Minutes of 2005 March 2 OTC meeting. Last revised 2005-03-04. DTE.

OTC Teleconference Meeting:

19:00 UTC, Wednesday March 2nd 2005.

`Call-in: 434-984-0244`

Present: Barry Clark, Darrel Emerson, Brian Glendenning, Tony Kerr, Peter Napier, John Payne, Marian Pospieszalski, Dick Sramek, Art Symmes, Dick Thompson, & John Webber.

AGENDA:

(1) Report on the outcome of the OTC endorsement for continuation of the UVa contract.

(2) OTC role in reviewing research and development grants given by NRAO to other research institutions.

(3) A research project on the development of wide bandwidth feeds for low frequency systems.

(4) Research Engineer Track: "Scientist/Senior Research Engineer" title for the entire research engineer track? (Proposal from Pan)

(5) Summary of Action Items

Background material for most of these issues was contained in various emails forwarded to the OTC on Feb 24th.

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(1) Report to the OTC on Funding for the NRAO/UVA 350-μm Project

Tony Kerr reported on the outcome of the letter, endorsed by the OTC, which had been sent to the Director concerning the UVa funding.

Tony thanked the members of the OTC for the endorsement for this work. Thanks to these efforts, it now appears that we will be able to undertake the 350-μm project and thereby keep the UVa foundry from disbanding.

The director is now strongly in support of this project. However, as there are no operating funds to support this work, he recommended that the funds come from the existing CDL budget.

Money found:

John Webber has come up with $193k of CDL money from:

-- Impending departure of one engineer
-- Reallocation of salaries to reflect current reality (CDL, ALMA, EVLA work)
-- Reallocation of CDL RE & M&S money
-- Claiming outside amplifier sales money

PVB agreed that it was in ALMA's interest to keep the UVA foundry operational, and contributed $25k from his initial operations budget.

Jim Condon, Tim Bastian, & Miller Goss agreed to provide ~$30k from the GRA fund to support the UVa Research Student.

Cost reduction:

UVa agreed to a reduced overhead rate on their work

The project schedule was rearranged to shift some equipment costs into later years (LO & sideband source ~$100k) -- this will slow down the work to some degree.

Bottom line:

Available funds: $218k + $30k GRA
First year cost: $288k + $30k GRA

First year shortfall: $70k -- to come from a future ALMA Operations grant, we hope!

Subsequent years: We hope for ALMA Operations money to continue this 3-year project.

On general NRAO-Wide R&D:

It appears there is no money to fund even the short list of "essential" R&D projects in the OTC's 5-year Technology Development proposal.

General Discussion:

The only R&D work now being done in the CDL now is: (i) Marian's amplifier development and (ii) the 350-μm work. This is a very bad situation for the long term. Fred has complained that no-one has been approaching him for funding; however, Peter pointed out that the overall NRAO ops budget has big problems, which are likely to continue. We should make these one-of-a-kind huge efforts when a disaster is looming, such as the UVa contract, but barring something as important as

that, it has to be limited to very special situations. John Webber agreed: unless something is reversed by Congress, the prospects for R&D funding within NRAO in the next 2 calendar years are very poor.

(2) OTC role in reviewing research and development grants given by NRAO to other research institutions.

Marian introduced this topic. It came out of the issue of the OTC endorsement for UVa, but also it appears that communication within the observatory on research contracts in general has been very poor. People in CV knew nothing about the contracts currently being proposed in GB, for example. It is suggested that if awards of such contracts are being considered, then there should be some review process within NRAO. Some process should have been established for this.

John Webber agreed: he had been completely in the dark about GB plans, and he had not been aware of the need for a wider instantaneous bandwidth in the GBT receivers and feeds.

Peter favors Marian's proposal. Examples that could have benefited from a review mechanism in the past include Caltech's work for the EVLA for Q-band MMICs. We should suggest to the Director that as a matter of policy there should be reviews.

Barry Clark commented that there is a continuum between research contracts and simple procurements. How is the line to be set between what needs review and what doesn't? Peter suggested that anything that requires development, rather than simple procurement, should come to the OTC for review.

John Payne commented on the problem of external supervision of contracts, which had been particularly difficult with the UCLA photodetector project a few years ago; the review process could also be part of OTC recommendations.

It was generally agreed that Marian's proposal is good, and that advantage should be taken of the OTC's collective wisdom in reviewing potential external contracts. A threshold may be $10k or $25k, and in many cases the OTC may simply decide that no review is necessary. NRAO should be more careful in making the Statement-of-Work (SOW) for such activities, with the specific deliverables clearly spelled out, and we should ensure that adequate oversight is maintained for the duration of a contract.

Darrel agreed to make the first draft of a recommendation from the OTC to the Director on this process, for further discussion by the OTC.

(3) A research project on the development of wide bandwidth feeds for low frequency systems.

