



# SKA Organisation Monthly Bulletin

*13<sup>th</sup> Issue, July-August 2015*

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## From the Desk of the Director-General

The Northern Hemisphere summer is over and I can already sense the ramp-up in activity around the SKA Office after staff here had a well-deserved break. I hope that those taking holidays in the SKA design consortia are also rested and ready for the busy period ahead of us.

The SKA Board meeting took place at SKA South Africa's office in Cape Town, and I thank the staff there for all their support for a very busy meeting. Colin Greenwood has, in his section below, provided a link to the outcomes of the meeting, so I won't repeat those here. I will however congratulate Prof Giovanni Bignami and Mr YIN Jun on their election as the Chair and vice-Chair of the Board, respectively. I look forward to working closely with them.

One issue that has come up both in the Board meeting and in discussion with colleagues in the design consortia and science working groups is that of communications both from the office and to the office. In a global and distributed project like the SKA efficient, effective communications and transparent decision-making are essential. We have seen problems developing in this area over the past months and are taking steps to minimise any problems. Alistair McPherson has increased the rate of meetings with the Consortium Leaders; they now have monthly telecons and quarterly face-to-face meetings, which is already improving communications in both directions.

On top of this, regular meetings are being set up between SKAO and consortia project managers, and between SKAO and consortia system engineers, all designed to improve the flow of information in both directions. And, one more thing, we will be opening up Confluence, a tool used inside the office for tracking issues, to appropriate members of the design consortia. Hopefully, all these steps will go some way to overcoming the communications issues that we have seen and further developing the teamwork required for a smooth running, global project.

I was pleased to hear, from several directions, that the meeting in Stockholm in August went very well. It appears to have fulfilled its main function in focusing the scientific community's collective mind to start the process of defining the strategy for key science projects; it also strongly reinforced the need for the SKA to be designed, from the ground up, as a facility that can deliver commensal observing programmes as much as possible.

The big, literally, event on the science front was the recent delivery to the SKA Office of hardcopies of the two volume SKA Science Book. The coffee table in my office is now groaning under the weight of the two books, which are an impressive achievement by the SKA science community. There is, of course, a much shorter executive summary that has been prepared for the so-called SKA Prospectus that will be provided to governments as we move towards the establishment of the SKA as a Treaty organisation. The latter process is described below by Simon Berry.

In August, I attended the IAU General Assembly in Honolulu. SKA featured large within the exhibition hall, with the almost 50% scale model inflatable dish being visible from anywhere in the room (see photo below). The comms team are to be congratulated on this initiative; it will be appearing at other meetings over the next couple of years. At the IAU I hosted a breakfast meeting for senior astronomers from around the world (about 90 attended) at which, in return for providing them with a continental breakfast, they had to listen to me giving an update on the status of the SKA.

Philip Diamond  
SKAO Director-General



## Project

**By Alistair McPherson, Head of Project**

The past month has been dominated, in the office, by the work resulting from the Architecture Review and the preparations towards the Systems Review. This has been made a great deal more effective by the assistance given by the consortia in ensuring that the architecture reflects the work that has gone on within the consortia preliminary design process. The systems work is continuing, but cannot be completed until we have closed the delta-PDRs. We now have dates for these with the key delta-PDR following the Dish Structure Down-Select at the end of the year.

The Consortium Leaders have met with the office twice this summer. Once in Edinburgh in July where we had a very fruitful meeting followed by a meeting in Dubai early September. The Dubai meeting was very much a discussion period where everyone had the opportunity to progress items within the project.

You will all be aware that the planning for the Engineering Meeting in Penticton is progressing with the dates and venue set. The meeting will be held from 9-12 November with Consortia meetings arranged to follow on the 13<sup>th</sup>. The bookings are going well and close at the end of September. Information is [available on the Indico page](#).

Susan Nel has been working hard on the new Configuration Management tool. The workshops and training were carried out in July and an assessment of the system has been completed. We are now in the final negotiations with the company to ensure that we all get a good deal. The aim will be to have sufficient seats for those necessary in the office and the consortia to use the system effectively. The project documentation will be transferred very soon.

In a further effort to communicate more effectively and have a common collaboration tool, we are investigating and trialling the use of Atlassian Confluence/Jira across the project. This has completed a trial and the configuration and hosting is being agreed at present. It should be available to key consortia members by the end of September.

