## Integrating Detector Work Package Diagram

## Assumed exchange rate : CAD/US 1.333333

## Color Code:

Red text: Un-costed / missing detail
CFI relevant fields

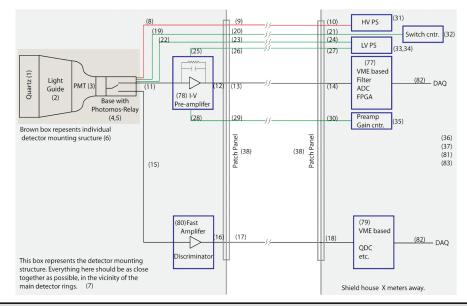
# det M. 224 # SM det. 28 cont. 0.2

## Legend:

Cntr

patch panel PS power supply Det Detector TRK Traking INT Integrating PreA Preamp ADC ADC PMT PMT Sig

Controller/Control



Ma	ain Detectors										
Sys	stem Part	Unit	Responsible	Funding Source	Items	items		ost/item \$US	Cost/item CAD	Total/part US\$	Total/part CAD
Item			Institution			W. 20%	cont.				
1	Quartz	#	UofM/SBU/SU	CFI		224	268	\$900.00	\$1,200.00	\$241,200.00	\$321,600.00
2	Light guides	#	UofM/SBU/SU	CFI		224	268	\$200.00	\$266.67	\$53,600.00	\$71,466.67
3	PMTs	#	UofM/SBU/SU	CFI		224	268	\$1,070.00	\$1,426.67	\$286,760.00	\$382,346.67
4	Bases	#	UofM/SBU/SU	CFI		224	268	\$300.00	\$400.00	\$80,400.00	\$107,200.00
5	Misc. Supplies and Mat.	arb.	UofM/SBU/SU	CFI		224	268	\$50.00	\$66.67	\$13,400.00	\$17,866.67
6	Quartz assembly mounts	#	UofM/SBU/SU	CFI		224	268	\$300.00	\$400.00	\$80,400.00	\$107,200.00
7	Det. package mount	#	JLab	DOE/NSF		1	1	\$0.00	\$0.00	\$0.00	\$0.00
8	HV cables PMT->PP	#	JLab	DOE/NSF		448	537	\$0.00	\$0.00	\$0.00	\$0.00
9	HV cables PP->PP	#	JLab	DOE/NSF		448	537	\$0.00	\$0.00	\$0.00	\$0.00
10	HV cables PP->PS	#	JLab	DOE/NSF		448	537	\$0.00		\$0.00	\$0.00
11	Sig. cables (INT) PMT -> PreA	#	Jlab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
12	Sig. cables (INT) PreA -> PP	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
13	Sig. cables (INT) PP -> PP	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
14	Sig. cables (INT) PP -> ADC	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
15	Sig. cables (TRK) PMT -> PreA	#	Jlab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
16	Sig. cables (TRK) PreA -> PP	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
17	Sig. cables (TRK) PP -> PP	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
18	Sig. cables (TRK) PP -> ADC	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
19	Base Switch cables PMT -> PP	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
20	Base Switch cables PP -> PP	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
21	Base Switch cables PP -> Cntr	. #	JLab	DOE/NSF		224	268	\$0.00		\$0.00	
22	Base power cables PMT -> PP	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
23	Base power cables PP -> PP	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
24	Base power cables PP -> PS	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
25	PreA power cables PMT -> PP	#	JLab	DOE/NSF		224	268	\$0.00		\$0.00	
26	PreA power cables PP -> PP	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
27	PreA power cables PP -> PS	#	JLab	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00

	Subtotal equipment only								\$755,760.00	\$1,007,680.00
38	Patch panels	#	JLab	DOE/NSF	1	1	\$0.00	\$0.00	\$0.00	\$0.00
37	Crates	#	JLab	DOE/NSF	1	1	\$0.00	\$0.00	\$0.00	\$0.00
36	Racks	#	JLab	DOE/NSF	1	1	\$0.00	\$0.00	\$0.00	\$0.00
35	PreA gain Cntr. board(s)	channels	JLab	DOE/NSF	224	268	\$0.00	\$0.00	\$0.00	\$0.00
34	PreA PS	channels	JLab	DOE/NSF	224	268	\$0.00	\$0.00	\$0.00	\$0.00
33	Base Switch PS	channels	JLab	DOE/NSF	224	268	\$0.00	\$0.00	\$0.00	\$0.00
32	Base Switch Cntr. board(s)	channels	JLab	DOE/NSF	224	268	\$0.00	\$0.00	\$0.00	\$0.00
31	HV Power Supplies	channels	JLab	DOE/NSF	224	268	\$0.00	\$0.00	\$0.00	\$0.00
30	PreA gain cntr. cbl. PP -> Cntr.	#	JLab	DOE/NSF	224	268	\$0.00	\$0.00	\$0.00	\$0.00
29	PreA gain cntr. cbl. PP -> PP	#	JLab	DOE/NSF	224	268	\$0.00	\$0.00	\$0.00	\$0.00
28	PreA gain cntr. cbl. PMT -> PP	#	JLab	DOE/NSF	224	268	\$0.00	\$0.00	\$0.00	\$0.00

