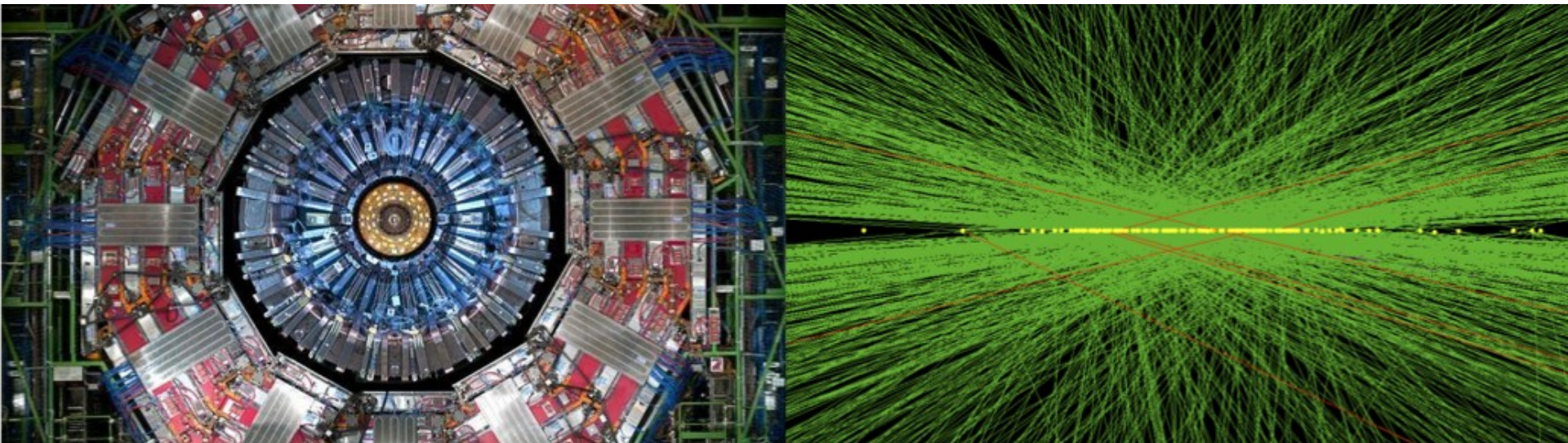




# US-MTD: FNAL Group Accounting

Frank Chlebana (MTD Deputy L2 Manager)  
Fermilab

Jan 27, 2021





# Task Codes

The budget is determined from the work plan in P6  
FNAL personnel will charge their time to the appropriate task code

402.84.100311	ETL-Assembly	OPC	FNAL	Labor
402.84.100312	ETL-Assembly	OPC	FNAL	M&S
402.84.100313	ETL-Assembly	OPC	FNAL	Travel
402.84.200311	ETL-Assembly	MIE	FNAL	Labor
402.84.200312	ETL-Assembly	MIE	FNAL	M&S
402.84.200313	ETL-Assembly	MIE	FNAL	Travel
402.84.100211	ETL-ASICs	OPC	FNAL	Labor
402.84.100212	ETL-ASICs	OPC	FNAL	M&S
402.84.100213	ETL-ASICs	OPC	FNAL	Travel
402.84.200211	ETL-ASICs	MIE	FNAL	Labor
402.84.200212	ETL-ASICs	MIE	FNAL	M&S
402.84.200213	ETL-ASICs	MIE	FNAL	Travel
402.82.100013	TL-Management	OPC	FNAL	Travel
402.82.200013	TL-Management	MIE	FNAL	Travel
402.82.200003	TL-Management		CERN	travel



# Hours

Jenny sends us a spread sheet that has the hours charged to each task code

402 KRONOS Report 14DEC2020-10JAN2120 BY PI.xlsx

Can filter on the date and task number

HL-LHC CMS 402 WEEKLY KRONOS REPORT BY TASK										
Proj	Payroll Type	Task	Long Task Name	Employee Name	Fermi ID	Approved By	Department	Fcn Category	Transaction Date	Sum - Hours
402	MON	402.84.200211	MP Timing Detector E	EDWARDS, CHRISTOP	31407N	OLSEN, JAMIESO	PPD - ELECTRIC	Electrical Engine	01/04/21	8
									01/05/21	8
									01/06/21	12
									01/07/21	12
									01/08/21	8
									01/09/21	12
									01/10/21	12
				<b>EDWARDS, CHRISTOPHER J Result</b>						<b>72</b>
				OLSEN, JAMIESON T	10831N	SHAW, THERESA	PPD - ELECTRIC	Electrical Engine	01/07/21	8
									01/08/21	8
				<b>OLSEN, JAMIESON T Result</b>						<b>16</b>
				SUN, QUAN	37564N	DRAKE, GARY R	PPD - ELECTRIC	Electrical Engine	01/04/21	7.5
									01/05/21	7.5
									01/06/21	5
									01/07/21	7.5
									01/08/21	6.5
				<b>SUN, QUAN Result</b>						<b>34</b>
				WU, JIN-YUAN	11785N	OLSEN, JAMIESO	PPD - ELECTRIC	Electrical Engine	01/05/21	8
									01/06/21	8
				<b>WU, JIN-YUAN Result</b>						<b>16</b>
		<b>402.84.200211 Result</b>								<b>138</b>
	<b>MON Result</b>									<b>138</b>
<b>402 Result</b>										<b>138</b>
<b>Total Result</b>										<b>138</b>

Check that the hours charged to our task codes are consistent with expectations

Need to make sure that the work is directly related to the activities we are responsible for



# Budget / Actuals (ETL-Assembly)

Filter Cost Set: Budget Results: F-BDN-AYs Columns: ControlAccount; WPCTC; WP  
 CAM: Golf, Frank From: 08 / 31 / 2019 To: 12 / 31 / 2020 Update

