



**JCTVC-M0115**

**Non-SCE1: simplification of intra mode coding in SHVC**

E. Francois, S. Shi, P. Onno, G. Laroche, C. Gisquet

JCT-VC 13<sup>th</sup> Meeting, Incheon, April 2013



**Canon**

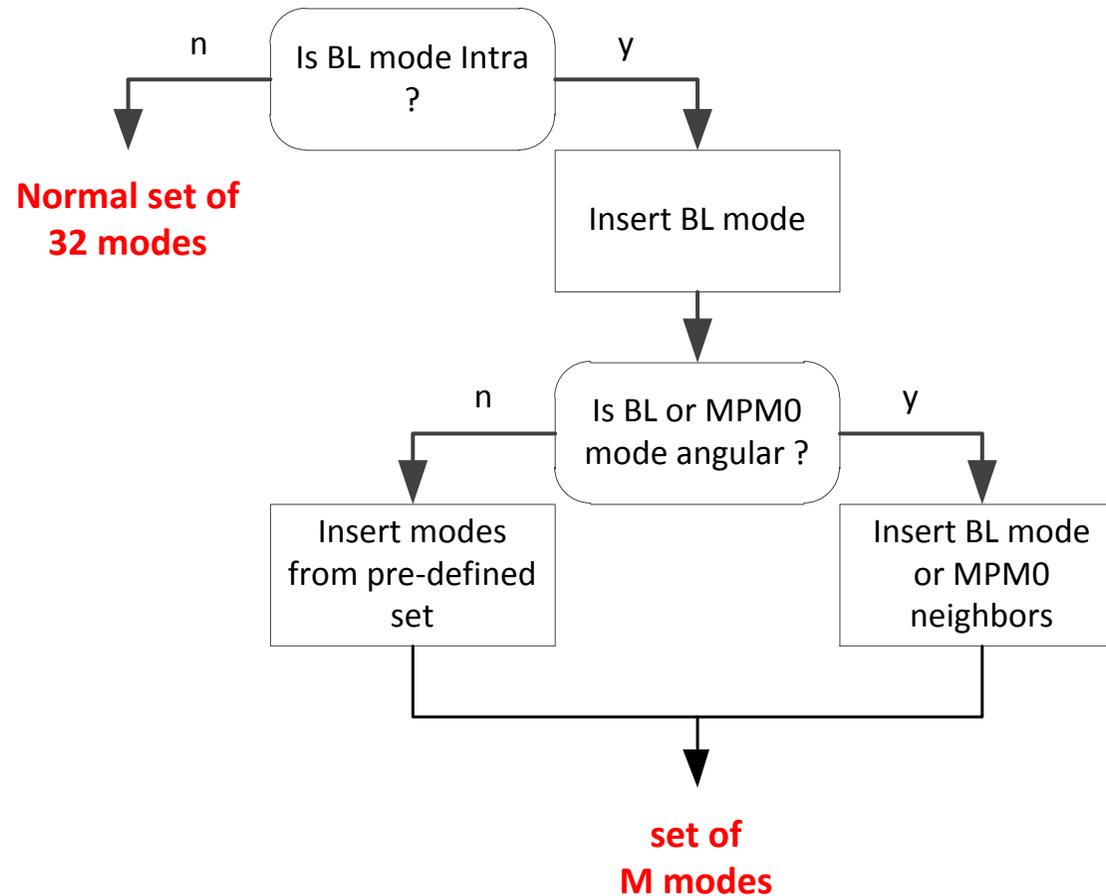
# Principle

- Co-located Intra BL mode is often relevant for the EL
- Can be used to reduce complexity of intra mode coding, in particular to reduce the nb of possible candidates
- Principle: limit nb M of remaining modes (practically 2 or 4)
  - Reduced complexity (mainly encoding side)
  - Possible to reduce nb of bits (1 or 2) to signal Remaining Mode
  - Total nb of possible modes is 5 or 7 instead of 35:

