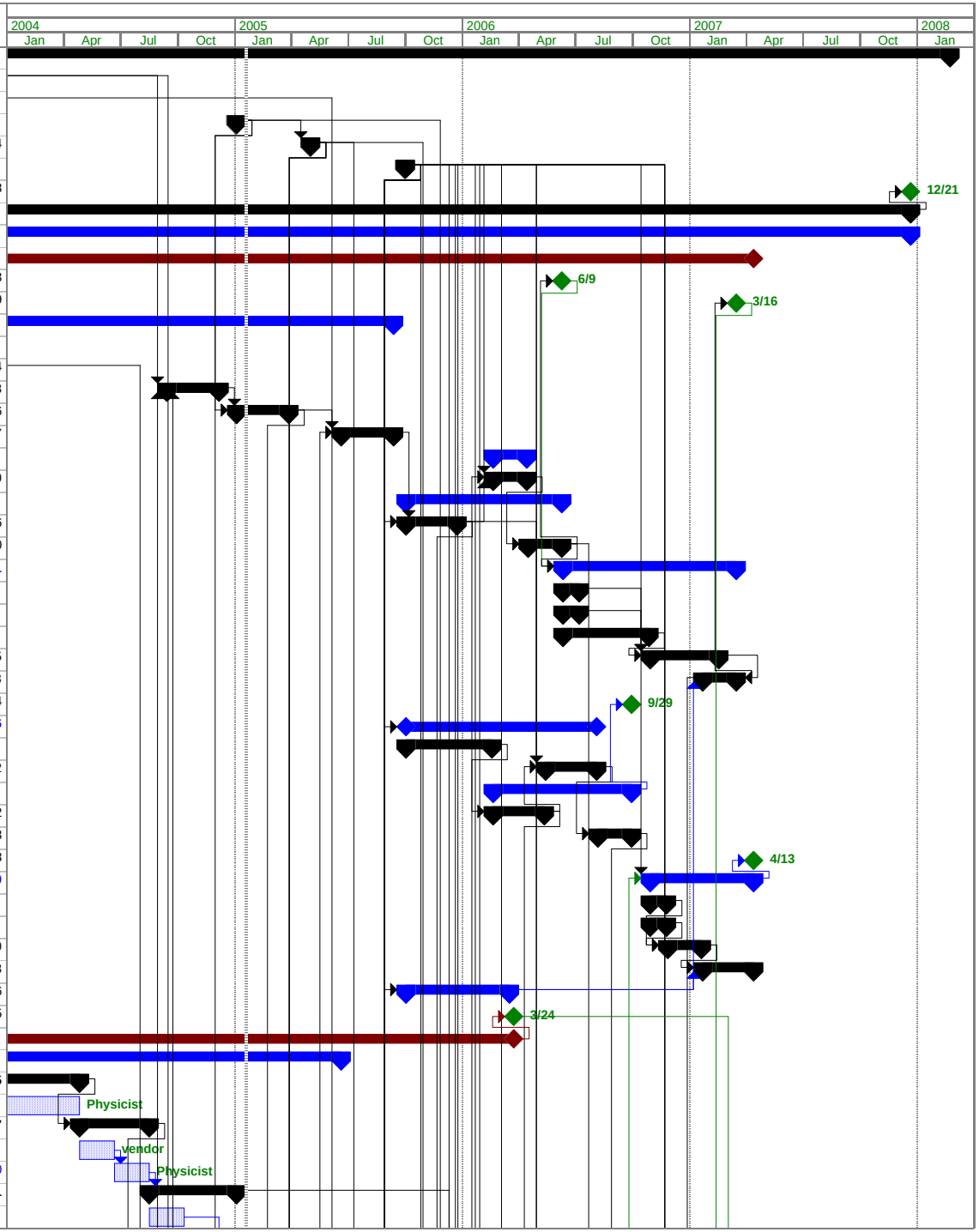
Tue 1/18/05

ID	WBS	Task Name	Start	Successors	Predecessors
1	1	**VTX project**	**Tue 4/1/03**		
2		DOE FY04 Generic R&D Funds	Wed 10/1/03	153,16	
3		RIKEN Construction Funds	Tue 4/1/03	61	
4		DOE FY05 Generic R&D Funds	Mon 1/3/05	165,17,68,5	
5		HYTEC R&D funding	Mon 5/2/05	213,234,214,215	4
6		DOE Construction Funds	Sat 10/1/05	1,22,312,43,223	
7		MILESTONE - Completion of SILICON BARREL	Fri 12/21/07		8
8	**1.1**	**SILICON BARREL**	**Tue 4/1/03**	**7**	
9	**1.1.1**	**STRIP**	**Tue 4/1/03**		
10	**1.1.1.1**	**Strip FEE**	**Tue 4/1/03**		
11		MILESTONE - Strip ROC Card Ready for Fab.	Fri 6/9/06	24	23
12		MILESTONE - Strip ROC Card Fabricated	Fri 3/16/07	92	29
13	**1.1.1.1.1**	**ROC R&D**	**Tue 4/1/03**		
14	1.1.1.1.1.1	ROC Design 0th Round	Tue 4/1/03	15	
15	1.1.1.1.1.2	ROC Prototype 0th Round	Tue 7/22/03	75,47	14
16	1.1.1.1.1.3	ROC Design 1st Round	Tue 9/14/04	17	69,2,73
17	1.1.1.1.1.4	ROC Prototype 1st Round	Tue 1/4/05	77,18	4,16
18	1.1.1.1.1.9	ROC Design 2nd Round	Tue 6/21/05	22	17,77
19	**1.1.1.1.2**	**ROC Design**	**Mon 2/20/06**		
20	1.1.1.1.2.1	ROC Design Pre-production	Mon 2/20/06	23	22,6,80
21	**1.1.1.1.3**	**ROC Prototype**	**Mon 10/3/05**		
22	1.1.1.1.3.1	ROC Prototype 2nd Round	Mon 10/3/05	33,80,20	18,6
23	1.1.1.1.3.2	ROC Prototype Pre-production	Mon 4/17/06	24,87,11	20
24	**1.1.1.1.4**	**ROC Fabrication**	**Mon 6/12/06**		**23,11**
25	1.1.1.1.4.1	ROC Fabrication - Boards	Mon 6/12/06	28	
26	1.1.1.1.4.5	ROC Fabrication - SVX4s	Mon 6/12/06	28	
27	1.1.1.1.4.6	ROC Fabrication - Other Parts	Mon 6/12/06	28	
28	1.1.1.1.4.7	ROC Fabrication - Assembly	Mon 10/30/06	29FF+1 mon	26,27,25
29	1.1.1.1.4.8	ROC Fabrication - Test	Mon 1/22/07	92SS+2 wks,12	28FF+1 mon,43
30		MILESTONE - Strip FEM Ready for Fab.	Fri 9/29/06		34
31	**1.1.1.1.5**	**FEM Design**	**Mon 10/3/05**		**6**
32	1.1.1.1.5.1	FEM Design - 1st Round	Mon 10/3/05	35	
33	1.1.1.1.5.5	FEM Design - Pre-production	Mon 5/15/06	36	35,22
34	**1.1.1.1.6**	**FEM Prototype**	**Mon 2/20/06**	**30**	
35	1.1.1.1.6.1	FEM Prototype - 1st Round	Mon 2/20/06	33,85	32
36	1.1.1.1.6.5	FEM Prototype - Pre-production	Mon 8/7/06	88	33
37		MILESTONE - Strip FEM Fabricated	Fri 4/13/07		38
38	**1.1.1.1.7**	**FEM Fabrication**	**Mon 10/30/06**	**37**	**6,70**
39	1.1.1.1.7.1	FEM Fabrication - Boards	Mon 10/30/06	41	
40	1.1.1.1.7.2	FEM Fabrication - Parts	Mon 10/30/06	41	
