AVB stack timing:  
a sync/async proposal

Chuck Harrison  
Far Field Associates, LLC  
cfharr@erols.com  
Ver. 1, 4 April 2007
Overview

• Disclaimer: “brainstorming” mode.
• Two client interface “styles”:
  – Synchronous: hard real time, e.g. would interface with I2S
  – Asynchronous: “soft” real time, e.g. ring buffer
• Synchronous service relies on existence of a global clock reference (802.1AS)
• Adaptation layer can map Synchronous on top of Asynchronous.
Baseline audio example

Synchronous media delivery service
fixed latency

Asynchronous media delivery service
bounded latency guarantee
Asynchronous Interface: Example implementations

for hardware jockeys:

```
if( SpaceAvail(Q_AV_XMT) )
  Enqueue(Q_AV_XMT, avData);
```

```
Success =
  ((avData=Dequeue(Q_AV_RCV)) != NULL);
```
Multiple asynch interfaces

SPDIF IN -> Sync/Async adaptation layer -> LLC -> MAC

Sync/Async adaptation layer

AVBTP transport

AVB Global clock Service 802.1AS

mixer/processor etc.

Asynchronous media delivery service
bounded latency

Asynchronous media delivery service
bounded latency

SPDIF OUT

Synchronous media delivery service
fixed latency

mixer/processor etc.

AVBTP transport

AVB Global clock Service 802.1AS

802.1AS Service

Global clock

Synchronous media delivery service
fixed latency

Asynchronous media delivery service
bounded latency

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