Case 1: Without a distributed CTG, Talkers typically generate presentation timestamps without reference to a specific phase of the media clock. This can make the Listener's job difficult, if Listener is operating on multiple streams within the same media clock domain.

Case 2: When multiple Talkers synchronize their presentation timestamps to a CTG, streams arrive at the Listener with close alignment, and well within the Listener's sync window. The duration <width?> of the Listener's sync window is defined in <ref CRF section>
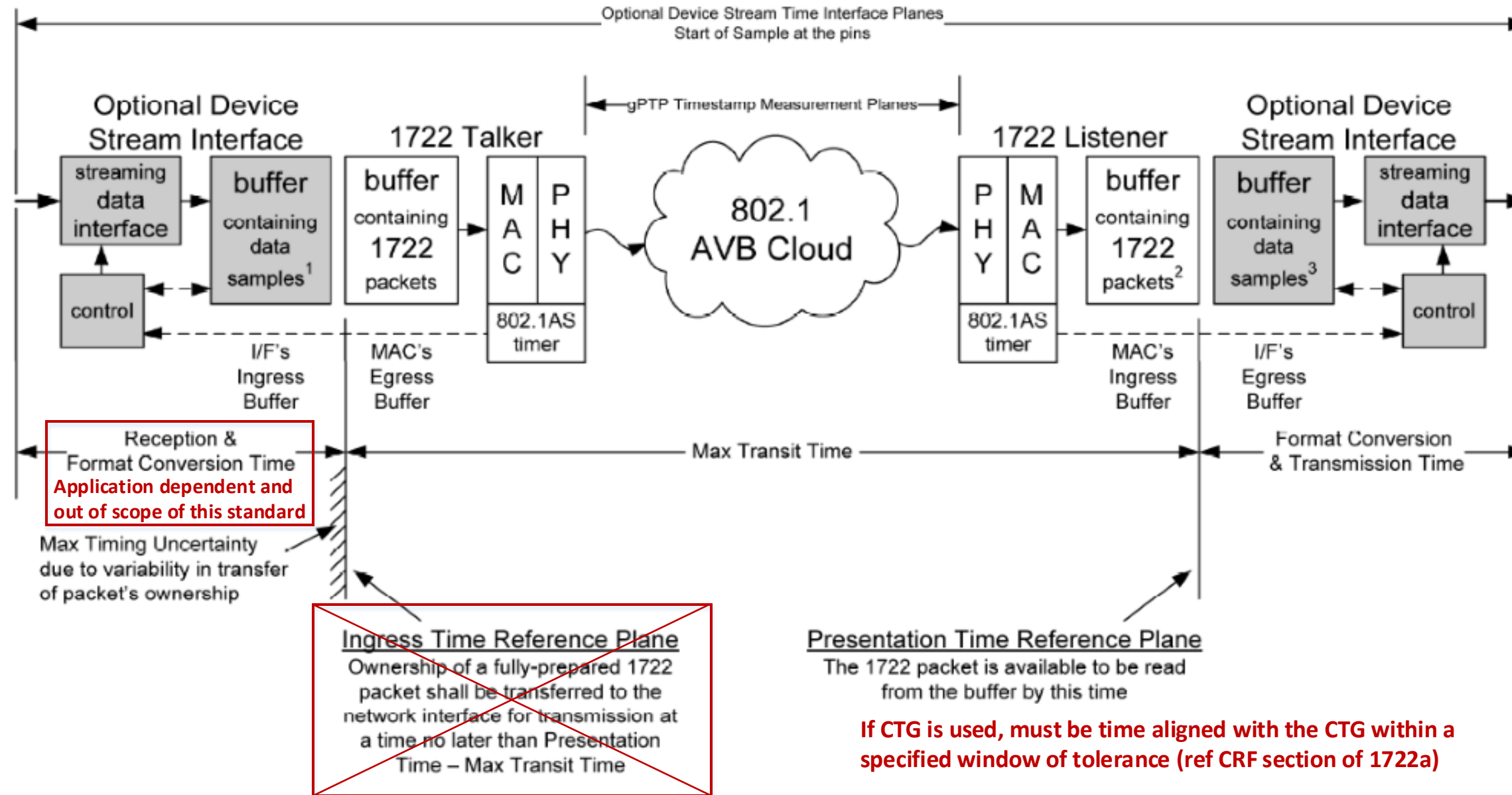
Figure <5.x> AVTP Listener's perspective when receiving media streams from multiple Talkers

Comments on current "timing measurement planes diagram" in 1722-2011
Question: Is this diagram due for changes or replacement? (not sure.. Discuss..)