41	1.1.1.1.7.3	FEM Fabrication - Assembly	Mon 11/27/06	42	39,40
42	1.1.1.1.7.4	FEM Fabrication - Test	Mon 1/22/07		41,43
43	**1.1.1.1.8**	**ROC/FEE Testbench development**	Mon 10/3/05	29,42	6
44		MILESTONE - Strip Sensor Fabricated	Fri 3/24/06	92	45
45	**1.1.1.2**	**Strip Sensor**	**Tue 11/11/03**	**44**	
46	**1.1.1.2.1**	**PROTOTYPE of Strip Sensor**	**Tue 11/11/03**		
47	**1.1.1.2.1.1**	**1st round - beam test**	**Tue 11/11/03**	**49**	**15**
48	1.1.1.2.1.1.1	signal/noise, position resolution	Tue 11/11/03		
49	**1.1.1.2.1.2**	**2nd round**	**Tue 4/27/04**	**75**	**47**
50	1.1.1.2.1.2.1	delivery of sensors	Tue 4/27/04	51	
51	1.1.1.2.1.2.2	tests	Tue 6/22/04	52	50
52	**1.1.1.2.1.3**	**final pre-production strip sensor**	**Tue 8/17/04**	**80**	**51**
53	1.1.1.2.1.3.1	SINTEF pre-production sensor	Tue 8/17/04	55	



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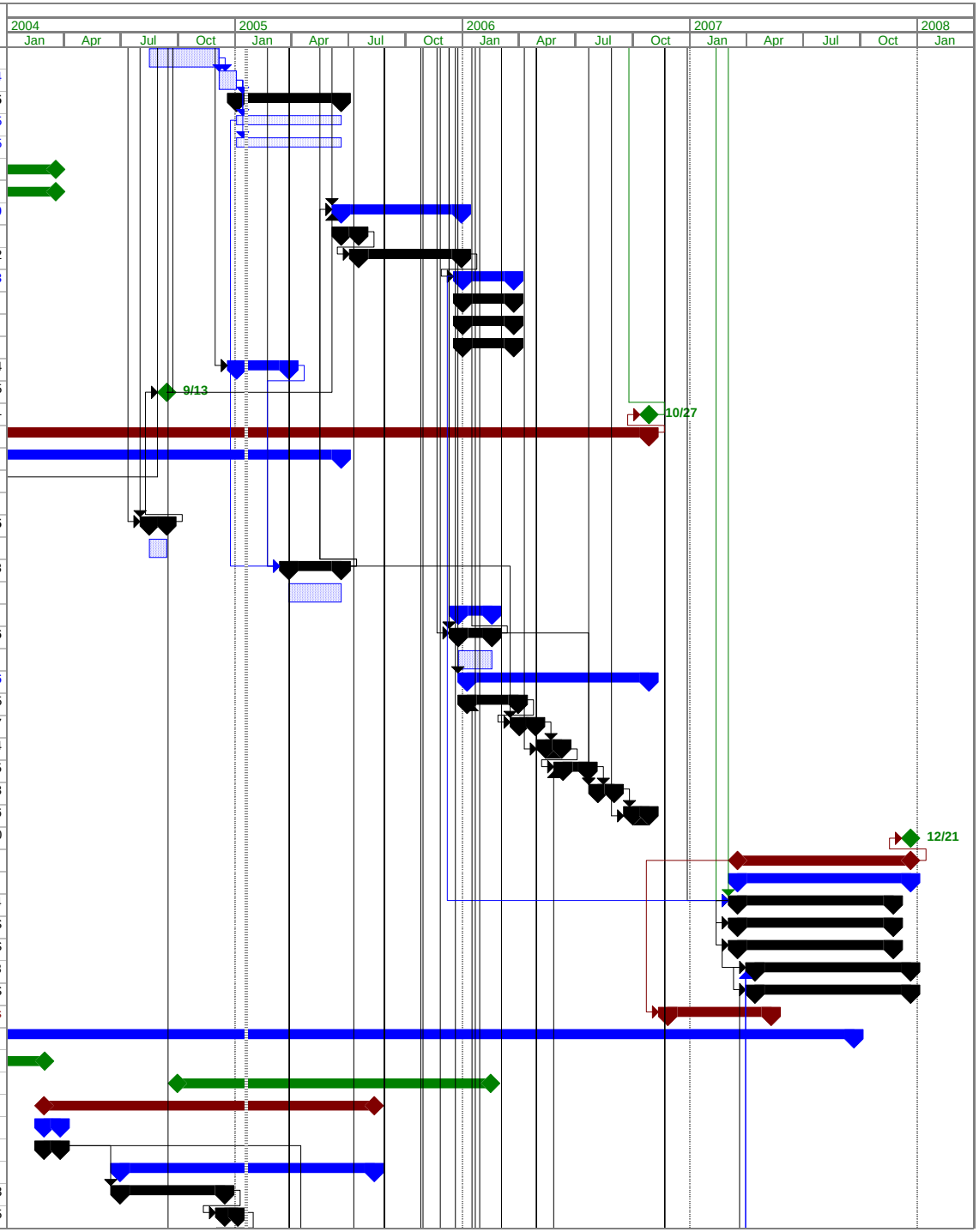
ID	WBS	Task Name	Start	Successors	Predecessors
54	1.1.1.2.1.3.2	Hamamatsu pre-production sensor	Tue 8/17/04	55	
55	1.1.1.2.1.3.3	tests at vendor	Tue 12/7/04	57,58,56	53,54
56	**1.1.1.2.1.4**	**Q/A of prototype sensor**	**Tue 1/4/05**		**55**
57	1.1.1.2.1.4.1	sensor Q/A at BNL	Tue 1/4/05	77SS+2 mons	55
58	1.1.1.2.1.4.2	sensor Q/A at UNM	Tue 1/4/05		55
59		SINTEF budget	Mon 12/1/03		
60		Hamamatsu budget	Mon 12/1/03		
61	**1.1.1.2.2**	**FABRICATION of Strip Sensor**	**Tue 6/21/05**		**77,3,69**
62	1.1.1.2.2.1	order	Tue 6/21/05	63	
63	1.1.1.2.2.2	delivery	Tue 7/19/05	64	62
64	**1.1.1.2.3**	**Q/A of final sensor**	**Mon 1/2/06**	**92SS+2 wks**	**63**
65	1.1.1.2.3.1	Q/A of sensor at BNL	Mon 1/2/06		
66	1.1.1.2.3.2	Q/A/ of sensor at UNM	Mon 1/2/06		
67	1.1.1.2.3.3	Q/A at USB	Mon 1/2/06		
68	1.1.1.2.4	Wire bonder	Tue 1/4/05	77	4
69		MILESTONE - ROC/Sensors Technology choice	Mon 9/13/04	16,61	75
70		MILESTONE - Strip system tests finished	Fri 10/27/06	38	71
71	**1.1.1.3**	**Strip System test**	**Tue 4/1/03**	**70**	
72	**1.1.1.3.1**	**Strip System Test R&D**	**Tue 4/1/03**		
73	**1.1.1.3.1.1**	**0th round**	**Tue 4/1/03**	**16**	
74	1.1.1.3.1.1.1	used viking	Tue 4/1/03		
75	**1.1.1.3.1.2**	**1st round system test**	**Tue 8/17/04**	**69**	**49,15**
76	1.1.1.3.1.2.1	use 0th round roc, 2nd round sensor	Tue 8/17/04		
77	**1.1.1.3.1.3**	**2nd round system test**	**Tue 3/29/05**	**61,18,84**	**'SS+2 mons,68**
78	1.1.1.3.1.3.1	use 1st round ROC	Tue 3/29/05		
