

CDF Run IIB Change Request

Title: Revised costs of the Data Acquisition and Trigger subproject		
WBS: 1.3		
Affected Items: WBS 1.3.1, 1.3.2, 1.3.4 and 1.3.5		
Originator: Doug Benjamin	Email: dbenjamin@fnal.gov	Phone: 630-840-8432
CCB DISPOSITION	DATE	Approval:
Accepted • Rejected • Forward to Director •		CDF PM _____ Date _____
Chairperson:		ADR _____ Date _____
		DOE PM _____ Date _____
Summary:		
<p>This change control describes changes in the baseline to the various parts of the CDF Run IIB DAQ subproject.</p>		
Technical Part I:		
<p>Two changes to the trigger scope are requested to optimize the detector operation at the highest luminosities we anticipate. Additional hardware is being purchased for the Run2b Level 2 project in order to increase the speed of merging the trigger data, and to reduce the level 2 trigger latency. Also, the plan for Level3 computing has evolved with improved knowledge of the needs of the experiment. A rack of computers that receives data from the upgraded Event Builder sends it to the Level 3 PC farm has been added to the schedule. The computer processing needs for the Level 3 PC farm have been reevaluated, and the number of computers required has been determined to be larger than initially planned. In addition, the cost per processor of computing exceeds the estimate used for the baseline. More information on these changes can be found at this URL: (http://www-cdf.fnal.gov/upgrades/run2b/PMG_Apr05/PMG_Apr05.html)</p>		
Part II: Schedule		
<p>The overall DAQ schedule is unchanged. Milestone WBS 1.3.4.5.6.5 has been renamed to "Arrival of 192 L3 PCs" to better reflect its meaning.</p>		
Part III: Cost		
<p>The total cost of DOE equipment funds needed for the Data Acquisition and Trigger subproject increases by \$524,730. Revaluation in the amount of labor required for the TDC and Event Builder subprojects, results in a decrease in cost for those projects. Additional hardware for the Level 2 subproject and a reassessment of the needs for the Level 3 subproject result in an increase in the cost in these areas. The baseline estimate for computing needs and cost is now obsolete, and has been changed to reflect our current understanding. Finally, a problem with the Finder board design requires additional engineering, and an associated increase in the cost of the track trigger subproject. The changes to the baseline costs by subproject are summarized in Appendix A.</p>		
Part IV: Work Breakdown Structure (WBS) & Dictionary		
<p>New tasks for Converter nodes are WBS 1.3.5.9 and below.</p>		
Part V: ES&H Impact - None		
Part VI: Labor		
<p>The amount of FNAL technician labor required for the modifications of the TDC's has been reduced to reflect the amount of labor required. The amount of engineer labor provided by FNAL on Event Builder subproject has been reduced to reflect the actual amount of labor used in the past and the amount of labor required for the rest of the subproject.</p>		

Appendix A: Changes in cost (\$AY) to the Data Acquisition and Trigger subproject.

This table describes the changes in the DOE equipment cost for WBS 1.3. These costs are fully burdened and are in actual year dollars.

	(costs in AY\$)		
	Current Baseline	Revised Baseline	Change
1.3.1 Run 2b TDC Project	\$741,434	\$655,792	(\$85,642)
1.3.2 Run 2b Level 2 Project	\$437,236	\$473,959	\$36,723
1.3.4 Event-Builder Upgrade	\$518,180	\$435,363	(\$82,817)
1.3.5 Computer for Level3 PC Farm / DAQ	\$479,403	\$1,101,492	\$622,089
1.3.6 SVT upgrade	\$362,407	\$362,407	\$0
1.3.11 Revised XFT Project	\$1,620,128	\$1,654,504	\$34,376
1.3 Run 2b DAQ and Trigger Project	\$4,158,786	\$4,683,516	\$524,730