HAM Large Triple Suspension (HLTS) and HAM Suspensions Electronics Final Design Review Checklist - E1000053-v5

Based on the Final Design Review Checklist, LIGO M050220-v1, page 10 D. Bridges for the SUS team, 17 Mar 2010

HLTS Final Design Review Checklist

Number	Checklist Description	Document Number	Document Title	Comment	Responsible People
	Final requirements - any changes or refinements				
1	from PDR?	<u>T1000012</u>	HAM Large Triple Suspension Final Design Document		Norna
		<u>T010007-v2</u>	Cavity Optics Suspension Subsystem Design Requirements Document		Mark
			Preliminary Design Review (PDR) Report for the HAM Large and Small Triple		
2	Resolution of action items from PDR	M0900018-v1	Suspensions (HLTS, HSTS)		PDR Committee
2	Resolution of action items from PDR	T1000012	HAM Large Triple Suspension Final Design Document	See section 3	Norna
3	Subsystem block and functional diagrams	T1000061	aLIGO Triple Suspension Controls Design Description		Jay
Ŭ	Drawing package (assembly drawings and	11000001			ouy
4	majority of remaining drawings)	E080191-v1	Drawing Tree - HLTS Overall Assembly and Assembly Fixtures	Version v1 applies to prototype	Derek
	, , 6 6,	E1000036	SUS Drawing Tracker	See sheet specific to HLTS	Derek
		D080718-v1	HLTS Overall Assembly and Assembly Fixtures	Version v1 applies to prototype	Derek
		D070447-v1	HLTS Overall Assembly	Version v1 applies to prototype	Derek
	Final parts lists	E080329-v1	Material List - HLTS Overall Assembly and Assembly Fixtures	Version v1 applies to prototype	Derek
	Final specifications	E080208-v1	HLTS Assembly Specification	Version v1 applies to prototype	Derek
7	Final interface control documents	T1000031	Requirements for HAM Installation Arm	to be revised based on new holes in HLTS structure	Luke
		M1000047	Decision to Modify HAM Structures (HLTS, HSTS, OMC)	to be revised	Calum
		TBD M080041-v1	Thiskness of DD2 and CD2 and Wedge Information	Alignment features	Doug
		<u>M080041-v1</u> T080078-v3	Thickness of PR3 and SR3 and Wedge Information Stable Recycling Cavity Mirror Coordinates and Recycling Cavity Lengths	Optic size and wedge angle Optic size, wedge angle and orientation	GariLynn Mike Smith, Dennis
		D080662-v2	PR3 Substrate	Optic size, wedge angle and one filation	Calum
		D080663-v2	F-PR3 Substrate	Optic size and wedge angle	Calum
		D080664-v2	SR3 Substrate	Optic size and wedge angle	Calum
		D060102-v1	aLIGO ETM and ITM SUS Recycling Mirror Envelope	Optic height above table	Calum
8	Relevant RODA changes and actions completed	T1000012	HAM Large Triple Suspension Final Design Document	See section 8.1	Norna
		M050397-03	Core Optic Sizes, Including TMs, BS, FM and RM		GariLynn
		M060315-00	No Flats on IMC & RM Optics		Janeen
		M080038-03	Responsibilities for Elements of the Stable Recycling Cavities		Dennis
		M080041-v1	Thickness of PR3 and SR3 and Wedge Information		GariLynn
		M080374-00	Provision for Mounting Struts to HLTS & HSTS	Superseded by M1000047	Janeen
		<u>M0900034</u> M0900087-v1	Use of SmCo and NdFeB Magnets in Advanced LIGO Suspensions All In-Vacuum Cabling Will Be Shielded		Norna Dennis
		M0900234-v1	SUS (US) Blades Will Use Maraging Steel 250		Norna
		M0900234-V1 M0900271-v1	Division of Responsibilities for Harnesses for Advanced LIGO Suspensions		Norna
		M1000047	Decision to Modify HAM Structures (HLTS, HSTS, OMC)	to be revised	Calum
9	Signed Hazard Analysis	E1000043-v2	HLTS Assembly and Installation Hazard Analysis		Derek
10	Final Failure Modes and Effects Analysis			Not required	
11	Risk Registry items discussed	T1000012	HAM Large Triple Suspension Final Design Document	See section 8.2	Norna
12	Design analysis and engineering test data	<u>T080310-v2</u>	MATLAB Model of HAM Large Triple Suspension (HLTS)		Norna
			Parameters and Predicted Mode Frequencies and Transfer Functions for the		
		<u>T1000095-v1</u>	As-Built HLTS Prototype		Norna
		T1000106	HLTS Prototype Test Results		Derek/Carl
40	Cofficient detailed desire	T0900223-v2	Status of Testing Self-Clinching Nuts for Use in Advanced LIGO		Derek
	Software detailed design Final approach to safety and use issues	T1000061 E1000043-v2	aLIGO Triple Suspension Controls Design Description HLTS Assembly and Installation Hazard Analysis		Jay Derek
14 15	Production plans	<u>E1000043-V2</u> C1000229	HLTS Assembly and installation Hazard Analysis HLTS Production Plan	Restricted to Lab Business	Janeen
15	Plans for acquisition of parts, components,	01000223		I Cosmolou to Lab Dusiness	5416611
16	materials needed for fabrication	C1000229	HLTS Production Plan	Restricted to Lab Business	Janeen
17	Installation plans and procedures	E1000045	HLTS Installation Procedure		Janeen, Derek
	, ,	T1000031	Requirements for HAM Installation Arm	to be revised based on new holes in HLTS structure	Luke
18	Final hardware test plans	T1000089-v1	HAM Large Triple Suspension (HLTS) AdvLIGO Test Plan		Mark
19	Final software test plans	T1000061	aLIGO Triple Suspension Controls Design Description		Jay
	Cost compatibility with cost book	<u>C1000229</u>	HLTS Production Plan	Restricted to Lab Business	Janeen
21	Fabrication, installation and test schedule			See Project Management Schedule page	
22	Lessons learned documented, circulated	<u>T1000106</u>	HLTS Prototype Test Results		Derek/Carl
23	Problems and concerns	<u>T1000012</u>	HAM Large Triple Suspension Final Design Document	See section 9	Norna