Minutes of Plan meet of 10 July 2013 (follow-up of some pending topics
from different areas) :

1. Documentation related :

1.1 Follow-up on level 3 (NTR) -- pending for long : from 22 May & before (SSK/DO):
To check status of report on design of OF system, expected to be ready by 5 Jul 13.
==> no update; can be done one month later.

1.2 Detailed design doc -- pending for long : from 19 June & before (SSK/BAK) :
follow-up on subsystems to be converted : (i) OF Rx system to be completed
(Satish Lokhande) -- hardcopies had been collected; doc to be made ready
(ii) OF Tx to be started (iii) analog BE system to be completed.
==> no progress, to reschedule accoringly.

2. FE & OF related :

2.1 Update on results from test range -- from 19 June & before (GSS/SSK) :
(i) phase centre tests for 250-500 CDF : to report on expt with 10 to
20 mm height change in 250-500 feed on one antenna to see how much change in
sensitivity is seen. Need update on results from HRB.
==> +100 mm showed 1 dB drop ; need to see if this can be documented properly.
(ii) update on calculation (based on reference paper) of the expected deflection
at 450 or 500 MHz and comparison with measurements to see if we are losing
significant sensitivity -- GSS to come back with refined version more relevant
for GMRT, and to see if further expts with 250-500 or 500-1000 feed are useful.
Awaiting updates from GSS + project student.
==> student has been working, but there is no final update; to be followed up
1 or 2 weeks later.
(iii) status of phase centre checking for ver1 550-900 CDF and CSIRO feeds --
waitng for results with new VVM set-up.
==> no update available.
To follow-up next week ?

2.2 New LNA for 130-260 system -- from 19 Jun & before (VBB/SSK) :
(i) Variation of gain and Tsys with temperature : to report results from testing
with different lengths of cable in env chamber.
==> to continue this testing with Labjack and to check if current set-up has
effectively no cable and then introduce some cable (RG214 of about 1.5 m) to
quantify its effect.
(ii) update on scheme for fitting two temp monitors (one for LNA, one for box)
in 130-260 MHz FE box for tests on bench followed by antenna tests.
==> to work with Ops Group (and control room) to try and get readings from the
one already installed and work on getting two temp monitors installed.
Follow-up on both items after 2 weeks.

2.3 Mass production of 250-500 FE system -- from 19 June & before (ANR/SSK) :
(i) status of testing and installation of new feeds : to check if W04 is done
and what is the present count of antennas completed; can we get final sensitivity

plots (on-off)/off for all the installed systems.
==> 14 antennas done (including W4). Will do one more (C11) and then stop.
HRB to provide sensitivity results from 4 data sets of 6-9 antennas each.
(ii) status of testing and installaton of FE boxes : to check status of number of boxes installed and stability of performance; is matching still an issue?
==> 9 are complete; 10th will go in next two days (W04) and then stop, with 2 FE boxes spare. Matching problem appears to be traced to size of female N-type connector on QH unit -- it is smaller dia than normal; fix to the problem is being tried.
(iii) status of testing and installation of modified Common Boxes : to check if new units with Hitite amplifier are working ok and whether scheme can be finalised; need response of the new system for different combination of Hitite devices.
==> unit with 2 Hitite (740) giving total gain of 15 + 15 now installed on E6
Also 4 ants (E02, W04, S02, S04) have older Sirenza + ECG. FE has enough devices for 4-5 more antennas. Will populate 8 antennas (mix type) and keep 2 spare.
(iv) status of lower priority items : notch filter at 540 (new PCB tested?), dir coupler ready?, power splitter for noise (chassis ready?), noise src, additional supply for new post ampl, temp monitor, power monitor, chassis, RFCM card (how many are ready?), phase switch + opamp (testing by Sougata completed?)
==> no fresh update; can be taken up 1 or 2 weeks later.
To follow-up on pending items after 2 weeks.

2.4 Status of improved 500-1000 MHz CDF -- from 12 June & earlier (HRB/GSS/SSK) :
(i) follow-up on immediate action items (#s 1 to 3) from 20 Mar discussions :

1. repeat the deflection tests for ver2 with a rigid stool design
2. to share the results of deflections wrt other antennas with old 610 system
3. finer adjustment of focus distance for ver2

==> rigid stool request to be given; 30-1 results to be shared; 3 -- nothing much happening.
(ii) slightly longer term follow-up items from 20 Mar discussion :

4. status of tests with newly delivered ver2 solid cone
5. try ver2 dipole in ver1 cavity and verify that results don't degrade?
6. try new polariser + LNA in old feed : what will we learn? (are there enough components?) -- update on getting new face plate etc ready.

