

MINUTES OF THE PLAN MEETING OF 1 FEBRUARY 2012

Duration of the meeting : 1145-1345 Hrs.

Members present : APK (Chair), AKB, RBS, GSS, HRB, ANR, SCC, NMS, Raj Uprade, CPK, VBB. ICH & Sanjay Dongare were called for a certain duration for inputs/discussions.

I am giving the description below each agenda point as Ans.

1. Documentation on Plan website : to follow-up with groups who have not yet put up the documents (electrical, mechanical etc). Also, minutes of all past Plan meetings (from Mar 2011 onwards) should now be on the website (YG has sent the files to S. Dongare)

Ans.

Mechanical & Electrical groups have reported that the work is under progress. Others groups have sent the documents to SND already.

SND informed that he has uploaded all the past plan minutes monthwise.

2. FE & OF related :

2.1 Update on refurbished 610 feeds (GSS) : due from 2 weeks ago

Ans.

GSS informed that a 610/235 MHz feed was corrected to have flush (no projections) by removing the welded points at appropriate points. This feed will reach GMRT site on 1 Feb 2012.

2.2 Raw dump procedure : (i) HRB to report on discussions with ICH regarding beam shape fitting algorithm

Ans.

ICH has assigned the job to Manisha Samble. She started the work on 1 Feb. 2012. HRB informed that the job could be completed by next wednesday.

(ii) GSS to look at first draft of SoP by HRB

Ans.

HRB needs some more inputs from Atul Ganla regarding LabVIEW. HRB will report about the progress next week.

2.3 follow-up on LO settings for wideband feeds : (i) further feedback from lab tests (APK)

Ans.

At ABR Lab, the tests were conducted by APK, DAJ & AMV. Report will be submitted about the details & findings of the Lab. tests. However the conclusion is that, the broadband feeds & RF Electronics will not affect the normal GTAC observations.

(ii) final conclusions from antenna tests (ICH)

Ans.

ICH reported that cross bandshapes across the band with ALC off was observed with 255 MHz and 275 MHz L.O settings. He told that the cross bandshapes are very similar and there is no indication of extra noise or degradation of the signal to noise ratio.

(iii) draft note for control room (ICH + RBS)

Ans.

RBS wanted to see the 250-500 MHz Bandpass filter's bandshape before writing the appropriate note. ICH told that as long as L.O. frequency is lower than R.F. frequency, the P-Band receiver will function normally. ICH suggested that the draft note to control room can be given to use L.O. frequency always lower than RF by 70 MHz within the range covered by the old system.

Action: Anil Raut to circulate the filter response.

2.4 Scaled cone-dipole feed for 500-1000 MHz : updates, if any (GSS)

Ans.

The conical reflector and the single polarisation feed will reach GMRT site on 1 Feb 2012 evening.

2.5 Discussion on new common box problem : updates, if any (APK)

Ans.

We do not have the latest F.E. Power supply for testing the Common Box and induce the failure mechanism. A Power supply will be made after S. Ramesh joins duty after his leave.

2.6 Reminders : Raw dump SoP first draft is due next week

Ans.

The work will take place after getting inputs from Atul Ganla regarding LabVIEW

3. RFI related matters :

3.1 Testing RFI effectiveness of box of mesh on ground : comments and discussion of the report

(PAR/SSK)

Ans.

Discussion is postponed to next week.

3.2 Brief update on inspection of BLDC racks in Bangalore (PAR/SSK)

Ans.

SSK and PAR reported that the test set up does not meet the standard IEC-61587. They are exploring the possibility of testing at SAMEER's new facility at Kharghar, Mumbai.

3.3 Update on RFI tests with EoR mode of GSB (NK)

Ans.

No input received.

4. Operations :

4.1 Palm size units : clarifications on Windows vs Linux ; RFI tests (PAR/SSK)

Ans.

Raj reported that Dynamic C was loaded in the Palm size PC. It has WINDOWS XP. He has tested the sample Program for Serial Commands. He will be testing the ABCCOM software. The next discussion can be had on this topic after two weeks.

