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Non-CE4:  
On a simplification for triangle merge mode

JVET-P0236

SHARP CORPORATION

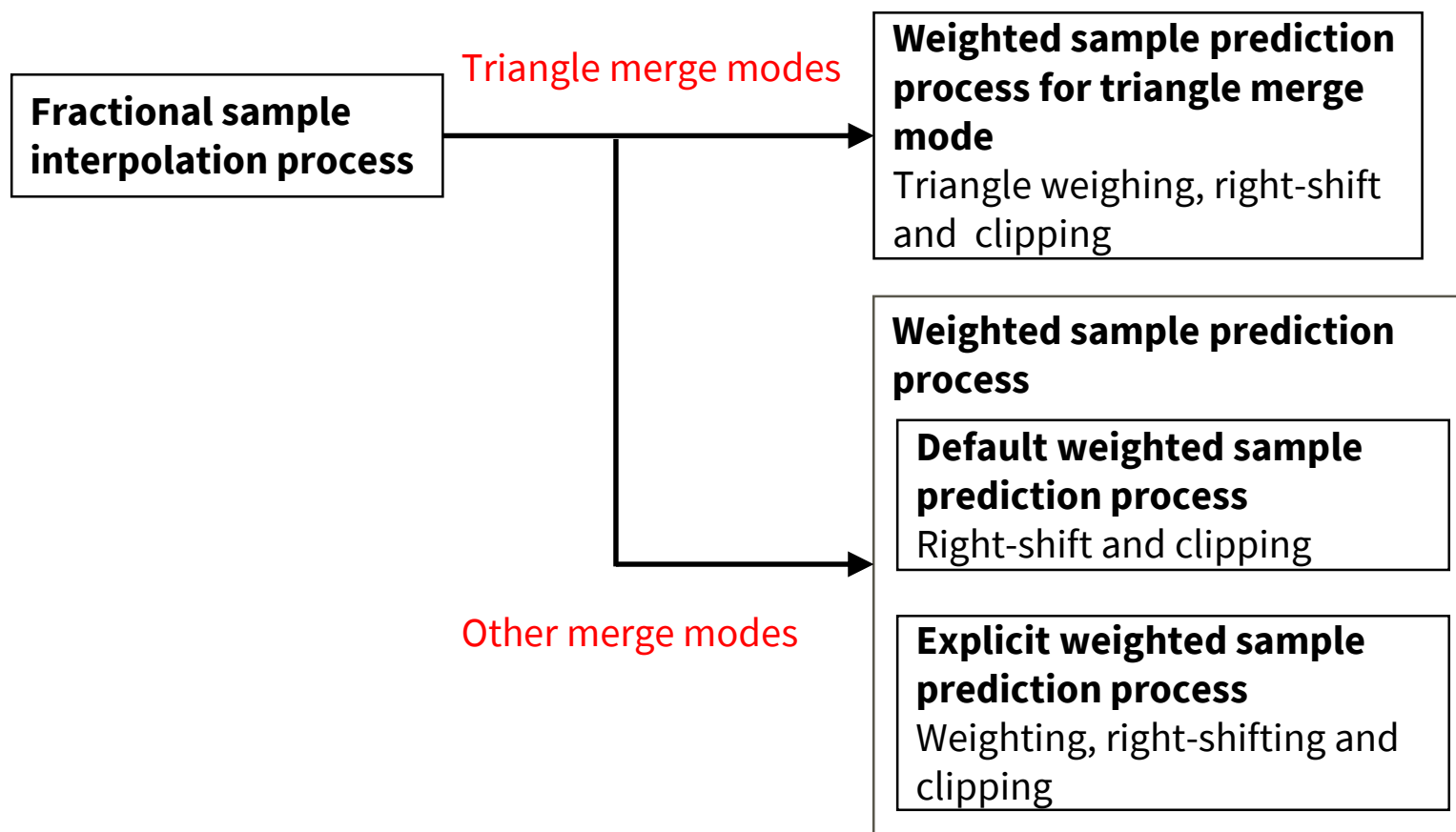
Takeshi Chujoh, Eiich Sasaki and Tomohiro Ikai

- In WD6 and VTM-6.0 software, the explicit weighted prediction can not be selected in the triangle merge mode.
- In this contribution, the explicit weighted prediction can be selected in both the triangle merge mode and the other merge tools.
- On CTC, the coding efficiency and the encoding time were not changed, and the average of encoding times became 1% faster on LB.
- On fade sequences by using the explicit weighted prediction, the average gain was 0.42%.

