

JCTVC-K0152

AHG7: Chroma sampling filter hint SEI

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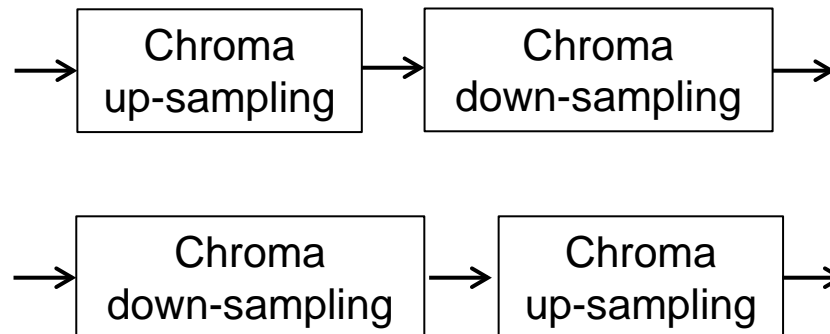


# Background 1

- **Video signal specifies colour descriptions which are colour primaries, transfer characteristics and matrix coefficients.**
  - Those information are included in YUI.



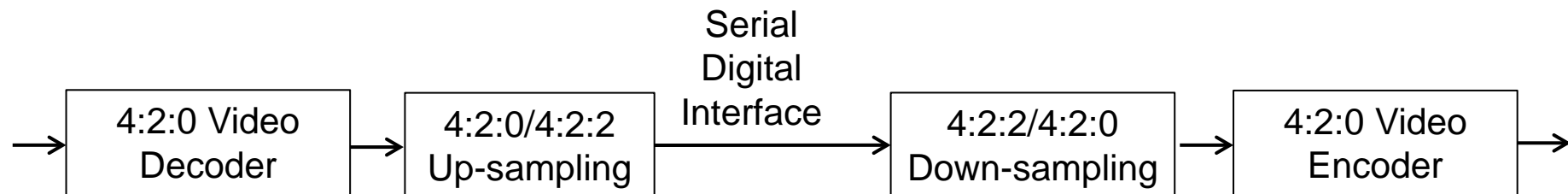
- **Consistency of sampling filter is needed.**





# Background 2

- A problem of chroma shift when two or more 4:2:0 codecs are concatenated is known.



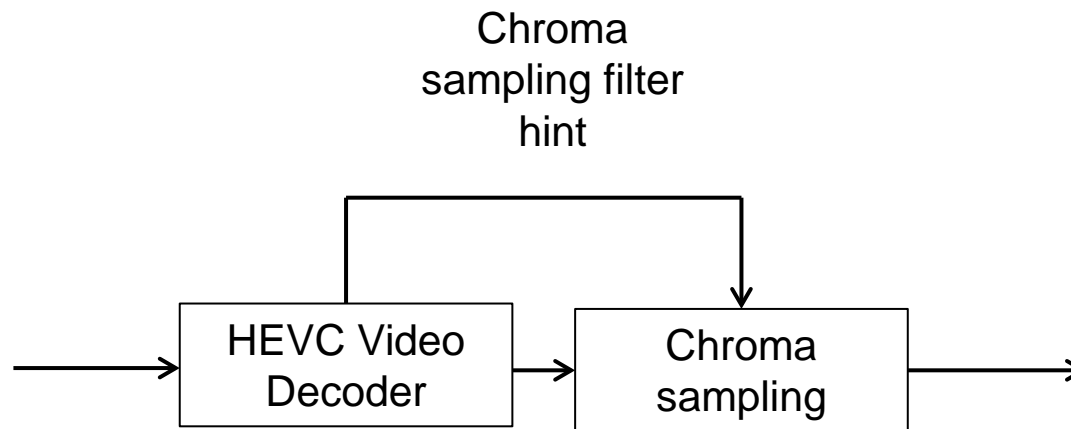
- A. Nakagawa, K. Kazui, and S. Kobayashi, “Proposal on standardization of a filter set for converting between 4:2:2/4:2:0 chrominance sampling,” ISO/IEC JCT1/SC29/WG11, MPEG2008/M15569, Hannover, July 2008.
- **SMPTE 2050-1:2012 has been published recently.**
  - Filter coefficients for 4:2:0/4:2:2 and 4:2:2/4:2:0 conversions.



# Proposal

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- In order to solve those problems generally, a framework of SEI is introduced.
- Selection of minimum syntax elements for chroma sampling filter information





# Proposed specification

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- **Coded chroma\_format\_idc and bit\_depth**
- **Target chroma format, bit depth, max value and min value**
- **Vertical filter coefficients considering interlace source**
  - 4:2:0/4:2:2 (up-sampling) and 4:2:2/4:2:0 (down-sampling)
  - Implicit set is SMPTE RP2050-1.
- **Horizontal filter coefficients**
  - 4:2:2/4:4:4 (up-sampling) and 4:4:4/4:2:2 (down-sampling)
  - Implicit set is TM5.



# Conclusion

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- **A SEI message for chroma sampling filter has been proposed.**
- **Any conversion of 4:4:4, 4:2:2 and 4:2:0 can be provided.**
- **Fujitsu cross-checked this proposal mentally.**

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