

List of topics for Plan meet of 9th November 2011 (follow-up of some pending topics from different areas) :

1. Documentation on Plan website : to follow-up with groups who have not yet put up the documents.
2. FE & OF related :
 - 2.1 Cone-dipole feed : Updates on (i) new measurements by Nissim (ii) new measurements by Hanumanth (iii) update on fitting of the curves in matlab (HR+GSS) (iv) porting of the software for independent functioning (HR+AG+MU) (v) status of mesh based version of the feed (in Pune w'shop) (GSS+HSK)
 - 2.2 150 MHz system : (see MoM of 4th Oct meeting) : FE group to report progress so far (APK); RFI group to report on characterisation of RFI in that band (SSK)
 - 2.3 Status of antenna test range and testing of new version of cone-dipole feed on the same (GSS)
 - 2.4 New lasers : status of the order; what about mux/demux and pig-tails?
 - 2.5 Better vendors for mass production : SSK + HSK; SKG (drawing for sample chassis was to be given by SSK to SKG)
 - 2.6 Environmental Chamber : interface plate sent to party? order ready to ship by when?
3. RFI related matters :
 - 3.1 updated report on RFI testing of servo shed : follow-up for testing radiating units tbd between SSK and SS -- any updates?
 - 3.2 RFI testing of C4 in present running condition of BLDC : SSK and SS to coordinate for a fresh round of testing when BLDC is released -- any updates?
 - 3.3 RFI from transformers : recheck of 10 units that have been improved -- list to be sent from electrical to RFI -- any progress?
 - 3.4 BSNL towers : visit to Ahmednagar planned? -- around 10th or 15th Oct : updates ?
 - 3.5 Updates on Ue-Li Pen RFI scheme [NK] -- pending from NK (corollary : is the EoR switch released for normal use now? -- Ajith to report)
4. Operations :
 - 4.1 Miltec units : Indent placed (RBS)?; to remind Miltec about the last modification (SSK)
 - 4.2 Palm sized units order progress -- delivery by when?
 - 4.3 Update on MCM card work (RBS) : status of component delivery? new PCB finalised?
 - 4.4 Serial ports for antenna testing (RBS) : new version ready for use now?

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Minutes and action items from Plan meet of 2nd November 2011 on

Status and plans of digital back-end systems for the upgrade, starting with current status and results (from FPGA and GPU based systems), and plans for the next few months / one year, incorporating feedback from useful discussions held during the recent CASPER meeting, and discussion on the way forward.

1. Back-end systems :
 - 1.1 Update on analog back-end system -- population & testing : 2 sets made ready (2nd has some improvements); tested in the lab, basically OK except for "ripple" in localised parts of the band; FR4 to Ultralam may give some improvement in the "ripple" behaviour? breaking up into smaller units may help?; all components are final, except for the filters for which there are empty slots; components order going OK; connectors : 1/3 order delivered, can be repeat ordered with different vendors; low loss cable also remaining.
 - 1.2 Note re LO scheme for upgraded system : still pending ; can revisit 2 weeks from now.
 - 1.3 Current status of Pocket Correlator testing -- what have we learnt, what problems remain : 2 ant, full delay and fringe, 300 MHz BW, 512 channels; tuning for proper power level -- method is understood and in use to balance the total power; some time synchronisation issues are still there -- latest improvement shows slow phase; possible source

of error due to mean vs apparent source coordinates -- TBC (tests are ongoing); larger issue of interfacing the new correlators to online : python interface issues need to be resolved -- to contact and check with Yogesh. Is help required from JPK?

1.4 Current status of Packetized Correlator testing -- is the performance acceptable on short and long baselines or further changes are needed? is there now a stable configuration (for how many antennas?) : loading scheme for parameters is very different -- uses absolute time information; corr_package issues are now resolved for our current XAUI based design; also all 10 Gbe design has been tested at GMRT; hasn't yet been tested fully on short (and long baselines); full polar 4 ant, 400 MHz BW, 512 ch design tested at half of full delay and full delay version is ready for tests; expansion to 8K channels -- may not be possible, 4K may be possible; may need to go to Roach2? comparison of Roach1 and Roach2 is needed; expansion of current design to 8-antenna system is possible.

