



**What's next for SRP?
Stream Registration Protocol rev. 2**

Craig Gunther (cgunther@harman.com)

21 January 2010

Functionality excluded from SRP 1.0

- Unicast Stream destination address
- Multiple Talkers per Stream (one streaming at a time)
- Latency calculation algorithm
- Automatic Talker pruning
- Dynamic bandwidth reservations (modify 'on the fly')
- Variable bit rate reservations (statistical averaging)
- Dynamic changes to latency
- Energy Efficient Ethernet
- Configurable SR Class to PCP mapping
- Gateway between conflicting SR Class domains
- More SR Classes
- Cloud diagnostics (devices along the path)

Unicast Stream destination address

- Application
 - Legacy equipment (VOIP phones)
- Concerns
 - Egress filtering StreamDA will filter *all* traffic to that DA
 - [av-fuller-filtering-sr-classes-0708-v01.pdf](#)
- Solutions?
 - We cannot do egress filtering since two Talkers may be sending to a unicast StreamDA from two ingress ports of the same bridge and we don't want to stop both streams. 802.1Q (8.6.2) supports ingress filtering by VID membership. Is ingress filtering powerful enough to do filtering by MAC DA + PCP? If so, we could filter the stream on ingress if that port only has that single stream destined for the MAC DA. If there are two streams for the MAC DA on that ingress port, then the previous bridge must filter it.

Multiple Talkers per Stream (one streaming at a time)

- Application
 - Network is a video switch
 - Pro Audio house clock
- Concerns
 - Coordinating Talkers
 - Exceeding bandwidth if more than one Talker streaming at a time (overlap during transition from one Talker to another)
 - Reservations on inactive paths wastes bandwidth
 - TSpec mismatches – what to do?
 - Switch in 20ms or less for broadcast TV (MRP could take 200ms/hop)
- Solutions?
 - Ingress filtering

Latency calculation algorithm

- Application
 - Identical operation of multi-vendor solutions
- Concerns
 - Someone needs to derive the formula
- Solutions?
 - [av-fuller-queue-delay-calculation-0809-v02.pdf](#)

Automatic Talker pruning

- Application
 - Simplified set up
 - Automatic operation
- Concerns
 - Denial of Service
 - All Listeners must be capable and involved
- Solutions?

Dynamic bandwidth reservations

- Application
 - Listener surfs from HD channel to SD channel and bandwidth requirements shrink
- Concerns
 - Bandwidth may not be there for SD to HD channel surf. How does Listener request change from Talker? TSpec has been removed from Listener.
- Solutions?
 -

Variable bit rate reservations

- Application
 - More video channels for a given medium since statistically not every channel will need full bandwidth at the same time
- Concerns
 - What happens when instantaneous requirements exceeds available bandwidth?
- Solutions?
 - Temporarily steal bandwidth from Best Effort traffic. Make sure variable bandwidth reservations don't exceed ?95%? of total link bandwidth?

Dynamic changes to latency

- Application
 - Management reconfigures the Class A % of bandwidth marker
 - Management reconfigures maximum latency in a bridge
 - Management activates more AVB ports
- Concerns
 - Listeners have already configured buffers
 - Increased latency could eliminate active Listeners
 - How to synchronize the change?

- Solutions



Energy Efficient Ethernet

- Application
 -
- Concerns
 - Increased latency
- Solutions?
 - Disable Periodic timer

Configurable SR Class to PCP mapping

- Application



- Concerns

- What if our SR class-to-PCP mapping doesn't match our neighbor?

- Solutions

- Use LLDP to inform neighbor of our SR class-to-PCP

Gateway between conflicting SR Class domains

- Application



- Concerns



- Solutions



More SR classes

- Applications



- Concerns



- Solutions



Cloud diagnostics

- Application
 - Topology discovery
- Concerns
 -
- Solutions
 - 802.1ag LinkTrace?
 - LLDP + SNMP (which MIBS?)



AUDIOACCESS

BECKER



harman/kardon



lexicon



Harman International

Premium Solutions for Audio and Infotainment