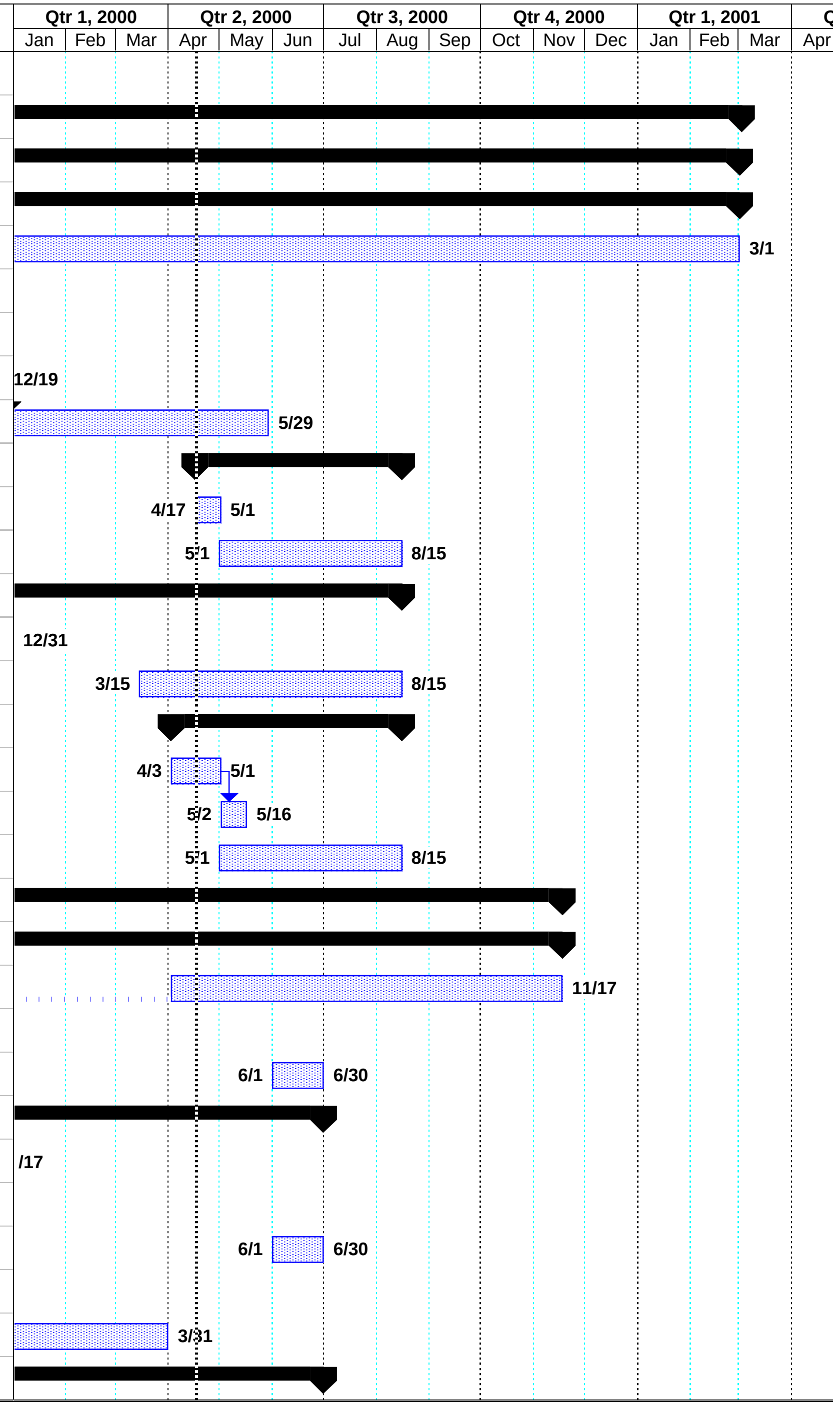
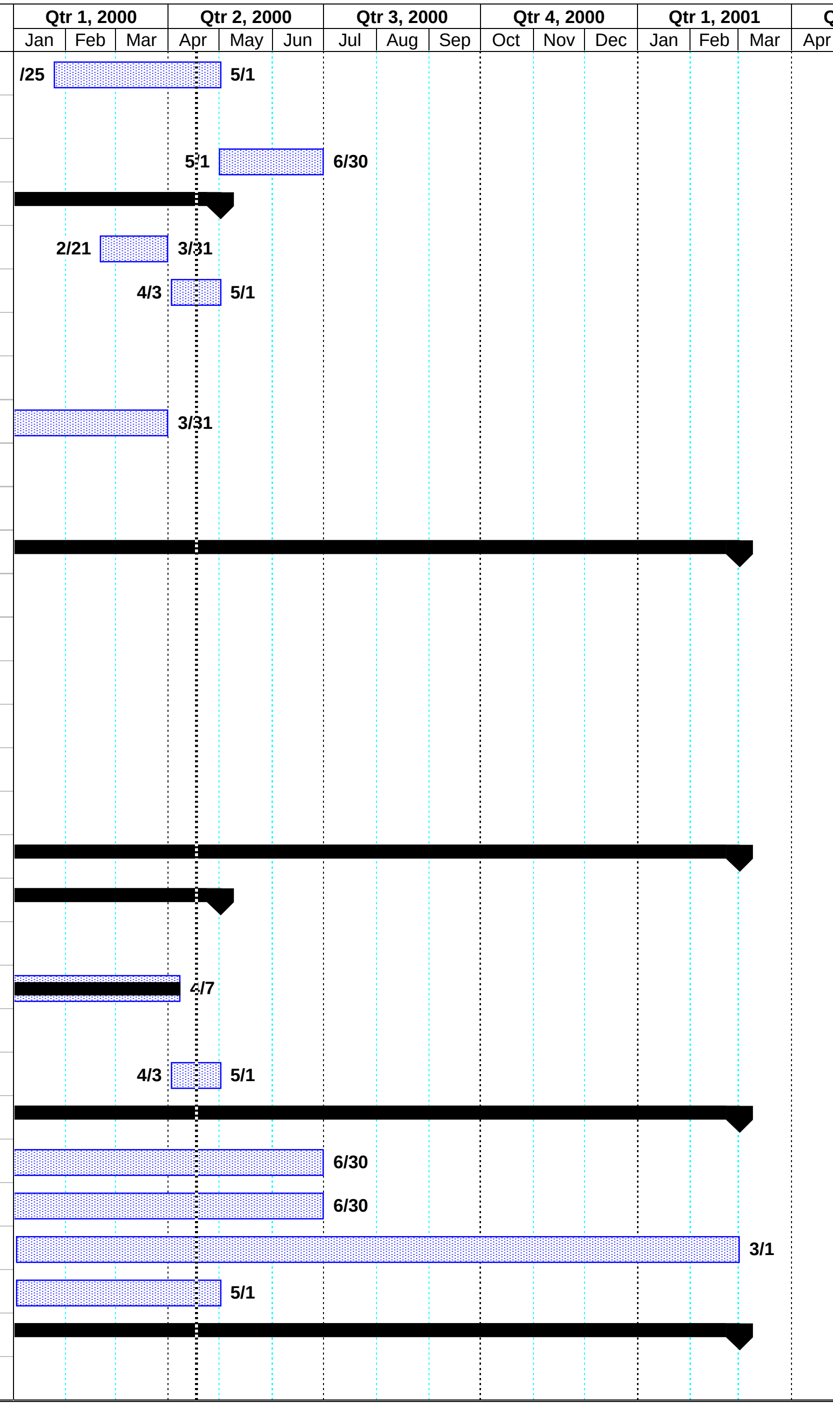
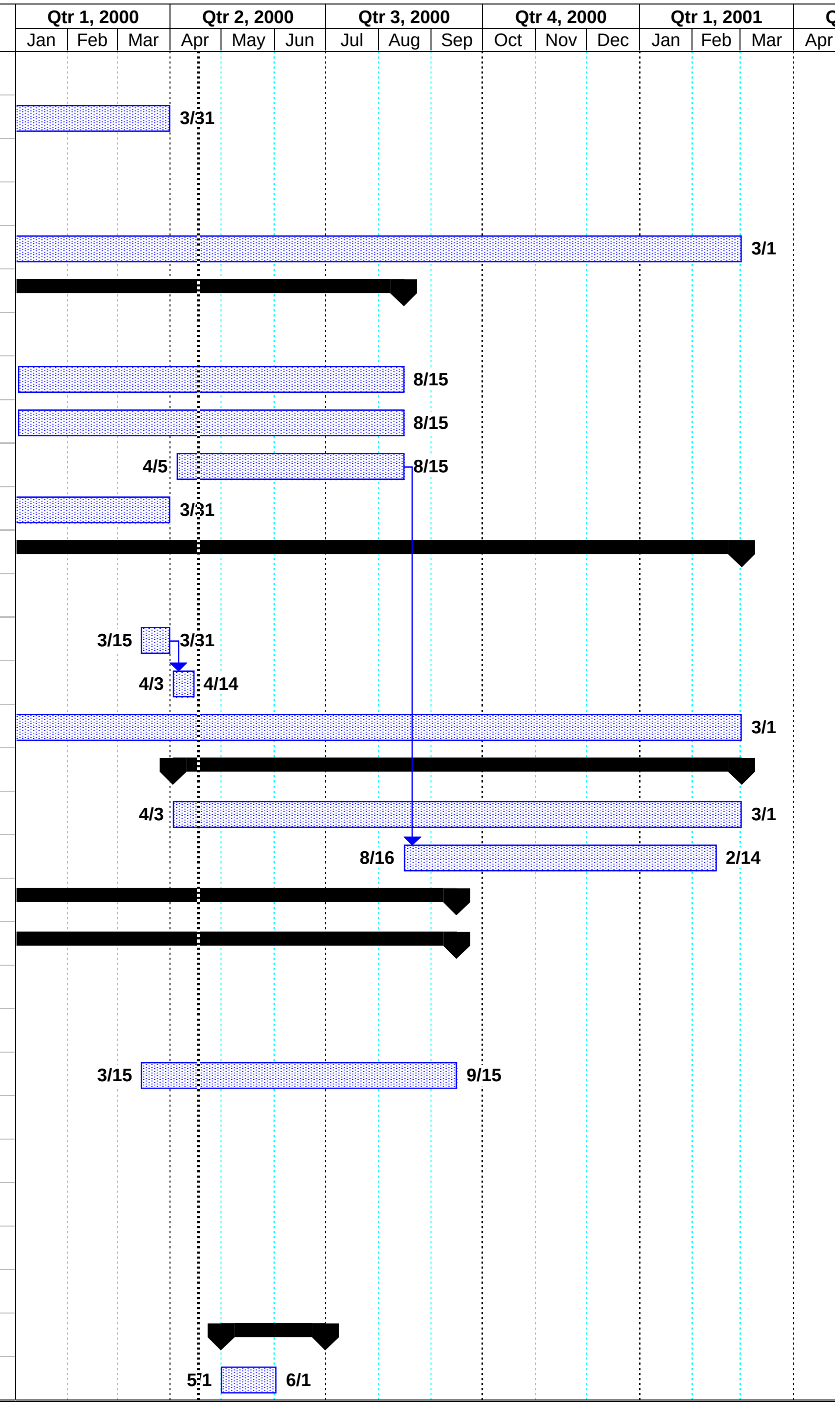
ID		WBS	Task Name	Resource Names
1		1	Rest of CDF	
2		**2**	**CDF Computing and Software Upgrade**	**M. Shapiro,R. Harris,D. Amidei**
3		**2.1**	**Code Integration**	**L. Sexton-Kennedy,R. Snider**
4		**2.1.1**	**Production Executable**	**R. Snider**
5		2.1.1.1	Management	R. Snider
6		2.1.1.2	Full prototype (done)	R. Snider
7		2.1.1.3	1st Integration/Optimization (done)	R. Snider
8		2.1.1.4	Mock Data Challenge 1 (done)	R. Snider
9		2.1.1.5	Second Optimization	R. Snider
10		**2.1.1.6**	**Error Logging and Handling**	
11		2.1.1.6.1	Policy and Guide for Error Logging	R. Snider,L. Sexton-Kennedy
12		2.1.1.6.2	Implementing Error Handling in Reconstruction	Developers
13		**2.1.1.7**	**Communications with Database**	
14		2.1.1.7.1	Example of Talking to DB (done)	M. Lancaster
15		2.1.1.7.2	DB Use by Tracking, Muons, etc.	Developers
16		**2.1.1.8**	**Access to Alignment**	
17		2.1.1.8.1	Formation of Alignment Group	
18		2.1.1.8.2	Definition of Infrastucture & Constants	
19		2.1.1.8.3	Code Infrastructure	
20		**2.1.2**	**Infrastructure**	
21		**2.1.2.1**	**C++ Support**	
22		2.1.2.1.1	Compliers and Debuggers	R. Kennedy,L. Sexton-Kennedy,C. Green
23		2.1.2.1.2	Class Browser	
24		2.1.2.1.3	Use of ISOCXX portability package	
25		**2.1.2.2**	**Analysis Tools**	
26		2.1.2.2.1	PAT ROOT support	
27		2.1.2.2.2	Formatted Bank Dump (done)	R. Snider
28		2.1.2.2.3	Build Job++	
29		2.1.2.2.4	Zoom: heptuple, error log (done)	
30		**2.1.2.3**	**Library Maintenance**	
31		**2.1.2.4**	**Redesign Geometry**	



ID		WBS	Task Name	Resource Names
32		2.1.2.4.1	Design/implementation	C. Green,J. Kowalkowski,M. Patterno
33		2.1.2.4.2	Database/Persistence	
34		2.1.2.4.3	Extrapolation Interface	
35		**2.1.3**	**Production Runtime Configuration (L4)**	
36		2.1.3.1	Prototype production parser	K. Tollefson
37		2.1.3.2	Prototype production table	R. Snider
38		2.1.3.3	Prototype Input validation control	M. Lancaster
39		2.1.3.4	Data File Catalog Interface	
40		2.1.3.5	Optimization	
41		**2.1.4**	**Validation**	
42		2.1.4.1	Validation Modules	
43		**2.2**	**Event Reconstruction**	**R. Snider,L. Sexton-Kennedy**
44		**2.2.1**	**Luminosity**	**U. of Florida**
45		**2.2.1.1**	**Luminosity Reconstruction Code**	
46		2.2.1.1.1	Geometry	
47		2.2.1.1.2	D to E	
48		2.2.1.2	Luminosity Analysis	
49		2.2.1.3	Input of Luminosity to Data File Catalog	
50		**2.2.2**	**Tracking**	**D. Gerdes**
51		**2.2.2.1**	**High Level track Class**	
52		2.2.2.1.1	Basic Design (done)	R. Snider,J. Boudreau
53		2.2.2.1.2	Remake for EDM design (done)	R. Snider,D. Waters
54		2.2.2.1.3	CDFTrack in new EDM (done)	R. Snider,D. Waters
55		2.2.2.1.4	Re-implement CDFTrack persistency	R. Snider,D. Waters
56		**2.2.2.2**	**EventVertex**	
57		2.2.2.2.1	Fast Event Vertex	Univ. Karlsruhe
58		2.2.2.2.2	VXPrim 3D Vertex	Univ. Karlsruhe
59		2.2.2.2.3	Generic Vertex Fitting	
60		2.2.2.2.4	constrained mass fitting (CTVMFT)	J. Boudreau,P. Maksimovic
61		**2.2.2.3**	**Silicon Reconstruction**	
62		2.2.2.3.1	Z side clustering and charge depo	M. Herndon,R. Snider

