



LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

RECORD OF DECISION/AGREEMENT (RODA)

Document	LIGO-M <input type="text" value="M060043-01"/> _Y	
Date:	<input type="text" value="30 October 2007"/>	
Title:	RODA: <input type="text" value="Determine need for OSEM sensors for UIM and PUM in the ETM and ITM and determine need for OSEM cable electrical shielding"/>	
To the Attention of:		
cc:		
From/signatories:	Name/Title: <input type="text" value="Norna Robertson, SUS Leader"/>	Signature: _____
	Name/Title: <input type="text" value="Justin Greenhalgh, SUS/UK Project Manager"/>	Signature: _____
	Name/Title: <input type="text" value="Peter Fritschel, ISC Leader"/>	Signature: _____
	Name/Title: <input type="text"/>	Signature: _____
	Name/Title: <input type="text"/>	Signature: _____
	Name/Title: <input type="text"/>	Signature: _____
System(s) affected:	<input type="checkbox"/> Initial LIGO <input checked="" type="checkbox"/> Advanced LIGO <input type="checkbox"/> Other: <input type="text"/>	
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 type="checkbox"/> Other <input type="text"/>	
Subsystem(s) affected	<input type="checkbox"/> Relevant Subsystem(s)/Component(s): <input type="text" value="SUS/UK"/> <input type="text" value="ISC"/> <input type="text"/>	
Primary Contacts	<input type="text" value="SUS/UK: Justin Greenhalgh"/> Group or Affiliation and Contact	
Reference Documents:		

DECISION/AGREEMENT STATEMENT:

It has been proposed that for the ETM and ITM we will not fit sensors to the OSEMs on the penultimate and upper intermediate masses. However, following experience on the controls prototype, there is concern that the OSEM sensors will be required for the assembly and alignment of the suspension.

This RODA records agreement on the following decision process.

- For the N-Ptype, the sensors will be included on the global control OSEMs but we will try to avoid using them during assembly and alignment of the suspension.
- Decide whether the N-Ptype can be assembled without using the sensors in the OSEMs.
- If that is so, OSEM sensors will be omitted from the production SUS (this may require a change to the flexi-rigid board).
- If not, then we will need sensors in the production SUS OSEMs – but they will not need full-time low noise electronics; a simple local unit will suffice (and be much easier to use than the full-blown system). A check would need to be made on plug/wiring provision.

Experience with the controls prototype also showed that the stiffness of the wiring (pigtails) leading to the global control OSEMs was an issue. This stiffness is mostly due to the shielding of the wiring. However, there is concern that the ESD may interfere with the OSEM drive signals if shielding is omitted.

This RODA records agreement on the following decision process.

- The Pigtails leading to the UIM and PUM OSEMs in the N-Ptype will not be shielded. This is so that a check can be made as to whether the ESD interferes with those OSEM's drive signals.
- If it turns out that such interference is present, then shielding will be tested on the N-Ptype. If it proves helpful, then shielding will be used for the production suspensions. In this case we will draw on recent experience elsewhere to make the cables as flexible as possible.