1.5 Current status of GPU Correlator testing -- is the performance acceptable? extension to many antenna system : 2-ant full polar, 200 MHz, 8-bit version built and tested; 400 MHz, 4-bit version tested with noise source, needs corrected delay calc for real sources; 2 machine version (connection via 10 Gbe switch) tested with software data files, may have some bugs in data ordering; can go to 4 antenna, 400 MHz, 4-bit version.

Remaining items to be taken up at future meeting :

1.6 Longer term plans for development : Roach 1 vs Roach 2; CX4 vs SFP+; Beamformer implementation on FPGA and GPU systems; integration into future activities

1.7 Digital noise source : future plans

1.8 Other activities ?

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Minutes of the discussions during the Plan Meeting of 09-Nov-2011

List of topics for Plan meet of 9th November 2011 (follow-up of some pending topics from different areas) :

1. Documentation on Plan website : to follow-up with groups who have not yet put up the documents.

[No update reported]

2. FE & OF related :

2.1 Cone-dipole feed : Updates on

(i) new measurements by Nissim

(ii) new measurements by Hanumanth

[HR presented 'new' plots of data taken on 31-Oct-2011 (C06, Ch-I & Ch-II) & compared with earlier plots. This data is consistent with 'no dip' at ~ 325 MHz & 'better' response at > 500 MHz. Hence, except for only one dataset showing 'dip' & poorer high-freq response, rest all are consistent.

It was suggested that 'data averaging' should be done prior to plotting (so far all plots are without averaging).]

(iii) update on fitting of the curves in matlab (HR+GSS)

[~ 60% of the work is completed; should be over soon]

(iv) porting of the software for independent functioning (HR+AG+MU)

[work is progressing - should be over by 20-Nov-11]

(v) status of mesh based version of the feed (in Pune w'shop) (GSS+HSK)

2.2 150 MHz system : (see MoM of 4th Oct meeting) : FE group to report progress so far (APK); RFI group to report on characterisation of RFI in that band (SSK)

2.3 Status of antenna test range and testing of new version of cone-dipole feed on the same (GSS)

[Fibre optic cable has been laid; splicing has been completed; waiting for an 'enclosure' on terrace; system to be ready for use by 20-Nov-11]

2.4 New lasers : status of the order; what about mux/demux and pig-tails?

[New laser indent at 'waiver for tendering' stage;
Mux/de-mux indent being raised (firming up numbers);
Pig-tail indent will take a while.]

2.5 Better vendors for mass production : SSK + HSK; SKG (drawing for sample chassis was to be given by SSK to SKG)

[No response yet.]

2.6 Environmental Chamber : interface plate sent to party? order ready to ship by when?

[Interface provided; final thermal test planned within ~ 10 days]

3. RFI related matters :

3.1 updated report on RFI testing of servo shed : follow-up for testing radiating units tbd between SSK and SS -- any updates?

[The 31-Mar-2011 measurement (report already available) had shown several RFI lines. One needs to identify the 'component/(s)' responsible for these lines. In addition, electrical systems have been placed outside the shielded lab.

Fresh RFI tests could be carried out by early January 2012.]

3.2 RFI testing of C4 in present running condition of BLDC : SSK and SS to coordinate for a fresh round of testing when BLDC is released -- any updates?

[C4 tests planned today (09Nov11); completion within 1 week.]

3.3 RFI from transformers : recheck of 10 units that have been improved -- list to be sent from electrical to RFI -- any progress?

[The RFI report is awaiting some details from RVS about 'what improvements have been made to the specific transformers'.

These inputs are important, as from RFI point of view some transformers are OK but others are not.]

3.4 BSNL towers : visit to Ahmednagar planned? -- around 10th or 15th Oct : updates ?

[No need for visit to Ahmednagar. BSNL people have telephoned & communicated their plans of shifting to 1800 MHz.]

3.5 Updates on Ue-Li Pen RFI scheme [NK] -- pending from NK (corollary : is the EoR switch released for normal use now? -- Ajith to report)

[Tests are in progress today (09Nov11) to understand the recently reported malfunction of the electronic switch for EoR/normal mode.

Seems to get toggled by itself after ~ 30 minutes ...]

