

Herschel/Planck Project

date	23 July 2004	reference	SCI-PT-29150	page	1 / 4
meeting date	23/07/2004	meeting place	Telecon		
chairman	C. Scharmberg				
participants	Bernard Collaudin ALCATEL Horst Fass Eric Sawyer RAL Carsten Scharmberg ESA	copy	Participants + Guy Doubrouvik Bruce Swinyard John Delderfield Thomas Passvogel Gerald Crone Peter Oldeman Chris Jewell Flemming Pedersen Goeran Pilbratt Sarah Leeks		
subject	SPIRE Progress Telecon #9				

Agenda

1. Action status of previous SPIRE telecons (MoM: SCI-PT-21435 & SCI-PT-27717)
2. CQM/PFM status report.
3. Changes of SPIRE detailed planning w.r.t. previous schedule
4. SPIRE CDR Briefing
5. Status of AIT/EMC preparations for EQM test campaign
6. Interface Issues
7. AOB

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1. Action status of previous SPIRE telecoms (MoM: SCI-PT-21435 & SCI-PT-27717)

SPIRE Progress Telecon #2 (MoM: SCI-PT-21435 - 29/10/03)

AI#3 SPIRE to issue the Harness Definition Document version 1.2, which will reflect HDD 1.1 plus update according annex 5 of SPIRE IID-B version 3.0 "SPIRE HDD 1.1 Deltas"

SPIRE will update the relevant document "with low priority", because the relevant information is already available within:

- *SPIRE HDD1.1 and*
- *SPIRE HDD 1.1 Deltas (SPIRE-RAL-NOT-001819)*

And will be included in the next IID-B issue.

New Due has been agreed during SPIRE Progress Telecon #6: 1st June 2004

SPIRE will focus their documentation activities on the input needed for the IID-B update.

New due date was agreed to be 23rd August 2004

- OPEN -

SPIRE Progress Telecon #8 (MoM: SCI-PT-27717 - 26/05/04)

AI#1 on ASED to provide real need date for DRCU during EQM campaign (Due date: next SPIRE I/F Meeting - 30.06.04).

Obsolete

- CLOSED -

AI#2 on SPIRE to answer, preferably by email or fax, to ASED with ASP & ESA in copy on the ASED comments (Due date: 2nd June 2004).

Closed by email from Eric Sawyer dated 27.05.2004

- CLOSED -

AI#3 on SPIRE to answer, preferably by email or fax, to ASED with ASP & ESA in copy on the ASED comments until 2nd June 2004, and follow up the close-out (issue of new agreed MGSE drawings) prior to next SPIRE I/F Meeting (30.06.04).

Closed by email from Eric Sawyer dated 27.05.2004

- CLOSED -

2. CQM/PFM status report.

The status of CQM, Warm electronics, PFM, AIV and schedule was presented by Eric in a power point file provided prior to the telecon to all participants (Annex #1).

CQM:

Cold vibration test campaign completed. Post test inspection show no damage. Cooler performance has been verified by CEA. Modifications on internal thermal interfaces on the detector box are being implemented. CQM will be in the test cryostat in 3 weeks. Delay of ILT2 start will result in November 2004 delivery of CQM FPU to industry.

WIH:

SPIRE requested from ASP design and construction guidelines for the warm interconnecting harness. Details shall be clarified next week between SPIRE and ASP.

[AI#1 B. Collaudin to answer by email who at ASP side will be the contact person to address this issue \(Due date: 23rd July 2004\)](#)

PFM:

Structure manufactured (except CFRP legs and L0 straps). FM Cooler, QM2/FM DRCU manufacturing has started. Cooler delivery in Aug/Sep 2004, which will delay PFM. DRCU QM2/FM. BDA – SSW has been delivered, SLW on its way. Calibrators, filters – SCAL and filters ready, PCAL in test. BSM FM range underperforming, will be exchanged against FS (with new magnets) later in the SPIRE programme. PFM FPU mirrors mounted and alignment completed (all in spec).

3. Changes of SPIRE detailed planning w.r.t. previous schedule

SPIRE has provided their updated schedule prior to the telecon to industry and ESA (Annex #2).

