

WBS 1.4.4		LEVEL 2						detail not detail not in cost est change order require							
WBS	ITEM	MATERIALS & SERVICES (M&S)				CONTINGENCY			ORIGINAL	LATEST	LATEST	NEW -	Change		
1.4.4	LEVEL 2	Unit	#	Unit	M&S	%	Cost	TOTAL	M&S	M&S	w/Continger	LATEST	% above	Order	
Revision: JTL	3/18/99 11:19 AM			Cost	TOTAL			Cost	TOTAL	TOTAL	Cost	Cost	latest	Thresh. LEV	
1.4.4.1	LL5 Calorimeter Electron Trigger				265,564	0	0	265,564	265,564	265,564	265,564	0	0%	0	4
1.4.4.2	L2 Trigger Components				1,355,453	26	349,666	1,705,119	1,376,400	1,360,027	1,741,183	(4,575)	0%	95289	4
1.4.4.2.1	Alpha in VME				315,052	29	91,006	406,058	382,500	266,645	344,893	48,407	18%	78248	5
1.4.4.2.1.1	Engineering & Design				25,000	0	7,500	32,500	40,000	25,000	32,500	0	0%		6
1.4.4.2.1.1.1	CDF/U M charges	ea	0.5	50,000	25,000	30	7500	32,500							7
1.4.4.2.1.1.2	reserved for surprises	my	0.0	80,000	0	30	0	0							7
1.4.4.2.1.2	Prototypes				64,163	30	18,984	83,147	52,500	64,163	83,147	(1)	0%		6
1.4.4.2.1.2.1	Cards	ea	5	6,600	33,000	30	9900	42,900							7
1.4.4.2.1.2.2	ECL Drivers	ea	30	4	113	15	17	129							7
1.4.4.2.1.2.3	Memory (128 MB)	ea	5	160	800	15	120	920							7
1.4.4.2.1.2.4	Hard Drive	ea	5	140	700	15	105	805							7
1.4.4.2.1.2.5	Ethernet Card	ea	5	80	400	30	120	520							7
1.4.4.2.1.2.6	Floppy	ea	5	30	150	15	23	173							7
1.4.4.2.1.2.7	Mbus to VME cards	ea	4	3,000	12,000	30	3600	15,600							7
1.4.4.2.1.2.8	VME Bus Analyzer Card	ea	1	7,500	7,500	30	2250	9,750							7
1.4.4.2.1.2.9	Setup Charges	ea	0.5	19,000	9,500	30	2850	12,350							7
1.4.4.2.1.3	Final Card				225,890	30	64,522	290,411	290,000	177,482	229,246	48,408	27%		6
1.4.4.2.1.3.1	Cards	ea	33	5,000	165,000	30	49500	214,500							7
1.4.4.2.1.3.2	Spare Chips	ea	1	10,000	10,000	15	1500	11,500							7
1.4.4.2.1.3.3	ECL Drivers	ea	198	4	743	15	111	854							7
1.4.4.2.1.3.4	Memory (128 MB)	ea	33	160	5,280	15	792	6,072							7
1.4.4.2.1.3.5	Hard Drive	ea	33	140	4,620	15	693	5,313							7
1.4.4.2.1.3.6	Ethernet Card	ea	33	129	4,257	30	1277	5,534							7
1.4.4.2.1.3.7	Floppy	ea	33	30	990	15	149	1,139							7
1.4.4.2.1.3.8	Alpha Checkout Engineering	my	0.3	80,000	24,000	30	7200	31,200							7
1.4.4.2.1.3.9	Ethernet Equipment & Cabling	ea	1	11,000	11,000	30	3300	14,300							7
1.4.4.2.2	MBT (Magic Bus Transceiver)				255,400	28	72,750	328,150	209,000	232,500	300,225	22,900	10%	67725	5
