List of topics for Plan meet of 14th September 2011 (follow-up of some pending topics from different areas):

1. Documentation on Plan website: some new updates are visible -- follow-up is still required from all concerned; servo has been reminded; need to reiterate with mech, civil & electrical also.

### 2. FE & OF related:

- 2.1 Cone-dipole feed: (i) Update on new results from Hanumanth -- can we get an "average" response of the feed now? (ii) Any updates from back-end measuremens (NK)? (iii) improved mechanical design: drawing of dipole to w'shop (HR); estimate of time scale from mech group (APK)
- 2.2 150 MHz system : fix a slot for a bigger meeting / discussion (with adequate preparation from FE group)
- 2.3 Update on study / report on cross-dipole noise radiation scheme : any progress since discussion of 3rd Aug? : No progress even now!
- 2.4 W04 broadband link: update from BE group about tested power levels
- 2.5 Status of completing loop connection for Pune-GMRT link
- 2.6 Update on Environmental Chamber purchase
- 3. RFI related: (Not discussed last week due to shortage of time)
- 3.1 Follow-up on Ue-Li Pen's survey : (i) RFI team's report on the Pomegranate Farm (SSK) (ii) any clarification on results and final report from Pen's team (NK)
- 3.2 Follow-up on BSNL mobile towers
- 4. Operations: (Not discussed last week due to shortage of time)
- 4.1 Quick update on Miltec visit to Pune and any related item (from 24Aug11)
- 4.2 Update on testing of MCM card with patch card (from 10Aug11)
- 4.3 Serial ports for antenna base testing: update on new effort by Uprade (from 10Aug11)
- 5. Back-ends: (Not discussed last week due to shortage of time)
- 5.1 Reminder: note from BAK on proposed scheme for LO in new analog system: update by 17th Aug was agreed upon. No updates last meeting.

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Minutes and action items of Plan meet of 7th September 2011:

1. Documentation on Plan website: some new updates are visible -- follow-up is still required from all concerned; servo has been reminded; need to reiterate with mech, civil & electrical also. No updates this time also!

#### 2. FE & OF related:

- 2.1 Cone-dipole feed: (i) results frm 250-500 MHz version (NK and Hanumanth): RFI team to look in detail at performance near 250 MHz for RFI; poor deflection at 325 to be checked with repeat test and follow-up; beamshape fitting looks OK at first order but needs some improvement in technique.
- (ii) update from Hanumanth Rao on getting beam widths and deflection plots, and also work required to make independent version of the program that can be used at antenna base: HR, Atul and Mangesh working on it (iii) follow-up on progress of new version of the feed: APK in touch with mechanical group on progress; HR to send a drawing for the dipole; APK to talk to HSK to get estimated time scale.
- 2.2 Discussion on possibilities for new 150 MHz feed: scaled cone-dipole (with some modifications), scaled version of modified Kildal feed (currently on C08), other options...: to try scaled version of cone-dipole feed and look at mechanical aspects; modified Kildal feed to be studied more thoroughly at 250-500 and then see if it can be scaled; possibilities for boxing ring configurations and drooping dipole designs can also be looked at -- to schedule one more detailed discussion on this topic, maybe 2-3 weeks later.
- 2.3 Update on study / report on cross-dipole noise radiation scheme : any progress since discussion of 3rd Aug? : No progress even now!

