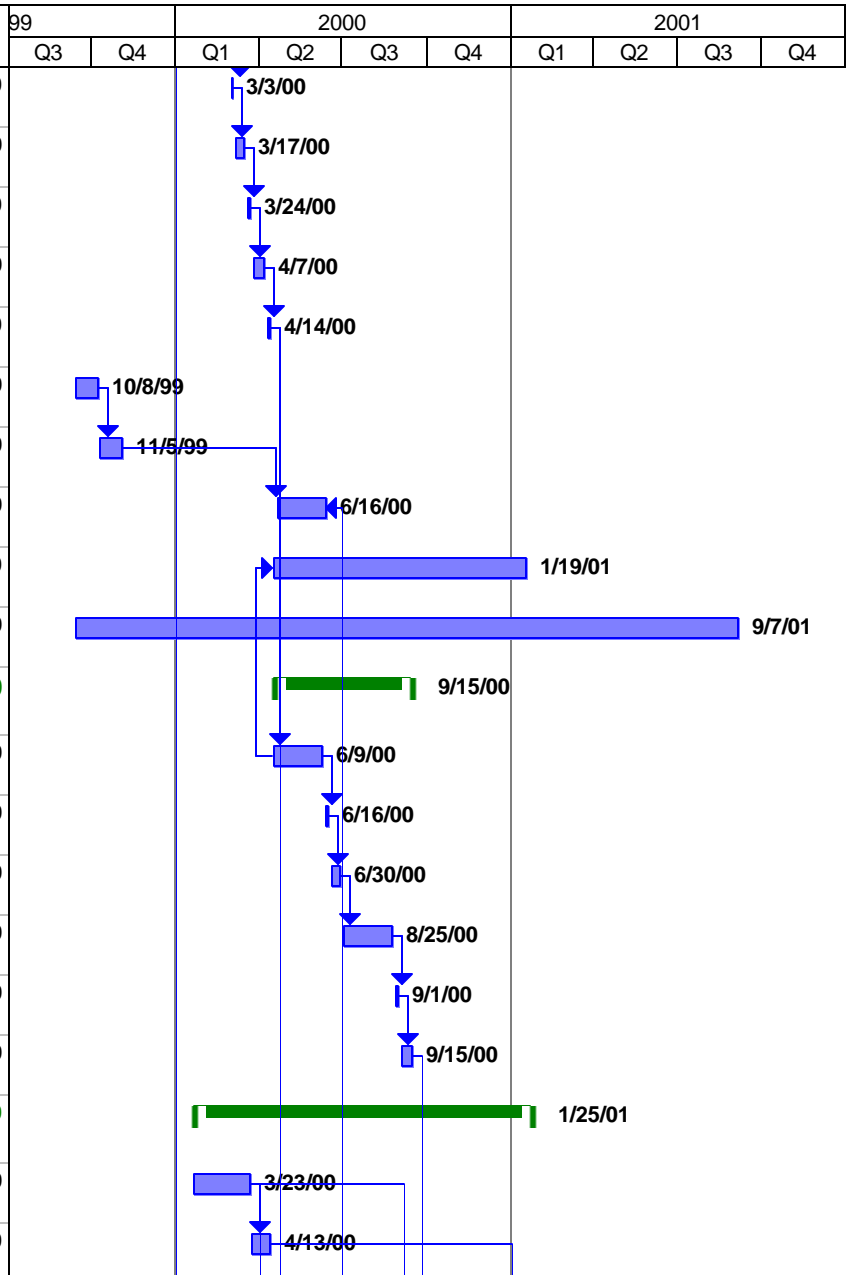


## NLC Controls Software R & D Project

ID	Task Name	Duration	Total Cost	99				2000				2001			
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
1	<b>NLC Control Software R&amp;D Project</b>	<b>120 wks</b>	<b>\$228,000</b>	[Purple bar spanning from start of 99 to end of 2001]											
2	<b>Requirements</b>	<b>46.8 wks</b>	<b>\$8,000</b>	[Green bar from start of 99 to 8/3/00]											
3	Send 1-2 people to "Requirements Management with Use Cases" Class.	0.5 wks	\$1,400	[Blue arrow pointing to 11/3/99]											
4	Send one or two people to "Rational RequisitePro"	0.2 wks	\$600	[Blue arrow pointing to 11/18/99]											
5	Teach the rest of us what was learned and establish our Requirements standards	2 wks	\$0	[Blue arrow pointing to 12/2/99]											
6	3 Copies of RequisitePro. 1-3 people will maintaining THE requirements documents.	1 wk	\$6,000	[Blue arrow pointing to 12/9/99]											
7	Document SLC functional Requirements	6 wks	\$0	[Blue box from 10/22/99 to 11/18/99]											
8	Develop requirements standard for NLC documents	1 wk	\$0	[Blue arrow pointing to 10/29/99]											
9	Assemble, format and analyze the initial SLC requirements list	6 wks	\$0	[Blue box from 10/29/99 to 1/20/00]											
10	Derive NLC Requirements from SLC functional description	12 wks	\$0	[Blue box from 1/20/00 to 4/13/00]											
11	Update, review and analyze the requirements. This is ongoing.	16 wks	\$0	[Blue box from 4/13/00 to 8/3/00]											
12	<b>Techniques, Tools and Environments</b>	<b>104 wks</b>	<b>\$126,500</b>	[Green bar from start of 2000 to 9/7/01]											
13	ClearCase Fundamentals Class. Send 2 people 1 UNIX and 1 NT to evaluate and	0.2 wks	\$2,000	[Blue arrow pointing to 1/21/00]											
14	Group presentations, evaluate, recommend ClearCase vs CVS + tools.	2 wks	\$0	[Blue arrow pointing to 2/4/00]											
15	Install a document version control system	3 wks	\$0	[Blue arrow pointing to 2/25/00]											
16	Evaluate Commercial and free Java tools, present and recommend	2 wks	\$0	[Blue arrow pointing to 1/14/00]											
17	Purchase Java development tools for the group	1 wk	\$2,500	[Blue arrow pointing to 1/21/00]											
18	Bring in an instructor to teach a Java to the group	1 wk	\$8,000	[Blue arrow pointing to 2/4/00]											
19	OO Analysis & Design class with UML for 6 people	1 wk	\$10,000	[Blue arrow pointing to 2/25/00]											
20	Introduction to Rational Rose 98i class	0.5 wks	\$5,000	[Blue arrow pointing to 3/1/00]											

## NLC Controls Software R & D Project

ID	Task Name	Duration	Total Cost	99		2000				2001								
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
21	Rational Unified Process Class. Send 2 people to evaluate	0.5 wks	\$4,000															
22	Group presentations, evaluate recommend Rational Unified Process method.	2 wks	\$0															
23	Send 2 people to the Rational Suite Quickstart Team Workshop	1 wk	\$5,000															