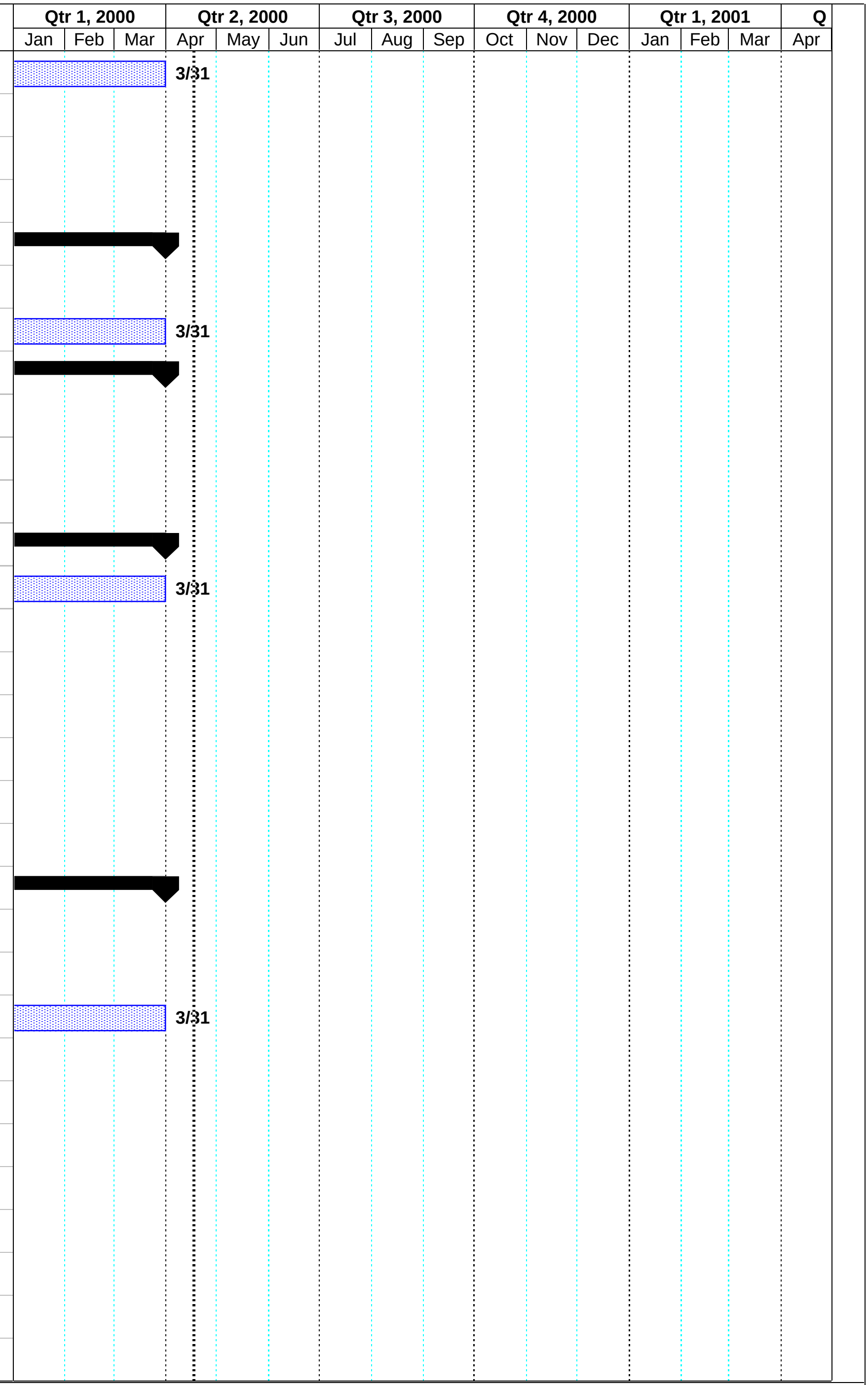


ID	WBS	Task Name	Resource Names
63	2.2.2.3.2	Standalone algorithm (done)	
64	2.2.2.3.3	Reorganize geometry	
65	2.2.2.3.4	Alignment Hooks	
66	2.2.2.3.5	Material Integrator	
67	2.2.2.3.6	Optmization	K. Bloom,S. Haywood
68	**2.2.2.4**	**COT Reconstruction**	
69	2.2.2.4.1	Reorganize geometry (done)	P. Tamburello
70	2.2.2.4.2	R-phi Algorithm development	P. Gatti
71	2.2.2.4.3	Stereo algorithm development	
72	2.2.2.4.4	Final fitter	P. Tamburello,R. Snihur
73	2.2.2.4.5	Optmization	K. Bloom
74	**2.2.2.5**	**COT-into-SVX Reconstruction**	
75	2.2.2.5.1	Integrate outside-in code (done)	K. Bloom
76	2.2.2.5.2	Integrate silicon z-hit finding	K. Bloom,P. Azzi
77	2.2.2.5.3	Full integration & testing	K. Bloom,P. Gatti,P. Azzi
78	2.2.2.5.4	Optmization	
79	**2.2.2.6**	**multi-algorithm, multi-fit, integration**	
80	2.2.2.6.1	picking the best track for a set of hits	
81	2.2.2.6.2	multiple fit infrastructure (CDFTrack needs list c	
82	**2.2.3**	**Muons**	**P. Singh**
83	**2.2.3.1**	**CMU**	
84	2.2.3.1.1	D to E	
85	2.2.3.1.2	E to S (done)	
86	2.2.3.1.3	E to S in C++	D. Eisenberg
87	2.2.3.1.4	Calibration Database	U. of Illinois
88	**2.2.3.2**	**CMP**	
89	2.2.3.2.1	D to E	
90	2.2.3.2.2	E to S	P. Singh
91	2.2.3.2.3	Calibration Database	U. of Illinois
92	**2.2.3.3**	**CSP**	
93	2.2.3.3.1	D to E	U. of Trieste



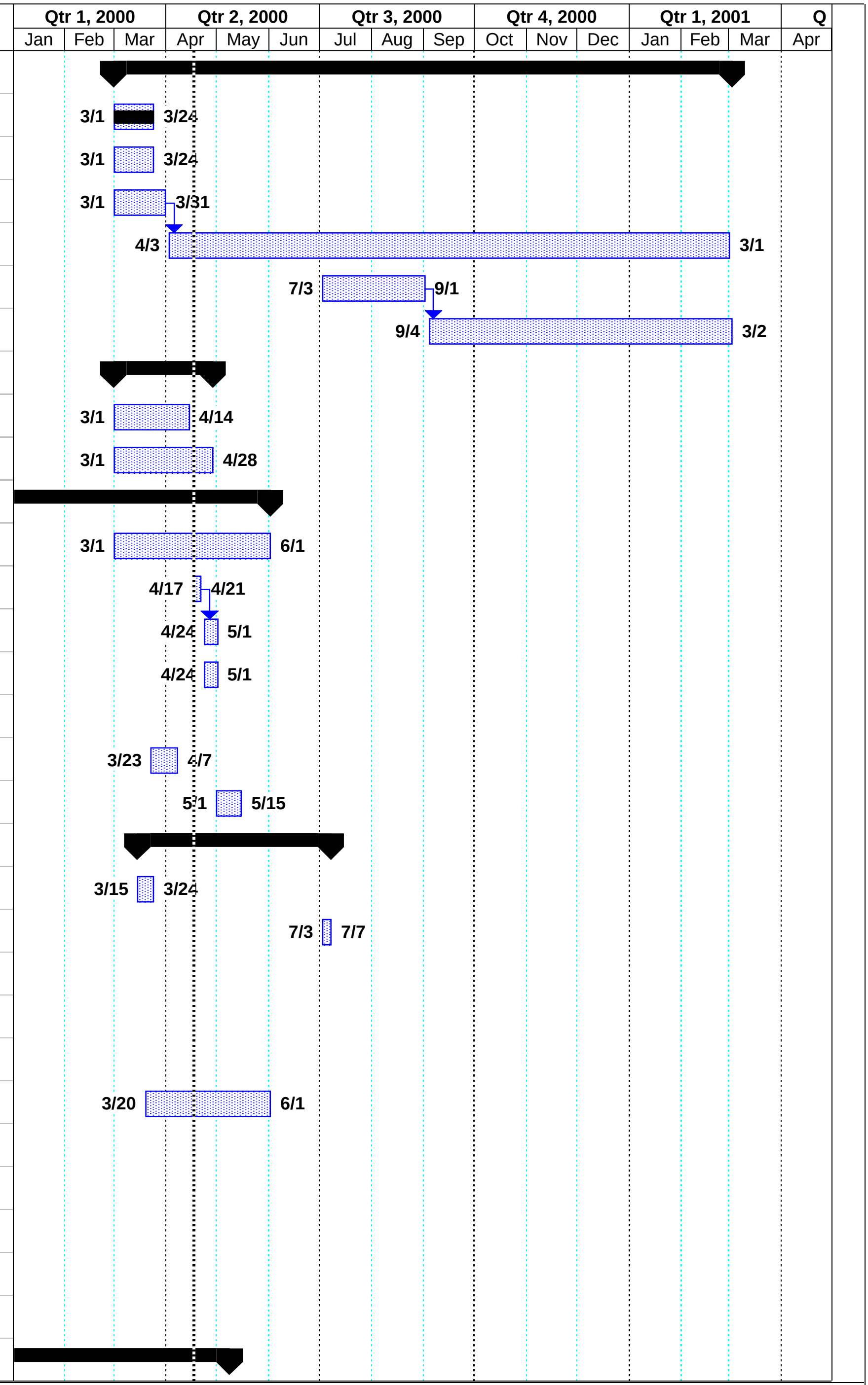
ID	WBS	Task Name	Resource Names	Qtr 1, 2000 – Qtr 1, 2001 (Jan–Apr)
94	2.2.3.3.2	E to S	U. of Trieste	6/1 – 6/30
95	**2.2.3.4**	**CMX**		
96	2.2.3.4.1	D to E		
97	2.2.3.4.2	E to S	D. Dagenhart	
98	2.2.3.4.3	Calibration Database (done)		
99	**2.2.3.5**	**CSX**		
100	2.2.3.5.1	D to E		
101	2.2.3.5.2	E to S		
102	**2.2.3.6**	**IMU Muons**	**U. of Wisconsin**	
103	2.2.3.6.1	D to E	J. Bellinger	
104	2.2.3.6.2	E to S	J. Bellinger	
105	2.2.3.6.3	Calibration Database	J. Bellinger	
106	**2.2.3.7**	**Old Linking via CMLNK (done)**	**P. Singh,J. Done**	
107	2.2.3.8	New Linking (MuonLink)	P. Singh	6/1
108	2.2.3.9	Extrapolator	P. Singh	
109	2.2.3.10	Geometry	P. Singh	
110	**2.2.3.11**	**High Level Muon Class**		
111	2.2.3.11.1	Design		
112	2.2.3.11.2	Implementation (CDFMuon)	P. Singh	3/7 – 5/5
113	2.2.3.12	Validation	V.(Slava) Krutelyov,P. Singh	
114	2.2.3.13	Error Logger	P. Singh	
115	**2.2.4**	**Calorimetry**	**P. Savard**	
116	**2.2.4.1**	**Calorimetry**	**P. Savard**	
117	2.2.4.1.1	Energy Scale		
118	2.2.4.1.2	Mods for geom, EDM, calibration (done)	P. Savard	
119	2.2.4.1.3	Integration/Optmization	P. Savard	3/31
120	2.2.4.1.4	Validation	P. Savard	6/1 – 7/31
121	**2.2.4.2**	**Jet Clustering**	**P. Savard**	
122	2.2.4.2.1	Jet Algorithms	P. Savard,J. Dittmann,J. Mayer	5/1 – 6/30
123	2.2.4.2.2	Jet Corrections	P. Savard,R. Harris	
124	2.2.4.2.3	Compressed Object	P. Savard	4/3 – 5/31

ID		WBS	Task Name	Resource Names
125		2.2.4.2.4	Optimization	P. Savard
126		**2.2.4.2.5**	**High Level Jet Class**	**P. Savard,B. Kilminster**
127		2.2.4.2.5.1	Design	P. Savard,B. Kilminster
128		2.2.4.2.5.2	Preliminary Implementation	P. Savard,B. Kilminster
129		**2.2.4.3**	**EM Clustering**	**R. G. Wagner**
130		2.2.4.3.1	Mods for geom, EDM, calibration	R. G. Wagner
131		2.2.4.3.2	Integration/Optimization	R. G. Wagner
132		**2.2.4.4**	**Strip Clustering**	**Argonne,B. Tannenbaum**
133		**2.2.4.4.1**	**Central Strips**	**M. Riveline**
134		2.2.4.4.1.1	Central Algorithm development	M. Riveline
135	✓	2.2.4.4.1.2	D to E and Calibration (done)	
136		**2.2.4.4.2**	**Plug Strips**	**B. Tannenbaum,M. Riveline,D. Waters**
137		2.2.4.4.2.1	Plug Algorithm Development	D. Waters,B. Tannenbaum
138		2.2.4.4.2.2	D to E and Calibration	B. Tannenbaum
139		2.2.4.4.3	High Level Objects	R. G. Wagner,D. Waters,M. Riveline
140		**2.2.4.5**	**Pre-Shower Clustering**	
141	✓	2.2.4.5.1	Plug Pre-Shower (done)	U. of Tsukuba,T. Suzuki
142		2.2.4.5.2	Central Pre-Shower	Argonne,T. Moulik
143		2.2.4.6	Crack Chambers	Argonne
144		**2.2.4.7**	**Electron**	**R. G. Wagner**
145		2.2.4.7.1	Central Algorithm Development	R. G. Wagner
146		2.2.4.7.2	Plug Algorithm Development	R. G. Wagner,C. Blocker
147		2.2.4.7.3	Integration/Optimization	R. G. Wagner
148		**2.2.4.7.4**	**High Level Electron Class**	**R. G. Wagner**
149		2.2.4.7.4.1	Design	
150		2.2.4.7.4.2	Preliminary Implementation	
151		**2.2.4.8**	**MET**	**P. Savard**
152		2.2.4.8.1	Algorithm Development	
153		2.2.5	TOF	M. Jones,C. Paus
154		2.2.6	dE/dX	
155		2.2.7	Offline Trigger Information	

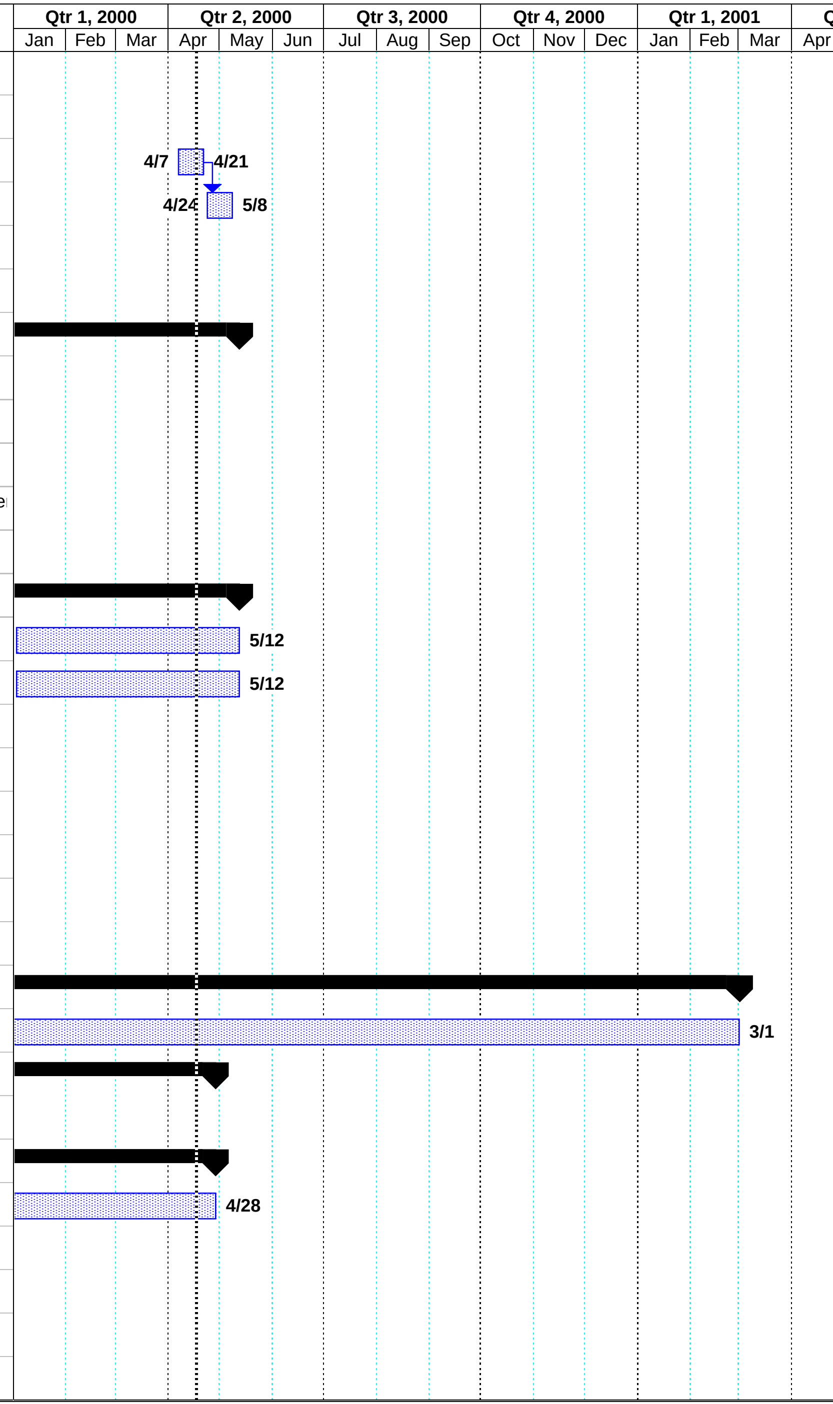


ID		WBS	Task Name	Resource Names	Qtr 1, 2000 (Jan Feb Mar) Qtr 2, 2000 (Apr May Jun) Qtr 3, 2000 (Jul Aug Sep) Qtr 4, 2000 (Oct Nov Dec) Qtr 1, 2001 (Jan Feb Mar) Q (Apr)
156		**2.3**	**Level 3 Modules**	**K. McFarland**	
157		2.3.1	Management	K. McFarland	3/31
158		**2.3.2**	**Reconstruction**		
159		2.3.2.1	Regional Reco Framework (done)	A. Reichold,D. Waters,U. of Oxford	
160		2.3.2.2	Regional COT tracking	K. Tollefson	4/14
161		2.3.2.3	Trigger Integration of Regional tracking	U. of Oxford,U. of Rochester	
162		2.3.2.4	Regional silicon tracking	U. of Oxford	
163		**2.3.3**	**Framework**		
164		2.3.3.1	Path/Prereq/Output	U. of Rochester	
165		2.3.3.2	Monitors	U. of Rochester	
166		2.3.3.3	DAQ 2 interface	K. McFarland	3/1 5/1
167		2.3.3.4	Run Control Integration	U. of Rochester,S. Demers	6/1 9/29
168		2.3.3.5	Maintenance	U. of Rochester	
169		**2.3.4**	**Databases**	**U. of Rochester,U. of Michigan**	
170		2.3.4.1	L3 Trigger Table	U. of Rochester	
171		2.3.4.2	L3 Calibration	U. of Rochester	
172		**2.3.5**	**Code Building**	**J. Loken,U. of Oxford**	
173		2.3.5.1	Build Platform	U. of Rochester,U. of Oxford	
174		**2.3.6**	**Executable**		
175		2.3.6.1	Null Exe (done)		
176		2.3.6.2	Non-null Exe (done)		
177		2.3.6.3	DAQ 1 Integrated Exe (done)		
178		2.3.6.4	DAQ 2 integrated Exe		5/1
179		**2.4**	**Event Data Model**	**R. Kennedy**	
180		2.4.1	TRYBOS (done)	R. Kennedy	
181		**2.4.2**	**Event Data Model (CDFEDM2)**	**R. Kennedy**	
182		**2.4.2.1**	**Management and Support**	**R. Kennedy**	
183		2.4.2.1.1	coordinate software development	R. Kennedy,L. Sexton-Kennedy	3/1
184		2.4.2.1.2	follow-up on build and validation failures	R. Kennedy,L. Sexton-Kennedy	3/1
185		2.4.2.1.3	maintain web page	R. Kennedy	3/1
186		2.4.2.1.4	consult with users on CDFEDM2	R. Kennedy	3/1