Shower Max	Detectors									
System	Part	Unit	Responsible	Funding Source	Items	items	Cost/item \$US	Cost/item CAD	Total/part US\$	Total/part CAD
			Institution			W. 20% cont.				
39	Quartz	#	ISU/SBU	CFI	112	134	\$1,116.33	\$1,488.43	\$149,587.55	\$199,450.07
40	PMTs	#	ISU/SBU	CFI	28	33	\$1,070.00	\$1,426.67	\$35,310.00	\$47,080.00
41	Bases	#	ISU/SBU	CFI	28	33	\$300.00	\$400.00	\$9,900.00	\$13,200.00
42	Light guides	#	ISU/SBU	CFI	28	33	\$100.00	\$133.33	\$3,300.00	\$4,400.00
43	Misc. Supplies and Mat.	arb.	ISU/SBU	CFI	28	28	\$50.00	\$66.67	\$1,400.00	\$1,866.67
44	Tungsten / Lead	#	ISU/SBU	CFI	112	134	\$538.34	\$717.79	\$72,137.63	\$96,183.50
45	Stack support frame	#	ISU/SBU	CFI	33	33	\$300.00	\$400.00	\$9,900.00	\$13,200.00
46	Detector package mount	#	Jlab	DOE/NSF	1	1	\$0.00	\$0.00	\$0.00	\$0.00
47	HV cables	#	JLab	DOE/NSF	124	148	\$0.00	\$0.00	\$0.00	\$0.00
48	Signal cables	#	JLab	DOE/NSF	248	297	\$0.00	\$0.00	\$0.00	\$0.00
49	PMT to Preamp cables	#	JLab	DOE/NSF	124	148	\$0.00	\$0.00	\$0.00	\$0.00
50	Base control cables	#	JLab	DOE/NSF	124	148	\$0.00	\$0.00	\$0.00	\$0.00
51	Preamp power cables	#	JLab	DOE/NSF	124	148	\$0.00	\$0.00	\$0.00	\$0.00
52	HV Power Supplies	channels	JLab	DOE/NSF	124	148	\$0.00	\$0.00	\$0.00	\$0.00
53	PMT control power sup.	channels	JLab	DOE/NSF	124	148	\$0.00	\$0.00	\$0.00	\$0.00
54	Preamp power sup.	channels	JLab	DOE/NSF	124	148	\$0.00	\$0.00	\$0.00	\$0.00
55	PMT control interface	channels	JLab	DOE/NSF	124	148	\$0.00	\$0.00	\$0.00	\$0.00
56	Racks	#	JLab	DOE/NSF	1	1	\$0.00	\$0.00	\$0.00	\$0.00
57	Crates	#	JLab	DOE/NSF	1	1	\$0.00	\$0.00	\$0.00	\$0.00
58	Patch panels	#	JLab	DOE/NSF	1	1	\$0.00	\$0.00	\$0.00	\$0.00
	Subtotal equipment only								\$281,535.18	\$375,380.24

Scanner										
	Part	Unit	Responsible	Funding Source	Items	items	Cost/	item \$US Cost/item CAD	Total/part US\$	Total/part CAD
			Institution			W. 20% c	ont.			
59	Quartz	#	VT	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
60	PMTs	#	VT	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
61	Bases	#	VT	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
62	Light guides	#	VT	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
63	Motion System	#	VT	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
64	Mounting	#	VT/JLab	DOE/NSF		1	6	\$0.00	\$0.00	\$0.00
65	HV cables	#	JLab	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
66	Signal cables	#	JLab	DOE/NSF		8	6	\$0.00	\$0.00	\$0.00
67	PMT to Preamp cables	#	JLab	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
68	Base control cables	#	JLab	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
69	Preamp power cables	#	JLab	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
70	HV Power Supplies	channels	JLab	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
71	PMT control power sup.	channels	VT	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
72	Preamp power sup.	channels	VT	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
73	PMT control interface	channels	VT	DOE/NSF		4	6	\$0.00	\$0.00	\$0.00
74	Racks	#	JLab	DOE/NSF		1	6	\$0.00	\$0.00	\$0.00
75	Crates	#	JLab	DOE/NSF		1	6	\$0.00	\$0.00	\$0.00
76	Patch panels	#	JLab	DOE/NSF		1	6	\$0.00	\$0.00	\$0.00

Subtotal equipment only	\$0.00	\$0.00

	Part	Unit	Responsible	Funding Source	Items	items	Cos	t/item \$US	Cost/item CAD	Total/part US\$	Total/part CAD
			Institution			W. 20%	cont.				
77	ADC (INT)	channels	UofM/TRIUMF	CFI		512	614	\$200.00	\$266.67	\$122,800.00	\$163,733.33
78	Pre-amplifiers (INT)	channels	UofM/TRIUMF	CFI		512	614	\$75.00	\$100.00	\$46,050.00	\$61,400.00
79	ADC (TRK)	channels	(Jlab ?)	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
80	Pre-amplifiers (TRK)	channels	?	DOE/NSF		224	268	\$0.00	\$0.00	\$0.00	\$0.00
81	VME crates	#	UofM/JLab	DOE		45	54	\$0.00	\$0.00	\$0.00	\$0.00
82	Cables	#	UofM/JLab	DOE		448	537	\$0.00	\$0.00	\$0.00	\$0.00
83	Crate CPUs	#	UofM/JLab	DOE		40	48	\$0.00	\$0.00	\$0.00	\$0.00
	Subtotal equipment only									\$168,850.00	\$225,133.33
	Overal Total (equipment	only )								\$168.850.00	\$1,608,193,57

