



MINUTES OF MEETING

SPIRE-RAL-MOM-001425

Date: 22-Oct-2002

No. of Sheets: 9

Subject: SPIRE Optical Alignment Meeting 22nd October 2002

Meeting Place: RAL

Date/Time: 22-October-2002 09:30-14:00

Agenda Dated:

Chairman: D.L.Smith

Secretary:

Close of Meeting: 14:00

PARTICIPANTS

ADDITIONAL DISTRIBUTION

Dave Smith (RAL)
Berend Winter (MSSL)
Alain Origne (LAM)
Marc Ferlet (RAL)
Chris Brockley Blatt (MSSL)
Yann Alanou (LAM)
John Coker (MSSL)
Eric Sawyer (RAL)
Bruce Swinyard (RAL)

Doug Griffin (RAL – Part
Time)

Kjetil Dohlen (LAM)



MINUTES OF MEETING

Subject: SPIRE Optical Alignment Meeting 22nd October 2002

Ref: SPIRE-RAL-MOM-001425

Date: 22-October-2002

Page 2 of 9

Action / Comment Number	Short Title	Action (A), Recommendation (R), Decision (D), Observation (O)	Action / Ref. with:	Action Deadline
	Agenda	Review of actions from previous meeting Inputs for metrology of optics bench OGSE, review list and confirm suppliers D tool specification. BSM/OGSE alignment criteria. Alignment procedure Schedule AOB Date of next meeting		
A-001360-01	Review of Actions MSSL MGSE Specification	MSSL to check changes needed to meet new MGSE requirements to enable optical alignment verification. Closed: Design should ensure little or no movement of SOB when locked.	MSSL	
A-001360-02	MGSE requirements	LAM to provide specification of all requirements for rotisserie and HOB simulator applicable to optical alignment Closed: E-Mail sent 19 th September 2002 – requirement is 0.5 arc minutes.	LAM	



MINUTES OF MEETING

Subject: SPIRE Optical Alignment Meeting 22nd October 2002

Ref: SPIRE-RAL-MOM-001425

Date: 22-October-2002

Page 3 of 9

Action / Comment Number	Short Title	Action (A), Recommendation (R), Decision (D), Observation (O)	Action / Ref. with:	Action Deadline
A-001360-03	HOB Alignment Plate	LAM to review interface drawings and propose design for HOB alignment plate Closed: E-Mail sent 20 th September 2002	LAM	
A-001360-04	Optical Bench height	LAM to specify height of optical bench needed for integration. Closed: Propose to use the RAL MGSE to perform integration and alignment. Some modification to MGSE required to improve stability of frame.	LAM	
A-001360-05	Cryostat alignment configuration	LAM to propose new set-up of alignment tools in cryolab for cold alignment. Closed: Optical bench can be located at entrance end of cryolab. Optical bench can be moved to corner of lab when filling with cryogens. Alternative is to revert to original plan with optical bench at far end of lab and only move when opening and closing lab door.	LAM	
A-001360-06	Metrology data	Kjetil to specify content and format of data from 3D metrology measurements Closed: Kjetil did send spreadsheet but needs further discussion. Data is in spire_config_41.xls positions referenced to Herschel optical reference. Obtain copy from Judy. Use first optical component to define	LAM	



MINUTES OF MEETING

Subject: SPIRE Optical Alignment Meeting 22nd October 2002

Ref: SPIRE-RAL-MOM-001425

Date: 22-October-2002

Page 4 of 9

Action / Comment Number	Short Title	Action (A), Recommendation (R), Decision (D), Observation (O)	Action / Ref. with:	Action Deadline
		datum. Will be discussed on 31 st October.		
	Inputs for metrology of optics bench	To be discussed on 31 st October with Metrology Dept		
A-01	OGSE Loan of Mirror Mount	<p>Most recent edition of alignment plan issued 10-April-2001 Alignment tools in separate specification document – new version</p> <p>MAT – Already in house. LAM will bring when Apex tool – has been made. 2 will be used for different mirror thicknesses.</p> <p>3D tool – Tool(s) still to be made. Some debate about usefulness and concern about repeated insertion of tools into dowel holes. Possibly relax tolerance on spigot to make it loose fit. MSSL to loan scrap mirror mount to LAM for trial fit of 3D tool. Can be posted to LAM by the end of the week.</p> <p>D-Tool(s) – has been made – harness has been made. Harness will go through hole in box.</p> <p>CCA Tool – has been made</p> <p>CS-Tool – has been made</p> <p>O-Tool – has been deleted</p>	MSSL	25-Oct-2002



MINUTES OF MEETING

Subject: SPIRE Optical Alignment Meeting 22nd October 2002

Ref: SPIRE-RAL-MOM-001425

Date: 22-October-2002

Page 5 of 9

Action / Comment Number	Short Title	Action (A), Recommendation (R), Decision (D), Observation (O)	Action / Ref. with:	Action Deadline
A-02	M2 Design Changes	<p>M2 Tool – has been made</p> <p>Bruce to inform LAM about changes to design of M2</p> <p>PSD Tool – Deleted</p> <p>Hartmann Tool – design to be finalised.</p> <p>BSM replacement – STM BSM will be used and has been accepted pending a few open actions.</p> <p>STM Filters – To be provided by Cardiff. 1 set of dichroics to be made from half silvered Mylar (does not need to be exactly 50/50), 2 sets of beamsplitters. 1 off 50/50 and 1 off 0/100. No alignment markings required. Thickness is not an issue provided that they are not thicker than the flight beamsplitters. Required 1st December 2002.</p>	Bruce Swinyard	25-Oct-2002
A-03	Alignment Tools Specification	LAM to send latest version of alignment tools specification to RAL.	Alain Origne/ Kjetil Dohlen	25-Oct-2002
	BSM/OGSE Alignment	<p>STM BSM has a fixed mirror with a shoe that has to be machined to ensure that the mirror is in the correct position on the optical bench.</p> <p>Does BSM have to be positioned to a higher accuracy than flight mirror?</p>		