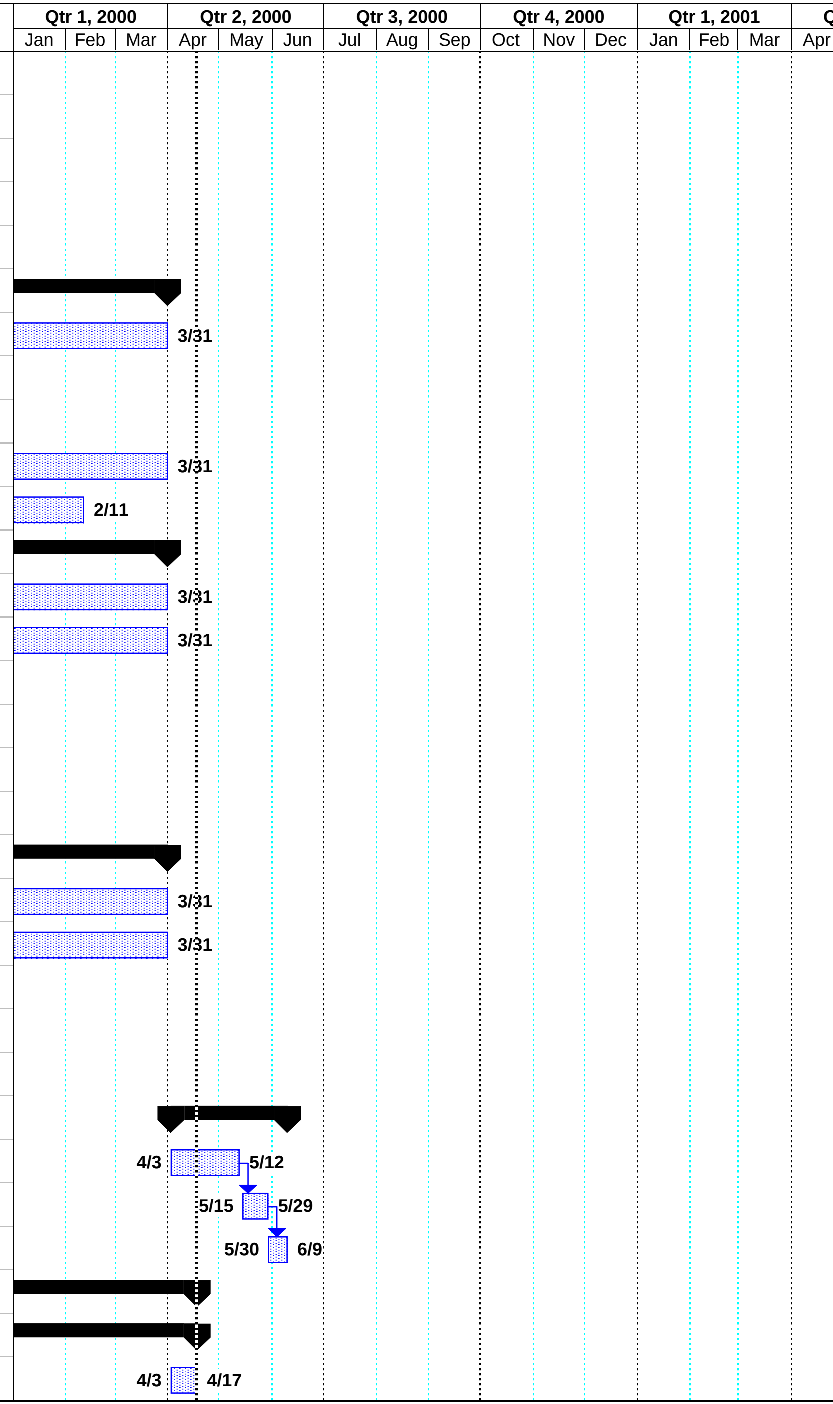
ID		WBS	Task Name	Resource Names
187		**2.4.2.2**	**Documentation**	**R. Kennedy**
188	✓	2.4.2.2.1	EDM for Novices (done)	R. Kennedy
189		2.4.2.2.2	Basic Tools for EDM and Documentation	R. Kennedy
190		2.4.2.2.3	examples, datafiles, put into validation	R. Kennedy
191		2.4.2.2.4	revise and announce	R. Kennedy
192		2.4.2.2.5	programmer reference guide	R. Kennedy
193		2.4.2.2.6	maintain and test the guide	R. Kennedy
194		**2.4.2.3**	**Build Procedures**	**R. Kennedy**
195		2.4.2.3.1	Fix arch_spec_rootcint.mk	R. Kennedy,L. Sexton-Kennedy,J. Amundson
196		2.4.2.3.2	Adapt official arch_spec_root*.mk	R. Kennedy,P. Murat
197		**2.4.2.4**	**Optimize EDM2 for Sequential I/O**	**R. Kennedy**
198		2.4.2.4.1	Profiling and Benchmarking on MDC1 Data	R. Kennedy,P. Canal,R. Snider,C. Green
199		2.4.2.4.2	Rework postread()	R. Kennedy
200		2.4.2.4.3	Speed up Object Selection	R. Kennedy
201		2.4.2.4.4	Use Memory Managers	R. Kennedy
202		2.4.2.4.5	Making postread() optional	R. Kennedy
203		2.4.2.5	Optimize EDM2 for Data Logger	R. Kennedy
204		2.4.2.6	Optimize EDM2 for Splitter	R. Kennedy
205		**2.4.2.7**	**Support I/O drop/keep lists in EDM2**	**R. Kennedy**
206		2.4.2.7.1	Initial minimal implementation	L. Sexton-Kennedy
207		2.4.2.7.2	More general API	L. Sexton-Kennedy
208		2.4.2.8	Support Object Compression in EDM2	R. Kennedy,R. Snider,Physics Groups
209		2.4.2.9	List of Class Names in Data file in EDM2	R. Kennedy
210		2.4.2.10	Templated Find and Append Methods	R. Kennedy
211		2.4.2.11	indexedLink classes	R. Kennedy
212		2.4.2.12	Adapt EDM2 to new RCP System	R. Kennedy,L. Sexton-Kennedy
213		2.4.2.13	Adapt EDM2 code to use ErrorLogger	
214		2.4.2.14	Improve linking to new objects	
215		2.4.2.15	Improve robustness	R. Kennedy
216		2.4.2.16	Improve error handling	R. Kennedy,ZOOM
217		**2.4.3**	**ROOT Event Model**	**R. Kennedy**



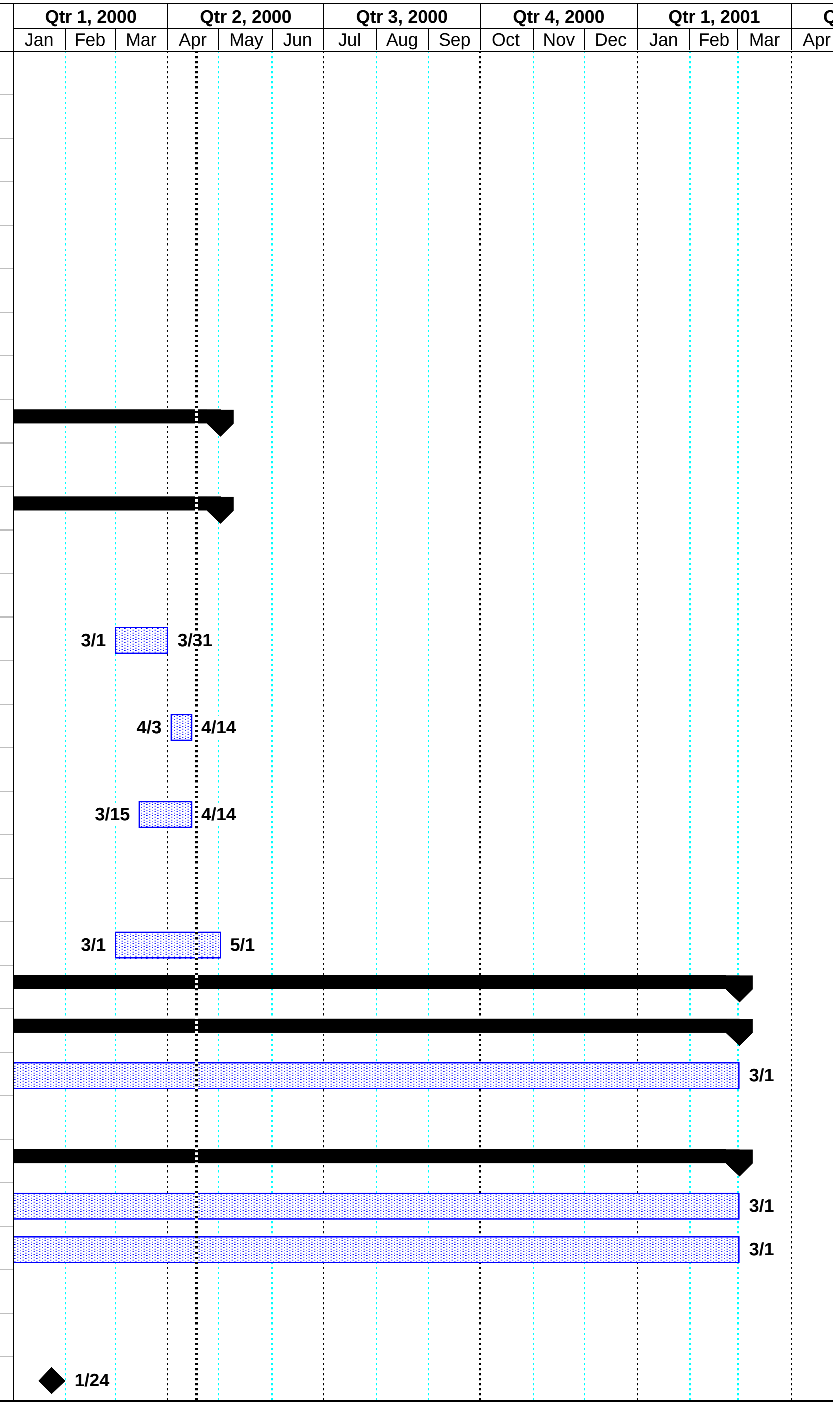
ID		WBS	Task Name	Resource Names
218		2.4.3.1	Implement first sequential event model (done)	R. Kennedy
219		2.4.3.2	ROOT data browsing/interaction	L. Sexton-Kennedy,P. Canal
220		2.4.3.3	first multi-branch event model	R. Kennedy
221		2.4.3.4	Optimize multi-branch event model	R. Kennedy
222		2.4.3.5	branches and class-branch assigments	R. Kennedy
223		2.4.3.6	Split-Root Files	
224		**2.4.4**	**Event Data Format**	**R. Kennedy,D. Dagenhart**
225		**2.4.4.1**	**Management and Support**	**R. Kennedy,D. Dagenhart**
226		2.4.4.1.1	Determine which objects lack support	R. Kennedy,D. Dagenhart
227		2.4.4.1.2	definition and implementation of objects	R. Kennedy,D. Dagenhart
228		2.4.4.1.3	Consulting	R. Kennedy,R. Glosson,D. Dagenhart,D. Wate
229		2.4.4.2	Header Banks/objects	R. Kennedy,L. Sexton-Kennedy,R. Snider
230		**2.4.4.3**	**Raw Data, Calibration, Pedestal Banks**	**D. Dagenhart**
231		2.4.4.3.1	CDF 4152 maintenance and support	D. Dagenhart
232		2.4.4.3.2	Bank accessor functions	D. Dagenhart,R. Glosson,S. Rolli
233		2.4.4.3.3	Bank simulation functions	
234		2.4.4.3.4	Bank channel map functions	
235		2.4.4.4	Trigger Banks	S. Rolli,K. McFarland
236		2.4.4.5	Simulation objects	P. Murat
237		2.4.4.6	Reconstruction objects	R. Snider,P. Savard,P. Singh
238		2.4.4.7	Higher-Level Physics objects	H. Frisch,S. Rolli
239		**2.5**	**Databases and Constants**	**R. St. Denis,M. Lancaster**
240		2.5.1	Management	R. St. Denis,M. Lancaster
241		**2.5.2**	**Calibration DB**	**J. Cranshaw**
242		2.5.2.1	Shakedown + Document: release exaples	
243		**2.5.2.2**	**Table definitions (java) with det. Grps**	**M. Lancaster,J. Cranshaw**
244		2.5.2.2.1	Calorimeter	J. Cranshaw
245		2.5.2.2.2	COT	
246		2.5.2.2.3	SVX	S. Nahn
247		2.5.2.2.4	Muons	D. Dagenhart,P. Singh
248		2.5.2.2.5	Luminosity Monitor	



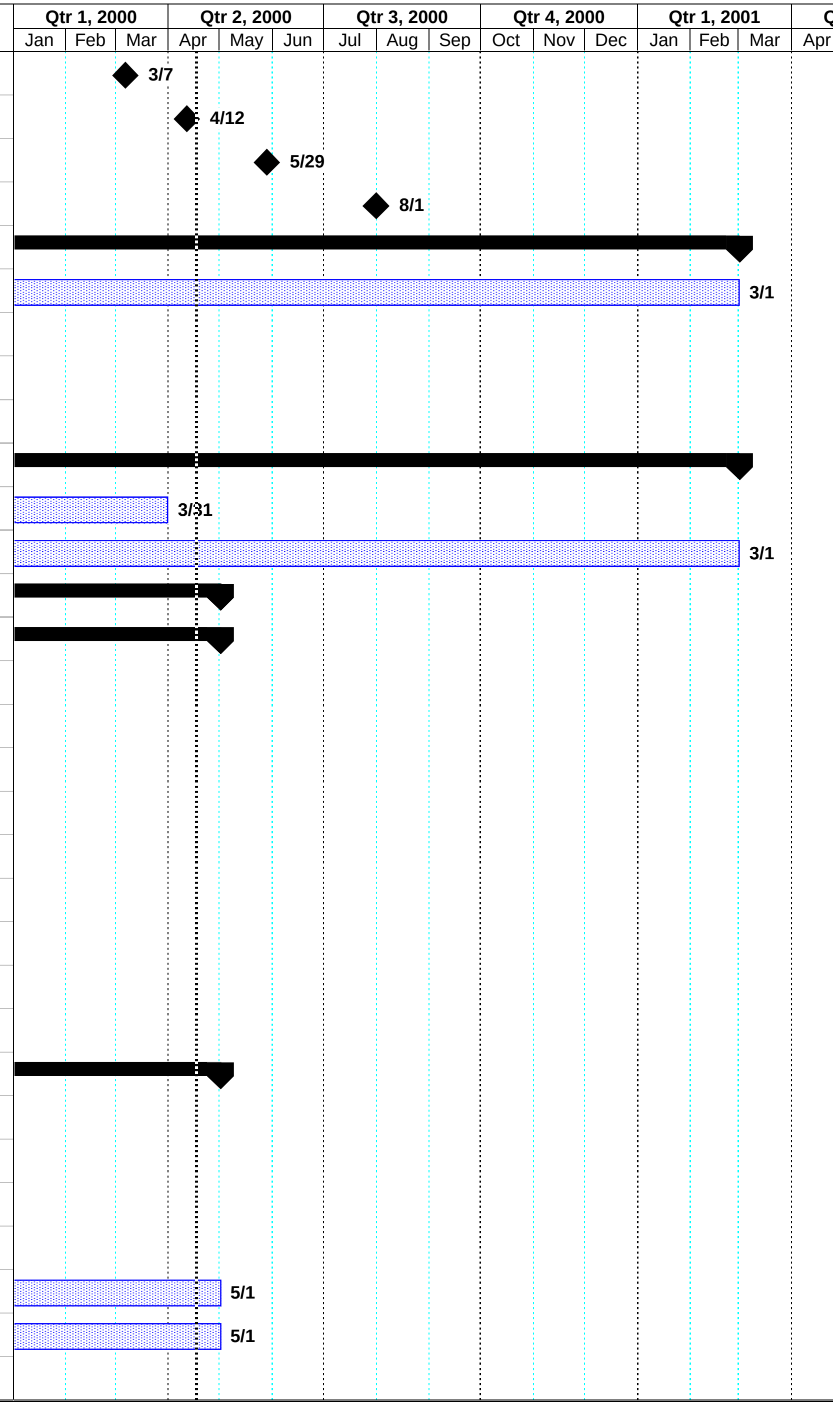
ID		WBS	Task Name	Resource Names
249		2.5.2.2.6	TOF	
250		2.5.2.2.7	CES	
251		**2.5.2.3**	**Calibration Hooks**	
252		2.5.2.3.1	Reconstruction	
253		2.5.2.3.2	L3	
254		**2.5.3**	**Conditions Databases**	
255		2.5.3.1	Development	
256		2.5.3.2	Trigger	
257		2.5.3.3	Detector Conditions	
258		2.5.3.4	Luminosity	
259		2.5.3.5	Beams	P. Derwent
260		**2.5.3.6**	**Alignment**	
261		2.5.3.6.1	Develop Algorithms	
262		2.5.3.6.2	Implement	
263		2.5.3.6.3	COT	
264		2.5.3.6.4	SVX	
265		2.5.3.6.5	Muons	
266		2.5.3.6.6	CES	
267		**2.5.3.7**	**Constants**	
268		2.5.3.7.1	Develop Algorithms	
269		2.5.3.7.2	Implement	
270		2.5.3.7.3	COT	
271		2.5.3.7.4	SVX	
272		2.5.3.7.5	Muons	
273		**2.5.4**	**Production/Integration/Development DB**	
274		2.5.4.1	Purchase Machines	S. Lammel,R. Harris
275		2.5.4.2	Commision Machines	CDF Task Force
276		2.5.4.3	Install Oracle	ODS-DBA Group
277		**2.5.5**	**Export of Database to Remote Institutions**	
278		**2.5.5.1**	**Oracle Implementation**	
279		2.5.5.1.1	Linux Oracle Server in KITS	D. Box



