

JCTVC-J0075

AHG10 Hooks for Scalable Coding: Video Parameter Set Design

Proposal (1)

VPS is proposed to be extended in scalable extensions of HEVC to contain:

1. The dependencies between layers
2. The mapping of reserved_one_5bits, i.e. layer ID, to specific scalability properties (e.g. dependency_id, quality_id, view order index).

Proposal (2)

Two alternative approaches:

1. “Cross-layer VPS”:

- Dependencies of between layers of the entire coded video sequence and the properties of all layers in a single VPS is active for all layers.
- If layers are extracted from the bitstream, the cross-layer VPS may describe layers that are no longer present in the bitstream.
- No changes required in HEVC v1

2. “Layered VPS”:

- Dependencies and properties of a single layer.
- The layered VPS NAL unit uses reserved_one_5bits and hence VPS NAL units are extracted along with other layer-specific NAL units in sub-bitstream extraction.
- A different VPS is active for each layer, although the same vps_id is used in all active VPSes.
- Impact for HEVC v1: vps_max_layers_minus1 syntax element in VPS becomes redundant and can be removed.