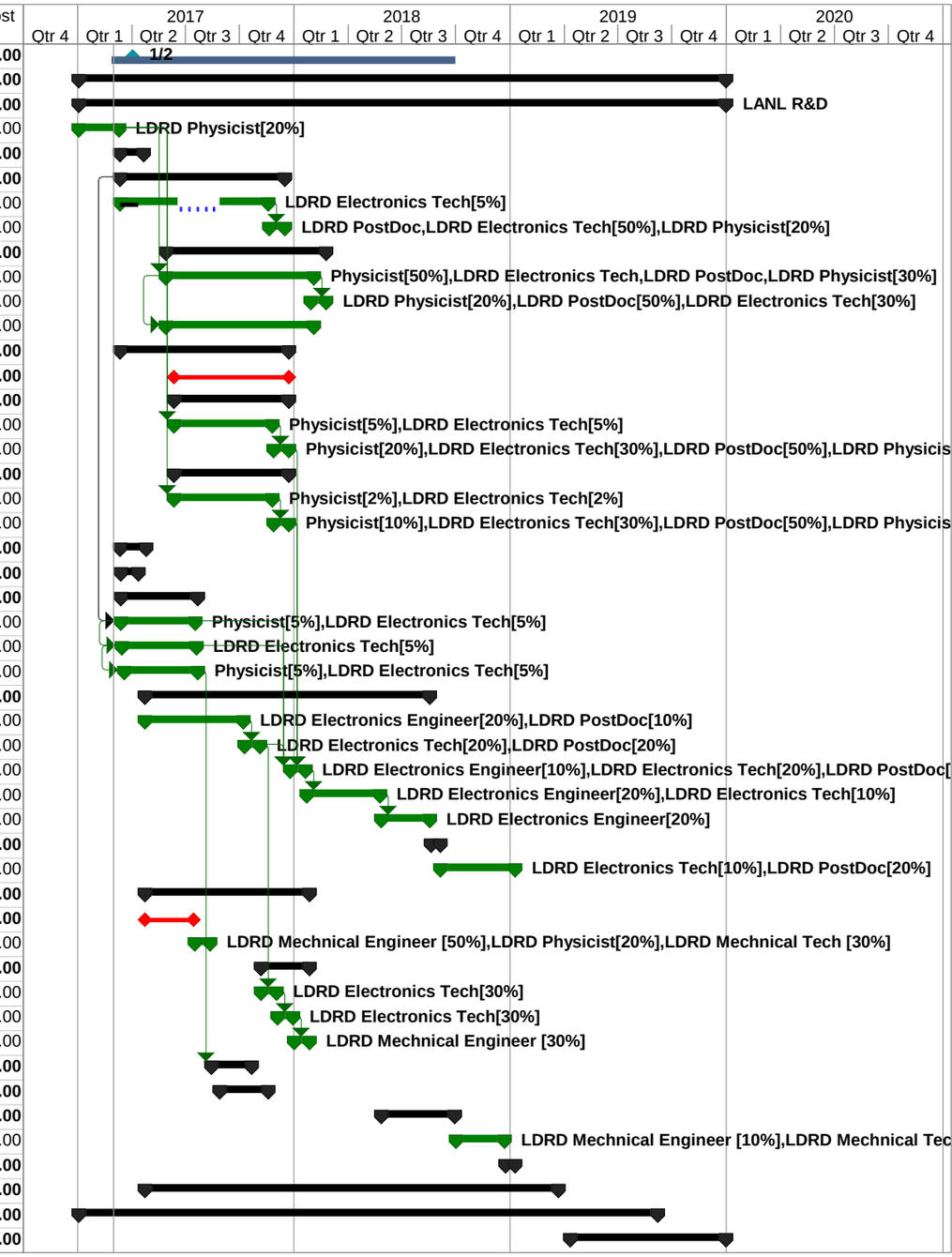
Thu 12/1/16

ID	WBS	Task Name	Duration	Start	Finish	Fixed Cost	Cost	Activity	Cost per Unit	Resource Cost
1	**1**	**ALICE ITS Key Tasks**	**0 days**	**Mon 1/2/17**	**Mon 1/2/17**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
8	**2**	**LDRD Milestones & Critical Tasks**	**781 days**	**Mon 10/3/16**	**Mon 9/30/19**	**$0.00**	**$0.00**		**$0.00**	**$0.00**
14	**3**	**LANL LDRD**	**781 days**	**Mon 10/3/16**	**Mon 9/30/19**	**$0.00**	**$2,959,568.00**	**LANL**	**$0.00**	**$2,579,068.00**
15	3.1	MOU btw LANL and ALICE for R&D	50 days	Mon 10/3/16	Fri 12/9/16	$0.00	$18,400.00		$0.00	$18,400.00
16	**3.2**	**Obtain Designs from ALICE**	**30 days**	**Mon 12/12/16**	**Fri 1/20/17**	**$0.00**	**$82,800.00**		**$0.00**	**$82,800.00**
20	**3.3**	**Setup Alice Readout Test Stand**	**200 days**	**Mon 12/12/16**	**Fri 9/15/17**	**$0.00**	**$135,760.00**		**$0.00**	**$75,760.00**
21	3.3.1	Procure 2 Test Stands and MAPS Evaluation Modules	180 days	Mon 12/12/16	Fri 8/18/17	$50,000.00	$92,000.00		$25,000.00	$42,000.00
22	3.3.2	Setup Test Stands	20 days	Mon 8/21/17	Fri 9/15/17	$10,000.00	$43,760.00		$0.00	$33,760.00
23	**3.4**	**Procure R&D ALICE Staves**	**195 days**	**Mon 2/27/17**	**Fri 11/24/17**	**$0.00**	**$553,720.00**		**$0.00**	**$466,720.00**
24	3.4.1	Procure and Produce 4 Staves	180 days	Mon 2/27/17	Fri 11/3/17	$60,000.00	$504,960.00		$15,000.00	$444,960.00
25	3.4.2	Test Staves at LANL	20 days	Mon 10/30/17	Fri 11/24/17	$0.00	$21,760.00		$0.00	$21,760.00
26	3.4.3	Travel and Per Diem Support	180 days	Mon 2/27/17	Fri 11/3/17	$27,000.00	$27,000.00		$0.00	$0.00
27	**3.5**	**Procure ALICE Electronics & Cables**	**205 days**	**Mon 12/12/16**	**Fri 9/22/17**	**$0.00**	**$150,020.00**		**$0.00**	**$71,520.00**
28	**3.5.1**	**ALICE Readout Electronics Boards**	**140 days**	**Mon 3/13/17**	**Fri 9/22/17**	**$0.00**	**$75,920.00**		**$0.00**	**$49,920.00**
29	**3.5.1.1**	**Readout Units (RDOs)**	**140 days**	**Mon 3/13/17**	**Fri 9/22/17**	**$0.00**	**$41,280.00**		**$0.00**	**$25,280.00**
