

Cost Comparison

Below is a cost comparison of the DSP-based and FPGA-based options, and a comparison with the U.S. baseline cost estimate. A number of assumptions are made to make this comparison

- The L1 trigger rate is 100 KHz
- The S-link is assumed to operate at 40 Mwps
- A Region-of-Interest trigger is assumed
- The Pixel cost does not apply to the B-layer
- TOT pixel readout is assumed
- Only component costs are shown. Raw-board cost, board loading and board debugging have not been included. These costs were included in the production baseline ROD estimate and were taken at that time to be \$952(FY97) per board.
- The preprototype baseline cost was \$84K(FY97) for fabrication of 16 cards + 2 "prototype" cards. This cost included the bare-board, board loading etc. Thus to make a comparison with the estimates presented at the review, I have calculated a component cost per board as follows: $\$84K/16 = \$5250 - \$952 = \4298 (FY97).
- The production baseline component estimate of $\$4059 - \$952 = \$3107$ (FY97) was inflated by 6% to FY99 and is \$3293(FY99).
- The preprototype baseline component estimate of \$4298(FY97) was inflated by 6% to \$4556.
- No attempt was made to scale either the FPGA-based or DSP-based preprototype estimates to production quantities.

	SCT LINKS PER ROD	PIXEL LINKS PER ROD	SCT COST	PIXEL COST
Preprototype baseline	32	32	4556	4556
ROD production baseline	32	32	3293	3293
FPGA-based preprototype	96	36	4392	3309
DSP-based preprototype	96	?	?	?

Schedule Comparison

The baseline milestone for the completion of fabrication of the first preprototype ROD was 30-Mar-99. A comparison with the milestones presented at the review is given below. A five month delay is projected in the case of the FPGA-based design and a ?? month delay in the case of the DSP-based design.

	FIRST PREPROTOTYPE COMPLETE
Baseline schedule	30-Mar-99
FPGA-based	1-Sep-99
DSP-based	?

Manpower

A summary of the physicist, electrical engineer and student manpower available through the expected debug-period of the preprototype ROD is given below.

UW	FTE	UCI	FTE
Dao(EE)	0.10	Dailing(EE)	
Fasching(Phys)	1.0	Fahland(Phys)	
Hayes(Phys)	1.0	Lankford(Phys)	
Jared(EE)	0.25	Pier(EE)	
Marks(EE)	1.0	Schernau(Phys)	
Nagel(EE)	1.0	Students	
Students	0.5		