

Synthesis Round Two (Sunday)

Discovered that the multiply-add which is the main pipeline in the FPU is always configured to be 64-bit. Made the change to the FPU to configure it as 32 or 64 bit depending on ISA configuration settings. This will widen the gap between single and double precision builds, working in Melodica's favour. I need to push this fix up to Flute as well.

Comparisons between different implementations:

Cells or Area	RV32ACFIMSU (Baseline)	RV32ACDFIMSU (With Double)	RV32ACFIMSU-P32 (With Posit-32)
AND2X1	4640	8184	7221
AOI21X1	10468	16578	13250
AOI22X1	5354	6645	5519
BRAM2	5	5	5
BUFX2	57	54	77
DFFPOSX1	14986	19490	30329
INVX1	10616	16512	21259
MUX2X1	33044	42729	44974
NAND2X1	27210	39951	41961
NAND3X1	10780	13459	35130
NOR2X1	4012	6737	6135
NOR3X1	2225	4176	3733
OAI21X1	17903	26513	22284
OR2X1	4272	7551	6675
XNOR2X1	3238	5371	5691
XOR2X1	2842	5577	4743
Total Cells	151652	219532	248986
Area	497674.3473	704899.8632	826799.1303