According SPIRE schedule, the delivery dates are:

CQM: 15 November 2004

PFM: October 2005

ASP will include in IID-A the industrial need dates:

CQM: 15th November 2004

PFM: November 2005

4. SPIRE CDR Briefing

No show stopper has been identified during the SPIRE CDR. Minor issues have been identified, which are considered as normal work. Some extra tests have been recommended by the Board (If in line with industrial need dates).

5. Status of AIT/EMC preparations for EQM test campaign

Ongoing action on SPIRE (Agreed between Clemens Kalde and Doug Griffin) to review the ASED EMC plan and provide well in advance of the SPIRE AIT/EMC Meeting, which will be held on 9th September 2004 in Ottobrunn.

AIT: ASED will issue next week the updated EQM test plan (Ref. H-P-ASED-PL-0021), that include recent input, provided by SPIRE.

ASP confirmed that either Mr. Luc or Mr. Gallagher will participate to above mentioned EMC meeting.

6. Interface Issues

LOU Baffle feedback

During the SPIRE CDR, Bruce Swinyard stated, that the current design is unacceptable for SPIRE, because the cryostat design does not foresee a baffle between the instrument shield and the HIFI LOU entrance holes on the FPU. SPIRE will formally answer to ASED email taking into account the "Straylight ground test analysis"

[AI#2 SPIRE to answer on ASED email HP-ASED-EM-0564-04 from 25.06.2004 \(Due date: 30th July 2004\)](#)

7. AOB

Saving plugs TN

ASED received TN on saving plugs (SPIRE-RAL-NOT-002028, draft 02, 18 June 04). Final clarification on open points will be done directly between SPIRE and ASED next Wednesday, 28th July 2004.

16 bushes to be delivered

SPIRE has not yet provided the requested bushes to ASED. SPIRE will clarify on Monday, 26th July 2004 with ASED, and will release the delivery with high priority.

AIT/EMC Meeting

The meeting date will be kept on 9th September 2004 in Ottobrunn. ASED will check, if the meeting can be extended to cover AVM testing, as requested by Flemming Pedersen.

Next Progress Telecon on Tuesday, 31st August, 2004 @ 15:00 CEST



Progress/Status

Eric Sawyer

SPIRE

AVM

- No update from last telecon
- Next test phase is planned for after the CQM cold test, probably mid Sept start

CQM

Cold Qualification model

- Test campaign at CSL completed
- Instrument returned to RAL
- Post test visual inspection shows no damage
- Cooler has been returned to CEA checks out ok
- Electrical measurements on BDA and JFETs
- Metrology on BDA
- Modifications to internal thermal interfaces on the detector box are being implemented. Parts being installed
- This delays start of next cold test until end of July
- November delivery to Spacecraft ok.

Warm electronics

- QM2/FM manufacture started
- One outstanding issue.
- WIH specification required, this is becoming urgent

PFM

- Structure manufactured, except CFRP legs and L0 straps
- Cooler –In manufacture, delivery August/September which will delay PFM
- DRCU FM manufacture underway
- SMEC – CQM in assembly and test, delivery in July
- Mirrors –delivered
- BDA - SSW delivered, SLW on its way
- DPU – Status uncertain
- Calibrators, filters – SCAL and filters ready, PCAL in test,.
- BSM – Built, some problems with range, FM will be delivered as is, FS will be fitted with new magnets and swapped out later.
- PFM FPU Mirror mounts integrated, metrology completed.
- Alignment completed, well within spec.
- PFM on hold, effort back on CQM.

AIV

- CQM tests phase 1 complete
- Test facility ready for next phase

schedule

Milestones.

- CQM build complete 5/12/03 Complete
- CQM cold verification 1 start 31/01/04 Complete
- Cold vibration end 28/4/04 completed 8/5/04
- CQM Ready for delivery Nov with DRCU QM1 (temp)
- DRCU (QM1) required for FM programme.
- FM delivery delayed to Oct 05 with QM2 electronics, due to slip in QM2 delivery

