

# BoG on CE9: MV Coding and Skip/Merge operations

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- BoG report JCTVC-E481
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- Background of things already agreed in Group A
  - Fix motion data compression (also compress refidx and mode)
- Topics
  - Test on simplifications
  - Test on temporal motion vector predictor
  - Test AMVP and MERGE skip
  - Further discussion

# Test on Simplifications

- Perform simulations on M31 and T with
  - Simplification F (simplified AMVP spatial candidate scanning)
  - Simplification L (reduce the merge candidates for skip)
- Result:
  - Simplification F does not cause coding loss
  - Simplification L causes coding loss of 0.1% on average
- Recommends
  - To adopt simplification F

# Test on Temporal Motion Vector Predictor

- Perform simulations with different temporal motion vector predictor
  - From M31 and T (Bottom right, then centered)
  - From HM2.0 (collocated centered)
- Result:
  - HM2.0 collocated introduces a loss of 0.8% and 1.1%
- Recommends
  - To adopt temporal predictor used in M31 and T

# Test on AMVP and MERGE skip

- Perform simulations with different skip modes
  - AMVP skip (refidx derived from spatial neighbors)
  - MERGE skip (refidx for temporal.mvp derived from spatial neighbors)
- Result:
  - 1.8% gain on average for both cases
  - -1.3% RA HE -1.7% RA LC -1.6% LD HE -2.6% LD LC (AMVP skip)
  - -1.4% RA HE -1.9% RA LC -2.1% LD HE -1.6% LD LC (MERGE skip)
- Recommends
  - To adopt MERGE skip

# Further discussion

- Following concerns are raised and suggested to be further studied in either AGH or CE.
  - Study of spatial MVP scaling for small (8x8, 4x4) blocks
  - Study of the use of temporal MVP for small (16x16, 8x8, 4x4) blocks
  - Skip mode with no fixed reference index
  - Unification of the temporal candidates (H or Collocated): suggestion to check one position only
  - Encourage to test/study unified solutions for candidate positions for AMVP and Merge
- Reference of related CEs
  - Spatial MVP scaling with simplified AMVP spatial candidate scanning
  - Temporal motion vector predictor (Bottom right, then centered)
  - Motion data compression fix
  - MERGE skip (refidx for temporal mvp derived from spatial neighbors)