

Minutes of SPIRE Project Team Meeting 6

MSSL, 20 November 2000

Present: Matt Griffin Ken King
 Bruce Swinyard (Chair) Berend Winter

1. Review of outstanding actions from previous meetings (actions still open are in **RED**)

No. PT-01-xx	Actionee	Description	Priority	Need and Date	Status
02	JD	Review framework and format for Instrument Design Description and clarify and revise the top-level document tree.	High	For Systems Review.	Open The top-level doc. tree being reviewed. JD is putting contents list for the DDD together now.
03	MJG	Revise and tidy up Science Requirements Document	Med	For Systems Review	Open. New deadline = Nov. 24
05	KJK	Produce revised Instrument Development Plan	High	For technical meeting Draft 30/9/00	Open. See discussion below.
06	BMS/ MJG	Draft top level criticality analysis with emphasis on impact on scientific performance; OBS and degraded modes.	Med	For Systems Review Draft 30/9/00	Open. Basic issue has been addressed in MJG's presentation to the FST. BMS to elaborate.
07	BMS	Request sub-system level criticality analysis for input into system level criticality analysis	High	Send request by 8/9/00	Deferred. Not a high priority at present. BMS to ask for it and to indicate low current priority.
08	MJG	Raise parallel mode with Albrecht Poglitsch at November FST	Low	For Systems Review	Open. Was not addressed at the FST as had been planned.

No. PT-03-xx	Actionee	Description	Priority	Deadline	Status
01	C Cara	Specify requirements on Cryoharness needed for CEA detector electronics Testing	High	31/10/2000	Superseded by an action from detector meeting In Pasadena
11	BMS	Write requirements document for the FPU simulator.	Low	16/10/2000	Open
12	CRC	Ask LAM for estimate of the date by which the decision on which BSM option is needed	High	16/10/2000	Open - TBC. It may be covered in newly produced ATC DP. If not, it's now very urgent.

No. PT-04-xx	Actionee	Description	Priority	Deadline	Status
01	KJK	Write WE test plan	High	Dec. 20	Open
02		Write formal response to Reidingen letter	Low		Open
03	KJK	Issue doc. detailing how configurable items will be dealt with after the review	High	15 Nov. 2000	Open - TBC. DK to is to have issued draft today

04		Revise and issue plan for ICD review	High	4 Nov. 2000	Closed
05		Review and comment on the SIRD	High	4 Nov. 2000 Defer to Dec. 5.	Open
No. PT-05-xx	Actionee	Description	Priority	Need and Date	Status
01	BMS	Discuss ICD documentation and control scheme with John Delderfield	High	6 Nov.	Closed
02	KJK	Emphasise to PMs the urgent need for revised Development Plans Urgent input needed from JPL, ATC in particular.	High	31 Oct. (telecon)	Closed But action to be continued as many institute DPs not yet available
03	MJG	Circulate formal response to ISVR report to KJK, BMS, JAL	Low	1 Nov.	Closed (by e-mail of Oct. 13)
04	TGD/ KJK	Ask Paolo Saraceno for clarification on issue of level of effort available from Giovanni Bisaglia.	Low	6 Nov.	Open (TBC)
05	TGD	Contact Otto Bauer and Pjotr Roelfsma to get their views on ORAC DR.	Med	6 Nov.	Open (TBC) See discussion below
06	MJG	Organise establishment of SPIRE web site at QMW	Low	15 Dec.	Open
07	All core PT members	Review the Systems Design Co-ordination Team organisation document and comment to BMS.	High	6 Nov.	Closed. Scheme was presented to the FST.
08	BMS/ KJK	Organise BSM progress review in early December	Med	15 Nov.	Open To be arranged tomorrow
09	KJK	Formally invite Otto Bauer to Systems Design Review	High	2 Nov.	Closed
10	BMS	Formally issue Systems Review agenda	High	2 Nov.	Closed

- **Preparation of the Detailed Design Document:** This is now is a very high priority for the System Review
- **Instrument Development Plan status:** KJK still does not have all the inputs necessary from the various institutes:

ATC : DP has just been provided - needs to be reviewed
 QMW : Plan has been provided but does not have enough detail. Additional information has been requested.
 JPL : DP not yet received
 MSSL : Structure DP was reviewed Nov. 20 - some further iteration needed
 RAL : AIV plan exists but needs updating
 IFSI : DP received and reviewed - OK
 CEA Saclay : DP received - OK
 CEA Grenoble : DP received - OK
 Saskatchewan : No DP for the shutter yet available (ITT has been issued to Canadian industry)
 Stockholm : No DP available yet
 LAM : No DP available (but confirmation has been given that required delivery dates

can be met

KJK will make a short presentation on the IDP at the System Design Review on 30 November.

