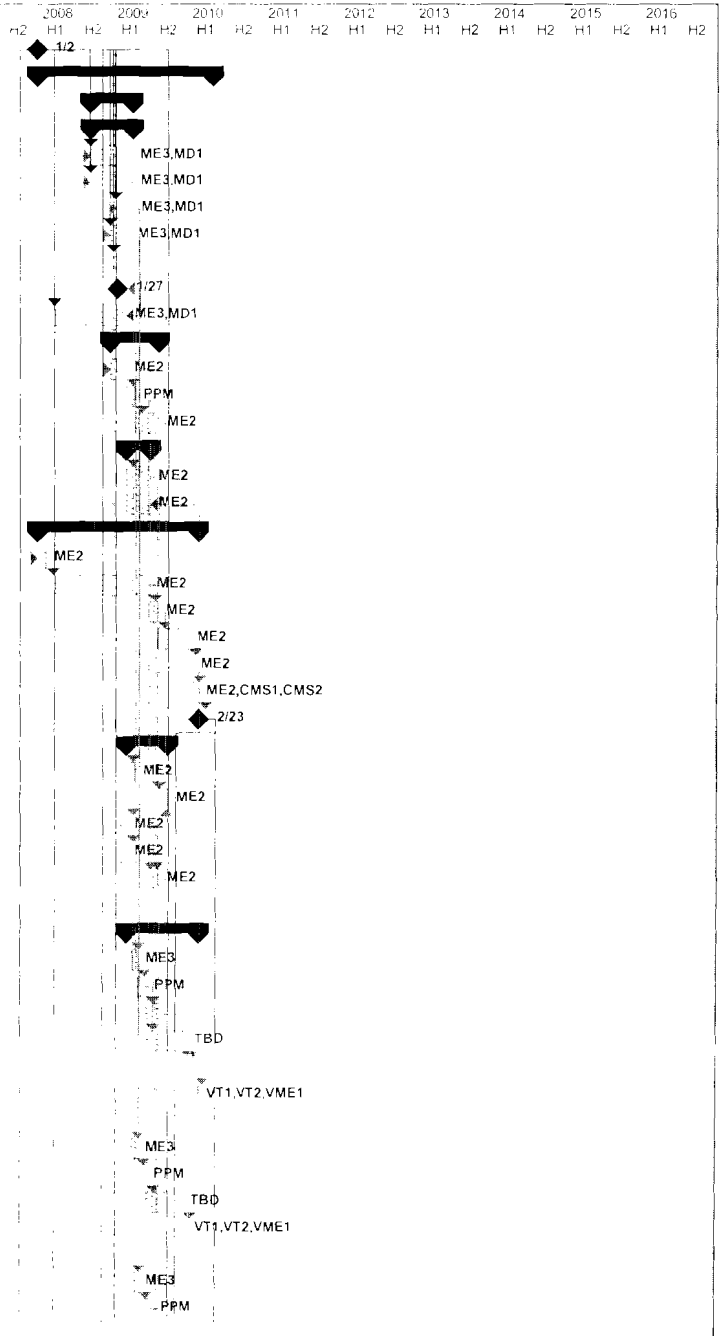
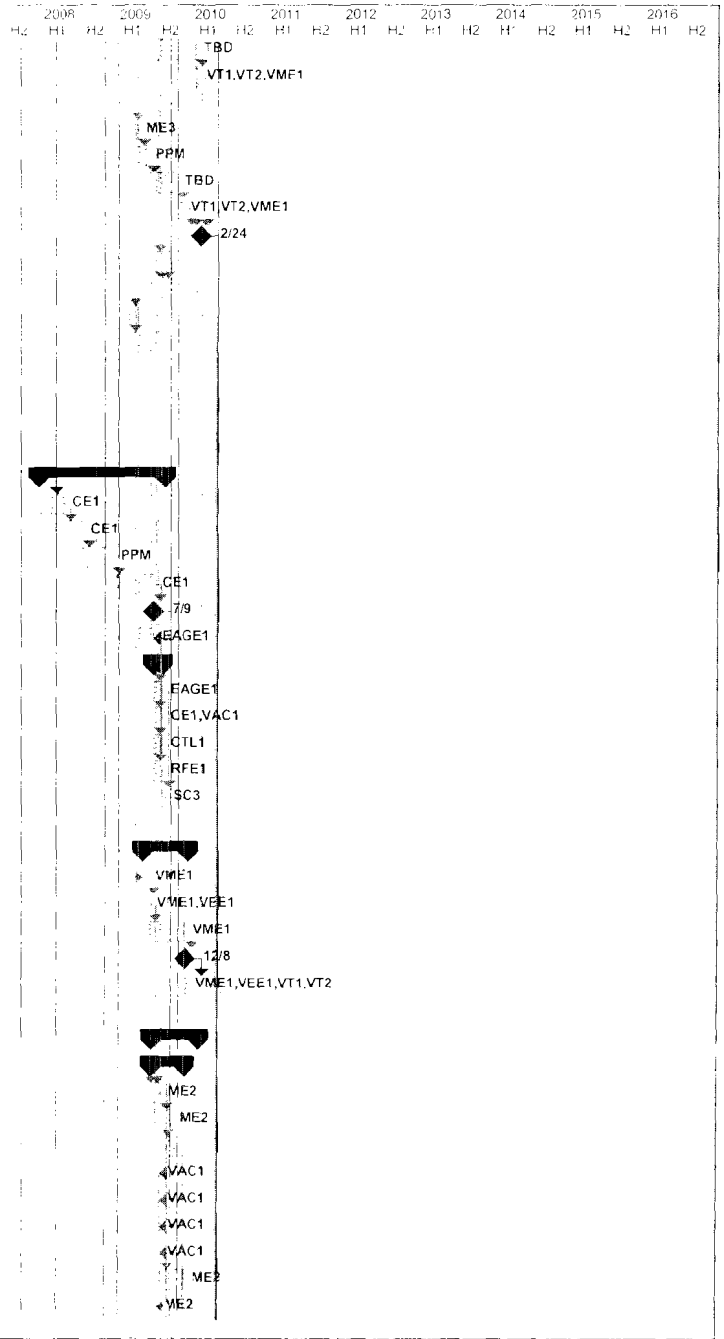
ID	Task Name	Duration	Start	Finish	Predecessors
1	56 Mhz SRF Cavity Program Start: Blue Ring AIP Funding Released	0 days	Wed 1/2/08	Wed 1/2/08	
2	**Design Development**	**585 days**	**Wed 1/2/08**	**Fri 5/7/10**	
3	**Cavity Design**	**138 days**	**Thu 9/18/08**	**Mon 4/13/09**	
4	**Cavity/Helium Vessel Transitions**	**138 days**	**Thu 9/18/08**	**Mon 4/13/09**	
5	Fundamental Damper	135 days	Thu 9/18/08	Wed 4/8/09	1,11SS+180 days
6	HOM Dampers	135 days	Thu 9/18/08	Wed 4/8/09	1,5SS
7	Fundamental Power Coupler	60 days	Mon 1/19/09	Mon 4/13/09	1,5SS
8	Pick-up Probes	60 days	Tue 12/23/08	Wed 3/25/09	1,5SS+65 days
9	External Design Review	2 days	Thu 1/8/09	Fri 1/9/09	1
10	LESHC & ASSRC Reviews Complete	0 days	Tue 1/27/09	Tue 1/27/09	11FF+30 days
11	Cavity design complete	295 days	Wed 1/2/08	Wed 3/11/09	1,9FF
12	**Heluim Vessel**	**160 days**	**Tue 12/23/08**	**Mon 8/17/09**	
13	Design	50 days	Tue 12/23/08	Wed 3/11/09	11FS-50 days
14	Bid cycle	30 days	Thu 3/12/09	Wed 4/22/09	13
15	Procure & inspect	80 days	Thu 4/23/09	Mon 8/17/09	14
16	**Cavity/Helium Vessel Support System**	**80 days**	**Thu 3/12/09**	**Mon 7/6/09**	
17	Space Frame	80 days	Thu 3/12/09	Mon 7/6/09	13
18	Nitronic Rods	80 days	Thu 3/12/09	Mon 7/6/09	17FF
19	**Tuner**	**532 days**	**Wed 1/2/08**	**Tue 2/23/10**	
20	Develop concept	30 days	Wed 1/2/08	Wed 2/13/08	11SS
21	Complete final tuner layout	342 days	Thu 2/14/08	Mon 6/29/09	20
22	Fabricate tuner components	30 days	Tue 6/30/09	Wed 8/12/09	21
23	Procure vendor-supplied items	100 days	Thu 8/13/09	Fri 1/8/10	22