ID	Task Name	Duration	2003					2004					2005					2006									
			Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	
1	SM AIV programme	199 days																									
2	SM FPU Subsystem deliveries	178 days																									
3	CQM Mirrors and OGSE Delivery	0 days																									
4	CQM Mirrors Acceptance	3 days																									
5	STM Filters, Dichroics, Beamsplitters and OGS	0 days																									
6	STM Filters, Dichroics, Beamsplitters Acceptan	3 days																									
7	STM BSMm Delivery	0 days																									
8	STM BSMm Acceptance	3 days																									
9	CQM BSM Harness Delivery	0 days																									
10	CQM BSM Harness Acceptance	3 days																									
11	Optical Dummy SMECm Delivery	0 days																									
12	Optical Dummy SMECm Acceptance	3 days																									
13	CQM Thermal Straps Delivery	0 days																									
14	CQM Thermal Straps Acceptance	3 days																									
15	STM Cooler Delivery	0 days																									
16	STM Cooler Acceptance	3 days																									
17	CQM Cooler Harness Delivery	0 days																									
18	CQM Cooler Harness Acceptance	3 days																									
19	STM BDAs Delivery	0 days																									
20	STM BDAs Acceptance	1 day																									
21	CQM BDAs Harness Delivery	0 days																									
22	CQM BDAs Harness Acceptance	3 days																									
23	STM SCAL Delivery	0 days																									
24	STM SCAL Acceptance	1 day																									
25	STM SCAL Harness Delivery	0 days																									
26	STM SCAL Harness Acceptance	3 days																									
27	STM SMECm Delivery	0 days																									
28	STM SMECm Acceptance	1 day																									
29	STM SMECm Harness Delivery	0 days																									
30	STM SMECm Harness Acceptance	3 days																									
31	CQM FPU RF Filter Modules Delivery	0 days																									
32	CQM FPU RF Filter Modules Acceptance	1 day																									
33	STM/CQM 300mK strap delivery	0 days																									
34	STM/CQM 300mK strap acceptance	3 days																									
35	CQM Cooler Delivery	0 days																									
36	CQM Cooler Acceptance	3 days																									
37	SM Structure Integration	17 days																									

Project: SPIRE 3_10_03
Date: Thu 22/07/04

Task		Summary		Rolled Up Progress		Group By Summary	
Critical Task		Rolled Up Task		Split			
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			Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov
38	SM Structure Parts Delivery to RAL	2 days																								
39	Clean	1 day																								
40	Bakeout	2 days																								
41	Assembly of SOB on MGSE	1 day																								
42	Bakeout at MSSL	6 days																								
43	Integration of all MSSL parts	2 days																								
44	Integrate mirrors without alignment	2 days																								
45	Integrate STM SMEC	1 day																								
46	Integrate STM cooler	1 day																								
47	Integrate STM BDAs	1 day																								
48	Integrate STM BSM	1 day																								
49	Early vibration test	9 days																								
50	Prepare for test	2 days																								
51	Initial vibration test	2 days																								
52	Return to G56, prepare for reconfig	2 days																								
53	AM programme	64.5 days																								
54	Reconfigure to AM	19 days																								
55	Adjust BSM shoe	1 day																								
56	Rectify CM3 interface issue	1 day																								
57	Fit OGSE, SMEC dummy etc	2 days																								
58	Carry out trial alignment TBD	15 days																								
59	Cold alignment verification AM	49.5 days																								
60	Complete Optical Alignment	2 days																								
61	Install Thermometers into FPU	1 day																								
62	Make Heater Blocks for Instrument	7 days																								
63	Prepare FPU for cold tests	1 day																								
64	Install STM JFET unit	1 day																								
65	Build up MGSE for cold trials	1 day																								
66	Plumbing for Cryostat	4 days																								
67	Vacuum Window Tests	2 days																								
68	Modifications to MGSE trolley	1 day																								
69	Modifications to 77K End Cap	10 days																								
70	Reinstall L0 Strap Heaters	1 day																								
71	Clean up Laboratory	2 days																								
72	Cleanliness Inspection	1 day																								
73	Move SPIRE to Cryolab	0 days																								
74	Install SPIRE into Cryostat	4 days																								

