Synchronizer State machines

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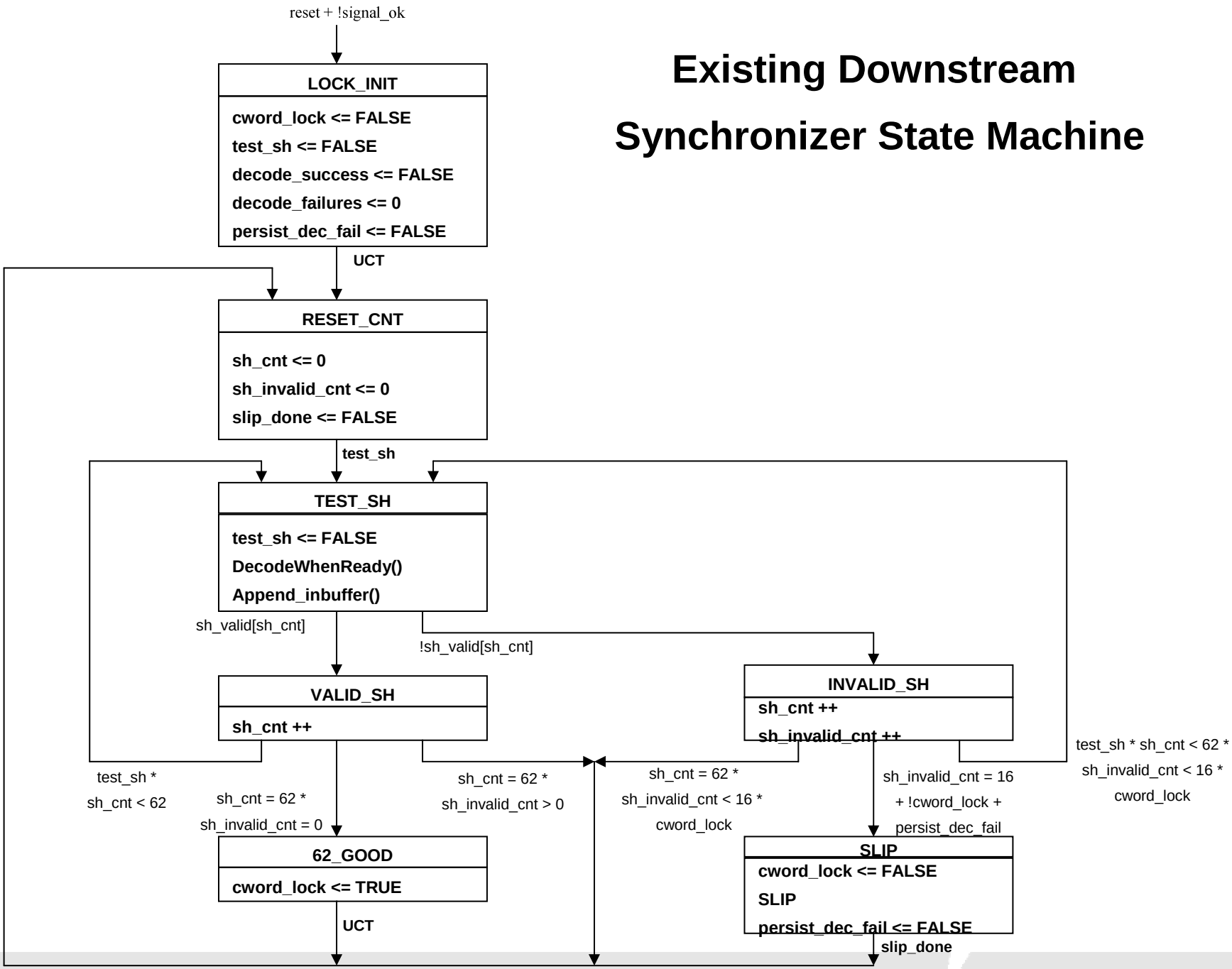
