



# The Structure Agnostic Mapper clarifications

Jouni Korhonen  
Broadcom Ltd.  
6/9/2016  
revision 2

# Background

- ❑ The IEEE P1904.3/D1.0 draft defines a Structure Agnostic (CPRI) Mapper.
- ❑ Current text implies the mapper is CPRI specific, which is not true.
  - The PAR makes it clear the structure agnostic mapper is not CPRI specific.
- ❑ The synchronization properties of the structure agnostic mapper are a bit vague in D1.0 and deserve to be clarified.

# Assumptions

- ❑ The RoE does not know ~anything about the radio framing protocol it is transporting..
  - It only requires a flow with periodic properties..
  
- ❑ The mapper does know every detail of the radio framing protocol:
  - (de)mapper/(de)packetizer takes care of proper frame alignment into the RoE payload.
  - Mapper knows the synchronization events/points.
  - Mapper knows the radio framing protocol PCS details and strips off/adds those..
  
- ❑ Mapper and RoE need to share some knowledge “transparently” and the minimum required is the synchronization event/point.

# Issues

- The synchronization point cannot float in the RoE packet, since there is no indication where it is:
  - The synchronization event/indication itself is either explicitly or implicitly encoded into the RoE header (e.g., the orderingInfo field).

# Proposal to be added to D1.x

- ❑ Clarify that the Structure Agnostic Mapper has an explicit synchronization point in the RoE payload and this is independent of how the synchronization event/point is actually indicated in the RoE packet.
- ❑ When the RoE packet contains payload that triggered the desired synchronization event, then the first octet of the RoE payload is the synchronization point.
- ❑ If the payload contains multiple eligible synchronization points, then the one that generated the synchronization event at the sender mapper is used as the synchronization point and aligned to the start of the RoE payload.

# Example implications

## ❑ Assuming CPRI transport:

- The Basic Frame that contains the Sync Byte starts the RoE payload.
- The control word with the Sync Byte (Z.0.0) is the first octet of the RoE payload.

## ❑ Assuming OBSAI transport:

- The Message Group after the last seen Idle Code (K28.5 or K28.7) starts the RoE payload.
- The first octet of the Message Group is the first octet of the RoE payload.

## ❑ Assuming “tunneling” transport:

- The first octet of the RoE payload is associated to the orderingInfo.
- There probably is no explicit synchronization event.

# Considerations

- ❑ It is the mapper/system setup that decides which synchronization point generates the synchronization event:
  - I.e., the one that RoE receiver can detect containing the synchronization point e.g., based on the RoE header orderingInfo.
  
- ❑ Not all eligible synchronization points (e.g. CPRI hyperframe Sync Byte) has to be considered as an synchronization event:
  - Allows e.g., synchronization event be once in a radio frame..

# Discussion..