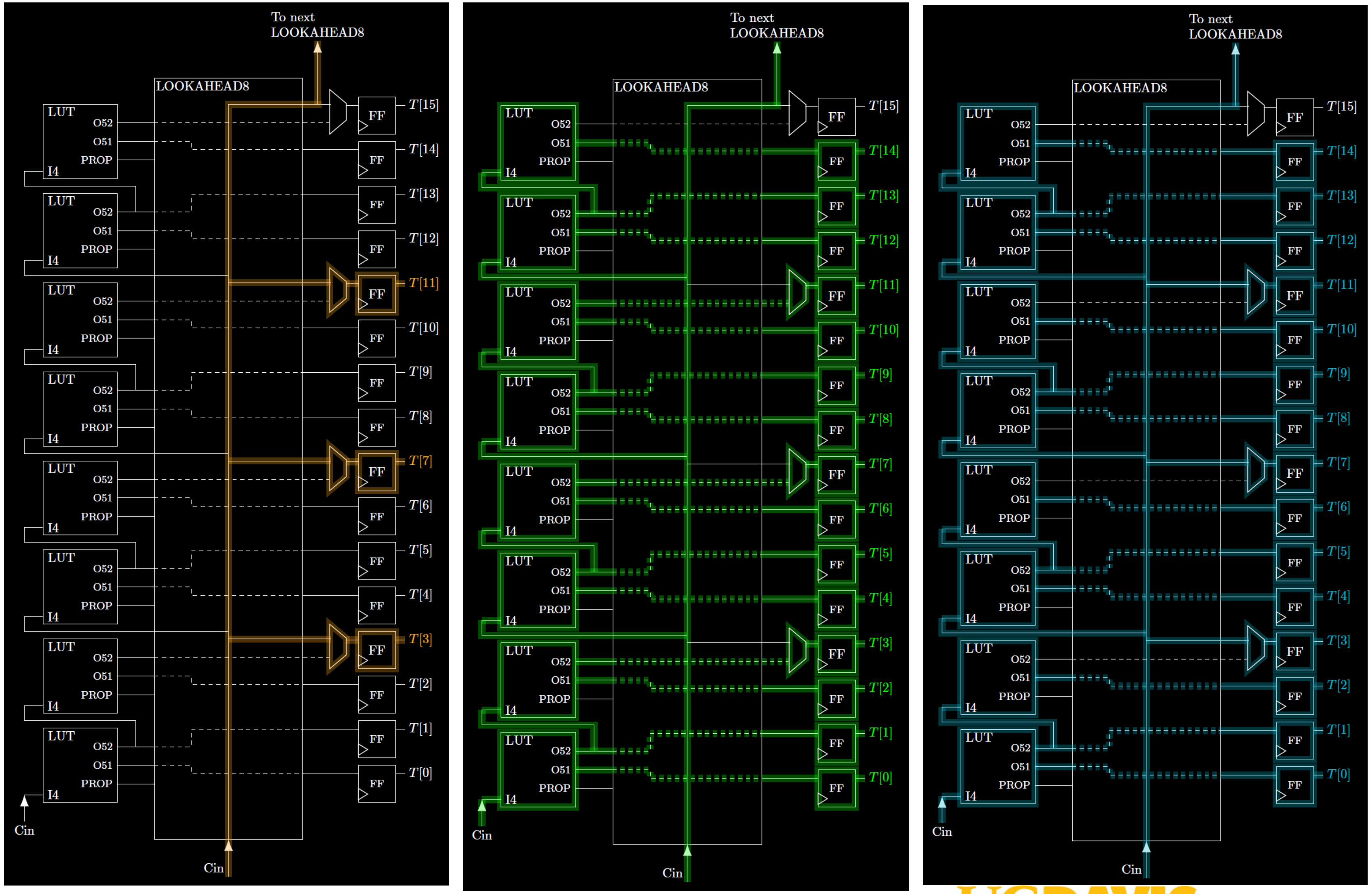
Rationale and design

Goal: Evaluate the Versal architecture potential for TDC in FGPA.

