

Minutes of the Plan Meeting of 4 April 2012.

Members present:

APK (Chair), SKG, YG (From Pune), RBS, AKB, GSS, ANR, HRB, ICH, DVL, Divya Oberoi.

Answers are provided below each agenda point.

List of topics for Plan meet of 4th Apr 2012 (follow-up of some pending topics from different areas) :

1. Documentation on Plan website : "Detailed Design doc" template to be produced by APK (carried over from last week)

APK presented the details of the template and obtained some feedback. APK to produce the softcopy of the template and circulate to wider forum.

2. FE & OF related :

2.1 Update on curve fitting algorithm for beam shapes and fresh beam shape tests by HRB (pending) (HRB/MJ/ICH)

Divya Oberoi presented the status and explained about the details of the algorithms as it stands. He will work with Manisha Samble, understand about the algorithm in more detail and provide the update next week.

2.2 Scaled cone-dipole for 500-1000 MHz : first test results on integrating prototype feed with matching FE box, in preparation for sky test on antenna (GSS/APK)

Cone dipole is ready. It covers a frequency span of 465-800 MHz. Matching 550-900 MHz Front-End Box with Polarizer and LNA in-built is ready after detailed testing. Feed will be integrated with the Front-End for initial testing outside the Lab.

2.3 Status update on 250-500 MHz feed :

(i) any new test results (HRB/GSS/NK)

HRB measured the EI & Az cut measurements at the antenna base using CASA as the astronomical source at S-02 antenna and provided the measurements to Manisha Samble for curve fitting.

(ii) first cut plans for mass production (see MoM of 14 & 28 March) (GSS/HSK)

Gerald provided the final version AUTOCAD drawing of the mesh version of the conical reflector. GSS to sit with HSK for further work towards mass manufacture.

Dipole drawing has to be made by Rajesh Lolap.

2.4 Update on testing of LNA stability in the lab -- (pending from 3 weeks) :

(i) test with tunable load (ANR/APK)

ANR tested two no.s of 200-500 MHz LNAs varying the input load impedance with tunable stub and stabilised the LNAs with a drain resistive loading of 680 ohms and 22 pF. One of the LNAs required an input to ground choke of 330 nH. Other LNA required an unknown choke. ANR will work to sort out the choke issue.

(ii) test with spare cone-dipole feed (ANR/APK)

Will be done after the LNAs are finalised.

2.5 Testing of modified Common Box with 3 different kinds of amplifiers :

(i) update on Sirenza testing is pending (SSK/APK)

Sirenza amplifiers will be given this week.

(ii) when can modified common box go back to antenna (APK)

Though it can go immediately, it is better to sort out the -0.4V instead of 0.0V appearing as control voltage for the GaAsFET MMIC RF switch when MCM is turned OFF.

(iii) voltage level problem was to be discussed with Ops group (APK/CPK/RBS)

RBS, APK, CPK, VBT are working towards solution to this problem.

3. RFI related matters :

No new matters for this week.

Reminder : to convert brief plots of RFI test results of new Miltec PC into a formal report, including detailed comparisons with earlier version of Miltec PC : this is due next week.

4. Operations :

4.1 Status update on Miltec PC order delivery and testing

PC has been ordered and expected delivery is during the third week of May. After that the RFI group can test the PC.

5. Back-ends :

5.1 Updates on PoCo and packetised design debugging (SCC/MM/BAK)

(i) PoCo problem : follow-up from last week

Ajit reported that PoCo has been tested with long baseline antennas. Cross amplitude instabilities were seen. Quantisation error is suspected. Tests have to be done to confirm this.

(ii) Packetised corr : follow-up from last 2 weeks

Packetised Correlator has been tested with noise source. Two types of problems were seen in cross amplitude.

First is a sinusoidal variation in cross amplitude over time where peak to peak variation is 0.2 % of the average cross amplitude level. For this again, quantisation error is suspected and needs to be confirmed.

Second problem is seen when control commands are sent from an external computer. Larger variation in cross amplitudes are seen at regular intervals. YG felt that both problems are inter-related and suggested that priority should be given to the first problem also.

5.2 Updates on GPU corr work (HR/SSK/BAK)

Ajit reported that two GPU clusters were made in the receiver room and were used as four antenna correlator. Tests with feeding the noise produced expected results. Sky tests need to be done.