Finally, the Telescope Teams have been set up, one for SKA-Low and one for SKA-Mid. These each are designed to have members of the relevant consortia and are led by Mark Waterson, along with Jan Geralt de Vaate, for SKA-Low and Gie-Han Tan, along with Thomas Kusel, for SKA-Mid. Membership of the two teams is detailed in the table below. Each team will have a small executive to agree priorities and progress. The Telescope Teams are designed to generate Resolution Teams, drawn from across the project, to find resolutions to specific issues identified. Naturally, the collaboration tool will be essential for this work.

	TT – LOW	TT-MID
Chair*	Mark Waterson	Gie Han Tan
Requirements*	Wallace Turner	Wallace Turner
PM*	Andre van Es	Martin Austin
SE*	Maria Grazia Labate	Andrea Cremonini
PS*	Jeff Wagg	Tyler Bourke
Co-Chair*	Jan Gerald Bij de Vaate	Thomas Kusel
LFAA	Jan Gerald Bij de Vaate	<i>Not applicable</i>
DSH	<i>Not applicable</i>	Adriaan Peens-Hough
SDP	Rosie Bolton	Rosie Bolton
CSP	Ben Stappers/Steve Ord	Ben Stappers/Michael Rupen
TM	Alan Bridger	Lize van den Heever
SaDT	Richard Oberland	Richard Oberland
INFRA AUS	Shandip Abeywickrema	<i>Not applicable</i>
INFRA SA	<i>Not applicable</i>	Carel van der Merwe
AIV	Adam MacLeod	Donald Gammon

\* Members of TT Executive



## System Engineering

*by Tim Stevenson, SKA Chief System Engineer*

The run-up to the System PDR (Architecture and System Reviews) has proved challenging as predicted – we are attempting to ‘build’ a re-baselined Observatory using un-rebaselined Elements whose own PDR processes have not run their full course in some cases. Whilst one would not plan to do this in an ideal world, the overall schedule does not allow for full risk mitigation at Preliminary Design. In fact, there is a goodly amount of stable design definition available to feed into System PDR, and it is a matter of organising it in order to give the Review Panel good visibility of what has been achieved. The Consortia are to be congratulated on handling dramatic change during 2015 and their support in preparing for the PDR is much appreciated.

We are looking forward to the Engineering meeting, at which, amongst other things, there will be a session on System Modelling. The use of a common system model is an extremely attractive goal and, together with Consortia, we are developing ways of attaining it such that it makes many system tasks and analyses more effective. Watch this space for further news on this initiative.

## Architecture

*by Peter Dewdney, Acting SKA Architect*

Due to workload, there is no contribution from Peter this time.

## Operations Planning

*by Gary Davis, Director of Operations Planning*

As I type this, we await two inputs from the Consortia: a Reliability, Availability, Maintainability (RAM) report and a Failure Mode, Effects and Criticality Analysis (FMECA) report (both first drafts). These inputs are critical for assessing the resource requirements for maintaining the SKA and we are very anxious to see the results. In the meantime, further integrated logistics work in the office is on-going but awaits clarity on the evolving architecture.

Work to define the operational requirements is underway. I plan to issue an Operations Concept Document to the Consortia for review in November/December, leading to final issue by Christmas and a review in early 2016. Until these requirements are issued, we are maintaining a regular dialogue with TM and, recently, also with SDP. These meetings have been fruitful in highlighting issues where clarity is needed. Just today I gave a talk to SaDT and this also generated some very useful discussion.

In my previous report I highlighted the organisational structure of the SKA (in its 50-year operational phase) as a fundamental prerequisite for its ultimate success. Following discussion at the Board meeting in July, the Board set up a working group to support me in this and I am hopeful that an agreed structure can be announced soon.

The organisational structure is one component of the Operations Plan – a management plan which will go to the Board in November and to the IGO negotiation process in December. The Operations Plan will also contain an estimated operations budget, and this will obviously be of great interest to the Member countries.

Finally, readers of this Bulletin will be aware that the €650M cost cap on SKA1 does not include any provision for the long-term curation of data, nor for access to data for our users. It is self-evident that this is a fundamental shortcoming for any observatory. At its July meeting, the Board endorsed our recommendation to set up an Advisory Panel to look at the big picture of the data flow problem and to recommend a solution. The Data Flow AP consists of members from most SKA countries and it will report to the Board in March 2016.