- 2.4 Quick update on status of work on upgraded common box: waiting for sample of new amplifier which should come anytime; can place MOQ order for the same; prototype PCB is ready; temp monitor -- tbc for space constraints and report back (2 weeks); power detector -- can use same device as identified earlier for FE and BE systems. Check again after 2 weeks (21 Sep)
- 2.5 Temp monitoring plans and progress: new device identified which is better
- -- to be finalised soon (vis-a-vis LM35)
- 2.6 W04 broadband link: update on full testing and characterisation by OF group: all testing completed by OF group, report getting ready; still has hard-wired var attn control still; BE group to check power levels at their system for 3 different BW choices; only effect of old common box should be seen -- about 4-6 dB. Update next week (14 Sep)
- 2.7 Updated on component purchase for OF systems: lasers, extra cables, mux-demux etc: laser delivery delay by one week; 6 ants completed; 7th can be done even now; target for 3 more to make 10 ants; mux-demux: to go ahead with indent for full 30 ants. To discuss with HSK for finding better vendors for mass production of units. Update after two weeks (21 Sep)
- 2.8 Discussion on rerouting of optical fibres in receiver room for upgrade works : discussed and cleared for implementation during MTAC (24th Sep onwards, for one week).
- Ethernet link for additional 8 ants is possible, 4 more will be done during next MTAC ==> total 7 will be available.
- 2.9 Status of completing loop connection for Pune-GMRT link: optical ampl should come by end of this week; to contact BSNL when ready after lab tests. Update next week (14 Sep)
- 2.10 Update on Environmental Chamber purchase -- from meeting of 24Aug11 : issue of interface plate remains unresolved -- can't get party on the line; postponed to after Ganesh festival -- tbc after 1 week (14 Sep)
- 3. RFI related : (Not discussed due to shortage of time)
- 3.1 Follow-up on Ue-Li Pen's survey : (i) RFI team's report on the Pomegranate Farm (SSK) (ii) any clarification on results and final report from Pen's team (NK)
- 3.2 Follow-up on BSNL mobile towers
- 4. Operations: (Not discussed due to shortage of time)
- 4.1 Quick update on Miltec visit to Pune and any related item (from 24Aug11)
- 4.2 Update on testing of MCM card with patch card (from 10Aug11)
- 4.3 Serial ports for antenna base testing: update on new effort by Uprade (from 10Aug11)
- 5. Back-ends: (Not discussed due to shortage of time)
- 5.1 Reminder: note from BAK on proposed scheme for LO in new analog system: update by 17th Aug was agreed upon. No updates last meeting.

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List of topics for Plan meet of 21st September 2011 (follow-up of some pending topics from different areas):

1. Documentation on Plan website: some new updates are visible -- follow-up is still required from all concerned; servo has been reminded; need to reiterate with mech, civil & electrical also.

### 2. FE & OF related:

- 2.1 Cone-dipole feed: Updates on (i) do we have any new measurements to get a better "average" response? (HR) (ii) update on fitting of the curves in matlab (HR+GSS) (iii) any updates from back-end measurements (NK)? (iv) porting of the software for independent functioning (HR+AG+?) (v) improved mechanical design: drawing of dipole to w'shop (HR); estimate of time scale from mech group (APK).
- 2.2 150 MHz system: to discuss first order issues (FE group to lead the discussion) and fix a slot (2 weeks from now) for a bigger discussion.
- 2.3 Update on common box design work: temp monitor and power detector (pending from two weeks ago)
- 2.4 Update on study / report on cross-dipole noise radiation scheme : any progress since discussion of 3rd Aug? : No progress even now
- 2.5 W04 broadband link: BE group to make measurements at antenna base to understand differnce in power levels and report on 21st Sep. Also check S2 which is showing temporal jumps on seconds time scales.
- 2.6 To discuss with HSK for finding better vendors for mass production of units OF units. Update after two weeks (21st Sep) -- any updates?
- 2.7 Status of completing loop connection for Pune-GMRT link: to confirm the current status and plans
- 2.8 Update on Environmental Chamber purchase: to check if matter is sorted out or not.

### 3. RFI related:

- 3.1 Follow-up on Ue-Li Pen's survey : (i) RFI team's report on the Pomegranate Farm (SSK) (ii) any clarification on results and final report from Pen's team (NK)
- 3.2 Follow-up on BSNL mobile towers
- 4. Operations:
- 4.1 RFI report on Miltec to be discussed in some detail; should we put an indent for an appropriate specification.
- 5. Back-ends:
- 5.1 Current status of Pocket Correlator testing
- 5.2 Current status of Packetized Correlator testing
- 5.3 Current status of GPU Correlator testing

# Minutes and action items from Plan meet of 14th September 2011:

1. Documentation on Plan website: some new updates are visible -- follow-up is still required from all concerned; servo has been reminded; need to reiterate with mech, civil & electrical also.

### 2. FE & OF related:

- 2.1 Cone-dipole feed: (i) Update on new results from Hanumanth -- can we get an "average" response of the feed now?: 2 data sets are now available; show different "dips"; hence avg beaviour really needed/useful ==> take 2 more data sets; fitting of the curve to be tried within matlab and report back next week (ii) Any updates from back-end measurements (NK)? no update (iii) improved mechanical design: drawing of dipole to w'shop (HR); estimate of time scale from mech group (APK) -- no update.
- 2.2 150 MHz system: fix a slot for a bigger meeting / discussion (with adequate preparation from FE group) -- slot the meeting for first week of Oct (preceded by a note from FE group about different options with pros & cons); reminder disussion next week (21st)
- 2.3 Update on study / report on cross-dipole noise radiation scheme : any progress since discussion of 3rd Aug? : No

progress even now -- No update as APK not present.