24	Fabricate tuner modification components	10 days	Mon 1/11/10	Mon 1/25/10	23
25	Assembly components in mock-up & test	20 days	Tue 1/26/10	Tue 2/23/10	24
26	Deliver tuner components for installation	0 days	Tue 2/23/10	Tue 2/23/10	25
27	**Position adjustment**	**140 days**	**Thu 3/12/09**	**Tue 9/29/09**	
28	Cavity in vacuum box	30 days	Thu 3/12/09	Wed 4/22/09	13
29	Cryostat in space	30 days	Tue 8/18/09	Tue 9/29/09	13,32
30	Magnetic Shields Design	20 days	Wed 2/11/09	Wed 3/11/09	13FS-20 days
31	Heat Shield Design	20 days	Wed 2/11/09	Wed 3/11/09	13FS-20 days
32	Vacuum Vessel - Cryomodule Component Design	30 days	Tue 7/7/09	Mon 8/17/09	13,30,31,17
33					
34	**Cavity Transition Components Procurement**	**238 days**	**Thu 3/12/09**	**Wed 2/24/10**	
35	Fundamental Damper procurement package complete	20 days	Thu 4/9/09	Wed 5/6/09	5
36	Bid cycle	30 days	Thu 5/7/09	Thu 6/18/09	35
37	Design Fundamental Damper Test plan & fixture	40 days	Fri 6/19/09	Mon 8/17/09	36
38	Fundamental Damper fabricated	130 days	Fri 6/19/09	Tue 12/29/09	36
39	[illegible]	[illegible]			
40	[illegible] received, tested & cleaned	8 days	[illegible]	Wed 2/24/10	39
41					
42	HOM Dampers procurement package complete	20 days	Thu 4/9/09	Wed 5/6/09	6
43	Bid cycle	30 days	Thu 5/7/09	Thu 6/18/09	42
44	HOM Dampers fabricated	120 days	Fri 6/19/09	Fri 12/11/09	43
45	HOM Dampers received, tested & cleaned	10 days	Mon 12/14/09	Tue 12/29/09	44
46					
47	Fundamental Power Coupler procurement package complete	20 days	Tue 4/14/09	Mon 5/11/09	7
48	Bid cycle	30 days	Fri 6/5/09	Mon 7/20/09	47