Optional Device Stream Time Interface Planes
Start of Sample at the pins

gPTP Timestamp Measurement Planes

Optional Device Stream Interface

1722 Talker

streaming data interface

buffer containing data samples[1]

buffer containing 1722 packets

M A C

P H Y

802.1AS timer

control

802.1 AVB Cloud

1722 Listener

P H Y

M A C

buffer containing 1722 packets[2]

Optional Device Stream Interface

buffer containing data samples[3]

streaming data interface

control

802.1AS timer

I/F's Ingress Buffer

MAC's Egress Buffer

MAC's Ingress Buffer

I/F's Egress Buffer

Reception & Format Conversion Time
Application dependent and out of scope of this standard

Max Transit Time

Format Conversion & Transmission Time

Max Timing Uncertainty due to variability in transfer of packet's ownership

Ingress Time Reference Plane
Ownership of a fully-prepared 1722 packet shall be transferred to the network interface for transmission at a time no later than Presentation Time – Max Transit Time

Presentation Time Reference Plane
The 1722 packet is available to be read from the buffer by this time

If CTG is used, must be time aligned with a specified window of tolerance (ref CRF section of 1722a)

**This implies specifics about implementation (i.e. how stream packets are generated prior to going on the wire) which arguably should be out of scope**

Suggested Change
A Talker shall queue each 1722 stream packet for transmission at a time no later than (PT – MTT), where PT is the presentation time in the current packet and MTT is the Max Transit Time.

Possible new diagram to help more cleary define and quantify the "presentation time offset" concept and requirement
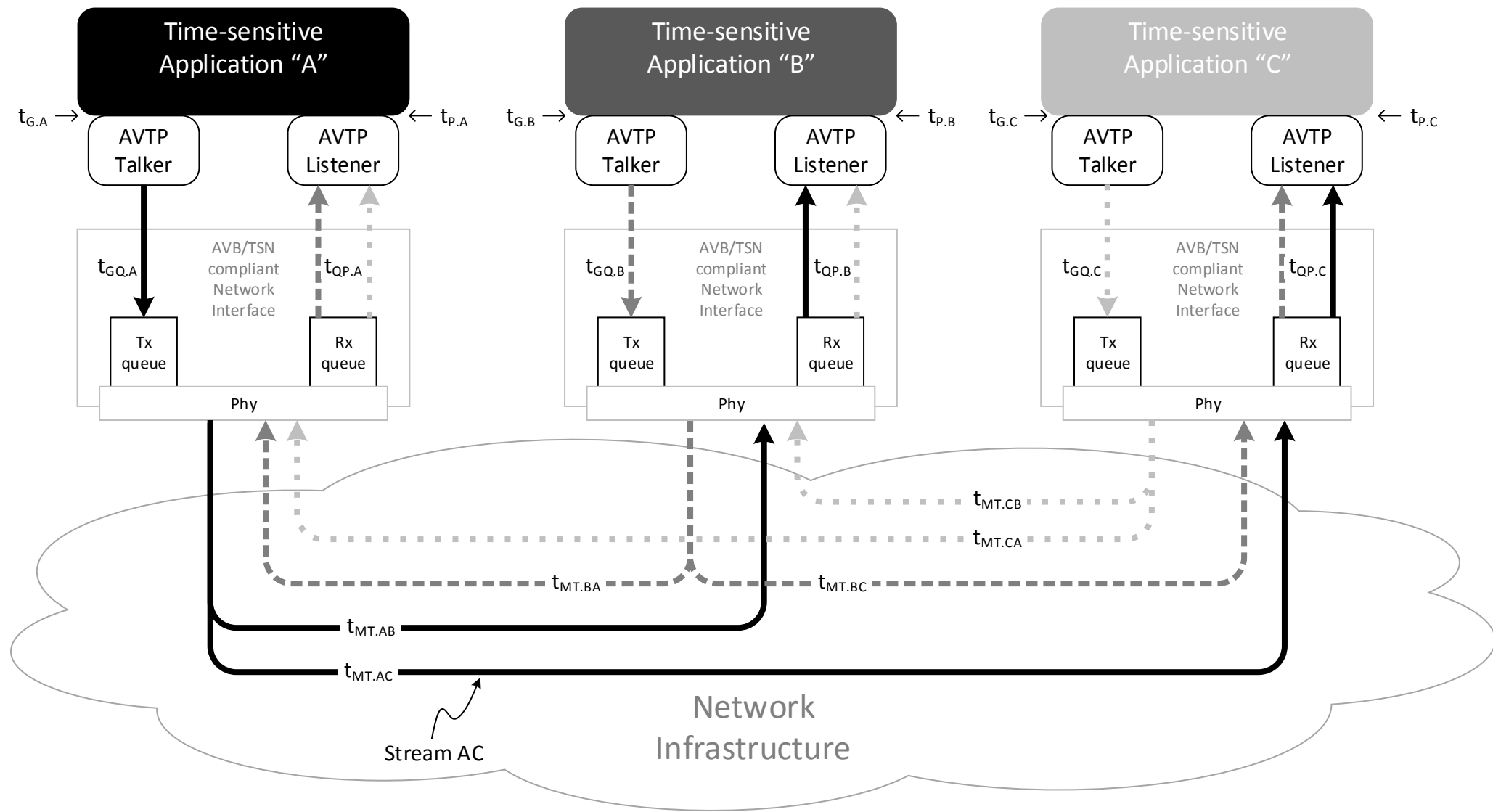
Example: Calculation of minimum Presentation Time Offset for Stream AC

$$PTO_{AC} \geq t_{GQ.A} + t_{MT.AC} + t_{QL.C}$$

where: $t_{GQ.A}$ = time from sample generated to packet in tx queue for Talker A

$t_{MT.AC}$ = max transit time across network from Talker A to Listener C

$t_{QL.C}$ = time from rx queue to ready for app consumption for Listener C