

The background is a solid red color. It is decorated with various white and light red digital and network-related graphics. On the left, there are faint, semi-transparent icons of a code editor with a '</>' symbol, a waveform graph, and a circular target or radar-like graphic. In the center and right, there are abstract network diagrams consisting of interconnected nodes (small circles) and lines, with some nodes highlighted in a brighter red. Faint binary code (0s and 1s) is also visible in the background.

AHG12/AHG17: Subpicture Properties

JVET-P0245

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Geneva, October 2019 meeting



Introduction

- Subpicture design principle
 - Each subpicture can be independently coded
 - Multiple subpictures can be aggregated into a picture which can be decoded as a single picture
- Authors believe goal should be to ensure maximum interoperability without introducing significant complexity beyond a profile without subpicture support
- Propose set of “subpicture rules” to be maintained as the subpicture design evolves until it is finalized

Common DPB

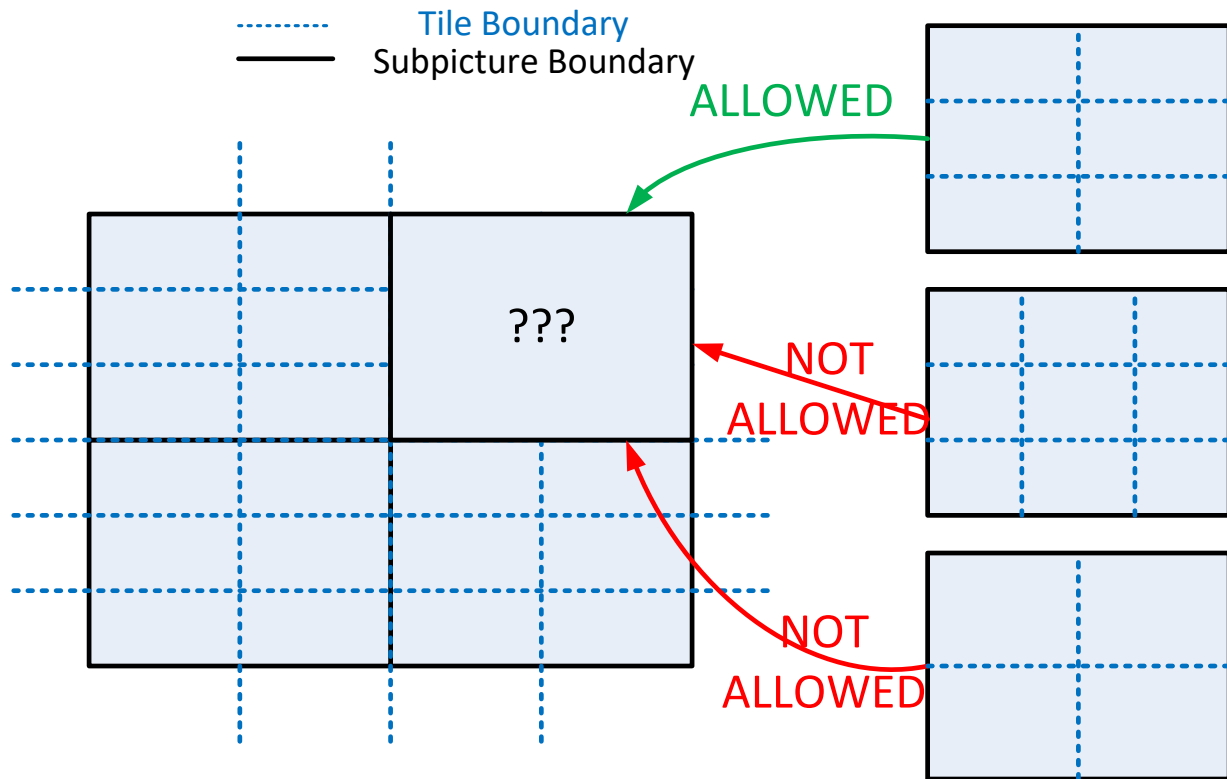
- All of the subpictures in the aggregate picture must use a common DPB with common DPB management.
- It is claimed that this is a critical property to maintain as there is significant complexity with having to track and switch between multiple DPB configurations.

Subpictures sharing the same DPB

- Common DPB means each subpicture has these properties:
 - Same frame rate
 - Same reference picture lists
 - DPB can only be flushed at the same picture
 - Same temporal layer
 - Same reference picture resampling (RPR) scale factor
 - Same collocated reference picture
 - Delta-POCs to all reference pictures must be the same

Tile structure must align at the picture level

- Tile rows and columns at the picture level apply across the entire picture.
- Tile structure used by each sub-picture must align with the tile row/column grid at the picture level.



Consistent SPS/PPS/APS parameters

- SPS/PPS/APS parameters must be the same for all the subpictures in a picture.
- Consider a picture without subpictures, these parameters can be effectively loaded once to decode the whole picture.
- If these parameters are allowed to change, then it is claimed there is significant complexity with having to track and switch between different SPS/PPS/APS parameters based on the subpicture.
- Without such a requirement, every parameter in the standard could effectively change in every slice.



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