- 2.4 W04 broadband link: update from BE group about tested power levels: measurements at OF o/p in CEB shows power levels which are lower than expected by about 16 dB; slope across the band is 10 dB instead of 6 dB expected. To measure at antenna base and circulate results, in time for discussion next week. Also check S2 which is showing temporal jumps on seconds time scales. follow-up next week (21st)
- 2.5 Status of completing loop connection for Pune-GMRT link: to take up next week.
- 2.6 Update on Environmental Chamber purchase: to check if order can be amended to add the 30K for adding the panel OR buy the product with present conditions and then add extra work order for the modifications. Update next week.

# 3. RFI related:

- 3.1 Follow-up on Ue-Li Pen's survey : (i) RFI team's report on the Pomegranate Farm -- follow-up action from electrical group required (ii) any clarification on results and final report from Pen's team (NK)
- 3.2 Follow-up on BSNL mobile towers

### 4. Operations:

4.1 Quick update on Miltec visit to Pune and any related item (from 24Aug11): testing has been done, results are encouraging / better than earlier version, still some scope for improvement is there (around 150 MHz), RFI team to send

the report, to investigate putting an indent for an appropriate specification.

- 4.2 Update on testing of MCM card with patch card (from 10Aug11): basic testing has been done, but not all the software has been ported, would like to do that before finalising the new PCB. 2-3 weeks to complete software porting, then 2-3 weeks for finalising new PCB; FE indent for Rabbit card to be initiated; same for other components; to taget October end for availability of all components; mass assembly to be done outside (Argus?); FE to check about accommodating new MCM card + box in their common box. Options for communicating to the FE MCM: either through RS 485 or through ethernet (both to be available).
- 4.3 Serial ports for antenna base testing: update on new effort by Uprade (from 10Aug11): new FTDI units are very clear about using all the bits; USB to RS485 interface is working -- 10 commands are working; others will start working soon and will be handed over to FE group for testing -- in few weeks time.
- 5. Back-ends: (Not discussed last week due to shortage of time)
- 5.1 Reminder: note from BAK on proposed scheme for LO in new analog system: update by 17th Aug was agreed upon: Work is ongoing; two weeks more time (28th Sep)

Email from SSK:

Dear Prof. Yashwant Gupta,

The input for various topics related to OF and RFI are below

- 1. W04 Testing completed and released for usage. Connecting using telemetry is pending and planned to take later.
- 2. Miltec PC tested and it shows all the spurious lines reduced and noise level is low except for an increase in noise around 150 MHz with 7 dB. It can be corrected with better shielding on connector side and fan side. They said they will be getting the unit after shielding as early as possible.
- 3. Input for Pomogranate RFI was given with all details and our part is complete.
- 4. Status of 8 X 1GBE lin is the link works with full 8 GBE after improving the link losses. Now we will be installing the Optical

amplifier to improve further reliability of the link.

- 5. Reports on Rabbit card testing is complete and the cabinet is also complete. Now it is to be decided about going for mass production of the RFI shielded enclosure for the Rabbit card.
- 6. PC104 can't be shielded individually since it is an add-on card. Hence rack needs to be shielded if needed or reduce the RFI from PC104 with better routing and shielding at card level.
- 7. Reports on Miltec, Pest control units, Lamps etc. is getting ready.

With thanks and regards,

S.Sureshkumar

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List of topics for Plan meet of 28th September 2011 (follow-up of some pending topics from different areas):

1. Documentation on Plan website: some new updates are visible -- follow-up is still required from all concerned; servo has been reminded; need to reiterate with mech, civil & electrical also.

### 2. FE & OF related:

- 2.1 Cone-dipole feed: Updates on (i) any new measurements? (ii) update on fitting of the curves in matlab (HR+GSS)
- -- further refinements (e.g. DC offset etc) taken care of? (iii) any updates from back-end measurements (NK)? (iv) porting of the software for independent functioning (HR+AG+MU) -- xp vs win7 problem resolved?
- 2.2 150 MHz system : reminder to FE about background document
- 2.3 W04 broadband link: 6 dB attenuator change completed?
- 2.4 New lasers : follow-up on testing; can we indent for the remaining quantity?
- 2.5 Better vendors for mass production : SSK + HSK; SKG (Mumbai options)
- 2.6 Relocation of OF racks : completed? any unresolved matters?
- 2.7 Environmental Chamber: order cleared?
- 3. RFI related matters (mostly confirmation of actions):
- 3.1 updated report on RFI testing of servo shed (before and after usage)
- 3.2 RFI testing of C4 in present running condition of BLDC
- 3.3 RFI from transformers: recheck of 10 units that have been improved
- 3.4 BSNL towers : visit to Ahmednagar planned?
- 3.5 Updates on Ue-Li Pen RFI scheme [NK]
- 4. Operations:
- 4.1 RFI report on Miltec to be discussed in some detail; should we put an indent for an appropriate specification. Indent can be placed between (RBS and SS) -- done?
- 4.2 Palm sized units order progress?
- 5. Back-ends:
- 5.1 Current status of Pocket Correlator testing
- 5.2 Current status of Packetized Correlator testing
- 5.3 Current status of GPU Correlator testing
- 5.4 Note from BAK re LO scheme for upgraded system