==> item 4 : 9.2 dB deflection in one channel; other channel gave 7.8 with 6 dB down in absolute level; to do some testing and confirm the situation; item 5 still not done due to lack of FE box.
(iii) comparison of measured parameters with simulations : follow-up on interaction with Yogesh Karandikar -- update on items from 20 Mar and 30 & 16 Jan meetings :

7. try more complicated / different dipole geometry in the standard cavity to see if another solution gives same or better RL performance?
8. simulation with denser mesh (higher order of basis functions)? to contact

WiPLD experts for help and advice (in addition to Karandikar).
==> in contact with WiPLD persons but no progress yet.
Follow-up after 2 weeks.

2.5 Signal flow analysis (SFA) related items -- from 19 June & before (GP/ANR/SSK)
(i) discussion of new version of L-band SFA report : effect of new common box amplifier design to be incorporated?
==> gain will be 5 dB down; may need to incorporate this; also common box one problem pointed out (disagreement with Bhalerao) which needs correction; to check status of updated version after 2 weeks.
(ii) corresponding SFA for OF system to be discussed, including addition of the scheme of 10 dB attn + 20 dB ampl

==> Ankur has completed; SSK to review and release; to check status after 2 weeks.
(iii) plans for SFA of 250-500 system; also generating a first cut block diagram of the 250-500 MHz receiver : to check if (a) analysis has started (b) missing items (like temp monitor) added to blk diagram (c) list of parts, items to be ordered, jobs to be done for making new version FE box is ready.
==> planning work has been started by GP.
Can follow-up after 2 weeks.

2.6 Directional coupler for 250-500 FE system -- from 19 June & before (ANR/SSK) : follow-up on
(i) status of testing prototype model made from old system -- how much is the loss and is the result acceptable?
==> 2 units have been made and both show 0.09 at 500 and going down 0.06 at 250.
(ii) status of new PCBs that were ordered (what design does this correspond to?)
==> PCBs have come; chassis will come in a day or so and then 2 units can be tested.
Follow-up after 2 weeks.

2.7 Filters at different stages of receiver chain -- from 19 June & before (SSK) :
(i) scheme for filters at antenna base : schematic of present scheme, and status of the delivery of PCB and testing of the prototype.
==> 8-1 switching network : PCB has come and tested to get 38 dB isolation; one set of filters are ready -- prototype can be assembled after one more switch PCB is wired. SSK to (re)send the block diagram of this system.
(ii) to follow-up on refinements of the scheme for each FE box -- draft document showing these was to have been circulated by now (few days after 19th Jun) -- waiting for updates for several weeks now !
==> SSK to (re)send the document. 250-500 to be the first prototype to be assembled -- switch circuit ready, main BPF is ready, 1 sub-band ready, 2 more sub-bands getting ready. About 4 weeks.
Follow-up after 4 weeks (provided the (re)send of the documents happens in time).

2.8 Finalisation of design for temperature detectors for FE system -- from 19 June and before (SSK/VBB/SN) : follow-up on implementation plans -- all new FE boxes to go up with the agreed design for monitoring of box temp; scheme for monitoring in control room to be implmented with help of telemetry and ops group.
==> W1 has 130-260 FE box has one unit; can put 2 monitors after solving the MCM interfacing problem. Follow-up after 2 weeks.

2.9a Spares for L-band FE system -- short-term problem 10 Jul : we have 32 feeds, 3 not working (1 dismantled for making drawings of new feed); all are device failures, but not able to put new device and tune it. Hence, 29 is the current count of working antennas. Need to make 2 sets of LNAs working to release 2 feeds -- to do so by getting the toroids etc required for tuning of old LNA circuit. URGENT ! Follow-up next week !

2.9b Spares for L-band FE electronics -- from 2 Jul, 19 Jun & before (ANR/SSK) : (check which of these items are complete and can be closed)
(i) RFCM-type card status : old and new -- how many old cards now made working; whether any of the new cards are working; is total number now sufficient?
==>
(ii) LNA related matters : (a) follow-up on toroids and gold-plated Cu wires for old LNAs (b) status of design of new LNA circuit (using MMICs).
==>

(iii) filters : update about chassis from w'shop and ordering of connectors.
==>
(iv) noise gen : status of chassis and completion of assembly.
==>
(v) post-ampl and phase switch also need to be checked : to update about PCB and chassis (from w'shop) and status of integration work.
==>
(vi) timescale for integration? : when can it start?
==>
(vii) need a detailed discussion to see how many antennas have satisfactorily working Lband systems and what improvements are needed.
==>
All items deferred to next week, based on request by SSK.

2.10 Calibration scheme with radiator at apex of antenna -- from 3 Jul, 19 Jun & before (SSK/PAR/SRoy/DO/YG): to check if the following tests have been completed (from 20 Mar) and report is available :
(i) control expt with two RF cables used in loop-back fashion (at o/p of common box).
==>
(ii) azimuth expt with back and forth movement and also with the loop;
==>
(iii) temp performance of 40 m length of cable in env chamber.
Following detailed discussion of preliminary but very interesting results from 22 May, waiting for an updated and polished release of the results to all the interested members. Still waiting for the release of the data + results doc... (one week from 19 June was stated earlier, but doc has not been released yet !)
==>
Item not discussed in detail; new report has been sent; to be circulated amongst all concerned and taken up for discussion next week, or the week after. Also, YG to look into organising a separate discussion session between interested astronomers and FE / OF team members.