PAR and SSK have tested the RFI levels from the Palm size PCs. The RFI levels are low of the order of -100 dBm or lower. The Report is under preparation.

4.2 Miltec indent and order : updates on (i) sample unit from Miltec for tests;

Ans.

RFI group is waiting for the sample unit. They informed that YG suggested that the RFI group can visit Hyderabad and test the sample to speed up the process.

(ii) placing of order with Miltec (RBS + SSK)

Ans.

Quote was not valid. (Date constraint). Revalidated quote has been obtained. By March order has to be placed. After clearance from the RFI group, order will be placed.

4.3 First draft of user requirements template from Ops Group : reactions and comments from other groups, if any; timescale for giving response back to Ops Group to be fixed.

Ans.

Users should give response before March first week. Ops group require immediately the list of commands with dummy bit pattern and monitoring requirements. Monitored voltages should be within +5V and -5V.

4.4 Status check on MCM card design : PCB should be ready to send now (RBS/CPK)

Ans.

MCM design is in the final stages. Some modifications in the circuitry are being done. Add-on feature for SPI interface is being provided. PCB will be done by Argus Technologies. Purchase folder is open at present. Once the folder is received, Work order will be placed.

4.5 Updates on testing of new serial port MCM interface by users and getting the laptops ready for the same (also ordering 5 h'ware units by Ops Group) (RBS)

Ans.

Raj Upgrade reported that 'fedora' Linux loaded Laptops work for ABR system, Telemetry system and for systems at GMRT Receiver room. 'Ubuntu' Linux loaded Laptops work for Telemetry system and not for ABR and Receiver room electronics.

For ordering USB to RS-485 Dongle hardware costing around Rs. 3500/- each, Ops group is planning to go ahead with cash purchase mode.

5. Back-ends :

5.1 Update on note regarding LO distribution scheme (BAK)

Ans.

AKB reported that separate L.Os are being planned for each antenna with 600-1600 MHz coverage, tunable in 500 KHz steps. He told that YG suggested to have one common L.O 100-2000 MHz also. It is being planned. For the individual L.Os YG suggested to go below 600 MHz (Say 200 MHz). BE group is searching for a suitable Frequency Synthesizer to cover the entire range with +10 dBm power for each antenna. YG also suggested to make provision for more than one single oscillator in a redundant mode with RF switches. The BE group will use SPDT switches for better isolation. The present note on this system will be suitably modified and made available in about two weeks.

BE group is also exploring the possibility of using Microwave Relays for switching purposes since they are available with about 60 dB isolation and high power handling capacity.

5.2 Technical note on ADC characterisation : due this week (SCC/KDB/BAK)

SCC showed a draft report on iADC Characterisation. Final version will be submitted by about two weeks.

5.3 Reminder : LO distribution scheme is due for discussion next week.

Ans.

We had a discussion.

6. Miscellaneous items :

6.1 Getting chassis work done in TIFR workshops : update from SKG / HSK on modalities to be followed.

AKB has given five different RF chassis to workshop with drawings with an aim to get 70 units made for each chassis. They require 10 to 15 units each on a priority basis.

A.Praveen Kumar

02/02/2012

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Minutes of the Plan meet of 8th Feb 2012

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

1. Documentation on Plan website : Minutes of past meetings have been put on the website by S. Dongare (in pdf files for each month); need to follow-up with groups who have not yet put up the documents/reports (electrical, mechanical etc).

2. FE & OF related :

2.1 Raw dump procedure : (i) HRB to provide an update on beam shape fitting algorithm -- effort ongoing (Manisha and Nissim are looking with HRB and ICH); to check status next week (ii) update by HRB on first draft of SoP (including check by GSS) -- first draft version is there; to be followed up 2 weeks later.

2.2 follow-up on LO settings for wideband feeds : update on draft note for control room (ICH + RBS) -- agreed that ICH will work on finalisation of the note; to try and close the matter by next week !