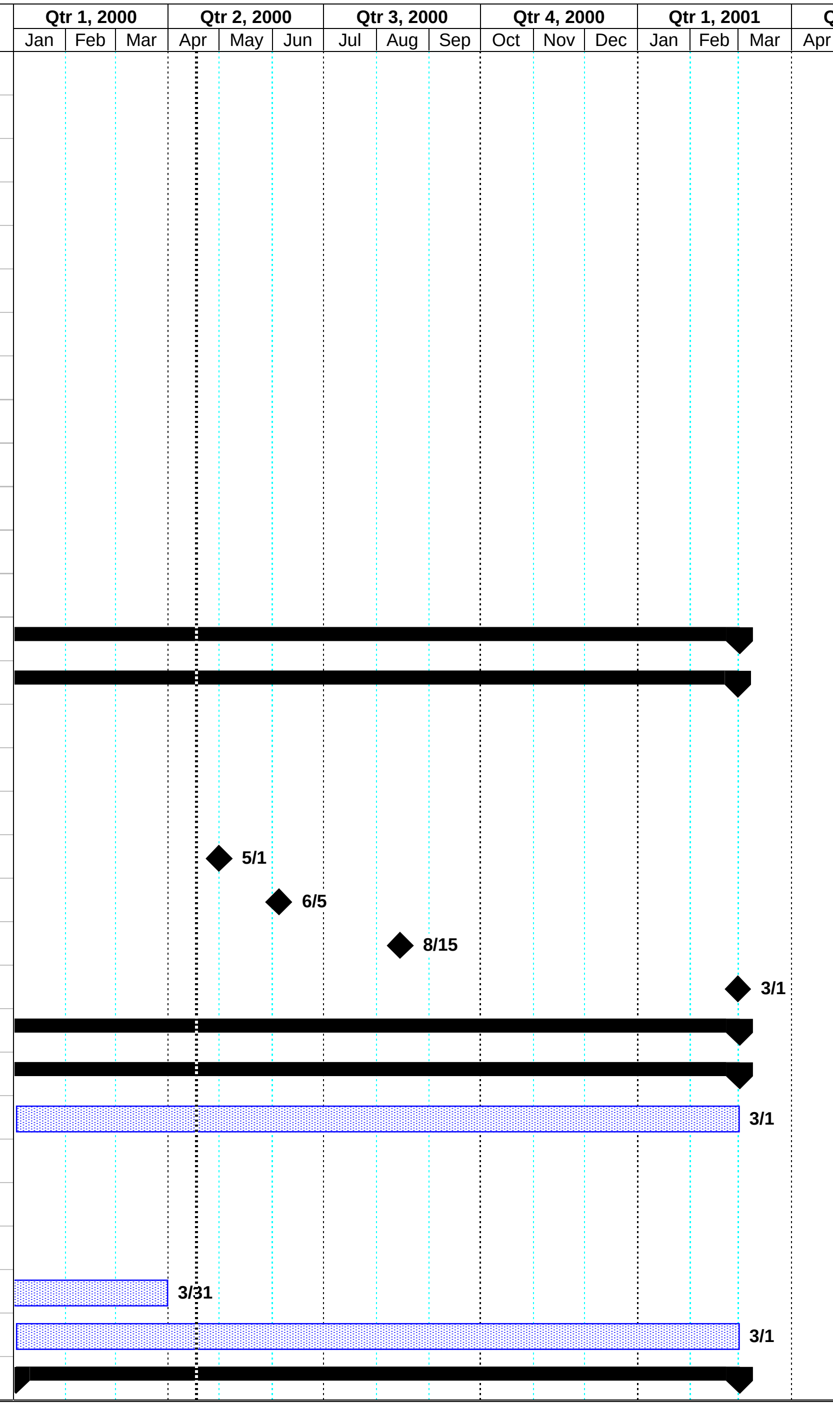
ID		WBS	Task Name	Resource Names
280		2.5.5.1.2	Prototype	
281		2.5.5.2	Freeware Implementation	
282		2.5.6	Database Administration	ODS-DBA Group,D. Bonham,N. Stanfield
283		2.5.7	Database Replication	ODS-DBA Group
284		**2.5.8**	**Database Backup and Restore**	
285		2.5.8.1	Management	E. Wicklund
286		2.5.8.2	Backup from Oracle to Disk (RMAN)	ODS-DBA Group
287		2.5.8.3	Backup from Disk to Tape (fmb)	CDF Task Force
288		**2.6**	**Event Display**	**D. Litvinsev,ITEP Moscow**
289		2.6.1	OI SVX Display: vdf (done)	J. Boudreau
290		**2.6.2**	**ROOT Event Display (evd)**	**ITEP Moscow,D. Litvinsev**
291		2.6.2.1	COT	D. Litvinsev
292		2.6.2.2	Silicon (SVX / ISL)	D. Litvinsev
293		2.6.2.3	Muons	D. Litvinsev
294		2.6.2.4	Calorimeters (LEGO)	D. Litvinsev
295		2.6.2.5	Central Cal (Wedge)	D. Litvinsev
296		2.6.2.6	Plug Cal	D. Litvinsev
297		2.6.2.7	CLC	D. Litvinsev
298		2.6.2.8	TOF	D. Litvinsev
299		2.6.2.9	Trigger	
300		2.6.2.10	Documentation	D. Litvinsev
301		**2.7**	**Code and Configuration Management**	**A. Kreymer**
302		**2.7.1**	**Release Management**	**A. Kreymer,C. Debaun**
303		2.7.1.1	CVS Repository management	C. Debaun
304		2.7.1.2	SoftRelTools	J. Amundson
305		**2.7.1.3**	**Creation of frozen releases**	**A. Kreymer,C. Debaun**
306		2.7.1.3.1	Coordinating Release	A. Kreymer
307		2.7.1.3.2	Building Releases	C. Debaun
308		2.7.1.3.3	Release 3.2.0	
309		2.7.1.3.4	Release 3.3.0	
310		2.7.1.3.5	Release 3.3.1	



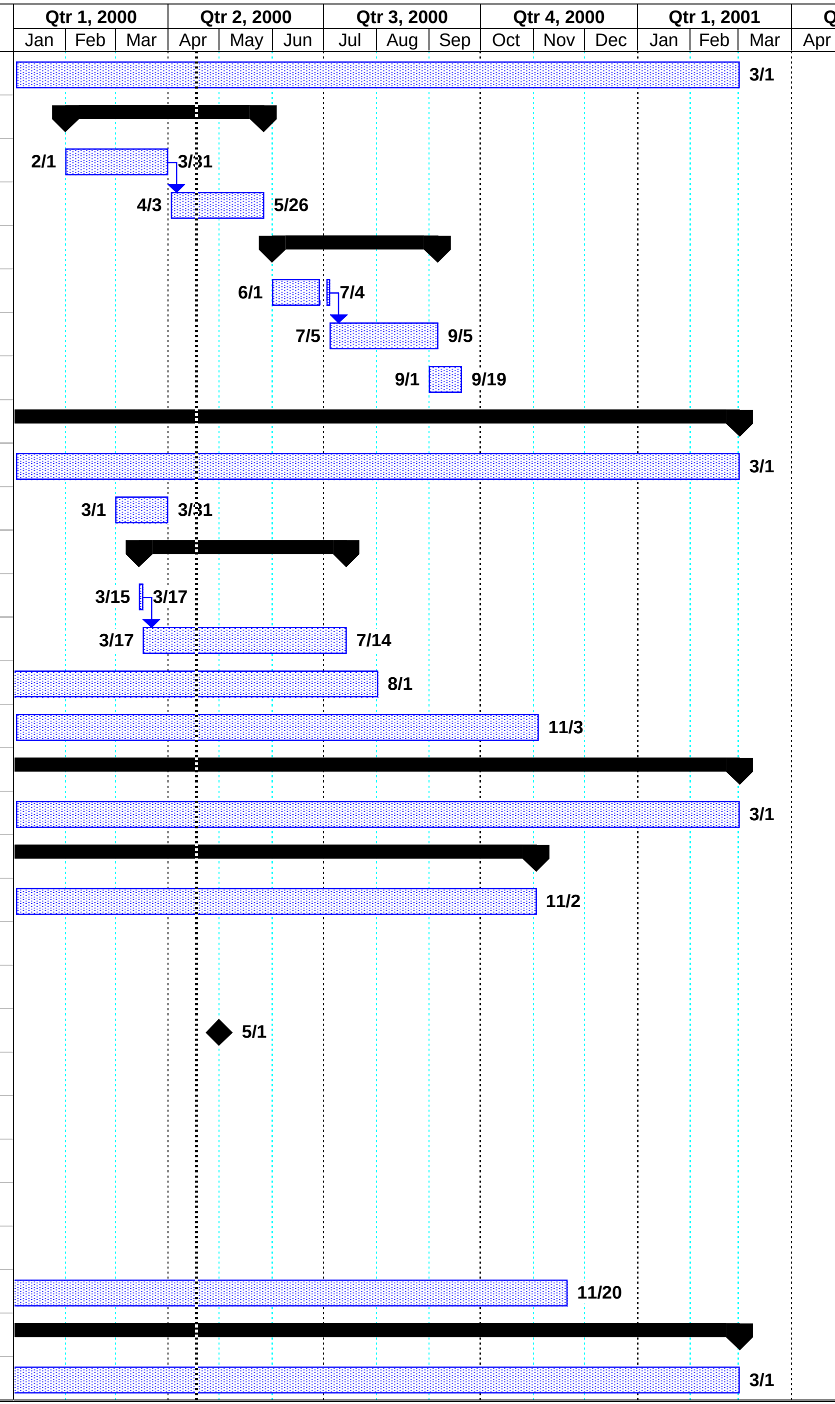
ID	WBS	Task Name	Resource Names
311	2.7.1.3.6	Release 3.4.0	
312	2.7.1.3.7	Release 3.5.0 (MDC2 Simulation)	
313	2.7.1.3.8	Release 3.6.0 (MDC2 Reconstruction)	
314	2.7.1.3.9	Release 3.7.0 (Commisioning Run)	
315	**2.7.2**	**Distribution Management**	**A. Kreymer,C. Debaun**
316	2.7.2.1	Field Support	A. Kreymer,C. Debaun
317	2.7.2.2	UPD distribution of releases	A. Kreymer,C. Debaun
318	2.7.2.3	Remote Access and Registration	C. Debaun
319	2.7.2.4	New Flavors	A. Kreymer,C. Debaun
320	**2.7.3**	**Validation Management**	**A. Beretvas**
321	2.7.3.1	Validation of Frozen Releases	A. Beretvas,A. Kreymer
322	2.7.3.2	Daily Error Reporting	A. Beretvas
323	**2.8**	**Analysis Framework**	
324	**2.8.1**	**FrameMods**	
325	2.8.1.1	F77Interface (done)	
326	2.8.1.2	APPFileInputModule	L. Sexton-Kennedy
327	2.8.1.3	APPGenInputModule (done)	L. Sexton-Kennedy,P. Murat,M. Shapiro
328	2.8.1.4	APPLevel3InputModule	U. of Rochester
329	**2.8.1.5**	**APPFileOutputModule**	**L. Sexton-Kennedy**
330	2.8.1.5.1	Bank List Control	L. Sexton-Kennedy,R. Kennedy
331	2.8.1.5.2	Connection to Filters (done)	
332	2.8.1.6	APPVegasInputModule (done)	
333	2.8.1.7	EventMixMods	T. Hufmann
334	**2.8.1.8**	**Utility Modules**	
335	2.8.1.8.1	InitModule (done)	
336	2.8.1.8.2	Framework Bank Dump (done)	
337	2.8.1.8.3	Error Logger (done)	
338	2.8.1.8.4	CalibrationManager	M. Lancaster,J. Kowalkowski
339	2.8.1.8.5	GeometryManager	C. Green,M. Patterno
340	2.8.1.8.6	Histogram Manager	L. Sexton-Kennedy
341	**2.8.2**	**MenuHandler**	



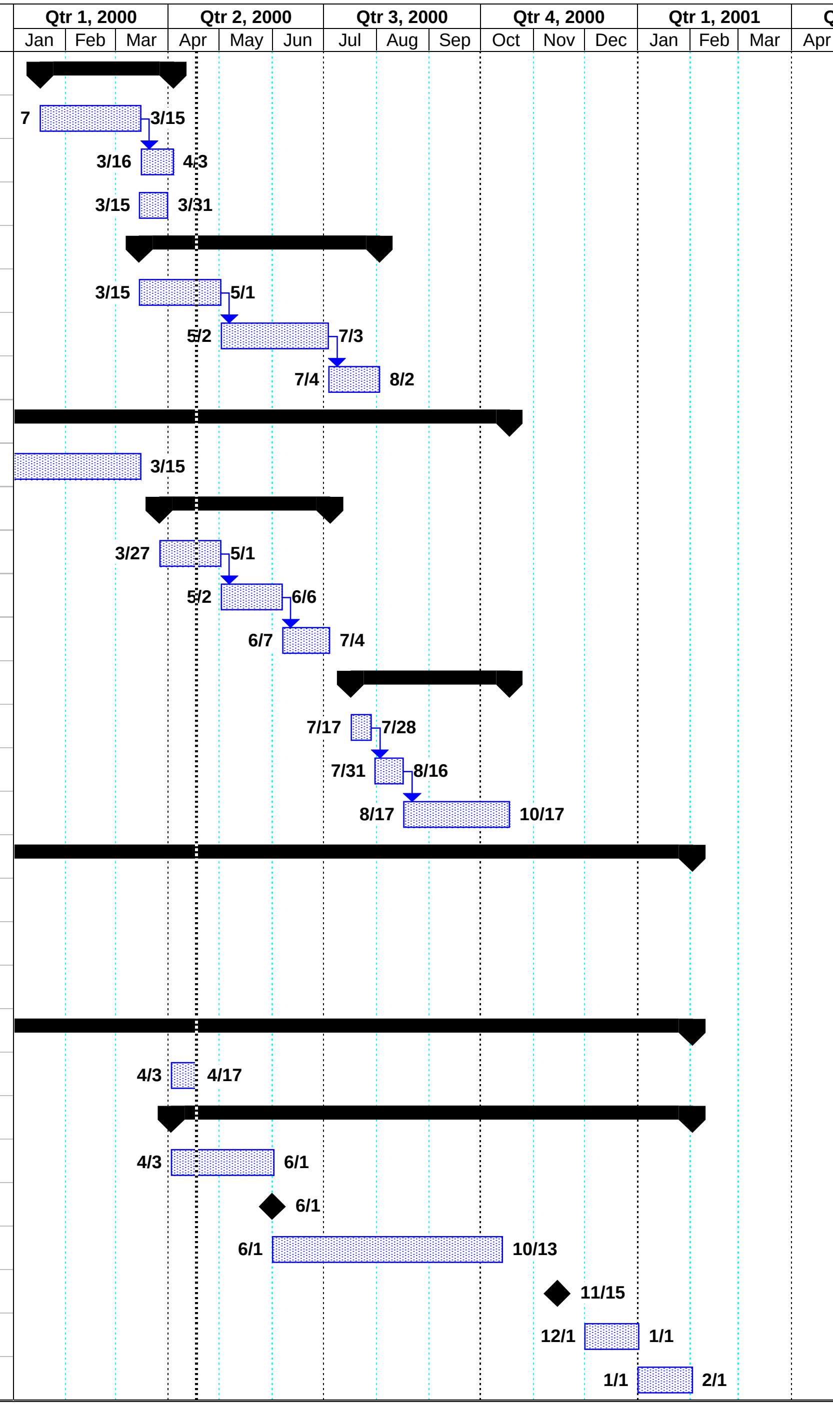
ID		WBS	Task Name	Resource Names
342		2.8.2.1	CLI (done)	
343		2.8.2.2	GUI	
344		**2.8.3**	**Filtering**	
345		2.8.3.1	enable/disable by path (done)	
346		2.8.3.2	connect path<-->stream (done)	
347		2.8.3.3	statistics (done)	
348		2.8.3.4	persistence of filter results	L. Sexton-Kennedy
349		2.8.4	Run-time Module cloning (done)	
350		2.8.5	Begin-run Begin-File behaviour	L. Sexton-Kennedy
351		2.8.6	Processing statistics (done)	
352		2.8.7	Persistant Processing History	L. Sexton-Kennedy
353		**2.8.8**	**Histograms**	
354		2.8.8.1	ntuple example (done)	
355		**2.9**	**Data Handling**	**S. Lammel,T. Watts**
356		**2.9.1**	**Milestones**	
357		2.9.1.1	October Demonstration (done)	
358		2.9.1.2	Analysis Prototype available (done)	
359		2.9.1.3	Mock Data Challenge 1 (done)	
360		2.9.1.4	Testing for Mock Data Challenge 2	
361		2.9.1.5	Mock Data Challenge 2	
362		2.9.1.6	Engineering Run	
363		2.9.1.7	First Data	
364		**2.9.2**	**Resource Management**	
365		**2.9.2.1**	**Batch System**	
366		2.9.2.1.1	Management	
367		2.9.2.1.2	Prototype (done)	
368		2.9.2.1.3	Batch Requirements (done)	
369		2.9.2.1.4	Choose Batch implementation:LSF (done)	
370		2.9.2.1.5	Batch Customization	
371		2.9.2.1.6	Batch Integration	
372		**2.9.2.2**	**Disk Inventory Manager**	**S. Lammel,P. Hubbard**