## Science

by *Robert Braun, SKA Science Director*

### The SKA Key Science Workshop:

The SKA Key Science Workshop was held in Stockholm, Sweden on the 24<sup>th</sup>-27<sup>th</sup> of August 2015; we had 160 participants. Throughout the workshop there was some very good discussion on all areas of science that the SKA will be involved in. All of the talks and plenary presentations on day 1 and 4 were recorded and are [available online here](#) for you to watch at your leisure.

Specific outcomes of the meeting will be in the summary documents from each of the science working focus groups, outlining progress in their areas to the three main goals of the workshop being to:

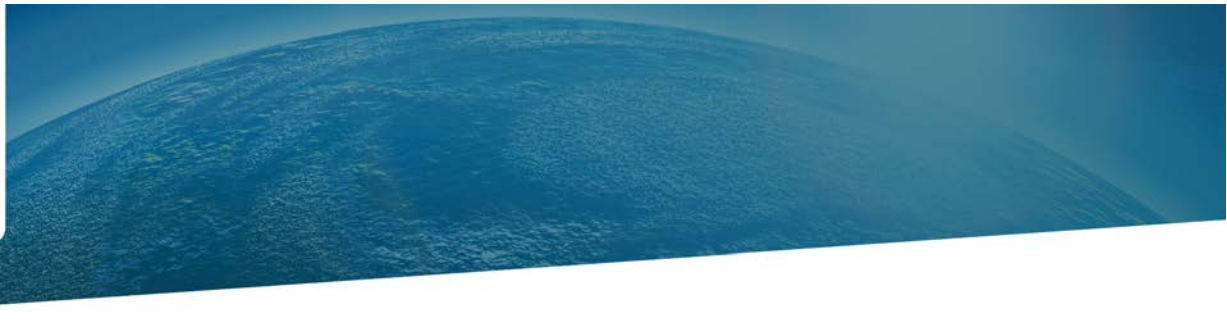
- further develop KSP concepts
- support development of potential KSP collaborations
- maximise commensality

These will be reported on by the end of September.

The other major outcome of the meeting was a comprehensive matrix of potential survey programmes, which will be used to distil a small number of key generic surveys that might account for a fraction of the 5 year KSP package, that would attempt to maximise commensality, which was the idea that we gathered from the whole range that everyone wanted. We will then distribute these contributions for discussion and comments within the community.

I gratefully acknowledge and thank both the City of Stockholm and Onsala Space Observatory for sponsoring both receptions that took place during the week. You can see below some photos taken during the week.



