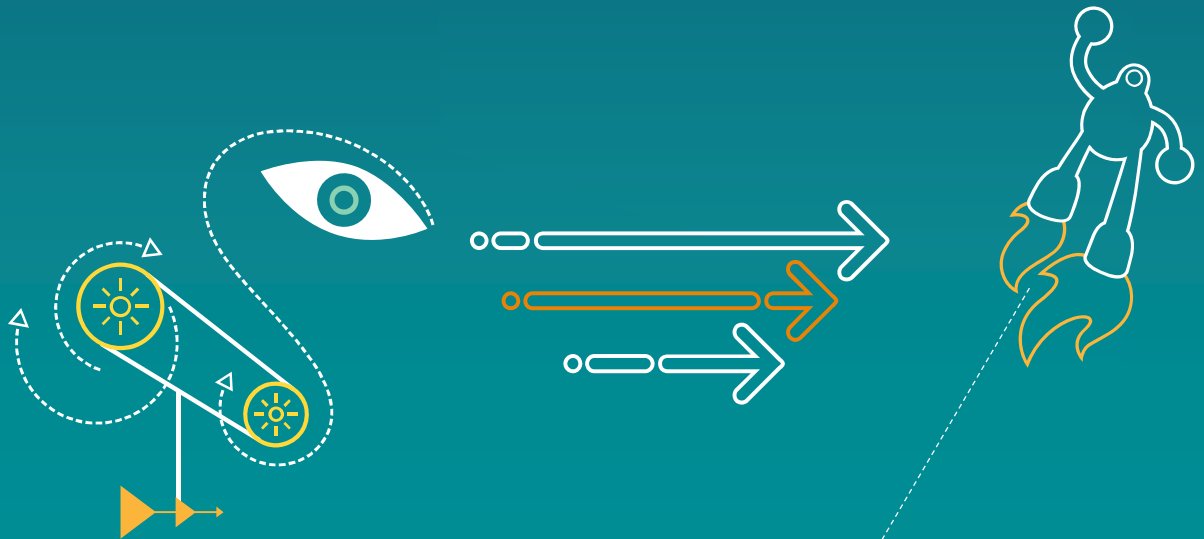R. Joshi, V. Seregin, K. Rapaka, Y.-K. Wang M. Karczewicz

JCTVC-V0059
Suggested text specification and software fixes for constrained intra prediction

QUALCOMM®

Method 1

- For constrained intra prediction

  - Allow intra prediction reference samples to be from intra or intra block copy

  - Allow intra block copy prediction reference samples to be from intra or intra block copy prediction

Method 1

- ## Specification changes

  - Introduce definition of intra block copy prediction

  - Change the semantics for constrained_intra_pred_flag

  - Add bit-stream conformance constraint specifying that all reference samples needed to form intra block copy prediction are coded using intra prediction or intra block copy prediction

    - In case of non-444 formats, include samples needed for chroma interpolation

- ## Software changes

  - Modify isIntraBC(.) function

    - For bi-predictive block, check that both reference indices refer to the current picture

  - Add bit-stream conformance constraint for constraint intra prediction

    - Take samples needed for chroma interpolation into account

Method 2

- The meeting notes for BoG report JCTVC-O352
  - For constrained intra prediction:
    - An IntraBC block is regarded as available for determination of intra prediction reference samples
    - Informative note suggesting that an encoder should ordinarily avoid referencing reconstructed pixels from inter blocks when encoding an IntraBC block.

Method 2

- ## Specification changes

  - Definition of intra block copy predition

- ## Software changes

  - Modify isIntraBC(.) function

    - For bi-predictive block, check that both reference indices refer to the current picture

  - While checking reference samples for intra block copy prediction, take the samples needed for chroma interpolation into account

Summary

- For constrained intra prediction

Method 1	Reference samples		
	Intra	Intra block copy	inter
Intra prediction	Yes	Yes	No
Intra block copy prediction	Yes	Yes	No

Method 2	Reference samples		
	Intra	Intra block copy	inter
Intra prediction	Yes	Yes	No
Intra block copy prediction	Yes	Encoder	Encoder