This project has been proposed from Green Bank and from Sandy Weinreb (please see emails forwarded to the OTC on Feb 24). Here is an extract from Phil's message – see the original email for the full text.
[Extract from email sent by Phil Jewell, distributed by DTE to OTC on Feb 24.]

"…We have some interest in wideband feeds for the GBT, although our needs are rather specific. Our low frequency, prime focus receiver is divided into 4 bands at 300, 450, 600, and 800 MHz, roughly. Switching between bands requires a manual feed change, which takes a couple of hours and must be scheduled on a maintenance day. Our pulsar observers, in particular, like to observe in both the 350 MHz and 800 MHz bands, sometimes within a short time frame. Accommodating this is logistically difficult. If we had a dual-frequency feed that covered 350 MHz and 800 MHz, it would save a lot of feed changes and improve the science. Having a feed that simultaneously covered the entire 300 to 1200 MHz range would be nice, although we do not have a big science driver for that at this point.

…

"After some discussion here, my feeling is that the proposed feed is not a very good solution for GBT needs. It would involve a long study project, and it might well be too expensive and difficult to implement a production version. The cost and effort required would probably greatly exceed the priority I would give the project. I think we would be better off trying to design a simpler, dual frequency 350/800 MHz feed that works with our existing prime focus systems."

[End of extract from Phil Jewell's message.]

Marian felt this project should be discussed by the OTC. Given the funding difficulties throughout NRAO, the project should be reviewed by the OTC.

John Webber pointed out that more information is required: a white paper describing what the science requirements are, and what would be the consequence of **not** having wide bandwidth feeds. The tradeoff of science return versus investment needs to be investigated. What are the consequences operationally? What is really needed now that is not already available – maybe there is a better technological or operational solution?

Dick Thompson would like to know if the feed could be designed to fit the focal ratio of the GBT; there is some scientific requirement, because of the 2 hours (see extract above) currently required to change between bands.

Peter commented that there would be long term interest in New Mexico for low frequencies on the VLA and for phase II of the EVLA. The Phase II proposal may well morph into a prototype for the SKA. However, it is not completely clear how useful this would really be for the EVLA or EVLA; Peter does not propose that it be funded right now.

John Webber suggested that maybe the proponents should organize a workshop on the topic. Users should hear about the discussion and planning. Marian said the topic may be of future interest, but now is probably not the right time.

(4) Research Engineer Track: "Scientist/Senior Research Engineer" title for the entire research engineer track? (Proposal from Pan)

Pan had written the following message to John Webber, about the current standing of the Research Engineer Track in the NRAO Scientific Staff Policy Manual:

> Subject: research engineer track
> From: Shing Kuo Pan <span2@nrao.edu>
> Date: Thu, 17 Feb 2005 09:33:43 -0500
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> To: John Webber <jwebber@nrao.edu>
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> Hi John,
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> It was brought to my attention by several research engineers that in the new NRAO Scientific Staff Policy Manual, the Ph.D. level research engineers are put under the Scientist track; positions in the Scientist track are divided into Assistant Scientist, Associate Scientist, Scientist and Scientist with Continuing or Tenure Appointment. However, there are only two grades in the present research engineer appointments: Research Engineer and Scientist/Senior Research Engineer with Continuing or Tenure Appointment. The lack of the equivalent "Associate Scientist" and "Scientist (without Continuing or Tenure Appointment)" grades between the entry-level Research Engineer and Senior Research Engineer makes recruiting, appointing and promoting the Ph.D. level engineers difficult and is not compatible with the regular Scientist track appointment.
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> It seems to me that intermediate levels between the entry-level Research Engineer and Senior Research Engineer are needed for the research engineer track. One possible solution that does not require revision of the Scientific Staff Policy Manual is to adopt a description similar to the current "Scientist/Senior Research Engineer" title for the entire research engineer track (i.e. Assistant Scientist/Research Engineer, Associate Scientist/Research Engineer, Scientist/Research Engineer and Scientist/Senior Research Engineer with Continuing or Tenure Appointment).
>
> Do you think we need to address this issue?
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> Cheers,
>
> Pan

Miller Goss suggested that Rick Fisher - the new chair of the SPRC - RE (scienfitic performance review committee - research engineers) ask his committee to look at this new category for REs'.

John Webber agreed to reactivate the research engineer issue, and remind the OTC on what had been discussed agreed, and what needs to be modified in the SSP manual.

(5) Summary of Action Items

i) Darrel will draft a recommendation to Fred on OTC reviews of future research contracts awarded by NRAO.

ii) Darrel will draft a response to Phil Jewell and to Sandy Weinreb, on the wide bandwidth feed research issue.

iii) John Webber will resurrect the research engineer track planning. (Rick Fisher was not able to attend this meeting, but clearly needs to be in the loop here.)

Discussion on these topics will take place via email over the next 3 weeks, with the next OTC telecon to be in about 3 or 4 weeks, depending on progress.

DTE.