ControlAccount	WPCTC	WP	08/31/2019	09/30/2019	10/31/2019	11/30/2019	12/31/2019	01/31/2020	02/29/2020	03/31/2020	04/30/2020	05/31/2020	06/30/2020	07/31/2020	08/31/2020	09/30/2020	10/31/2020	11/30/2020	12/31/2020	Total
402.08.04.03 ETL - Assembly			\$25,314.22	\$21,884.87	\$23,423.29	\$10,361.07	\$25,967.56	\$29,464.92	\$39,843.58	\$33,875.72	\$17,571.01	\$16,854.68	\$38,087.54	\$60,500.23	\$28,998.25	\$28,328.15	\$30,984.00	\$20,135.49	\$35,170.21	\$486,764.80
	402.84.100311 ETL-Assembly OPC FNAL Labor				\$2,399.74	\$4,209.98	\$11,051.84	\$7,796.54												\$25,450.10
		TL1001049				\$1,591.13	\$3,023.15	\$1,750.24												\$6,364.53
		TL1001279				\$636.45	\$6,046.30	\$6,046.30												\$12,729.05
		TL1003530			\$2,399.74	\$1,982.39	\$1,982.39													\$6,364.53
	402.84.100312 ETL-Assembly OPC FNAL MandS				\$2,655.62															\$2,655.62
		TL1003319			\$2,655.62															\$2,655.62
	402.84.100313 ETL-Assembly OPC FNAL Travel				\$660.54	\$545.67	\$545.67													\$1,751.88
		TL8671			\$347.65	\$287.19	\$287.19													\$922.04
		TL8691			\$312.89	\$258.47	\$258.47													\$829.84
	402.84.100391 ETL-Assembly OPC UNIV Labor		\$3,163.49	\$5,077.62	\$7,011.05	\$2,831.88	\$8,124.76	\$8,124.76												\$34,333.56
	402.84.100392 ETL-Assembly OPC UNIV MandS		\$20,930.00	\$15,697.50	\$5,331.66															\$44,624.99
	402.84.100393 ETL-Assembly OPC UNIV Travel		\$1,220.73	\$1,109.76	\$5,364.68	\$2,773.54	\$1,806.29													\$12,275.00
	402.84.200311 ETL-Assembly MIE FNAL Labor							\$2,099.29	\$3,741.72	\$6,032.52	\$5,820.76	\$5,181.59	\$3,153.94	\$5,699.75	\$4,963.33	\$2,099.29	\$2,457.50	\$5,024.26	\$5,199.00	\$51,472.94
		TL1001139									\$2,227.58	\$3,182.26	\$954.68							\$6,364.53
		TL1001481																		\$3,408.32
		TL1001819							\$1,742.39	\$3,833.26	\$1,393.91						\$1,704.16	\$1,704.16		\$6,969.55
		TL1002439															\$67.61	\$1,276.58	\$1,343.77	\$2,687.96
		TL1003179												\$3,500.49	\$2,864.84					\$6,364.53
		TL1003530A						\$2,099.29	\$1,999.33	\$2,199.26	\$2,199.26	\$1,999.33	\$2,199.26	\$2,199.26	\$2,099.29	\$2,099.29				\$19,093.58
		TL1003540																\$2,389.90	\$2,043.52	\$2,151.07
	402.84.200312 ETL-Assembly MIE FNAL MandS																	\$2,196.35		\$5,490.89
		TL1001482																	\$5,490.89	\$5,490.89
		TL1003329																\$2,196.35		\$2,196.35
	402.84.200313 ETL-Assembly MIE FNAL Travel							\$577.84	\$550.33	\$605.36	\$605.36	\$550.33	\$605.36	\$605.36	\$577.84	\$577.84	\$548.65	\$476.76	\$501.85	\$6,782.88
		TL8671A						\$304.13	\$289.65	\$318.61	\$318.61	\$289.65	\$318.61	\$318.61	\$304.13	\$304.13				\$2,766.12
		TL8672																\$288.76	\$250.92	\$264.13
		TL8691A						\$273.72	\$260.68	\$286.75	\$286.75	\$260.68	\$286.75	\$286.75	\$273.72	\$273.72				\$2,489.51
		TL8692																\$259.89	\$225.83	\$237.72
	402.84.200391 ETL-Assembly MIE UNIV Labor						\$1,773.16	\$8,953.67	\$12,403.17	\$9,238.97	\$9,141.01	\$9,301.05	\$10,997.70	\$20,201.25	\$15,146.27	\$16,273.88	\$18,449.55	\$12,994.20	\$22,251.87	\$167,125.75
	402.84.200392 ETL-Assembly MIE UNIV MandS								\$21,326.65	\$15,994.99			\$21,326.65	\$31,989.97	\$6,397.99	\$7,464.33	\$5,438.30			\$109,938.87
	402.84.200393 ETL-Assembly MIE UNIV Travel							\$1,912.81	\$1,821.72	\$2,003.89	\$2,003.89	\$1,821.72	\$2,003.89	\$1,912.81	\$1,912.81	\$1,893.65	\$1,640.28	\$1,726.61		\$22,657.97
<b>Total</b>			<b>\$25,314.22</b>	<b>\$21,884.87</b>	<b>\$23,423.29</b>	<b>\$10,361.07</b>	<b>\$25,967.56</b>	<b>\$29,464.92</b>	<b>\$39,843.58</b>	<b>\$33,875.72</b>	<b>\$17,571.01</b>	<b>\$16,854.68</b>	<b>\$38,087.54</b>	<b>\$60,500.23</b>	<b>\$28,998.25</b>	<b>\$28,328.15</b>	<b>\$30,984.00</b>	<b>\$20,135.49</b>	<b>\$35,170.21</b>	<b>\$486,764.80</b>

Filter Cost Set: Actuals Results: F-BDN-AYs Columns: ControlAccount; WPCTC; WP  
 CAM: Golf, Frank From: 08 / 31 / 2019 To: 12 / 31 / 2020 Update

ControlAccount	WPCTC	WP	08/31/2019	09/30/2019	10/31/2019	11/30/2019	12/31/2019	01/31/2020	02/29/2020	03/31/2020	04/30/2020	05/31/2020	06/30/2020	07/31/2020	08/31/2020	09/30/2020	10/31/2020	11/30/2020	12/31/2020	Total
402.08.04.03 ETL - Assembly				\$3,126.66		\$5,692.43	\$2,038.30	\$11,805.57	\$2,963.94	\$260.43	\$16,323.73	\$27,629.89	\$30,481.37	\$7,473.05	\$14,527.04	\$79,180.39	\$30,466.40	\$26,292.42	\$35,450.78	\$293,712.40
	402.84.100302 ETL-Assembly OPC CERN MandS														\$49.22					\$49.22
		402.84.100302													\$49.22					\$49.22
	402.84.100311 ETL-Assembly OPC FNAL Labor					\$5,692.43	\$555.42	\$5,423.02												
		402.84.100311				\$5,692.43	\$555.42	\$5,423.02												
	402.84.100391 ETL-Assembly OPC UNIV Labor			\$3,126.66			\$1,253.30			\$260.43	\$13,364.51	(\$2,794.72)		\$4,308.29		(\$41.57)	\$3,844.94	\$3,661.86		\$26,983.70
	402.84.100392 ETL-Assembly OPC UNIV MandS						\$229.58				\$79.01	\$6,128.81	\$11,416.01	(\$9,543.79)	\$7,779.36	\$16,251.10	\$1,713.85			\$34,053.93
	402.84.200311 ETL-Assembly MIE FNAL Labor							\$6,382.55	\$1,333.00		\$444.33	\$24,295.80	\$19,065.36	\$12,708.55	\$6,541.19	\$63,031.61	\$24,860.30	\$13,188.18	\$8,070.37	\$179,921.24
		402.84.200311						\$6,382.55	\$1,333.00		\$444.33	\$24,295.80	\$19,065.36	\$12,708.55	\$6,541.19	\$63,031.61	\$24,860.30	\$13,188.18	\$8,070.37	\$179,921.24
	402.84.200312 ETL-Assembly MIE FNAL MandS								\$1,630.94		\$2,435.88			\$206.49	\$31.83	\$47.31	\$520.97	\$10,652.45	\$15,525.87	\$15,525.87
		402.84.200312							\$1,630.94		\$2,435.88			\$206.49	\$31.83	\$47.31	\$520.97	\$10,652.45	\$15,525.87	\$15,525.87
	402.84.200391 ETL-Assembly MIE UNIV Labor																	\$1,353.88	\$11,655.09	\$13,008.97
	402.84.200392 ETL-Assembly MIE UNIV MandS																	\$7,567.53	\$787.39	\$8,354.92
	402.84.200393 ETL-Assembly MIE UNIV Travel																		\$4,285.48	\$4,285.48
<b>Total</b>				<b>\$3,126.66</b>		<b>\$5,692.43</b>	<b>\$2,038.30</b>	<b>\$11,805.57</b>	<b>\$2,963.94</b>	<b>\$260.43</b>	<b>\$16,323.73</b>	<b>\$27,629.89</b>	<b>\$30,481.37</b>	<b>\$7,473.05</b>	<b>\$14,527.04</b>	<b>\$79,180.39</b>	<b>\$30,466.40</b>	<b>\$26,292.42</b>	<b>\$35,450.78</b>	<b>\$293,712.40</b>