1.4.4.2.2.1	Engineering & Design	m. yr.	1.0	120,000	120,000	30	36000	156,000	84,000	84,000	109200	36,000	43%		6
1.4.4.2.2.2	Prototypes				38,600	21	8,190	46,790	15,000	16,500	21,225	22,100	134%		6
1.4.4.2.2.2.1	Cards	ea	4	4,000	16,000	30	4800	20,800							7
1.4.4.2.2.2.2	SCL Mezanines	ea	4	400	1,600	15	240	1,840							7
1.4.4.2.2.2.3	Test Fixtures	ea	1	7,000	7,000	15	1050	8,050							7
1.4.4.2.2.2.4	Demux Cards	ea	5	600	3,000	15	450	3,450							7
1.4.4.2.2.2.5	Transmission Tester	ea	4	500	2,000	15	300	2,300							7
1.4.4.2.2.2.6	Data Source Cards	ea	3	3,000	9,000	15	1350	10,350							7
1.4.4.2.2.2.7	Bigger FIFO's (64 to 128 kB)	ea	0	320	0	15	0	0							7
1.4.4.2.2.3	Final Card				96,800	30	28,560	125,360	110,000	132,000	169,800	(35,200)	-27%		6
1.4.4.2.2.3.1	Cards	ea	23	4,000	92,000	30	27600	119,600							7
1.4.4.2.2.3.2	SCL Mezanines	ea	12	400	4,800	20	960	5,760							7
1.4.4.2.2.3.3	Bigger FIFO's (64 to 128 kB)	ea	0	320	0	15	0	0							7
1.4.4.2.3	SLIC (DSP board)				264,000	29	77,200	341,200	360,000	388,000	528,400	(124,000)	-32%	140400	5
1.4.4.2.3.1	Engineering & Design	m. yr.	1.2	100,000	120,000	30	36000	156,000	100,000	100,000	156000	20,000	20%		6
1.4.4.2.3.2	Prototypes	ea	2	10,000	20,000	20	4000	24,000	20,000	20,000	24,000	0	0%		6
1.4.4.2.3.3	Final Card				124,000	30	37,200	161,200	240,000	268,000	348,400	(144,000)	-54%		6
1.4.4.2.3.3.1	Cards	ea	22	4,000	88,000	30	26400	114,400							7
1.4.4.2.3.3.2	Muon Coax Input Converter (CIC)	ea	18	2,000	36,000	30	10800	46,800							7
1.4.4.2.4	SCL Fanout (SFO)				61,000	23	14,200	75,200	64,000	36,000	45,200	25,000	69%	9200	5
1.4.4.2.4.1	Engineering & Design	m. yr.	0.3	80,000	20,000	30	6000	26,000	24,000	20,000	26000	0	0%		6
1.4.4.2.4.2	Prototypes	ea	1	5,000	5,000	20	1000	6,000	10,000	0	0	5,000	#####		6
1.4.4.2.4.3	Final Card	ea	18	2,000	36,000	20	7200	43,200	30,000	16,000	19,200	20,000	125%		6
1.4.4.2.5	Fiber Input Converter (FIC)				115,000	26	29950	144,950	84,000	96,000	117,600	19,000	20%	21600	5
1.4.4.2.5.1	Engineering & Design	m. yr.	0.3	80,000	24,000	30	7200	31,200	24,000	24,000	31200	0	0%		6
1.4.4.2.5.2	Prototypes	ea	3	6,000	18,000	20	3600	21,600	20,000	12,000	14,400	6,000	50%		6
1.4.4.2.5.3	Final Card				73,000	26	19,150	92,150	40,000	60,000	72,000	13,000	22%		6
1.4.4.2.5.3.1	Main FIC Card	ea	13	3,500	45,500	30	13650	59,150							7
1.4.4.2.5.3.2	VTM	ea	11	2,500	27,500	20	5500	33,000							7
1.4.4.2.6	Mbus Backplane				66,256	19	12,527	78,783	37,000	40,800	47,940	25,456	62%	7140	5