Project: 56Mhz Cavity Project 123008
Date: Mon 1/5/09

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

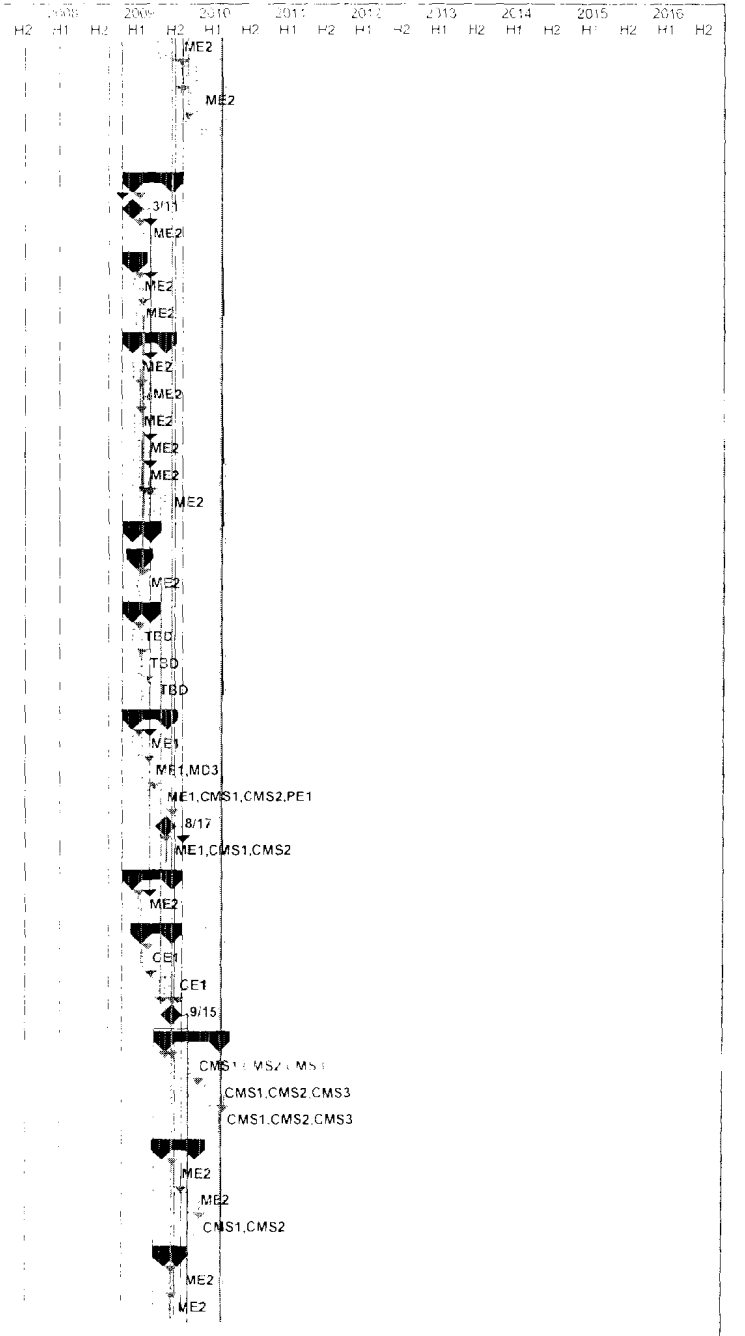
ID	Task Name	Duration	Start	Finish	Predecessors
49	Fundamental Damperfabricated	130 days	Tue 7/21/09	Thu 1/28/10	48
50	Fundamental Damper received, tested & cleaned	10 days	Fri 1/29/10	Thu 2/11/10	49
51					
52	RF Pick-up Probes procurement package complete	20 days	Thu 3/26/09	Wed 4/22/09	8
53	Bid cycle	30 days	Thu 4/23/09	Thu 6/4/09	52
54	RF Pick-up Probes fabricated	100 days	Fri 6/5/09	Tue 10/27/09	53
55	RF Pick-up Probes received, tested & cleaned	20 days	Wed 10/28/09	Wed 11/25/09	54
56	Transition components received, tested and cleaned	5 days	Wed 2/24/10	Wed 2/24/10	40,45,50,55
57	Space Frame Fabrication, including bid cycle	120 days	Tue 7/7/09	Tue 12/29/09	37
58	Cryomodule Components Procurement	120 days	Tue 8/18/09	Thu 2/11/10	18,32
59	Heat shield procurement package complete	30 days	Thu 3/12/09	Wed 4/22/09	31
60	Magnetic Shield Fabrication, including bid cycle	120 days	Thu 3/12/09	Mon 8/31/09	30
61					
62					
63					
64					
65	**Vertical Test Facility**	**418 days**	**Wed 1/2/08**	**Thu 9/3/09**	
66	Determine location & configuration	84 days	Wed 1/2/08	Wed 4/30/08	1
67	Specify dewar requirements	60 days	Thu 5/1/08	Mon 7/28/08	66
68	Procurement & bid cycle	100 days	Tue 7/29/08	Fri 12/19/08	67
69	Procure dewar with magnetic shielding	124 days	Tue 1/13/09	Thu 7/9/09	68FS+10 days
70	Delivery of dewar to 912 location	0 days	Thu 7/9/09	Thu 7/9/09	69
71	Construct VTF Tower & initiate utilities	60 days	Tue 4/14/09	Thu 7/9/09	70FF
72	**Connect utilities to dewar & facility**	**30 days**	**Fri 7/10/09**	**Thu 8/20/09**	
73	Electrical - Instrumentation	30 days	Fri 7/10/09	Thu 8/20/09	71
74	Cryogenics - Vacuum	30 days	Fri 7/10/09	Thu 8/20/09	71
75	Controls	30 days	Fri 7/10/09	Thu 8/20/09	71
76	RF system connected & running	30 days	Fri 7/10/09	Thu 8/20/09	71
77	Test systems - VTF ready for cavity qualification	10 days	Fri 8/21/09	Thu 9/3/09	73,74,75,76
78					
79	**All Metal RF Shielded Gate Valves & Vacuum Components**	**150 days**	**Mon 5/18/09**	**Tue 12/22/09**	
80	Determine valve requirements, write spec & SOW	15 days	Mon 5/18/09	Mon 6/8/09	88FS-60 days
81	Engineer Valve Control	5 days	Tue 6/9/09	Mon 6/15/09	80
82	Procure components	120 days	Tue 6/16/09	Tue 12/8/09	81
83	Receipt of valves	0 days	Tue 12/8/09	Tue 12/8/09	82
84	Perform require acceptance testing	10 days	Wed 12/9/09	Tue 12/22/09	83
85					
86	**String Assembly Tooling**	**153 days**	**Tue 6/30/09**	**Thu 2/11/10**	
87	Layout vacuum sealed String Gvalve-to-GValve	110 days	Tue 6/30/09	Tue 12/8/09	
88	[illegible]	30 days	Tue 6/30/09	Wed 8/12/09	[illegible]
89	Design of String Assembly Tooling	60 days	Thu 7/16/09	Thu 10/8/09	85FS-20 days
90	Design of Cryomodule Assembly Tooling	60 days	Tue 8/4/09	Tue 10/27/09	32FS-10 days
91	Vacuum gauge ports, hardware & valves	10 days	Thu 7/30/09	Wed 8/12/09	88FF
92	Pump ports & hardware	10 days	Thu 7/30/09	Wed 8/12/09	88FF
93	Gate Valves	10 days	Thu 7/30/09	Wed 8/12/09	88FF
94	Burst Disc ports	15 days	Thu 7/23/09	Wed 8/12/09	88FF
95	Procurement of purchased string components	80 days	Thu 8/13/09	Tue 12/8/09	88,91,92,93,94
96	String Assembly supports & inter-cleanroom transport	20 days	Tue 6/30/09	Wed 7/29/09	92FF-10 days



