

Behrend, Dirk (GSFC-698.0)[NVI]

From: Bill Petrachenko [Bill.Petrachenko@nrc-cnrc.gc.ca]
Sent: Friday, February 22, 2008 1:12 PM
To: Simon Ellingsen
Cc: Behrend, Dirk (GSFC-698.0)[NVI]; Arthur Niell; Oleg Titov; Bill Petrachenko
Subject: Re: AuScope operations questions

Hi Simon,

These are wonderful questions to start thinking about. If I had the time, it would give me great pleasure to do just that. Unfortunately, time is short with the IVS GM looming, so I'll just say a few words. To the best of my knowledge, geodetic VLBI is no longer correlator limited but station (and perhaps media) limited. If I were you, I would want to observe as often as possible with global networks to establish Australia within the the global/international context. It may require one or two more playback units at the correlators, but I would try to get added to as many R1, R4 and T sessions as possible, and then, as Oleg suggests, round out the rest of the year with some southern hemisphere CRF's, and perhaps a few continuous Aus/NZ sessions. [It sounds like the shipping budget will get pretty large, and I'm not sure what you have planned.] I think that would get you pretty close to 180 days. For the purpose of EOP, one of your stations might be enough for the T1's and T4's, but for TRF, observing as often as possible will help you define the your Australian stations better. I'm not involved with the IVS OPC, so I'm probably the worst person to ask about operational questions like this. I'm probably saying things that are totally impossible, but if I am, I'm sure I'll get corrected by others.

Anyway, off the top of my head, that's my two cents. I think your antennas in the south will improve schedules for the southern hemisphere stations, although sensitivity with TIGO will be an issue.

Best regards, -Bill.

On Fri, 22 Feb 2008, Simon Ellingsen wrote:

> Dear Dirk, Oleg, Arthur & Bill
>
> I was wondering if you may have some time during the upcoming IVS
> meeting in St Petersburg to discuss some issues relevant to AuScope
> operations? We want to maximise the geodetic science gain from the
> new AuScope antennas, however, there are a number of issues which will
> have a major impact on the operations which we would like some
> science/geodesy input on. Basically the number and frequency of
> experiments where AuScope antennas form the core of the array
> determines the required size of the disk pool. In particular :
>
> - The three AuScope antennas will be available approximately 180 days
> per year for IVS observations. What percentage of those are likely
> to be existing programs such as R1, R4, CRF, OHIG etc? Currently
> Hobart participates in 60 days of observations each year, it wasn't clear
> to me how much further scope there is for southern antennas to participate
> in these existing experiments?
>
> - The remainder of the time will presumably be experiments where the
> AuScope antennas form the core of the array, is it likely that other
> stations (e.g. Hart, Forteleza, etc) will be available to
> participate? These experiments are the ones where it would seem to

> make most sense to correlate them at Curtin, however, at the moment
> the budget has a correlator with 3 MkV playback units (possibly 4 if
> the NZ consortium fund one) and 10 LBAHDR playback units (I'm pretty
> sure that the LBAHDR units aren't being funded through AuScope, but
> will connect to the same correlator). It will be possible to add
> additional MkV playback units, so that experiments with more than 3
> (or 4) IVS antennas can be correlated, however, additional funds
> would need to be found for this.
>
> - It may be more efficient (and hence cheaper) to run the AuScope IVS
> operations in blocks (e.g. 3x24 hour experiments one after the other
> and then 4 days with no IVS, or week on - week off), as opposed to
> approximately 1 x 24 hour experiment every two days. Would this
> sort of blocked mode of operation have an adverse impact on the
> geodesy (e.g. Earth rotation parameters)?
>
> Its not critical to have final answers on any of these questions,
> however, some guidance would be very useful and provide us with a
> starting point for the operations discussions.
>
> Regards
>
> Simon
> --
> Simon Ellingsen : Senior Lecturer Physics & Astronomy, University of Tasmania
> email : Simon.Ellingsen@utas.edu.au
> WWW : <http://www-ra.phys.utas.edu.au/~sellings>
> Phone : 6226 7588 ; Area Code : +61 3 (International)
> 6278 8636 (Home), 6226 2410 (Fax) 03 (Australia)
>
>
>