

Front End Cartridge Meeting, 24 to 26 April 2002

ALMA Week, Granada

Agenda

– Version 1.4, 19 April 2002 –

Durations are given for (presentation+ questions)

Wednesday, 24 April, morning and afternoon

- 08:30 Introduction (10 min) – Wild, Cunningham
08:40 Strawman system layout (15+5 min) – Cunningham
Current plans for cartridge designs
09:00 – Band 3 (15+5 min) – HIA (C.C. Chin)
09:20 – Band 6 (15+5 min) – NRAO (G. Ediss)
09:40 – Band 7 (15+5 min) – IRAM (S. Claude)
10:00 – Band 9 (15+5 min) – NOVA/SRON (A. Baryshev / R. Hesper)
10:20 – Japanese ideas (15+5 min) – NAOJ (Y. Sekimoto)

10:40 – 11:00 Coffee

Session on thermal issues (chair: A. Orlowska)

- 11:00 Cryostat: Thermal design, status and results (25+5 min) – A. Orlowska
11:30 Japanese results with cryocooler (15+5 min) – Y. Sekimoto
Dewar windows and IR filters
11:50 – Work and results at IRAM (10 min) – S. Navarro
12:00 – Work and results at NRAO (10 min) – G. Ediss
12:10 Discussion (20 min): thermal issues. Some questions:
– Is there a conflict between heat lift capacity and cooling requirement at any of the stages ?
– Is there enough information for a good thermal model ?
– What about the LO driver power dissipation ?
– Delivery date of cryostat ? Where ?
– What are the next steps ?

12:30 – 14:00 Lunch

14:00 – 14:45 Discussion on thermal issues (continued)

Session on LO integration (chair: C. Cunningham)

- 14:45 Local oscillator (multiplier) (30+10 min) – S. Thacker/E. Bryerton
– Warm multiplier assemblies (WMAs): design, status and interfaces
– Multipliers: status and mechanical/electrical/optical interfaces
15:25 Possibility of a photonic local oscillator ? (10+5 min) – J. Payne
15:40 Comments on photonic LO (10 min) – M. Ishiguro

15:50 – 16:15 Coffee

16:15 – 18:00 Discussion on LO integration issues

Thursday, 25 April – FE Cartridge Meeting, morning and afternoon

Session on mechanical issues (chair: M. Harman)

- 08:30 Cryostat: Mechanical design, status and mass budget (30+10 min) – Harman
09:10 Mechanical/optical alignment: review of previously stated requirements (10+5 min) – B. Lazareff
09:25 Cartridge structure: Review of structure under development (20min) – Harman
09:45 Japanese cartridge structures (20 min) – Y. Sekimoto / H. Ogawa

10:05 – 10:30 Coffee

- 10:30 – 12:00 Discussion: mechanical issues (90 min). Some questions:
- Cryostat interface to telescope. Any change/concerns?
 - Interface with external optics, widgets and WVM.
 - What, if any, design adjustments need to be considered for cartridges (e.g., space, access holes etc.)?
 - Any new alignment requirements for cartridges and overall cryostat? Any issues re. overall cryostat alignment concept?
 - What tests need to be done to ensure mechanical stability of cartridges and overall cryostat/ QA ?
 - Provision / “real estate” for mounting ancillary components outside the cartridge (e.g., electronics, room temp IF, LO etc.)

12:00 – 13:30 Lunch

Session on electronics issues (chair: C. Cunningham)

- Bias electronics (mixers, IF amps, magnets, heaters, ...):
- 13:30 – Requirements (10 min) – C. Cunningham
13:40 – Work at NRAO (15+5 min) – W. Grammer
14:00 – IRAM development for PdB (10+5 min) – B.Lazareff

Monitor & control (M&C) system:

- 14:15 – Requirements (10 min) – W. Wild
14:25 – Work at NRAO (25+5 min) – A. Perfetto

14:55 – 15:15 Coffee

- 15:15 – 16:30 Discussion on electrical issues (75 min). Some questions:
- Are the requirements complete ?
 - What functions should the M&C system have ?
 - Where should the bias electronics / the M&C system be located ?
 - Do we need heaters to remove trapped flux in the junctions?

Session on optics issues (chair: M. Carter)

- 16:30 Optics: design, status and prototype plans (20+5 min) – M. Carter
16:55 Calibration: hardware (10+5 min) – M. Carter
17:10 Dual load load in subreflector (10+5 min) – S. Radford
17:25 Discussion: optics issues (35 min) – Any open optics questions ?
18:00 End session

Friday, 26 April – FE Cartridge Meeting, morning only

08:30 Summary of two days of FE cartridge meeting (Cunningham, Wild)

Session on test and schedule issues (chair: W. Wild)

09:00 Cartridge test cryostats for bands 3, 6, 7 and 9 (30+10 min) – Y. Sekimoto

09:40 Ideas for a cartridge test plan (10+5 min) – Y. Sekimoto

10:00 ALMA Metaschedule (20+5 min) – C. Cunningham, W. Wild

10:25 – 10:45 Coffee

10:45 – 12:30 Discussion: test issues and FE schedule (60 min). Some questions:

- What is a possible front end schedule ?
- When do we need prototype cartridges ?
- When do we need the LO ?
- When do we need the bias and M&C electronics ?
- Which tests need to be done at the cartridge level ?
- Which tests need to be done at the FE subsystem level ?

12:30 End session

12:30 – 14:00 Lunch

Note: There is the option of continuing the FE cartridge meeting on Friday afternoon.