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# Non-CE4: Simplification for harmonization of HMVP and share merge list

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**JVET-N0486**

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# Overview

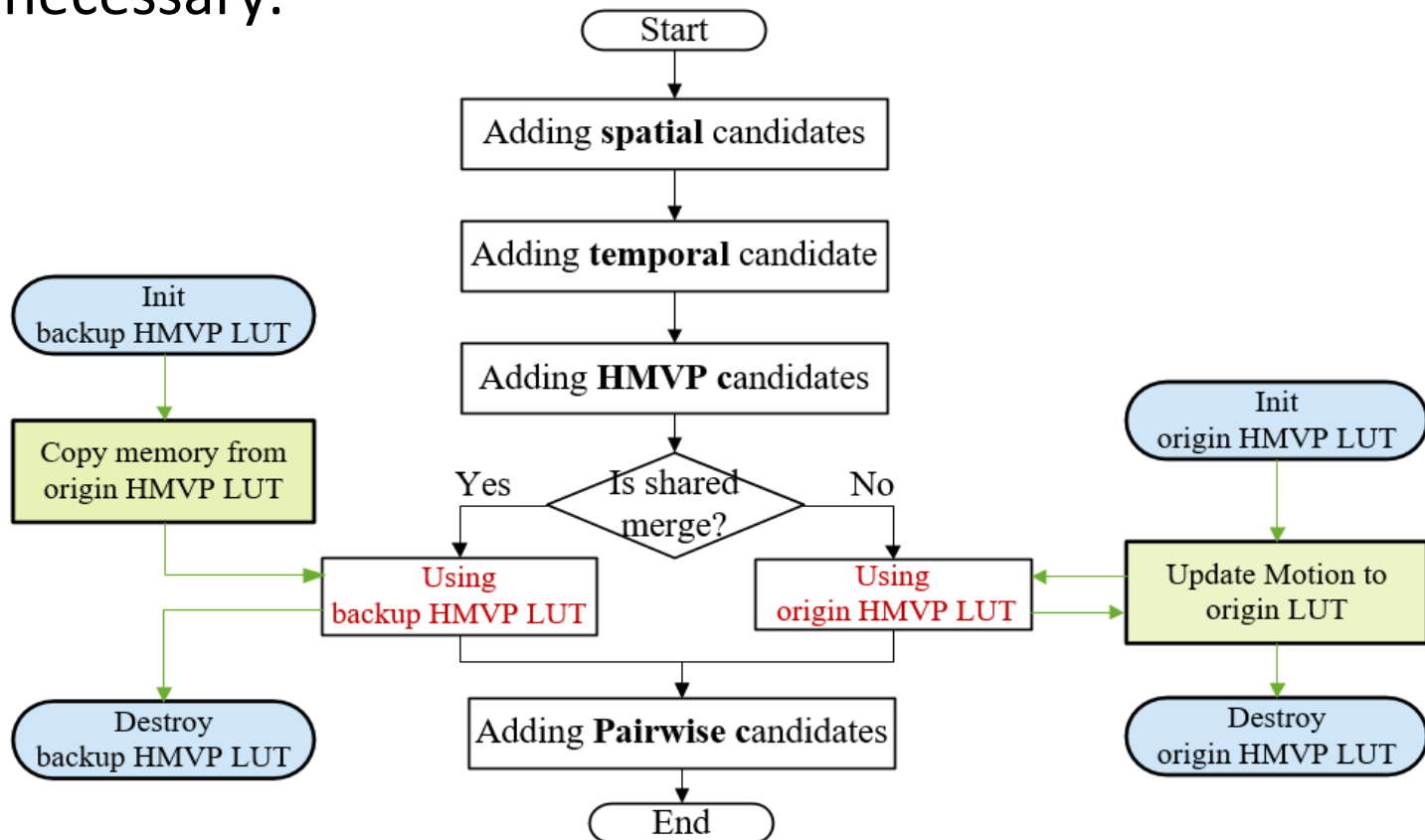
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- Simplify the harmonization of HMVP and shared merge list by using only one HMVP LUT for all CUs.
  - Method 1: Only updating the motion information of the last coded leaf CU of the ancestor node to HMVP LUT
  - Method 2: Not allow to update HMVP LUT in shared merge list node
- Experimental results show no performance change compared to anchor with minor decoding time decrease.