1.4.4.2.6.1	Engineering & Design	m. yr.	0.0	80,000	0	0	0	0	16,000	0	0	0	#####		6
1.4.4.2.6.2	Prototypes	ea			23,322	20	3,847	27,169	1,500	0	0	23,322	#####		6
1.4.4.2.6.2.1	Cards	ea	14	1,500	21,000	15	3150	24,150							7
1.4.4.2.6.2.2	Connectors	ea	4	581	2,322	30	697	3,019							7
1.4.4.2.6.2.3	Terminators	ea	0	500	0	30	0	0							7

WBS 1.4.4		LEVEL 2						detail not detail not in cost est change order require							
WBS	ITEM	MATERIALS & SERVICES (M&S)				CONTINGENCY		ORIGINAL	LATEST	LATEST	NEW -	Change			
1.4.4	LEVEL 2	Unit	#	Unit	M&S	%	Cost	TOTAL	M&S	M&S	w/Continger	LATEST	% above	Order	
Revision: JTL	3/18/99 11:19 AM			Cost	TOTAL		Cost	Cost	TOTAL	TOTAL	Cost	Cost	latest	Thresh. LEV	
1.4.4.2.6.2.4	Assembly	ea	0	581	0	30	0	0							7
1.4.4.2.6.3	Final Cards	ea			42,934	20	8,680	51,614	19,500	40,800	47,940	2,134	5%		6
1.4.4.2.6.3.1	Cards	ea	14	2,000	28,000	15	4,200	32,200							7
1.4.4.2.6.3.2	Connectors	ea	14	581	8,134	30	2,440	10,574							7
1.4.4.2.6.3.3	Terminators	ea	34	200	6,800	30	2,040	8,840							7
1.4.4.2.6.3.4	Assembly	ea	0	0	0	30	0	0							7
1.4.4.2.7	Bit3 MPM				73,820	15	11,048	84,868	65,000	93,342	108,837	(19,523)	-21%	15495	5
1.4.4.2.7.1	Prototype Equipment				22,785	5	1,139	23,924							6
1.4.4.2.7.1.1	PCI to A32/D32 VME with DMA 617	ea	4	2,850	11,400	5	570	11,970							7
1.4.4.2.7.1.2	Dual Port Ram (8MB)	ea	4	1,195	4,780	5	239	5,019							7
1.4.4.2.7.1.3	6U-9U holder	ea	2	360	720	5	36	756							7
1.4.4.2.7.1.4	Fiber Optic Interface Card	ea	1	1,095	1,095	5	55	1,150							7
1.4.4.2.7.1.5	Fiber Optic Interface Module	ea	1	1,295	1,295	5	65	1,360							7
1.4.4.2.7.1.6	25' cable for 6 U adapter	ea	4	230	920	5	46	966							7
1.4.4.2.7.1.7	25' cable for w/o adapter	ea	1	230	230	5	12	242							7
1.4.4.2.7.1.8	8 ft CPU end cable	ea	1	145	145	5	7	152							7
1.4.4.2.7.1.9	100 m fiber optic cable	ea	1	400	400	5	20	420							7
1.4.4.2.7.1.10	SBS Bit3 Support Software for NT	ea	3	600	1,800	5	90	1,890							7
1.4.4.2.7.2	Final and FNAL Test Stand Equipment				51,035	19	9,909	60,943							6
1.4.4.2.7.2.1	PCI to VME 618	ea	9	3,700	33,300	15	4,995	38,295							7
1.4.4.2.7.2.2	Dual Port Ram (2MB)	ea	9	581	5,225	30	1,567	6,792							7
1.4.4.2.7.2.3	6U-9U holder	ea	12	500	6,000	30	1,800	7,800							7
1.4.4.2.7.2.4	Fiber Optic Interface Card	ea	0	1,035	0	15	0	0							7
1.4.4.2.7.2.5	25' cable for 6 U adapter	ea	0	230	0	15	0	0							7
