



LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY
RECORD OF DECISION/AGREEMENT (RODA)

Document	LIGO-M 040091-00 -Y	
Date:	23 March 2004	
Title:	RODA: Covers for AdL Optics	
To the Attention of:	COC: GariLynn Billingsley, Bill Kells, Helena Armandula, Gregory Harry IO: David Reitze, David Tanner SUS: Norna Robertson, Dennis Coyne SUS/US: Janeen Romie, Calum Torrie SUS/UK: Caroline Cantley, Justin Greenhalgh Systems: Dennis Coyne, Peter Fritschel, David Shoemaker, Carol Wilkinson	
cc:	aligo_sus, aligo_io, aligo_sys	
From/signatories:	Name/Title:	Helena Armandula (COC Coatings Leader) Signature: _____
	Name/Title:	Gregory Harry (COC Coating Cog. Scientist) Signature: _____
	Name/Title:	Dennis Coyne Signature: _____
	Name/Title:	Norna Robertson Signature: _____
	Name/Title:	David Reitze Signature: _____
	Name/Title:	Dennis Coyne (System Engineer) Signature: _____
	Name/Title:	Signature: _____
System(s) affected:	<input type="checkbox"/> Initial LIGO <input checked="" type="checkbox"/> Advanced LIGO <input type="checkbox"/> Other: _____	
Nature/Scope:	<input checked="" type="checkbox"/> Design Decision <input type="checkbox"/> Requirements Decision <input type="checkbox"/> Work Scope Decision <input type="checkbox"/> Working Agreement between Groups <input checked="" type="checkbox"/> Other effects the interface	
Subsystem(s) affected	<input checked="" type="checkbox"/> Relevant Subsystem(s)/Component(s): Suspension (SUS) subsystem Core Optics Components (COC) Input Optics (IO) subsystem	
Primary Contacts	Group or Affiliation and Contact Caltech / Helena Armandula	

Reference Documents:	
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DECISION/AGREEMENT STATEMENT:

Background

There is evidence that prolonged room/lab air exposure of the optics after coating causes a degradation in performance (increase in absorption and scattering loss). Cleaning processes used to date also appear to degrade optical performance (due to a residual film or etching of the coatings). While we recognize the fact that optics cleaning, of surface films and/or particulates, at the observatories (and possibly in situ in a chamber) is likely to be required during the complete life cycle of an optic, we wish to minimize such occurrences.

Likewise, it is a known that every time one handles glass or glass gets placed on a fixture, there is a chance of chipping or breakage. Consequently handling of Adv. LIGO mirrors will be done with a minimum of moves and fixtures.

Optics/Suspension interface decision

The mirrors will be covered, after inspection, at the coating facility. The covers, designed and manufactured to maintain the optics clean, free of particles, will not be removed unless absolutely necessary.

These covers need to be incorporated into the "mass catcher" SUS design, as well as all tooling and procedures related to the assembly and handling of the suspensions. The COC "ergonomic" arm will interface to the optics cover.

IDEALLY NEED A DRAWING WITH DIMENSIONS – IS THIS POSSIBLE?