Integrating Electronics

Part   Unit   Responsible   Funding Source   Nam of /ry   Cod/year SUS   Cod/year SUS   Cod/year CAD   Total/Item CAD	Manpower											
Section   Sect		Part	Unit	Responsible	Funding Source		Num of yrs	Cost/	ear \$US/	Cost/year CAD	Total/item US\$	Total/item CAD
NSF   Undergraduate Students   W   Memorial   NSERC   1   8   \$7,000.00   \$58,000.00				Institution		Or FTEs						
Best	84	Undergraduate Students	#	UofM	NSERC		2	8		\$7,000.00		\$112,000.00
88	85		#	UofW	NSERC		2	8		\$7,000.00		
88         Undergraduate Students         #         SBU         NSF         0         0         50.00         50.00           90         Undergraduate Students         #         ISU         NSF         0         0         50.00         50.00           91         Undergraduate Students         #         IVT         NSF         0         0         50.00         50.00           92         Graduate Students         #         UofM         NSERC         6         12         \$21,000.00         \$50.00         500.00           93         Graduate Students         #         UofM         NSERC         2         12         \$21,000.00         \$50.00,000.00         593.00         593.00         500.00         \$50.00         \$50.00         \$525,000.00         \$525,000.00         \$525,000.00         \$5	86	Undergraduate Students	#	Memorial			1	8		\$7,000.00		
89	87	Undergraduate Students	#	Acadia	NSERC		1	8		\$7,000.00		\$56,000.00
90	88	Undergraduate Students	#	SBU	NSF		0	0	\$0.00		\$0.00	
91	89	Undergraduate Students	#		NSF		0	0				
92   Graduate Students # UoPM NSERC   6   12   \$21,000.00   \$1,512,000.00   93   Graduate Students # UoPM NSERC   2   12   \$21,000.00   \$5,000.00   94   Graduate Students # Memorial NSERC   1   12   \$21,000.00   \$252,000.00   95   Graduate Students # SBU NSF   0   0   \$0,00   \$0.00   96   Graduate Students # SBU NSF   0   0   \$0,00   \$0.00   97   Graduate Students # SBU NSF   0   0   \$0,00   \$0.00   98   Graduate Students # SBU NSF   0   0   \$0,00   \$0.00   99   Graduate Students # ISU NSF   0   0   \$0,00   \$0.00   99   Graduate Students # VT NSF   0   0   \$0,00   \$0.00   100   Research Associates (Postdocs) # UoPM NSERC   3   12   \$60,000.00   \$0.00   101   Research Associates (Postdocs) # UoPM NSERC   0   0   \$60,000.00   \$0.00   102   Research Associates (Postdocs) # Memorial NSERC   0   0   \$60,000.00   \$0.00   103   Research Associates (Postdocs) # Memorial NSERC   0   0   \$60,000.00   \$0.00   104   Research Associates (Postdocs) # SBU NSF   0   0   \$60,000.00   \$0.00   105   Research Associates (Postdocs) # SBU NSF   0   0   \$60,000.00   \$0.00   106   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   107   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   108   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   109   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   107   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   108   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   109   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   109   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   100   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   100   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   100   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   100   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   100   Research Associates (Postdocs) # SBU NSF   0   0   \$0.00   \$0.00   100   Research Associates (Po	90	Undergraduate Students	#	ISU	NSF		0	0	\$0.00			
93   Graduate Students #   UnfW   NSERC   2   12   \$21,000.00   \$550,000.00   94   Graduate Students #   Memorial   NSERC   1   12   \$21,000.00   \$252,000.00   95   Graduate Students #   SBU   NSF   0   0   \$0.00   \$0.00   96   Graduate Students #   SBU   NSF   0   0   \$0.00   \$0.00   97   Graduate Students #   SU   NSF   0   0   \$0.00   \$0.00   98   Graduate Students #   ISU   NSF   0   0   \$0.00   \$0.00   99   Graduate Students #   VT   NSF   0   0   \$0.00   \$0.00   100   Research Associates (Postdocs) #   UnfW   NSERC   3   12   \$60,000.00   \$0.00   101   Research Associates (Postdocs) #   UnfW   NSERC   0   0   \$60,000.00   \$2,160,000.00   102   Research Associates (Postdocs) #   UnfW   NSERC   0   0   \$60,000.00   \$0.00   103   Research Associates (Postdocs) #   Acadia   NSERC   0   0   \$60,000.00   \$0.00   104   Research Associates (Postdocs) #   SBU   NSF   0   0   \$0.00   \$0.00   \$0.00   105   Research Associates (Postdocs) #   SBU   NSF   0   0   \$0.00   \$0.00   \$0.00   106   Research Associates (Postdocs) #   SU   NSF   0   0   \$0.00   \$0.00   \$0.00   107   Research Associates (Postdocs) #   SU   NSF   0   0   \$0.00   \$0.00   \$0.00   108   Engineers   FTE   UnfW   NSERC   0   0   \$0.00   \$0.00   \$0.00   109   Engineers   FTE   UnfW   NSERC   0   0   \$100,000.00   \$0.00   110   Engineers   FTE   UnfW   NSERC   0   0   \$100,000.00   \$0.00   111   Engineers   FTE   SU   NSF   0   0   \$0.00   \$0.00   \$0.00   112   Engineers   FTE   SU   NSF   0   0   \$0.00   \$0.00   \$0.00   113   Engineers   FTE   UnfW   NSERC   0   0   \$0.00   \$0.00   \$0.00   114   Engineers   FTE   UnfW   NSERC   0   0   \$0.00   \$0.00   \$0.00   115   Engineers   FTE   UnfW   NSERC   0   0   \$0.00   \$0.00   \$0.00   116   Technicians   FTE   UnfW   NSERC   0   0   \$0.00   \$0.00   \$0.00   117   Technicians   FTE   UnfW   NSERC   0   0   \$0.00   \$0.00   \$0.00   118   Technicians   FTE   UnfW   NSERC   0   0   \$0.00   \$0.00   \$0.00   119   Technicians   FTE   UnfW   NSERC   0   0   \$0.00   \$0.00   \$0.00   110   Technicians   FTE   UnfW   NSE	91	Undergraduate Students	#	VT	NSF		0	0	\$0.00		\$0.00	
