Audio Video Bridging (AVB) Assumptions

IEEE 802.1 AVB Conference Call

March 28, 2007

Green Text = Agreed to on March 28, 2007's Call

Don Pannell
Marvell
dpannell@marvell.com

AVB Assumptions

- Link Speed
  - 802.3: 100 Mbit/sec or faster (i.e., no 10 Mbit support)
  - 802.11: Leaf node: ?? Bridged (Core): ??
- Link Duplex
  - 802.3: Full Duplex only (i.e., no half duplex support)
  - 802.11: ??
- Maximum Frame Size
  - 802.3: 1522 bytes? Or 2000 bytes? (i.e., no Jumbo frame support)
  - 802.11: ??
- Flow Control
  - 802.3x is not supported and cannot be used on AVB links
- 802.1 Q Tagging
  - All AVB Streams will be Q Tagged
  - All PTP frames (for 802.1AS) will NOT be Q Tagged
  - All SRP frames (for 802.1Qat) will be Q Tagged

AVB Assumptions

- Priorities
  - AVB Class 5 Streams will use a Q Tag priority of 5
  - AVB Class 4 Streams will use a Q Tag priority of 4
  - Legacy frames in the AVB cloud CANNOT use Q Tag priorities of 4 or 5
    - What about Vista? Need a Provider Network Model or
- Class Observation Interval
  - AVB Class 5 is 125 uSec
  - AVB Class 4 is 1-5 mSec?
- Latency
  - 802.3: AVB Class 5: Less than 2 mSec over 7 bridge hops
  - 802.3: AVB Class 4: Less than 10 mSec over 7 bridge hops
  - 802.11: ??
- Latency Variation (Jitter)
  - 802.3: Need to discuss objectives – effects shaper

AVB Assumptions

- PTP Clock Quality
  - Bridges: +/- 100ppm or better from a free running >25 MHz clock
  - End point time synchronization accuracy (up to 7 hops) <= 1 uSec
- Stream Identification
  - Q Tag priority 4 or 5 entering an AVB port?
  - MAC DA address?
- DA MAC Address
  - Multicast Range?
  - Unicast?
- PONs?
- VLANs
  - The VID is a VLAN and not a Stream Identifier
  - Stream Identifiers must be unique per VID
- AE Environments
  - Any AVB Streams and PTP & SRP frames can be AE Tagged
- Provider Networks?

AVB Assumptions

- Other Assumptions …
  - (this is a growing work in process)