2.11 Characterisation of new FE+OF systems -- from 3 Jul & before (PAR/SSK/DVL) :
(i) to confirm consistency / repeatibility of the first round of results ! have been cross-checked on at least one antenna ?
==> it looks like repeatability is not too good in L-band (not clear why); it is claimed to be better for 250-500 band -- to be confirmed.
(ii) need numbers / performance figures for full 400 MHz band also (in addition to 110 MHz bands) -- are these available now?
==> yes, now available.
(iii) detailed discussion of plots showing behaviour across the full band.
==> slope is clearly seen; it ranges from 7.5 to 9.5 typically, with worst case of ~18 dB -- FE team to investigate these worst cases, and report back.
(iv) new set of results after adding E2 and W4 to be provided.
==> ???
(v) feedback from users like DVL about what they are finding.
==> ???
Follow-up after one / two weeks on different aspects of the problem.

2.12 M&C for new FE systems with new MCM cards -- from 19 & 5 Jun (SSK/PAR/CPK/SN) :
The scheme for control of new FE systems with old / new MCM cards needs to be taken up for discussion and plans made accordingly. Detailed discussion of ations being taken (alongwith Ops Group members).
==> to extract action items from the MoM and then put them for regular follow-up

in Plan meet. Can be taken up after 2 weeks.

3. RFI related matters :

3.1 Mobile phone RFI -- from 5 June and earlier (SSK/PAR) :
to check (i) if we now have 3 phone units with software loaded (sub-item can be closed then).
==> not successful with 2 hand-sets; only one working unit right now.
(ii) progress on identifying the operators at and around E06, and in Nagar, Junnar directions (follow-up with sending letters to BSNL etc).
==> still pending.
Follow-up after 2 weeks.

3.2 Effect of military satellite RFI in 243 band -- from 5 June & before (PAR/SSK) :
follow-up action on testing for saturation effects, decision about appropriate location of switchable filter, possibility about control room (ops group) being able to come up with predictions for user's observations.
==> not discussed as relevant persons not present. Follow-up after 2 weeks.

3.3 RFI tests of ethernet switches for antenna base -- from 5 June & earlier (SN/BAK/SSK): update on testing the available switches for RFI (as per 29 May discussion); plans for design of RFI box for ethernet switches. (later : tests on integrated system with OF transceiver + switch + Miltech PC + MCM cards using shielded RJ45 connectors and CAT6 cables)
==> not discussed as relevant persons not present. Follow-up after 2 weeks.

4. Operations :

4.1 Development of M&C software -- from 19 Jun & before (JPK/RU/SN/NGK/YW) :
(i) plans to organise larger discussions regarding major decision items (all)
-- follow-up from last meeting : to organise next meetings to look at (a) hardware interface issues
==> to try for a discussion next week on Thursday morning.

4.2 Using new MCM card on ethernet of PC for upgraded analog backend -- from 19 Jun (JPK/NS/CPK/BAK) :
(i) new system has been released and working -- has the SoP been released?
(ii) to check reintroduction of web-based option has been completed
==> (i) is done and can be closed; (ii) is done but pending final testing and acceptance by ABR group. To check again after 2 weeks.

4.3 Monitoring of 3-phase power at each antenna -- from 19 Jun & 25 Apr (SN/RVS) :
Ops group to report on tests done at antenna base. Results from testing at C8 antenna to be reported. No updates since April !
==> no updates ; to check with SN directly and bring up next week.

4.4 Identification of appropriate ethernet switches for antenna base -- from 5 June (SN/PAR) : Ops group to work with Comp team and RFI group to plan for trying some of the 16/24 port switches for antenna base use; to look into appropriate RFI cabinet for the switch. Check status of selection and order of sample switches of some makes.
==> 2 L2 switches have been identified from 2 companies (DLink & HP) to do

Cisco and DELL. Follow-up after 2 weeks.

4.5 Identification of appropriate ethernet switches for reciever room usage -- from 5 June and earlier (SN/PAR/BAK) : Update on plans for network wiring and switch choice.
==> not discussed as none of the members present. Follow-up after 2 weeks.

4.6 Planning for proper space utilisation for new equipment at antenna base -- from 3 Jul & before (SN/CPK) : placement of eth switch in the rack; longer-term plans for proper utilisation of the space. Ops group to report their proposal. Foot-print drawing to be discussed on 10-Jul-13.
==> outline plan by SN + JPK; to be discussed next week after internal discussion within Ops Group. Follow-up after 2 weeks.

5. Back-ends :

5.1 Analog back-end for 8 antennas -- from 19 June & before (BAK) : SOP for restored 8 ant system has been released; update on status of online control. (pending for a long time -- 5 June and before) !
==> mostly done, except for issue of changing IP whenever any antenna is changed. BE group wants to keep 8 antenna constrol system unchanged for the timebeing and web based dual facility to go in the next 8 ant system (see below). Take up for final discussion 2 weeks from now.