94         Graduate Students         #         Memorial         NSERC         1         12         \$21,000.00         \$222,000.00           95         Graduate Students         #         SBU         NSF         0         0         \$0.00         \$0.00           97         Graduate Students         #         SBU         NSF         0         0         \$0.00         \$0.00           98         Graduate Students         #         USU         NSF         0         0         \$0.00         \$0.00           99         Graduate Students         #         VT         NSF         0         0         \$0.00         \$0.00           100         Research Associates (Postdocs) #         UofM         NSFRC         3         12         \$60,000.00         \$0.00           101         Research Associates (Postdocs) #         Honorial         NSERC         0         0         \$60,000.00         \$0.00           102         Research Associates (Postdocs) #         Memorial         NSERC         0         0         \$60,000.00         \$0.00           103         Research Associates (Postdocs) #         A Cadia         NSERC         0         0         \$60,000.00         \$0.00           10	92	Graduate Students	#	UofM	NSERC		6	12		\$21,000.00		\$1,512,000.00
95         Graduate Students         #         Acadia         NSERC         1         12         \$21,000.00         \$252,000.00           96         Graduate Students         #         SU         NSF         0         0         \$0.00         \$0.00           98         Graduate Students         #         SU         NSF         0         0         \$0.00         \$0.00           99         Graduate Students         #         VT         NSF         0         0         \$0.00         \$0.00           100         Research Associates (Postdocs) #         UofM         NSERC         3         12         \$60,000.00         \$0.00           101         Research Associates (Postdocs) #         Memorial         NSERC         0         0         \$60,000.00         \$0.00           102         Research Associates (Postdocs) #         Memorial         NSERC         0         0         \$60,000.00         \$0.00           103         Research Associates (Postdocs) #         SBU         NSERC         0         0         \$60,000.00         \$0.00           104         Research Associates (Postdocs) #         SBU         NSF         0         0         \$0.00         \$0.00           105	93	Graduate Students	#	UofW	NSERC		2	12		\$21,000.00		\$504,000.00
96 Graduate Students # SBU NSF 0 0 0 \$0.00	94	Graduate Students	#	Memorial			1	12				
97 Graduate Students # ISU NSF 0 0 0 \$0.00 \$0.00 \$0.00 98 Graduate Students # ISU NSF 0 0 0 \$0.00 \$0.00 99 Graduate Students # VT NSF 0 0 0 \$0.00 \$0.00 100 Research Associates (Postdocs) # UofM NSERC 3 12 \$60,000.00 \$2,160,000.00 101 Research Associates (Postdocs) # UofM NSERC 0 0 0 \$60,000 \$2,160,000.00 102 Research Associates (Postdocs) # Memorial NSERC 0 0 0 \$60,000.00 \$0.00 103 Research Associates (Postdocs) # Acadia NSERC 0 0 0 \$60,000.00 \$0.00 104 Research Associates (Postdocs) # SBU NSF 0 0 0 \$60,000.00 \$0.00 105 Research Associates (Postdocs) # SU NSF 0 0 0 \$0.00 106 Research Associates (Postdocs) # ISU NSF 0 0 0 \$0.00 107 Research Associates (Postdocs) # ISU NSF 0 0 0 \$0.00 108 Engineers FTE UofM NSERC 0 0 0 \$100,000.00 \$0.00 109 Engineers FTE UofM NSERC 0 0 0 \$100,000.00 \$0.00 110 Engineers FTE Memorial NSERC 0 0 0 \$100,000.00 \$0.00 111 Engineers FTE Nemorial NSERC 0 0 0 \$100,000.00 \$0.00 112 Engineers FTE SU NSF 0 0 0 \$0.00 113 Engineers FTE SU NSF 0 0 0 \$0.00 114 Engineers FTE SU NSF 0 0 0 \$0.00 115 Engineers FTE Wemorial NSERC 0 0 \$0.00 116 Technicians FTE UofM NSERC 0 0 \$0.00 117 Technicians FTE UofM NSERC 0 0 \$0.00 118 Engineers FTE SU NSF 0 0 \$0.00 119 Engineers FTE Wemorial NSERC 0 0 \$0.00 110 Engineers FTE Nemorial NSERC 0 0 \$0.00 111 Engineers FTE Nemorial NSERC 0 0 \$0.00 110 Engineers FTE Nemorial NSERC 0 0 \$0.00 111 Engineers FTE Nemorial NSERC 0 0 \$0.00 110 Technicians FTE Nemorial NSERC 0 \$0.00 111 Engineers FTE NO NSF 0 0 \$0.00 112 Engineers FTE NO NSERC 0 0 \$60,000.00 \$0.00 113 Engineers FTE NO NSERC 0 0 \$60,000.00 \$0.00 115 Engineers FTE NO NSERC 0 0 \$60,000.00 \$0.00 116 Technicians FTE NO NSERC 0 0 \$60,000.00 \$0.00 117 Technicians FTE NO NSERC 0 0 \$60,000.00 \$0.00 118 Technicians FTE NO NSERC 0 0 \$60,000.00 \$0.00 119 Technicians FTE NO NSERC 0 0 \$60,000.00 \$0.00 120 Technicians FTE NO NSERC 0 0 \$60,000.00 \$0.00 121 Technicians FTE NO NSERC 0 0 \$60,000.00 \$0.00	95	Graduate Students	#	Acadia	NSERC		1	12		\$21,000.00		\$252,000.00
98         Graduate Students         #         ISU         NSF         0         0         \$0.00         \$0.00           99         Graduate Students         #         VT         NSF         0         0         \$0.00         \$0.00           100         Research Associates (Postdocs) #         UofM         NSERC         0         0         \$60,000.00         \$0.00           101         Research Associates (Postdocs) #         Memorial         NSERC         0         0         \$60,000.00         \$0.00           103         Research Associates (Postdocs) #         Acadia         NSERC         0         0         \$60,000.00         \$0.00           104         Research Associates (Postdocs) #         SBU         NSF         0         0         \$60,000.00         \$0.00           105         Research Associates (Postdocs) #         SU         NSF         0         0         \$0.00         \$0.00           106         Research Associates (Postdocs) #         SU         NSF         0         0         \$0.00         \$0.00           107         Research Associates (Postdocs) #         VT         NSF         0         0         \$0.00         \$0.00           107         Research Associates (	96	Graduate Students	#	SBU	NSF		0	0	\$0.00		\$0.00	