Project: SPIRE 3_10_03
Date: Thu 22/07/04

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			Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov
75	Warm Alignment Check	1 day																		
76	Test Readiness Review	0.5 days																		
77	Pump-Down	2 days																		
78	Purge He Can with N2	0.5 days																		
79	Warm Alignment Check	1 day																		
80	Fill 77K shield	10 days																		
81	Precool He Vessel with LN2	6 days																		
82	Fill He vessel with LHe	5 days																		
83	Cold Alignment Check	2 days																		
84	Warm up to Ambient	4 days																		
85	Warm Alignment	1 day																		
86	Let-Up to Air	1 day																		
87	Remove SPIRE from Cryostat	2 days																		
88	FPU Ready for CQM Integration	0 days																		
89	AVM programme	15 days																		
90	DPU testing with simulator and EGSE	15 days																		
91	Warm electronics programme	10 days																		
92	DRCU QM1 delivery	0 days																		
93	DRCU QM1 integration and test	10 days																		
94	DRCU QM1 available for CQM	0 days																		
95	CQM programme	370 days																		
96	STM/CQM FTB Subsystem Deliveries	76 days																		
97	STM JFET racks Delivery	0 days																		
98	STM JFET Modules Delivery	0 days																		
99	CQM JFET module delivery (1 off)	0 days																		
100	STM/CQM FTB RF Filter Modules Delivery	0 days																		
101	JFET Module STM/CQM Integration	2 days																		
102	Preparation of CQM	113.5 days																		
103	Remove Instrument Covers and place into MG!	2 days																		
104	Remove OGSE	1 day																		
105	Integration of STM Subsystems	8 days																		
106	Integrate CQM cooler	1 day																		
107	Integrate PLW BDA	1 day																		
108	Integrate RF filter modules	1 day																		
109	Fit PCAL to BSM	1 day																		
110	Wire PCAL to BSM connector	1 day																		
111	Remove links to dummy BDAs	1 day																		

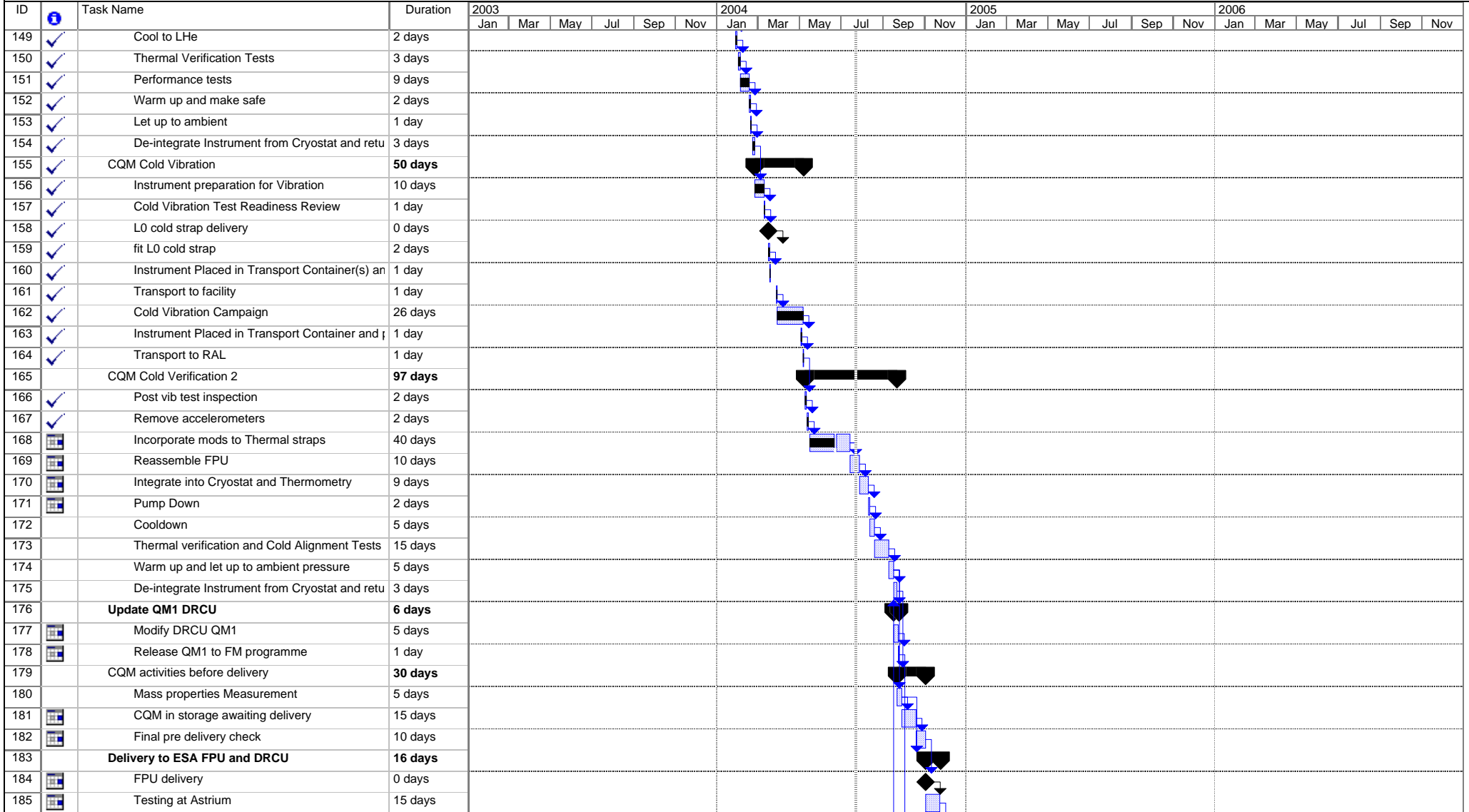
Project: SPIRE 3_10_03
Date: Thu 22/07/04