2.3 Scaled cone-dipole feed for 500-1000 MHz : status of tests on prototype (GSS) -- single pol dipole without full sleeve arrangement tested in lab : RL performance OK from 450 to 700 MHz; to trim the length, add sleeves, then give for full cross-dipole fabrication; meanwhile, to put linear dipole in cavity and test; to check status after two weeks.

2.4 Oscillation vs RFI in new 250-500 FE Box of S02 : are there issues of conditional stability? -- to check in the lab (need tuning equipment which has to be ordered -- may be able to borrow from RAC for short time?); to explore possibilities of testing LNAs at Canada; to try 130-600 MHz LNA version on S02 with same FE box; status update next week.

2.5 Discussion on new common box : (i) ECG units ready for test? -- units are ready (ii) further progress in solving problem, if any (APK) -- Ramesh will come next week and then new supply can be made ready for testing; to check progress next week.

2.6 Quick update on work on 150 MHz system : progress on simulations (from 2 weeks ago) (HRB/GSS) -- return loss shows good behaviour over one octave (110 to 220 MHz (this needs to be tuned slightly); edge taper plot shows ~2 dB mismatch which needs to be improved by trying different ring geometry; check status after 2 weeks.

2.7 OF components : (i) delivery of lasers -- no response yet from vendor about delivery; to keep following up and check formal delivery date (ii) status on mux-demux (SSK) -- PO sent will take up to 5 weeks; alternate Chinese version is also possible (can be explored in parallel); will need about 1 week to complete the testing. (iii) with available hardware : 3 more antennas can be completed (only shortage is of coupler); this will take total count to 9 antennas (C6, C9, C11, W4, S2, E6, E2 (now) + 2 more to be decided); of these 4 have new antenna base electronics : W4, C6, S2, E2 now; need manpower for wiring of systems under local supervision (to explore possibility of help from RAC); check status after 2 weeks.

2.8 Env Chamber : 2 weeks since last discussion have gone by : to confirm if this vendor is delivering or not! (ANR/SSK) -- vendor has done some work; to check next week and plan for a visit.

3. RFI related matters :

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3.1 Testing RFI effectiveness of box of mesh on ground : comments & discussion of the report (PAR/SSK) -- some discussion about the report & its implications. 3.2 Update on interface of RFI related issues with electrical (SSK/RVS/YG) -- activities are proceeding; can aim for a joint meeting

for follow-up in 2 weeks.

3.3 Update on RFI tests with EoR mode of GSB (NK) -- not discussed.

4. Operations :

4.1 Palm size units : First version of RFI report to be circulated (PAR/SSK) -- work is going on, report will be circulated soon (follow-up next week); Linux based test also done by RU, to do with full features OS to check for any bottle-necks (follow-up after 3 weeks)

4.2 Miltec indent and order : any update on the matter (visit to H'bad location by SSK ?) -- to be followed up.

4.3 MCM card design : confirmation that PCB manufacture is underway (RBS/CPK) -- team is still doing some fine tuning of layout of PCB; may be ready to go in 2 weeks.

4.4 Updates on testing of new serial port MCM interface by users and getting the laptops ready for the same (also ordering 5 h'ware units by Ops Group) (RBS) -- to try joint exercise to demonstrate workability for FE system; new units being ordered (3 nos) to make total of 7 nos.

4.6 Reminder : response from users to requirements template of Ops Group is due by end of this month; would like to see first versions by 3rd week of Feb.

5. Back-ends :

5.1 Technical note on ADC characterisation : due this week (SCC/KDB/BAK) -- first ver is circulating within the group; can be circulated to others within 2 weeks.

5.2 Status update on testing of correlators : (i) GPU vs PoCo vs GSB -- no further tests results; testing 400 MHz BW (4-bit) design on GPU (ii) phase problem of packetised design (SCC/AKB) -- no updates.

5.3 Reminder : LO distribution scheme is due for discussion next week

6. Miscellaneous items :

None.

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Minutes of the Plan meeting of 15 February 2012

Members Present:

APK (Chair), SKG, RBS, SSK, BSP, AKN, NDS, Raj Uprade, NMS, SCC, SHR, VBB, SRA, ICH was called for a brief clarification.

