

LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY
- LIGO -

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Naming Convention and Interface Definition for SUS		
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DRAFT

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1 NAMING CONVENTION FOR THE SUSPENSION COMPONENTS

The naming convention for the suspension components is shown in Fig. 1.

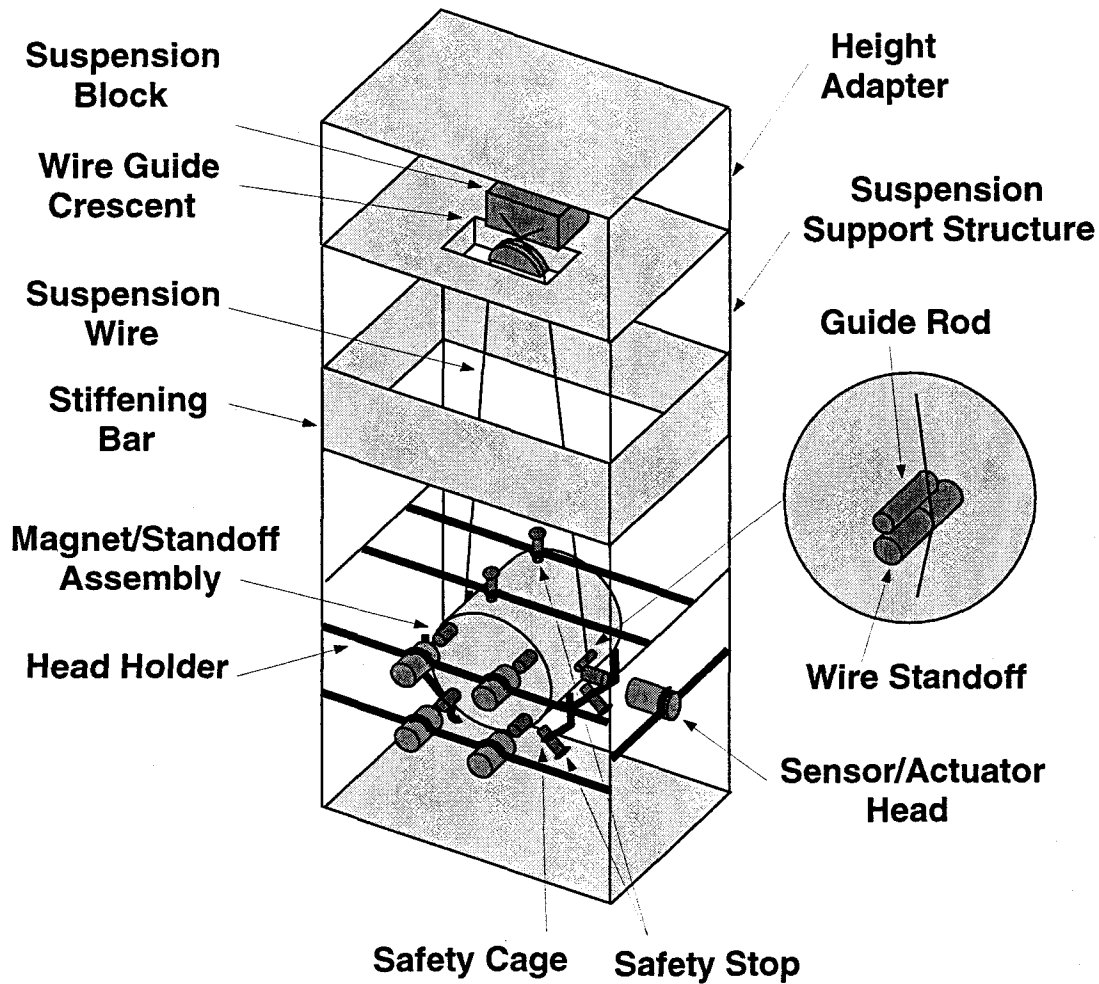


Figure 1: Naming convention for the suspension components. The height adapter exists only for the suspension for the BSC chamber, not for the HAM chamber. The whole assembly is called Suspension Assembly.