30	3.5.1.1.1	Procure 4 RDOs	120 days	Mon 3/13/17	Fri 8/25/17	$16,000.00	$23,200.00		$4,000.00	$7,200.00
31	3.5.1.1.2	Test RDOs	20 days	Mon 8/28/17	Fri 9/22/17	$0.00	$18,080.00		$0.00	$18,080.00
32	**3.5.1.2**	**Common Readout Units (CRUs)**	**140 days**	**Mon 3/13/17**	**Fri 9/22/17**	**$0.00**	**$34,640.00**		**$0.00**	**$24,640.00**
33	3.5.1.2.1	Procure 2 CRUs	120 days	Mon 3/13/17	Fri 8/25/17	$10,000.00	$12,880.00		$5,000.00	$2,880.00
34	3.5.1.2.2	Test CRUs at LANL	20 days	Mon 8/28/17	Fri 9/22/17	$0.00	$21,760.00		$0.00	$21,760.00
35	**3.5.2**	**SamTec Cables**	**32 days**	**Mon 12/12/16**	**Tue 1/24/17**	**$0.00**	**$5,000.00**		**$0.00**	**$3,000.00**
38	**3.5.3**	**Optical Cables**	**22 days**	**Tue 12/13/16**	**Wed 1/11/17**	**$0.00**	**$2,900.00**		**$0.00**	**$2,400.00**
41	**3.5.4**	**Procure Ancillaries**	**94 days**	**Tue 12/13/16**	**Fri 4/21/17**	**$0.00**	**$66,200.00**		**$0.00**	**$16,200.00**
42	3.5.4.1	Procure LV,HV, controls	90 days	Tue 12/13/16	Mon 4/17/17	$30,000.00	$35,400.00		$0.00	$5,400.00
43	3.5.4.2	Procure Racks	90 days	Thu 12/15/16	Wed 4/19/17	$10,000.00	$15,400.00		$0.00	$5,400.00
44	3.5.4.3	Procure Chiller	90 days	Mon 12/19/16	Fri 4/21/17	$10,000.00	$15,400.00		$0.00	$5,400.00
45	**3.6**	**Readout R&D**	**345 days**	**Mon 1/23/17**	**Fri 5/18/18**	**$0.00**	**$137,840.00**		**$0.00**	**$137,840.00**
46	3.6.1	Preliminary readout design and FPGA programing	120 days	Mon 1/23/17	Fri 7/7/17	$0.00	$52,800.00		$0.00	$52,800.00
47	3.6.2	Preliminary test of RDO with test bench	20 days	Mon 7/10/17	Fri 8/4/17	$0.00	$7,680.00		$0.00	$7,680.00
48	3.6.3	Test Preliminary Readout Design with RDO and CRU	20 days	Mon 9/25/17	Fri 10/20/17	$0.00	$11,360.00		$0.00	$11,360.00
49	3.6.4	Readout design and test II	90 days	Mon 10/23/17	Fri 2/23/18	$0.00	$43,920.00		$0.00	$43,920.00
50	3.6.5	Readout final design	60 days	Mon 2/26/18	Fri 5/18/18	$0.00	$22,080.00		$0.00	$22,080.00
51	**3.7**	**Electronics Final Design Review**	**12 days**	**Mon 5/21/18**	**Tue 6/5/18**	**$0.00**	**$25,088.00**		**$0.00**	**$15,088.00**
