

SWG Chairs telecon 10/01/2017

Participants: Robert Braun, Anna Bonaldi, Andrew Siemion, Jean-Pierre Macquart, Jonathan Pritchard, Ann Mao, Erwin de Blok, Garrelt Mellema, Xuelei Chen

SKA meetings

2017 meeting: EWASS, (June) URSI (August),

IAU 2018 Vienna: proposal submitted -> Now science based rather than facility based

Cost control Action Plan:

The Board recommended a review of costs and a plan to meet the cost cap. Volatility of cost estimates from some of the design consortia is an issue. The office will now scrutinise costings received from the Design Consortia and ensure they are consistent and complete. No re-scoping of the scientific capabilities was recommended by either the Senior Management Review or the System PDR. The action plan is broken into several streams and each of them is coordinated by one of the SKAO staff (e.g. Braun/Stringhetti for antenna design). Preliminary recommendations will be presented at the next SKA Board meeting in March.

SKA-low antenna design: Two types of changes are being explored at the moment: one type is simply a cost reduction and the other also involves some change to the scientific capabilities. Whenever science capabilities are impacted a more thorough scientific review would be undertaken before any decision were made.

Performance of the SKALA3 vs other SKA1-Low antenna designs is being investigated. One option is to use a scaled (bigger) version of MWA antennas, which have more limited frequency coverage but smooth and quite sensitive response over the band that is sampled. The Vivaldi design also exhibits a response which is not smooth with frequency, and costings have not yet been received, so it is not clear whether there would be a saving. However, the cost of LFAA is dominated by deployment rather than physical antenna cost. The beam-forming is possibly also an area of savings. Analog beam forming (as in MWA) is cheaper but there are implications on the quality and stability of the station beams and therefore implications for the scanning and tracking strategy.

The cost estimates for MID are more robust, although the current correlator cost estimates are also of concern.

Procurement of the various components in the open market could make a difference because of different cost of labour etc. with respect to that assumed by the consortia in their costings.

Costing of SDP has gone down considerably since the first projections were very conservative (all analysis in real time at maximum data and processing rates). Their costs are now more sensible and they are more robust. The high performance computing can be deployed in stages to benefit from improvement of technologies and reduction of costs. The system must be scalable and flexible enough to allow this.