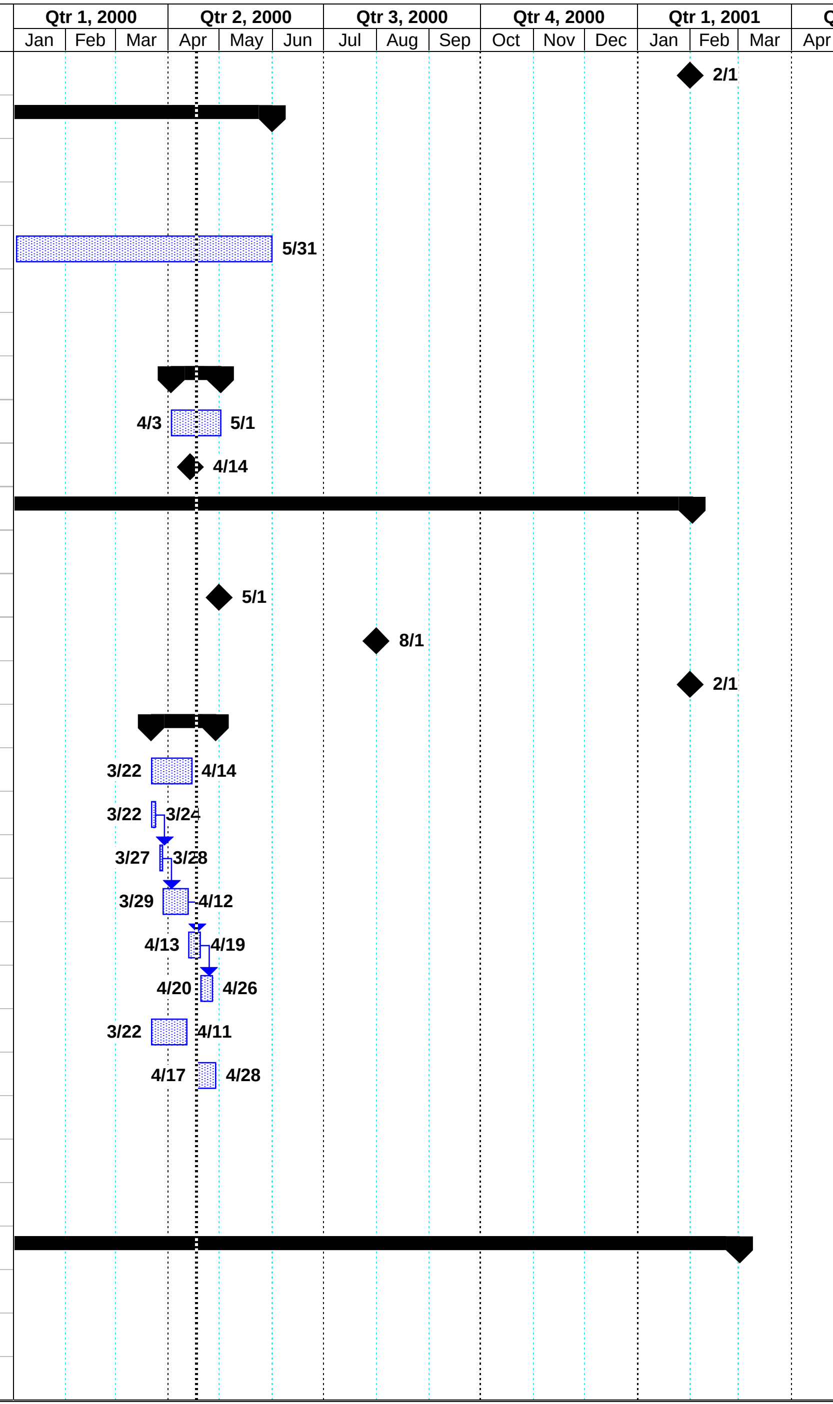
ID		WBS	Task Name	Resource Names
373		2.9.2.2.1	Management	S. Lammel
374		**2.9.2.2.2**	**Basic**	**P. Hubbard,S. Lammel**
375		2.9.2.2.2.1	Design	
376		2.9.2.2.2.2	Code and Debug	
377		**2.9.2.2.3**	**Full version**	**S. Lammel,P. Hubbard**
378		2.9.2.2.3.1	Design	
379		2.9.2.2.3.2	Code and Debug	
380		2.9.2.2.4	Integration	
381		**2.9.3**	**CDF Data Catalog**	**E. Wicklund,T. Watts**
382		2.9.3.1	Manage	T. Watts
383		2.9.3.2	MDC1 Fixes	T. Watts
384		**2.9.3.3**	**Tables**	**J. Kowalkowski,E. Wicklund**
385		2.9.3.3.1	Finalize Tables	J. Kowalkowski
386		2.9.3.3.2	Finalize Implementation	J. Kowalkowski,E. Wicklund
387		2.9.3.4	Dataset Browsing	S. Lammel,E. Wicklund
388		**2.9.3.5**	**Operations and Maintenance**	**E. Wicklund**
389		**2.9.4**	**Mass Storage**	**S. Lammel**
390		2.9.4.1	Management	S. Lammel
391		**2.9.4.2**	**Tape systems**	**S. Lammel**
392		2.9.4.2.1	Serial Media Working Group	S. Lammel
393		2.9.4.2.2	Media and Drives for MDC2	S. Lammel
394		2.9.4.2.3	Medi and Drives for Engineering Run	S. Lammel
395		2.9.4.2.4	First Serial Media RFP	S. Lammel
396		**2.9.4.2.5**	**Tape software**	
397		2.9.4.2.5.1	OCS	ISD Department
398		2.9.4.2.5.2	mt-tools	
399		2.9.4.2.5.3	FTT	M. Mengel
400		2.9.4.2.5.4	Daemons	
401		2.9.5	Analysis Systems	S. Lammel,CDF Task Force
402		**2.9.6**	**I/O (DHMod)**	**F. Ratnikov**
403		2.9.6.1	Management	F. Ratnikov



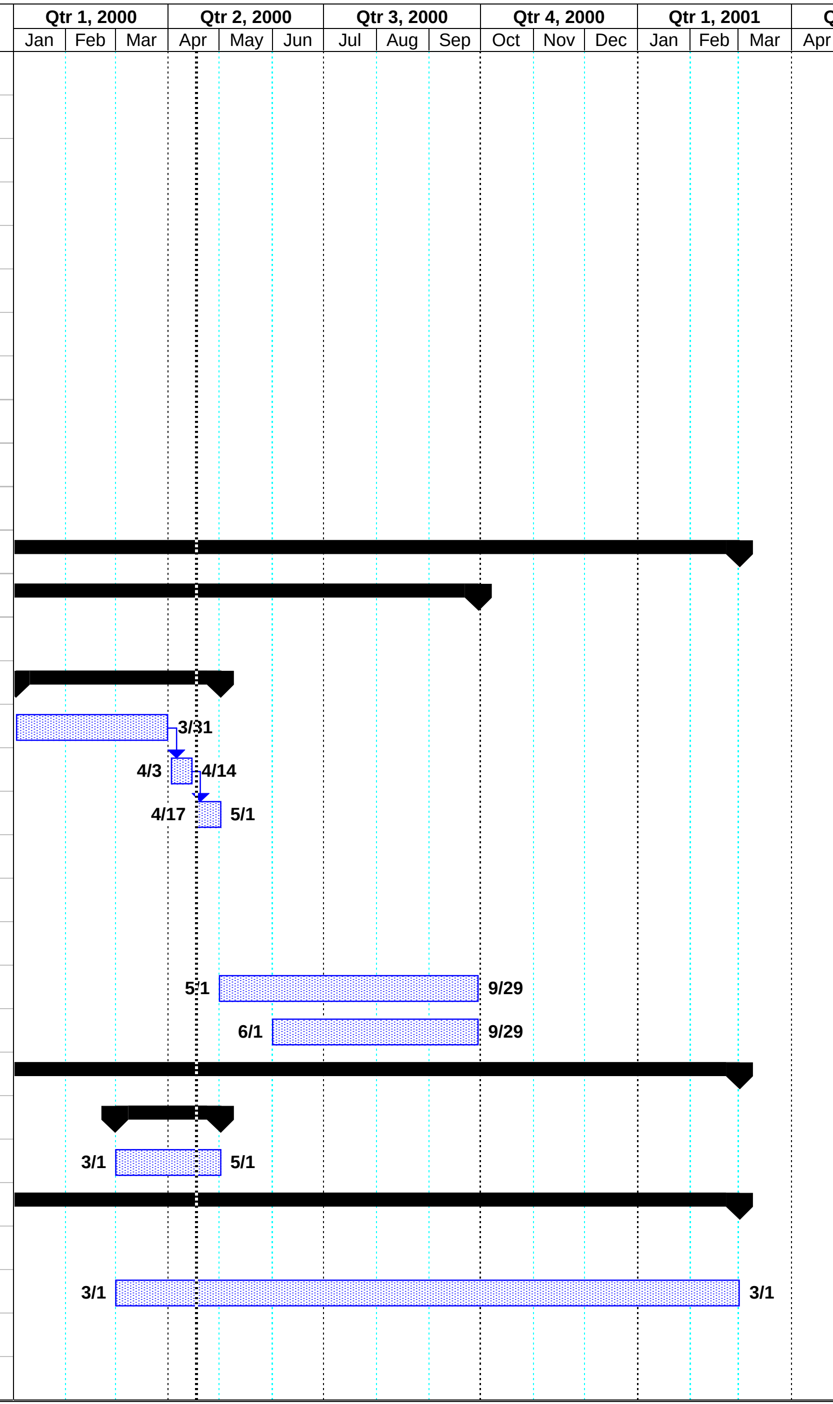
ID		WBS	Task Name	Resource Names
404		**2.9.6.2**	**Input Module**	**F. Ratnikov**
405		2.9.6.2.1	Input Module Implementation	F. Ratnikov
406		2.9.6.2.2	Input Module Tests	F. Ratnikov
407		2.9.6.2.3	User Guide	F. Ratnikov
408		**2.9.6.3**	**Output Module**	**F. Ratnikov**
409		2.9.6.3.1	Design	F. Ratnikov
410		2.9.6.3.2	Implmentation	F. Ratnikov
411		2.9.6.3.3	User Guide	F. Ratnikov
412		**2.9.7**	**Operations**	**S. Lammel,T. Watts**
413		2.9.7.1	MDC1 Operations	S. Lammel,T. Watts
414		**2.9.7.2**	**Mock Data Challenge 2**	**S. Lammel,T. Watts**
415		2.9.7.2.1	Preparation	
416		2.9.7.2.2	Testing	
417		2.9.7.2.3	Operations	
418		**2.9.7.3**	**Engineering Run**	**S. Lammel,T. Watts**
419		2.9.7.3.1	Test Data Path	
420		2.9.7.3.2	Rate Test	
421		2.9.7.3.3	Operations	
422		**2.10**	**Production Systems (Farms)**	**S. Wolbers,Y. Chen**
423		**2.10.1**	**Management**	**S. Wolbers,Y. Chen**
424		2.10.1.1	Schedule/Milestones	S. Wolbers,Y. Chen
425		2.10.1.2	MOU	S. Wolbers,Y. Chen
426		**2.10.2**	**Hardware**	**S. Wolbers**
427		2.10.2.1	Testing of 50 Node Farm	Farms Group
428		**2.10.2.2**	**50 more nodes**	
429		2.10.2.2.1	Develop Procurement Strategy	Farms Group
430		2.10.2.2.2	Decision on Procurement Strategy	
431		2.10.2.2.3	Evaluate and Purchase Nodes	Farms Group
432		2.10.2.2.4	Node Delivery	
433		2.10.2.2.5	Node Testing	Farms Group
434		2.10.2.2.6	Integrate Into CDF Farms	Farms Group



ID	WBS	Task Name	Resource Names
435	2.10.2.2.7	Ready for Run 2	
436	**2.10.2.3**	**Engineering Run Preparations**	
437	2.10.2.3.1	Tape Drives	
438	2.10.2.3.2	Disk	
439	2.10.2.3.3	FBS/FIPC	ISD Department of CD
440	2.10.2.3.4	Farms Software v3.0	
441	2.10.2.3.5	Production Executable	
442	**2.10.2.3.6**	**Databases**	
443	.10.2.3.6.1	Interactions with Oracle DB	Farms Group
444	.10.2.3.6.2	MYSQL	
445	**2.10.3**	**Farm Control**	
446	2.10.3.1	v1.0 for for MDC1 (done)	
447	2.10.3.2	v2.0 for MDC2	
448	2.10.3.3	v3.0 for Engineering Run	
449	2.10.3.4	v4.0 for Run II	
450	**2.10.3.5**	**Farm Control V2.0 Activities**	
451	2.10.3.5.1	Coordinator	Farms Group
452	2.10.3.5.2	Reconstructor	M. Siket
453	2.10.3.5.3	Collector	M. Siket
454	2.10.3.5.4	Splitter	M. Siket
455	2.10.3.5.5	Stager	M. Siket
456	2.10.3.5.6	Concatenator	M. Siket
457	2.10.3.5.7	Resource Manager	P. Yeh,Y. Chen,M. Siket
458	2.10.3.5.8	Bookkeeper	Y. Chen
459	**2.10.4**	**Documentation/Management**	
460	2.10.4.1	Farms Users Guide for CDF Shifters	Farms Group
461	2.10.4.2	Farms Software Document for developers	Farms Group
462	**2.11**	**Event Generators**	**P. Murat**
463	2.11.1	StdHep	L. Garren
464	2.11.2	Fakev	M. Shapiro
465	2.11.3	Isajet	J. Lys,L. Galtieri



ID		WBS	Task Name	Resource Names
466		2.11.4	Herwig	J. Lys
467		2.11.5	Pythia	S. Thompson
468		2.11.6	MBR	A. Bhatti
469		2.11.7	Vecbos	
470		2.11.8	DyRad	
471		2.11.9	Bgenerator	C. Paus
472		2.11.10	QQ	J. Tseng
473		2.11.11	EVTGen	
474		2.11.12	Tauola	T. Molique
475		2.11.13	Wgrad	D. Waters
476		2.11.14	Herprt	
477		**2.12**	**Detector Simulation**	**P. Murat**
478		**2.12.1**	**Infrastructure**	
479		2.12.1.1	Old	P. Murat
480		**2.12.1.2**	**New**	**C. Green,M. Patterno,J. Kowalkowski**
481		2.12.1.2.1	Geant Initialisation using New Geometry	C. Green,M. Patterno,J. Kowalkowski
482		2.12.1.2.2	Prototype with 1 subdetector	C. Green,M. Patterno,J. Kowalkowski
483		2.12.1.2.3	completion of new simulation infrastructure	C. Green,M. Patterno,J. Kowalkowski
484		2.12.1.3	Random Numbers	
485		2.12.1.4	Geometry database	
486		2.12.1.5	API Digitization Framework	
487		2.12.1.6	Digitization Rewrite	C. Green,M. Patterno,J. Kowalkowski
488		2.12.1.7	Bank Creation Routines	
489		**2.12.2**	**Calorimeter**	
490		**2.12.2.1**	**user interface**	
491		2.12.2.1.1	talk to	C. Green,L. Sexton-Kennedy
492		**2.12.2.2**	**I/O**	
493		2.12.2.2.1	CPRD made Run 1 format)	A. Bhatti,P. Savard,M. Riveline
494		2.12.2.2.2	PPRD made	
495		2.12.2.2.3	PESD made	T. Suzuki
496		2.12.2.2.4	D banks for Trigger Simulation	P. Savard



ID		WBS	Task Name	Resource Names	Gantt (Qtr 1, 2000 – Qtr 1, 2001)
497		2.12.2.3	**GFLASH**		
498		2.12.2.3.1	generally	P. Savard	
499		2.12.2.3.2	**validation**	**P. Savard**	
500		.12.2.3.2.1	Cental EM scale		3/1
501		.12.2.3.2.2	Central Hadron Tuned (high energy)		3/1
502		.12.2.3.2.3	Plug EM tuned		3/1
503		.12.2.3.2.4	Plug Hadron Tuned (High Energy)		3/1
504		2.12.2.4	QFL (done)		
505		2.12.2.5	Detailed central, plug in Geant module		
506		2.12.2.6	**Geometry**		
507		2.12.2.6.1	Update Coarse Geometry (GFLASH)	P. Savard	4/3 – 6/1
508		2.12.2.6.2	Update Detailed Geometry (GEANT)	J. Mayer	4/3 – 9/29
509		2.12.2.7	Miniplug	L. Gerchtein	5/1
510		2.12.3	**Central Muons**	**P. Singh**	
511		2.12.3.1	Muon Steel Geometry		
512		2.12.3.2	Magnetic Field tuned		3/1
513		2.12.3.3	Update geom to DetectorModel	M. Gold	4/3 – 9/29
514		2.12.3.4	fix bugs in digitization	M. Gold	9/1
515		2.12.4	**Intermediate Muons**	**J. Bellinger**	
516		2.12.4.1	Fortran Version	J. Bellinger	
517		2.12.4.2	Magnetic Field Map		
518		2.12.4.3	Study Stub quality	J. Bellinger	
519		2.12.4.4	Move geometry to C++	J. Bellinger	4/3 – 9/29
520		2.12.5	**Silicon**		
521		2.12.5.1	generally		3/31
522		2.12.5.2	**User interface**		
523		2.12.5.2.1	Talk-to submenu		
524		2.12.5.3	**signal simulation**		
525		2.12.5.3.1	Tune cluster widths(Run1 cluster sim)		
526		2.12.5.3.2	Add noise		
527		2.12.5.3.3	Z-clusters		

ID	Indicators	WBS	Task Name	Resource Names	Gantt dates (Qtr 1, 2000 – Qtr 2, 2001)
528		**2.12.5.4**	**Geometry**		
529		2.12.5.4.1	Update geom to DetectorModel	C. Green	4/3 – 6/1
530		2.12.5.4.2	Interface to Geometry DB		
531		2.12.5.4.3	misalignment hooks		4/3 – 9/29
532		**2.12.5.5**	**I/O**		
533		2.12.5.5.1	MSVX bank creation	K. Bloom	
534		**2.12.6**	**COT**		
535		2.12.6.1	generally		4/7
536		**2.12.6.2**	**user interface**		
537		2.12.6.2.1	talk-to		
538		**2.12.6.3**	**Signal simulation**		
539		2.12.6.3.1	Physics effects: hit res, afterpulsing, noiuse, dec	P. Murat,B. Ashmanskas	
540		**2.12.6.4**	**Geometry**		
541		2.12.6.4.1	fix hit generation (change from fortran to C++)		4/3 – 9/29
542		2.12.6.4.2	Put correct material in active COT		
543		2.12.6.4.3	wire sag		10/2 – 3/1
544		2.12.6.4.4	outer cylinder		4/3 – 4/14
545		2.12.6.4.5	Geometry DB and Misalignments		4/3 – 3/1
546		2.12.6.4.6	unified geometry		4/3 – 5/1
547		2.12.6.4.7	misalignment hooks		
548		2.12.7	TOF	M. Jones,U. of Pennsylvania	
549		2.12.8	CLC	D. Acosta,U. of Florida	
550		2.12.9	Validation	P. Murat	3/1
551		**2.12.10**	**Documentation**		
552		2.12.10.1	Geometry Classes	C. Green,M. Patterno,J. Kowalkowski	
553		2.12.10.2	Users Guide	P. Murat	
554		2.12.10.3	Validation note: Calorimeter	P. Savard	
555		2.12.10.4	Validation note: Central Muons	P. Singh,M. Gold	
556		2.12.10.5	Performance note: Run 2 Tracking	B. Ashmanskas,P. Murat	
557		**2.13**	**Trigger Simulation**	**S. Rolli**	
558		2.13.1	Management	S. Rolli	

ID		WBS	Task Name	Resource Names	Qtr 1, 2000 (Jan, Feb, Mar) · Qtr 2, 2000 (Apr, May, Jun) · Qtr 3, 2000 (Jul, Aug, Sep) · Qtr 4, 2000 (Oct, Nov, Dec) · Qtr 1, 2001 (Jan, Feb, Mar) · Q (Apr)
559		2.13.2	XFTsim		3/31
560		2.13.3	SVTsim	L. Moneta,C. Berclaz,G. Punzi,B. Ashmanskas	5/1
561		2.13.4	Calsim (done)	S. Rolli	
562		2.13.5	Cmusim	U. of Michigan,S. Rolli	5/15
563		2.13.6	xcesim	K. Byrum	
564		2.13.7	L1 Global and L2 Global	G. Field,S. Miller,K. Bloom	
565		2.13.8	XTRP		
566		2.13.9	Parser	S. Miller,K. Tollefson	
567		2.13.10	Database Access		
568		2.13.11	Validation		3/31
569		**2.14**	**Training**	**J. Yoh**	
570		2.14.1	Coding Standards (done)		
571		2.14.2	C++ Courses	J. Yoh	
572		2.14.3	Computing Library in Trailers	J. Yoh	
573		2.14.4	Offline Training Courses		
574		2.14.5	Documentation		

1 Rest of CDF
This is the detector upgrade, not covered here.

2 CDF Computing and Software Upgrade
Project Manager: Marjorie Shapiro (U.C. Berkeley)
Deputy Managers: Robert Harris (Fermilab CD/CDF)
Dan Amidei (University of Michigan)

3 Code Integration
Project Leades: Liz Sexton-Kennedy (Fermilab, CD/CDF)
Rick Snider (Fermilab, PPD/CDF)

4 Production Executable
Still to be done as of 3/2/00: Getting all code to talk to database. All detectors need to be aligned. Need alignment infrastructure. Error logging and error handling. Request from production farms to terminate with non-success code on failure. Farms operations items. Global. Local error handling when a module doesn't get what it needs. Only Chris Green and Rick are using error logger. May need a histogram manager.