79	**1.1.1.3.2**	**Electronics ROC & Sensor**	**Mon 12/26/05**		
80	**1.1.1.3.2.1**	**final pre-production system test**	**Mon 12/26/05**	**87,20**	**52,22,6**
81	1.1.1.3.2.1.1	use 2nd round ROC	Mon 12/26/05		
82	**1.1.1.3.3**	**Ladder (roc, sensor, bus, pilot, ladder)**	**Mon 1/9/06**		**6**
83	1.1.1.3.3.1	design of assembly jigs	Mon 1/9/06	84	235
84	1.1.1.3.3.2	1st round test ladder	Mon 4/3/06	85	83,77
85	1.1.1.3.3.3	test of the 1st round test ladder	Mon 5/15/06	86	35,84
86	1.1.1.3.3.4	2nd round design of assembly jigs	Mon 6/12/06	87	238,85
87	1.1.1.3.3.5	pre-production test ladder	Mon 8/7/06	88	86,80,23
88	1.1.1.3.3.6	test of pre-production test ladder	Mon 10/2/06		87,36
89		MILESTONE - strip ladders assembled	Fri 12/21/07		90
90	**1.1.1.4**	**Assembly and Testing of Strip ladders**	**Mon 3/19/07**	**97SS-4 mons,89**	
91	**1.1.1.4.1**	**ROC & sensor+pilot+ladder**	**Mon 3/19/07**		
92	1.1.1.4.1.1	Glue ROC on sensor	Mon 3/19/07	93SS	SS+2 wks,12,44
93	1.1.1.4.1.2	wire bond ROC+Sensor	Mon 3/19/07	94SS	92SS
94	1.1.1.4.1.3	test asembled ROC+sensor	Mon 3/19/07	95SS+1 mon	93SS
95	1.1.1.4.1.4	Mount (ROC+sensor) on the ladder substrate	Mon 4/16/07	96SS	+1 mon,240,263
96	1.1.1.4.1.5	test assembled ladders	Mon 4/16/07	282SS	95SS
97	1.1.1.5	Services, LV, racks etc	Mon 11/27/06		90SS-4 mons
98	**1.1.2**	**PIXEL**	**Tue 4/1/03**		
99		RIKEN/CERN MOU	Tue 4/1/03		
100		RIKEN/CERN contract(2)	Fri 10/1/04		
101	**1.1.2.1**	**Pixel Sensors**	**Mon 3/1/04**		
102	**1.1.2.1.1**	**Design Pixel Sensor**	**Mon 3/1/04**		
103	1.1.2.1.1.1	Design of sensors	Mon 3/1/04	105,107	
104	**1.1.2.1.2**	**Pixel Sensor Fab/QA**	**Thu 7/1/04**		
105	1.1.2.1.2.1	Sensor ladder fab.(54 ladders)	Thu 7/1/04	106	103
106	1.1.2.1.2.2	QA Round 1	Thu 12/16/04	123	105



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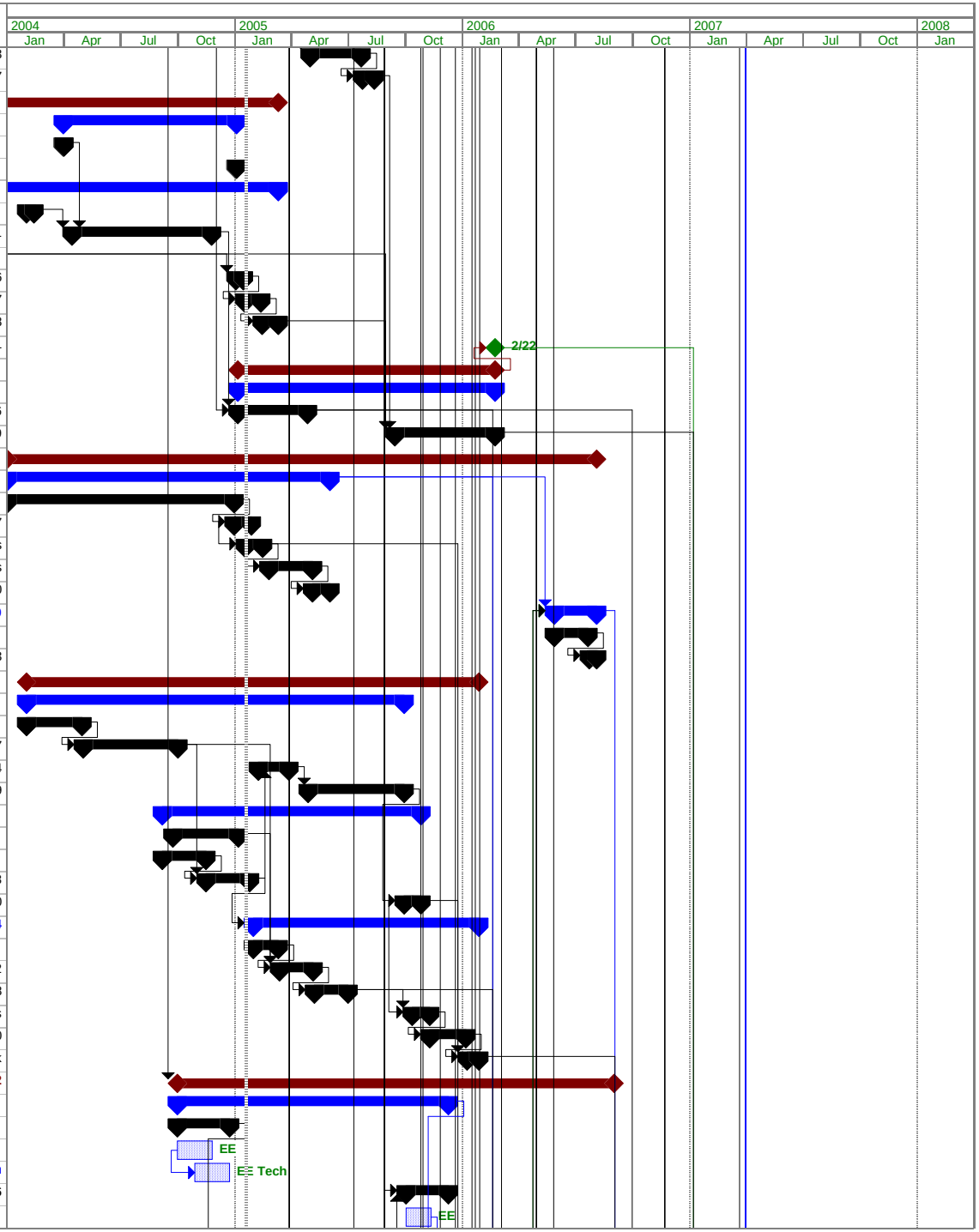
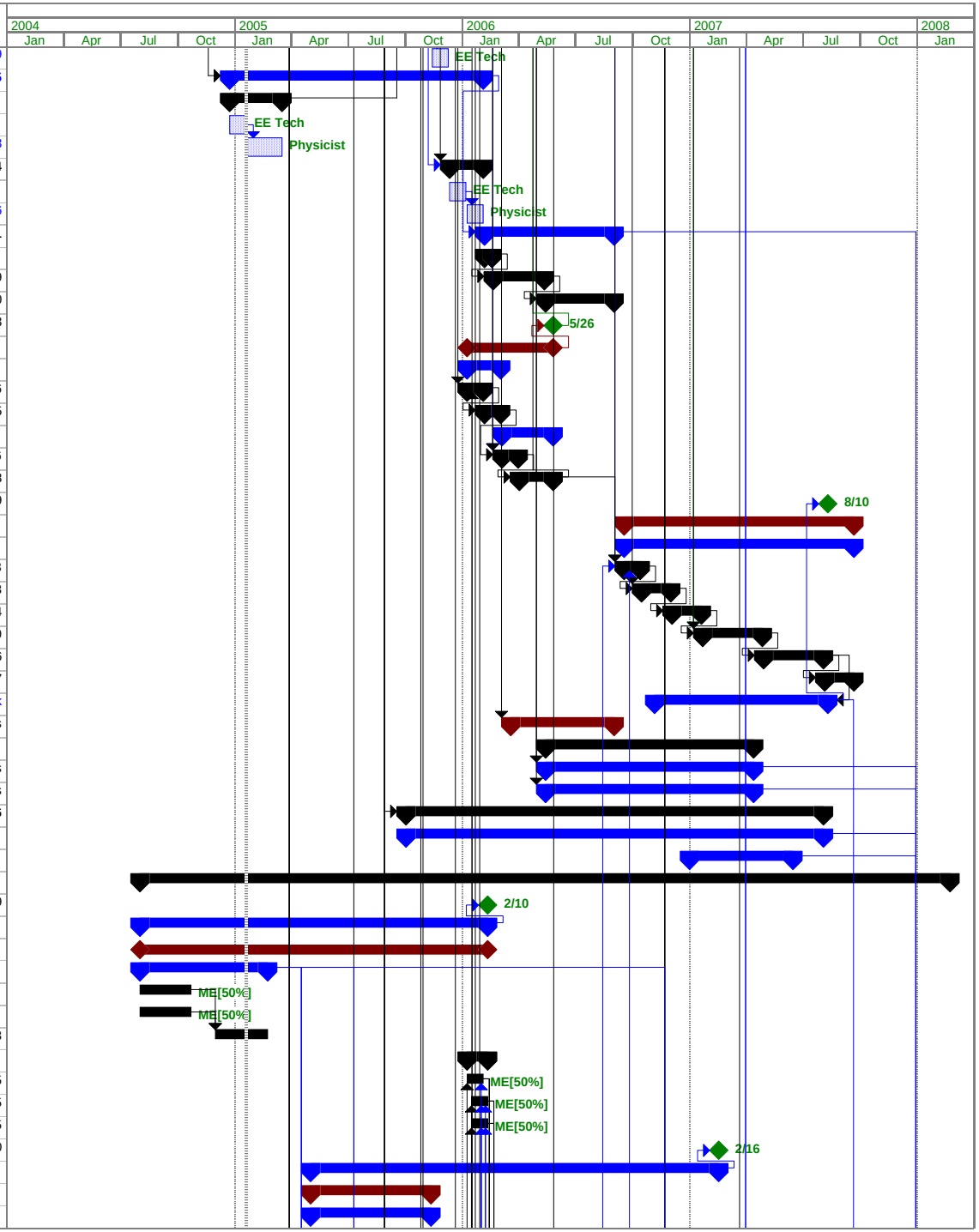
ID	WBS	Task Name	Start	Successors	Predecessors
107	1.1.2.1.2.3	Sensor ladder fab.(108 ladders)	Mon 5/2/05	108	103
108	1.1.2.1.2.4	QA Round 2	Mon 7/25/05	124	107
109	**1.1.2.2**	**Pixel ROC**	**Tue 4/1/03**		
110	**1.1.2.2.1**	**Pixel R/O ALICE1 Readout Delivery**	**Thu 4/1/04**		
111	1.1.2.2.1.1	Delivery of ALICE1 Read-out (16 wafers)	Thu 4/1/04	115	
112	1.1.2.2.1.2	2nd Delivery of ALICE1 Read-out (8 wafers)	Mon 1/3/05		
113	**1.1.2.2.2**	**Pixel R/O QA**	**Tue 4/1/03**		
114	1.1.2.2.2.1	chip Probe station setup	Mon 2/2/04	115	