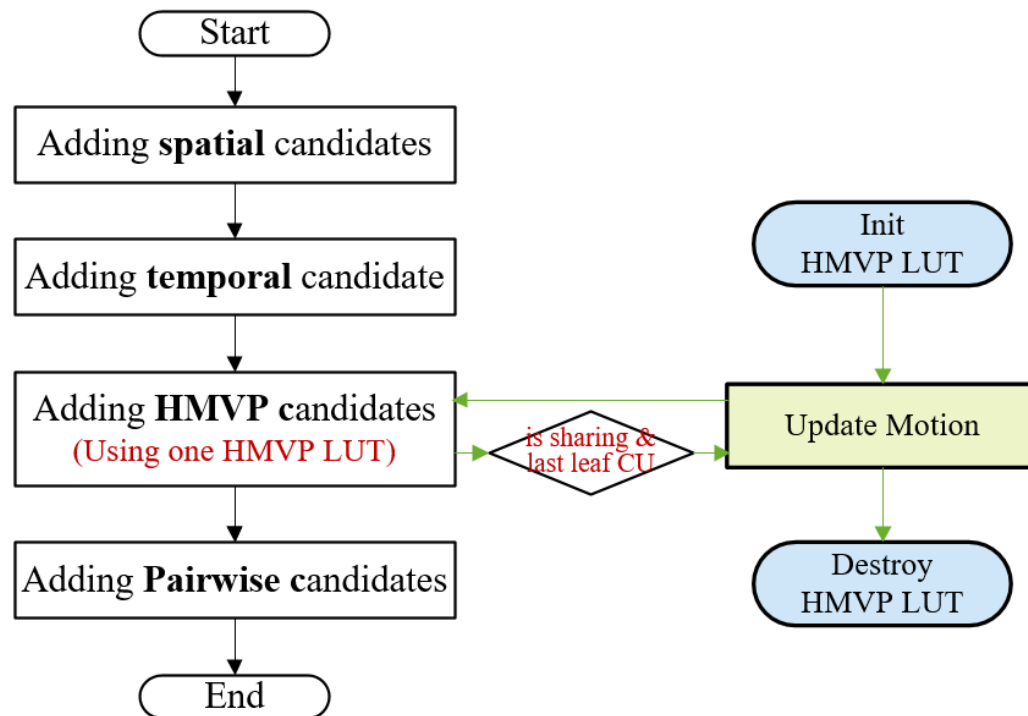
# Proposed method

- In current design, **two LUTs** are needed for the harmonization of HMVP and share merge list, which is complicated and unnecessary.



# Proposed method

- ❑ Method 1: only updating the motion of the last coded leaf CU of the shared merge node to the HMVP LUT
- ❑ Method 2: not allow to update the motion of the CUs in shared merge node to HMVP LUT



# Experimental Results

## □ CTC Test (method 1)

	Random Access				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1	-0.01%	0.01%	-0.03%	107%	98%
Class A2	-0.01%	-0.06%	0.03%	106%	99%
Class B	0.01%	0.01%	0.06%	81%	98%
Class C	0.01%	-0.08%	-0.12%	82%	97%
Class E					
<b>Overall</b>	0.00%	-0.03%	-0.01%	91%	98%
Class D	-0.02%	-0.01%	0.06%	82%	96%
Class F	0.02%	-0.09%	-0.16%	100%	97%

	Low Delay B				
	Over VTM-4.0				
	Y	U	V	EncT	DecT
Class A1					
Class A2					
Class B	-0.01%	0.09%	0.00%	80%	97%
Class C	-0.01%	0.26%	0.02%	82%	99%
Class E	0.03%	-0.01%	-0.70%	81%	98%
<b>Overall</b>	0.00%	0.12%	-0.17%	81%	98%
Class D	0.00%	0.02%	-0.64%	84%	97%
Class F	-0.15%	-0.28%	-0.46%	58%	99%



# Experimental Results

## □ CTC Test (method 2)

	Random Access				
	Over VTM-4.0			EncT	DecT
	Y	U	V		
Class A1	-0.01%	0.06%	0.03%	101%	99%
Class A2	-0.02%	-0.09%	0.05%	101%	99%
Class B	0.00%	-0.02%	-0.02%	81%	98%
Class C	-0.01%	-0.01%	-0.05%	82%	97%
Class E					
<b>Overall</b>	-0.01%	-0.01%	-0.01%	89%	98%
Class D	-0.03%	0.02%	-0.04%	81%	96%
Class F	0.01%	-0.08%	-0.14%	83%	97%

	Low Delay B				
	Over VTM-4.0			EncT	DecT
	Y	U	V		
Class A1					
Class A2					
Class B	#VALUE!	#VALUE!	#VALUE!	#NUM!	#NUM!
Class C	0.00%	0.09%	-0.11%	81%	98%
Class E	-0.06%	-0.16%	-0.25%	82%	96%
<b>Overall</b>	#VALUE!	#VALUE!	#VALUE!	#NUM!	#NUM!
Class D	-0.11%	-0.03%	-0.35%	82%	94%
Class F	-0.28%	-0.01%	-0.41%	57%	96%



# Conclusion

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- ❑ This proposal suggests simplify the harmonization of HMVP and shared merge list by using only one HMVP LUT for all CUs.
- ❑ It is recommended to adopt the proposed simplification to the next version of VVC working draft.



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# Thanks!