10 Error Logging and Handling
Status as of 3/2/00: Need to incorporate into reconstruction modules. Need policy for passing error codes and for error severity. One page guide. Change cout statements to error logger statements.

11 Policy and Guide for Error Logging
This is both the policy for passing error codes, and the guide for which severity to use in logging, and a how-to for coding in the error logger/handler for users.

14 Example of Talking to DB (done)
Status as of 3/10/00: Done for calorimetry and CMX.

15 DB Use by Tracking, Muons, etc.
Status as of 3/2/00: Want this for MDC2. The online groups need will drive which banks get done first. Done for calorimetry. We must have this for commisioning run.Peter Tamburello for COT. Need for silicon and beamline. COT, silicon, beamline, muons, calorimetry needs to be finished, API will be used by Geometry, but wont get data from oracle. Geometry DB is currently planned to be a root file.

18 Definition of Infrastucture & Constants
Status as of 3/2/00: Need database tables for alignment. Want to use calibration database API. First need to define set of constants: specify the alignment content and tables for each detector.

22 Compliers and Debuggers
Status as of 3/2/00: Ongoing. Supposed to be examining the next GNU compiler in the spring, but this is not a high priority. Using Totalview debugger. It is sufficient but not wonderful.

24 Use of ISOCXX portability package
Status as of 3/2/00: Want to substitute ISOCXX portability package for defect macros. Required if we want to move to another compiler. To implement this, we could grep for defect and replace with standard c++ and include header file from ISOCXX package.

28 Build Job++
Status as of 3/2/00: Need a student to do this, but Liz thinks it will take too much of her time to direct a student to do it. Could use a C++ programmer for this, but it wouldn't require great levels of expertise in C++. Previous version was written in Python. Could be done in a month if we can salvage some of the old Python stuff.

29 Zoom: heptuple, error log (done)
Status as of 3/2/00: Product is in maintenance phase. API could use some improvements. Some people prefer to use Root directly. Half paw and half Root in the CDF offline. To continue to use paw we need HepTuple.

32 Design/implementation
Status as of 3/2/00: Linked to the use of the new Geometry in simulation.

33 Database/Persistence
Status as of 3/2/00: Not done. Currently this is planned to be a root file.

34 Extrapolation Interface
Status as of 3/2/00:Driven off of Geometry. Interface for the extrapolation of tracks to various detectors. We have extrapolator class but it needs rethinking. Need generic interface for users, but need detector specific interfaces for efficiency. Simple classes for specific easy extrapolations.

37 Prototype production table
Status as of 3/15/00. Work has not begun. List of modules, parameters, prerequisites, etc. Level 4 Trigger Table.

38 Prototype Input validation control
Status as of 3/15/00: How do we know that calibration constants are OK. Valid set is ready and OK. Automated procedure by which production job on the farm can determine that it has all the required inputs and they are all correct. Don't want to be able to run with stale constants. Unknown whether this has been completed.

43 Event Reconstruction
Project Leaders: Rick Snider (Fermilab, CD/CDF)
Liz Sexton-Kennedy (Fermilab, PPD/CDF)

44 Luminosity
Sub-Project is the responsibility of Univ of Florida.

45 Luminosity Reconstruction Code
Status as of 4/5/00: Responsiibility of Univ. of Florida. In process of writing D bank in April 2000. QIE chip readout similar to calorimetry code. In process of working on Geometry and D to E. Note that consumer code may need luminosity info as well.

48 Luminosity Analysis
Status as of 4/5/00: nobody working on this as far as we know.

49 Input of Luminosity to Data File Catalog
Status as of 4/5/00: nobody working on this as far as we know.

50 Tracking
Sub-Project Leader: Dave Gerdes (University of Michigan).

55 Re-implement CDFTrack persistency
Status as of 3/2/00: Dont write out TRCK and TRCL banks anymore. R. Snider really wants this done. Rick may do it, or Dave Waters.

57 Fast Event Vertex
Status as of 3/2/00: Z-vertex from z-position of tracks along beamline.
XY-vertex from beamline. Basically done, something that runs, could still use continued validation. Dirk Neuberger at Karlsruhe did some work on this. QPV is what it is called. Rick has not had a chance to test it yet. Need to check the efficiency and track multiplicity. Want to make code to use tracks as well as silicon stuff for vertex. VXPRIM is overkill for this task, need faster method using tracks. Roughly a month of work. Needed for start of run. Karlsruhe responsibility. Patrick Schemitz may be working on this. Hans Wenzel was working on VXPRIM, but he now works for CD/CMS. Dave Gerdes has promised to contact Karlsruhe to discuss status.

58 VXPrim 3D Vertex
Not done as of 3/8/00: Three dimensional vertex that uses XYZ of tracks. Responsibility of Karlsruhe group. Their student wrote the code, but it may still need to be integrated into the offline system. Might only be a month of work.

59 Generic Vertex Fitting
Status as of 3/2/00: Framework for either primary or secondary vertex fitting with various algorithms. For example, CTVMFT could be used within Generic Vertex Fitting. Needs to be ready at start of run. CTVMFT has been wrappered. Rick has bigger idea of a framework. B group wants it. Not necessary for CTVMFT.

60 constrained mass fitting (CTVMFT)
Status as of 3/2/00: The old run 1 algorithm CTVMFT has been wrappered for run 2 use. We do not know how up-to-date the interface is, or if it takes CDFTrack. People working on it are Joe Boudreau and Petar Maksimovic. May need this for MDC2, if we have a level 3 trigger that requires constrained mass fitting.

64 Reorganize geometry
Status as of 3/2/00: Basically done according to Rick Snider.

65 Alignment Hooks
Status as of 3/2/00: see comments under alignment.

66 Material Integrator
Status as of 3/2/00: Not done because it requires initialisation of new geometry in simulation (geant).

70 R-phi Algorithm development
Status as of 3/2/00: Mature for one algorithm. Aseet tracking. 2nd algorithm needed. A lot of work has been done. May be integrated tracking approach: if so a lot of infrastructure exists. Paolo has a prototype model. Getting a final list of COT tracks based on multiple agorithms has not been done and is potentially a lot of work. 2nd algorithm needed for Commisioning run.

71 Stereo algorithm development
Status as of 3/2/00: We don't know if it is done. It may need more validation. Stereo is working really quite well. Acceptable performance.

72 Final fitter
Status as of 3/2/00: Peter Tamburello, and Rob Snihur (Rutherfoord) are working on this. Needed for Engineering run. The status of this fitter is an action item for Dave Gerdes.

73 Optmization
Status as of 3/2/00: Ken Bloom is working on this. Speed Optimization. Going on
continually at low level. OK for MDC2. Sufficiently optimized for commisioning run and run 2 as well.

76 Integrate silicon z-hit finding
Status as of 3/2/00: Pattern Recognition is being done, but hits are currently not being used in the last pass of fit. Adding hits to fit is a weeks work for Ken.

77 Full integration & testing
Status as of 3/2/00: Not done. Dependent on integrate silcon z-hit finding. Ken Bloom and Paolo Gatti and Patricia Azzi.

79 multi-algorithm, multi-fit, integration
Status as of 3/2/00: This is a big job. 6 months of work. nobody is commited to this. Got to be there for beginning of run 2.

80 picking the best track for a set of hits
Status as of 3/9/00: Not started yet. could be a lot of work. not a lot known.
Tracking Group wide issue. Milestones for MDC2, commisioning run ,start of run needed.

81 multiple fit infrastructure (CDFTrack needs list of fits)
Status as of 3/9/00: Linked to completion of "Port run 1 fitter" which should be changed to final fitter. Start using it when final fitter is completed. Same end dates. A lot of work. Track interface add fit method for CDFTrack, etc. Could take 6 months. Strong religious opinions on this one. Tracking Group wide issue, and Level 3 algorithms people. Joe Boudreau agreed to wite a fit class a while ago, so he is a candidate.

82 Muons
Sub-Project Leader Prem Singh (University of Illinois).

84 D to E
Status as of 4/5/00: Coded, partially tested. Need good D banks from simulation.

85 E to S (done)
Status as of 4/5/00: Debugged. Works well. Rewrite in C++ needed. Prem Singh and UIUC student, Dan Eisenberg will work on this.

86 E to S in C++
Status as of 4/5/00: Dan Eisenberg is an undergrad from Illinois. Will be working 1/4 time on this with Prem. Will become more than 1/4 time during summer break but the average will be 1/4. Most work will start in May when he is based here at Lab.

87 Calibration Database
Status as of 4/5/00: Not done. Univ. of Illinois is working on it.

89 D to E
Status as of 4/5/00: Coded, partially tested. Need good D banks from simulation.

90 E to S
Status as of 4/5/00: Debugged. Works Well. Ongoing maintenance service work from Prem Singh.

91 Calibration Database
Status as of 4/5/00: Not done. Univ. of Illinois is working on it.

93 D to E
Status as of 4/5/00: 25% FTE from Giovanni Paoletta's group (Universtity of Trieste, INFN) will be working on this. Code not written yet.

96 D to E
Status as of 4/5/00: Coded, partially tested.

97 E to S
Status as of 4/5/00: Debugged. Wroks Well. Service work for ongoing maintenances from David Dagenhart.

100 D to E
Status as of 4/5/00: Coded, partially tested.

104 E to S
Status as of 4/5/00: Some validation done but more needed.
105 Calibration Database
Status as of 4/5/00: Not done.
106 Old Linking via CMLNK (done)
Staus as of 4/5/00: Done. Works quite well for the CMU/CMP and CMX. Some ongoing service work to maintain from Prem Singh. Validation done by Prem Singh, Slava (Vyacheslav Krutelyov), James Done.
107 New Linking (MuonLink)
Status as of 4/5/00: July onwards, if there is any work left, Michael Schmidt has a postdoc with 25% FTE to work on this project. Prem currently exercises the interface and exects help from Slava after May 15, 2000.
108 Extrapolator
Status as of 4/5/00: Need to run it in reconstruction and write more methods for non muon stuff.

109 Geometry
Status as of 4/5/00: Fix/Validate being done by Prem Singh. Nobody assigned to put constants from hardware to a database. Marjorie will talk to Tom LeCompte.
112 Implementation (CDFMuon)
Status as of 4/5/00: Currently setup to fill from the old linking code (CMLNK), only muon related quantities. Need to expand it to all the needed quantities. Prem Singh and perhaps David Waters.
113 Validation
Status as of 4/5/00: Approximate percentages FTE's are Vyacheslav (Slava) Krutelyov 40% FTE and Prem Singh 25% FTE.
115 Calorimetry
Sub-Project leader Pierre Savard (University of Toronto).
117 Energy Scale
Status as of 4/10/00: Online and detector group responsibility. The energy scale for the calorimetry comes from taking the ADC counts and multiplying by one constant per calorimeter. This constant is being taken from the calibration database, by calling the CalDigiToGev_mgr. This gets the online definition of ADC/Gev. The definition has always been that a 50 GeV electron should give 50 GeV in the EM section, and a 50 GeVpion which is MIP in the EM should give 50 GeV in the HAD section. Mike Lindgren says this is the Plug convention for run 2 as well. The plug detector group is responsible for this: Mike Lindgren and Yoshi Seiya.
118 Mods for geom, EDM, calibration (done)
Status as of 4/10/00: Still waiting for new geometry framework. But not a big deal to incorporate them. EDM done. Still writing equivalent of run 1 QTOW which should be available 4/12/00. Compressed tower format. first compressed bank. Has been reading calibration database for a while. Constants are not realistic. This task overall task is essentially done.
119 Integration/Optmization
Status as of 4/10/00: Integration (Getting all calorimeters into calorimetery) is missing the TDC banks for the CHA and WHA. Currently not filling time information, waiting for these banks which (Frank Chlebana and David Dagenhart responsible). Miniplug needs to be integrated. Needs to be there for beginning of run. Lena Gerchtein working on standalone simulation without reconstruction. Her work should be transferable to this reconstruction. Filling TOWE for the miniplug should be simple compared to the simulation work. Optimization: fast enough already.
120 Validation
Status as of 4/10/00: Cuts on individual PMT's need to be verified. All constants need to be checked. For example the PMT cuts for noise, Geometry constants such as the radiation lengths, interaction lengths (especially plug), beause want the angle from the vertex to some point in the calorimeter and that points depend on interaction length depth (to get the interaction length centroid). Input to the equivalent of SETA bank for run 1, which is now PhysicsTowers object. Pierre Savard responsible. Wants to do it in June and July, needed for commissioning run.
122 Jet Algorithms
Status as of 4/10/00: Will have a KT algorithm in run 2. Jay Dittmanr esponsible. Needs to be debugged. Needed for engineering run. Will have a run 2 cone algorithm in addition to JetClu. Difference is in the merging algorithm and the way seeds are handles, bit more complicated, not Et weighted sum, uses four vectors instead. Convention between theorists CDF and D0 on what a cone algorithm should be. nobody assigned. JetClu done. maintenance mode.
123 Jet Corrections
Status as of 4/10/00: We have run 1 corrections, which are clearly wrong for the plug. Infrastructure needs to be in for the engineering run. JTC96 equivalent for run 2. Nobody working on this at the moment. These are eta dependent jet corrections, and absolute corrections. In principal the central corrections for run 1 should still work, but we really want to redo even the central corrections. This is a large job which is the responsibility of the physics group, but offline should provide infrastucture to the jet corrections. No infrastructure exists at this time. Has to be ready for commisioning run.
124 Compressed Object
Status as of 4/10/00: Working on compressed bank. Should be ready in a month.
125 Optimization
Status as of 4/10/00: Optimization for speed is ongoing. Algorithm specific.
126 High Level Jet Class
Status as of 4/10/00: High Level Jet is called TopJet. A jet with a bunch of tracks associated, with b-tagging info, trigger info, strip info, etc. No b-tagging yet. Tracks are associated. Strips still need work. Ben Kilminster is a good candidate to work on this.
127 Design
Status as of 4/10/00: Design partially complete.
128 Preliminary Implementation
Staus as of 4/10/00: Needed for run 2. About a months work for both design and implementation.
129 EM Clustering
Status as of 4/10/00: It is called EmClusterModule. Working but needs to be fixed in the plug. Needed for the commissioning run. R.G. Wagner responsible.
130 Mods for geom, EDM, calibration
Status as of 4/10/00: EDM done. Needs to use the new geometry system when complete. Calibration needs to implemented: equivalent of CEMFIX from run 1. Want to put contstants from CEMFIX in the calibration database. Scale, increase in energy near the edges, etc. Electron/photon dependent, etc. May be a big job. not begun.
131 Integration/Optimization
Status as of 4/10/00: There is a calorimeter based algorithm, but we also need a track based algorithm. Track based one not ready.
132 Strip Clustering
This includes both central and plug shower maxium clustering.
133 Central Strips
Status as of 4/10/00: Moving from fortran version to C++ version of stpana.
134 Central Algorithm develompent
Status as of 4/10/00: Micheal Riveline working on this. C++ equiva lent of STPANA is coded but needs to be debugged and validated. soft electron module in development.

135 D to E and Calibration (done)
Status as of 4/10/00: Done. In run 1 we produced a CESE bank, but in run 2 we will only use CESD equivalent. There is no D to E for central strips. CESD bank defined.

137 Plug Algorithm Development
Status as of 4/10/00: PlugStripClusterModule. First implementation coded and is working. Needs more work. David Waters has an algorithm that uses the plug strips as seeds for tracks. builds 2D clusters in the plug strips. Plug2DStrip, works on top of PlugStripClusterModule.

138 D to E and Calibration
Staus as of 4/10/00: Ben Tannenbaum at UCLA is working on this. First implmentation supposed to be done by mid-may.

139 High Level Objects
Status as of 4/10/00: Base class written. ShowerMaxCluster. CESCluster and PESCluster classes have a first implementation. Some design work still going on.