115	1.1.2.2.2.2	Pixel R/O Q/A for 15 wafer	Thu 4/15/04	123	114,111
116	1.1.2.2.2.3	pixel R/O Q/A for 5 wafers	Tue 4/1/03	117,124	
117	1.1.2.2.2.4	move the probe station to RIKEN	Mon 1/3/05	118	116
118	1.1.2.2.2.5	probe station setup at RIKEN	Mon 1/17/05	119	117
119	1.1.2.2.2.6	Pixel R/O chip QA for 4 wafers	Mon 2/14/05	124	118
120		MILESTONE - Pixels bump-bonded	Wed 2/22/06	186	121
121	**1.1.2.3**	**Pixel Sensor assembly**	**Thu 1/6/05**	**120**	
122	**1.1.2.3.1**	**Hybrid bump-bonding**	**Thu 1/6/05**		
123	1.1.2.3.1.1	bump-bonding of first 50 sensor assemblies	Thu 1/6/05	178,184	115,106
124	1.1.2.3.1.2	bump bonding of 100 more sensor assemblie:	Thu 9/15/05	186	108,116,119
125	**1.1.2.4**	**Pixel Bus**	**Fri 1/2/04**		
126	**1.1.2.4.1**	**PROTOTYPE of Pixel Bus**	**Fri 1/2/04**	**178,132**	
127	1.1.2.4.1.1	ALICE bus copy	Fri 1/2/04	128	
128	1.1.2.4.1.2	Test of prototype ALICE bus	Fri 12/31/04	129SS+2 wks	127
129	1.1.2.4.1.3	Design of PHENIX bus	Tue 1/18/05	30FS+8 days,175	128SS+2 wks
130	1.1.2.4.1.4	PHENIX bus test production	Fri 2/25/05	131	129FS+8 days
131	1.1.2.4.1.5	PHENIX test bus final test	Fri 5/6/05		130
132	**1.1.2.4.2**	**FABRICATION of Pixel Bus**	**Mon 5/29/06**	**183**	**126,172,179**
133	1.1.2.4.2.1	fabrication	Mon 5/29/06	134	
134	1.1.2.4.2.2	testing	Mon 7/24/06		133
135	**1.1.2.5**	**Pixel Pilot Module**	**Mon 2/2/04**		
136	**1.1.2.5.1**	**Pixel Digital Pilot ASIC**	**Mon 2/2/04**		
137	1.1.2.5.1.1	PILOT ASCI design 1st round	Mon 2/2/04	138	
138	1.1.2.5.1.2	PILOT ASIC 1st round fab	Mon 5/3/04	144,148	137
139	1.1.2.5.1.3	PILOT ASIC final design	Tue 2/8/05	140	144
140	1.1.2.5.1.4	PILOT ASIC final production	Fri 4/29/05	145	139
141	**1.1.2.5.2**	**test of PILOT ASIC**	**Tue 9/7/04**		
142	1.1.2.5.2.1	GOL test	Fri 9/24/04	148	
143	1.1.2.5.2.2	test board design	Tue 9/7/04	144	
144	1.1.2.5.2.3	test of 1st round PILOT ASIC	Tue 11/16/04	139,146	143,138
145	1.1.2.5.2.4	test of final PILOT ASIC	Fri 9/30/05	wk,150SS+2 wks	140
146	**1.1.2.5.3**	**PILOT module**	**Mon 1/31/05**		**144**
147	1.1.2.5.3.1	1st round pilot module design	Mon 1/31/05	148	
148	1.1.2.5.3.2	1st round pilot module board fab	Mon 3/14/05	149	147,138,142
149	1.1.2.5.3.3	1st round pilot module board test	Mon 5/9/05	150,178	148
150	1.1.2.5.3.4	final pilot module design	Thu 10/13/05	151	9,145SS+2 wks
151	1.1.2.5.3.5	final pilot module board fab	Thu 11/10/05	152	150