5.3 Status update on installation of new back-end systems in corr room (BAK)

Three racks are installed at present. Eight ROACH units are installed for four antenna system and another two no.s for PoCo & GPU corr. 10 MHZ, 1 PPS, 1 PPM signals have been brought to correlator wall panel. Currently, differential to single-ended distribution circuits are connected.

5.4 Follow-up on order for new SFP+ system (KDB/BAK)

Folder has been sent to Purchase with recommendation for placing order on MTE.

6. Other items :

6.1 Environmental Chamber : check that new process has been initiated (ANR/SSK)

ANR raised a new indent and will take approval of C.D. for the indent.

6.2 Follow-up on status of 15-m works (JNC) : any specific items needing urgent discussion

Laser Transmitter cooling issue is yet to be sorted out. SKG suggested to write to MITEQ, USA who manufactured the unit and ask their suggestion. Hyderabad based company TEEWAVE looked into the transmitter at Hyderabad.

=====
=====

Minutes of Plan meet of 11th Apr 2012

(follow-up of some pending topics from different areas) :

1. Documentation related :

1.1 "Detailed Design doc" template : soft copy to be circulated by APK

==> item could not be discussed due to shortage of time; email update from APK says he needs one more week to complete the first draft. To check next week.

1.2 Template for reports : SSK and DO to report on first cut ideas and plan

==> item could not be discussed due to shortage of time; but email update has been provided by DO and SSK : the old version has been retrieved and will be polished by SSK and Sanjay Dongare; DO will generate a draft write-up with guidelines for contents to add to the template and this will be circulated for a last set of feedback. To follow-up after 2 weeks.

2. FE & OF related :

2.1 Update on curve fitting algorithm for beam shapes (HRB/MJ/ICH/DO)

==> there was a silly bug in the fitting algo : no dc component added ! Now showing much better results now; may need one more level of sophistication ; meanwhile, can use this version to run through the existing 5-7 data sets that HRB has available and report the results. HRB/MJ/DO to follow-up and report status next week.

2.2 Cone-dipole for 500-1000 MHz :

(i) schedule for sky test on antenna with 1st feed (APK/ANR/GSS)

==> first round test with feed + FE electronics done in lab; needs change in dipole central rod for SMA connector; should be ready to go on antenna next week.

(ii) update on fine tuning frequency coverage with 2nd feed (GSS)

==> no updates (matter not discussed)

2.3 Status update on 250-500 MHz feed :

(i) results from new beam shape measurements (HRB/GSS/MJ)

==> no updates, as the data has not yet been analysed, waiting for improved fitting algorithm (see item 2.1) -- can be taken up now; to check next week.

(ii) plans for mass production : identification of vendors etc (GSS/HSK)

==> item not discussed, but subsequent email update from GSS & HSK : work on identifying prospective parties has started & discussions with some parties will happen by next week; to confirm if the final drawings are ok; to check matter after 2 weeks.

2.4 Update on testing of 250-500 MHz LNA stability in the lab :

(i) completion of modifications of LNA circuit & tests with spare feed (ANR/APK)

==> ANR reported that final inductor values fixed and LNAs are ready; FE box being modified to accommodate these; test results with spare cone-dipole feed should be available by early next week; to check the status next week.

(ii) schedule for putting on antenna (ANR/APK)

==> agreed that it can be done on different antenna (other than S2 and C6); can be finalised next week.

2.5 Testing of modified Common Box with 3 different kinds of amplifiers :

(i) results from Sirenza testing is pending (SSK/APK)

==> done and cleared !

(ii) update on voltage level problem (APK/CPK/RBS)

==> will need some more time to resolve (CPK will look into it and report next week); mux should be switched off ? -- this can be done for new MCM card; agreed that for the old MCM card + new common box, to go with the present modified scheme.

(iii) schedule for putting back on antenna (APK/ANR)

==> can go on W4 with ECG ampl by next week.

2.6 L-band feed spares : Update from RRI (from 3 weeks ago) (APK)

==> no update; APK to follow-up and report by next week.

2.7 OF o/p interface panel in receiver room : update (from 2 weeks) (SSK/PAR)

==> sample unit ready and ok; 2 more such units needed (with pwdr coating) from w'shop. Will take about ten days to have ready.

2.8 OF components : final decision on order for mux-demux (from 2 weeks) (SSK)

==> ready for mass ordering; waiting for the file. APK to check and report.