4. Operations :

4.1 Miltec units : Indent placed (RBS)?; to remind Miltec about the last modification (SSK)

[Indent placed. Enquiries should be available within 10 days.]

4.2 Palm sized units order progress -- delivery by when?

[Delivery of 2x units by 15-Nov-11.]

4.3 Update on MCM card work (RBS) : status of component delivery? new PCB finalised?

[No indent as yet. Layouting for SMD (high value) capacitors etc will take ~ 3 week. The PCB design modifications will take ~ 1 month.]

4.4 Serial ports for antenna testing (RBS) : new version ready for use now?

[Work completed !]

5.0 Any other matter :

[The latest version of WIPL-D software (for feed simulations) is a 'two-user' licence. The code is loaded on HR's PC. It is proposed to test if a second user (from the common PC room) can run WIPL-D concurrently.

HR will first test using 'old' code (already) on the second PC, if that fails, he will load the 'new' code & test again.]

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Minutes of Plan meet of 16th November 2011 (follow-up of some pending topics from different areas) :

1. Documentation on Plan website : to follow-up with groups who have not yet put up the documents -- no immediate update.

2. FE & OF related :

2.1 Cone-dipole feed : Updates on (i) new measurements by Nissim (ii) new measurements by Hanumanth (can we get an average plot; are new beamwidth values available) -- avging of SA runs on a given day can be done; avging of data from different days still needs to be done; couple more epochs of beam width measurements needed (ii) status of mesh based version of the feed (in Pune w'shop) (GSS+HSK) -- ready to come to GMRT for testing (side topic : is it worth making a scaled version for 550-900 for cross-checking droopy response of CSIRO feed -- may be worthwhile; FE group will look into the details and confirm).

2.2 CSIRO feed : status of getting new units fabricated by Godrej (HSK+JNC) -- update from JNC : looking for options for casting, in place of machining from a block.

2.3 150 MHz system : (see MoM of 4th Oct meeting) : (i) FE group to report progress so far (APK) -- will do 2 weeks from now; (ii) RFI group to report on characterisation of RFI in that band (SSK) -- work ongoing, report expected shortly.

2.4 WiPLD related update : 2 simultaneous users on floating license -- verified OK. FE group to make enquiries with vendor for more users, with upgrade (if needed).

2.5 Update on works related to new common box (form 21sep meeting) : procurement of sample devices, time schedule for first unit to be ready -- amplifier : sample device appears to work OK, final results in 2 weeks, follow-up of purchase order; temperature sensor -- follow-up of order tbd; FE group to send an email update about status and planned date for first common box to be ready.

2.6 Report on study of cross-dipole noise radiation scheme from APK -- pending from mid-Oct : YG and APK to discuss.

2.7 Status update on loop connection related works for Pune-GMRT OF link -- waiting for finalising new agreement; then take this up as new request after that. Meanwile, improvement in loss at Pune end to be taken up on Monday.

2.8 Better vendors for mass production : SSK + HSK; SKG (drawing for sample chassis was to be given by SSK to SKG) -- in progress.

3. RFI related matters :

3.1 updated report on RFI testing of servo shed : follow-up for testing radiating units -- YG to send email to SSK and SS for follow-up (including electrical installations outside); regular upkeep to be taken care of.

3.2 RFI testing of C4 in present running condition of BLDC : discussion of new results -- look OK, except for some unexplained lines which are seen even in all OFF condition -- needs to be followed up.

3.3 RFI from transformers : input from electrical is required -- matter not getting resolved, to try for joint meeting of electrical and RFI group.

3.4 Updates on Ue-Li Pen RFI scheme pending from NK (corollary : update on functioning of EoR switch) -- no updates.

4. Operations :

4.1 Miltec units : discussion of RFI and latest response from Miltech -- need follow-up of indent raised by RBS (signed by YG on 2nd Nov)

4.2 Serial ports for antenna testing (RBS) : released for use by others? -- ready to release; should order 5 or so units.

4.3 Update on MCM card work : looks like getting delayed? -- problem of Altium learning and SMD components (latter can be revisited in 2 weeks).