152	1.1.2.5.3.6	Test of final pilot module	Mon 1/9/06	183	51,145FS+1 wk
153	**1.1.2.6**	**Pixel FEM**	**Fri 10/1/04**		**2**
154	**1.1.2.6.1**	**E&D of Pixel FEM**	**Fri 10/1/04**	**165**	
155	**1.1.2.6.1.1**	**1st round**	**Fri 10/1/04**	**161**	
156	1.1.2.6.1.1.1	firmware	Fri 10/1/04	157SS+1 mon	
157	1.1.2.6.1.1.2	circuit diagram	Fri 10/29/04		156SS+1 mon
158	**1.1.2.6.1.2**	**final round**	**Mon 10/3/05**		**162,6**
159	1.1.2.6.1.2.1	firmware	Mon 10/3/05	160	

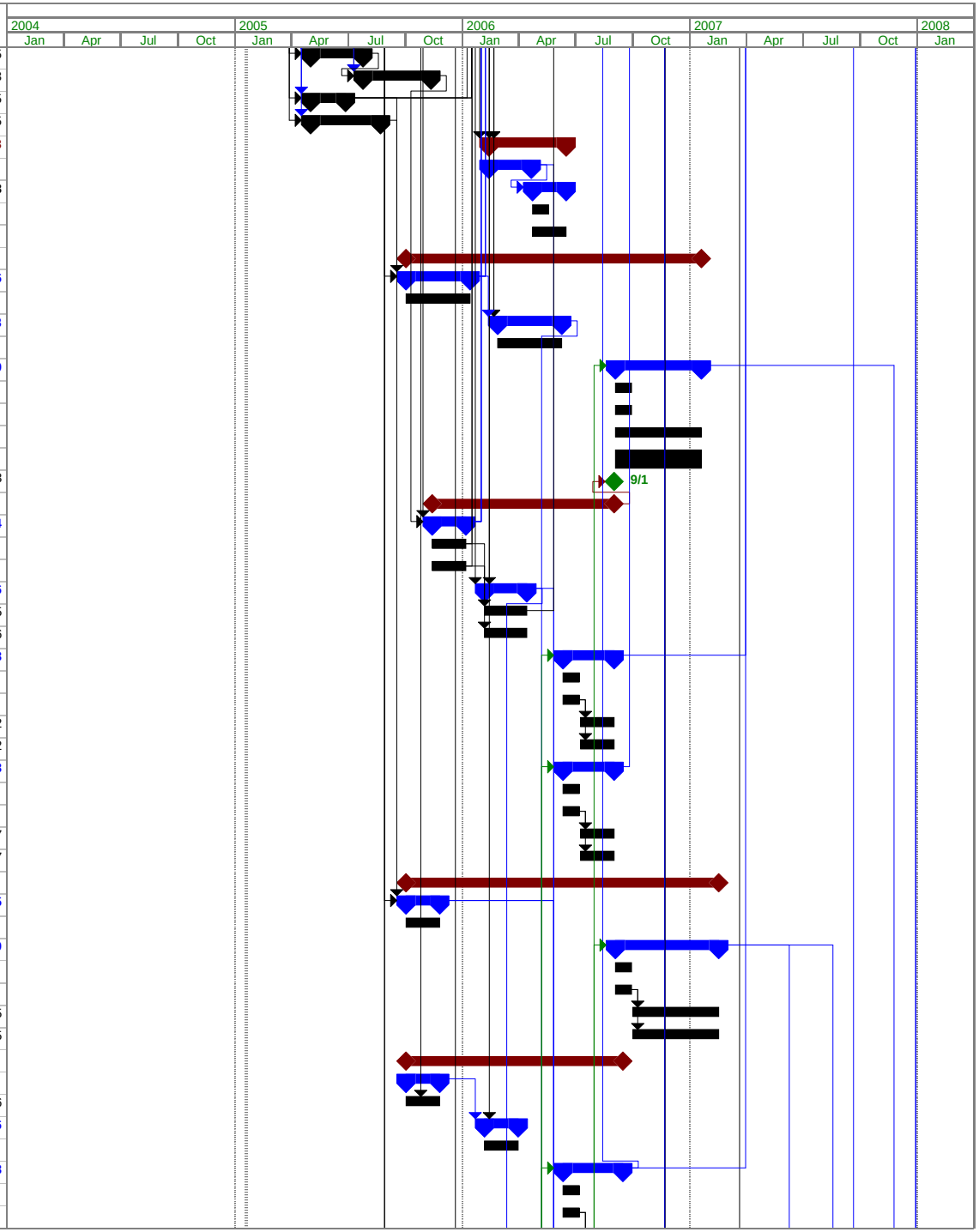
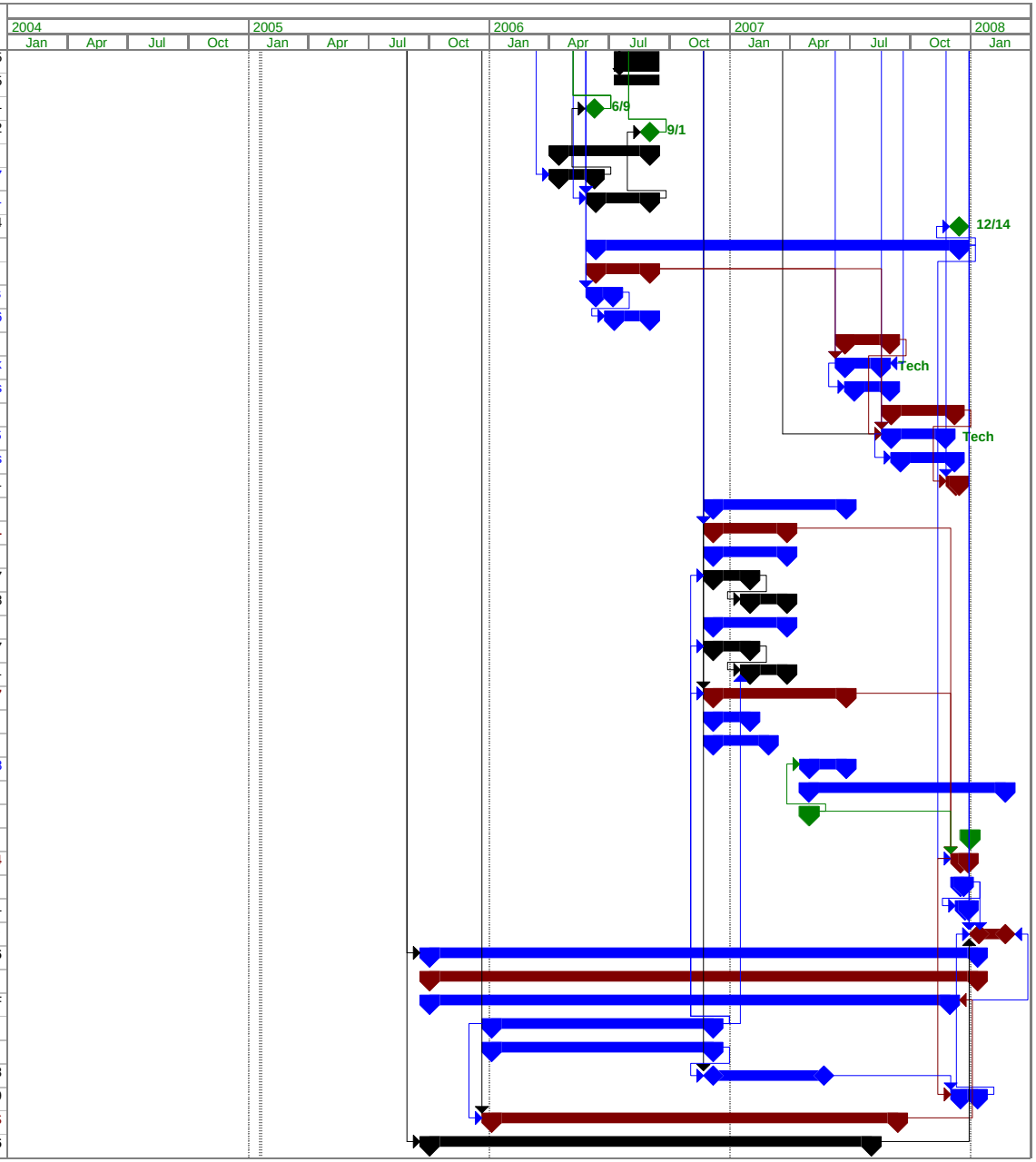


ID	WBS	Task Name	Start	Successors	Predecessors
160	1.1.2.6.1.2.2	circuit diagram	Mon 11/14/05		159
161	**1.1.2.6.2**	**PROTOTYPE of Pixel FEM**	**Fri 12/24/04**	**168**	**155**
162	**1.1.2.6.2.1**	**1st round**	**Fri 12/24/04**	**158**	
163	1.1.2.6.2.1.1	assembly	Fri 12/24/04	164	
164	1.1.2.6.2.1.2	testing	Fri 1/21/05		163
165	**1.1.2.6.2.2**	**final round**	**Mon 12/12/05**		**154,4**
166	1.1.2.6.2.2.1	assembly	Mon 12/12/05	167	
167	1.1.2.6.2.2.2	testing	Mon 1/9/06		166
168	**1.1.2.6.3**	**FABRICATION of Pixel FEM**	**Mon 2/6/06**	**303**	**161**
169	1.1.2.6.3.1	order	Mon 2/6/06	170	
170	1.1.2.6.3.2	delivery	Mon 2/20/06	171	169
171	1.1.2.6.3.3	test	Mon 5/15/06		170
172		MILESTONE - Pixel ladders ready for production	Fri 5/26/06	132	173
173	**1.1.2.7**	**Prototype Pixel ladder (sensor+ROC+bus+pilot MCI**	**Mon 1/9/06**	**172**	
174	**1.1.2.7.1**	**Assembly Fixture**	**Mon 1/9/06**		
175	1.1.2.7.1.1	Assembly fixture design	Mon 1/9/06	176	129,236
176	1.1.2.7.1.2	Assembly fixture fab	Mon 2/6/06	178	175
177	**1.1.2.7.2**	**Prototype ladder**	**Mon 3/6/06**		
178	1.1.2.7.2.1	assemble prototype ladder	Mon 3/6/06	179	23,149,126,176
179	1.1.2.7.2.2	prototype ladder testing	Mon 4/3/06	183,132	178
180		MILESTONE - Pixel Ladders assembled	Fri 8/10/07		189
181	**1.1.2.8**	**final ladder production**	**Mon 9/18/06**		
182	**1.1.2.8.1**	**production**	**Mon 9/18/06**		
183	1.1.2.8.1.1	1st PHENIX half ladder	Mon 9/18/06	184	32,152,245,263
184	1.1.2.8.1.2	10 half ladder	Mon 10/16/06	185	183,123
185	1.1.2.8.1.3	10 half ladder (total 20; 1st layer done)	Mon 12/4/06	186	184
186	1.1.2.8.1.4	20 half ladder (total 40)	Mon 1/22/07	187	185,124,120
187	1.1.2.8.1.5	20 half ladder (total 60; 2nd layer done)	Mon 4/30/07	188,189FF+1 wk	186
188	1.1.2.8.1.6	10 spare half ladders	Mon 8/6/07		187
189	1.1.2.8.2	test production ladders	Mon 11/6/06	279FF+1 wk,180	187FF+1 wk