# Budget / Actuals (ETROC)

Reports on the budget / actuals can be extracted from the CAM eToolbox

CD1 version of the schedule...

Budget

ControlAccount	WPCTC	WP	08/31/2019	09/30/2019	10/31/2019	11/30/2019	12/31/2019	01/31/2020	02/29/2020	03/31/2020	04/30/2020	05/31/2020	06/30/2020	07/31/2020	08/31/2020	09/30/2020	10/31/2020	11/30/2020	12/31/2020	Total
402.08.04.02 ETL - Frontend ASICs			\$9,110.63	\$12,122.27	\$54,087.98	\$43,899.99	\$24,997.26	\$29,907.66	\$31,901.15	\$11,642.92	\$50,333.33	\$47,346.50	\$51,281.45	\$59,872.07	\$84,611.87	\$39,216.12	\$30,245.47	\$25,870.75	\$23,313.95	\$629,761.37
	402.84.100211 ETL-ASICs OPC FNAL Labor			\$2,106.02	\$50,188.83	\$39,823.75	\$10,365.08	\$11,456.15	\$10,910.62	\$1,091.06										\$125,941.50
		TL04560		\$2,106.02	\$50,188.83	\$39,278.22														\$91,573.06
		TL04570				\$545.53	\$10,365.08	\$11,456.15	\$10,910.62	\$1,091.06										\$34,368.44
	402.84.100212 ETL-ASICs OPC FNAL MandS						\$1,327.81													\$1,327.81
		TL04514					\$1,327.81													\$1,327.81
	402.84.100213 ETL-ASICs OPC FNAL Travel				\$817.52	\$675.34	\$675.34	\$746.43	\$284.36											\$3,199.00
		TL02110			\$817.52	\$675.34	\$675.34	\$746.43	\$284.36											\$3,199.00
	402.84.100291 ETL-ASICs OPC UNIV Labor		\$9,110.63	\$10,016.25	\$3,081.62	\$3,400.90	\$12,629.02	\$17,705.08	\$16,861.98	\$6,323.24										\$79,128.73
		TL04504	\$519.29	\$2,596.46	\$3,081.62	\$2,143.74														\$8,341.11
		TL04506				\$1,257.17	\$838.11													\$2,095.28
		TL04513					\$2,095.28													\$2,095.28
		TL04515					\$2,529.30	\$8,852.54	\$8,430.99	\$5,480.14										\$25,292.97
		TL04522					\$7,166.34	\$8,852.54	\$8,430.99	\$843.10										\$25,292.97
	402.84.200211 ETL-ASICs MIE FNAL Labor		\$8,591.34	\$7,419.80																\$16,011.14
		TL04600									\$1,909.36	\$38,187.15	\$42,005.87	\$50,597.98	\$76,183.37	\$35,444.62	\$29,447.86	\$25,179.86	\$21,273.77	\$320,229.85
		TL04610									\$1,909.36	\$38,187.15	\$42,005.87	\$42,005.87	\$40,096.51	\$7,637.43				\$171,842.20
		TL04620												\$8,592.11	\$36,086.86	\$24,057.91				\$68,736.88
		TL04640														\$3,749.28	\$29,447.86	\$25,179.86	\$14,577.81	\$72,954.81
		TL04735																	\$911.11	\$911.11
	402.84.200212 ETL-ASICs MIE FNAL MandS										\$30,539.64									\$5,784.85
		TL04512									\$9,294.67									\$9,294.67
		TL04512A									\$14,605.92									\$14,605.92
		TL04514A									\$5,311.24									\$5,311.24
		TL1008235									\$1,327.81									\$1,327.81
	402.84.200213 ETL-ASICs MIE FNAL Travel										\$6,638.68									\$797.62
		TL02120															\$797.62	\$690.90	\$727.26	\$690.90
		TL1008245									\$6,638.68									\$727.26
	402.84.200291 ETL-ASICs MIE UNIV Labor								\$3,844.20	\$4,228.62	\$11,245.64	\$9,159.35	\$9,275.58	\$9,274.09	\$8,428.49	\$3,771.50				\$1,312.92
		TL04518									\$7,174.82	\$8,440.97	\$1,266.14	\$8,009.44	\$9,274.09	\$8,009.44				\$60,540.39
		TL04524											\$8,009.44	\$9,274.09	\$8,009.44					\$16,881.93
		TL04528													\$419.06	\$3,771.50				\$25,292.97
		TL04590							\$3,844.20	\$4,228.62										\$4,190.55
		TL04627																		\$8,072.82
		TL1003830									\$4,070.82	\$718.38								\$1,312.92
<b>Total</b>			<b>\$9,110.63</b>	<b>\$12,122.27</b>	<b>\$54,087.98</b>	<b>\$43,899.99</b>	<b>\$24,997.26</b>	<b>\$29,907.66</b>	<b>\$31,901.15</b>	<b>\$11,642.92</b>	<b>\$50,333.33</b>	<b>\$47,346.50</b>	<b>\$51,281.45</b>	<b>\$59,872.07</b>	<b>\$84,611.87</b>	<b>\$39,216.12</b>	<b>\$30,245.47</b>	<b>\$25,870.75</b>	<b>\$23,313.95</b>	<b>\$629,761.37</b>

Filter Cost Set: Actuals Results: F-BDN-AyS Columns: ControlAccount; WPCTC; WP CAM: Liu, Ted From: 08 / 31 / 2019 To: 12 / 31 / 2020 Update