5. Back-ends : not discussed in this meeting -- to be taken up next week

5.1 Note from BAK re LO scheme for upgraded system

5.2 Quick follow-up on python related aspects from previous meeting

Minutes of Plan meet of 23rd November 2011 (follow-up of some pending topics from different areas) :

1. Documentation on Plan website : to follow-up with groups who have not yet put up the documents.
2. FE & OF related :
 - 2.1 Cone-dipole feed : Updates on (i) new measurements by Nissim -- response seen by BE data is similar to RF response; dip around 460-70 looks genuine - FE to check simulations and other causes of the problem; 2 more FE boxes needed - FE to look into that; beam shape : not available now, may do c8 with new broadband FE (ii) any new update from Hanumanth including (a) improved algorithm -- will take some more time; (b) porting of software -- complete, needs one more test for releasing, to try and do that within this week; (c) measurements on C08 -- can be done with new s'ware when new broadband FE is put (iii) status of mesh based version of the feed (GSS+HSK) -- will come by end of this week; can try to put on S02 next week, alongwith modified FE box; note for users to use only ONE kind of LO for these antennas -- to be generated.
 - 2.2 Update from FE group about feasibility scaled version of cone-dipole feed (from last week's discussion) (APK) -- FE to discuss and come back with a response, to discuss next week.
 - 2.3 150 MHz system : (i) FE group to report progress so far (APK) -- due next week; (ii) RFI group to report on characterisation of RFI in that band (SSK) -- first version has been sent (later circulated to wider group), -48 dBm total power needs to be understood better.
 - 2.4 Update on works related to new common box : when can we have first unit ready for testing on antenna (APK) -- only 2 devices of the amplifier are available; to speed up the processing of the indent/purchase; meanwhile, use Siernza device to assemble one box with one ch using new amplifier, second ch using Sirenza amplifier.
 - 2.5 Antenna test range update (GSS) -- work ongoing today (update next week)
 - 2.6 Status update on loop connection related works for Pune-GMRT OF link : results from loss-improvement works at Pune on 21st Nov (SSK) -- 2 dB improvement only, as other connections not accessible - this needs to be discussed and understood how to handle.
 - 2.7 New lasers order status of file -- needs urgent follow-up !
 - 2.8 Environmental chamber status update (ANR/SSK) -- no update yet.
3. RFI related matters :
 - 3.1 Update on RFI study of wideband 150 frequency range (same as item 2.3 above)(SSK)
 - 3.2 Updates on Ue-Li Pen RFI scheme [NK] -- report from Pen summarized by Nissim : 7 locations of which 2-3 have been looked at (need some follow-up from electrical about what is being done about these (YG+RVS)); to try and get more details from Pen et al for other sources (NK); calibration scheme and other effects for improving the reliability (NK+Ue-Li+student); EoR switch : h'ware sw working ok; s'ware sw found to have pick-up problems which are now getting fixed, may be released by end of the week; EoR output in LTA format; EoR mode in zoom, narrow spectral line mode done -- work in progress, will need some test time (NK+Prasun et al.).
4. Operations :
 - 4.1 Miltec units : follow-up on purchase order (RBS) -- indent sent.
 - 4.2 Palm size units : delivery status update (RBS) -- waiting for delivery.
 - 4.3 Resurrected item : detailed requirements of each group in new MCM card -- needs a discussion in next few weeks.
5. Back-ends :
 - 5.1 Note from BAK re LO scheme for upgraded system (BAK) -- almost ready will circulate by end of the week; can be discussed next week or the week after.
 - 5.2 Analog back-end ripple problem : update (BAK) -- problem due to mismatch; part of it is in output buffer/cable driver; more of it is in Gali84 amplifier stage -- exact cause needs to be identified; to relook after 2 weeks.
 - 5.3 Updates from latest test results (including source coordinates issue) -- src coord change appears to have improved the PoCo result (and maybe GPU performance); only one run has been done; more tests are needed.
 - 5.4 Quick follow-up on python related aspects from previous meeting (BAK) -- SCC has started looking into swig and libc related issues, should talk to YW about the matter

5.5 Packetised design : phase jump problems, some debugging done along with Jason Manley, needs more work / time. To look again after 2 weeks.