1. Documentation on Plan website : need to follow-up with groups who have not yet put up the documents/reports (electrical, mechanical etc).

Ans.

Electrical, Mechanical & Civil groups were asked to put up the documents in present form within a week and then refine the document later.

2. FE & OF related :

2.1 Raw dump procedure : update from HRB on beam shape fitting algorithm

Ans.

Manisha Samble informed that it would take about two weeks' time to complete the job.

2.2 follow-up on LO settings for wideband feeds : to check if note for control room is ready (ICH)

Ans.

ICH produced the first draft of the proposal which reads as follows.

``You may be aware that C-06, C-08, & S-02 antennas are having upgraded broadband 325 MHz feed, operating in the range of 250-500 MHz. Since these antennas will be used for regular 325 MHz observations, along with rest of the antennas, for all regular observations in the 325 MHz band, the first L.O. should be ALWAYS be less than RF.

However, specific system tests on these antennas with broadband feed can have any L.O. as desired by the user".

Nissim further clarified by E-mail that the allowed first L.O values should be ≤ 290 MHz; the image band would then be < 239 MHz, i.e. well below the cut-off of the Cone-Dipole feed & Front-End system. The note by ICH may be modified to reflect this and avoid this confusion.

2.3 Scaled cone-dipole for 500-1000 MHz : status of tests on prototype (GSS)

Ans.

Shankar sent E-mail that the dipole with sleeve adjustmant and additional sleeve will be tested by next week.

2.4 Update on status of refurbished 235/610 feed (GSS)

Ans.

S.Ramesh tested a feed modified by our workshop and found that the return loss across the band is smooth without kinks. Therefore we conclude that the cavity should not have grooves, welding projections & blobs. Four more feeds at Pune workshop will be repaired with the above points in mind.

2.5 Update on Antenna Test Range (GSS)

Ans.

Initial run with Broadband (30-8000 MHz) RF detector proved to be problematic. The strong 540 MHz TV carrier is swamping the output. VBB has given a Low Pass Filter (LPF) to reject the 540 MHz carrier. Will be tested in a couple of days.

An alternate data acquisition plan by SSK and Sanjeet Roy has evolved; the LabVIEW code was modified so that Spectral Analyzer spectral dump plus one additional channel of data from the Azimuth Encoder of the test platform will be acquired simultaneously. Testing is being done by Shankar and IIST students today.

2.6 Oscillation vs RFI in new 250-500 FE Box of S02 :

Ans.

200-500 MHz LNA is oscillating.

(i) update on putting

130-600 MHz LNA on S02 (is the performance different?)

130-600 MHz LNA has been put and found to be stable and flat bandshape. The LNA will have about 40 Kelvin Noise Temperature instead of 25-30 Kelvin of 200-500 MHz LNA.

(ii) update on lab tests for LNA circuit

Lab tests done. Improvement for stability to be done.

(iii) procurement of tuning equipment

ANR to put indent for Maury Microwave sliding stub tuner.

(purchase vs borrowing from RAC) ;

APK will contact D. Nandagopal.

2.7 Discussion on new common box : Update on testing in the lab (new power supply to be made ready by Ramesh (APK))

Ans.

Ramesh will give a power supply for testing in about two days.

2.8 Env Chamber : follow-up on status from last week (ANR/SSK)

Ans.

Anil has contacted the vendor and asked him to provide Glass windows instead of Acrylic windows.

2.9 Reminders : Raw dump SoP first draft is (still) due next week !

AAG has clarified LabVIEW related matters. HRB not present. Will review next week.

3. RFI related matters :

3.1 RFI report on Palm size units is due (PAR/SSK)

Ans.

Please see Minutes of the Plan Meeting dated 1 Feb 2012 section 4.1. Status is the same.

3.2 Any updates on mobile phone towers ? (PAR/SSK)

Ans.

South and East arm survey completed. Western arm remaining. Airtel has put 3 towers and Vodafone has put one tower.

4. Operations :

4.1 Miltec indent and order : any update on the matter (visit to H'bad location by SSK) (SSK)

Ans.