Actuals

ControlAccount	WPCTC	WP	08/31/2019	09/30/2019	10/31/2019	11/30/2019	12/31/2019	01/31/2020	02/29/2020	03/31/2020	04/30/2020	05/31/2020	06/30/2020	07/31/2020	08/31/2020	09/30/2020	10/31/2020	11/30/2020	12/31/2020	Total
402.08.04.02 ETL - Frontend ASICs				\$114,445.24	\$40,929.04	\$120,169.67	\$37,886.48	\$49,234.48	\$38,305.43	\$36,443.71	\$34,043.73	\$37,408.32	\$33,982.58	\$28,500.84	\$41,207.94	(\$119,400.60)	\$32,120.87	\$64,905.80	\$44,079.86	\$634,263.39
	402.84.100211 ETL-ASICs OPC FNAL Labor			\$98,966.20	\$40,929.05	\$120,169.67	\$37,471.66	\$9,344.53	\$3,177.15	\$2,990.26						(\$20,845.15)				\$292,203.37
		402.84.100211		\$98,966.20	\$40,929.05	\$120,169.67	\$37,471.66	\$9,344.53	\$3,177.15	\$2,990.26						(\$20,845.15)				\$292,203.37
	402.84.100213 ETL-ASICs OPC FNAL Travel						\$414.82		\$1,114.16							(\$2.15)				\$1,526.83
		402.84.100213					\$414.82		\$1,114.16							(\$2.15)				\$1,526.83
	402.84.100291 ETL-ASICs OPC UNIV Labor			\$15,479.04	(\$0.01)						\$4,328.08	\$4,173.50	\$4,173.50		\$12,520.18	\$15,899.04				\$56,573.33
		402.84.100291		\$15,479.04	(\$0.01)						\$4,328.08	\$4,173.50	\$4,173.50		\$12,520.18	\$15,899.04				\$56,573.33
	402.84.200211 ETL-ASICs MIE FNAL Labor						\$39,889.95	\$34,014.12	\$33,453.45	\$29,715.65	\$33,234.82	\$29,809.08	\$28,500.84	\$28,687.76	(\$114,452.34)		\$32,120.87	\$64,238.38	\$42,205.22	\$281,417.80
		402.84.200211					\$39,889.95	\$34,014.12	\$33,453.45	\$29,715.65	\$33,234.82	\$29,809.08	\$28,500.84	\$28,687.76	(\$114,452.34)		\$32,120.87	\$64,238.38	\$42,205.22	\$281,417.80
	402.84.200212 ETL-ASICs MIE FNAL MandS															\$667.42	\$1,874.64			\$2,542.06
		402.84.200212														\$667.42	\$1,874.64			\$2,542.06
<b>Total</b>				<b>\$114,445.24</b>	<b>\$40,929.04</b>	<b>\$120,169.67</b>	<b>\$37,886.48</b>	<b>\$49,234.48</b>	<b>\$38,305.43</b>	<b>\$36,443.71</b>	<b>\$34,043.73</b>	<b>\$37,408.32</b>	<b>\$33,982.58</b>	<b>\$28,500.84</b>	<b>\$41,207.94</b>	<b>(\$119,400.60)</b>	<b>\$32,120.87</b>	<b>\$64,905.80</b>	<b>\$44,079.86</b>	<b>\$634,263.39</b>



# CD1 Budget / Actuals

<b>ETROC</b>			
Budget (up to 12/31/2020)	629,761.37		
Actuals	634,263.39		
SMU (Engineer)	107,813.00		
SMU (Grad Students)	8,088.00		
Total	750164.39		
Difference	-120403.02		
<b>ETL Assembly</b>	<b>Budget</b>	<b>Actuals</b>	<b>Difference</b>
OPC Labor	25,458.10	11,529.07	13,929.03
OPC M&S	2,655.62		2,655.62
OPC Travel	1,751.88		1,751.88
MIE Labor	51,472.94	179,921.24	-128,448.30
MIE M&S	7,687.24	15,525.87	-7,838.63
MIE Travel	6,782.88		6,782.88
Total	95808.66	206976.18	-111,167.52



# CD2 Schedule (ETL-Assembly)

The work plan is entered in P6 and is used to measure our progress

We are currently monitoring progress relative to the CD-1 plan...

Extract (and monitor) the activities that we are responsible for in an excel file...

