JVC KENWOOD

Non-CE9: Construction of MVP list without using scaling operation

JCTVC-G0219

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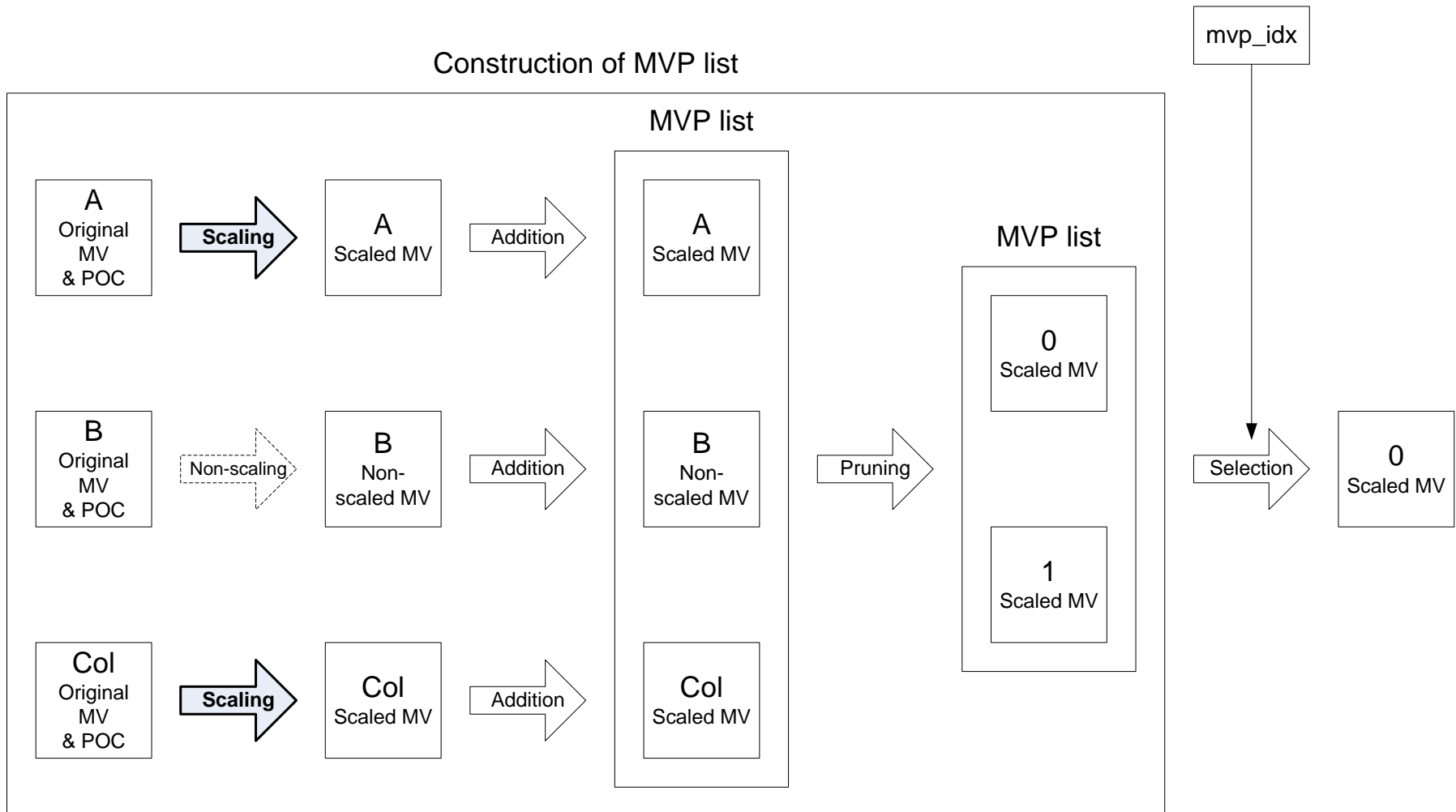JVC KENWOOD Corporation