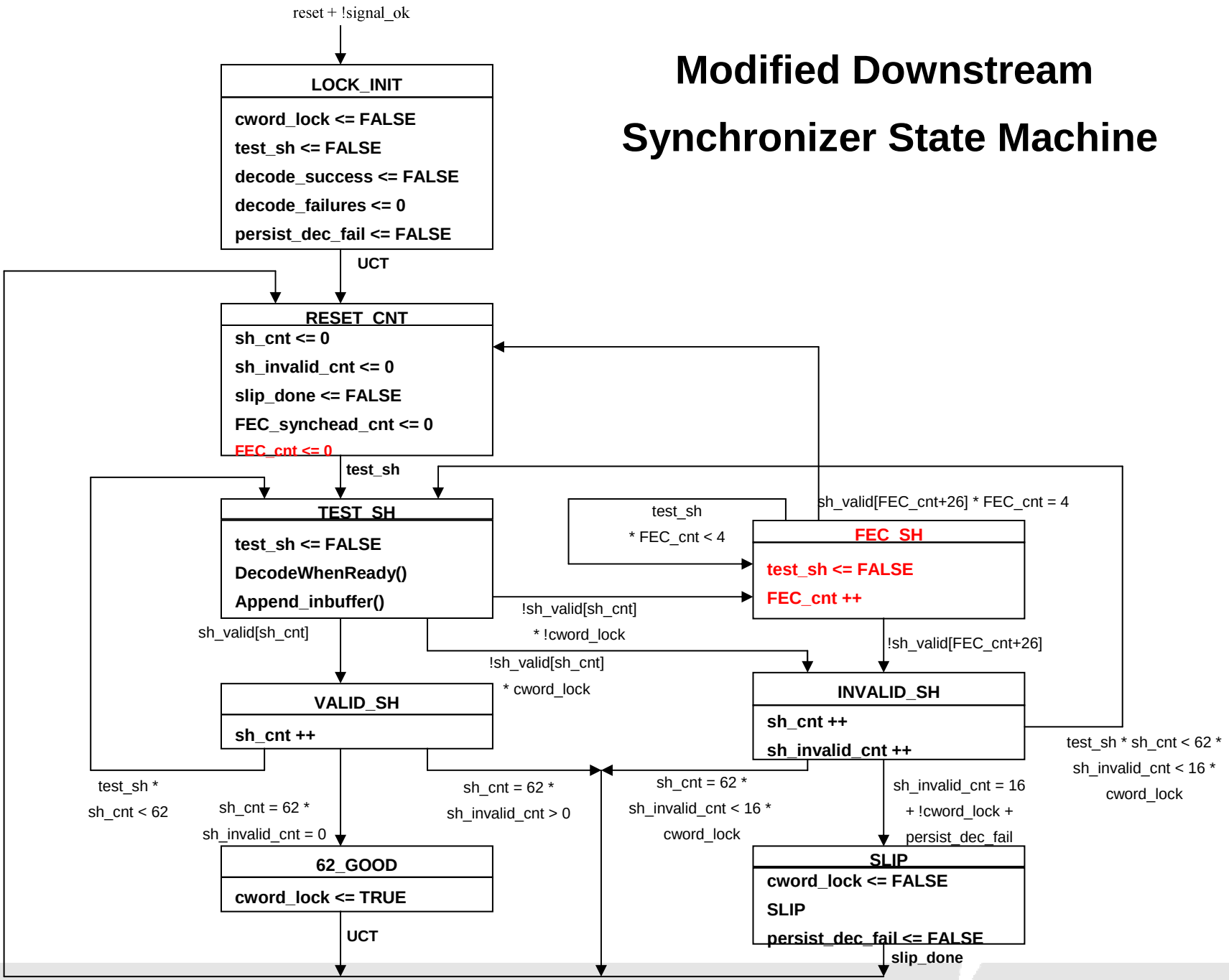
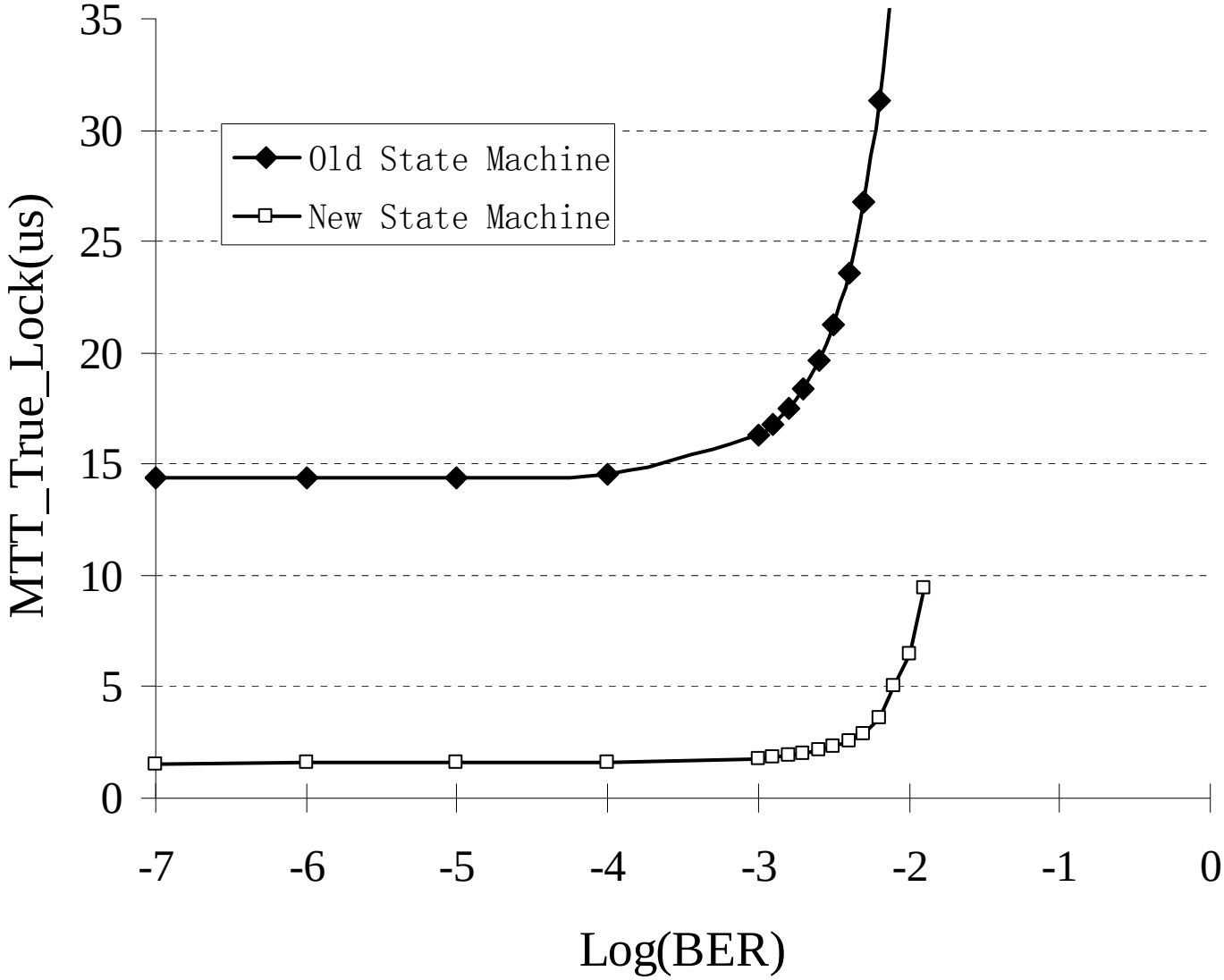
Existing Downstream Synchronizer State Machine