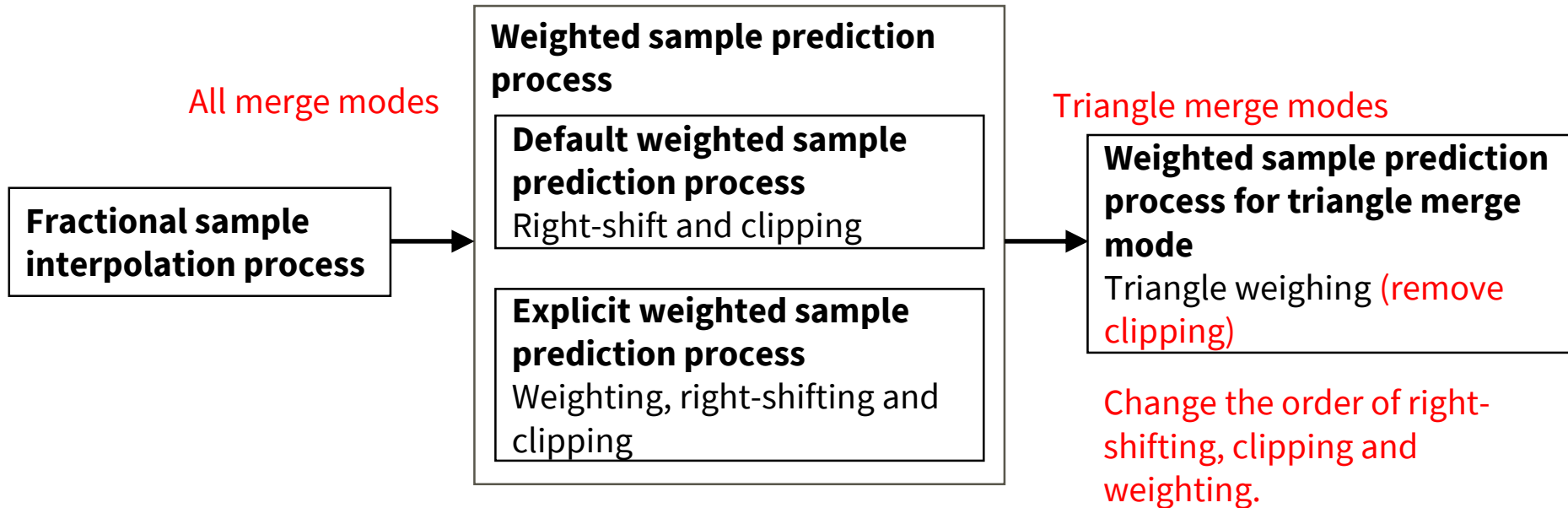
- In most of inter tools, the explicit weighted prediction can be selected by `refIdxLX`.
- Several tools, for example BCW, BDOF and DMVR are restricted by `luma_weight_lX_flag[ refIdxLX ]` or `chroma_weight_lX_flag[ refIdxLX ]`.
- According to ticket #367, when triangle merge mode is selected, the explicit weighted prediction is prohibited regardless the value of `refIdxLX`.

The design of triangle merge mode is different from that of the other tools.

- According to ticket #367, when the triangle merge mode is selected, the explicit weighted prediction is prohibited regardless the value of refIdxLX.



- In both the triangle merge mode and the other merge tools, the explicit weighted prediction can be selected by refIdxLX.



There is no additional complexity on MC stage.

- The 1% encoding time on LB has been improved.
- There was no loss on average.

	Random access Main10					Low delay B Main10				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
<b>Class A1</b>	0.00%	0.05%	0.05%	100%	100%					
<b>Class A2</b>	0.02%	0.04%	0.02%	100%	100%					
<b>Class B</b>	-0.01%	0.06%	0.09%	100%	100%	0.00%	0.10%	0.11%	100%	100%
<b>Class C</b>	-0.03%	-0.01%	0.03%	100%	100%	0.00%	-0.10%	0.09%	99%	99%
<b>Class E</b>						0.04%	0.15%	0.21%	99%	100%
<b>Overall</b>	<b>-0.01%</b>	<b>0.04%</b>	<b>0.05%</b>	<b>100%</b>	<b>100%</b>	<b>0.01%</b>	<b>0.05%</b>	<b>0.13%</b>	<b>99%</b>	<b>100%</b>
<b>Class D</b>	-0.03%	-0.03%	0.06%	99%	100%	-0.04%	0.03%	0.14%	100%	100%
<b>Class F</b>	0.00%	0.02%	-0.02%	100%	100%	0.00%	-0.14%	0.68%	99%	99%

- The average gain was 0.42%.

		Over VTM-6.0_WPM0+WPB+WPP				
		Y	U	V	EncT	DecT
<b>Proposed RA10</b>	Black fade	-0.60%	-0.92%	-0.88%	98%	104%
	White fade	-0.74%	-0.71%	-0.87%	98%	104%
<b>Proposed LB10</b>	Black fade	-0.17%	-0.23%	-0.22%	100%	99%
	White fade	-0.17%	-0.54%	-0.05%	100%	98%
		<b>-0.42%</b>	<b>-0.60%</b>	<b>-0.51%</b>	<b>99%</b>	<b>101%</b>

			Over VTM-6.0				
			Y	U	V	EncT	DecT
<b>RA10</b>	Black fade	WP	-6.60%	-10.37%	-9.97%	127%	87%
		Proposed	-7.15%	-11.21%	-10.77%	124%	91%
	White fade	WP	-8.40%	-12.25%	-12.23%	125%	86%
		Proposed	-9.08%	-12.88%	-12.99%	122%	90%
<b>LB10</b>	Black fade	WP	-28.11%	-36.10%	-35.27%	89%	88%
		Proposed	-28.25%	-36.24%	-35.45%	89%	86%
	White fade	WP	-29.67%	-36.56%	-36.18%	83%	86%
		Proposed	-29.79%	-36.92%	-36.25%	82%	84%

- In this contribution, the explicit weighted prediction can be selected in both the triangle merge mode and the other merge tools.
- As a result, the specification of triangle merge mode is clarified without major changes.
- Recommend to fix the working draft and reference software.
- Thank Abe-san (Panasonic) and Philippe (InterDigital) for cross-checking.



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