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List of topics for Plan meet of 30th November 2011 (follow-up of some pending topics from different areas) :

150 MHz update !
Digital System detailed discussions

1. Documentation on Plan website : to follow-up with groups who have not yet put up the documents.

2. FE & OF related :

2.1 Cone-dipole feed : Updates on (i) status of mesh based version of the feed (GSS), plans for installation, 2 new FE boxes (APK), note re care with LO setting for modified antennas (YG)

2.2 Spectral dump software porting : working version release by Hanumanth (HRB/GSS)

2.3 Cone-dipole prototype for 500-900 MHz : plans & time-lines from FE group (APK)

2.4 150 MHz system : (see MoM of 4th Oct meeting) : FE group to report progress and plans so far, with rough timelines (APK)

2.5 WiPLD related update : final conclusion? (GSS)

2.6 Antenna test range : status update (GSS)

2.7 Update on new common box : time schedule for first unit (using mixed combination of amplifiers) to be ready (APK)

2.8 Better vendors for mass production : SSK + HSK; SKG (drawing for sample chassis was to be given by SSK to SKG) : any updates?

2.9 New lasers order : status of the folder ! (SSK/APK)

2.10 Environmental chamber : updates? (ANR/SSK)

3. RFI related matters :

3.1 Pomegranate farm RFI source : update (RVS/YG)

3.2 Electrical systems RFI update : (RVS/YG)

3.3 RFI from transformers; HT line survey etc : results from joint meeting of RFI and Electrical (YG)

3.4 Corollary : update on functioning of EoR switch (BAK)

3.5 BSNL towers shifting to 1800 MHz : updates?

4. Operations :

4.1 Update on MCM card work : SMD components (RBS) (ii) learning Altium (CPK/RBS)

4.2 Palm size units : delivery ?

4.3 Detailed requirements of each group for new MCM : document available? (RBS)

5. Back-ends :

5.1 Note from BAK re LO scheme for upgraded system -- ver1.0 available : to circulate and take up for discussion next week? (BAK/YG)

5.2 Updates from further tests with PoCo and GPU corr (SCC/BAK)

5.3 Python related matters : discussion with YW (SCC)

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List of topics for Plan meet of 7th December 2011 (follow-up of some pending topics from different areas) :

1. Documentation on Plan website : to follow-up with groups who have not yet put up the documents. YG to get a response from electrical, mechanical etc.
2. FE & OF related :
 - 2.1 Cone-dipole feed : (i) quick update on status of installation of mesh based version of the feed (GSS/APK) (ii) note to control room re LO setting for modified antennas (YG/APK/RBS)
 - 2.2 WiPLD related update : any fresh updates from vendor? (GSS)
 - 2.3 Update on new common box : status update on progress with mixed amplifier design and getting more free samples from vendor (ANR/APK)
 - 2.4 Better vendors for mass production : SSK + HSK; Any news from TIFR (SKG)
 - 2.5 Environmental chamber : updates? can we close the matter? (ANR/SSK)
 - 2.6 Status update on loop connection related works for Pune-GMRT OF link : to discuss matter reported by SSK 2 weeks ago (MoM of 23 Nov meet)
3. RFI related matters : NOTHING NEW THIS WEEK (meeting between RFI, electrical and YG is still pending !)
4. Operations :
 - 4.1 Palm size units : delivery status check.
 - 4.2 Miltec indent and order : quick check on latest status (RBS)
 - 4.2 Detailed requirements of each group for new MCM : follow-up : is the basic specs document available (RBS)? Do we need a review about the requirements and realisation details?
5. Back-ends :
 - 5.1 Note from BAK re LO scheme for upgraded system -- ver1.0 available : has been circulated and will be taken up for discussion next week (14th Dec). (BAK)
 - 5.2 Update on analog back-end ripple problem (NDS/BAK)
 - 5.3 Updates from further tests with PoCo and GPU corr (SCC/SHR)
 - 5.4 Python related matters : discussion with YW (SCC)
 - 5.5 Updates on testing of packetised desing (SCC/BAK)

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Minutes of Plan meet of 30th November 2011 (follow-up of some pending topics from different areas) :

1. Documentation on Plan website : to follow-up with groups who have not yet put up the documents -- No new action.
2. FE & OF related :
 - 2.1 Cone-dipole feed : Updates on (i) status of mesh based version of the feed (GSS), plans for installation, 2 new FE boxes (APK), note re care with LO setting for modified antennas (YG) -- feed has come from Pune; dipole is there, sleeves have to be made ready, with correct dimensions, 2 LNAs are ready, QH available, 2 filters to be done, physical modification of FE box to be done ==> one more week needed to get things ready, two weeks from now for installation on S02. To follow-up the status

next week.