55	3.8	Prototype readout assembled and tested	90 days	Wed 6/6/18	Tue 10/9/18	$0.00	$23,760.00		$0.00	$23,760.00
56	**3.9**	**Mechanical Support and Cooling**	**200 days**	**Mon 1/23/17**	**Fri 10/27/17**	**$0.00**	**$236,160.00**		**$0.00**	**$181,160.00**
57	**3.9.1**	Specifications	**60 days**	**Mon 1/23/17**	**Fri 4/14/17**	**$0.00**	**$65,120.00**		**$0.00**	**$65,120.00**
61	3.9.2	Prototype Stave Space Frame Design	20 days	Mon 4/17/17	Fri 5/12/17	$0.00	$32,960.00		$0.00	$32,960.00
62	**3.9.3**	**Safety Systems**	**60 days**	**Mon 8/7/17**	**Fri 10/27/17**	**$0.00**	**$35,440.00**		**$0.00**	**$25,440.00**
63	3.9.3.1	review sensors & interlocks	20 days	Mon 8/7/17	Fri 9/1/17	$0.00	$7,200.00		$0.00	$7,200.00
64	3.9.3.2	electrical interlock design	20 days	Mon 9/4/17	Fri 9/29/17	$5,000.00	$12,200.00		$0.00	$7,200.00
65	3.9.3.3	cooling interlocks design	20 days	Mon 10/2/17	Fri 10/27/17	$5,000.00	$16,040.00		$0.00	$11,040.00
66	**3.9.4**	**Cooling System**	**50 days**	**Mon 5/15/17**	**Fri 7/21/17**	**$0.00**	**$54,280.00**		**$0.00**	**$24,280.00**
70	**3.9.5**	**Stave Assembly Tooling**	**60 days**	**Mon 5/29/17**	**Fri 8/18/17**	**$0.00**	**$48,360.00**		**$0.00**	**$33,360.00**
74	**3.10**	**Prototype Assembly and Test**	**90 days**	**Mon 2/26/18**	**Fri 6/29/18**	**$0.00**	**$114,240.00**		**$0.00**	**$114,240.00**
77	3.11	Mechanical Conceptual Design	60 days	Mon 7/2/18	Fri 9/21/18	$0.00	$18,240.00		$0.00	$18,240.00
78	**3.12**	Mechanical Conceptual Design Review	**12 days**	**Mon 9/24/18**	**Tue 10/9/18**	**$0.00**	**$33,920.00**		**$0.00**	**$23,920.00**
82	**3.13**	**Softrware Tool Development and Analysis**	**500 days**	**Mon 1/23/17**	**Fri 12/21/18**	**$0.00**	**$351,200.00**		**$0.00**	**$351,200.00**
85	**3.14**	**Detector Optimizaation and Physics Simulations (MIE)**	**700 days**	**Mon 10/3/16**	**Fri 6/7/19**	**$0.00**	**$946,000.00**		**$0.00**	**$896,000.00**
88	**3.15**	**Test Beam Operation**	**187 days**	**Fri 1/11/19**	**Mon 9/30/19**	**$0.00**	**$132,420.00**		**$0.00**	**$102,420.00**