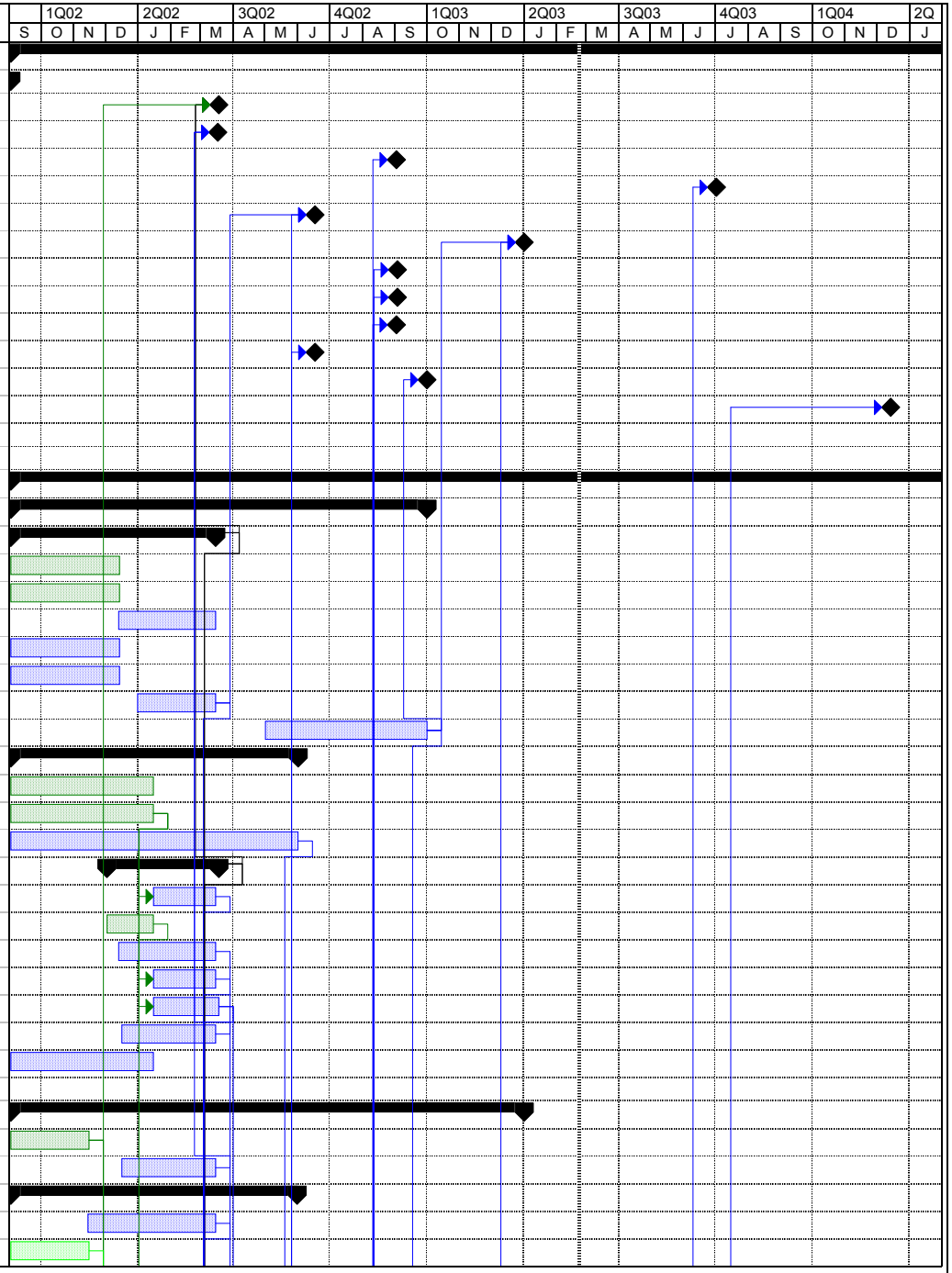
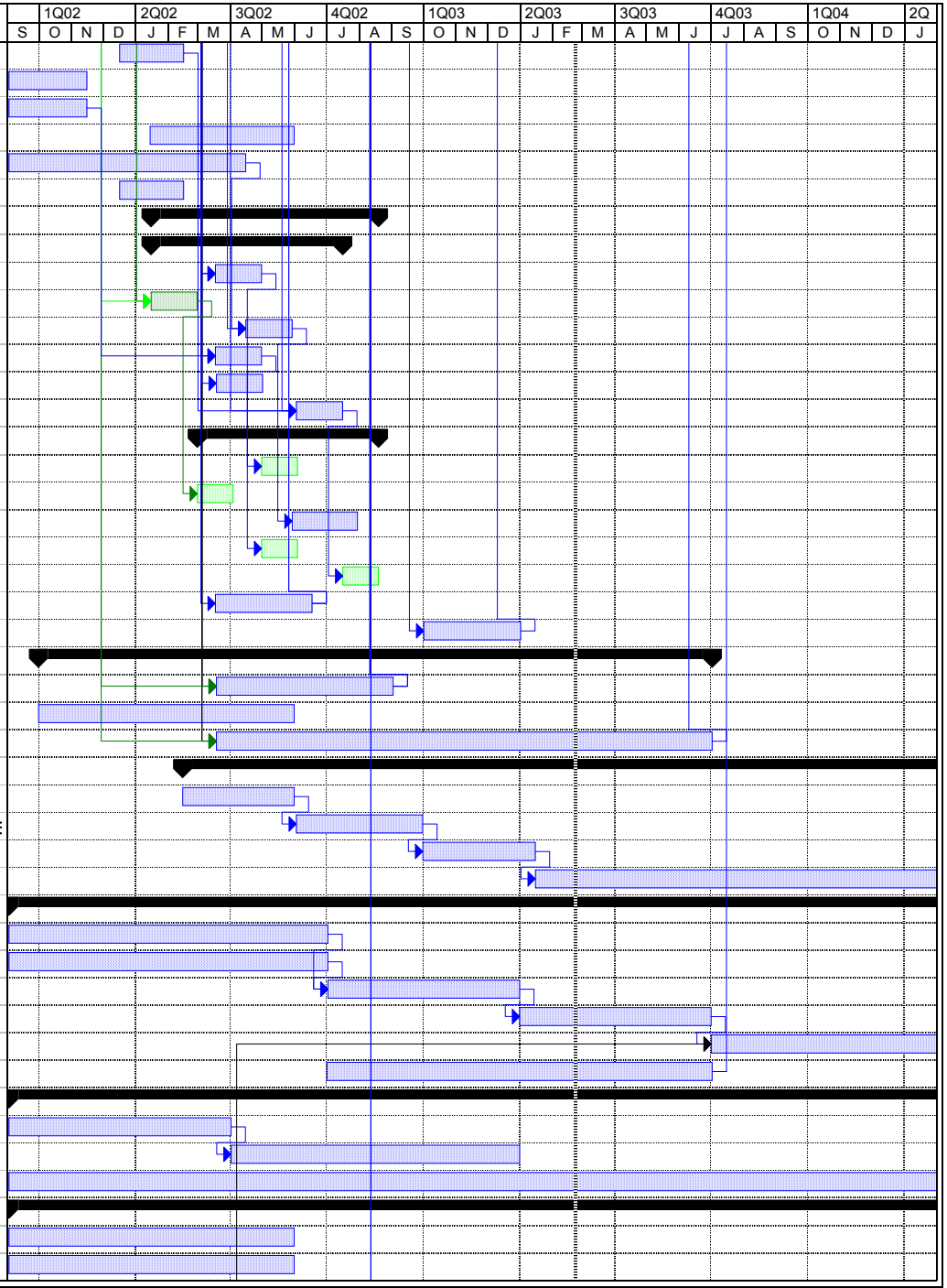
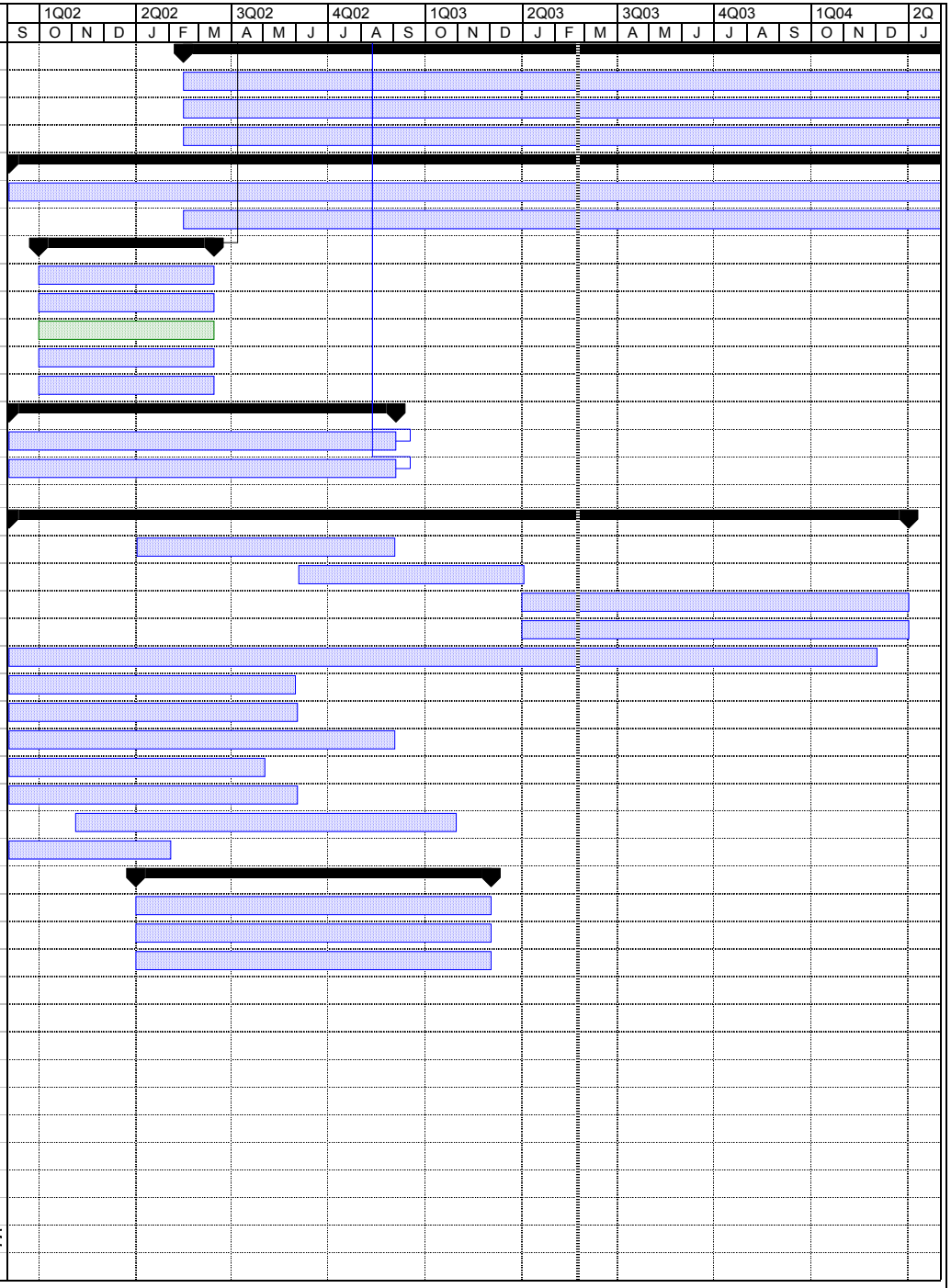
ID	WBS	Task Name
1	a	***Application / User Level Milestones***
2	a.1	project begin
3	a.2	Grid jobs on local systems at LBNL, ANL, ORNL, PNNL
4	a.3	Grid jobs on NERSC non-prod. Resources
5	a.4	Grid tertiary stroage access at NERSC
6	a.5	Grid tertiary stroage access at PNNL
7	a.6	Jobs across the federated Science Grid
8	a.7	Jobs across the scalable Science Grid
9	a.8	Proto user: Cosmology supernova search
10	a.9	Proto user: Regional Air Quality
11	a.10	Collaboratory: Earth Sciences Grid
12	a.11	Collaboratory: STAR
13	a.12	Bulid virtual orgs.
