

JCTVC-081: On reference picture list construction

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1 proposal and 1 discussion

▣ 1 proposal

- ▣ To change the reference picture list construction process, such that reference pictures with greater temporal_id never appear in the reference picture lists

▣ 1 discussion

- ▣ Are the following needed?
 - gaps_in_frame_num_value_allowed_flag in SPS
 - Processes for generating and handling of “non-existing” pictures

Reference picture list construction proposal

- **Current reference picture list construction process**
 - Initialization
 - Truncation per num_ref_idx_lx_active_minus1
 - Modification per reference picture list modification commands in slice header
- **VCL NAL units include temporal_id in NAL unit headers**
 - Pictures shall not use reference pictures with greater temporal_id for inter prediction
 - Therefore there is no good reason to include those reference pictures in the reference picture list(s)
 - Rather, there is disadvantage: either reference index values may become unnecessarily greater (which affects coding efficiency, some times significantly), or the encoder must figure the appropriate reference picture list modification commands and include them in to slice headers
- **Proposal**
 - Slightly modify the reference picture list construction process, such that reference pictures with greater temporal_id never appear in the reference picture lists
 - Texts for restrictions in list initialization and modification processes in document

Discussion related to gaps in frame_num values

- VCL NAL units include temporal_id in NAL unit headers for better support of temporal scalability
- Thus it does not make much sense to disallow gaps in frame_num values, i.e. it does not make much sense to allow gaps_in_frame_num_value_allowed_flag in SPS to be equal to 0, or in other words, should the flag be removed from SPS?
- Furthermore, are the processes for generating and handling of “non-existing” pictures needed in the specification? This should be studied.

Thank you

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