5.2 Support for 250-500 MHz in 8 antenna analog back-end -- from 19 Jun & before (NDS/BAK) : requires LO scheme going below the current 600 MHz -- update on completion of wiring and control tasks. When can the set-up be released?
==> the full set-up can not be released till rewiring work is completed ! To try an alternative of bypass of synthesiser etc and giving from sig gen + splitter directly to mixers for both 250-500 and L-band -- to check and decide by next week. Follow-up next week.

5.3 Analog back-end beyond 8 antennas -- from 19 June and before (BAK) :
(i) status of implementation of new system and layout : completion of 2nd set of 8 antenna system in all respects to be checked.
==> all 16 PIUs for GAB rx are done; LO PIUs are completed; MCM PIU is pending (Rabbit control card has just been made available), internal wiring is almost ready -- IDC connector replaced by other kinds of connectors. Target to finish by end of July. After that existing 8 antenna may get partially dismantled ! But to ensure that 12 antenna system is released. This requires some careful following !
(ii) filter bank choices in the system :
(a) to check status of PCBs and fabrication of units : PCBs are there, but still waiting for chassis -- 1 or 2 weeks; will allow for filters for about 5 ants.. this also needs follow-up, main shortage appears to be chassis (and plates).
(b) follow-up on discussion initiated between FE and BE group + YG -- can we come to a final agreement on the way forward?
==> matter not discussed.
Follow-up after 2 weeks.

5.4 GPU corr status -- from 3 Jul & before (SHR/GSJ/SSK/BAK/DVL) : updates on following items, pending from last discussion :
(i) release of 4 node, 8 input, 200/250 MHz version -- to confirm status and test results for 32 & 110 MHz data sets : (a) root cause of time offset problem

to be understood (SHR) (b) updates on 32 MHz imaging (DVL to resend the earlier images & follow-up discussion) (c) plans for 110 MHz imaging (DVL) (d) code for providing beam modes in the basic code (SSK/YG) (e) to confirm plans for providing LO < RF support (SHR/SSK/NSR/BAK) -- is this tested and released?
==> time offset ==> round off vs truncation of time inferred from PC and also to put sig gen under lock from Rb freq ref (d) to aim for providing at least IA beam mode for now (e) looks like done and can be closed.
(ii) update on testing K20 card (SHR/SSK) : report on latest discussions with nvidia and plans for follow-up action -- XGPU code and reshuffle algorithm.
==> no updates from NCRA; Pradeep may be trying some things? To check & follow-up
(iii) plans for purchase of couple of host machines : status of first and repeat orders for sample units (GSJ/SHR)
==> both orders are gone; to check with DELL for expedited delivery.
(iv) status of i/o performance tests using the two R720 nodes available at GMRT (also Centos vs other OS?).
==> trying to install various OS (Fedora and Centos) for testing 2 x 10 Gbe input data i/o + 10 Gbe or IB interconnect.
(v) status and plans about configuration of 8 node cluster : to clarify present status of configuration and usage of the other 4 machines (SHR/BAK) -- do we now have two K20 cards (from nvidia) installed in these machines?
==> main 4 nodes are now on IB connection; trial nodes to get uniform configuration will happen by end of this week.
(vi) update on purchase of bigger IB switch (GSJ/BAK).
==> ordered; to expedite delivery...

5.5 8 antenna back-end plans for further astronomical tests -- from 3 Jul & 19 June (DVL/YG) : (i) closure on getting images of extended sources with 32 MHz data
(ii) report on attemps to get test data with 110 MHz BW settings.
==> no updates. To check again next week.

5.7 Next-gen time & frequency standards -- from 19 Jun (NDS/BAK) :
(i) completion of tests at GMRT and summary of the same by NDS & plans to visit NPL -- to check about response from NPL.
==>
(ii) follow-up from the visit of Symmetricom.
==> brief discussion with NDS to produce a summary of the discussions with Symmetricom before producing a list of specifications etc.
To follow-up after two weeks.

5.8 Power and cooling requirements for projected back-end systems -- pending from 22 May, 25 & 10 Apr, 20 & 6 Mar, 9 Jan & earlier (BAK/RVS/YG) : short meeting took place betweent BAK, RVS, YG. To summarise action items from the same and follow-up on action on those.
==> No discussions; to follow-up separately and bring up again after 2 weeks.

5.9 SFP testing of final unit : SFP+ side working fine for both Cu and Opt; XAUI CX4 side is still flaky -- may still be marginal in timing.
==> Needs some follow-up : to check again after 2 weeks.

6. Other items :

6.1 Jobs at TIFR -- from 12 June (HSK/SKG) : to follow-up on the following :
(i) update on status of our jobs at TIFR -- check if 120 items have been collected

+ status of 180 pending jobs.
==> email update from HSK : OFC chassis 120 jobs collected after rectification, on 5th July; Drilling tapping work in progress; status of remaining 180 ?