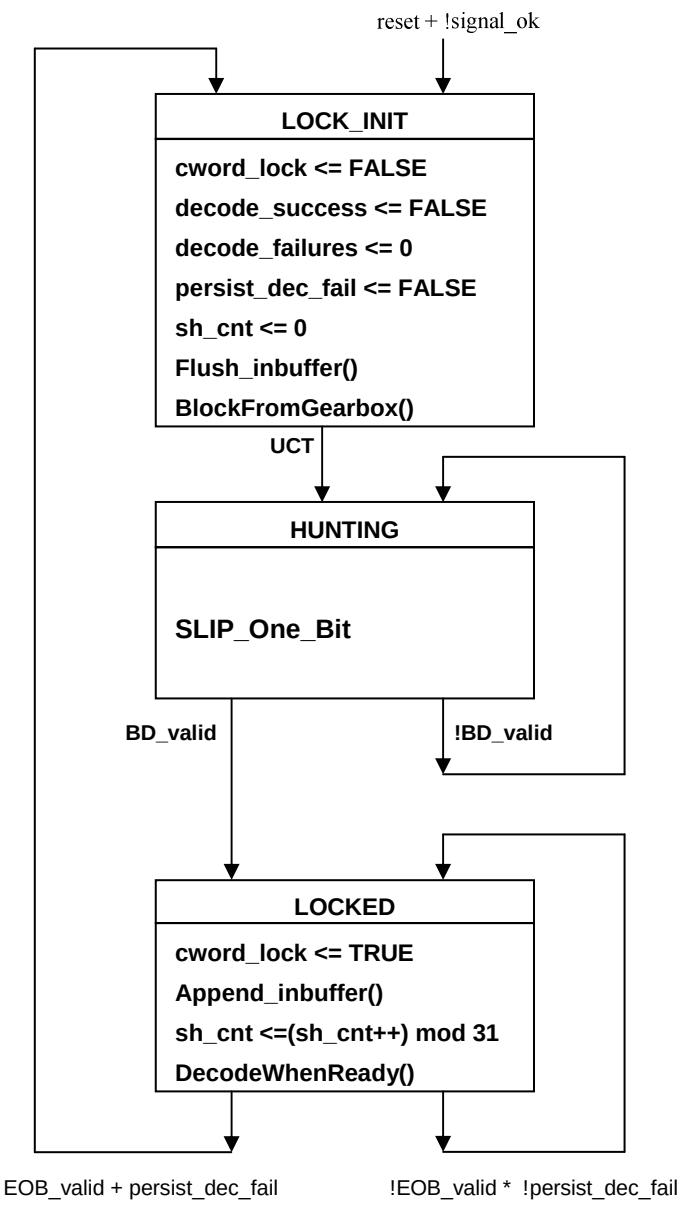
Modified Downstream Synchronizer State Machine



Synchronizer Performance Comparison



Proposed Upstream Synchronizer State Machine



New Variables:

BD_valid

Boolean indication that is set true if received block rx_coded matches the BURST_DELIMITER with less than 12 bits difference, and de-asserted otherwise. TYPE: boolean

EOB_valid

Boolean indication that is set true if the last 2 received blocks have less than 11 one bits in total, and deasserted otherwise. TYPE: boolean

New Function:

SLIP_One_Bit

Causes the next candidate block sync position to be tested. The next candidate must be exactly one bit later than the previous candidate – no burst alignments may be skipped.

Thank You

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