Planned  
Start

Responsible  
Institute

DOE-CD1-402.8-FC2-5.4.3.1.4 ETL - Assembly R&D (CD-2)											
TL1005785	ETL - Design mechanical and thermal studies and components (FNAL)	3-Jun-19	14-Nov-23 1120d	9784h	\$661,324.34	0h	\$0.00	\$57,808.00			
TL1006085	ETL - Procure lab supplies - FY20 - FNAL	3-Jun-19	29-Jul-19 40d	16h	\$2,457.02	0h	\$0.00	\$0.00	FN	L1	Fnd_MECH_DESIGN_EN
TL1006175	ETL - Engineering layout of prototype test card for ETROC1	1-Oct-19	28-Oct-19 20d	0h	\$0.00	0h	\$0.00	\$13,278.00	FN	M5	FN_MS_STND_FY19
TL1006185	ETL - Engineering layout for prototype flex for ETROC1	26-Nov-19	29-Jan-20 40d	240h	\$38,187.14	0h	\$0.00	\$0.00	FN	L5	Fnd_ELTN_DESIGN_EN
TL1006265	ETL - Prepare PO for prototype flex for ETROC1	26-Nov-19	27-Dec-19 20d	160h	\$25,458.10	0h	\$0.00	\$0.00	FN	L5	Fnd_ELTN_DESIGN_EN
TL1006715	ETL - Design back end test hardware for ETROC1 system testing	30-Dec-19	14-Jan-20 10d	8h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_PHYST
TL1008035	ETL - SVT - Vendor fabricates back end test hardware for ETROC1 system testing	30-Dec-19	14-Jan-20 10d	160h	\$11,968.74	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_RA, c_Fnd_ELTN_DESIGN_EN
TL1006255	ETL - Prepare PO for prototype test card for ETROC1	15-Jan-20	29-Jan-20 10d	20h	\$3,182.26	0h	\$0.00	\$0.00	FN	L5	Fnd_ELTN_DESIGN_EN
TL1006745	ETL - Receive back end test hardware for ETROC1 system testing (M&S)	30-Jan-20	12-Feb-20 10d	8h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_PHYST
TL1006415	ETL - Evaluate prototype flex for ETROC1	30-Jan-20	19-Feb-20 15d	0h	\$0.00	0h	\$0.00	\$0.00	FN	M5	
TL1009745	ETL - Evaluate prototype flex for ETROC1 - COVID	14-Feb-20	12-Mar-20 20d	80h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_RA
TL1006765	ETL - Assemble and test back end hardware for ETROC1 system testing	14-Feb-20	12-Mar-20 20d	40h	\$5,984.37	0h	\$0.00	\$0.00	FN	L5	c_Fnd_ELTN_DESIGN_EN
TL1009725	ETL - Assemble and test back end hardware for ETROC1 system testing - COVID	20-Feb-20	18-Mar-20 20d	80h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_RA
TL1006405	ETL - Evaluate prototype test card for ETROC1 - COVID	20-Feb-20	18-Mar-20 20d	40h	\$6,364.52	0h	\$0.00	\$0.00	FN	L5	Fnd_ELTN_DESIGN_EN
TL1006775	ETL - Develop back end software and firmware for ETROC1 system testing	13-Mar-20	9-Apr-20 20d	80h	\$12,729.05	0h	\$0.00	\$0.00	FN	L5	Fnd_ELTN_DESIGN_EN
TL1008425	ETL - Setup gantry system at UNL (FNAL) - COVID	19-Mar-20	15-Apr-20 20d	240h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_RA
TL1008155	ETL - Develop prototype gantry tooling (FNAL)	2-Jul-20	27-Aug-20 40d	120h	\$11,361.88	0h	\$0.00	\$0.00	FN	L5	Fnd_MECH_ASMBY_TECH, Fnd_ELEC_TECH
TL1008085	ETL - Develop gantry programming framework (FNAL)	28-Aug-20	23-Oct-20 40d	160h	\$26,111.68	0h	\$0.00	\$0.00	FN	L5	Fnd_MECH_DESIGN_EN
TL1009165	ETL - Plan studies for adhesives (FNAL)	1-Sep-20	28-Dec-20 80d	160h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_RA
TL1009705	ETL - Develop gantry programming framework (FNAL) - COVID	1-Sep-20	29-Sep-20 20d	80h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_PHYST
TL1006645	ETL - Procure lab supplies - FY21 - FNAL	1-Sep-20	28-Dec-20 80d	120h	\$11,901.77	0h	\$0.00	\$0.00	FN	L5	Fnd_ELEC_TECH
TL1008405	ETL - Construct prototype jigs (FNAL)	1-Oct-20	28-Oct-20 20d	0h	\$0.00	0h	\$0.00	\$11,049.00	FN	M5	FN_MS_STND_FY19
TL1008415	ETL - Assemble ETROC1 modules and basic quality control checks (FNAL) - COVID	29-Oct-20	29-Jan-21 60d	40h	\$6,748.99	0h	\$0.00	\$0.00	FN	L1	Fnd_MECH_DESIGN_EN
TL1008325	ETL - Develop initial specifications for readout, flex, and power boards for ETROC2 modules (FNAL)	2-Dec-20	2-Feb-21 40d	40h	\$6,748.99	0h	\$0.00	\$0.00	FN	L5	Fnd_MECH_DESIGN_EN
TL1008435	ETL - Develop mechanical assembly procedure with mechanical pieces at UNL - step 1 (FNAL) - COVID	10-Dec-20	10-Feb-21 40d	40h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_PHYST
TL1009085	ETL - Construct full scale jigs (FNAL) - COVID	7-Jan-21	4-Mar-21 40d	80h	\$13,497.98	0h	\$0.00	\$0.00	FN	L5	Fnd_MECH_DESIGN_EN
TL1008305	ETL - Construct plan of work and studies with ETROC2 modules (FNAL)	1-Feb-21	23-Apr-21 60d	80h	\$13,497.98	0h	\$0.00	\$0.00	FN	L1	Fnd_MECH_DESIGN_EN
TL1008045	ETL - Setup CO2 test stand	11-Feb-21	5-May-21 60d	40h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_PHYST
TL1009625	ETL - Setup CO2 test stand - COVID	25-Feb-21	7-Apr-21 30d	120h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_RA
TL1006495	ETL - Electrical studies of ETROC1 modules (FNAL) - COVID	25-Feb-21	7-Apr-21 30d	120h	\$20,246.96	0h	\$0.00	\$0.00	FN	L5	Fnd_MECH_DESIGN_EN
TL1008615	ETL - Irradiate ETROC1 modules (FNAL)	3-Mar-21	27-Apr-21 40d	40h	\$6,748.99	0h	\$0.00	\$0.00	FN	L5	Fnd_ELTN_DESIGN_EN
TL1009315	ETL - Develop mechanical assembly procedure with mechanical pieces at UNL - step 2 (FNAL) - COVID	3-Mar-21	30-Mar-21 20d	120h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_RA, FN_U_PT_EXP_PHYST
TL1002729A10	ETL - Engineering layout of flex and power board for ETROC2 (FNAL)	5-Mar-21	29-Apr-21 40d	160h	\$6,748.99	0h	\$0.00	\$0.00	FN	L5	Fnd_MECH_DESIGN_EN, FN_U_PT_EXP_RA
TL1008755	ETL - Studies of Si mockup assemblies on disk (with CO2 cooling) - FNAL - COVID	16-Mar-21	10-May-21 40d	160h	\$26,995.95	0h	\$0.00	\$0.00	FN	L5	Fnd_ELTN_DESIGN_EN
TL1006315	ETL - Studies of bump bonded mockups on disk (with CO2 cooling) - FNAL - COVID	17-Mar-21	11-May-21 40d	280h	\$44,525.24	0h	\$0.00	\$0.00	FN	L5	Fnd_MECH_ASMBY_TECH, Fnd_MECH_DESIGN_EN
TL1008465	ETL - SVT - Modification to thermal FEA model for dummy assemblies	8-Apr-21	3-Jun-21 40d	280h	\$44,525.24	0h	\$0.00	\$0.00	FN	L5	Fnd_MECH_ASMBY_TECH, Fnd_MECH_DESIGN_EN
TL1008125	ETL - Test beam with ETROC1 modules (FNAL)	8-Apr-21	3-Jun-21 40d	0h	\$0.00	0h	\$0.00	\$0.00	FN	L5	
TL1008445	ETL - Develop wire bonding procedures with mechanical components at UNL (FNAL)	12-Apr-21	14-May-21 25d	240h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_RA
TL1008625	ETL - Analysis of test beam data of irradiated ETROC1 modules (FNAL)	30-Apr-21	23-Aug-21 80d	240h	\$24,187.87	0h	\$0.00	\$0.00	FN	L5	Fnd_ELEC_TECH
TL1007995	ETL - Prepare PO for prototype flex and power board for ETROC2	10-May-21	7-Jun-21 20d	120h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_PHYST, FN_U_PT_EXP_RA
TL1008775	ETL - Modification to thermal FEA model for Si mockup assemblies on disk	11-May-21	24-May-21 10d	8h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_PHYST
TL1008135	ETL - Analyze test beam data for ETROC1 modules (FNAL)	12-May-21	8-Jul-21 40d	80h	\$13,497.98	0h	\$0.00	\$0.00	FN	L5	Fnd_MECH_DESIGN_EN
TL1008055	ETL - Wire bond mockup modules (FNAL)	17-May-21	14-Jun-21 20d	120h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_RA
TL1002749P20	ETL - SVT - Vendor fabricates prototype flex and power board for ETROC2	24-May-21	28-May-21 5d	40h	\$4,031.31	0h	\$0.00	\$0.00	FN	L1	Fnd_MECH_ASMBY_TECH
TL1008065	ETL - Metrology measurements of mockup modules	25-May-21	22-Jun-21 20d	160h	\$0.00	0h	\$0.00	\$0.00	FN	L5	
TL1008275	ETL - Studies of wire bonding with modules from jigs (FNAL)	1-Jun-21	7-Jun-21 5d	40h	\$4,031.31	0h	\$0.00	\$0.00	FN	L1	Fnd_MECH_ASMBY_TECH
TL1006425	ETL - Analysis of data from thermal studies of bump bonded mockups (FNAL)	1-Jun-21	27-Jul-21 40d	32h	\$0.00	0h	\$0.00	\$0.00	FN	L7	FN_U_PT_EXP_PHYST
TL1006975	ETL - Evaluate prototype flex and power board for ETROC2 (FNAL)	4-Jun-21	1-Jul-21 20d	160h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_PHYST
		24-Jun-21	22-Jul-21 20d	160h	\$0.00	0h	\$0.00	\$0.00	FN	L5	FN_U_PT_EXP_RA

