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Qualcomm

Non-EE2: LIC model parameter inheritance for merge modes

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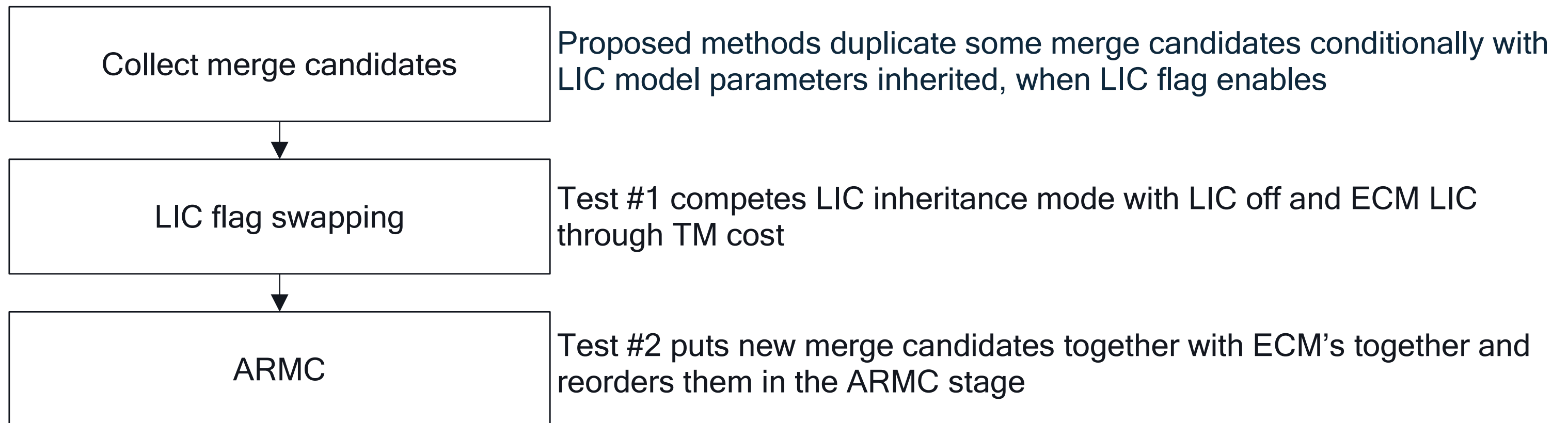


Introduction and Proposal

- **Target:** Inherit LIC model parameters from neighboring block for merge modes
- **ECM LIC:**
 - Inherit LIC flag only
 - Derive model parameters on the fly
 - Store derived model parameters in motion field
 - Use stored model parameters in subsequence CU's OBMC process only
- **LIC inheritance:**
 - Merge candidate would be duplicated with inherited LIC model parameters when LIC flag enables
 - New candidate may stay in merge candidate list after LIC flag swapping process (Test #1) or ARMC process (Test #2)
 - When selected, the derivation process of LIC parameters could be bypassed
 - LIC model parameter inheritance is also applied to GPM
- **Performance summary:**
 - Test #1 (LIC Swapping): RA(Y/U/V): {-0.05%, 0.04%, -0.07%, EncT 99.1%, DecT 99.7%};
LB(Y/U/V): {-0.13%, -0.15%, 0.01%, EncT 99.2%, DecT 99.6%};
 - Test #2 (ARMC) : RA(Y/U/V): {-0.07%, 0.04%, 0.01%, EncT 100.2%, DecT 100.3%};
LB(Y/U/V): {-0.11%, 0.20%, -0.18%, EncT 100.4%, DecT 99.9%};

Proposed methods

- Merge candidate list construction



- GPM candidate list construction

- Always inherit LIC model parameters from merge candidates when existing
- No reordering

Experimental results

[Test #1]
LIC swapping stage

	Random Access Main 10					Low Delay B Main 10				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class A1	-0.04%	0.12%	0.07%	99.3%	98.7%	x	x	x	x	x
Class A2	0.00%	0.19%	0.05%	99.0%	100.3%	x	x	x	x	x
Class B	-0.07%	-0.13%	-0.23%	99.1%	99.6%	-0.16%	-0.10%	-0.01%	98.9%	98.7%
Class C	-0.06%	0.07%	-0.06%	99.0%	100.2%	-0.04%	0.02%	-0.31%	99.3%	100.3%
Class E	x	x	x	x	x	-0.20%	-0.45%	0.45%	99.6%	100.3%
Overall	-0.05%	0.04%	-0.07%	99.1%	99.7%	-0.13%	-0.15%	0.01%	99.2%	99.6%
Class D	-0.04%	0.09%	-0.11%	99.8%	100.3%	0.02%	-0.73%	-0.70%	98.3%	98.7%

[Test #2]
ARMC stage

	Random Access Main 10					Low Delay B Main 10				
	Y	U	V	EncT	DecT	Y	U	V	EncT	DecT
Class A1	-0.08%	0.12%	0.06%	99.9%	100.5%	x	x	x	x	x
Class A2	-0.01%	0.03%	0.02%	99.8%	98.8%	x	x	x	x	x
Class B	-0.08%	0.06%	-0.01%	100.3%	100.1%	-0.12%	0.21%	0.18%	101.0%	98.5%
Class C	-0.08%	-0.02%	-0.02%	100.4%	101.6%	-0.03%	0.09%	-0.32%	100.1%	102.4%
Class E	x	x	x	x	x	-0.19%	0.35%	-0.58%	99.6%	99.1%
Overall	-0.07%	0.04%	0.01%	100.2%	100.3%	-0.11%	0.20%	-0.18%	100.4%	99.9%
Class D	-0.01%	0.22%	0.21%	101.0%	101.9%	-0.14%	0.63%	-0.57%	100.4%	101.1%

* Few rate points are copied from anchor

We would like to thank KDDI for crosscheck



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