

JVET-Q0141

Non-CE1/Non-CE3: Deblocking filter control for lossless blocks

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■ Problem statement

- Lossless coding is realized without introducing an additional flag (e.g. `cu_transquant_bypass_flag`) in the current VVC design.
- In the mixed lossless/lossy case, deblocking filter can be applied to “lossless block” depending on QP value of the adjacent block.
- It is not guaranteed that “lossless block” is completely lossless in VVC.

■ Proposal

- Deblocking filter is not applied for TU regardless of filtering decision when all of the following conditions are true:
 - Transform skip is applied,
 - Q_p' is less than or equal to 4.

- Lossless coding is realized without introducing an additional flag (e.g. `cu_transquant_bypass_flag`) in the current VVC design.
 - It is from discussion of the previous meeting.

- Deblocking filter doesn't have any disabling flag for block level.
 - In the mixed lossless/lossy case, deblocking filter can be applied to “lossless block” depending on QP value of the adjacent block.
 - It is not guaranteed that “lossless block” is completely lossless in VVC.

- On the other hand, deblocking filter can be disabled CU level by `cu_transquant_bypass_flag` in HEVC RExt.

- VVC doesn't have functionality that realizing completely lossless for block-level in contrast with HEVC RExt.

- **Deblocking filter is not applied for TU regardless of filtering decision when all of following condition are true:**
 - Transform skip is applied,
 - Q_p' is less than or equal to 4.

- **It is the similar way of deblocking filter control for CU with palette mode in VVC (and HEVC RExt).**

- **It is also the similar way of deblocking filter control for a lossless block by `cu_transquant_bypass_flag` in HEVC RExt.**

■ Problem statement

- Lossless coding is realized without introducing an additional `cu_transquant_bypass_flag` in the current VVC design.
- In the mixed lossless/lossy case, deblocking filter can be applied to “lossless block” depending on QP value of the adjacent block.
- It is not guaranteed that “lossless block” is completely lossless in VVC.

■ Proposal

- Deblocking filter is not applied for TU regardless of filtering decision when all of the following conditions are true:
 - Transform skip is applied,
 - Q_p' is less than or equal to 4.

■ Proposal is recommended to adopt to VVC D8 and VTM-8.