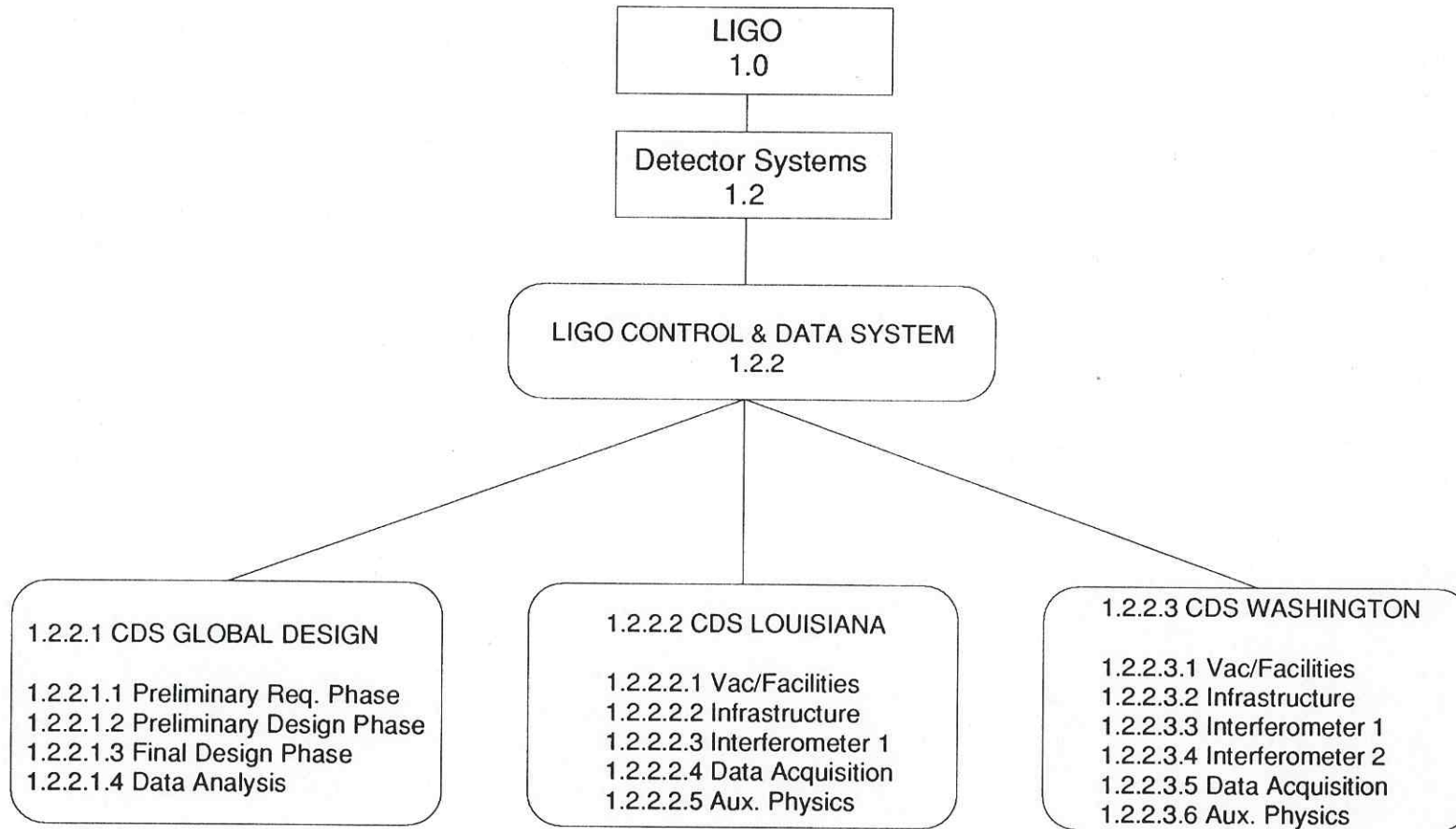


## CDS COST ESTIMATE

- **SCOPE : All labor and procurement costs associated with producing a CDS for LIGO, including:**
  - Design
  - Equipment
  - Installation
  - Acceptance testing
  
- **METHOD**
  - Bottom-up cost estimate
  - Loaded into and calculated by AutoPlan II™
    - Entered WBS and activities
    - Developed and loaded resources into activities
    - AutoPlan calculated schedule and costs
  - Reconciled with LIGO baseline cost estimate and schedule