3. RFI related matters :

3.1 Update on final Miltec PC RFI report (from 2 weeks ago) (SSK/PAR)

==> some more time needed : to check again one week later.

4. Operations :

4.1 Status update on new MCM card manufacture (from one month ago) (CPK/RBS)

==> 2 fully assembled cards in hand, being tested now. Need 2 weeks for full testing, and if all OK, 2 more weeks to get all PCBs. To initiate folder for assembly of the PCBs; some components are still needed -- to speed up these folders. To check status after 2 weeks.

4.2 Status update on users requirements to Ops Group -- from 2 weeks ago (ALL)

==> making progress, but not done yet; check after 2 weeks for final status.

4.3 Joint meeting of Servo, Ops & YG for M&C issues (from 2 weeks ago) (YG)

==> meeting was held this morning; summary is as follows : new controller for FPS will be a Rabbit based card (servo group to check if new MCM Rabbit card can be used for this purpose); communication with ABC will be thru Ethernet; Ops group will work with servo for this development; from servo side Bhumkar + one new person (GT or FTA); rough estimate of time scale for first unit is about one year; progress to be monitored once in 6-8 weeks.

5. Back-ends :

5.1 Updates on PoCo and packetised design debugging (SCC/MM/BAK)

(i) PoCo problem : follow-up from last 2 weeks

==> Ampl drop with time problem still present (repeatability is also an issue) what should be done? a summary list of tests done so far and future tests can be decided (noise source tests can start even now).

(ii) Packetised corr : follow-up from last 2 weeks

==> Testing of scaling factor related issues : improvement by factor of 10 (0.2 to 0.02 %) with change of scaling factor, for the regular oscillations; interesting test done with 4 cycle update that shows a boundary problem.

5.2 Updates on GPU corr work : Discussion of new results & plans (HR/SSK/BAK)

==> fairly decent results from the first sky tests of 2 node system; a few unresolved issues to be looked into.

5.3 Status update on installation of new back-end systems in corr room (BAK)

==> work in progress, no major issues; may need to worry about cable losses as low loss cables are not yet installed.

5.4 Plans for integration of new back-ends with online control (SSK/JPK/BAK)

==> SSK and JPK described the plan of action : python scripts and related issues; KS and JPK to discuss with SCC about details of pkt design to better understand the needs and then summarize the situation and plans. To check after 2-3 weeks.

5.5 Finalisation of ADC report : final round of mods done ? (SCC/KDB/BAK)

==> to put ver 2 on Plan web-page for external comments.

5.6 New item : plans for next generation time/frequency standards (BAK/NDS)

==> initial study of different kinds of Masers etc being carried out by the group. Can look at other contacts : Haystack (DO), NPL, vlbi (YG)

5.7 LO distribution scheme : any further discussions ? (ALL)

==> Implications from last report from BAK (currently on web-page) discussed in some detail; agreed that best option is to go with scheme 1 of the report with the option to upgrade to scheme 3.

It can be done in a manner where we start scheme 1 for first 30 antennas and then put in additional units and go over to scheme 3.

6. Other items :

6.1 Environmental Chamber :

(i) new indent

==> sent to purchase for sending indents

(ii) closure of old file (ANR/SSK)

==> there is a set of fresh results from the party which looks promising; to ask him for one more round of test results (for full temp range) and then PAR and D. Jangade can visit for inspection

6.2 Follow-up on status of 15-m works (JNC) : any specific items needing urgent discussion

==> list of 7 items from JNC via email. Mech & servo items mentioned but not discussed;

Back-end : M&C related issues are being sorted out; connector problems etc. are being looked into.

Main back-end control via M&C system is getting close to finished (few more days needed).

M&C software : new PSL ver testing is ongoing and appears to be reasonable

Integration at GMRT (with FE and ABR lab connected via fibre over the roof) is planned from next week onwards.

=====
=====

Minutes of the plan meeting of 18 April 2012

Members present:

APK (Chair), DVL, ANR, SSK, AKB, SCC, KB, SHR, MVM

1. Documentation related :

1.1 "Detailed Design doc" template : soft copy to be circulated by APK

Under preparation. Hoping to complete by this week end.

2. FE & OF related :

2.1 Status update on 250-500 MHz feed :

(i) reports from any new tests ?

(ii) mass production plans (to check if prototype of new mechanical design has been made & tested on antenna before going for mass prodn): update from GSS/HSK

Last week, HSK & GSS had meeting with vendor Soman of Somanshu Udyam. They are waiting for his quotation.