Architecture	Fabrication process	Precision (ps RMS)
Virtex-7	28 nm	~ 10
UltraScale	20 nm	~ 5
UltraScale+	16 nm	~ 2.5
Versal	7 nm	?



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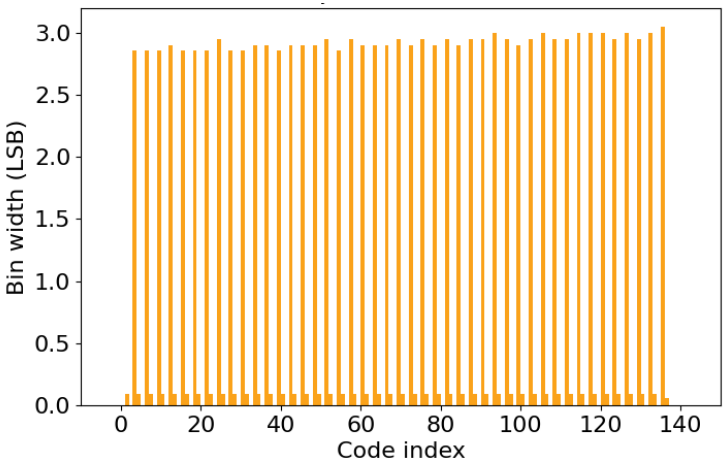
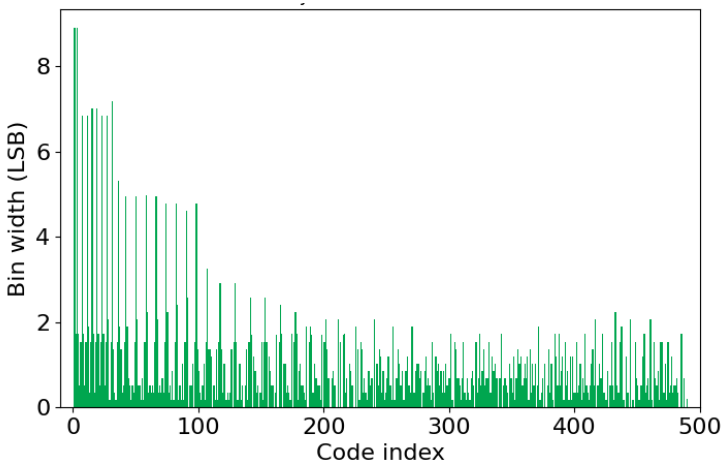
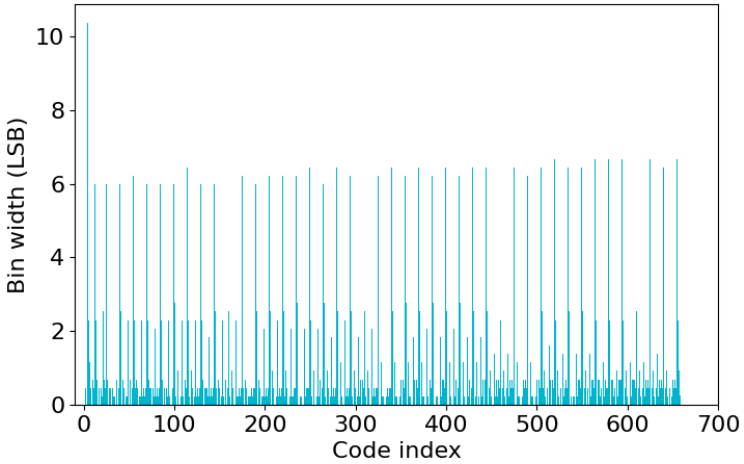
Results

Code density







	Reference UltraScale+	Only Lookahead	Only LUT	Hybrid
Resolution (ps)	**1.8**	**10.5**	**2.9**	**2.9**
Q error (ps)	**1.3**	**8.7**	**2.9**	**2.9**
Precision (ps)	**2.7**	**12.5**	**4.5**	**4.5**

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