Project: 56Mhz Cavity Project 123008
Date: Mon 1/5/09

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

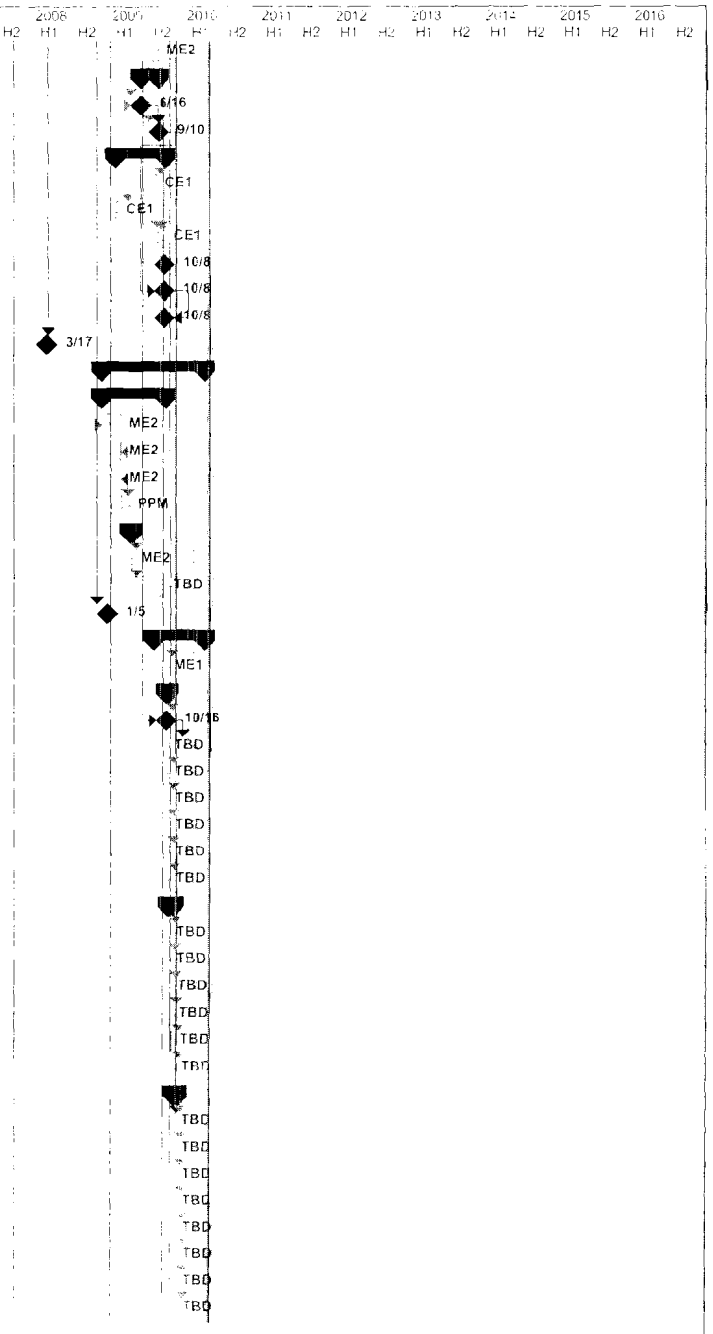
ID	Task Name	Duration	Start	Finish	Predecessors
97	Design of Transport-Ready tooling	60 days	Thu 7/9/09	Thu 10/1/09	88FS-25 days
98	Fabrication of String Assembly Tooling	70 days	Fri 10/2/09	Fri 1/15/10	97
99	Fabrication of Transport Tooling	70 days	Fri 10/2/09	Fri 1/15/10	97
100	Fabrication of Cryomodule Assembly tooling	70 days	Wed 10/28/09	Thu 2/11/10	99
101					
102	**Process Tooling**	**130 days**	**Wed 3/11/09**	**Tue 9/15/09**	
103	Processing location selected / design complete	0 days	Wed 3/11/09	Wed 3/11/09	1,11
104	Cage	40 days	Thu 3/12/09	Wed 5/6/09	103,11FS-20 days
105	**Cage -to-BCP Cabinet Adapter**	**13 days**	**Thu 3/12/09**	**Mon 3/30/09**	
106	without He Vessel	10 days	Thu 3/12/09	Wed 3/25/09	103,11FS-20 days
107	with He vessel	3 days	Thu 3/26/09	Mon 3/30/09	106
108	**Lifting and Assembly Fixtures**	**110 days**	**Thu 3/12/09**	**Mon 8/17/09**	
109	Liftcart	5 days	Thu 3/12/09	Wed 3/18/09	103
110	Cage-grasping mount	15 days	Thu 4/16/09	Wed 5/6/09	109,104FF
111	with/without He Vessel	5 days	Thu 3/19/09	Wed 3/25/09	109
112	Rollcart	30 days	Thu 3/12/09	Wed 4/22/09	103
113	Flipcart	30 days	Thu 3/12/09	Wed 4/22/09	103
114	Lifting and Assemoly Fixtures Complete	70 days	Thu 5/7/09	Mon 8/17/09	104,106,107,109,110,111,113,1
115	**High Pressure Rinse**	**60 days**	**Thu 3/12/09**	**Thu 6/4/09**	
116	**HPR Cage Adapter**	**20 days**	**Tue 3/31/09**	**Mon 4/27/09**	
117	w & w/o He vessel	20 days	Tue 3/31/09	Mon 4/27/09	106,107
118	**HPR device (provided by BCP facility)**	**60 days**	**Thu 3/12/09**	**Thu 6/4/09**	
119	Determine design criteria	10 days	Thu 3/12/09	Wed 3/25/09	13
120	Design HPR device	20 days	Thu 3/26/09	Wed 4/22/09	119
121	Fabricate, build & test HPR	30 days	Thu 4/23/09	Thu 6/4/09	120
122	**Weld Fixture - Helium Vessel to Cavity**	**115 days**	**Thu 3/12/09**	**Mon 8/24/09**	
123	Determine requirements of roll & tack fixtures	35 days	Thu 3/12/09	Wed 4/29/09	103,11
124	Design and verify fit & function of fixtures	15 days	Thu 4/30/09	Wed 5/20/09	123
125	Fabricate components and assemble	35 days	Thu 5/21/09	Mon 7/13/09	124
126	Receive He vessel components	0 days	Mon 8/17/09	Mon 8/17/09	15
127	Verify fit & function w. cavity & He vessel	5 days	Tue 8/18/09	Mon 8/24/09	125,126
128	**Vertical Test Area Mounting Fixture**	**130 days**	**Thu 3/12/09**	**Tue 9/15/09**	
129	w & w/o He vessel	30 days	Thu 3/12/09	Wed 4/22/09	103,11,13
130	**Vacuum Pumpout Components**	**100 days**	**Thu 4/23/09**	**Tue 9/15/09**	
131	Design VTF vacuum pumpout system	10 days	Thu 4/23/09	Wed 5/6/09	129
132	Procure components	90 days	Thu 5/7/09	Tue 9/15/09	131
133	BCP/VTF Tooling complete	0 days	Tue 9/15/09	Tue 9/15/09	121,117,129,132,114
134	**Cryomodule Installation Assembly Tooling**	**180 days**	**Tue 8/18/09**	**Fri 5/7/10**	
135	Develop / design tooling - String Transporter, Vacuum Load Restraint, Cryostat Supp	[illegible] days	[illegible]	[illegible]	[illegible]
136	[illegible]	[illegible]	[illegible]	[illegible]	
137	Inspect & assemble components	[illegible] days	Mon 4/26/10	Fri 5/7/10	[illegible]
138	**Cryomodule Stand**	**107 days**	**Tue 8/4/09**	**Fri 1/8/10**	
139	Design / engineering	45 days	Tue 8/4/09	Tue 9/29/09	82FS-10 days
140	Fabricate components	50 days	Wed 10/7/09	Tue 12/29/09	139
141	Inspect components & assemble	7 days	Wed 12/30/09	Fri 1/8/10	140
142	**Cryostat Assembly / Installation Tooling**	**45 days**	**Thu 8/13/09**	**Thu 10/15/09**	
143	String Transporter	45 days	Thu 8/13/09	Thu 10/15/09	88
144	Vacuum Load Restraint	20 days	Thu 8/13/09	Thu 9/10/09	88



Project: 56MHz Cavity Project 12/3008
Date: Mon 7/5/10

Task	Progress	Summary	External Tasks	Deadline	
Split	Milestone	Project Summary	External Milestone		