Party is not replying to E-mails. SSK to call MILTEC by phone.

4.2 Updates on testing of new serial port MCM interface by users :

Ans.

See Plan Minutes 1 Feb. 2012. Section 4.5.

(i) report on joint exercise of Ops and FE groups to test FE systems (RBS/APK)

S.Ramesh has been assigned the job today. He has already contacted Operations Group.

(ii) do we need a short SoP from Ops Group on this? (RBS/RU)

SOP is available in the plan website.

4.3 Reminder : response from users to requirements -- follow-up is due end of this month.

Ans.

By this month end users will give input.

5. Back-ends :

5.1 LO distribution scheme follow-up discussion (BAK)

Ans.

See 1 Feb 2012 minutes.

5.2 Brief update on status of analog back-end units (BAK)

Ans.

See 1 Feb 2012 minutes.

5.3 Status update on testing of correlators :

Ans.

(i) GPU vs PoCo vs GSB

GPU Results:

SHR presented the results of 4 Bit/sample and 400 MHz Bandwidth system tests. The GPU is nVIDIA's Fermi processor C2050. Two results were shown.

a) C-06 Vs W-04 cross amplitude of frequency spectrum and phase for single time stamp.

b) C-06 Vs W-04 Cross amplitude and phase w.r.t time for about two and a half hours.

The plots showed good behaviour.

PoCo: No recent results available (MVM on leave).

GSB: Recent results for coparison not available. See 2 January 2012 results.

(ii) phase problem of packetised design (SCC/AKB)

Time stamp mismatch between the X Engines data is debugged. Phase jump problem debugging is under progress.

5.4 Reminder : note on ADC characterisation is due next week

Ans.

SCC presented the latest results on iADC characterisation. Will be put on Plan Website.

6. Miscellaneous items :

6.1 Finalisation of arrangements for mech fabrication jobs at TIFR (SKG)

Ans.

SSK requires 250 chassis and AKB requires 300 chassis

Praveen
15/02/2012

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Minutes of Plan meet of 29th Feb 2012

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

1. Documentation on Plan website : (i) to check further progress (ii) formation of a group for looking into a standard format for technical reports
(iii) resurrection of "design doc" -- APK to provide update.
==> item not covered in detail due to lack of time; APK to resurrect the "design doc" by next week.
2. FE & OF related :
 - 2.1 Raw dump procedure SoP : follow-up on matters from last week (HRB/GSS)
==> waiting for feedback from GSS; to take up again next week.
 - 2.2 Update on curve fitting algorithm for beam shapes (from 2 weeks ago) -- HRB
==> algo is ready, some bugs to be fixed, should be ready next week.
 - 2.3 Scaled cone-dipole for 500-1000 MHz : status of tests with prototype -- pending from last 2 weeks (GSS)
==> no updates; to be taken up next week.
 - 2.4 Update on work on 550-900 MHz filter units
==> work in progress, but vendor is busy with Infosys order; to take up after 2 weeks.
 - 2.5 Oscillations in new 250-500 FE Box : (i) update on post-ampl oscillation in FE box
==> needs to be done on different PCB layout : 2-3 weeks to make ready and test.
(ii) update on stability improvement of LNAs in the lab
==> waiting for equipment from RAC to come; meanwhile, get 2 more feeds made for use in lab tests; also to use the perforated sheet version available in Pune campus. FE group to initiate action; matter to be reviewed after 2 weeks.
 - 2.6 Debugging the problem in new common box : Update on tests in the lab (APK)
==> ECG + new pwr supply arrangement simulates similar problem as seen with Sirenza + old pwr supply : Tel group + FE group to look jointly at problem; to see if original problem with Sirenza can be simulated in lab. Review next week.
 - 2.7 OF : status of order for new lasers (SSK)
==> party has replied saying prodn line is busy with a big order; hence, ours is delayed till 15th May! Purchase to follow-up in formal manner; to keep informal channels open with vendor to ensure 15th May deadline. Review after 1 month.
 - 2.8 New wideband OF systems : response plots of newly intalled units (SSK)
==> item not discussed
 - 2.9 Plans for supplying final o/p from OF system to analaog back-ends :
==> low loss cable requires TNC type connector, but OF o/p is SMA -- some i/f arrangement needs to be provided. To be taken up for discussion next week.