190	1.1.2.9	**Pixel Services, LV, racks etc**	Mon 3/20/06		6FS+6 mons
191	**1.2**	**DAQ**	**Mon 5/15/06**		
192	**1.2.1**	**Strip DCM**	Mon 5/15/06	303	6FS+8 mons
193	**1.2.2**	**Pixel DCM**	Mon 5/15/06	303	6FS+8 mons
194	**1.3**	**ELECTRONICS SYSTEM INTEGRATION**	**Mon 10/3/05**		**6**
195	1.3.1	oversight tasks	Mon 10/3/05	303	
196	1.3.2	Environmental Safety & Compliance	Mon 1/1/07	303	
197	**1.4**	**AUXILLARY SYSTEMS & INTEGRATION**	**Mon 8/2/04**		
198		MILESTONE - Completion of Specifications	Fri 2/10/06		199
199	**1.4.1**	**Specifications**	**Mon 8/2/04**	**198**	
200	**1.4.1.1**	**E&D of Specifications**	**Mon 8/2/04**		
201	**1.4.1.1.1**	**1st Round**	**Mon 8/2/04**	**216,213,214,215**	
202	1.4.1.1.1.1	specify heat load	Mon 8/2/04	204	
203	1.4.1.1.1.2	specify mechanical tolerances/distortions	Mon 8/2/04	204	
204	1.4.1.1.1.3	plan service routing	Wed 12/1/04		202,203
205	**1.4.1.1.2**	**2nd Round**	**Mon 1/9/06**		
206	1.4.1.1.2.1	ladder	Mon 1/9/06	237,217,261	234,215
207	1.4.1.1.2.2	support	Mon 1/16/06	225,217	223,234,215
208	1.4.1.1.2.3	integration	Mon 1/16/06	225,217	223,234,215
209		MILESTONE - Completion of Mechanical Structure	Fri 2/16/07		210
210	**1.4.2**	**Mechanical Structure**	**Tue 5/3/05**	**209**	
211	**1.4.2.1**	**Mechanical Structure R&D**	**Tue 5/3/05**		
212	**1.4.2.1.1**	**Engineering Design + Simulations**	**Tue 5/3/05**		



Tue 1/18/05

ID	WBS	Task Name	Start	Successors	Predecessors
213	1.4.2.1.1.1	Ladder staves R&D	Tue 5/3/05	214	201,5
214	1.4.2.1.1.2	Ladder Coolant tubes R&D	Tue 7/26/05	234	201,5,213
215	1.4.2.1.1.3	Barrel Support R&D	Tue 5/3/05	251,206,207,208	201,5
216	1.4.2.1.1.4	Outer Stability R&D	Tue 5/3/05	223	201,5
217	**1.4.2.2**	**Cooling System**	**Mon 2/13/06**		**6,206,207,208**
218	1.4.2.2.1	Design	Mon 2/13/06	219,272	
219	**1.4.2.2.2**	**Procure**	**Mon 4/24/06**		**218**
220	1.4.2.2.2.1	Liaison	Mon 4/24/06		
221	1.4.2.2.2.2	Material	Mon 4/24/06		
222	**1.4.2.3**	**Outer Stability Structure**	**Mon 10/3/05**		
223	**1.4.2.3.2**	**1st Round**	**Mon 10/3/05**	**225,207,208**	**216,6**
224	1.4.2.3.2.1	design+prototype	Mon 10/3/05		
225	**1.4.2.3.3**	**2nd Round**	**Mon 2/27/06**	**272**	**223,207,208**
226	1.4.2.3.3.1	design+protoype	Mon 2/27/06		
227	**1.4.2.3.4**	**procure**	**Mon 9/4/06**	**284**	**269**
228	1.4.2.3.4.1	Liaison	Mon 9/4/06		
229	1.4.2.3.4.2	Tooling	Mon 9/4/06		
230	1.4.2.3.4.3	fabrication	Mon 9/4/06		