1.4.4.2.7.2.6	30 m fiber optic cable	ea	9	190	1,710	15	257	1,967							7
1.4.4.2.7.2.6	SBS Bit3 Support Software for NT	ea	1	600	600	5	30	630							7
1.4.4.2.7.2.7	PCI Extender crate	ea	3	1,400	4,200	30	1,260	5,460							7
1.4.4.2.8	PC	ea	5	2,300	11,500	20	2,300	13,800	15,000	11,500	13,800	0	0%	2300	5
1.4.4.2.9	Cables	ea	475	75	35,625	20	7,125	42,750	44,000	44,000	52,800	(8,375)	-19%	8800	5
1.4.4.2.10	Crates				157,800	20	31,560	189,360	115,900	151,240	181,488	6,560	4%	30248	5
1.4.4.2.10.1	VME	ea	12	4,400	52,800	20	10,560	63,360	42,900	66,240	79,488	(13,440)	-20%		6
1.4.4.2.10.2	Power	ea	14	6,000	84,000	20	16,800	100,800	52,000	64,000	76,800	20,000	31%		6
1.4.4.2.10.3	Monitoring and Cooling	ea	7	2,000	14,000	20	2,800	16,800	14,000	14,000	16,800	0	0%		6
1.4.4.2.10.4	Rack	ea	7	1,000	7,000	20	1,400	8,400	7,000	7,000	8,400	0	0%		6
1.4.4.3	System ED&I	m. yr.	0.7	75,000	54,000	20	10,800	64,800	30,000	54,000	64,800	0	0%	2700	4
1.4.4.4	Calorimeter Preprocessor				233,500	20	46,700	280,200	191,500	233,500	280,200	0	0%	11675	4
1.4.4.4.1	L2 Cal ED&I	m. yr.	0.9	75,000	66,000	20	13,200	79,200	24,000	66,000	79,200	0	0%	13200	5
1.4.4.4.2	Calorimeter Inputs	lot	1	167,500	167,500	20	33,500	201,000	167,500	167,500	201,000	0	0%	33500	5
1.4.4.5	L2 Muon				33,000	9	2,900	35,900	33,000	33,000	35,900	0	0%	725	4
1.4.4.5.1	L2 Muon ED&I	m. yr.	0.10	100,000	10,000	20	2,000	12,000	10,000	10,000	12,000	0	0%	2000	5
1.4.4.5.2	Development Hardware	lot	1	20,000	20,000	0	0	20,000	20,000	20,000	20,000	0	0%	0	5
1.4.4.5.3	Simulation Software	lot	1	3,000	3,000	30	900	3,900	3,000	3,000	3,900	0	0%	900	5
1.4.4.6	L2 CTT				12,000	20	2,400	14,400	15,000	15,000	18,300	(3,000)	-20%	825	4
1.4.4.6.1	ED&I	m. yr.	0.10	120,000	12,000	20	2,400	14,400	12,000	12,000	14,400	0	0%	2400	5
1.4.4.6.2	Simulation Software	lot	0	3,000	0	30	0	0	3,000	3,000	3,900	(3,000)	-100%	900	5
1.4.4.7	L2 Preshower				6,000	20	1,200	7,200	9,000	9,000	11,100	(3,000)	-33%	525	4
1.4.4.7.1	ED&I	m. yr.	0.10	60,000	6,000	20	1,200	7,200	6,000	6,000	7,200	0	0%	1200	5
1.4.4.7.2	Simulation Software	lot	0	3,000	0	30	0	0	3,000	3,000	3,900	(3,000)	-100%	900	5
1.4.4.8	L2 Global ED&I	m. yr.	0.8	75,000	60,000	20	12,000	72,000	24,000	60,000	72,000	0	0%	3000	4
1.4.4.9	Test Stand ED&I	m. yr.	0.3	75,000	22,500	20	4,500	27,000	18,000	22,500	27,000	0	0%	1125	4
1.4.4	TOTAL L2 TRIGGER				2,042,017	21	430,166	2,472,183	1,962,464	2,052,591	2,516,047	(10,575)	-1%	0	3