3. RFI related matters :

3.1 Report on new mobile phone towers -- from meeting of 2 weeks ago (PAR/SSK)

==> 12 of 13 new cell sites have been surveyed and report is getting ready -- matter can be taken up for discussion in about 2 weeks from now.

3.2 Characterisation of military satellite RFI near 250 MHz (PAR/SSK)

==> item not discussed; TBD next week.

4. Operations :

4.1 Miltec PC : update from tests of new unit at GMRT (SSK)

==> unit has not yet reached us (more than one week delay) -- PAR to follow-up

4.2 New MCM card : Confirm that order for PCB manufacture has gone (CPK/RBS)

==> order (alongwith Gerber file) will go to party by end of this week (2 cards will come populated).

4.3 Response from users to requirements : to check the status of this

==> no responses from any group; postponed for 2 weeks.

4.4 Plans for integrated control environment with servo : joint meeting (RBS)

==> some response is there from RBS + SS discussion; postpone till next week

4.5 Can the analog multiplexers (for monitoring) be left ON in new MCM card (even when card is off)

==> matter went into a long discussion -- not clear where the problem lies; FE and Ops group to look at jointly and report back by next week.

5. Back-ends :

5.1 Any quick updates on checking of GPU and PoCo back-ends :

==> modified PoCo design tested -- has ampl fluctuations while phase appears OK? DVL to help check the data and characterise the problem.

==> GPU design : 2 node version is almost ready - basically working, benchmark numbers to be ready by Friday. To discuss with nvidia about 4 node version. Topic to be reviewed next week.

5.2 Note on ADC characterisation needs to be circulated amongst concerned parties and then put up on web page (SCC/KDB/AKB)

==> further tests have been done in last few weeks and updated doc to be circulated by BE group within the next week; to be discussed in Plan meet 2 weeks from now and see if matter can be closed.

5.3 Update on SFP+ adapter work (KDB/AKB)

==> indent last date is today, to follow-up and check with purchase and with MTE as needed

5.4 Shifting of broadband systems to corr room :

==> Matter discussed in detail : 3 racks will be put : (i) Rack-1 : 4 antenna

final analog back-end system + older prototypes (ii) Rack-2 : packetised design for inhouse development for 4 ants, with expansion capabilities (iii) Rack-3 : released corr designs : (a) PoCo and (b) GPU correlator; in addition, arrange for keeping 4 PCs with GPUs. Further cooling tests to be done next week along with electrical and AC teams.

Note : to decide exact method of converting OF o/p (SMA) to TNC type (which is reqd for low loss cable) -- see item 2.9 above.

6. Other items :

6.1 Mechanical fabrication jobs at TIFR : (i) to formalise the procedure (SKG)

==> discussed and cleared with central w'shop at TIFR (Sangam Sinha); raw materials not required to be supplied by us (they have enough stock!); identify one person from NCRA as the interface (HSK will be the contact); users from GMRT can give job requests (along with choice of material) on the existing electronic form (with a suggestion for where we would like the work to get done) and HSK can take the final decision (ii) draw up list of all the requirements at present ==> AKB has already given some jobs; others (SSK etc) can also submit their jobs.

6.2 Status and plans for 15-m works (JNC)

==> to aim for mid-March for starting the work of integrating things; 3 specific items discussed :

(i) CommBox work update : RF part almost completed; OF part will take one more week (could be ready for shifting by end of next week);

(ii) OH feed work : most of the cabling, strips etc is damaged and needs to be done afresh alongwith quite a few of the PCBs etc. Work on this will start shortly (by next week or so, after CB work is finished).

(iii) Rabbit cards for 15m : 2 cards of ver1.0 can be assembled for use in 15m in 2 weeks time, if that is suitable; final ver2.0 cards will come alongwith bulk order of PCBs (see item 4.2 above)

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