141 Plug Pre-Shower (done)
Status as of 4/10/00: Takashi Suzuki finsihed this. Entry in TOWE for the plug preshower. Wrote the code to fill the entry.

142 Central Pre-Shower
Status as of 4/10/00: Tania Moulik from Purdue is working on this. Started work on reconstruction.

143 Crack Chambers
Status as of 4/10/00: Nothing done on this yet.

148 High Level Electron Class
Status as of 4/10/00: This is called CdfEmObject.

151 MET
Status as of 4/10/00: NaiveEt which somes the tower vector Et is done. CdfMetModule.

152 Algorithm Development
Status as of 4/10/00: Nobody working on more mature algorithms than NaiveEt.

153 TOF
Status as of 4/5/00: MIT and Univ of Pennsylvania may be involved. Matt Jones and Christoph Paus. D Banks being defined by David Dagenhart and Rich Glosson.Sin2Beta group working on high level analysis. Nobody working on lower level reconstruction code.

155 Offlline Trigger Information
Status as of 4/5/00: Equivalent to TAGC in run 1. Access to the trigger in the offline. For each trigger name we need to know what trigger passed for each event. We need a module equivalent to TRVIEW or TRSEL in run 1, a filter module that requires some set of triggers to pass. Nobody assigned to this task.

156 Level 3 Modules
Project Leader: Kevin McFarland (University of Rochester).

159 Regional Reco Framework (done)
Oxford responsible for maintenance. redone with edm, 12/99 completed.

160 Regional COT tracking
Status as of 4/6/00: Kirsten Tollefson. Process of converting to new regional framework. Should be in MDC2 release. Delayed because of new edm. Should be done in April. Needs TL2D bank.

161 Trigger Integration of Regional tracking
Status as of 4/6/00: Incoporation of changes to trigger banks. Ongoing task.

162 Regional silicon tracking
Status as of 4/6/00: Oxford responsibility. Issues surrounding TL2D bank, layer 00. Done for MDC2 purposes, needs ongoing trigger integration, adding other seeds. Understanding l3 strategies.

163 Framework
Trigger infrastucture, talking to DAQ system.

164 Path/Prereq/Output
Status as of 4/6/00: Rochester responsible. Kevin and Kirsten Tollefson. Code required to do definition of paths and output. Complete but requires ongoing maintenance. History and Persistency may be an issue.

165 Monitors
Statis as of 4/6/00: Rochester responsible. L3 part of XMon. Trigger and Xsec monitor. Done 6/99, needs integration with level 1 and level 2. Going to change what they are doing with TL3D bank. Have work to do for MDC2. Maintenance.

166 DAQ 2 interface
Status as of 4/6/00: Was complete in may 1999, but the end L3 talks to was recently redesigned. DAQ interface 2: Kevin McFarland responsible.

167 Run Control Integration
Status as of 4/6/00: Timing Synchronizations that are needed to take place with Run Control to make available executable, calibrations and trigger. Run start generates a report to tell online what it needs to use. Starts june 1 and ends October 1. Rochester.

169 Databases
Status as of 4/6/00: Rochester coordinates, but they don't do all work. Rely on L1, L2, Calibration, groups.

170 L3 Trigger Table
Status as of 4/6/00: Rochester responsible for L3 specific parts of trigger table. Prototype done. Alexei and Kirsten merging trigger tables from L1, L2, L3. Proto done 12/99. Version 1 final for commissioning run. Version 2 final for run 2. Have to make it work with l1 and l2, and develop user interface for it. GUI request. Rochester provides oversight. Conversion to TCL file done.

171 L3 Calibration
Status as of 4/6/00: Using tools provided by calib group and giving input to what those tools should be. Using flat file mechanism. Issues of L3 validator and valid sets. Largely an oversight and advisory task of Rochester.

172 Code Building
Status as of 4/6/00: Ongoing maintenance task of Oxford and Rochester. Online/Offline issues. Rochester assumes they are going to build their own releases for L3. Want to eventually have releases that are usuable both online and offline. Oxford responsible, Jim Loken working on it. Ongoing maintenance task. Loken has built a release but hasn't distributed it yet.

173 Build Platform
Status as of 4/6/00: In Tony Vaiculis office is b0urpctest. Oxfod/Rochester responsible for maintaining it, and online group too, doing sys admin of the box. Will be a different box in B0 eventually. Largely online responsibility.

177 DAQ 1 Integrated Exe (done)
Status as of 4/6/00: Required DAQ 1 to level 3 interface. Completed
179 Event Data Model
Project Leader: Rob Kennedy (Fermilab).
180 TRYBOS (done)
Status as of 3/22/00: Still in use, but package is in maintenance-only mode. Done.
181 Event Data Model (CDFEDM2)
policies, software defining how event data is manipulated
183 coordinate software development
Status as of 3/22/00: coordinate software development related to CDFEDM2
ongoing. Rob K., help from Liz S-K, on-going
184 follow-up on build and validation failures
Status as of 3/22/00: Rob K., help from Liz S-K and others, on-going
185 maintain web page
Status as of 3/22/00: ongoing
186 consult with users on CDFEDM2
Status as of 3/22/00: Rob K., help from Liz S-K, Rick S, Chris G, on-going
188 EDM for Novices (done)
Status as of 3/22/00: write first draft of EDM-for-novices note, post for
comments by mgmt and EDM-WG, but do not announce yet
* Rob K., began 3/1/00, complete 3/24/00, current task
* Edm-for-novices note is Second Top Priority as of 3/23/00
189 Basic Tools for EDM and Documentation
Status as of 3/22/00: create basic set of tools for CDFEDM2 and document
- in conjunction with EDM-for-novices notes
* Rob K., began 3/1/00, complete 3/24/00.
190 examples, datafiles, put into validation
Status as of 3/22/00: incorporate examples, datafiles, put into validation
- in conjunction with EDM-for-novices notes
* Rob K., David Dagenhart, Ken Bloom, and others
* began 3/1/00, complete 4/1/00,
191 revise and announce
Status as of 3/22/00: later: revise note per comments, fill in missing
pieces, test tools on all OSs, announce publicly
(This will become "maintain EDM-for-novices on all OSs")
* Rob K., begin 4/1/00, on-going from then
192 programmer reference guide
Status as of 3/22/00: Rob K., begin post-MDC2. Roughly 7/1/00
193 maintain and test the guide
Status as of 3/22/00: maintain programmer reference guide, test on all OSs
* Rob K., begin after creation, on-going from then
195 Fix arch_spec_rootcint.mk
Status as of 3/22/00: Fix arch_spec_rootcint.mk to handle indirect depends
* Rob K., Liz S-K, input from Jim Amundson, began 3//00
* Liz S-K to test proposed fix by 3/24/00 after minimal drop
* I/O list task completed, release by 4/1/00
* Release of EDM optimizations is waiting on this
* Fixing rootcint.mk is Third Top Priority at present.
196 Adapt official arch_spec_root*.mk
Status as of 3/22/00: Adapt official arch_spec_root*.mk to ease transition by
some away from RootObj variants of arch_spec files
* Rob K., input from Pasha Murat, began 3/1/00
* Release adaptation after indirect depends fixed
197 Optimize EDM2 for Sequential I/O
Optimize EDM2 implementation for sequential I/O
198 Profiling and Benchmarking on MDC1 Data
Status as of 3/22/00: use profiling, benchmark programs on MDC1 data to find
more bottlenecks, "slow code", inefficient algorithms
* Rob K., Philippe Canal, Rick S., Chris G., and others
* began 3/1 when local MDC-1 data samples used
* on-going process, need MDC-2 goals to be met
* Strictest goal appears to be 20 MB/sec in Splitter
199 Rework postread()
Status as of 3/22/00: rework postread() to use an object id-to-address map
* Rob K., begin 4/15, complete 4/22
* Should yield large reduction in CPU during post-read.

200 Speed up Object Selection
Status as of 3/22/00: use more sophisticated internal event data structure to speed up object selection, iteration, dropping objects
* Rob K., begin 4/22, complete 5/1
* Should yield moderate reduction in CPU used.

201 Use Memory Managers
Status as of 3/22/00: use memory managers once available
* Rob K., interest shown by Rick S. also
* requires ZOOM or Jim K/Marc P to produce memory mgrs
* desirable to begin testing in late April

202 Making postread() optional
Status as of 3/22/00: consider making postread() calls optional or on-demand
* Rob K., unknown begin and completion dates
* this may not be req

203 Optimize EDM2 for Data Logger
Status as of 3/22/00: Optimize EDM2 for Data Logger = Write(TBuffer)
- Provides desired alternative to format XXX without
- sacrificing rate in Data Logger (writes BLOB to TBranch)
* Rob K., begin 3/23 when Philippe Canal releases RH5.X version
* version of ROOT with this capability (RH6.1 exists)
* I expect 1-2 weeks for completion of tests and integration.
* Write(TBuffer) is First Top Priority at present.

204 Optimize EDM2 for Splitter
Status as of 3/22/00: - Optimize EDM2 for Splitter = Read(TBuffer), etc.
- Allows splitter to read most of event without allocating
- memory for individual objects in event. Coupling with the use
- multi-branch events, this may be needed for MDC-2.
* Rob K., begin when Philippe Canal/ROOT team releases version
* of ROOT with this capability. I expect 1-2 weeks of testing,
* integration after that. More difficult than Write(TBuffer).
* Desirable, but not required, for MDC-2
# 3-23-2000: Discussed with Miro. Tentative estimate for availability is end of April, depending on delivery of feature by ROOT team. He is eager to apply this to the Farms Concatenator program which does not need multiple branches (all information needed is external to event), but has a more severe I/O requirement since there is only one process treating all the data. Adding Read(TBuffer)/Write(TBuffer) functionality to the existing Sequential Root event model should yield a great improvement in the Concatenator's processing speed. Because it is simpler and applies to a more severe I/O requirement, this should be tried before exploration of multiple branches and the more complicated mixed Read(TBuffers)/Read (TBranch), which means read and interpret one TBranch while only reading into TBuffers the byte streams for other TBranches, as may be done in the Farms Splitter program.

206 Initial minimal implementation
Status as of 3/22/00: Liz S-K, began about 3/15, completion 3/24

207 More general API
Status as of 3/22/00: more general API and sophisticated implementation using optimized internal event data structure
* Rob K. and Liz S-K, begin sometime after MDC-2,
* Completion in about one week, but depends on completion of RCP integration.

208 Support Object Compression in EDM2
Status as of 3/22/00: Extend EDM2 to support object compression in various modes
- This is a broad topic, including the appproach to summary objects, DATSQZ-like approaches, and ROOT branch compression.
* Rob K., Rick S., and others interested. First need to define an overall plan as to what will be supported. Unknown begin and completion dates. Not needed for, but may be desired by, MDC2. Sometime in early April, we should have Henry Frisch's High-Level objects group, EDM working group, and other interested parties (Pierre, Avi, ...) to flesh out this topic.

209 List of Class Names in Data file in EDM2
Status as of 3/22/00: Extend EDM2 to maintain list of class names in data file.
- Class name list is saved in a separate branch in data file.
* Rob K. May be only a client task of EDM, or may require modifications to the EDM in order to be CPU efficient. Depends on completion of first multi-branch data file class. Should interface with the Production database in

space-efficient fashion. Unknown begin and completion dates.
Desirable, but not required, by Run2.

210 Templated Find and Append Methods
Status as of 3/22/00: Extend EDM2 to support templated find and append methods
- Permits class specific information to be used in find.
* Rob K., unknown begin and completion dates.

211 indexedLink classes
Status as of 3/22/00: Extend EDM2 to support "indexedLink" classes which provide
- persistent pointers to Streamable (rather than Storable)
- Object classes within Storable Containers
* Initial prototypes by Armin Reichold and Pierre Savard
* General case integrated into EDM by Rob K.
* Begin 3/20, no specific completion date yet.
* Desirable, but not required, before MDC-2.

212 Adapt EDM2 to new RCP System
Status as of 3/22/00: adds ability to drop/find by creating module, parameter set
* Liz S-K and Rob K., should take only a few days to complete
the EDM-specific portion of this task.

213 Adapt EDM2 code to use ErrorLogger
Status as of 3/22/00: Adapt EDM2 code to use ErrorLogger (rather than std::cerr)
* Does not require an expert for most of the work,
only for final tweaking of error reporting levels.
unknown begin date, should only take a few expert days.

214 Improve linking to new objects
Status as of 3/22/00: Improve linking to new objects in production output stream
- General utilities now have no automatic way to recognize
new objects put out by production unless hand editting done.
* Desirable for Run2

215 Improve robustness
Status as of 3/22/00: Improve robustness, close loopholes (esp. collections)
* Rob K., on-going work, a few specific instances need to be
* A few known cases now which may need to be looked into
* before examples may disappear in development

216 Improve error handling
Status as of 3/22/00: Improve error handling, adapting ROOT errors to ErrorLogger
* Rob K., with some input from ZOOM w.r.t ErrorLogger code
being compatible with ROOT error-handling scheme.
* Perhaps we can request the Zoom work begin after ROOT-related
optimization work begins to slow down.
* Desirable, but not required, for MDC-2.

217 ROOT Event Model
organization of objects in event on disk

218 Implement first sequential event model (done)
Status as of 3/22/00: Rob K., COMPLETED

219 ROOT data browsing/interaction
Status as of 3/22/00: Explore usefulness of ROOT data browsing/interaction and
implications on event model, CDFEDM2 code, and rootcint.
Is an n-tuple look-and-feel data file possible with CDFEDM2?
* Liz S-K and Philippe Canal to look into this soon.
* Not required for MDC-2.

220 first multi-branch event model
Status as of 3/22/00: Propose, implement first multi-branch event model
* Rob K., begin soon, may take one to two weeks to implement
* This may be needed by MDC2 to improve rate in Splitter

221 Optimize multi-branch event model
Status as of 3/22/00: Optimize multi-branch event model for production use
* Rob K., unknown begin date, estimate 2 weeks to implement
* Not required for MDC-2, should be done before Engineering Run

222 branches and class-branch assigments
Status as of 3/22/00: Create mechanism for groups to define their own branches and
class-branch assignments, and record these as meta-data
* Rob K. and others, with input from physics groups and DH.
* Not required before Run II begins, but desirable

223 Split-Root Files
Status as of 3/22/00: Determine how/where we can take advantage of Split-Root files
* Generally unknown how well we can match our DH system with
this approach to treating ROOT data. ROOT team knows about

this and is open to suggestions to improve our ability to
co-ordinate files containing differents pieces of the same
events given our DH system may deliver files "out-of-order".
* Not required before Run II begins, but desirable

224 Event Data Format
format of data in objects

226 Determine which objects lack support
Status as of 3/22/00: Determine which objects lack support and are needed,
when, and by whom
* Rob K., David Dagenhart, On-line and Off-line managers
* needed as soon as possible

227 definition and implementation of objects
Status as of 3/22/00: Co-ordinate definition and implementation of objects
* Rob K., David Dagenhart, On-line and Off-line managers
* needed by Engineering Run

228 Consulting
Status as of 3/22/00: Consult on implementation related to CDFEDM2, C++, etc.
* Rob K., David Dagenhart, Rich Glosson, David Waters,
* and others. Effort is on-going.

229 Header Banks/objects
Status as of 3/22/00: Header Banks/objects (LRIH, EVCL, etc.)
* Rob K., Liz S-K, and Rick S.
* Run I banks classes done, new LRIH done
* Major overhaul of what was stored in EVCL bank expected,
* the details have not been worked out, nor a person assigned.

230 Raw Data, Calibration, Pedestal Banks
(D, C, P banks)

231 CDF 4152 maintenance and support
Status as of 3/22/00: David Dagenhart, on-going, with slow-down by 5/12

232 Bank accessor functions
Status as of 3/22/00:
* David Dagenhart, Rich Glosson, and Simona Rolli (for Trigger banks)
* began in pre-history, completed by 5/12

233 Bank simulation functions
Status as of 3/22/00:
- Simplify Simulation's task of filling raw data banks
- Includes add_block() and commit() methods
* David Dagenhart has installed constructor(array)
* Related to adapting Simulation software to use
* StorableBanks (now use Generic Banks for some banks).
* unknown who will complete this

234 Bank channel map functions
Status as of 3/22/00:
- Map logical id's to readout element or detector element
- May be should be separated from Banks classes and
treated something like Geometry with database behind it.
* David Dagenhart documented in CDF 4152
* Calorimeters uses CalorKey, but other detectors?
* unknown who will implement this

235 Trigger Banks
Status as of 3/22/00: Trigger Banks (T banks, trigger readout banks)
* Simona Rolli (L1/L2) and Kevin McFarland (L3)
* Some work is progressing in parallel with raw data banks
* For status, see WBS Section 2.12: Trigger Simulation and
WBS Section 2.2.5: Level 3 Modules
* Some needed by MDC-2, others no later than Engineering Run

236 Simulation objects
Status as of 3/22/00: Simulation objects (HEPG, OBSP, OBSV, M banks)
* Pasha Murat
* First version of nearly all Simulation ('M' banks) now
* consistent with Offline.
* Missing StorableBank classes for MCOT and MVTX.
* For status, see WBS Section 2.11: Detector Simulation
* Needed by when???

237 Reconstruction objects
Status as of 3/22/00: Reconstruction objects (Track, Jet, Electron, Photon, Muon)
* Rick S., Pierre S., Muon Group

* Most already exist, improvement and support on-going
* For status, see WBS Section 2.2: Event Reconstruction
* Needed now for algorithm development

238 **Higher-Level Physics objects**
Status as of 3/22/00:
* Henry Frisch and Simona Rolli
* First prototypes appearing in Offline.
* For status, see WBS Section ???
* Needed into Run2

239 **Databases and Constants**
Project Leaders: Rick St. Denis (University of Glasgow) and Mark Lancaster (University College London).

244 **Calorimeter**
Status as of 3/6/00: Basically Done. needs some fixes, a few tables. 1 1/2 months of work.

245 **COT**
Status as of 3/6/00: 3 tables done. Online tables defined.

246 **SVX**
Status as of 3/6/00: table defined: need more. S. nahn. monitoring and offline needs definition. Dead Channel lists an issue. 1 1/2 months.