24	Evaluate, present & recommend which Rational Suite family products to use.	2 wks	\$0															
25	Purchase the required # of seats for the selected Rational tools.	1 wk	\$10,000															
26	Evaluate products for managing development of distributed object	4 wks	\$0															
27	Write a requirements spec for our distributed development multi-lab	4 wks	\$0															
28	Implement an R & D subset of the ultimate development environment based on	8 wks	\$0															
29	Hire/Contract an OO Mentor	40 wks	\$80,000															
30	EPICS installation, maintenance & Update	104 wks	\$0															
31	<b>Systems Analysis &amp; Overall Design</b>	<b>22 wks</b>	<b>\$0</b>															
32	High-level Systems Analysis	8 wks	\$0															
33	Review key system specifications	1 wk	\$0															
34	Update & write formal document	2 wks	\$0															
35	High-level system design (system objects)	8 wks	\$0															
36	Review	1 wk	\$0															
37	Publish Version 1.0 high-level system design	2 wks	\$0															
38	<b>CORBA/DCOM</b>	<b>53 wks</b>	<b>\$4,000</b>															
39	install a freeware (Tao?) CORBA package on our UNIX & NT servers. Test & evaluate	9 wks	\$0															
40	Install & evaluate payware CORBA	3 wks	\$4,000															







## NLC Controls Software R & D Project

ID	Task Name	Duration	Total Cost	99		2000				2001					
				Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
81	EDD/DM grand wish list requirements: to interface with CORBA, Database, CA on	6 wks	\$0			3/2/00									
82	Understand and get copies of previous and current EPICS efforts.	4 wks	\$0			2/17/00									
83	UML based high-level design of display generation and processing	4 wks	\$0			4/20/00									
84	Detailed design of those parts to initially implement.	8 wks	\$0			6/15/00									
85	Implement and test initial version. Iterate detailed design & implement.	8 wks	\$0			8/10/00									
86	Define & perform tests. group presentation, document the results.	4 wks	\$0			9/7/00									
87	Maintain, improve production releases. Probably an ongoing effort.	52 wks	\$0											9/6/01	
88	<b>Documentation</b>	<b>89.2 wks</b>	<b>\$0</b>												
89	Accumulate the NLC Control System Basic Implementers Guide (BIG).	10 wks	\$0											11/	
90	Define and write coding standards (C++, Java)	3 wks	\$0												
91	Define CORBA coding standard	2 wks	\$0			4/6/00									
92	Define R&D component design document standards	1 wk	\$0			4/21/00									
93															
94	<b>Miscellaneous</b>	<b>24 wks</b>	<b>\$0</b>												
95	The Object/Web technology will continue to evolve as we learn. We need to keep	16 wks	\$0												
96	Keeping our development Web current and accurate needs constant effort. Ongoing.	24 wks	\$0												
97	Get HyperNews code and expertise from BaBar and implement a server for NLC	8 wks	\$0												