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112	Refit Photometer box	1 day																								
113	Refit SMEC	1 day																								
114	Refit BSM	1 day																								
115	Integrate filters	1 day																								
116	Refit spec detector box	1 day																								
117	Fit STM thermal harness	1 day																								
118	Anneal internal thermal straps	2 days																								
119	Gold plate thermal straps	1 day																								
120	Fit internal thermal straps	1 day																								
121	Subsystem harness delivery	0 days																								
122	Trial fit harness	1 day																								
123	Bake harness	3 days																								
124	Fit temp sensors to harness	3 days																								
125	Integrate all internal harness	2 days																								
126	Detector harness delivery	0 days																								
127	Trial fit detector harness	1 day																								
128	Second detector harness delivery	0 days																								
129	Detector harness bake	3 days																								
130	Re-integrate cooler	1 day																								
131	Detector harness integration	2 days																								
132	Refit Covers	1 day																								
133	Integrate JFET Boxes and harnesses	2 days																								
134	prepare 300mK straps for annealing	1 day																								
135	Manufacture test Lo straps parts	3 days																								
136	Assemble test L0 straps	5 days																								
137	Prepare Instrument and Transport Cryo lab	1 day																								
138	Modify cryoharness	7 days																								
139	CQM Cold Verification 1	53 days																								
140	CQM cold Test Readiness Review	1 day																								
141	Harness integration	7 days																								
142	Functional check	2 days																								
143	Fit test L0 straps	4 days																								
144	Integrate into Cryostat and Thermometry	8 days																								
145	Final function check	1 day																								
146	Pump Down	3 days																								
147	Cooldown to LN2	2 days																								
148	Purge LN2	2 days																								