1. Overview

Overview

- **Proposed Technique**
  - Construction of MVP list without using scaling operation
- **Algorithm**
  - No scaling operation during constructing of MVP list
  - Scaling operation is invoked after getting a reference index
  - Only one scaling operation in the decoder side
  - Temporal picture distance td needs to be managed with original MV
- **Cross-check**
  - JCTVC-G105 by TI
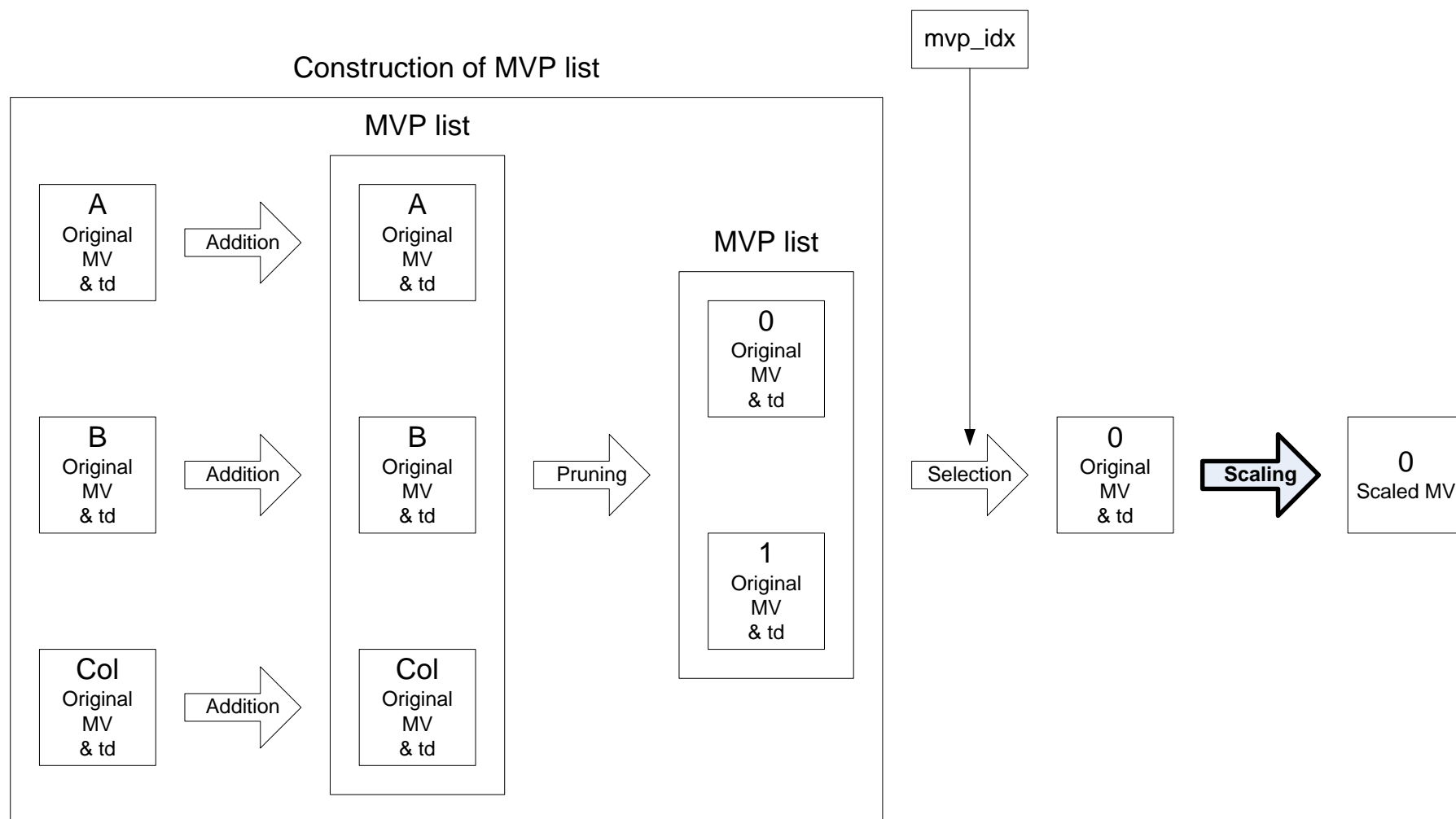- **Simulation results**
  - Overall no loss and gain

2. Algorithm

Decoding process of MVP in HM4.0

Decoding process of MVP in the proposed technique

Construction of MVP list

MVP list

A
Original MV & td

→ Addition →

A
Original MV & td

B
Original MV & td

→ Addition →

B
Original MV & td

Col
Original MV & td

→ Addition →

Col
Original MV & td

→ Pruning →

MVP list

0
Original MV & td

1
Original MV & td

mvp_idx

→ Selection →

0
Original MV & td

→ **Scaling** →

0
Scaled MV

td: temporal picture distance of Original MV

5

3. Experiments

Simulation results

- No coding loss for all settings
- Crosscheck: JCTVC-G105 by TI

	Random Access HE			Random Access LC		
	Y	U	V	Y	U	V
Class A	0.0%	-0.1%	-0.1%	0.0%	0.0%	0.0%
Class B	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Class C	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Class D	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Class E						
Overall	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Enc Time[%]	100%			100%		
Dec Time[%]	99%			99%		

	Low delay B HE			Low delay B LC		
	Y	U	V	Y	U	V
Class A						
Class B	0.0%	-0.1%	0.1%	0.0%	0.0%	0.2%
Class C	0.0%	-0.1%	-0.1%	0.0%	0.0%	-0.3%
Class D	0.0%	0.0%	0.4%	0.0%	-0.1%	-0.1%
Class E	0.0%	0.3%	0.7%	0.0%	-0.6%	0.1%
Overall	0.0%	0.0%	0.3%	0.0%	-0.1%	0.0%
	0.0%	0.0%	0.2%	0.0%	-0.1%	0.0%
Enc Time[%]	100%			100%		
Dec Time[%]	99%			99%		

4. Conclusion

Conclusion

- This proposed technique can be reduced scaling operations of the derivation process of MVP.

- We recommend that the proposed technique be further studied in CE activity.