2 MECHANICAL INTERFACES

The mechanical interfaces between SUS and other detector subsystems are shown in Fig. 2 and Table 1.

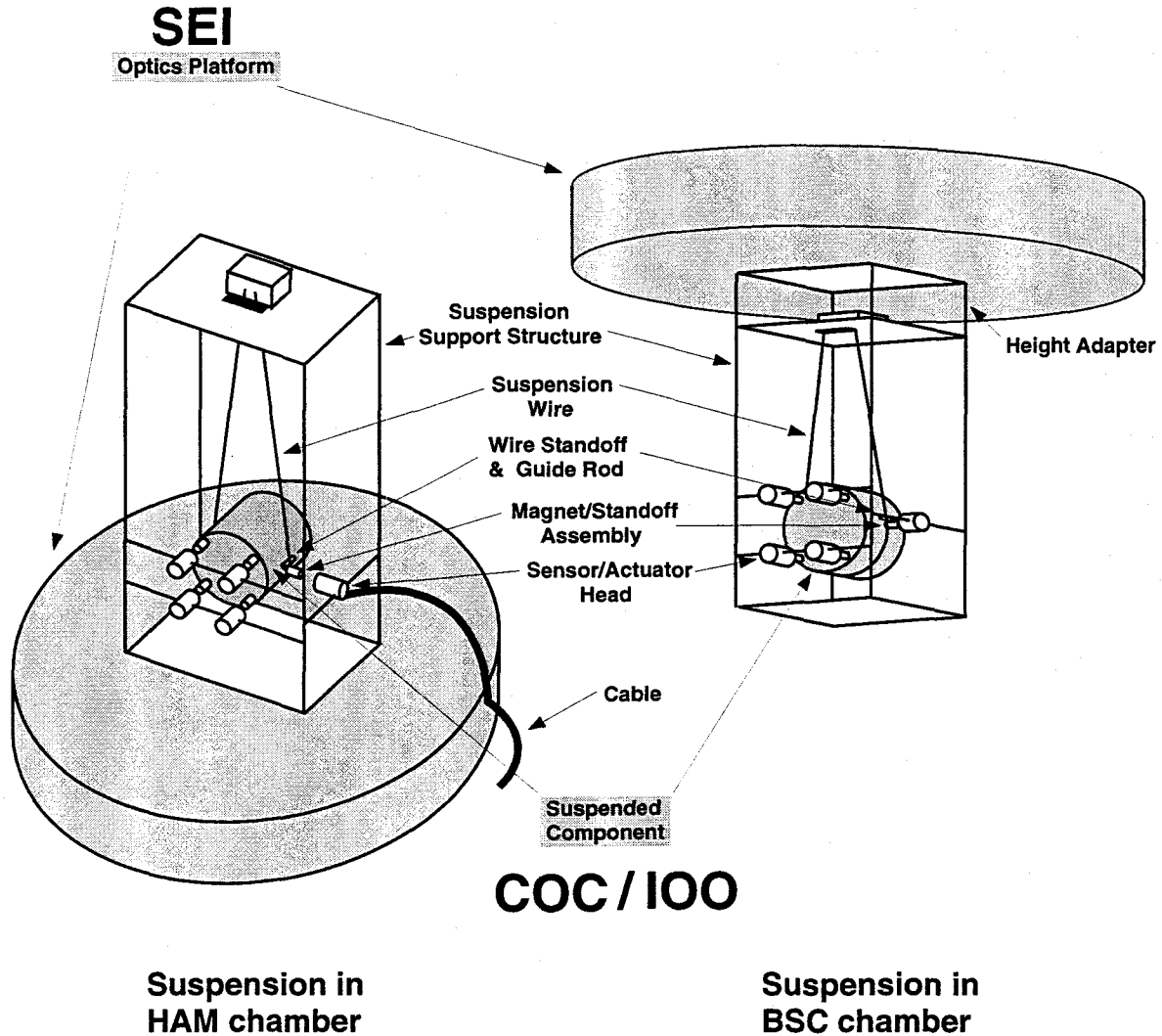


Figure 2: Mechanical interfaces between SUS and other detector subsystems (Left: the suspension system in the HAM chamber; Right: the suspension system in the BSC chamber). The objects and their names belonging to other subsystems are shaded.