(ii) requirements from different groups : requirement of boxes by FE group was pending.
==> appears to be still pending ?

(iii) follow-up on split of jobs between in-house, out-sourcing and TIFR -- status of jobs with Akvira.
==> status update not very clear as to how many jobs are outsourced.

6.2 Mass production of 250-500 feeds -- from 12 June (HSK/HRB/SSK) : Production and delivery status (for in-house and out-sourced) :
(i) check current stock with FE for # of dipoles and cavities (1 + 3 after E06 ?)
==> no status update from FE.
(ii) ongoing mass production : update from Physimech; updates on in-house production (2 more cavities ready?)
==> in-house production has delivered 10+1 nos CFD and dipole by 15 June 2013; update of Physimech : photo of job done had been sent and corrections were suggested, need inspection visit before despatch.

6.3 Coexistence of 50-90 MHz RRI feed with 250-500 CDF on same face of turret -- from 12 June and before (HSK) : Mech group to check for possible solutions and report back, after looking at the drawings (awaited from RRI).
==> No progress as Mr. Durai Selven of RRI has not given drawing.

6.4 Problem of access to FE boxes with 500-1000 CDF feed -- from 12 June & before (HSK) : Update on new solution being designed by Mech group.
==> prototype model made at workshop and under testing.

6.5 Work orders for CSIRO feed with 2 parties -- from 12 June & before (HSK/JNC/ANR) :
(i) check if sample feed from both vendors now available;
==> Inspected at vendor's place -- small correction required; expected next week after the correction.
(ii) whether filling operation is over and new lab tests have been done on feed.
==> Work in progress -- there is shortage of silver epoxy hardner and order has been placed.

6.6 Fabrication of 5 spare L-band feeds -- from 12 June & before (SSK/HSK) : to check about
(i) faulty unit from Akvira Engg (ii) status of orders on other 2 parties (Physimech, Fabromech).
==> Akvira unit : almost all corrections completed; waiting for getting new fabricated Front Horn Cone from M/s. Akvira; Physimech and Fabromech units are under fabrication and delivery expected in first week of August.

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Minutes of Plan meet of 17 July 2013 (follow-up of some pending topics from different areas) :

1. Documentation related :

1.1 Documentation : follow-up on level 2 (ITR) -- from 3 July & earlier :
conversion of older reports : FE has released 250-500 LNA report (ANR);
(i) ITR for 250-500 CDF feed is now overdue (HRB to report on status of work)
==> report is ready, waiting for GSS to review.
(ii) Test Range (was expected by end-June) -- can it be done by end-July ?
==> no update.
(iii) Signal Flow Analysis -- updates discussed on 10th June to be included
==> will be done
Follow-up on all 2 weeks later.

1.2 Documentation : SoP for antenna base work -- from 3 July & before (SSK/ANR/HRB) : updated version to be made ready for (i) installation of upgrade systems and (ii) ensure proper working of existing systems.
To check status of work on part (i) for
(a) feeds (HRB) -- final version was to be released 2 weeks ago !
==> will be finalised and released now.
(b) FE boxes (ANR) -- final version should have been ready for circulation.
==> almost done.
(c) Common Box (SSK) -- to be done alongwith / shortly after FE box; update needed.
(d) OF system (PAR) -- 2nd draft ready for external circulation ?
==> already submitted to Dongare (but he had not informed all).
To ensure that these are released in the next 2 weeks; to follow-up after 2 weeks.

2. FE & OF related :

2.1 Update on results from test range -- from 10 July & before (GSS/SSK) :
(i) phase centre tests for 250-500 CDF : to report on expt with 10 to 20 mm height change in 250-500 feed on one antenna to see how much change in sensitivity is seen. Need short note summarising the results.
(ii) update on calculation (based on reference paper) of the expected deflection at 450 or 500 MHz and comparison with measurements to see if we are losing significant sensitivity -- GSS to come back with refined version more relevant for GMRT, and to see if further expts with 250-500 or 500-1000 feed are useful.
Awaiting updates from GSS + project student.
(iii) status of phase centre checking for ver1 550-900 CDF and CSIRO feeds -- waitng for results with new VVM set-up.
==> no updates; to follow-up after 2 weeks.

2.2 Update on RF dump tests for new feeds -- from 3 July & 12 June (HRB/GSS/SSK)
(i) new data and results for 130-260, 250-500, 550-900 (HRB/SSK) : further data for 130-260 (2 antennas) & 250-500 (all antennas) has been taken, but no deflection plots are available yet ! This needs an update URGENTLY !!
==> HRB will take one more round of measurements and then circulate the results.

(ii) scheme for (re)calculation of expected values across the broad bands to be finalised (and added to measured curves) -- (SSK/GP/HRB) : to confirm if this scheme is close to finalisation and results can be included / integrated with the deflection plots.
==> to see if GP can generate a standard set of files for 4-5 main sources used for each wave band (right now 250-500 and Lband) which can be used by the code of HRB while plotting data results.
Follow-up after 2 weeks.