MINUTES OF MEETING

Subject: SPIRE Optical Alignment Meeting 22nd October 2002

Ref: SPIRE-RAL-MOM-001425

Date: 22-October-2002

Page 6 of 9

Action / Comment Number	Short Title	Action (A), Recommendation (R), Decision (D), Observation (O)	Action / Ref. with:	Action Deadline
A-04	STM BSM Position	LAM to specify accuracy to which BSM is to be positioned. Foot pads should be measured during 3D metrology and information used to machine foot. The machining will have to be done immediately after metrology.		25-Oct-2002
A-05	BSM Foot Machining	Eric to talk to Ian Pain about machining BSM foot.	Eric Sawyer	25-Oct-2002
A-06	Alignment Procedure Detector Box alignment Check	Alignment of optics within detector boxes can be performed before installing thermal busbars BUT this necessitates the box spine to be removed after mirrors alignment. A check should be performed to verify that removal of the spine does not affect the optical alignment. This needs to be incorporated into alignment procedure. LAM should include step in alignment sequence to verify alignment after removal of entire box cover (lid + spine). Some manufacturing problem with detector box A-frames of spectrometer detector box. Need to be remade. Needed by 20th December at the absolute latest. Spectrometer box is not needed during 3D metrology. Spirit level on optical bench – 15cm level can be used. LAM to provide spirit level.	LAM	01-Nov-2002



MINUTES OF MEETING

Subject: SPIRE Optical Alignment Meeting 22nd October 2002

Ref: SPIRE-RAL-MOM-001425

Date: 22-October-2002

Page 7 of 9

Action / Comment Number	Short Title	Action (A), Recommendation (R), Decision (D), Observation (O)	Action / Ref. with:	Action Deadline
	LAM HOB plate	<p>Is it necessary to have support frame? May be better to have 2 people to offer up plate to instrument feet and 3rd person to insert screws.</p> <p>If using crane then use a spring should be used to provide some inertia to sudden movement.</p> <p>Another possibility is to use some adjusting screws to support plate.</p>		
A-07	<p>Schedule</p> <p>Alignment Timings</p>	<p>Need timings (including margin) from LAM. May be able to do alignment in less time than specified on main schedule.</p> <p>LAM to provide breakdown of timings week ending 1st November.</p> <p>2 sets of mirror mounts are available so no impact on schedule if parts fail.</p> <p>Optical bench scheduled to arrive at MSSSL on 31st October. This is followed by fit check and insertion of Helicoils. Expected delivery to RAL 15th November. This is followed by cleaning and bakeout. Alignment planned to start 13th December. LAM need 2days to set up equipment.</p> <p>Need to allow time for shipping equipment.</p> <p>LAM to come over in 1st week of December to set up optical equipment to coincide with 3D metrology.</p> <p>Mirrors delivered to RAL between 9th-10th December.</p>	LAM	01-Nov-2002



MINUTES OF MEETING

Subject: SPIRE Optical Alignment Meeting 22nd October 2002

Ref: SPIRE-RAL-MOM-001425

Date: 22-October-2002

Page 8 of 9

Action / Comment Number	Short Title	Action (A), Recommendation (R), Decision (D), Observation (O)	Action / Ref. with:	Action Deadline
		Photometer alignment could start week before Christmas Spectrometer after Christmas. LAM would prefer to work 8 hours per day, but longer if necessary. Evenings and Saturdays as margin.		



MINUTES OF MEETING

Subject: SPIRE Optical Alignment Meeting 22nd October 2002

Ref: SPIRE-RAL-MOM-001425

Date: 22-October-2002

Page 9 of 9

Summary of Actions

Action / Comment Number	Short Title	Action (A), Recommendation (R), Decision (D), Observation (O)	Action / Ref. with:	Action Deadline
A-01	Loan of Mirror Mount	MSSL to loan scrap mirror mount to LAM for trial fit of 3D tool. Can be posted to LAM by the end of the week.	MSSL	25-Oct-2002
A-02	M2 Design Changes	Bruce to inform LAM about changes to design of M2	Bruce Swinyard	25-Oct-2002
A-03	Alignment Tools Specification	LAM to send latest version of alignment tools specification to RAL.	Alain Origne/ Kjetil Dohlen	25-Oct-2002
A-04	STM BSM Position	LAM to specify accuracy to which BSM is to be positioned.	LAM	25-Oct-2002
A-05	BSM Foot Machining	Eric to talk to Ian Pain about machining BSM foot.	Eric Sawyer	25-Oct-2002
A-06	Detector Box alignment Check	LAM should include step in alignment sequence to verify alignment after removal of entire box cover (lid + spine).	LAM	01-Nov-2002
A-07	Alignment Timings	LAM to provide breakdown of timings week ending 1 st November.	LAM	01-Nov-2002