Consolidation of the IDP remains as one of the most important continuing activities for the consortium. It will need to be emphasised at PM telecons and henceforth shall be a standing item on the agenda for Project Team meetings.

- **ORAC DR:** It's envisaged that the other instruments will not go for it. The implications of this for the UK SPIRE programme will need to be considered.
- **The QMW Calibrator and Thermal Strap programmes:** These are in serious need of attention (conceptual designs, prototyping plans, development plan, definition of electrical interfaces). A thorough review of the QMW programme should be held ASAP in the new year.

Additional actions arising from the discussion:

Action 01: KJK to write WE Requirements section for IRD by the end of this week

Action 02: BMS/KJK organise progress review of QMW programme in second week of January (week of 8 - 12 or 15 - 19).

2. Reports from recent meetings

2.1 FIRST Science Team meeting

(QMW, 13/14 November)

- MJG presented the status of SPIRE (viewgraphs will be placed on *Livelink*). This included:
 - Update on the instrument design and reports on the recent successful technical summit meetings
 - Options for solving the UK funding problem. The FST endorsed the view of the SPIRE Co-Is and the UK FIRST/Planck Steering Panel that deletion of the Beam Steering Mechanism was not justified
 - Discussion of Flight Spare Philosophy - proposal by SPIRE to adopt a "return-to-base" repair service instead of providing a full flight spare. Similar proposals are being made by PACS and HIFI. The issue is under continuing review by the FST.
 - SPIRE EMC modelling plans

2.2 Detector Summit meeting

(Pasadena, 8-10 November)

The detector summit was attended by all interested parties in the detector system. All outstanding issues related to the detector implementation were addressed and most of the interfaces agreed.

Significant decisions include:

- The number of detectors in the photometer SW array has been reduced from 149 to 139 to allow one to one correspondence between JFET modules and the detector modules.
- Two CQM arrays will be provided - the P/LW and the S/LW and the S/SW flight model will be provided untested for use in the CQM - this must be returned after CQM testing at RAL and NOT delivered with the CQM.
- At least one representative EM module will be provided for the STM.

Some outstanding areas for the detailed interfaces where work is still required are:

- Detailed implementation; routing and support of the harness between back of detectors and the outside of the FPU box. - ideas were discussed but no agreement was reached
- Harness between the FPU and the JFET box - less problematic but no definitive agreement

- Thermal interface between the JFET modules and the system - dissipation is too high - it is not clear whether this is conducted or radiated and what is the effect on the noise of the JFET temperature.
- Detailed definition of the verification plan and the work-share agreement between QMW and JPL

2.3 AIV and Ground Calibration Facility Review (RAL, 16 November)

- This was a thorough and successful review of the proposed AIV facility
- The cryoharness was identified as most the important/urgent issue (with worries concerning both the cost and schedule). Enquiries with *Tekdata* are now underway to obtain an estimate.
- Possible Canadian provision of an FTS for spectral characterisation was strongly preferred over UK (QMW) provision to decrease the pressure on the QMW programme and to allow SPIRE to benefit from the high level of FTS expertise in Canada.

2.4 CDMS meeting (Orsay, 3 November)

- KJK attended for SPIRE
- CDMS requirements were reviewed and defined. Planck have extra requirements over FIRST
- The RAL are looking at the possibility of doing spacecraft simulator for all instruments as the SPIRE contribution to the common EGSE effort. *Satellite Systems* have offered to build it for a certain price. RAL have first choice - decision needed next week.

