

## UK/US Quad Suspension Milestones: Planned and Needed Dates

Old version history at end.

[Version 24 updated by Justin for Schedule meeting of 2 PAril 2008](#)

Version 23 updated by Justin for schedule meeting of 5 March 08

Version 22 updated after SUS meeting of 15 Jan 2008

Interested parties: Ian Wilmut; Bob Taylor; Peter Fritschel; Phil Willems; Dennis Coyne; Helena Armandula; Tim Hayler; Janeen Romie; Ken Mailand; Garilyn Billingsley; Stuart Aston; Ken Strain; Carol Wilkinson; Mike Smith; Russell Jones; Mark Barton; Norna Robertson; Dwight Carter; Rich Mittleman.

	UK Rep.	US Rep.	Planned	Needed in M070046-11 by	
				task	date
<b>1. NOISE PROTOTYPE</b>					
1.1 US delivers LIGO 1 OSEMs (dirty) to RAL for trial assembly	Wilmut	<b>Taylor</b>	DONE 01-dec-06		
1.2 US delivers LIGO 1 OSEMs (clean) to LASTI for real assembly incl spares	Wilmut	<b>Taylor</b>	DONE 10 Jan 07		
1.3 US delivers final formal agreement info on mass and size of comp plate	Wilmut	<b>Fritschel (RODA)</b>	DONE 21 Feb 2007		
1.4 US delivers agreement on TM ring heater interface	Wilmut	<b>Willems</b>	DONE 01 dec 06		
1.5 US delivers agreement on Comp plate ring heater interface	Wilmut/O' Dell	<b>Willems</b>	Not needed		
1.6 US specifies location of wiring interface point on seismic table	Aston	<b>Coyne/Romie</b>	DONE 1 March		
1.7 UK delivers ear bonding jig to Glasgow (Internal SUS UK --> SUS UK)	<b>Wilmut</b>	UK only	Done 10 Feb 07		
1.8 UK delivers details of baffle interface from UK side	<b>Wilmut</b>	Smith	DONE 01 dec 06		
1.9 UK delivers first reaction mass for plating	<b>Glasgow</b>	Armandula	DONE 20 May 07		
1.10 UK delivers mask design	<b>Jones</b>	Armandula	DONE 01 dec 06		
1.11 US delivers plated reaction mass ready for prisms bonding (Internal SUS US --> SUS US)	Glasgow	<b>Armandula</b>	DONE 01 Sep 2007		
1.12 UK delivers other parts ready for ear bonding: bonding jig, PU mass, ears to LASTI	<b>Wilmut+Glasgow</b>	Armandula	done 27 Aug 07		
1.13 US (with UK support) delivers masses (TM, PU, RM) with bonded ears/prisms at LASTI. Ears (80% of work) are DONE; prism bonding with vac-seal date is shown here.	Glasgow	<b>Armandula</b>	DONE feb 2008		
1.14 UK delivers final sleeve to Caltech	<b>Wilmut</b>	Taylor	Done Dec 2007		
1.15 US delivers cleaned sleeve to LASTI	N/A	<b>Armandula / Taylor</b>	Done Jan 2008		