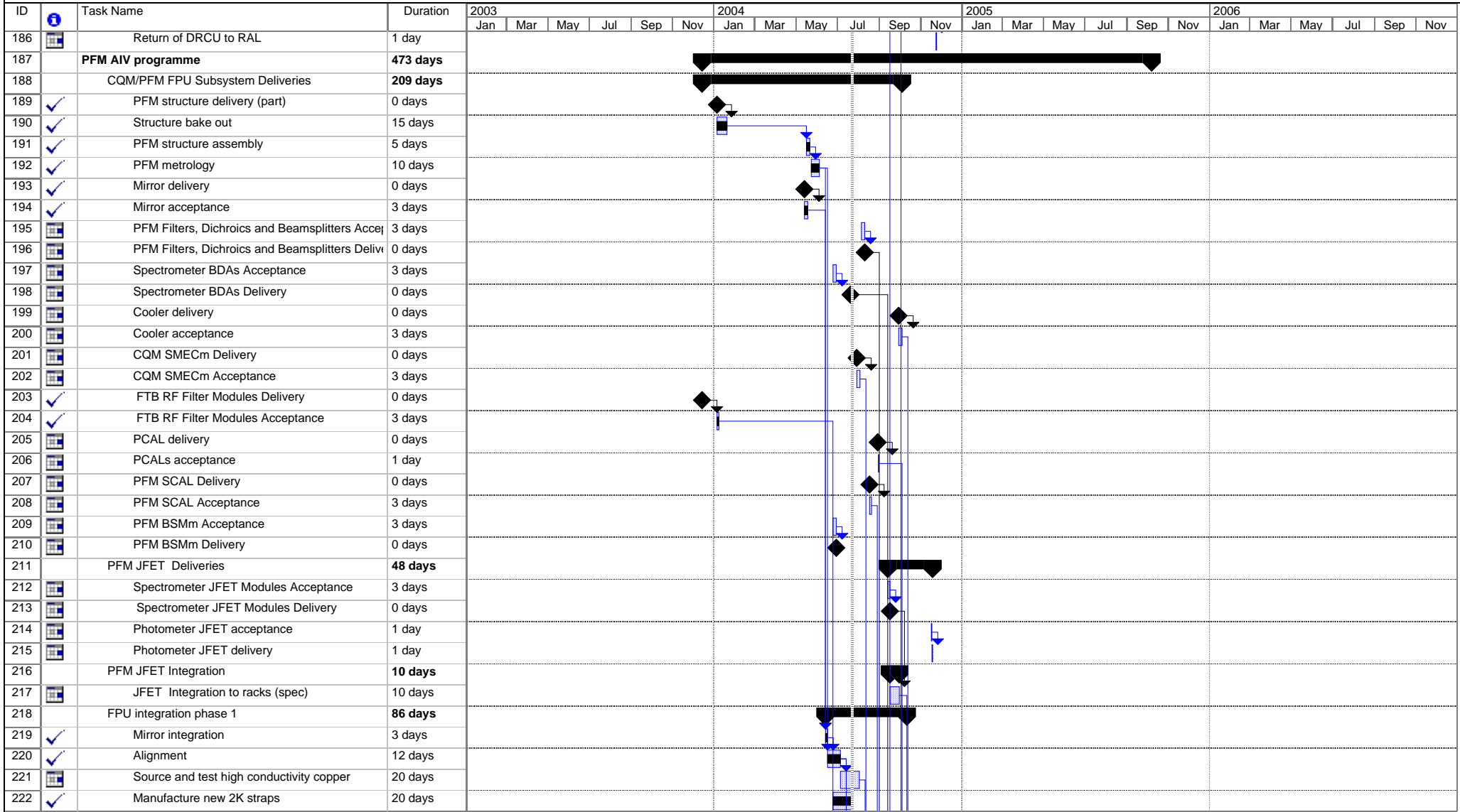
Project: SPIRE 3_10_03
Date: Thu 22/07/04

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223	Modify detector boxes	10 days																									
224	Manufacture new 300mK straps	30 days																									
225	Paint SM12 and baffle	10 days																									
226	SLW and SSW BDA Integration into detector b	3 days																									
227	Spectrometer Detector Box Integration and Ali	1 day																									
228	Spectrometer Detector Harness Integration	3 days																									
229	Harness integration	5 days																									
230	SCAL integration	1 day																									
231	Filters Integration	5 days																									
232	FPU RF Filters Integration	1 day																									
233	SMECm CQM Integration	3 days																									
234	FPU final assembly	5 days																									
235	Warm electronics Deliveries	5 days																									
236	EQM DPU Delivery	0 days																									
237	EQM DPU acceptance	5 days																									
238	QM1 Warm Electronics re Integration	15 days																									
239	Warm Electronics Integration Test	10 days																									
240	Test Facility Integration	5 days																									
241	Instrument integration and test phase 1	45 days																									
242	Instrument Integration I	9 days																									
243	FPU and JFET Preparation and Transport	3 days																									
244	FPU and JFET Integration into Cryostat	2 days																									
245	FPU and JFET Integration with Warm Elec	1 day																									
246	Warm Functional Test I	3 days																									
247	Instrument Cold Verification 1	36 days																									
248	Pumpdown	1 day																									
249	Cooldown	3 days																									
250	Thermal performance verification	3 days																									
251	FIR alignment check	5 days																									
252	Cold Functional Test III	2 days																									
253	Subsystem Performance Verification	5 days																									
254	Instrument verification 1	10 days																									
255	Warmup	3 days																									
256	FPU/FTB De-integration from Cryostat	2 days																									
257	QM1 DRCU available for CQM delivery	0 days																									
258	QM1 DRCU available for CQM delivery	0 days																									
259	FPUintegration phase 2	31 days																									

