

JCTVC-G548:

AHG21: Construction and modification of
predefined reference picture sets and
reference picture lists

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■ Modification of predefined RPS

- ❑ Temporary modifications may be needed e.g. pruning of leading pictures after CRA/IDR (by inverting “use_flag” or by removing/pruning RPS)
- ❑ Current design sends additional RPSes for leading pictures.

■ Signalling of long term ref pics

- ❑ We think that long term ref pic and its special handling (e.g. MV scaling, WP weights) are necessary.
- ❑ However, it is costly to continually signal delta POC for long term ref pics in consecutive slice headers.

■ Repetitive reordering of reference picture lists

- ❑ Some applications (e.g. real-time encoding) have predefined/intended reference picture lists (RPL), similar to RPS. These RPLs may be ordered differently from the initial/default order.
- ❑ Current design signals the same RPL reordering commands multiple times in the slice headers having same relative position within GOP.

1. Periodic RPS location

- ❑ Move multiple periodic RPSes from PPS to SPS. Some applications may use same GOP structure over entire coded video sequence. There may be scenarios where small PPS size is desired (e.g. PPS is sent frequently for signalling Q-matrix changes, in-band PPS transmission for random access)

2. Absolute POC signalling for long term ref pic

- ❑ Signal long term ref pic in predefined RPS (instead of “active” RPS in slice header) using absolute POC.

3. Hierarchical modification of predefined RPS

- ❑ Allow modification of a predefined RPS in PPS (applies to all slices referring to the PPS) and in slice header (applies to current slice only). APS is assumed to carry ALF and SAO syntaxes only.

4. Multiple modification commands

- ❑ Proposed commands include removing ref pic, adding ref pic, inverting usage flag, moving long term to short term (and v.v.).
- ❑ Commands are indicated using indexes (similar to MMCO). More operations/commands can be added.

5. Predefined reference picture list

- ❑ Send predefined RPL construction (including reordering commands, if any) together with predefined RPSes in SPS and/or PPS.

(in G548 document)

- **Benefits of proposed aspects:**

- Improving RPS flexibility while keeping logical and clean design.
- Removing redundancy in signalling long term ref pic and repetitive RPLs.

- **We recommended JCT-VC to review and consider each proposed aspect of this contribution.**

Thank you