1.16 UK delivers cleaned parts (metal masses) to LASTI	<b>Wilmut/Hayler</b>	Mittleman	done mid july		
1.17 UK delivers clean assembly tooling to LASTI	<b>Wilmut/Hayler</b>	Mittleman	~done end jul		
	<b>UK Rep.</b>	<b>US Rep.</b>	<b>Planned</b>	<b>task</b>	<b>date</b>
1.18 US delivers Caltech gazebo (internal US milestone: it may be used to store the control Ptype)	Wilmut	<b>Romie</b>	Not needed		
1.19 US delivers working area on bench in clean room for assembling masses	Wilmut	<b>Romie/Mittleman</b>	Done mid july		
1.19 a UK delivers lower structure to Caltech for fit checks with 5 axis table	<b>Wilmut</b>	Mailand	DONE 15 Apr 07		
1.20 US delivers 5 axis table (Mailand)	Wilmut	<b>Mailand</b>	DONE 1 Jun 07		
1.21 US delivers ergo arm ready for "glass" masses with flats to LASTI	Wilmut	<b>Armandula</b>	DONE 1 April		
1.22 UK delivers ERGO arm adapter to allow ERGO arm vac plate to be used with metal masses.	<b>Wilmut</b>	Armandula	DONE 1 Oct		
1.23 US delivers scissor table and Genie	Wilmut	<b>Mailand/Mittleman</b>	DONE 1 jun 07		
1.24 US carries out final anti-creep treatment on loaded blades (120C, 1 week, Ar/vacuum in oil-free air)	Wilmut	<b>Mason/Mittleman</b>	done August 07		
1.25 US delivers installation tooling	Wilmut	<b>Mailand</b>	DONE 1 jul 07		
1.26 US delivers room at LASTI for laser welding with optics table, services, laser safety, and space for ribbon testing and characterisation and ear bonding and for unpacking masses	Glasgow/Wilmut	<b>Mittleman</b>	Done		
1.27 (Internal SUS UK --> SUS UK) Glasgow delivers details of <a href="#">maximum possible sizes</a> of packing pieces to RAL – pieces will be re-machined to suit later.	<b>Wilmut/Jones/Barton</b>	UK only	<a href="#">Mid April</a>	1 month before 92	
1.28 UK delivers ribbon pulling/welding machine parts to LASTI (receipt date)	<b>Wilmut</b>	Mittleman	Done Dec 07		
1.29 UK (with US team support?) delivers assembled pulling/welding machine for use at LASTI	<b>Wilmut/Glasgow</b>	Mittleman	Done Feb 08		
1.30 US delivers clear access route from laser welding room to assembly gazebo	Wilmut	<b>Mittleman</b>	Done		
1.31 US delivers test mass to LASTI ready for ear bonding	Glasgow/Wilmut	<b>Billingsley Armandula</b>	done end july 07		
1.32 US delivers comp plate to LASTI (with bonded wire break off prisms) plus heating laser with ports to shine it through at LASTI. <a href="#">New date reflects possibility of making first all-glass suspension with comp plate.</a>	Wilmut/Glasgow	<b>Billingsley Armandula</b>	<a href="#">June 08</a>	109	
1.33 US delivers test mass ring heaters to LASTI integration test done, new date reflects need for heating test on glass suspension	Wilmut/Glasgow	<b>Willems</b>	<a href="#">July 2008</a>	100	
1.34 US delivers ring heater wiring to LASTI. Current plan??	Wilmut / Aston	<b>Willems</b>	Done Jan 2008		

1.35 US delivers tests plan for Noise prototype (key elements already agreed by some)	Greenhalgh/Strain	<b>Mittleman</b>	DONE 20 May 07		
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	<b>UK Rep.</b>	<b>US Rep.</b>	<b>Planned</b>	<b>task</b>	<b>needed</b>
1.36 UK delivers clean OSEMs (plus spares) and wiring (plus spare?) to LASTI	<b>Aston</b>	Heefner	Done (final delivery dec 07)		
1.37a UK delivers dirty OSEMs for OMC	<b>Aston</b>	Romie	Done 1 Apr 07		
1.37 UK delivers cleaned ESD wiring to LASTI	<b>Aston</b>	Romie/Mittleman	Done Dec 2007		
1.38 UK delivers local drive electronics to LASTI (but may use controls electronics instead)	<b>Aston</b>	Heefner/Mittleman	Done Feb 2008		
1.39 UK/US assembly team delivers clean metal suspension at LASTI. Step 1 is payload.	<b>Wilmut</b>	Romie/Mittleman	done end July 07		
1.40 US provides electronic drive/test system at LASTI	Aston	<b>Heefner</b>	done – will use triple		
1.41 US provides alignment optical equipment + someone to drive it	Wilmut	<b>Mittleman Mason</b>	Done Nov 07		
1.42 US provides team to carry out tests on the ETM or ITM	Greenhalgh	<b>Mittleman</b>	done		
1.43 UK/US team delivers *ITM* suspension to LASTI	Wilmut	Romie/Mittleman	29 oct 08	111	29 oct 08
1.44 UK/US team delivers GLASS ETM suspension to LASTI (US solders ESD wires to pattern)	<b>Wilmut</b>	Romie/Mittleman	mid Jun 08	97	ASAP
1.45 US gives results of ETM thermal tests with glass	Greenhalgh	<b>Mittleman</b>	end Aug 08	101	ASAP
1.46 US + UK gives go-ahead to START OJEU process	Wilmut/Greenhalgh	Wilkinson	DONE 20 Jun 07		
1.47 US + UK gives go-ahead to place main production orders	Wilmut/Greenhalgh	Wilkinson	Structures end Mar 08 Rest mid April?08		End April 08
1.48 UK start FM/BS prototype activity	<b>Hayler</b>	Wilkinson	DONE 1 March 07		
1.49 UK Complete FM/BS prototype activity	<b>Hayler</b>	Wilkinson	end May 08		End May 08
1.50 UK/US Approval for FM/BS construction	Greenhalgh	Wilkinson	end Jun 08		End Jun 08
1.51 Complete BS/FM PRR - Finish Date?	Greenhalgh	Wilkinson	end Jun 08		End Jun 08
1.52 US to Describe SPI interface to UK. SPI Interface described in broad terms - needs to button down hole positions.	Wilmut	Coyne	?		Mid April 08.

Version 00, Sept 27 06 following first SUS-wide discussion.

Version 01 Oct 7, following SUS discussion.

Version 02 for SUS of 17 Oct 2006 with email inputs