247 **Muons**
Status as of 3/6/00: 7 tables defined. 4 out of 7 being used. David Dagenhart and Prem did this.

252 **Reconstruction**
Status as of 3/6/00: Exists for Calorimeter, CMX, COT but not SVX.

253 **L3**
Status as of 3/6/00: done in principle, but there are bugs.

259 **Beams**
Status as of 3/6/00: This task should take a month.

260 **Alignment**
Status as of 3/22/00: Nobody currently in charge. Workshop is being planned for april to organize this activity.

267 **Constants**
Status as of 3/6/00: Examples are tracking t0, stage0. Nobody in charge here either.

277 **Export of Database to Remote Institutions**
Status as of 4/1/00: request has been sent to ODS group in computing division for help with the Oracle option for Remote databases.

288 **Event Display**
Project Leader: Dmitry Litvinsev (ITEP Moscow).
This is an ITEP Moscow institutional responsibility.

290 **ROOT Event Display (evd)**
This is the general purpose CDF event display. It is the responsibility of ITEP Moscow, and has been written by Dmitry Litvinsev. Dmitry has the following plans as of 3/27/00
* End of March
  Drawing of Muon Stubs.
*April
 - Technical Note "CDF Run II Event Display"
 - Implementation of CLC on-line monitor
 - Display of RAW Calorimeter Data, view analagous to wedge display in
   Run II (on request of Hans Jensen).
* April - June
 - Hidden Line Removal for complex shapes like: PCON, PGON, SPHERE.
 - Hidden Line Removal for scenes involving shapes and trajectories.
 - Add track information to lego display.
 - Add user interactions like:
     Refit (Track, Vertex)
     Recluster(JETS)
 - Implement mechanism of convenient setting or saving ED options.
* June - August
 - Start Developing Open GL views more extensively, namely: picking
   object sfrom the scene.
 - implement user hooks - ability for user to define and add new objects to ED.
 - interacts with subgroup leaders to define particular requirements, optionally
   elect a contact person or ED developer for given subdetector/project
 - implemnt dipslays on several terminals.

It has been agreed that high priority items are working with the detector subgroups to tailor displays that they are interested in, working with the online and commissioning efforts, and where there isn't much input using DF as a guide to what displays are a minimum requirment.

Dmitry will likely not be working on the Event Display passed September,
but it's maintenance and development remains an ITEP Moscow responsibility.

291 **COT**
Status as of 3/27/00: A 2D COT display exists.

292 Silicon (SVX / ISL)
Status as of 3/27/00: An SVX and ISL display exists.

293 Muons
Status as of 3/27/00: Drawing of Muon Stubs planned for end of March.

294 Calorimeters (LEGO)
Status as of 3/27/00: LEGO display exists. Jet identification abilities on display exist (seperate colors).

295 Central Cal (Wedge)
Status as of 3/27/00: Wedge display of raw calorimeter data planned for April.

296 Plug Cal
Status as of 3/27/00: Needs somebody from the plug group to work with Dmitry on defining usefule plug display other than the general LEGO. Something that would include the preshower and shower max detectors. Dmitry should contact Mike Lindgren for the appropriate person.

297 CLC
Status as of 3/27/00: Dmitry expects to implement Cherenkov Luminosity Counter (CLC) online monitor by mid April 2000.

298 TOF
Status as of 3/27/00: Waiting for Mathew Jones to finish new geometry and write TOF bank before he can read it and create event display.

299 Trigger
Status as of 3/27/00: Dmitry Needs to meet with Trigger people to get their input on useful displays. One suggestion is a lego based trigger display, where triggering objects at level 2 such as jets, muons, electrons, etc. are identified by flagging the energy deposition in the lego with a vertical flag, much like the DF display for run 1.

300 Documentation
Status as of 3/27/00: Extensive documentation already exists on the web at
http://www-cdf.fnal.gov/upgrades/computing/projects/display/EventDisplay.html
but Dmitry is writing a technical note that he expects to complete by end of April.

301 Code and Configuration Management
Project Leader Art Kreymer (CD/PAT)
Project Members Chuck Debaun (CD/OSS)
Andy Beretvas (CD/CDF)

303 CVS Repository management
Status as of 4/3/00: This includes registration, creation of packages, granting write access, etc. Anonymous cvs access should be ready to deploy in April 2000, will reduce registration burden by allowing users to read repositoy without being registered. Write access will still require registration.

304 SoftRelTools
Status as of 4/3/00: This is Jim Amundson's responsibility estimated at 10% of an FTE. Ongoing maintenance work and improvements. Long outstanding request for "super test release" was satisfied and is being tested by users. A new request (3/00) is to support parallel builds with gmake: building simultaneously on many processors on an SMP machine.

308 Release 3.2.0
Used as base for generation of events for MDC1. Simulation group made patches to this release as necessary, and saved the patches in CVS under cvs tag named "mdc1".

309 Release 3.3.0
Release intended for the first Mock Data Challenge.

310 Release 3.3.1
Release actually used by Mock Data Challenge 1.

311 Release 3.4.0
Standard Release.

312 Release 3.5.0 (MDC2 Simulation)
Status as of 4/3/00: This release is intended to be used for MDC2 Simulation. The tag is scheduled to go in on 4/12/00, the release is intended to be available to the simulation soon after that, and final release for distribution is scheduled 1-2 weeks after that.

313 Release 3.6.0 (MDC2 Reconstruction)
Status as of 4/3/00: Intended for MDC2 Reconstruction, the tag is scheduled for May 29, and the release should be available to the reconstruction farms soon after that, and should be generally distributable 1-2 weeks later.

314 Release 3.7.0 (Commisioning Run)
Status as of 4/3/00: Release intended for reconstruction during commissioning run. Tag is on August 1, intended to be available on August 15.

316 Field Support
Support for distribution to remote machines of develoment and frozen releases. Art Kreymer and Chuck Debaun.

317 UPD distribution of releases
Since 1997 we have used scripts that copy and unwind tar files to distribute frozen releases. We have always proposed to distribute the frozen releases using UPD. This is essentially complete. Art hopes to begin testing in April, 2000.

318 Remote Access and Registration
This is to receive a distribution of a frozen release or of development. Ongoing task to register these remote nodes.

319 New Flavors
Ongoing task to incoporate new flavors of operating system into distribution system.

322 Daily Error Reporting
Daily reporting of errors when running jobs, such as core dumps and segmentation faults. Andy Beretvas.

323 Analysis Framework
Project Leader Liz Sexton (Fermilab, PPD/CDF).

326 APPFileInputModule
status as of 4/12/00: Basically done. Little features left. Input ojbect dropping would be nice. aintenance phase. More work when we go to multi-branch root, multi-file oot. May be merged with the data handling input module.

327 APPGenInputModule (done)
Status as of 4/12/00: Code to generate event headers (LRIH, etc.) Might need more work when we have the final trigger scheme.

328 APPLevel3InputModule
Status as of 4/12/00: moved into FrameMods but maintained by Rochester.

329 APPFileOutputModule
Status as of 4/12/00: Status similar to APPFileInputModule. Basically done.

330 Bank List Control
Status as of 4/12/00: Basic functionality is there, but working on extra features such as, only keeping most recently created version of an object, and other things that require multi-branch EDM. See EDM section.

331 Connection to Filters (done)
Keeping events that pass a certain path.

332 APPVegasInputModule (done)
Status as of 4/12/00: something exists from George Velev that seems to work. Unweighting of generated events.

333 EventMixMods
Status as of 4/12/00: Generator level mixing is done. EventMixMods by Todd
Huffman is being developed, mixes E-bank level data for Tracking, Calorimetry and some fraction of the muon chambers.

335 InitModule (done)
Status as of 4/12/00: Still exists but will go away when we switch to the new simulation framework.Replaced by a simulation manager.

337 Error Logger (done)
Status as of 4/12/00: Manages the framework interaction. Has to setup the files for the error logger, keep track of the statistics, provides the talk-to for levels of errors, contacts the framework to find the name of the module. Interacts with ZOOM error logger and framework at the same time: data connection path between the two packages. Done. Could use some talk-to enhancements.

338 CalibrationManager
Status as of 4/12/00: Continuously changing with peoples experience with the database and policies associated with it. For example caching of database constants to allow access for multiple calib runs in a job quickly.

339 GeometryManager
Status as of 4/12/00: Being developed right now. Needs to be done by May 1.
Required for reconstruction and simulation. critical path item.

340 Histogram Manager
Status as of 4/12/00: Liz working on it currently. 1st version done, working on enhancements.Needs to be documented and solid by middle of may.

343 GUI
Status as of 4/12/00: Desirable but not required for the run.

348 persistence of filter results
Status as of 4/12/00: Used for the farms in run 1. Used to select events that have passed a given filter module. Saves the results of the filtering into the datastream so you can go back over your dataset and select on the filter results. Desireable for user analysis.

350 Begin-run Begin-File behaviour
Status of 4/12/00: When you switch runs without a begin run record. No begin file records. Framework will trap changes in run numbers for which there are no begin run records and generate begin run records. That is done. The part that isn't done is that begin run records are available at any time to modules. hook for doing this but it isn't implemented yet. Requested by Rick St. Denis. In the past we put calibration in the begin run record, not necessary with cached calibration. may want trigger info, but that not ready yet. Maybe it will be part of the calibration API. Online data taking conditions, parts of the detector readout, and specialized online need may be added.

351 Processing statistics (done)
Status as of 4/12/00: Done. Ongoing requests.

352 Persistant Processing History
Status as of 4/12/00: Uses RCP. Frameworks interface ot RCP. What module ran with what parameter sets. The event data needs to get tagged this with information. Rich Glosson was working on this originally. Needs to be interfaced into module class. Big job. A couple of months. Need it for the beginning of the
run.

355 Data Handling
Project Leaders Stephan Lammel (Fermilab, CD/CDF)
Terry Watts (Rutgers)

374 Basic
Basic functions include c/s, daemons/chrons.

393 Media and Drives for MDC2
Requisition for AIT2 drives and media signed 4/7/00

422 Production Systems (Farms)
Project Leaders Steve Wolbers (Fermilab, CDF/CDF)
Yen-Chu Chen (Academia Sinica, Taiwan)
The Farms Group is a collaboration of Fermilab CD and Academia Sinica, Taiwan.

437 Tape Drives
Status as of 3/22/00: They will be on fcfdsgi1, and are part of Data Handling Project.

438 Disk
Status as of 3/22/00: On fcdfsgi1, part of Data Handling project.

439 FBS/FIPC
Status as of 3/22/00: FBS (Farms Batch System) In good shape, some new features requested. FIPC (Farms Inter Process Communications) Socket package.

443 Interactions with Oracle DB
Status as of 3/22/00: The farms group will exercise it in April of 2000.

444 MYSQL
Status as of 3/22/00: Installation on cdffarm1 scheduled for April 14, 2000.

445 Farm Control
Farms Software Modules

451 Coordinator
Status as of 3/22/00: Error Handling. The plan is to move the functionality for this

from other modules in existing v1.0 software. 3 FTE-Weeks.

453 Collector
Status as of 3/22/00: Sends file from worker to I/O node. 2 FTE-days.

454 Splitter
Status as of 3/22/00: Splitting on worker nodes instead of I/O nodes. 2 FTE-Weeks. Miroslav reports we can alredy split on worker nodes. Splitting can be done right from executable. Miroslav reports we can split on I/O nodes in parallel. Several files from several worker nodes.

455 Stager
Status as of 3/22/00: Stages files to tape. Basically done, but improvments are necessary. 1 FTE-week

456 Concatenator
Status as of 3/22/00: Concatenates files that are split. split on worker node, concatenate on I/O node. 1 FTE-week. Miroslav thinks this is straightforward. Write to Data File Catalog and uses DHOutputModule. Miroslav Siket.

457 Resource Manager
Status as of 3/22/00: Interface to run the farms being designed by Ping Yeh, Yen-Chu Chen and Miroslav Siket. Responsible for resources: Disk, Networking, CPU. 2-3 FTE Weeks.

458 Bookkeeper
Status as of 3/22/00: Small modifications only. Uses MYSQL. 2 FTE-Weeks. Yen-Chu Chen

462 Event Generators
Project Leader Pasha Murat (Fermilab, CD/CDF).
Need names of responsible parties for all generators, to work on the interfaces between CDF code and generators, and also to do validation. The work list of generators here is actually the list of CDF interfaces to the generators.

463 StdHep
Status as of 3/13/00: Doesn't allow you to work with vecbos, dyrad, etc. Doesn't have place to store generator tag. HEPG format not optimal spacewise.

472 QQ
Status as of 3/13/00: Interface needs to be redone.

474 Tauola
Status as of 3/13/00: Tonya Molique from Perdue. Interface needs to be redone.

477 Detector Simulation
Project Leader Pasha Murat (Fermilab, CD/CDF).

482 Prototype with 1 subdetector
Status as of 3/13/00: The sub-detector used for the prototype will likely be TOF
by Mathew Jones, according to Pasha and Marjorie and Simulation WBS meeting.

485 Geometry database
Status as of 3/13/00: needs to read geometry settings in at run time rather than compile them into the code. Needs to define different alignments without compilation. Tied Alignment issues? Want to store nominal geometry in one place, and alignment in different place. correction for misalignments are closer to calib constants, but still read nominal geometry from somewhere. how do we change a single number if we store it in the database? Where do we want the nominal geometry to be stored so that accessing it is simple for a physicist.

487 Digitization Rewrite
Status as of 3/13/00: The strategy to do this quickly will be to reuse the old
code wherever possible.

491 talk to
Status as of 3/13/00: Going to be redone with a new system of menus. Related to the infrastucture

509 Miniplug
Status as of 3/13/00: This is a standalone program.

510 Central Muons
Status as of 4/5/00: George Velev wrote the simulation originally. read out geom. diff. in simulation and reconstructino CMUD/CMPD/CMXD test & validation responsibility of Mike Gold and Vladimir. CMUE/CMPE/CMXE test & validation done (Prem Singh, Dave Dagenhart, Slava) but more needed. CSPD creation begin written by Govanni Pauletta. Daily validation code. Update the code for the new Simulation Framework.

512 Magnetic Field tuned
Status as of 3/13/00: Nobody responsible. Mike Gold may be interested in this.

515 Intermediate Muons
status as of 4/5/00: IMU test and validation: Prem tested th stub making and till now no bugs found. Further testing by Jim Bellinger.

517 Magnetic Field Map
Status as of 3/13/00: not done. not sure what it means for IMU.

518 Study Stub quality
Status as of 3/13/00: Not sure if this is done because we cant link stubs to tracks.

530 Interface to Geometry DB
DB/alignment questions as always.

541 fix hit generation (change from fortran to C++)
Status as of 3/13/00: Peter Tamburello has some of the hooks needed. This is a big task. needs validation and integration.Bill Ashmanskas may be interested.

542 Put correct material in active COT
Status as of 3/13/00: not done. will use data. Bill Ashmanskas may be interested. Ongoing task.

545 Geometry DB and Misalignments
Status as of 3/13/00: Same Geometry/Alignment issues, and also calib database issues.

548 TOF
Status as of 3/13/00: Needs work for new Geometry Framework. Mathew Jones is doing this.

549 CLC
Status as of 3/13/00: Needs work for new Geometry Framework. Darin Acosta is working on this.

557 Trigger Simulation
Project Leader: Simona Rolli (Tufts)

559 XFTsim
Status as of 3/29/00: Brian Winer. In CVS, development in a week. Compiles and runs under development. Still needs to write output in XFT banks, which are in place. Two driver modules, one uses root, and the other is standard. Root is not acceptable.
560 SVTsim
Status as of 3/29/00: Level 2 SVT Simulation. Lorenzo Moneta and Christian Berclaz from Geneva are writing an offline simulation. Presented an accepted design. Punzi, Ashmansk and others lost contact with them. SVT workshop in early April. Geneve responsible for DB access for SVTsim. Moneta, Berclaz, Punzi and Ashmansk are responsible. Coding begun. Roughly 2 months of coding necessary. Want it by end of May. Want to run it as a first filter in level 3.
561 Calsim (done)
Status as of 3/29/00: Simona Rolli, from Michigan L2 Monica Techio and Heather Ray (student), Level 1 Ray Culbertson, Pedro Amaral from Chicago. Done as of 4/1/00. In testing. Ongoing maintenance.
562 Cmusim
Status as of 3/29/00: Grad studenst from Michigan working on this. Simona assisting. Design almost finished. Start coding soon. About a month to code. Realistically by middle of may should be done. The output bank is done, as with the other simulations.
563 xcesim
Status as of 3/29/00: Argonne (K. Byrum) responsible. Not done.
564 L1 Global and L2 Global
Status as of 3/29/00: Collects input from various L1 subsystems and produce scaler and TL1D bank. Interacts with parser. Greg Field from Yale responsible for L1 Stephen Miller and Ken Bloom responsible for L2: produces TL2D.

565 XTRP
Status as of 3/29/00: Extrapolator from track to stub. XTRP boards simulation.
nobody is assigned to this.
566 Parser
Status as of 3/29/00: Fully specifies the trigger in a language that the simulation can understand. Reads DB to get list of triggers, and instructs simulation what the list of triggers are. Requires Stephan miller and Kirsten Tollefson to have a design for the trigger database. A level 3 parser exists but is not needed here where we need a level 1 and 2 parser. Critical path item for the experiment that the parser does not exist. Responsibility of upgrade; steve miller and kirsten.
567 Database Access
Status as of 3/29/00: Simulation needs to access the trigger database, calibration, run conditions. Wants to have one person working on database issues only. Same as parser.

568 Validation
Status as of 3/29/00: Code that runs to verify that simulation of trigger looks like real trigger.
1. validation from andy.
2. engineering run, does sim agree with data.
3. march 2001 repeat 2.
connected with work going on in trigmon. validating caltrigger in trigmon. Simona will supply tcl to run caltrigger, etc. for andy. ongoing task.
569 Training
Project Leader: John Yoh (Fermilab, PPD/CDF).
570 Coding Standards (done)
Status as of 4/3/00: Done and available on web at http://cdfsga.fnal.gov/computing/coding_guidelines/