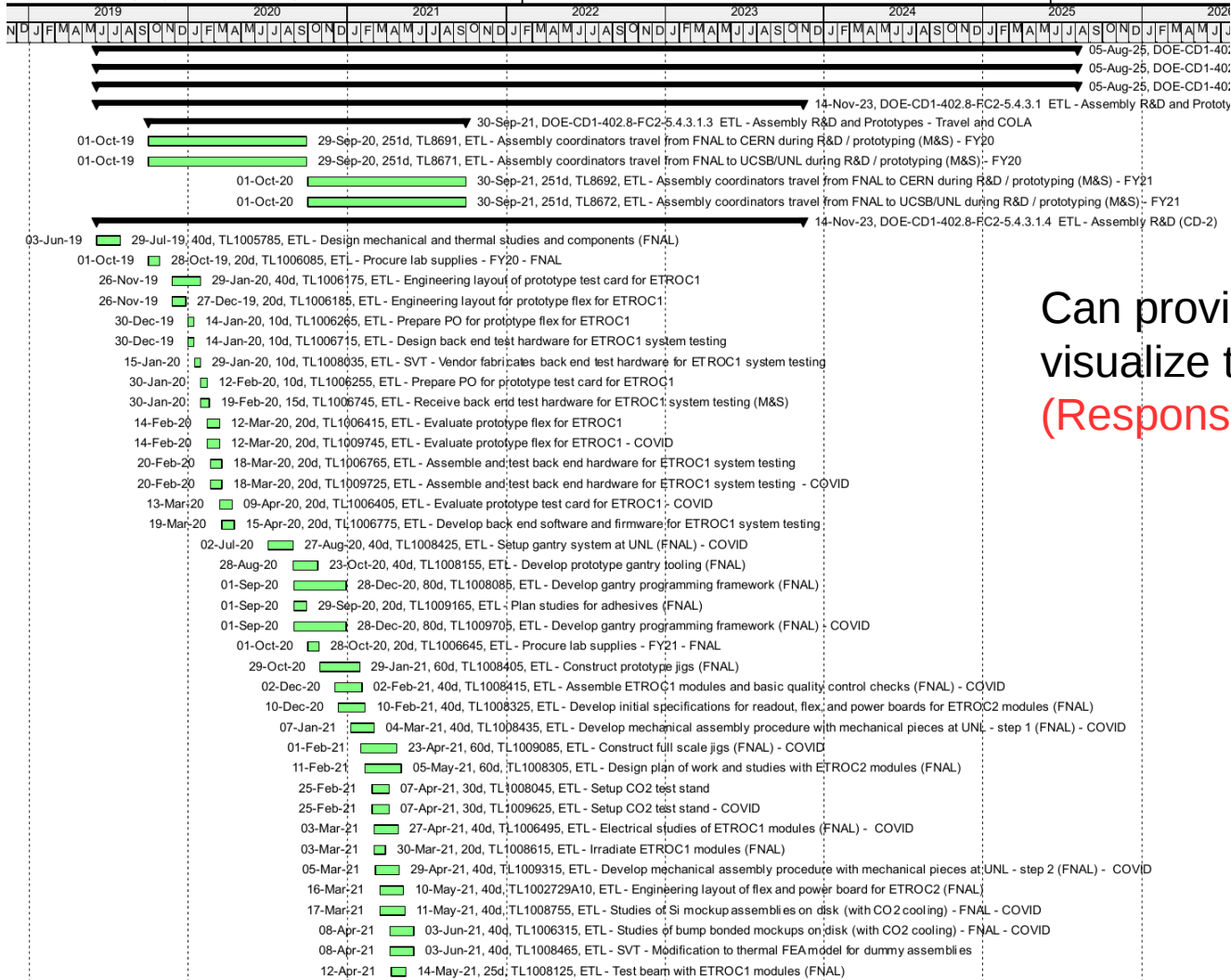
2019

2020

2021



# CD2 Activities (BCR-103)



Can provide a Gantt chart to help visualize the sequence of work (Responsible Institute = FNAL)





# CD1 vs CD2 Budget

Activities with a start date < Jan 1, 2021  
Responsible Institute = FNAL

Activity ID	Activity Name	Planned Start	Planned Finish	Planned Duration	Planned Labor	Planned Labor Cost	Planned Nonlabor Units	Planned Nonlabor Cost	Planned Material Cost
DOE-CD1-402.8-FC2-5.402.8 TL - Timing Layer - CD2 Working - 9 December 2020		03-Jun-19	30-Sep-21	587d	3308h	\$266,282.24	0h	\$0.00	\$48,022.41
DOE-CD1-402.8-FC2-5.4 ETL - Endcap Timing Layer		03-Jun-19	30-Sep-21	587d	3308h	\$266,282.24	0h	\$0.00	\$48,022.41
DOE-CD1-402.8-FC2-5.4.3 ETL - Assembly		03-Jun-19	30-Sep-21	587d	3308h	\$266,282.24	0h	\$0.00	\$48,022.41
DOE-CD1-402.8-FC2-5.4.3.1 ETL - Assembly R&D and Prototypes		03-Jun-19	30-Sep-21	587d	3308h	\$266,282.24	0h	\$0.00	\$48,022.41
DOE-CD1-402.8-FC2-5.4.3.1.1 ETL - Assembly R&D		03-Jun-19	30-Sep-21	587d	1376h	\$97,077.73	0h	\$0.00	\$10,389.90
DOE-CD1-402.8-FC2-5.4.3.1.3 ETL - Assembly R&D and Prototypes - Travel and COLA		01-Oct-19	30-Sep-21	503d	0h	\$0.00	0h	\$0.00	\$13,305.51
DOE-CD1-402.8-FC2-5.4.3.1.4 ETL - Assembly R&D (CD-2)		03-Jun-19	10-Feb-21	424d	1932h	\$169,204.50	0h	\$0.00	\$24,327.00