2.2 Spectral dump software porting : working version release by Hanumanth (HRB/GSS) -- no update available. To defer till HRB is back.

2.3 Cone-dipole prototype for 500-900 MHz : plans & time-lines from FE group (APK) : scaled drawing of cavity (for 500 to 1000 MHz response) will be given to w'shop by Monday, and dipole design to proceed in parallel. To put plate or box behind the cone and reuse FE box of CSIRO system. Check status 2-3 weeks later.

2.4 150 MHz system : (see MoM of 4th Oct meeting) : FE group to report progress and plans so far, with rough timelines (APK) -- strategy : (i) modified Kildal feed with (a) truncated reflector (ref. paper by Kildal) and (b) multiple rings (ii) manpower issues (can project students be useful?) -- all issues can be tested on existing 325 MHz design in WiPLD (iii) modified cone dipole related design to be taken up a bit after that. To take up about 4-6 weeks from now.

2.5 WiPLD related update : final conclusion? (GSS) -- existing version can allow 2 persons to work in parallel; new version can handle larger number of variables (factor of 30 better) - is it useful for us? To check a few other things with the vendor (AMC, 2 to 3 upgrade, other users of ver 9 etc) and get back. GSS to send email update within a week or so.

2.6 Antenna test range : status update (GSS) -- basic set-up is ready; one amplifier needs to be added; data acquisition using laptop based system agreed upon; need for a VVM to be checked depending on budget situation.

2.7 Update on new common box : time schedule for first unit (using mixed combination of amplifiers) to be ready (APK) -- two ECG008 amplifiers don't give enough gain; agreed to try and get more free samples and speed up the purchase order; also to assemble one CB with 2-stage Sirenza and test on W04. To look at again next week for status update.

2.8 Better vendors for mass production : SSK + HSK; SKG (drawing for sample chassis was to be given by SSK to SKG) : any updates? -- SKG waiting for response from H'bad centre this week; meanwhile immediate work of SSK is ongoing at w'shop; can check next week for status update.

2.9 New lasers order : status of the folder ! (SSK/APK) -- folder with quotes is ready; to process asap. Follow-up after 2-3 weeks.

2.10 Environmental chamber : updates? (ANR/SSK) -- some problems encountered; may be ready for inspection by end of this week. To get status update next week.

3. RFI related matters : -- many of these were not discussed due to shortage of time.

3.1 Pomegranate farm RFI source : update (RVS/YG)

3.2 Electrical systems RFI update : (RVS/YG)

3.3 RFI from transformers; HT line survey etc : results from joint meeting of RFI and Electrical (YG)

3.4 Corollary : update on functioning of EoR switch (BAK) -- full s'ware control version not yet ready, may happen by next week; meanwhile, manual h'ware version with full SOP is available.

3.5 BSNL towers shifting to 1800 MHz : updates -- BSNL has done at Alkutti; however, new tower just beyond E06 (BSNL + Airtel) which now requires follow-up. To get status update after 2-3 weeks.

4. Operations :

4.1 Update on MCM card work : (i) SMD components (RBS) (ii) learning Altium (CPK/RBS) -- work is ongoing.

4.2 Palm size units : delivery ? -- still stuck in Mumbai clearance; check next week.

4.3 Detailed requirements of each group for new MCM : document available? (RBS) -- Ops group to put up the interface document, as it exists; RBS to confirm action taken.

4.4 Rabbit card : new version almost final PCB tested for RFI and found to be better

than prototype add-on card (10 dB noise floor reduction seen); report to be put up on intranet Plan page.

5. Back-ends :

5.1 Note from BAK re LO scheme for upgraded system -- ver1.0 available : to circulate and take up for discussion within the next 2 weeks.

5.2 Updates from further tests with PoCo and GPU corr (SCC/BAK) -- no updates.

5.3 Python related matters : discussion with YW (SCC) -- no updates.

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