<i>Mechanical Mounting Interfaces</i>			<i>Drawing/ Doc #</i>
<i>SUS Mounting Surface</i>	<i>Other Subsystem Mounting Surface</i>	<i>Interface and its Characteristics</i>	
Top Plate of Height Adapter	BSC Optics Platform (SEI)	Bolts	
Bottom Plate of Suspension Support Structure	HAM Optics Platform (SEI)	Bolts	
Suspension Wire	Suspended Component (COC/IOO)	Friction	
Wire Standoff and Guide Rod	Suspended Component (COC/IOO)	Glue	
Magnet/Standoff Assembly	Suspended Component (COC/IOO)	Glue	
Safety Stop	Suspended Component (COC/IOO)	Holding only when transferring	
Cable	Optics Platform and Mass Element	Clamp	
<i>Critical Dimension/Size</i>			<i>Drawing/ Doc #</i>
Height of the center of suspended components relative to the bottom surface of the BSC Optics Platform (SYS)			
Height of the center of suspended components relative to the top surface of the HAM Optics Platform (SYS)			
Clear aperture of the suspended components (COC, IOO)			
Maximum size of the suspension support structure (ASC)			
Maximum weight of the suspension (SEI)			

Table 1: Mechanical interfaces between SUS and other detector subsystems

3 SIGNAL INTERFACES

The signal interfaces between SUS and other detector subsystems are shown in Fig. 3 and Table 2.

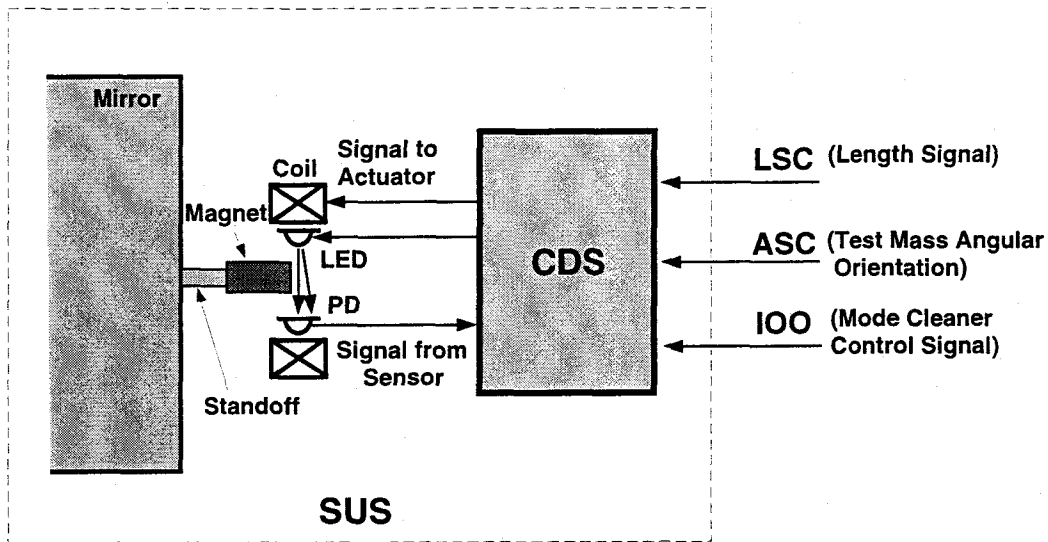


Figure 3: Diagrams showing signal interfaces between SUS and other detector subsystems

<i>SUS Control Signals</i>	
Inputs	
<ul style="list-style-type: none"> • Length signal (LSC) • Test mass angular orientation (ASC) • Mode cleaner control signal (IOO) 	
Outputs	
<ul style="list-style-type: none"> • Signal to stack support actuator (LSC,ASC) 	

Table 2: Signal interfaces between SUS and other detector subsystems

4 OPTICAL INTERFACES

There is no optical interfaces between SUS and other detector subsystems.

5 INTERFACES BETWEEN SUS AND SYSTEMS EXTERNAL TO THE DETECTOR (FAC/VE)

TBD