231	1.4.2.3.4.4	material	Mon 9/4/06		
232		MILESTONE - Completion of Mechanical Ladders	Fri 9/1/06		233
233	**1.4.2.4**	**barrel ladder staves**	**Mon 11/14/05**	**232**	
234	**1.4.2.4.1**	**1st Round ladder staves prototypes**	**Mon 11/14/05**	**206,207,208**	**5,214**
235	1.4.2.4.1.1	design+prototype of strip ladder	Mon 11/14/05	83,238	
236	1.4.2.4.1.2	design+prototype of pixel ladder	Mon 11/14/05	175,239	
237	**1.4.2.4.2**	**2nd Round**	**Mon 2/6/06**	**iFS+2 mons,271**	**6,206**
238	1.4.2.4.2.1	design+protoype strip ladder	Mon 2/6/06	86	235
239	1.4.2.4.2.2	design+protoype pixel ladder	Mon 2/6/06		236
240	**1.4.2.4.3**	**procure strip ladders**	**Mon 6/12/06**	**95**	**268**
241	1.4.2.4.3.1	Liaison	Mon 6/12/06		
242	1.4.2.4.3.2	Tooling	Mon 6/12/06	243,244	
243	1.4.2.4.3.3	fabrication	Mon 7/10/06		242
244	1.4.2.4.3.4	material	Mon 7/10/06		242
245	**1.4.2.4.4**	**procure pixel ladders**	**Mon 6/12/06**	**183**	**268**
246	1.4.2.4.4.1	Liaison	Mon 6/12/06		
247	1.4.2.4.4.2	Tooling	Mon 6/12/06	248,249	
248	1.4.2.4.4.3	fabrication	Mon 7/10/06		247
249	1.4.2.4.4.4	material	Mon 7/10/06		247
250	**1.4.2.5**	**Barrel**	**Mon 10/3/05**		
251	**1.4.2.5.2**	**2nd Round**	**Mon 10/3/05**	**iFS+2 mons,272**	**6,215**
252	1.4.2.5.2.1	design+protoype	Mon 10/3/05		
253	**1.4.2.5.3**	**procure (barrel)**	**Mon 9/4/06**	**282,279**	**269**
254	1.4.2.5.3.1	Liaison	Mon 9/4/06		
255	1.4.2.5.3.2	Tooling	Mon 9/4/06	256,257	
256	1.4.2.5.3.3	fabrication	Mon 10/2/06		255
257	1.4.2.5.3.4	material	Mon 10/2/06		255
258	**1.4.2.6**	**ladder coolant tubes**	**Mon 10/3/05**		
259	**1.4.2.6.2**	**1st Round**	**Mon 10/3/05**	**261**	
260	1.4.2.6.2.1	design+prototype	Mon 10/3/05		6
261	**1.4.2.6.3**	**2nd Round**	**Mon 2/6/06**		**259,206**
262	1.4.2.6.3.1	design+protoype	Mon 2/6/06		
263	**1.4.2.6.4**	**procure**	**Mon 6/12/06**	**183,95**	**268**
264	1.4.2.6.4.1	Liaison	Mon 6/12/06		
265	1.4.2.6.4.2	Tooling	Mon 6/12/06	266,267	



ID	WBS	Task Name	Start	Successors	Predecessors
266	1.4.2.6.4.3	fabrication	Mon 7/10/06		265
267	1.4.2.6.4.4	material	Mon 7/10/06		265
268		MILESTONE Decision to Procure mechanical ladders	Fri 6/9/06	240,245,263	271
269		MILESTONE Decision to Procure mechanical	Fri 9/1/06	227,253	272
270	**1.4.2.7**	**Mechanical Task Out to Bid**	**Mon 4/17/06**		
271	1.4.2.7.1	ladders	Mon 4/17/06	268	237
272	1.4.2.7.2	support structures	Mon 6/12/06	269	218,225,251