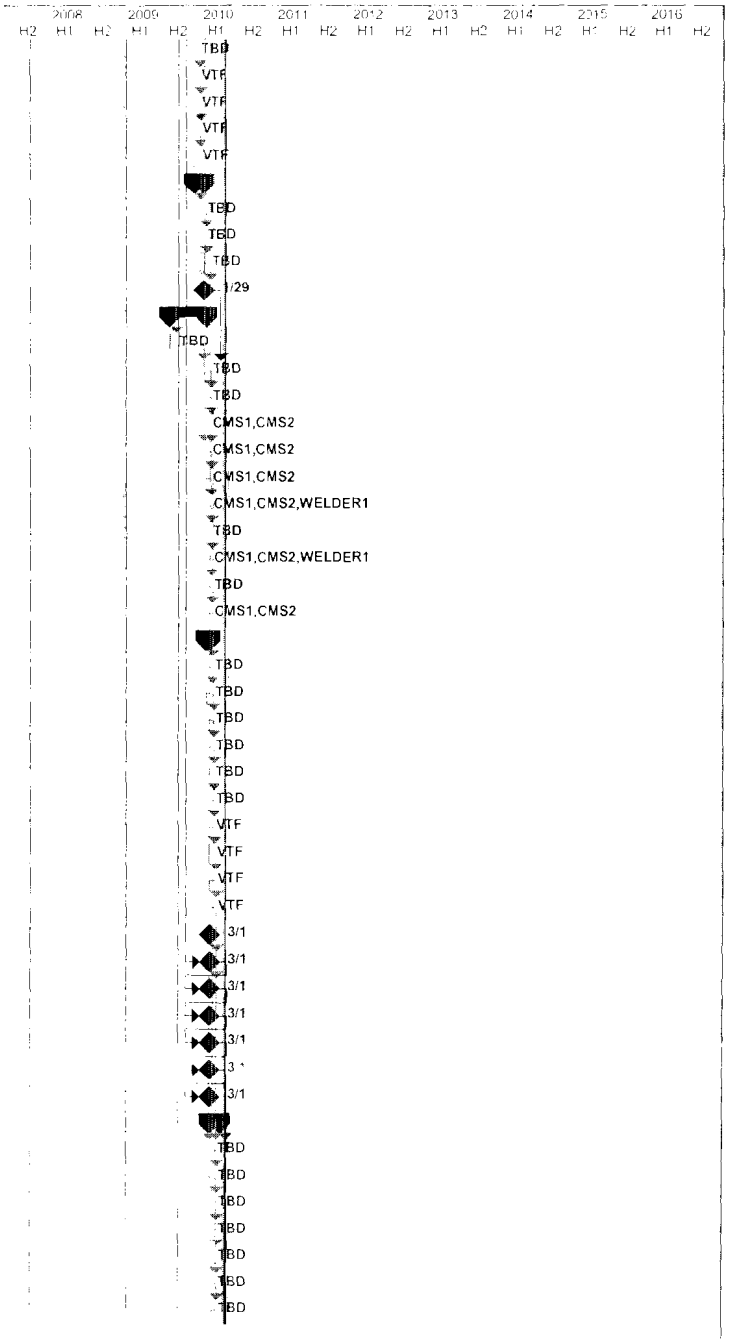
ID	Task Name	Duration	Start	Finish	Predecessors
145	Vertical Support - during assembly	20 days	Thu 8/13/09	Thu 9/10/09	88
146	**Design Reviews of Integrated Systems**	**60 days**	**Tue 6/16/09**	**Thu 9/10/09**	
147	Conceptual design review	0 days	Tue 6/16/09	Tue 6/16/09	11FS-40 days,88FS-40 days
148	Critical Design Review	0 days	Thu 9/10/09	Thu 9/10/09	13,32,14 FS+60 days
149	**Cryogenic Supply & Return**	**170 days**	**Wed 2/11/09**	**Tue 10/13/09**	
150	Heatshield Plumbing	20 days	Tue 8/4/09	Mon 8/31/09	32FS-10 days
151	Beamtube Cooling Lines	10 days	Wed 2/11/09	Wed 2/25/09	11FS-20 days
152	RHIC Cooling System Interface	30 days	Tue 9/1/09	Tue 10/13/09	153,151,32
153	**Safety Reviews of Complete 56MHz System**	**0 days**	**Thu 10/8/09**	**Thu 10/8/09**	
154	ASSRC	0 days	Thu 10/8/09	Thu 10/8/09	148FS+20 days
155	LESHC	0 days	Thu 10/8/09	Thu 10/8/09	154FF
156	First Prototype delivered to BLG 905	0 days	Mon 3/17/08	Mon 3/17/08	1
157	**Cavity Manufacturing**	**338 days**	**Tue 12/9/08**	**Wed 4/21/10**	
158	**Cavity Procurement**	**210 days**	**Tue 12/9/08**	**Tue 10/13/09**	
159	Complete drawing package	60 days	Tue 12/9/08	Wed 3/11/09	11FS-60 days
160	Complete SOW	5 days	Thu 3/5/09	Wed 3/11/09	159FF
161	Complete Specification	15 days	Wed 2/18/09	Wed 3/11/09	159FF
162	Bidding cycle	30 days	Thu 3/12/09	Wed 4/22/09	159,160,161
163	**Vendor selected**	**10 days**	**Thu 4/23/09**	**Wed 5/6/09**	
164	Vendor inspections	10 days	Thu 4/23/09	Wed 5/6/09	162
165	Cavity fabrication complete	120 days	Thu 4/23/09	Tue 10/13/09	162
166	56MHz Cavity AIP funding released	0 days	Mon 1/5/09	Mon 1/5/09	1
167	**Single Cavity Processing**	**168 days**	**Tue 8/18/09**	**Wed 4/21/10**	
168	Cavity shipped to processing center	3 days	Wed 10/14/09	Fri 10/16/09	165
169	**Intial Bulk chemistry on cavity**	**7 days**	**Fri 10/16/09**	**Tue 10/27/09**	
170	Cavity, Cage, BCP tooling received from BNL	0 days	Fri 10/16/09	Fri 10/16/09	168,133
171	CMM inspection	2 days	Mon 10/19/09	Tue 10/20/09	170
172	RF measurements & bead pulls, adjust input & field coupling	1 day	Wed 10/21/09	Wed 10/21/09	171
173	Degrease cavity (ultra sonic tank)	1 day	Thu 10/22/09	Thu 10/22/09	172
174	Remove 100 microns	1 day	Fri 10/23/09	Fri 10/23/09	173
175	HPR of cavity	1 day	Mon 10/26/09	Mon 10/26/09	174
176	Dry & bag in class 10 cleanroom & transport to furnace	1 day	Tue 10/27/09	Tue 10/27/09	175
177	**Heat treat Cavity (600 C)**	**18 days**	**Wed 10/28/09**	**Mon 11/23/09**	
178	Insert into furnace	1 day	Wed 10/28/09	Wed 10/28/09	176
179	Heat treat @ 600 C for 16 hours	2 days	Thu 10/29/09	Fri 10/30/09	178
180	Check RF tuning	2 days	Wed 11/4/09	Thu 11/5/09	179FS+2 days
181	Recheck dimensions on CMM	2 days	Tue 11/10/09	Thu 11/12/09	180FS+2 days
182	Ship tired cavity to Processing facility	2 days	Fri 11/13/09	Mon 11/16/09	181
183	2nd BCP, remove 100 microns	[illegible]	[illegible]	Mon 11/23/09	[illegible]
[illegible]	**Qualify Cavity (VTF 1)**	125 days	Tue 11/24/09	Mon 12/14/09	
185	Degrease cavity (ultra sonic tank)	0.5 days	Tue 11/24/09	Tue 11/24/09	183,133FS+[illegible] days
186	Perform light BCP (50 microns) on cavity	1 day	Tue 11/24/09	Wed 11/25/09	185
187	HPR of cavity	0.5 days	Wed 11/25/09	Wed 11/25/09	186
188	Transfer to clean cart, dry in Class 1	0.5 days	Mon 11/30/09	Mon 11/30/09	187
189	Assemble input probe, field probe & vacuum end flanges	1 day	Mon 11/30/09	Tue 12/1/09	188
190	HPR of cavity & dry	1 day	Tue 12/1/09	Wed 12/2/09	189
191	Assemble cavium pumpout port	1 day	Wed 12/2/09	Thu 12/3/09	190
192	Evacuate cavity and pump over night	[illegible]	Thu 12/3/09	Fri 12/4/09	191