99 Graduate Students # VT NSF 0 0 0 50.00 \$0.00 \$0.00 \$1.00 \$1.00 \$0.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,160,000.00 \$2,100,000.00 \$2,000	97	Graduate Students	#		NSF		0	0				
100   Research Associates (Postdocs) # UofM   NSERC   3   12   \$60,000.00   \$2,160,000.00     101   Research Associates (Postdocs) # UofW   NSERC   0   0   \$60,000.00   \$0.00     102   Research Associates (Postdocs) # Memorial   NSERC   0   0   \$60,000.00   \$0.00     103   Research Associates (Postdocs) #   Acadia   NSERC   0   0   \$60,000.00   \$0.00     104   Research Associates (Postdocs) #   SBU   NSF   0   0   \$60,000.00   \$0.00     105   Research Associates (Postdocs) #   SU   NSF   0   0   \$0.00   \$0.00     106   Research Associates (Postdocs) #   ISU   NSF   0   0   \$0.00   \$0.00     107   Research Associates (Postdocs) #   ISU   NSF   0   0   \$0.00   \$0.00     108   Engineers   FTE   UofM   NSERC   0   0   \$0.00   \$0.00   \$0.00     109   Engineers   FTE   UofM   NSERC   0   0   \$100,000.00   \$0.00     110   Engineers   FTE   UofM   NSERC   0   0   \$100,000.00   \$0.00     111   Engineers   FTE   Memorial   NSERC   0   0   \$100,000.00   \$0.00     112   Engineers   FTE   SBU   NSF   0   0   \$0.00   \$0.00     113   Engineers   FTE   SBU   NSF   0   0   \$0.00   \$0.00     114   Engineers   FTE   SBU   NSF   0   0   \$0.00   \$0.00     115   Engineers   FTE   UofM   NSERC   0   0   \$0.00   \$0.00     116   Technicians   FTE   UofM   NSERC   0   0   \$0.00   \$0.00     117   Technicians   FTE   UofM   NSERC   0   0   \$0.00   \$0.00     118   Technicians   FTE   UofM   NSERC   0   0   \$60,000.00   \$0.00     119   Technicians   FTE   UofM   NSERC   0   0   \$60,000.00   \$0.00     119   Technicians   FTE   UofM   NSERC   0   0   \$60,000.00   \$0.00     119   Technicians   FTE   UofM   NSERC   0   0   \$60,000.00   \$0.00     110   Technicians   FTE   UofM   NSERC   0   0   \$60,000.00   \$0.00     110   Technicians   FTE   UofM   NSERC   0   0   \$60,000.00   \$0.00     110   Technicians   FTE   SBU   NSFRC   0   0   \$60,000.00   \$0.00     120   Technicians   FTE   SBU   NSFRC   0   0   \$60,000.00   \$0.00     121   Technicians   FTE   SU   NSFRC   0   0   \$0.00   \$0.00     121   Technicians   FTE   SBU   NSFRC   0   0   \$0.00	98	Graduate Students	#	ISU	NSF		0	0	\$0.00		\$0.00	
101   Research Associates (Postdocs) # UofW NSERC   0 0 0 \$60,000.00   \$0.00	99	Graduate Students	#	VT	NSF		0	0	\$0.00		\$0.00	
102   Research Associates (Postdocs) #   Memorial   NSERC   0 0 0 \$60,000.00 \$0.00	100	Research Associates (Postdocs	) #	UofM	NSERC		3	12		\$60,000.00		\$2,160,000.00
103   Research Associates (Postdocs) #   Acadia   NSERC   0 0 0   \$60,000.00   \$0.00     104   Research Associates (Postdocs) #   SBU   NSF   0 0 0 \$0.00   \$0.00     105   Research Associates (Postdocs) #   ISU   NSF   0 0 0 \$0.00   \$0.00     106   Research Associates (Postdocs) #   ISU   NSF   0 0 0 \$0.00   \$0.00     107   Research Associates (Postdocs) #   VT   NSF   0 0 0 \$0.00   \$0.00     108   Engineers   FTE   UofM   NSERC   0 0 0 \$100,000.00   \$0.00     109   Engineers   FTE   UofW   NSERC   0 0 0 \$100,000.00   \$0.00     110   Engineers   FTE   Memorial   NSERC   0 0 0 \$100,000.00   \$0.00     111   Engineers   FTE   Acadia   NSERC   0 0 0 \$100,000.00   \$0.00     112   Engineers   FTE   SBU   NSF   0 0 0 \$0.00   \$0.00     113   Engineers   FTE   SU   NSF   0 0 0 \$0.00   \$0.00     114   Engineers   FTE   SU   NSF   0 0 0 \$0.00   \$0.00     115   Engineers   FTE   UofM   NSERC   0 0 0 \$0.00   \$0.00     116   Technicians   FTE   UofM   NSERC   0 0 0 \$60,000.00   \$0.00     117   Technicians   FTE   UofM   NSERC   0 0 0 \$60,000.00   \$0.00     118   Technicians   FTE   UofM   NSERC   0 0 0 \$60,000.00   \$0.00     119   Technicians   FTE   UofM   NSERC   0 0 0 \$60,000.00   \$0.00     120   Technicians   FTE   SBU   NSF   0 0 0 \$60,000.00   \$0.00     120   Technicians   FTE   SBU   NSF   0 0 0 \$60,000.00   \$0.00     121   Technicians   FTE   SBU   NSF   0 0 0 \$60,000.00   \$0.00     121   Technicians   FTE   SBU   NSF   0 0 0 \$0.00   \$0.00   \$0.00     121   Technicians   FTE   SBU   NSF   0 0 0 \$0.00   \$0.00   \$0.00     121   Technicians   FTE   SBU   NSF   0 0 0 \$0.00   \$0.00   \$0.00     121   Technicians   FTE   SBU   NSF   0 0 0 \$0.00   \$0.00   \$0.00     122   Technicians   FTE   SBU   NSF   0 0 0 \$0.00   \$0.00   \$0.00     121   Technicians   FTE   SBU   NSF   0 0 0 \$0.00   \$0.00   \$0.00     122   Technicians   FTE   SBU   NSF   0 0 0 \$0.00   \$0.00   \$0.00     123   Technicians   FTE   SBU   NSF   0 0 0 \$0.00   \$0.00   \$0.00     124   Technicians   FTE   SBU   NSF   0 0 0 \$0.00   \$0.00   \$0.00     125   Technici	101	Research Associates (Postdocs	) #	UofW	NSERC		0	0		\$60,000.00		\$0.00
104   Research Associates (Postdocs) # SBU NSF 0 0 0 \$0.00	102	Research Associates (Postdocs	) #	Memorial	NSERC		0	0		\$60,000.00		\$0.00
105   Research Associates (Postdocs) #   SU   NSF   0 0 0 \$0.00	103	Research Associates (Postdocs	) #	Acadia	NSERC		0	0		\$60,000.00		\$0.00
106   Research Associates (Postdocs) #	104	Research Associates (Postdocs	) #	SBU	NSF		0	0	\$0.00		\$0.00	