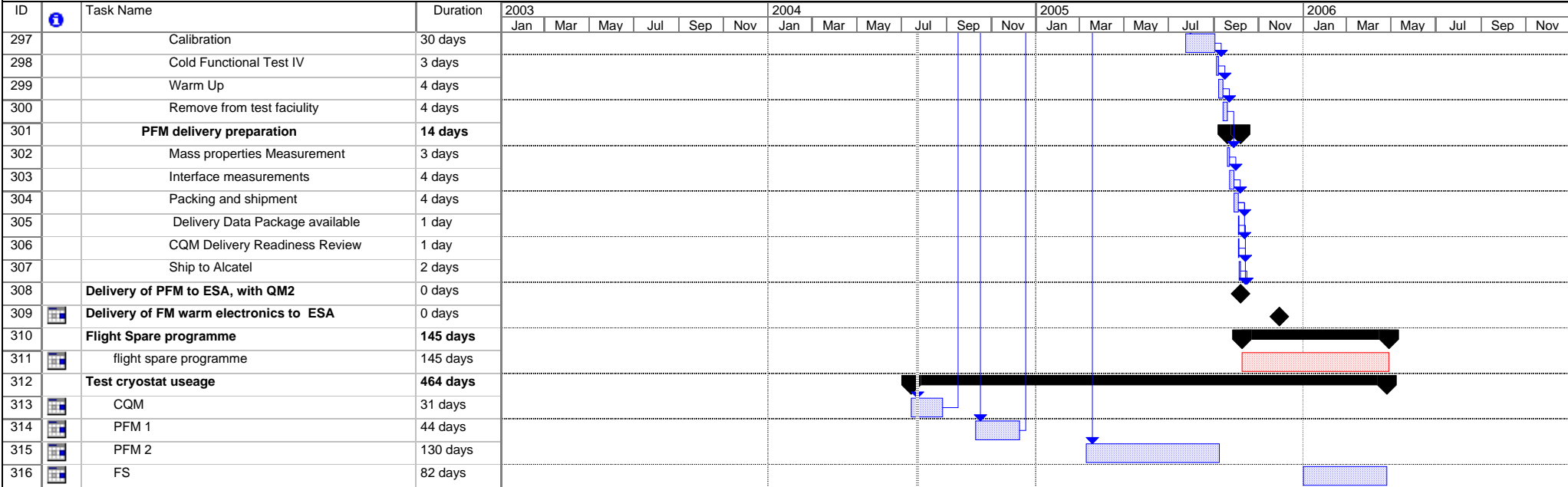
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			Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep
260	Disassemble Photometer side of FPU	5 days																							
261	PLW BDA Integration and Alignment	2 days																							
262	PMW BDA Integration and Alignment	2 days																							
263	PSW BDA Integration and Alignment	2 days																							
264	PFM SMEC integration	5 days																							
265	Other upgrades to full FM spec	15 days																							
266	Delivery of DRCU QM2	0 days																							
267	Delivery DRCU QM2	0 days																							
268	Delivery of FM DPU	5 days																							
269	Acceptance of DPU	5 days																							
270	Instrument integration and test phase 2	20 days																							
271	Instrument integration	10 days																							
272	Instrument test	10 days																							
273	PFM Verification	141 days																							
274	PFM Instrument Cold Tests I	21 days																							
275	Cool down	4 days																							
276	Interface Checks	2 days																							
277	Cold Functional Tests I	5 days																							
278	Pre-vibration Performance Tests	5 days																							
279	Warm Up	4 days																							
280	Warm Functional Tests II	1 day																							
281	PFM Cold Vibration	44 days																							
282	FPU/FTB Packing and preparation	5 days																							
283	Ship FPU/FTB to Cold Vibration Facility	2 days																							
284	Delivery of FPU/FTB to Cold Vibration Facility	0 days																							
285	Cold vibration test	30 days																							
286	Delivery of FPU/FTB from Cold Vibration Facility	0 days																							
287	FPU/FTB Integration into Test Cryostat	3 days																							
288	FPU/FTB Integration with Cryoharness	3 days																							
289	Warm Functional Tests III	1 day																							
290	PFM Instrument Cold Tests II	14 days																							
291	Cool Down	6 days																							
292	Cold Functional Tests II	3 days																							
293	Post-vibration Performance Tests	5 days																							
294	PFM Instrument Calibration	48 days																							
295	Cold Functional Tests III	2 days																							
296	Warm Electronics Thermal Range Tests	5 days																							

Project: SPIRE 3_10_03
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