Project: 56MHz Cavity Project 123008
Date: Mon 1/5/09

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

ID	Task Name	Duration	Start	Finish	Predecessors
193	Perform leak test on cavity, transport to VTA	1 day	Fri 12/4/09	Mon 12/7/09	192,77
194	Insert cavity into teststand & bake @ 100C	1.5 days	Mon 12/7/09	Tue 12/8/09	193
195	Insert cavity into dewar & cooldown	1 day	Wed 12/9/09	Wed 12/9/09	194
196	Fill with LHe & pump to 2K	1 day	Thu 12/10/09	Thu 12/10/09	195
197	Perform RF test & warm up	1.5 days	Fri 12/11/09	Mon 12/14/09	196
198	**Qualify Cavity (VTF 2 & 3)**	**30 days**	**Mon 12/14/09**	**Fri 1/29/10**	
199	Repeat Qualify Cavity - (see VTF 1 above)	14 days	Mon 12/14/09	Wed 1/6/10	197
200	Disassemble & meas re frequency & field flatness	2 days	Wed 1/6/10	Fri 1/8/10	199
201	Qualify Cavity (VTF 3)	14 days	Fri 1/8/10	Fri 1/29/10	200
202	Repeat Qualify Cavity (VTF) (if needed?)	0 days	Fri 1/29/10	Fri 1/29/10	201
203	**Weld Helium Vessel**	**119 days**	**Tue 8/18/09**	**Wed 2/10/10**	
204	QA helium vessel components & mock fitup	5 days	Tue 8/18/09	Mon 8/24/09	15
205	Degrease cavity (ultra sonic tank)	1 day	Fri 1/29/10	Mon 2/1/10	202,204
206	Transport to welding area	0.5 days	Mon 2/1/10	Mon 2/1/10	205
207	Seal cavity & purge with argon gas	0.5 days	Tue 2/2/10	Tue 2/2/10	206
208	Assemble and align cavity in tooling	0.25 days	Tue 2/2/10	Tue 2/2/10	207,127FS+5 days
209	Assemble instrumentation to cavity	0.25 days	Tue 2/2/10	Tue 2/2/10	208
210	Tack weld assembly	1 day	Wed 2/3/10	Wed 2/3/10	209
211	Check field flatness, perform RF bead pull	2 days	Thu 2/4/10	Fri 2/5/10	210
212	Complete welds	1 day	Mon 2/8/10	Mon 2/8/10	211
213	CMM inspection	1 day	Tue 2/9/10	Tue 2/9/10	212
214	Leak Check Helium Vessel (Helium Circuit)	1 day	Wed 2/10/10	Wed 2/10/10	213
215	**Qualify Cavity with Helium Vessel**	**12 days**	**Thu 2/11/10**	**Mon 3/1/10**	
216	Assemble input probe, field probe & end flange	1 day	Thu 2/11/10	Thu 2/11/10	214
217	Light BCP (50 microns) of cavity	2 days	Fri 2/12/10	Mon 2/15/10	216
218	HPR of cavity	1 day	Tue 2/16/10	Tue 2/16/10	217
219	Assemble vacuum pumpout port to cavity	1 day	Wed 2/17/10	Wed 2/17/10	218
220	Evacuate cavity and pump over night	0.5 days	Thu 2/18/10	Thu 2/18/10	219
221	Perform leak test on cavity, transport to VTA	1 day	Thu 2/18/10	Fri 2/19/10	220
222	Insert into teststand	0.5 days	Fri 2/19/10	Fri 2/19/10	221
223	Insert into dewar & cooldown	2 days	Tue 2/23/10	Wed 2/24/10	222
224	Fill with LHe & pump to 2k	2 days	Thu 2/25/10	Fri 2/26/10	223
225	Perform RF test & warm up	1 day	Mon 3/1/10	Mon 3/1/10	224
226	**Qualify RF Tuner -NOT TO BE PERFORM ON CAVITY**	**0 days**	**Mon 3/1/10**	**Mon 3/1/10**	
227	Receive & inspect Tuner components	0 days	Mon 3/1/10	Mon 3/1/10	225,26
228	Assemble tuner to cavity & adjust	0 days	Mon 3/1/10	Mon 3/1/10	227,225
229	Insert into dewar & cooldown	0 days	Mon 3/1/10	Mon 3/1/10	228
230	Fill & pump to 2K	0 days	Mon 3/1/10	Mon 3/1/10	229
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	0 days	Mon 3/1/10	Mon 3/1/10	[illegible]
233	**String Assembly (includes Mock-up & Shipping)**	**37 days**	**Tue 3/2/10**	**Wed 4/21/10**	
234	Re-inspect stands & other assembly equipment	1 day	Tue 3/2/10	Tue 3/2/10	99,56,64,18,225,57
235	Clean Rail tooling & bring into cleanroom	2 days	Wed 3/3/10	Thu 3/4/10	234
236	Receive & inspect valves, BT transitions, & torque dampers seals	1 day	Fri 3/5/10	Fri 3/5/10	235
237	Clean gate valves	1 day	Fri 3/5/10	Fri 3/5/10	235
238	Clean beam line components	1 day	Fri 3/5/10	Fri 3/5/10	235
239	Receive & inspect couplers (SNS - clean, extend, transfer to cleanroom	1 day	Fri 3/5/10	Fri 3/5/10	235
240	Assemble field probe	1 day	Mon 3/8/10	Mon 3/8/10	239