107   Research Associates (Postdocs) # VT NSF   0 0 0 \$0.00 \$0.00 \$0.00 \$0.00 \$100,000.00 \$0.00 \$100,000.00 \$0.00 \$100,000.00 \$0.00 \$0.00 \$100,000.00 \$0.0	105	Research Associates (Postdocs	) #	SU	NSF		0	0	\$0.00		\$0.00	
108         Engineers         FTE         UofM         NSERC         0         0         \$100,000.00         \$0.00           109         Engineers         FTE         UofW         NSERC         0         0         \$100,000.00         \$0.00           110         Engineers         FTE         Memorial         NSERC         0         0         \$100,000.00         \$0.00           111         Engineers         FTE         Acadia         NSERC         0         0         \$100,000.00         \$0.00           112         Engineers         FTE         SBU         NSF         0         0         \$0.00         \$0.00           113         Engineers         FTE         SU         NSF         0         0         \$0.00         \$0.00           114         Engineers         FTE         ISU         NSF         0         0         \$0.00         \$0.00           115         Engineers         FTE         VT         NSF         0         0         \$0.00         \$0.00           116         Technicians         FTE         UofM         NSERC         0         0         \$60,000.00         \$0.00           117         Technicians         <	106	Research Associates (Postdocs	) #	ISU	NSF		0	0	\$0.00		\$0.00	
Technicians   FTE   UofW   NSERC   0   0   \$100,000.00   \$0.00	107	Research Associates (Postdocs	) #	VT	NSF		0	0	\$0.00		\$0.00	
110         Engineers         FTE         Memorial         NSERC         0         0         \$100,000.00         \$0.00           111         Engineers         FTE         Acadia         NSERC         0         0         \$100,000.00         \$0.00           112         Engineers         FTE         SBU         NSF         0         0         \$0.00         \$0.00           113         Engineers         FTE         SU         NSF         0         0         \$0.00         \$0.00           114         Engineers         FTE         ISU         NSF         0         0         \$0.00         \$0.00           115         Engineers         FTE         IVT         NSF         0         0         \$0.00         \$0.00           116         Technicians         FTE         UofM         NSERC         0         0         \$60,000.00         \$0.00           117         Technicians         FTE         UofW         NSERC         0         0         \$60,000.00         \$0.00           118         Technicians         FTE         Acadia         NSERC         0         0         \$60,000.00         \$0.00           120         Technicians	108	Engineers	FTE	UofM	NSERC		0	0		\$100,000.00		\$0.00
111         Engineers         FTE         Acadia         NSERC         0         0         \$100,000.00         \$0.00           112         Engineers         FTE         SBU         NSF         0         0         \$0.00         \$0.00           113         Engineers         FTE         SU         NSF         0         0         \$0.00         \$0.00           114         Engineers         FTE         ISU         NSF         0         0         \$0.00         \$0.00           115         Engineers         FTE         VT         NSF         0         0         \$0.00         \$0.00           116         Technicians         FTE         UofM         NSERC         0         0         \$60,000.00         \$0.00           117         Technicians         FTE         UofW         NSERC         0         0         \$60,000.00         \$0.00           118         Technicians         FTE         Acadia         NSERC         0         0         \$60,000.00         \$0.00           120         Technicians         FTE         SBU         NSF         0         0         \$0.00         \$0.00           121         Technicians         FTE<	109	Engineers	FTE	UofW	NSERC		0	0		\$100,000.00		\$0.00
112         Engineers         FTE         SBU         NSF         0         0         \$0.00         \$0.00           113         Engineers         FTE         SU         NSF         0         0         \$0.00         \$0.00           114         Engineers         FTE         ISU         NSF         0         0         \$0.00         \$0.00           115         Engineers         FTE         VT         NSF         0         0         \$0.00         \$0.00           116         Technicians         FTE         UofM         NSERC         0         0         \$60,000.00         \$0.00           117         Technicians         FTE         UofW         NSERC         0         0         \$60,000.00         \$0.00           118         Technicians         FTE         Memorial         NSERC         0         0         \$60,000.00         \$0.00           119         Technicians         FTE         Acadia         NSERC         0         0         \$60,000.00         \$0.00           120         Technicians         FTE         SBU         NSF         0         0         \$0.00         \$0.00           121         Technicians         F	110	Engineers	FTE	Memorial	NSERC		0	0		\$100,000.00		\$0.00