2.3 Follow-up on 550-900 MHz band filters -- from 3 July & before (ANR/SSK) :
(i) status of delivery and in-house testing of prototype meeting full specs.
==> vendor has got the PCBs; will test and revert back.
(ii) possibilities for in-house development to be explored ? (Imran Khan IKA)
==> design and simulation done; ready to order the prototype PCBs for each subband; integrated PCB alongwith switch will come later.
can follow both after 2 weeks.

2.4 Finalisation of design for total power detector for FE boxes -- from 3 July and earlier (ANR/SSK) : follow-up on discussions on 12th June (current design, with Galli or Sirenza, may be ok for CB o/p, but probably not enough gain for FE o/p) :
(i) results from trying distributed chain of coupler + 2 amplifiers (from OF) + detector (from AB group) for 250-500 and L-band RF outputs
(ii) finalisation of amplifier scheme for CB version
(iii) plan for population of existing (25?) units in hand (for CB version?)
(iv) plans for final ITR report on the design.
==> 20 dB coupler for CB and 10 dB coupler for FE (at final output) with common 20 dB amplifier (maybe Sirenza, because of supply voltage requirement); PCBs for both FE and CB units have to be redone; should have PCBs and sample units ready in 2 weeks. Downstream work for tapping the signals on RFCM mux input to be wired for 4 new signals (3 from FE and 1 from CB) out of a total of 7 signals (4 + 3); further downstream data from these channels has to be ready by MCM card (RU) and then by online where some software changes will be needed (JPK to help).
Follow-up after 2 weeks.

2.5 FE power supplies at all antennas -- from 3 July (SSK/ANR) : 18 antennas have FE supply (some are home made, some are the original supplies); other 12 antennas use the ABR power supply which can lead to problems of overloading etc;
(i) long-term : plans for in-house completion of more supplies.
==> will continue this.
(ii) short-term : plans for purchase of off-the-shelf supplies & scheme for usage.
==> purchase procedure is on; meanwhile one antenna E2 this supply is on for last 3-4 weeks.
Follow-up after 2 weeks.

2.6 Fixing the non-working L-band feeds (short-term problem) -- from 10 Jul (SSK/ANR) : we have 32 feeds, 3 not working (1 dismantled for making drawings of new feed); all are device failures, but not able to put new device and tune it.
To check if there is any progress in getting the LNA circuit to work.
==> toroids are being tried from Ooty and Bangalore; gold plated wire also being tried; will either use existing board or assemble new one (latter preferred by Gopi). Alternate LNA design : PCB has been sent for OHMIC make MMIC based ckt. Another option new device from Skyworks with NF of 0.25 (cf to 0.4 of present system) -- design underway. Follow-up after 2 weeks.

2.7 Spares for L-band FE electronics -- from 3 Jul, 19 Jun & before (ANR/SSK) :
(check which of these items are complete and can be closed)
(i) RFCM-type card status : old and new -- how many old cards now made working; whether any of the new cards are working; is total number now sufficient?
==> about 8 (?) of the old RFCM cards are now made working; new RFCM is also being explored and new compact version with same functionality has been assembled and being tested.
(ii) LNA related matters : (a) follow-up on toroids and gold-plated Cu wires for old LNAs (b) status of design of new LNA circuit.
(iii) filters : update about chassis from w'shop and ordering of connectors.
==> main BPF and filter bank for 3 antennas is in hand;
(iv) noise gen : status of chassis and completion of assembly.
==> no PCBs, no films and hence new PCB layout has to be done and PCB made; chassis available for 3+ ants.
(v) post-ampl and phase switch also need to be checked : to update about PCB and chassis (from w'shop) and status of integration work.
==> PCB and chassis available for 3 ants; wiring has to be done.
(vi) timescale for integration? : when can it start?
==> plan to start integration sometime in August.
(vii) need a detailed discussion to see how many antennas have satisfactorily working Lband systems and what improvements are needed.
Follow-up after 2 weeks.

2.8 Walsh switching arrangement in FE -- from 29 May, 1 May, 3 Apr and before (SSK) :
matter is pending for a long time. FE group to come back with clear statement about (a) what is feasible and (b) how to go about doing the tests (vis-a-vis of action items minuted in meeting of 19 Dec 2012); does new system need new RFCM card?
==> no updates, can be taken up again after 2 weeks.

2.9 Characterisation of new FE+OF systems -- from 10 July & before (PAR/SSK/DVL) :
(i) results for 400 MHz band and sub-bands for different weeks to be looked into in detail (also E2 and W4 to be included)
(ii) check repeatibility of results and possible difference in performance between Lband and 250-500 systems.
==> Abhijeet will provide update on Lband; Ankur on 250-500 later this week.
(iii) slope across 400 MHz : worst case antennas (~ 18 dB change) were to be checked.
==> no progress; meanwhile 10 dB extra gain in 1390 is being added in few more antennas.
(v) feedback from users like DVL about what they are finding.
==> will know better after today's testing.
Follow-up next week.