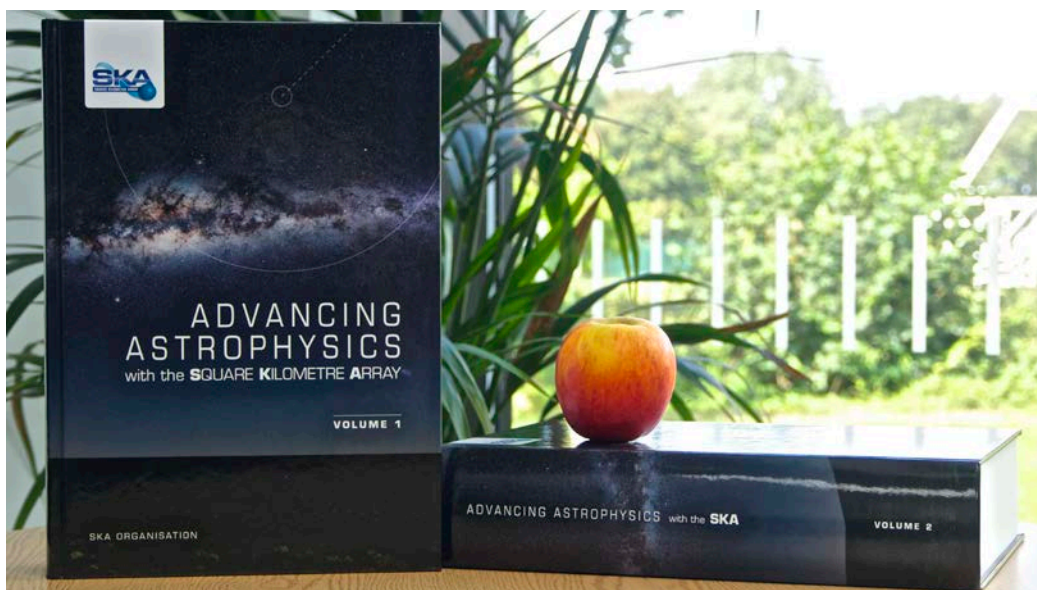


## IAU General-Assembly

We had an all day special session on the Sunday between the two weeks of the IAU GA, this session attracted approximately 100 participants away from the Hawaiian beaches. The session itself covered the whole day and included an introduction from myself followed by eight talks covering a spectrum of the scientific programme.

## SKA Science Book

I am pleased to announce that we have taken delivery of the printed SKA Science Book, weighing in at a cool 8.9kg. The electronic version in PDF format can be downloaded on the SKA website in the [books section](#). Individual chapters are available for download on the [Proceedings of Science website](#).



*The new SKA science book, Advancing Astrophysics with the Square Kilometre Array, published in 2015 in two volumes.*

## Science Meetings

On the 9<sup>th</sup>-11<sup>th</sup> of September the Astronomical Society of Japan (ASJ) held the Autumn Annual Meeting at Konan University. The Japan SKA consortium (SKAJP) organised a plenary session and a parallel session during the meeting. SKAJP also held some SKAJP mini workshops.

On November 2<sup>nd</sup>-4<sup>th</sup> there will be the SKA in Seoul, an Asia-Pacific Regional Workshop on HI Science, held in Seoul, Korea. The aim of this workshop is to foster collaboration and involvement from Asian astronomical communities. This meeting will be a strong drive to establish a lasting collaborative relationship between the astronomical societies in the Asia-Pacific region, thereby contributing to maximising science from the ground-breaking facilities.



## Policy Development

*by Simon Berry, SKA Director of Policy Development*

The Italian Government has been invited to lead the development of an SKA convention (treaty) towards the establishment of the SKA IGO. Preparations are taking place and a programme of meetings has been set in place to be started in the middle of October this year.

In July I had presented a range of policy related matters at the Board Meeting hosted in Cape Town. With the announcement of Jonathan Kings' retirement from the Board, this allowed an opportunity to reconstitute the STRATCOM, and so this was achieved and we hope to be able to announce the name of the new chair soon.

In the first week of September the Chinese Government signed the Letter of Intent. This is great news and shows the continuous strong involvement of the Chinese Government going forward with the project. We are working hard to develop supporting activities in various other countries particularly around developing industry interests around the project.

## SKA Board Matters and Administration

*by Colin Greenwood, SKA Head of Administration and Legal*

### SKA Members

The following governance changes have taken place recently:

- As from the 10<sup>th</sup> of July, Mr. Martin Hoffman stepped down as the nominated representative (member) and as voting representative (board) for Australia's Department of Industry and Science. Also effective from that date Mrs. Patricia Kelly was appointed as Mr. Hoffman's replacement in both of these roles.

The 18<sup>th</sup> meeting of the SKA Board of Directors convened on the 22<sup>nd</sup> and 23<sup>rd</sup> of July in Cape Town, South Africa. Prof. Giovanni Bignami was elected as the independent Chair of the SKA Board of Directors. Mr. YIN Jun was appointed as Vice-Chair to the SKA Board, each for a term of two years. Mr. Colin Greenwood was appointed as Company Secretary for a term of two years. Prof. Mike Garrett was appointed by the Board as Science Representative to the SKA Executive Committee.

Following the meeting Prof. Richards Hills agreed to extend his term as chair of the Science and Engineering Advisory Committee, SEAC.

Full details of the meeting are available via the Notes from the Chair of the meeting, which are available here (<https://www.skatelescope.org/meetings/outcomes-of-the-18th-ska-board-meeting/>)

### SKA Building Update

Negotiations between SKA Organisation and the UK Government have commenced regarding SKA Headquarters hosting agreements. In addition, the SKA Office is working closely with the University of Manchester to further develop designs for the new Headquarters building. The engineering and construction company Sir Robert McAlpine has been appointed as principal contractor for this project and the selection of the Project Architects will be made at SKA HQ on the 25<sup>th</sup> of September.