3 MPMs + 2 or 4 Remaining Modes

# Proposal description – Non-normative case

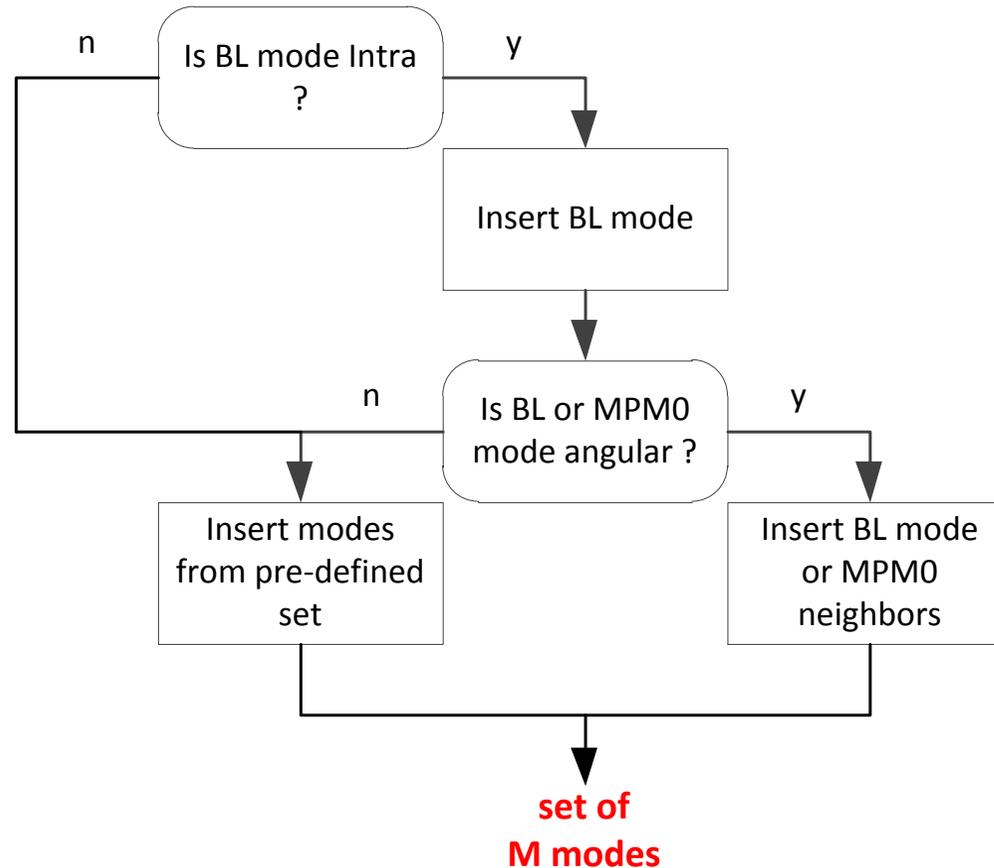
## ■ Derivation of set of remaining modes



# Proposal description – Normative case

## ■ Derivation of set of remaining modes

- Remaining mode coded using 1 (M=2) or 2 (M=4) bits instead of 5



# Results

## ■ Average on All-Intra configurations (1.5x, 2x, SNR)

Test	Y	U	V	Enc time [%]	Dec time [%]
Non-normative M=2	0.10%	0.04%	0.07%	81%	99%
Normative M=2	-0.11%	-0.03%	-0.03%	81%	100%
Non-normative M=4	0.06%	0.02%	0.04%	87%	100%
Normative M=4	-0.10%	-0.03%	-0.03%	86%	100%

## ■ Minor impact for Inter configurations

# Conclusions

- Since Intra BL mode is often relevant for the corresponding EL CU, the number of candidate modes is reduced to a limited set of 5 or 7 modes
- Change can be normative or encoder-only
- Leads to significant complexity reduction
  - 19% enc time reduction with 5 modes, 13–14% with 7 modes
  - With very limited coding penalty ( $\leq 0.1\%$ ) in non-normative case
  - With small coding gain ( $\geq 0.1\%$ ) in normative case