

SWG Chairs Telecon 21-April-2020

Participants: SWGs: Jason Hessels, Mark Sargent, George Heald, Adriano Ingallinera, Fernando Camilo, Izsaskun Jimenez-Serra, Natasha Hurley-Walker, Sarah Blyth, Eduard Kontar, Stefano Camera, Andrei Mesinger, Sarah Blyth, Alvise Raccanelli, Eduard Kontar, Laura Wolz

Apologies: Doug Johnstone, Françoise Combes, Valentina Vacca, Anna Nelles

SKAO: Robert Braun, Jeff Wagg, Tyler Bourke, Anna Bonaldi, Philippa Hartley, Lara Alegre

Topic: Countdown to Construction

Robert: It has been a busy month despite the lockdown.

- Operations Review was carried out on 23-25 March in three remote sessions. Strong endorsement of the Operations Plan and a good list of recommendations that will be implemented in the next version (v4) of the operations plan.
- System CDR closeout was 31 March. All recommendations from the review panel have either been implemented or have an implementation plan in place.
- Construction cost audit: this was a deep dive into the costing for building and delivery of SKA1, carried out by a very experienced firm. The outcome was very positive, and the Construction Proposal can now be prepared with confidence for the SKA Council.

Adriano: will there be funding issues from the member countries due to the pandemic?

Robert: The one-on-one discussions between Phil Diamond / Catherine Cesarsky and the representatives of member countries to secure financial commitments are carrying on as normal. From those we still have very positive messages, with no indication of a change in commitment. In some cases, the money has been already put aside. Participating in a project like the SKA can send a very positive message of recovery after such a crisis, and the individual commitments from member states are still modest compared to other expenditures.

Mark: Is the Operations Review report available?

Robert: it will probably be, once it has been presented to the SKAO Board.

Topic: Data challenges

Anna: SDC1 paper almost ready. It is a nice example of the internationality of the project, with scientists from 23 institutions participating.

Philippa: SDC2 dataset is being prepared. This is an HI simulation; the HI cube will ultimately be about 1TB in size, but we are going to share a smaller version with the HI SWG for testing.

Anna: Given the size of the data we will deliver it through a network of computing facilities, and teams will be asked to deploy their analysis pipelines there. As well as being a resource for the participants, it will add an extra dimension of training of the community in the

practices of SKA, particularly the data access aspect, that will ultimately happen through a federation of SRCs.

Jason: Will a continuum image also be released?

Anna: Yes, there is a continuum set accompanying the HI set.

Jason: we would like to have a look at how to insert transients, in preparation for further challenges.

Topic: Low bridging

Jeff: MRO site testing activities on hold, but the LOW design bridging data analysis work is continuing. The AAVS2 is a full prototype station of SKALA4.1 (log-periodic) antennas deployed on site. Measurements have been ongoing and are being analysed together with those from the EDA, which are dipole antennas, as a performance reference. Here we show an analysis of the 160 MHz sensitivity from Pupillo et al. Both the XX and YY polarization data are presented. The quiet sun is used as a primary flux density calibrator, and the model for its apparent flux density has been corrected using a model for the station beam. The sensitivity, once scaled to the number of SKA1 stations, is consistent with the SKA level 1 requirements. More work on station calibration is expected by the end of June. The oscillation of sensitivity may be due to the brightness of the Galaxy, and how much of it is in the station beam.

Natasha: Have off-zenith sensitivity measurements also been made?

Jeff: Some are in hand now and more are planned.

Topic: Proposal for a new SWG on Fundamental Physics

Robert: We received a proposal for a new SWG, to better connect theoretical physics to SKA science. The Cosmology SWG expressed concerns over possible overlap with GW and Cosmology. We invite other reactions.

Alvise: Happy to have other people involved, but indeed the GW and Cosmology already cover a lot of fundamental physics. The GW SWG would be happy to have other people join, rather than starting a new SWG.

Sarah: If theorists want to be better connected, then having their own SWG may not be the best way forward. Better to join an existing SWG.

Topic: Next science meeting: March 2021 in Cape Town

Anna: Venue for the plenary sessions secured, now working towards having a location for splinter sessions, that would happen in the afternoon. We had discussion on virtual participation, and whether we should encourage participating virtually rather than travelling. There are a couple of big conferences coming up that are going to be fully virtual, we are keeping an eye on how that goes.

Natasha: There is a report we can share on how to do virtual meetings well. In Australia we will do a workshop on enabling the networking aspect. Good internet connection will be key.

https://people.clarkson.edu/~jmatthew/acm/VirtualConferences_GuideToBestPractices_CURRENT.pdf

Andre: it could be optimistic to think that in March 2021 there will be no problems with travelling, but going fully virtual could be a risk for a big collaboration like SKA and difficult for junior people to engage.

Topic: AOB

Suggestions: a slack space for the SWG chairs. Some SWGs (Cosmology, Continuum, EoR) have already their slack spaces. Should they be merged into one space, with different channels? SKAO to explore options.