113         Engineers         FTE         SU         NSF         0         0         \$0.00         \$0.00           114         Engineers         FTE         ISU         NSF         0         0         \$0.00         \$0.00           115         Engineers         FTE         VT         NSF         0         0         \$0.00         \$0.00           116         Technicians         FTE         UofM         NSERC         0         0         \$60,000.00         \$0.00           117         Technicians         FTE         UofW         NSERC         0         0         \$60,000.00         \$0.00           118         Technicians         FTE         Memorial         NSERC         0         0         \$60,000.00         \$0.00           119         Technicians         FTE         Acadia         NSERC         0         0         \$60,000.00         \$0.00           120         Technicians         FTE         SBU         NSF         0         0         \$0.00         \$0.00           121         Technicians         FTE         SU         NSF         0         0         \$0.00         \$0.00	111	Engineers	FTE	Acadia	NSERC		0	0		\$100,000.00		\$0.00
114         Engineers         FTE         ISU         NSF         0         0         \$0.00         \$0.00           115         Engineers         FTE         VT         NSF         0         0         \$0.00         \$0.00           116         Technicians         FTE         UofM         NSERC         0         0         \$60,000.00         \$0.00           117         Technicians         FTE         UofW         NSERC         0         0         \$60,000.00         \$0.00           118         Technicians         FTE         Memorial         NSERC         0         0         \$60,000.00         \$0.00           120         Technicians         FTE         Acadia         NSFRC         0         0         \$60,000.00         \$0.00           120         Technicians         FTE         SBU         NSF         0         0         \$0.00         \$0.00           121         Technicians         FTE         SU         NSF         0         0         \$0.00         \$0.00	112	Engineers	FTE	SBU	NSF		0	0	\$0.00		\$0.00	
115         Engineers         FTE         VT         NSF         0         0         \$0.00         \$0.00           116         Technicians         FTE         UofM         NSERC         0         0         \$60,000.00         \$0.00           117         Technicians         FTE         UofW         NSERC         0         0         \$60,000.00         \$0.00           118         Technicians         FTE         Memorial         NSERC         0         0         \$60,000.00         \$0.00           120         Technicians         FTE         Acadia         NSFR         0         0         \$0.00         \$0.00           120         Technicians         FTE         SBU         NSF         0         0         \$0.00         \$0.00           121         Technicians         FTE         SU         NSF         0         0         \$0.00         \$0.00	113	Engineers	FTE	SU	NSF		0	0	\$0.00		\$0.00	
116         Technicians         FTE         UofM         NSERC         0         0         \$60,000.00         \$0.00           117         Technicians         FTE         UofW         NSERC         0         0         \$60,000.00         \$0.00           118         Technicians         FTE         Memorial         NSERC         0         0         \$60,000.00         \$0.00           119         Technicians         FTE         Acadia         NSERC         0         0         \$60,000.00         \$0.00           120         Technicians         FTE         SBU         NSF         0         0         \$0.00         \$0.00           121         Technicians         FTE         SU         NSF         0         0         \$0.00         \$0.00	114	Engineers	FTE	ISU	NSF		0	0	\$0.00		\$0.00	
117         Technicians         FTE         UofW         NSERC         0         0         \$60,000.00         \$0.00           118         Technicians         FTE         Memorial         NSERC         0         0         \$60,000.00         \$0.00           119         Technicians         FTE         Acadia         NSERC         0         0         \$60,000.00         \$0.00           120         Technicians         FTE         SBU         NSF         0         0         \$0.00         \$0.00           121         Technicians         FTE         SU         NSF         0         0         \$0.00         \$0.00	115	Engineers	FTE	VT	NSF		0	0	\$0.00		\$0.00	
118         Technicians         FTE         Memorial         NSERC         0         0         \$60,000.00         \$0.00           119         Technicians         FTE         Acadia         NSERC         0         0         \$60,000.00         \$0.00           120         Technicians         FTE         SBU         NSF         0         0         \$0.00         \$0.00           121         Technicians         FTE         SU         NSF         0         0         \$0.00         \$0.00	116	Technicians	FTE	UofM	NSERC		0	0		\$60,000.00		\$0.00
119         Technicians         FTE         Acadia         NSERC         0         0         \$60,000.00         \$0.00           120         Technicians         FTE         SBU         NSF         0         0         \$0.00         \$0.00           121         Technicians         FTE         SU         NSF         0         0         \$0.00         \$0.00	117	Technicians	FTE	UofW	NSERC		0	0		\$60,000.00		\$0.00
120         Technicians         FTE         SBU         NSF         0         0         \$0.00         \$0.00           121         Technicians         FTE         SU         NSF         0         0         \$0.00         \$0.00	118	Technicians	FTE	Memorial	NSERC		0	0		\$60,000.00		\$0.00
121 Technicians FTE SU NSF 0 0 \$0.00 \$0.00	119	Technicians	FTE	Acadia	NSERC		0	0		\$60,000.00		\$0.00
	120	Technicians	FTE	SBU	NSF		0	0	\$0.00		\$0.00	
122 Technicians FTE ISU NSF 0 0 \$0.00 \$0.00	121	Technicians	FTE	SU	NSF		0	0	\$0.00		\$0.00	
	122	Technicians	FTE	ISU	NSF		0	0	\$0.00		\$0.00	