3. Forthcoming meetings

<u>Meeting</u>	<u>Date</u>	<u>Attendance</u>
CDMS meeting	23 Nov. RAL	KJK, D. Parker
Interface Review	28, 29 Nov. Abingdon	Many
System Design Review	30 Nov. Abingdon	Many
SPIRE IDT meeting	7 Dec. IC	Many (KJK can't attend and BMS only 1/2 day)
BSM Review	Dec. TBD in Edinburgh	BMS, KJK, MJG, RC?, ATC team
QMW Review	Jan TBD	BMS, KJK, QMW team
Parts Proc. meeting	12/13 Dec.	Imp. for long lead items
IIDR	TBD (end April 2001?)	
IBDR	Summer/Autumn 2001 (to be based on combined outputs of DDR sessions)	

Action 03: John Delderfield to sort out what connectors needed for entire FPU this week so that this information can be fed into the CPP programme in time for the 12/13 Dec. meeting

4. Livelink

- There will be three folders:
 - Public
 - Controlled documents
 - Will be handled according to note that is to be produced
 - JD producing folder tree
 - Other
 - Managed as currently with JAL only allowed to put things on
 - Various folders
- To be available by mid-December

5. Preparation for the November Reviews

- BMS has scheduled the Interface Review according to people's availability
- Systems Review documentation supposed to be out tomorrow

Current state of documents that need to be updated:

- OBS URD is in 2nd issue: Looks OK
- Systems Budget Doc.: Some updates needed (e.g.: 2 JFET boxes)
- Optical Systems Desc.: OK
- Electrical Systems Desc.: Needs updating
- OMD: Put in degraded modes
MJG work on reducing OFS and SOFS
- IRD: Warm electronics reqs. have to go in (KJK)
- SRD: MJG to update
- IID-B: JD doing harness
BMS will do general update of Chap. 5
MJG look at Chap. 4
- Optics configuration control docs KD's spreadsheets

Documents not yet available:

- Design Description Doc.
- Thermal configuration control doc.: has been updated - will be updated with new cooler
- Structure/mechanics CCD: will be the big ICD
- EMC/Frequency plan: doesn't exist yet. Maybe JD should present something on this.

Action 04: BMS to ask JD to consult VH on getting equivalent circuit description to include as part of an EMC presentation at the review.

6. ICC Development Plan and effort available

- TGD is currently working at ~ 30% level - ideally this should be around 50%. Hopefully this can increase to ~ 50% from the start of 2001.
- Although little effort is available yet at IPAC to support the ICC, Steve Lord is acting as the point of contact at IPAC.
- An update and clarification of the overall level of resources (FTE staff effort) available for SPIRE ICC development is needed. This will be needed for the final phase of the UK programme cost review in early December.
- Given the uncertainty (unlikelihood?) of ORAC DR being adopted, the ATC contribution to the SPIRE ICC needs to be reviewed.

Action 05: MJG request TGD/SJO to send all ICC DT circulars/e-mails and other relevant documentation to Steve Lord at IPAC (regarding him as a *de facto* member of the ICC DT) Deadline: November 30

**Action 06: KJK include Steve Lord on the list of people with access to Livelink
Deadline: December 15**

Action 07: TGD to produce note on the ICC Development Plan including summary of the effort available. Dec. 7 (needed for SPIRE UK cost review)

7. Next meeting date

Monday 27th Oct. (Maybe telecon; main item = last-minute preparation for the Interface and Systems Reviews).

8. Summary of actions from this meeting

No. PT-06-xx	Actionee	Description	Priority	Need and Date	Status
01	KJK	Write WE Requirements section for IRD	High	Nov. 23 Essential for Systems Review	Open
02	BMS/ KJK	Organise progress review of QMW programme in second week of January (week of 8 - 12 or 15 - 19)	Medium	Dec. 15	Open
03	JD	Identify what connectors needed for FPU so that this information can be fed into the CPP programme in time for the 12/13 Dec. meeting	High	Dec. 7	Open
04	BMS	Ask JD to consult VH on getting equivalent circuit description of the detector and cold amplifier combination	Medium	Nov. 22	Open
05	MJG	Request TGD/SJO to send all ICC DT circulars/e-mails and other relevant documentation to Steve Lord at IPAC	Medium	Nov. 21	Open
06	KJK	Include Steve Lord on the list of people with access to Livelink	Medium	Dec. 15	Open
07	TGD	Produce note on the ICC Development Plan including summary of the effort available.	High	Dec. 7 (Needed for SPIRE UK cost review)	Open