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Minutes and action items from Plan meet of 21st September 2011:

1. Documentation on Plan website: some new updates are visible -- follow-up is still required from all concerned; servo has been reminded; need to reiterate with mech, civil & electrical also.

# 2. FE & OF related:

- 2.1 Cone-dipole feed: Updates on (i) do we have any new measurements to get a better "average" response? (HR): one more measurement, looks consistent with previous one (ii) update on fitting of the curves in matlab (HR+GSS) -- now working for gaussian functions and new results look much more sensible and also consistent with epoch (iii) any updates from back-end measurements (NK)? -- data has to be retreived from backup (iv) porting of the software for independent functioning (HR+AG+MU) -- progress is there, but some issues of linux vs windows (xp vs win7) (v) improved mechanical design: drawing of dipole to w'shop (HR) -- dipole, feed and mounting arrangement drawings to be finalised and formalised (work is underway); estimate of time scale from mech group (APK) -- 8 to 10 days, to check two weeks from now. Can go to test range for checking and then bring to site.
- 2.2 150 MHz system: to discuss first order issues (FE group to lead the discussion) and fix a slot (2 weeks from now) for a bigger discussion.

Target to have a discussion on 5th October; needs a background document by 30th Sep by FE group. About 4-5 options to be listed with main pros and cons and any open questions.

- 2.3 Update on common box design work: temp monitor and power detector (pending from two weeks ago) -- new device for temp monitor has been indented
- and it has no space constraints; power detector is agreed upon; amplifier procurement: sample devices free samples have not yet come, meanwhile indent has been put -- may take 6 weeks to come.
- 2.4 Update on study / report on cross-dipole noise radiation scheme : any progress since discussion of 3rd Aug? : to try and close the matter by middle of October with a recommendation note by APK.
- 2.5 W04 broadband link: BE group to make measurements at antenna base to understand difference in power levels and report on 21st Sep.: results look like fibre is giving expected performance, power level is less as coming from FE itself, deficit of 10 dB or more; also larger drop at top end of the band (1390) ==> compensating ampl is not there in W04 system?

It appears now that common box gain diff is more like 9-10 dB, rather than 4-6 dB. Immediate soln: to increase the power level at ABR by removing the 6 dB attn. as a temporary soln. till new CB is put. Part of the extra slope is due to splitter being used in IF system -- new device being put which will

- reduce it. Equaliser needed or some other trick will help? Also new, different cable. Also check S2 which is showing temporal jumps on seconds time scales -- no conclusion obtained.
- 2.5 Lasers arrived and being tested: seem to be OK, except for operating temperature requirement difference of 10 deg. OF to complete basic tests and come back with reco for full quantity order -- tbd asap.
- 2.6 To discuss with HSK for finding better vendors for mass production of units OF units. Update after two weeks (21st Sep) -- any updates? Matter to be followed up with HSK and SKG at Mumbai.
- 2.7 Status of completing loop connection for Pune-GMRT link: to confirm the current status and plans: needs discussion with BSNL and also shutdown of link -- can postpone to after MTAC (take up after one month).
- 2.8 Update on Environmental Chamber purchase: to check if matter is sorted out or not: purchase is ok with L1 + 30k if we give appropriate paperwork. PAR + SRamesh.
- 3. RFI related : (not discussed in detail due to lack of time)
- 3.1 Follow-up on Ue-Li Pen's survey : (i) RFI team's report on the Pomegranate Farm (SSK) (ii) any clarification on results and final report from Pen's team (NK)
- 3.2 Follow-up on BSNL mobile towers: visit to A'nagar may be needed.
- 4. Operations:
- 4.1 RFI report on Miltec to be discussed in some detail; should we put an indent for an appropriate specification. Indent can be placed between (RBS and SS)
- 5. Back-ends: (not discussed due to lack of time)
- 5.1 Current status of Pocket Correlator testing
- 5.2 Current status of Packetized Correlator testing
- 5.3 Current status of GPU Correlator testing

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