3. RFI related matters :

3.1 RFI testing of Miltech PC -- from 3 July and earlier (PAR/SSK):
update on testing new Miltech PC alone (and later with peripherals using new shielded ports, connectors, cables + Rabbit card), as per discussions of 29 May.
To report results from testing of new i7 Miltech PC. Was to be available by 8 July.
==> first round of test has been done; waiting for finalising the conclusions and report. Follow-up 2 weeks later.

3.2 Radiation from CAT5 cable -- from 3 July & earlier (SSK/PAR): Follow-up on action from 3 Apr discussions : to install shielded CAT6 cable in conference room as trial and finalise the scheme for all other public places in the building -- to check if quotes received and order placed : status of indent / order for shielded CAT5 cable.
==> no response from local vendor; foreign quote has produced one response. Follow-up after 2 weeks.

3.3 Follow-up on UPS RFI -- from 12 June & earlier (SSK/PAR/RVS) :
(i) procurement of 3 kVA unit from Miltech (RVS) -- to confirm status of the order.
(ii) follow-up from RFI testing of Consul unit -- status of ordering 2 new units with Consul.
==> Miltech has sent 1 kVA units (3 nos) from servo group order; 2 nos tested and gave fault while running; servo to follow-up with Miltec; no update on Consul new units delivery.
Follow-up after 2 weeks.

3.4 Discussion relating to Industrial RFI survey -- from 19 June (PAR/SSK) : revised docs (from 2009 and 2012 discussions) had been circulated by RFI group and were discussed in 5 June meeting; need to identify action to be taken : is the document too exhaustive; to try and pick only relevant items from the document for follow-up? To have a smaller discussion separately? YG to discuss with team and appropriate action to be planned.
==> matter discussed at some length. Finally agreed to the following : to try and see if we can get DIC involved in this as was done in 2000 (if they don't agree to work with us, then we may need to cut down the scope of the survey); PAR to see if his older contacts with DIC are still there and take up the matter with them informally; and come back for discussion.
Follow-up after 2 weeks.

3.5 RFI from cable TV leakage (new item) -- (PAR/SSK)
PAR informed that today this is probably a bigger problem than boosters etc : to see if we can have a clear test to see how much is the leakage as a function of frequency and then see if they can be requested to change the frequency or improve their set-up?
==> to follow-up after 2 weeks.

Side item : RFI from public WiFi unit : maybe still acceptable from single unit, but if many in a town or village? Sample unit tested and report getting ready -- to be evaluated and some decision / recommendation to be put out.
==> can be followed up after 2 weeks and final recommendations recorded.

4. Operations :

4.1 New Miltec PCs -- from 3 July & earlier (CPK/JPK/SN) : update on giving one PC for RFI testing; installing software on second PC and then testing by conecting various peripherals like rabbit card,eth output to optical transceiver to short patch of fibre to optical back to copper and connect a laptop or 2nd Miltech PC etc.
==> no updates, to take up next week.

4.2 Mass production of Rabbit MCM cards -- from 16 Jun, 22 May & before (CPK/SN) :
(i) status of testing of cards to be updated (it was going a bit slower than

expected -- 40 nos had been completed by 19 June).
(ii) follow-up on decision for procuring 80 more cards (follow-up from 20 Mar by YG and CPK) -- still pending !
==> 47 nos are done; slow down is clearly there but partly due to concerned members being away on leave. Next follow-up after one month.

4.3 Mass production of shielded box for MCM cards -- from 3 July & before (CPK/PAR/SN/HSK): CPK was to check with PAR and report on the following :
(i) Check if report on RFI testing of Akvira and Physimech units is released and can we finalise the choice with Akvira?
(ii) How to plan for the mass production?
==> no clear updates on (i) and (ii) : SN to look into both of them and report back.
(iii) Ops group and RFI group were to sit together and discuss how to solve the problem of adapting to different size / pin count of RFI shielded connectors.
==> no update; SN to check with CPK and update.
Update required before next meeting.

4.4 Development of M&C software -- from 3 July, 19 June & before (JPK/RU/SN/NGK) :
(i) new things related to old software : mostly new requirements from FE monitoring of temp and power :
==> FE monitoring of all 64 channels from RFCM card to MCM card to Laptop via serial to USB converter; available as a file on the PC -- done by RU for FE group.
also monitoring of all the channels at control room -- JPK looking into identifying the appropriate channel(s).
next follow-up after 2 weeks, to see if closure can be achieved.

(ii) update on in-house development efforts (RU/SN)
==> summary of updates :
(a) new online program directly connected to multiple new MCMs without need for despatcher.
(b) communication from lab to MCM card in C3 antenna and monitoring of temp data from antenna on web-based display.
(c) UI work : some simple kinds of UIs have been designed.
(d) engineering interface for seeing low level commands and responses being designed and being tested.
(e) GUI display of data from server via socket connection; another module via XML.
==> next follow-up after one month.