Activities with a start date < Jan 1, 2021

Activity ID	Activity Name	Planned Start	Planned Finish	Planned Duration	Planned Labor	Planned Labor Cost	Planned Nonlabor Units	Planned Nonlabor Cost	Planned Material Cost
DOE-CD1-402.8-FC2-5.402.8 TL - Timing Layer - CD2 Working - 9 December 2020		01-Oct-18	15-Mar-21	614d	9754h	\$1,505,083.95	15029h	\$442,060.10	\$99,986.82
DOE-CD1-402.8-FC2-5.4 ETL - Endcap Timing Layer		01-Oct-18	15-Mar-21	614d	9754h	\$1,505,083.95	15029h	\$442,060.10	\$99,986.82
DOE-CD1-402.8-FC2-5.4.2 ETL - Frontend ASICs		01-Oct-18	15-Mar-21	614d	9754h	\$1,505,083.95	15029h	\$442,060.10	\$99,986.82
DOE-CD1-402.8-FC2-5.4.2.1 ETL - Frontend ASICs General		01-Oct-18	12-Feb-21	593d	0h	\$0.00	0h	\$0.00	\$22,889.10
DOE-CD1-402.8-FC2-5.4.2.2 ETL - Frontend ASICs v1 development (Off Project)		01-Oct-18	29-Jun-20	438d	0h	\$0.00	0h	\$0.00	\$0.00
DOE-CD1-402.8-FC2-5.4.2.3 ETL - Frontend ASICs v2 development		01-Oct-18	15-Mar-21	614d	4082h	\$637,204.16	7847h	\$210,682.39	\$44,348.52
DOE-CD1-402.8-FC2-5.4.2.5 ETL - Frontend ASICs v2 development (CD-2)		01-Oct-18	26-Feb-21	603d	5672h	\$867,879.78	7182h	\$231,377.71	\$32,749.20

ETL-Assembly R&D	CD1	CD2	CD2-CD1
Labor	\$97,077.73	\$169,204.50	\$72,126.77
University	\$0.00	\$0.00	\$0.00
M&S	\$10,389.90	\$24,327.00	\$13,937.10
Total	\$107,467.63	\$193,531.50	\$86,063.87
<b>ETROC v2</b>			
Labor	\$637,204.16	\$867,879.78	\$230,675.62
University (SMU)	\$210,682.39	\$231,377.71	\$20,695.32
M&S	\$44,348.52	\$32,749.20	-\$11,599.32
Total	\$892,235.07	\$1,132,006.69	\$239,771.62



# Turnaround Report

Turnaround reports are located in the google doc folders

<https://drive.google.com/drive/folders/0B7zLbbgoJYKyTXpwY3MycE9aeU0>

Drive Search in Drive

Shared with me > USCMS HL LHC Monthly Reporting

Name	Owner	Last modified
2021_03	Steve Nahn	Jan 12, 2021 Steve Nahn
2021_02	Steve Nahn	Jan 12, 2021 Steve Nahn
2021_01	Steve Nahn	Jan 12, 2021 Steve Nahn
FY19	Petra Merkel	Jan 7, 2020 Petra Merkel
2019_11	Steve Nahn	Jan 2, 2020 William Freeman
2020_10	Steve Nahn	Aug 28, 2019 Steve Nahn
2020_09	Steve Nahn	Aug 28, 2019 Steve Nahn
2020_11	Steve Nahn	Aug 28, 2019 Steve Nahn
2020_12	Steve Nahn	Aug 28, 2019 Steve Nahn

After we fill out the turnaround report the PO will generate reports to calculate the project performance metrics  
Results used to update the working schedule to see the impact on future activities...



# Turnaround Report

Each month we have to fill out the turnaround report and indicate progress on the activities that are scheduled to start in the current reporting period

Indicate actual start date, percent complete.

Estimate start date for activities we know will be delayed

Progress used to update the working schedule, which will then shift dependent activities

Reports are generated which show how the activities / milestones are shifted...