14	a.13	Fault tolerant job execution
15	a.14	project end
16		
17	b	***Deployment and Development***
18	b.1	**Grid Information Services**
19	b.1.1	**GIS installed at each Lab**
20	b.1.1.1	ANL
21	b.1.1.2	LBNL
22	b.1.1.3	NERSC
23	b.1.1.4	ORNL
24	b.1.1.5	PNNL
25	b.1.2	GIS cross Lab federation (index node + referals)
26	b.1.3	Sci Grid integration with ESNet global GIS (LBNL/ESNet)
27	b.2	**Certification Authroity**
28	b.2.1	inter-Lab X.509 certificate policy
29	b.2.2	ESNet prototype Science Grid CA
30	b.2.3	ESNet production Science Grid CA
31	b.2.4	**RAs established fort each Lab**
32	b.2.4.1	ANL
33	b.2.4.2	LBNL
34	b.2.4.3	NERSC
35	b.2.4.4	ORNL
36	b.2.4.5	PNNL
37	b.2.5	CA installed at NERSC or NERSC uses ESNet
38	b.2.6	integration with ESNet root CA (LBNL/ESNet)
39		
40	b.3	**Deploy Globus**
41	b.3.1	initial Globus 2.0 install at each Lab
42	b.3.2	initial Globus installed at NERSC
43	b.3.3	**Incorporate computing resources**
44	b.3.3.1	? at ANL
45	b.3.3.2	Sun SMPs at LBNL



ID	WBS	Task Name
46	b.3.3.3	Aix at PNNL
47	b.3.3.4	Linux Cluster at PNNL
48	b.3.3.5	Sun and Linux at ORNL
49	b.3.3.6	cluster at ORNL
50	b.3.3.7	Linux cluster (Alvarez) at NERSC
51	b.3.3.8	IBM SP at NERSC
52	**b.3.4**	**Globus cross Lab operation**
53	**b.3.4.1**	**Globus availabable on SciGrid resources for local jobs**
54	b.3.4.1.1	ANL
55	b.3.4.1.2	LBNL
56	b.3.4.1.3	NERSC
57	b.3.4.1.4	ORNL
58	b.3.4.1.5	PNNL prototype
59	b.3.4.1.6	PNNL production
60	**b.3.4.2**	**Globus submitting jobs to remote SciGrid resources**
61	b.3.4.2.1	ANL
62	b.3.4.2.2	LBNL
63	b.3.4.2.3	NERSC
64	b.3.4.2.4	ORNL
65	b.3.4.2.5	PNNL
66	b.3.5	Globus cross Lab operation w/ federated GIS
67	b.3.6	Globus in a scalable Science Grid (searchable GIS tree)
68	**b.4**	**Grid Tertairy Storage**
69	b.4.1	Probe/HPSS + GSIFTP at NERSC
70	b.4.2	?? NERSC Probe configured to access data in prod. HPSS
71	b.4.3	MSS@PNNL + GridFTP
72	**b.5**	**Security Infrastructure**
73	b.5.1	develop Grid security model (all)
74	b.5.2	design and implement security monitoring for secure Grid syste
75	b.5.3	implement Grid security model (all)
76	b.5.4	ongoing security monitoring
77	**b.6**	**Auditing and Fault Monitoring (ORNL)**
78	b.6.1	job monitoring techniques
79	b.6.2	resource utilization auditing techniques
80	b.6.3	deploy on Sci Grid resources
81	b.6.4	resource usage data mgmt and accounting
82	b.6.5	allocation mgmt
83	b.6.6	fault notification and response
84	**b.7**	**User Services (PNNL)**
85	b.7.1	develop user system config. model
86	b.7.2	deploy Sci Grid install pkg. for config. model
87	b.7.3	Application Integration Support
88	**b.7.4**	**Helpdesk support**
89	b.7.4.1	first level troubleshooting capability
90	b.7.4.2	deploy integrated trouble ticket system (ESHQ)



ID	WBS	Task Name
91	**b.7.4.3**	**User Education**
92	b.7.4.3.1	tutorials for the SciDAC community
93	b.7.4.3.2	user documentation (Quick Start Guide)
94	b.7.4.3.3	develop application / Grids integration case studies
95	**b.8**	**Grid system services /Science Grid issues (all)**
96	b.8.1	Science Grid deployment Working Group
97	b.8.2	develop Grid system admin. tools
98	**b.8.3**	**resource owner allocation agreements**
99	b.8.3.1	ANL
100	b.8.3.2	LBNL
101	b.8.3.3	NERSC
102	b.8.3.4	ORNL
103	b.8.3.5	PNNL
104	**b.9**	**Applications**
105	b.9.1	Cosmology job mgmt integrated (LBNL)
106	b.9.2	Regional air qulaity job mgmt integrated (LBNL)
107		
108	**c**	**Integrate R&D from other projects**
109	c.1	CoG tools and Web interface
110	c.2	Data replica management
111	c.3	STACS tertiary storage management
112	c.4	Cache management
113	c.5	Workflow management
114	c.6	Grid Mon. Arch. Network monitoring
115	c.7	CPU Resource reservation
116	c.8	Certificate based access control
117	c.9	CAS / Restricted delegation
118	c.10	Condor-G
119	c.11	PUNCH
120	c.12	GPDK (application portal toolkit)
121	**c.13**	**GridFTP on MSS**
122	c.13.1	Extensions to GridFTP
123	c.13.2	HPSS
124	c.13.3	ADSM
125	c.13.4	Parallel filesystem (SAN)
126	c.13.5	GUPFS
127	**c.14**	**longer term**
128	c.14.1	HRM
129	c.14.2	brokering
130	c.14.3	execution environment management
131	c.14.4	CCA
132	c.14.5	Instrument integration
133	c.14.6	WebDAV
134	c.14.7	dynamic application / Web service aggregation (e.g. IBM WebS
135	c.14.8	generalized data subscription, publication, selection