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Task | Progress | Summary | External Tasks | Deadline
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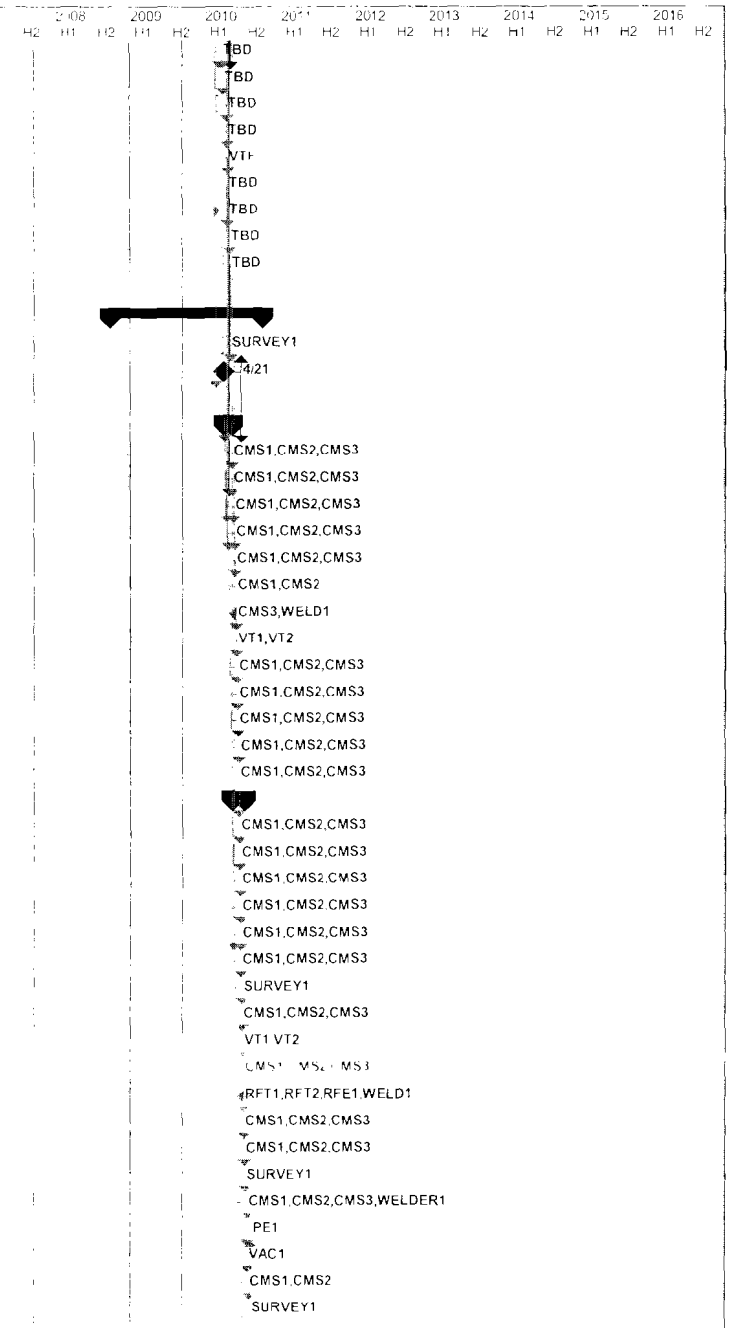
ID	Task Name	Duration	Start	Finish	Predecessors
241	Mock-up of line components	3 days	Tue 3/9/10	Thu 3/11/10	240
242	Assemble coupler to cavity, then to rail	4 days	Fri 3/12/10	Wed 3/17/10	241,224,231
243	Assemble beamline components to rail	10 days	Thu 3/18/10	Wed 3/31/10	242
244	Evacuate string and pump over night	2 days	Thu 4/1/10	Fri 4/2/10	243
245	Perform leak check & establish vacuum	1 day	Mon 4/5/10	Mon 4/5/10	244
246	Transfer to "cryomodule" group for shipping	1 day	Tue 4/6/10	Tue 4/6/10	245
247	Clean Cleanroom	1 day	Tue 4/6/10	Tue 4/6/10	246SS
248	Prepare string for shipping	8 days	Wed 4/7/10	Fri 4/16/10	246
249	Shipping of cavity/cryomodule to BNL	3 days	Mon 4/19/10	Wed 4/21/10	248
250					
251	**Cavity Mechanical Installation**	**502 days**	**Thu 10/16/08**	**Mon 10/25/10**	
252	Survey cavity positions in RHIC Sector 3, Blue and Yellow	10 days	Thu 4/8/10	Wed 4/21/10	253FS-10 days
253	56 MHz SCRF Cavity String Arrives at BNL	0 days	Wed 4/21/10	Wed 4/21/10	249
254	Cryomodule components and assembly tooling received and inspected	5 days	Fri 2/12/10	Thu 2/18/10	100
255	**Construction of SCRF Cavity thru to Nitronic rod installation**	**27 days**	**Mon 4/26/10**	**Wed 6/2/10**	
256	Place Cavity on interim stands	3 days	Mon 4/26/10	Wed 4/28/10	253FS+2 days,254
257	Remove space frame	1 day	Thu 4/29/10	Thu 4/29/10	256
258	Install tuner & test	5 days	Fri 4/30/10	Thu 5/6/10	257,26
259	Install inner magnetic shield	3 days	Fri 5/7/10	Tue 5/11/10	258,60
260	Install heatshield in space frame	3 days	Wed 5/12/10	Fri 5/14/10	259,59
261	Install LN2 line in SF/HS assembly	2 days	Mon 5/17/10	Tue 5/18/10	260
262	Weld SST extension to helium vessel	2 days	Mon 5/17/10	Tue 5/18/10	261FF
263	Leak check all cryo-lines and SST extension	2 days	Wed 5/19/10	Thu 5/20/10	262
264	Insulate H/S with MLI	2 days	Fri 5/21/10	Mon 5/24/10	263
265	Place SF/HS with external supports around cavity	2 days	Tue 5/25/10	Wed 5/26/10	264
266	Mount support rods between cavity & SF	2 days	Thu 5/27/10	Fri 5/28/10	265
267	Secure cavity to rods	1 day	Tue 6/1/10	Tue 6/1/10	266
268	Remove cavity interim supports	1 day	Wed 6/2/10	Wed 6/2/10	267
269	**Construction of SCRF Cavity thru closing vacuum vessel**	**41 days**	**Thu 6/3/10**	**Mon 8/2/10**	
270	Mount H/S end caps & bottom of H/S	2 days	Thu 6/3/10	Fri 6/4/10	268
271	Install bottom arc to SF	0.5 days	Mon 6/7/10	Mon 6/7/10	270
272	Mount bottom of outer magnetic shield	0.5 days	Mon 6/7/10	Mon 6/7/10	271
273	Install vacuum vessel lower shell & align penetrations	2 days	Tue 6/8/10	Wed 6/9/10	272
274	Secure lower shell to SF assembly	1 day	Thu 6/10/10	Thu 6/10/10	273
275	Roll in base stand assembly	1 day	Fri 6/11/10	Fri 6/11/10	252,274
276	Survey stand into position & adjust stand	3 days	Mon 6/14/10	Wed 6/16/10	275
277	Remove external supports	1 day	Thu 6/17/10	Thu 6/17/10	276
278	Leak check all cryo-lines and feedthroughs	2 days	Fri 6/18/10	Mon 6/21/10	277
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	3 days	[illegible]	[illegible]	279FF+1 day
281	Install interim supports & HOM damper supports	1 day	[illegible]	[illegible]	280
282	Install valve supports & remove SF based supports	1 day	Mon 6/28/10	Mon 6/28/10	281
283	Verify survey position of cavity prior to closing shell (perfect & fiber lines)	3 days	Tue 6/29/10	Thu 7/1/10	282
284	Assemble remaining vacuum vessel components	5 days	Fri 7/2/10	Mon 7/12/10	283
285	Have shielding block removed at Sector 3	5 days	Tue 7/27/10	Mon 8/2/10	288,284
286	Leak check & repair vacuum vessel	2 days	Tue 7/13/10	Wed 7/14/10	284
287	Move cryomodule to Sector 3	3 days	Thu 7/15/10	Mon 7/19/10	286
288	Survey cryomodule into place	5 days	Tue 7/20/10	Mon 7/26/10	287