273		MILESTONE - vtx ready for installation	Fri 12/14/07		274
274	**1.4.3**	**Assembly of ladders onto barrel**	**Mon 6/12/06**	**300,273**	
275	**1.4.3.1**	**assembly jig for ladders onto barrel**	**Mon 6/12/06**	**282,279**	
276	1.4.3.1.1	design jig	Mon 6/12/06	277	237FS+2 mons
277	1.4.3.1.2	fabricate jig	Mon 7/10/06		276
278	**1.4.3.2**	**mount pixel ladders on barrel**	**Mon 6/25/07**	**282**	
279	1.4.3.2.1	align + fix ladders	Mon 6/25/07	280SS+2 wks	75,189FF+1 wk
280	1.4.3.2.2	test	Mon 7/9/07		279SS+2 wks
281	**1.4.3.3**	**mount strip Ladders on barrel**	**Mon 9/3/07**	**284**	
282	1.4.3.3.1	align + fix ladders	Mon 9/3/07	283SS+2 wks	3,275,278,96SS
283	1.4.3.3.2	test	Mon 9/17/07		282SS+2 wks
284	**1.4.3.4**	**add outer stability structure barrel**	Mon 12/10/07		227,281
285	**1.4.4**	**Infrastructure**	**Thu 12/7/06**		
286	**1.4.4.1**	**Installation+support**	**Thu 12/7/06**	**300**	**6,201**
287	**1.4.4.1.1**	**Beam-pipe**	**Thu 12/7/06**		
288	1.4.4.1.1.1	Procure Beam-pipe	Thu 12/7/06	289	307
289	1.4.4.1.1.2	Beam-pipe support	Thu 2/1/07		288
290	**1.4.4.1.4**	**Detector Support**	**Thu 12/7/06**		
291	1.4.4.1.4.1	Detector Support in CM	Thu 12/7/06	292	307
292	1.4.4.1.4.2	Installation Fixtures	Thu 2/1/07		307,291
293	**1.4.4.2**	**Services**	**Thu 12/7/06**	**300**	**6,307**
294	1.4.4.2.1	Rack Platforms	Thu 12/7/06		
295	1.4.4.2.2	Power+water services for IR, outside of IR	Thu 12/7/06		
296	1.4.4.2.3	preparation of IR region	Wed 5/2/07		298
297	**1.4.5**	**Installation**	**Tue 5/1/07**		
298		IR Open Summer 07	Tue 5/1/07	300,296	
299		IR close winter 07	Mon 12/31/07		
300	**1.4.5.1**	**Install vtx in inner region**	**Mon 12/17/07**	**310SS**	**98,286,293,274**
301	1.4.5.1.1	Tech	Mon 12/17/07	303,302	
302	1.4.5.1.2	survey	Mon 12/24/07		301
303	1.4.5.6	preops	Mon 1/14/08		6FF-1 mon,168
304	**1.4.6**	**Mechanical system Integration**	**Mon 10/3/05**		**6**
305	**1.4.6.1**	**Mechanical System Engineer**	**Mon 10/3/05**		
306	1.4.6.1.1	oversight tasks	Mon 10/3/05	303FF-1 mon	311FF
307	1.4.6.1.2	Design support from nosecone	Thu 1/5/06	2,293,288,311SS	
308	1.4.6.1.3	Design installation fixtures	Thu 1/5/06	309	
309	1.4.6.1.4	Environmental Safety & Compliance	Thu 12/7/06	310	6,308
310	1.4.6.1.5	supervise installation	Mon 12/17/07	303	300SS,309
311	1.4.6.2	Detailing/drawings	Thu 1/5/06	306FF	6,307SS
312	**1.5**	**MANAGEMENT**	**Mon 10/3/05**	**303**	**6**