AIP Meeting Wrap-up

8 – 9 June 2017,Dwingeloo, the Netherlands

Wrap-up

- The SKA is set-up to support a 50 year lifetime to offer world's biggest radio telescope in an international partnership.
- Continuous upgrades and expansions, enabling new capabilities, are essential for the future of the SKA.
- New technologies are absolutely necessary to ensure that the SKA2 science goals can be met.
- There is an excellent engagement of a broad scientific community on advanced technologies. A next step by the SKAO will be to organize science workshops on SKA2 science.
- The science talks we have seen expressed a high interest in large field of views, frequency range and instantaneous bandwidths and flexibility of the system.
- Engagement of young engineers is essential to ensure long-term R&D for the SKA. A role for the SKAO would be to support and stimulate this, possibly via the SODP.

Wrap-up

- Roadmaps (science, instrumentation, technology) should be established and maintained asap to guide observatory development, R&D and industry. To be established by the SKAO, in consultation (or together) with the teams active in SKA technology development.
- The roadmap should include realistic timelines to appropriately target and organize development and prototyping and to manage expectations
  - A factor to take into account is that the same resources are involved in getting SKA1 operational and SODP developments
- The SKAO supports the idea that the definition of a CTO (technology development ‘visionary’) role to monitor and guide observatory development would be a very valuable addition to the SKAO. Such CTO should also seek synergy in a larger context, such as with other large research infrastructures.

Wrap-up

- The SKAO aims to establish the SODP (replacing the AIP). The AIP will continue until the establishment of the SODP.
- Draft SODP plans, including a budget, have been made. Approval is waiting for the IGO to become operational (2018/2019).
- Participating organisations in the AIP are asking for a clarification of their return on investment
- The SKAO should firmly anchor the SODP in its organization and demonstrate a strong commitment towards observatory development. Such visible and genuine commitment of the SKAO is a necessary condition for partners to successfully acquire national R&D funding.
- We signal that the current AIP activities are focused at frontend technologies. Innovation in other parts of the signal chain is also needed. For example, new calibration and imaging algorithms, processing platforms and correlator upgrades.
- To evaluate advanced technologies for the SKA, a range of test facilities will be needed, including access to (part of) SKA Low and Mid (+local support) and/or an end-to-end test facility.

Wrap-up

- SKA1 timelines are slipping.
  - R&D towards SKA2 becomes less urgent and parties that are involved in both SKA1 and the AIP need to invest more than anticipated in SKA1 and are prioritising the SKA1 work.
  - Organisations are reconsidering the investments in the AIP. Hard commitments to the AIP are therefore being reduced. However, R&D is continued for their own stakes and at their own pace. They would like to share the outcomes with the SKA, with minimal overhead.
- SODP projects can be in various stages of the design (e.g. conceptual design, preliminary design)
- The overhead (e.g. reporting to the SKAO) and type of reviews (design review vs. progress review) should be adopted to the design stage and agreed deliverables of the consortium.

Wrap-up

- Great progress in R&D has been presented
  - MFAA Science requirements analysis, system design and front-end technology
  - PAF development and prototyping from ~1 to 8 GHz. Cooling is key for competitive performance on SKA1. Collaboration through the AIP/SODP stimulates comparative testing, which has been proven extremely valuable.
  - WBSPF is delivering prototypes for band A and B, and will continue to PDR. After PDR of band A and B, WBSPF is discussing a new SoW and considers to proceed their R&D into advanced spf technologies.
- Mark Bowen will present the outcomes of the meeting at the Engineering Meeting, and will ensure a response of the SKAO to the discussion paper.
- This AIP meeting was very much appreciated and should be organised regularly. The meeting should remain open for people outside of the SODP.