	Total Manpower Only	1						\$0.00	\$5,386,000.00
	Subtotal							\$0.00	\$5,386,000.00
133		FIE	TRIOWIF	Cri	1	1.3	\$140,000.00	¢0.00	
133	Egineers	FTE	TRIUMF	CFI	1	1.5	\$140,000.00		\$210,000.00
132	Technicians	FTE	TRIUMF	CFI	1	2	\$80,000.00		\$160,000.00
131	Scientists	FTE	VT	NSF	0	0	\$0.00	\$0.00	
130	Scientists	FTE	ISU	NSF	0	0	\$0.00	\$0.00	
129	Scientists	FTE	SU	NSF	0	0	\$0.00	\$0.00	
128	Scientists	FTE	SBU	NSF	0	0	\$0.00	\$0.00	
127	Scientists	FTE	Acadia	NSERC	0	0	\$100,000.00		\$0.00
126	Scientists	FTE	Memorial	NSERC	0	0	\$100,000.00		\$0.00
125	Scientists	FTE	UofW	NSERC	0	0	\$100,000.00		\$0.00
124	Scientists	FTE	UofM	NSERC	0	0	\$100,000.00		\$0.00
123	Technicians	FTE	VT	NSF	0	0	\$0.00	\$0.00	

Project Subsystem Total \$6,994,193.57

CFI Request				
	Hardware			
		cost/module	modules	total
	Main Detector Module	\$3,760.00	268	\$1,007,680.0
	Shower Max Module	\$11,251.55	33	\$371,301.1
	ADCs	\$266.67	614	\$163,733.3
	Preamps	\$100.00	614	\$61,400.0
			Subtotal	\$1,604,114.
	Manpower			
		cost/month	months	total
	Engineer	\$11,666.67	18	\$210,000.
	Technician	\$6,666.67	24	\$160,000.
		. ,		
			Subtotal	\$370,000.
			Total From CFI	\$1,974,114.
				\$1,9/4,114.4
				\$1,974,114.
CFI In-Kind				\$1,974,114.
CFI In-Kind				\$1,974,114.
FI In-Kind				\$1,974,114.
FI In-Kind				\$1,974,114.
CFI In-Kind				\$1,974,114.
FI In-Kind				\$1,974,114.
EFI In-Kind				\$1,374,114.
CFI In-Kind				31,374,114.
CFI In-Kind				71,774,114.
CFI In-Kind				71,774,114
CFI In-Kind				31,374,114.
CFI In-Kind				31,374,114.
CFI In-Kind				31,374,114.
CFI In-Kind				31,374,114.
CFI In-Kind				31,374,114.
EFI In-Kind				31,374,114.
CFI In-Kind				31,374,114