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Task | Progress | Summary | External Tasks | Deadline
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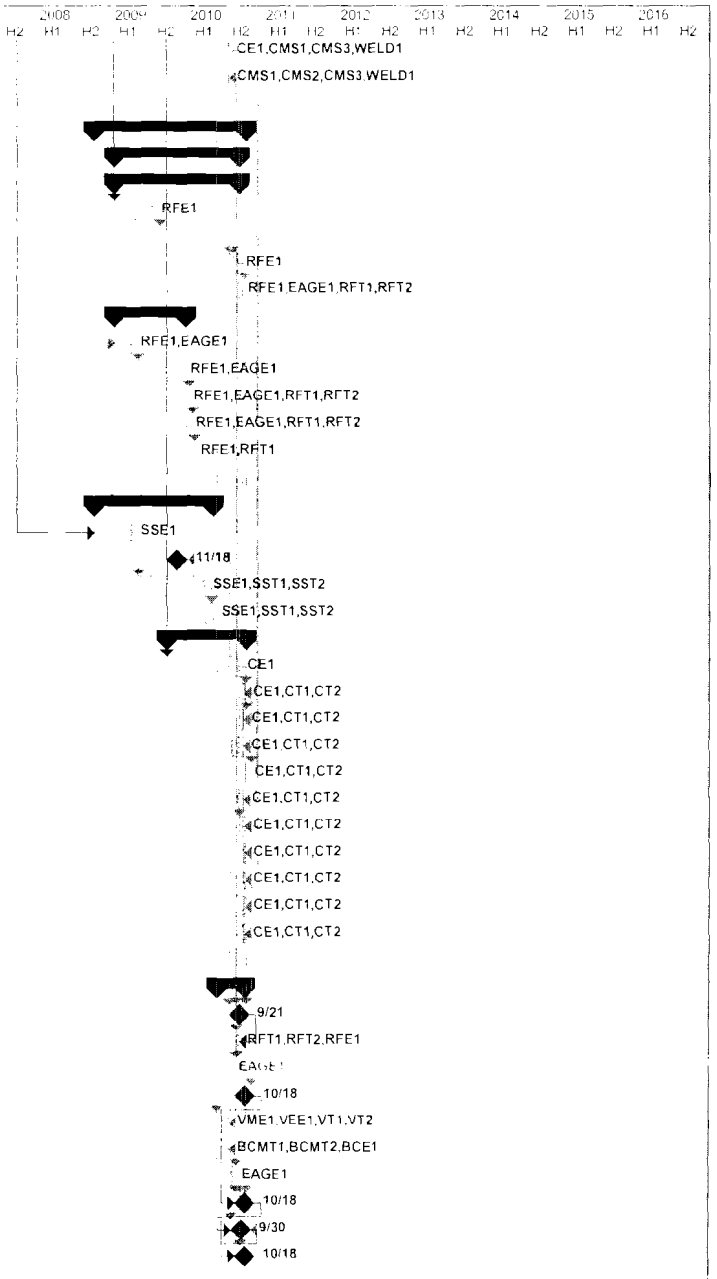
ID	Task Name	Duration	Start	Finish	Predecessors
289	Attach ballast tank RHIC cryo-system to He vessel and secure	[illegible] days	Tue 7/27/10	Mon 8/2/10	288
290	Attach all cryo-lines to feedthroughs	5 days	Tue 7/27/10	Mon 8/2/10	289FF
291					
292	**Required SCRF Cavity Components**	**502 days**	**Thu 10/16/08**	**Mon 10/25/10**	
293	**RF transmitter, dummy load & associated equipment**	**418 days**	**Wed 1/21/09**	**Tue 9/21/10**	
294	**Transmitter, dummy load & associated equipment**	**418 days**	**Wed 1/21/09**	**Tue 9/21/10**	
295	Procure & receive required RF components	130 days	Wed 1/21/09	Mon 7/27/09	1FS+260 days
296	Install transmitter & test	20 days	Tue 7/28/09	Mon 8/24/09	295
297	Procure & receive final wave guide sections	30 days	Tue 8/3/10	Tue 9/14/10	287FS+10 days,295
298	Install WGs to transmitter/cryomod & test (maint. day)	5 days	Wed 9/15/10	Tue 9/21/10	297
299	**Circulator (for Transmitter)**	**237 days**	**Wed 1/21/09**	**Thu 12/31/09**	
300	Analyze type & size of circulator	60 days	Wed 1/21/09	Wed 4/15/09	295SS
301	Procure & receive circulator	167 days	Thu 4/16/09	Tue 12/15/09	300
302	Inspect circulator & test	10 days	Wed 12/16/09	Thu 12/31/09	301
303	Connect circulator to transmitter & water system	5 days	Mon 1/4/10	Fri 1/8/10	302
304	Test connection	15 days	Mon 1/11/10	Mon 2/1/10	303
305					
306	**e-CX Safety System (PASS)**	**390 days**	**Thu 10/16/08**	**Fri 5/14/10**	
307	Determine safety criteria required	120 days	Thu 10/16/08	Wed 4/15/09	1SS+200 days
308	System reviewed & approved by RSC, ASSRC, etc	0 days	Wed 11/18/09	Wed 11/18/09	309FF-90 days
309	RHIC PASS system upgrade installed	240 days	Thu 4/16/09	Fri 4/2/10	307
310	PASS system tested and running	30 days	Mon 4/5/10	Fri 5/14/10	309
311	**Assemble Cryo System & Test**	**265 days**	**Fri 10/2/09**	**Mon 10/25/10**	
312	Procure 56 MHz cryogenic subsystem	240 days	Fri 10/2/09	Mon 9/20/10	1FS+437 days
313	Install & test: buffer tank & stand assembly	20 days	Tue 9/21/10	Mon 10/18/10	312,280FF
314	Install & test helium supply system	15 days	Tue 9/21/10	Mon 10/11/10	312,290FF
315	Buffer tank & transfer lines incorporated in cryo system	39 days	Tue 8/17/10	Mon 10/11/10	314FF
316	Test vacuum pumping systems	5 days	Tue 10/19/10	Mon 10/25/10	313
317	Test helium return systems	20 days	Tue 9/14/10	Mon 10/11/10	314FF
318	Install & test relief vent lines, includes UHV relief vent	20 days	Tue 9/21/10	Mon 10/18/10	313FF,288FS-10 days
319	Install liquid helium supply & return lines	5 days	Tue 10/12/10	Mon 10/18/10	318FF
320	Install High pressure liquid helium lead flow supply & return lines	5 days	Tue 10/12/10	Mon 10/18/10	318FF
321	Install liquid nitrogen H/S supply & return lines	5 days	Tue 10/12/10	Mon 10/18/10	318FF
322	Install cryogenic instrumentation on major piping	5 days	Tue 10/12/10	Mon 10/18/10	318FF
323					
324	**Assemble SRf Cavity & Associated Components**	**96 days**	**Wed 6/2/10**	**Mon 10/18/10**	
325	Assemble transmitter waveguide to cavities' FPCs	0 days	Tue 9/21/10	Tue 9/21/10	304,290,298
326	Connect Cavity to RF Transmitter, etc. all & test	10 days	Wed 9/8/10	Tue 9/21/10	304,325FF-290
327	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
328	[illegible]	[illegible] days	[illegible]	Mon 10/18/10	316
329	Finalize Vacuum connections, dress cables, connect valves and gauges	4[illegible] days	Wed 6/2/10	Mon 8/2/10	290FF,84
330	Install HOM probes	41 days	Thu 6/3/10	Mon 8/2/10	290FF
331	Replace shielding blocks at Sector 3	[illegible] days	Tue 8/17/10	Tue 8/24/10	290FS+[illegible] days
332	All systems tested and tested	[illegible] days	Mon 10/18/10	Mon 10/18/10	328,326,329,330,331
333	ASSRC walkthru, checklist item sign off & approval to run	5 days	Thu 9/30/10	Thu 9/30/10	331FF,309,332FS-15 days
334	Cavity Systems Testing & Cold Emissions Testing (2)	[illegible] days	Mon 10/18/10	Mon 10/18/10	331,333,332



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