(iii) update on HRS & SRS work with TCS (JPK/SN)
==> HRS review and acceptance procedure completed; SRS document has been received and teams have been made for reviewing different aspects of the doc; walk through is planned tomorrow; response from NCRA by 25th and final closure by 5th Aug is planned.
Follow-up after 2 weeks.

(iv) next round of broader discussions : can it be scheduled on 18th July?
==> may not be feasible tomorrow -- need to look for another slot?
Follow-up after 2 weeks.

4.5 Monitoring of 3-phase power at each antenna -- from 19 Jun & 25 Apr (SN/RVS) :
Ops group to report on tests done at antenna base. Results from testing at C8 antenna to be reported. No updates since April !
==> some technical difficulties encountered in connecting at C8, but now almost

solved and it should be working in the next few days.
Follow-up after 2 weeks.

5. Back-ends :

5.1 Power equalisation schemes for new back-ends -- from 3 July and before (SKS/NSR/BAK): Need updates on both the following :
(i) option 1 : using detectors in GAB and local feedback loop -- status update on completion of monitoring set-up, start of work on the code etc.
(ii) option 2 : using correlator self outputs and computing gain corrections : status update on scheme being implemented by SKS and NSR.
==> no updates on either of these; email reminder sent by YG on 17 jul -- still waiting for update.

5.2 Support for 250-500 MHz in 8 antenna analog back-end -- from 10 July & before (NDS/BAK) : requires LO scheme going below the current 600 MHz; option for using sig gen + ampl + power splitters was discussed in 22 May meeting : major difficulty was expressed in 10 July meeting; option of temporary by-pass of synthesiser etc and giving from sig gen + splitter directly to mixers for both 250-500 and L-band was to be explored and reported upon.
==> no updates on this; requires urgent follow-up -- to check again next week.

5.3 GPU corr status -- from 10 July & before (SHR/GSJ/SSK/BAK/DVL) : updates on following items, pending from last discussion :
(i) release of 4 node, 8 input, 200/250 MHz version -- to confirm status and test results for 32 & 110 MHz data sets : (a) time offset problem understood and fixed?(SHR) (b) updates on 32 MHz imaging (DVL to resend the earlier images & follow-up discussion) (c) plans for 110 MHz imaging (DVL) (d) code for providing basic IA beam mode (SSK/SHR/YG)
==> no updates on (a), (b), (6c) ; for (d) discussion has happened but work is yet to start (meanwhile some progress on the polar mode has been done!)
(ii) update on testing K20 card (SHR/SSK) : report on latest discussions with nvidia and plans for follow-up action -- XGPU code and reshuffle algorithm.
==> no updates !
(iii) plans for purchase of couple of host machines : delivery status of both orders (GSJ/SHR)
==> one T620 has come; 2nd one will come next week; 2 R720s will come together in about two weeks time. Will starting the T620 by next week -- single 10 Gbe, followed by dual 10 Gbe and then correlation (using the C2050/75 card)
(iv) status of i/o performance tests using the two R720 nodes available at GMRT (also Centos vs other OS?).
==> Centos6.4 and Fedora17 both installed (latter required some tweak to get the Mellanox drivers going). May be able to get testing shortly with single 10 Gbe and the dual 10 Gbe + IB interconnect.
(v) status and plans about configuration of 8 node cluster : to clarify present status of configuration and usage of the other 4 machines (SHR/BAK) -- uniform configuration; installation of two K20 cards; plans for testing / integration.
==> IB installed in released nodes and environment created on trial nodes. 8 node n/w test gives 30% less than expected (which is achieved for 2 and 4 node setup); but rate is enough to meet the correlator requirement (similar tests with 10 Gbe set-up showed proper scaling); 2 K20s, 2 2050s and 4 2075s is the GPU config on these machines -- should be enough for a 16 input 200 MHz correlator (may go upto 350).

(vi) update on delivery status of bigger IB switch (GSJ/BAK).
==> likely to be shipped around 6th Aug from Singapore.

5.4 Final online control for GPU corr -- from 12 June & 29 May (SSK/JPK/NR/DVL) :
(i) update on full GUI compatibility : update on sideband flag support and about settings for max number of channels allowed -- pending confirmation for some time now!
(ii) follow-up on long-term items like provision for control of FPGA and other peripherals (like sig generator) for different modes -- details of existing provisions to be discussed and plans for final configuration to be finalised.
==> no updates; need to check again after 2 weeks.

5.5 8 antenna back-end plans for further astronomical tests -- from 19 & 12 June (DVL/YG) : (i) closure on getting images of extended sources with 32 MHz data
(ii) report on attemps to get test data with 110 MHz BW settings.
==> no updates; need inputs from DVL.

6. Other items :

None for this week.

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