HSK informed that production prototype is getting made for thorough testing before mass production. Also he has decided to manufacture about 10 No.s of the finalised feed at NCRA workshop.

(iii) Update on curve fitting algorithm for beam shapes.

Manisha informed that flagging the bad data and refitting the data has been done. The refitted data has been sent to Divya Oberoi and she is waiting for his reply.

2.2 Cone-dipole for 500-1000 MHz :

(i) sky test on antenna with 1st feed (APK/ANR/GSS)

The feed was integrated with the 550-900 MHz Front-End with Polarizer. Integrated testing was done in the F.E. Lab with termination and open to sky. Termination Vs Open to sky measurement yielded about 4 dB difference in power. The feed was taken to C-11 antenna today for installation with the appropriate additional stool. It could not be installed due to mismatch of holes in the stool.

(ii) update on fine tuning frequency coverage with 2nd feed (GSS)

GSS is on leave today.

2.3 Testing 250-500 MHz LNA with feed :

(i) update on test results with spare feed (ANR/APK)

(ii) schedule for putting on 3rd antenna (different from C6 and S2) (ANR/APK)

The F.E. Box with stabilised LNA is ready.

The Dipole is not ready. Will update next week.

2.4 Testing of modified Common Box :

(i) update on voltage level problem (APK/CPK/RBS)

CPK is looking into the solution. APK suggestion for future: Do not switch off Analog Multiplexer and turn off the processor only.

(ii) status and results from putting back on W4 antenna (APK/ANR)

Final tests are under progress. Planning to install during next wednesday.

2.5 Status update on CSIRO feed : (JNC/HSK)

Quotation obtained from Godrej for machining. The costs are very high. Rs. 15 Lakh per unit. Non recurring charges Rs. 8 Lakh. HSK Waiting for more quotations for machining. Casting order is placed and one set ready with proof machining.

2.6 L-band feed spares : APK to report update from RRI (from 4 weeks ago) (APK)

E-Mail reminder sent to Raghu & waiting for his reply.

2.7 OF o/p interface panel in receiver room : update (from 2 weeks) (SSK/PAR)

Work completed.

3. RFI related matters :

3.1 Update on final Miltec PC RFI report (from 2 weeks ago) (SSK/PAR)

Work is under progress. Likely to take two more weeks.

4. Operations :

No immediate items for discussion this week !

5. Back-ends :

5.1 Updates on PoCo and packetised design degbugging (SCC/MM/BAK)

(i) PoCo problem : (a) summary of all tests done so far was to be circulated

Mekhala showed a copy of the summary of all tests done so far. She has also circulated the summary of all tests. DVL will look at the tests and come up with suggestions for improvement in design & test procedures.

(b) noise source tests were to start (MM/BAK)

Tests have started. Mekhala did not get time to try out different options. Hoping to complete the tests by next week.

(ii) Packetised corr : follow-up from last week's reports (SCC/BAK)

Shifting of packetised units into the correlator room is completed. SCC & IMH are testing the complete set-up. Sweta has separately tested the analog part. By next week, SCC is hoping to get some results.

(iii) Harshavardhana Reddy has installed a four-node GPU cluster and is doing offline testing.

5.2 To check if ADC report ver2 is available on Plan pages (SCC/KDB/BAK)

Report is available on Plan pages.

5.3 Update on SFP+ order

Our BE group had discussions with MTE and have prepared a time-line. Work started already. Identification of components, materials & connectors is complete. Mid June is the expected delivery.

5.4 BE group have sent the Control & Monitor details to the Operations group as a first draft.

6. Other items :

6.1 Environmental Chamber : (i) follow-up with old party (ANR/SSK)

The party sent plots of thermal cycling from 20 deg C to 60 deg C for both the chambers. PAR sent an E-mail to the party asking for thermal cycling details from 0 deg C to 60 deg C cycling for one chamber & 10 deg C to 60 deg C cycling for the second chamber. The party informed yesterday that he would be sending the test results within the next two days.

6.2 Follow-up on status of 15-m works (JNC) : any specific items needing urgent discussion

Prof SKG suggested putting a copper heatsink over the Laser Diode Transmitter of the Common Box. NCRA Workshop will complete the job by next week.

Fiber connectivity between Fiber-Optic Lab & ABR Lab has been established for integrated testing.

A. Praveen Kumar
18/04/2012

=====
=====