2020-12 Turnaround-CMS-HL-LHC-DOE-Issued

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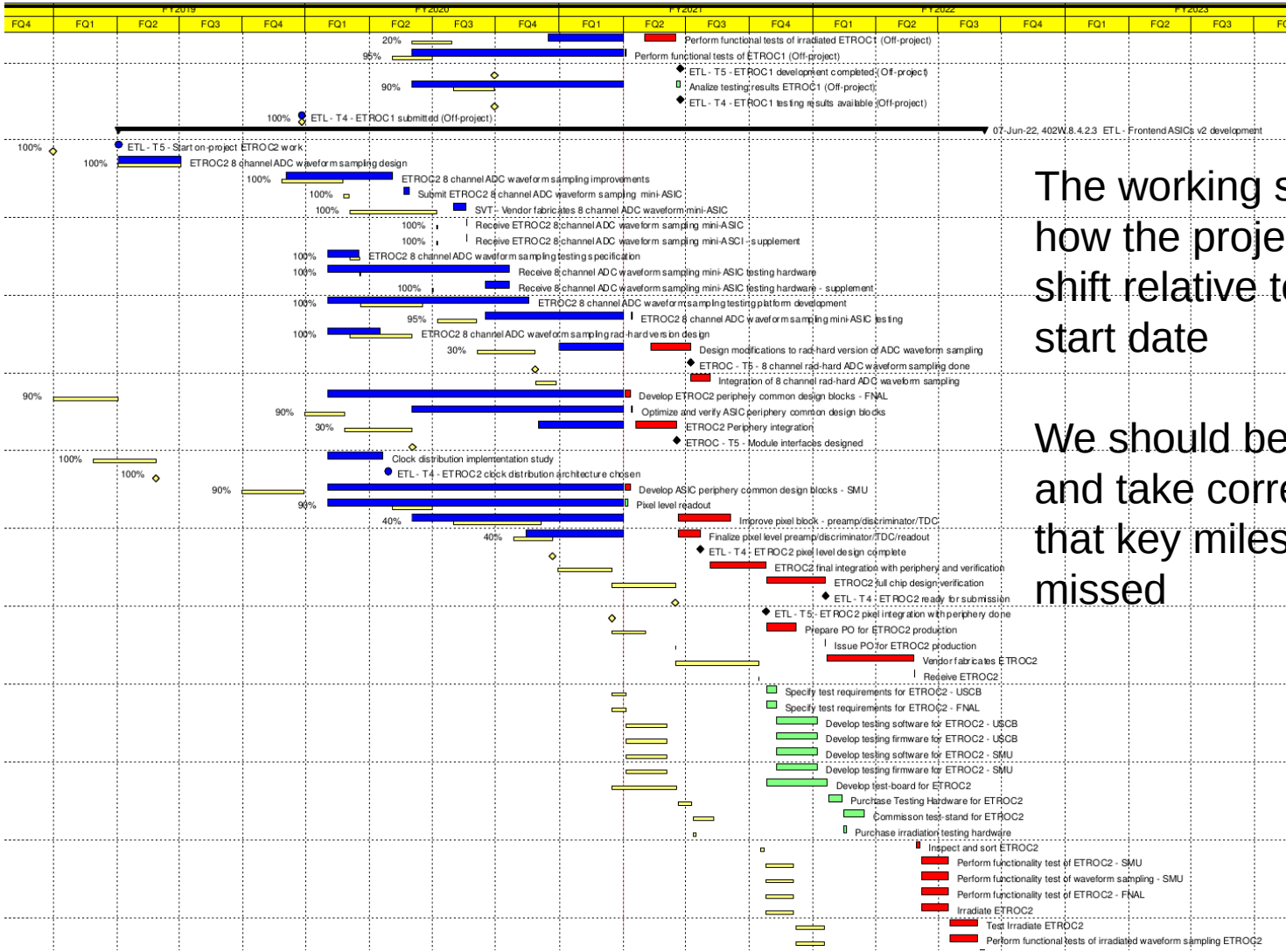
Activity ID	Activity Name	Activity Type	Planned Duration	Activity Status	BL Start	BL Finish	Start	Finish	Actual Start	Actual Finish	Expect Finish	Act. % Comp.	Comp. Type	PMT Code	Steps Comp.	Total Step Cnt.	Planned FNAL Labor Hrs	Planned Non FNAL Labor Hrs	Planned Base MandS	
212	402W.8.4 ETL - Endcap Timing Layer		660d		1-Oct-18	30-Sep-21	01-Oct-19 A	21-Jun-22	1-Oct-19							0	0	6,448	14,543	\$ 186,826.48
213	402W.8.4.2 ETL - Frontend ASICs		558d		1-Oct-18	15-Jul-21	01-Nov-19 A	27-Jan-22	1-Nov-19							0	0	4,832	5,331	\$ 56,315.33
214	402W.8.4.2.1 ETL - Frontend ASICs General		90d		1-Oct-20	12-Feb-21	01-Oct-20 A	12-Feb-21	1-Oct-20							0	0	-	-	\$ 3,272.70
215	TL02120 ETROC - Lodging and travel costs FY21	Task Depé	90d	In Progress	1-Oct-20	12-Feb-21	01-Oct-20 A	12-Feb-21	1-Oct-20			67.78%	Physical	A		0	0	-	-	\$ 3,272.70
216	402W.8.4.2.2 ETL - Frontend ASICs v1 development (Off Project)		248d		3-Feb-20	29-Jun-20	02-Mar-20 A	24-Feb-21	2-Mar-20							0	0	-	-	\$ -
217	EM110 Irradiate ETROC1 (Off-project)	Task Depé	21d	In Progress	3-Feb-20	2-Mar-20	02-Mar-20 A	29-Dec-20	2-Mar-20			10%	Physical			0	0	-	-	\$ -
218	EM120 Perform functional tests of irradiated ETROC1 (Off-project)	Task Depé	42d	In Progress	3-Mar-20	29-Apr-20	15-Sep-20 A	18-Feb-21	15-Sep-20			20%	Physical			0	0	-	-	\$ -
219	EM130 Perform functional tests of ETROC1 (Off-project)	Task Depé	42d	In Progress	3-Feb-20	31-Mar-20	02-Mar-20 A	2-Dec-20	2-Mar-20			95%	Physical			0	0	-	-	\$ -
220	EM140 ETL - T5 - ETROC1 development completed (Off-project)	Finish Mil	0d	Not Started		29-Jun-20		24-Feb-21				0%	Duration			0	0	-	-	\$ -
221	EM160 Analyze testing results ETROC1 (Off-project)	Task Depé	42d	In Progress	30-Apr-20	29-Jun-20	02-Mar-20 A	24-Feb-21	2-Mar-20			90%	Physical			0	0	-	-	\$ -
222	EM165 ETL - T4 - ETROC1 testing results available (Off-project)	Finish Mil	0d	Not Started		29-Jun-20		24-Feb-21				0%	Duration			0	0	-	-	\$ -
223	402W.8.4.2.3 ETL - Frontend ASICs v2 development		558d		1-Oct-18	15-Jul-21	01-Nov-19 A	27-Jan-22	1-Nov-19							0	0	3,968	4,444	\$ 53,042.63
224	TL04518 ETROC2 8 channel ADC waveform sampling mini-ASIC testing	Task Depé	40d	In Progress	8-Apr-20	3-Jun-20	16-Jun-20 A	10-Dec-20	16-Jun-20			95%	Physical	C		0	0	-	564	\$ -
225	TL04524 Design modifications to rad-hard version of ADC waveform sampling	Task Depé	60d	In Progress	4-Jun-20	27-Aug-20	01-Oct-20 A	11-Mar-21	1-Oct-20			30%	Physical	C		0	0	-	845	\$ -
226	TL04526 ETROC - T5 - 8 channel rad-hard ADC waveform sampling done	Finish Mil	0d	Not Started		27-Aug-20		11-Mar-21				0%	Duration			0	0	-	-	\$ -
227	TL04528 Integration of 8 channel rad-hard ADC waveform sampling	Task Depé	20d	Not Started	28-Aug-20	25-Sep-20	12-Mar-21	8-Apr-21				0%	Physical	C		0	0	-	140	\$ -
228	TL04550 Develop ETROC2 periphery common design blocks - FNAL	Task Depé	63d	In Progress	1-Oct-18	3-Jan-19	01-Nov-19 A	8-Dec-20	1-Nov-19			90%	Physical	C		0	0	864	-	\$ -
229	TL04560 Optimize and verify ASIC periphery common design blocks	Task Depé	42d	In Progress	30-Sep-19	26-Nov-19	03-Mar-20 A	14-Dec-20	3-Mar-20			90%	Physical	C		0	0	576	-	\$ -
230	TL04570 ETROC2 Periphery integration	Task Depé	63d	In Progress	27-Nov-19	3-Mar-20	01-Sep-20 A	19-Feb-21	1-Sep-20			30%	Physical	C		0	0	216	-	\$ -
231	TL04572 ETROC - T5 - Module interfaces designed	Finish Mil	0d	Not Started		3-Mar-20		19-Feb-21				0%	Duration			0	0	-	-	\$ -

Measures the technical progress

Costs are determined through invoicing / actuals



# Working Schedule



The working schedule shows how the projected activities shift relative to the planned start date

We should be monitoring this and take corrective actions so that key milestones are not missed

- Baseline Milestone
- Milestone
- Actual LOE
- Crit. Remaining Work
- Completed Milestone
- Project Baseline
- Remaining LOE
- Remaining Work
- Summary



# Questions

What is our budget (CD1 vs CD2)

What have we spent so far

Review hours assigned to the task codes

Monitor the technical progress on the activities we are responsible for

Estimate remaining effort needed to complete assigned work

Review planned work in the near future

Evaluate projected schedule shifts

Determine CPI, SPI

Review variance reports

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