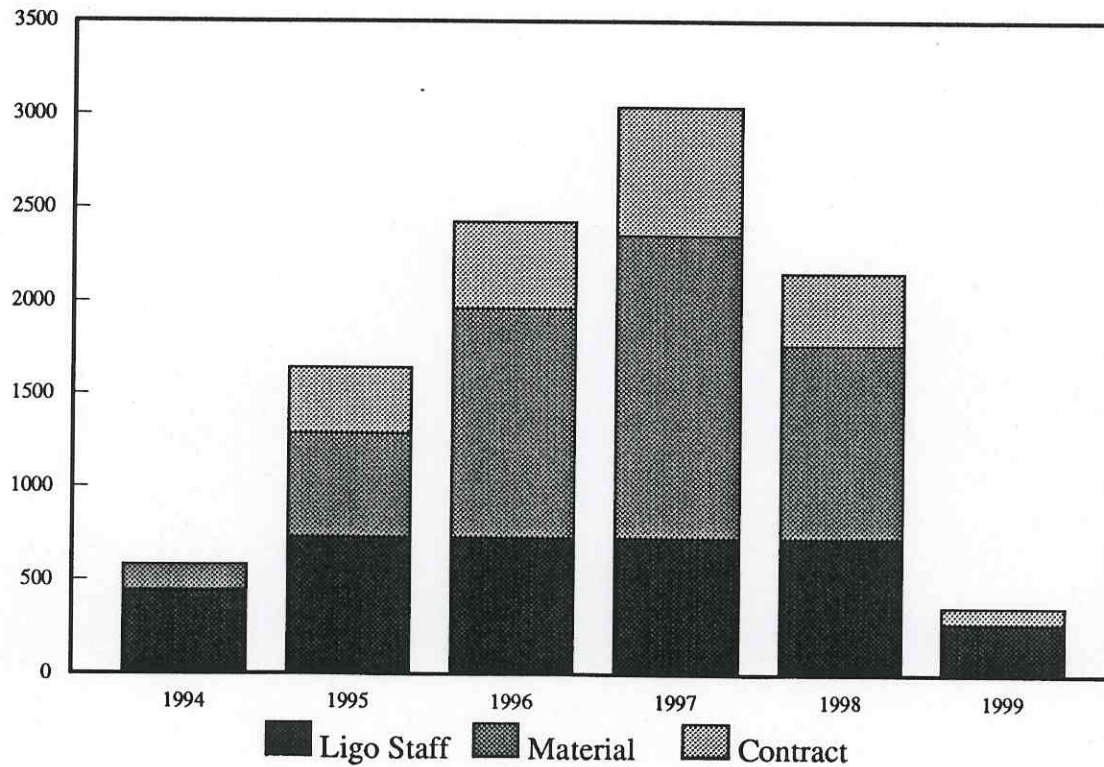
# LIGO CDS WBS

•  
•



### CDS LEVEL 3 COST ESTIMATE AND DISTRIBUTION (1994 \$K)

WBS Number	Name	In-house Labor	Equipment	Contract	Total
1.2.2.1	CDS Design	1525.7	798.0	445.8	2769.5
1.2.2.2	CDS LA	994.8	1658.6	892.2	3545.6
1.2.2.3	CDS WA	1094.1	2148.3	631.0	3873.4
<b>Totals</b>		<b>3614.6</b>	<b>4604.9</b>	<b>1969.0</b>	<b>10188.5</b>



Prepared By : R. BORK

Company :

Project : CDS30

- CDS

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### LIGO CDS - LEVEL 4 ACTIVITY REPORT

Activity Name	WBS Code	Act Type	Dur	Prf Start	Prf Finish	Budget Cost
CDS	0:CDS30	S	267.40W	06/02/94	07/19/99	10188560.00
CDS - GLOBAL	0.1:0012	S	812.00D	06/02/94	07/11/97	2769500.00
PRELIMINARY REQ. PHASE	0.1.1:0016	S	90.00D	06/02/94	10/05/94	262800.00
PRELIMINARY DESIGN PHASE	0.1.2:0022	S	300.00D	07/14/94	09/06/95	1599800.00
FINAL DESIGN PHASE	0.1.3:0043	S	220.00D	09/07/95	07/10/96	807900.00
Data Analysis Sys	0.1.4:0103	S	100.00D	02/24/97	07/11/97	99000.00
CDS - LOUISIANA	0.2:0013	S	556.00D	12/28/95	02/12/98	3545640.00
LA VAC/Facilities	0.2.1:0053	S	396.00D	01/25/96	07/31/97	630320.00
LA INFRASTRUCTURE	0.2.2:0054	S	376.00D	12/28/95	06/05/97	822620.00
LA INTERFEROMETER 1	0.2.3:0056	S	323.00D	08/27/96	11/20/97	939700.00
LA DATA ACQUISITION	0.2.4:0057	S	300.00D	08/27/96	10/20/97	976880.00
LA AUX. PHYSICS	0.2.5:0059	S	140.00D	07/29/97	02/09/98	176120.00
LA CDS COMPLETE	0.2.6:0062	M	0.00D	02/12/98	02/12/98	
CDS - WASHINGTON	0.3:0080	S	561.00D	04/11/97	06/04/99	3873420.00
WA VACUUM	0.3.1:0053A	S	341.00D	04/11/97	07/31/98	583340.00
WA INFRASTRUCTURE	0.3.2:0054A	S	301.00D	04/11/97	06/05/98	780620.00
WA INTERFEROMETER 1	0.3.3:0056A	S	300.00D	11/21/97	01/14/99	939700.00
WA INTERFEROMETER 2	0.3.4:0094	S	240.00D	04/10/98	03/11/99	612960.00
WA DATA ACQUISITION	0.3.5:0057A	S	280.00D	04/20/98	05/14/99	795280.00
WA AUX. PHYSICS	0.3.6:0059A	S	121.00D	10/23/98	04/09/99	161520.00
WA CDS COMPLETE	0.3.7:0062A	M	0.00D	06/04/99	06/04/99	
External Milestones	0.4:0070	S	249.20W	10/07/94	07/19/99	

## CDS SCHEDULE

- **1994**
  - **Preliminary Requirement Specifications / Designs**
  - **Development systems for “dry” prototyping**
- **1995**
  - **40M prototype installations/tests**
  - **Final Vac/Facilities control system and CDS Infrastructure designs**
  - **Begin final interferometer and data acquisition system designs**
- **1996**
  - **Procure LA Vac/Facilities and infrastructure components; begin installation**
  - **Complete final designs for interferometer control and data acquisition systems**
- **1997**
  - **Complete LA Vac/Facilities and Infrastructure**
  - **Procure and begin installation of LA interferometer controls and data acquisition systems**
  - **Begin WA Vac/Facilities and Infrastructure installation**
- **1998**
  - **Complete LA CDS**
  - **Complete WA Vac/Facilities and Infrastructure**
  - **Begin installation of WA Interferometer and data acquisition systems**
- **1999**
  - **Complete WA CDS**