker, reservation returns
  - ☐ Sending stream
    - ☐ Uses new traffic shaping requirements on a per-class basis
- ☐ For bridge
  - ☐ Maintaining timing
    - ☐ 0 or 1 clock slave ports, take synch/followup messages and associated timestamps
- ☐ LLDP
  - ☐ Need correct TLV(s) for Ethernet AV ...
    Either one or two TLVs: just "AV bridge" or ("1588/802" and "AV bridge")
- ☐ 1588v2 802/layer2 Protocol
  - ☐ Uses well-known Ethertype
  - ☐ Offset/frequency time synch
    - ☐ Clock master sends synch (and possible followup)
      - ☐ messages are easily parsed to make sure that HW can easily note time of tx/rx
    - ☐ Clock slave uses synch info to maintain offset and freq

- ☐ Offset/frequency time synch

Topic

- - ☐ Clock slave uses synch info to maintain offset and freq
  - ☐ Bridge transfers information from slave ports to master ports using "modifi ed transparent clock" method
- ☐ Establish GM
  - ☐ Default hierarchy with override
- ☐ GM switchover
  - ☐ No glitches on GM change
  - ☐ Forced time update possible
    - ☐ will reset all connections
- ☐ Simple Reservation Protocol
  - ☐ Based on 802.1ak "Multiple Reservation Protocol"

    New draft available, needs intense review for implementation
  - ☐ "SRP" uses MRP to register talker MAC address, multicast address, traffi c class, and BW needed

    Felix Feng of Samsung is author. We need to work with him intensely. He may be a resource for development.
    - ☐ Adds a "reservation" phase when registration gets to talker
      - ☐ Returns to listener

        locks down resources
    - ☐ registration expires if reservation not received

      needed original registration may flood network if paths not established