### Staff Updates

We are delighted to welcome two new starters, Mr. Nathan Cunningham who has re-joined us on the 3<sup>rd</sup> of



August as IT Systems Analyst, and Mr. Daniel Brown who has started on the 3<sup>rd</sup> of August as our IT Placement Intern for the next year.

On 14<sup>th</sup> August, Vipin Gungaram finished his contracted time here at the SKA as the IT Placement Intern. He was on a one-year industrial placement from the University of Manchester. We wish to thank Vipin for all his efforts and wish him all the best for the future and his studies.

## Communications and Outreach

by *William Garnier, SKA Communications and Outreach Manager*

As usual, there are some exciting initiatives to report on the Communications front in this new issue of the SKAO Bulletin. Most relevant ones are detailed as follows.

### Shared Sky

After an excellent showcase at the Iziko National Art Gallery in Cape Town, South Africa, our now extremely popular indigenous art-astronomy exhibition –well, a subset of it- was displayed at the Jodrell Bank Discovery Centre, near the SKA HQ, during August. Thanks to the hard work of the Discovery Centre staff, the exhibition was very successful and was visited by about 15,000 people, including 5,000 children. Several activities were organised around the exhibition to make the experience even more interactive for the visitors:

- Children's art – children were encouraged to produce pictures which were inspired by the exhibition. Most of the children who visited will have taken part in this activity. Drawings were attached on a wall of art. Some photos are below.

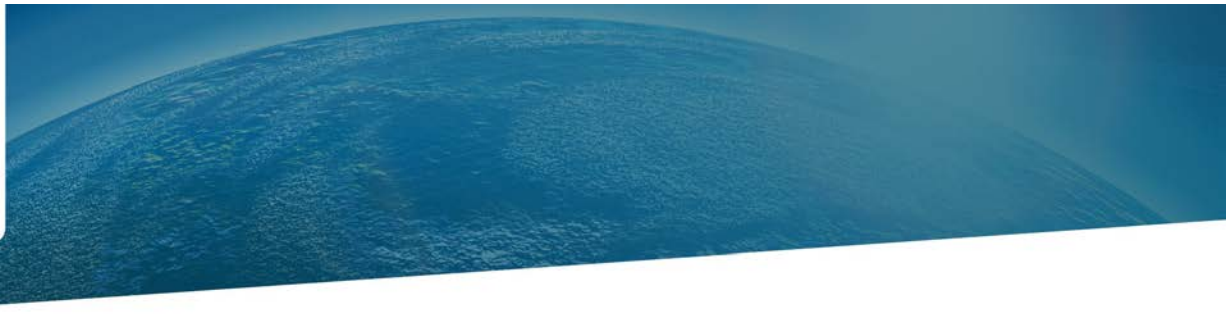




- Children's story time – aimed at the younger visitors. In these sessions, the children were told the story of the Emu in the Sky and the Girls who made Stars, two legends which are part of the exhibition. At the end of these sessions, children were invited to make their own Milky Way or constellations out of electric tea lights. This activity will have reached approximately 1000 children over the summer.
- Lovell lecture – Keith Grainge, the SaDT Consortium lead, gave an overview of the SKA in the same room as the exhibition is displayed. About 150 people attended the lecture.
- Meet the SKA expert – Three Meet the Expert sessions were run, featuring our colleagues André van Es, Jimi Green and Gary Davis. A total of 242 people attended these sessions.

#### IAU General Assembly

As described in the Science Director's report, SKAO was well represented at the conference, with several of us attending. I think all delegates would confirm that it was impossible to miss the SKA stand there, populated by a half-scale SKA inflatable dish. This was definitely an excellent talking point to engage with the community, and we had an excellent turnout at the stand over the 2 weeks.



### SKA People page

We have launched a new outreach initiative called SKA People aimed at showcasing the diversity of people - scientists, engineers, technicians, & experts in all fields - who work on the SKA around the world. The initiative is two-fold: publishing profiles of and interviews with SKA experts; and organising or taking part in outreach events where we can showcase this diversity. You can find out more on our [SKA People page!](#) If you'd like to suggest someone with an interesting background and who is passionate about the SKA, get in touch!

### Scibars

We are continuing our participation in [scibars](#) across the North West, and are very thankful to the wide range of SKAO staff volunteering to give these outreach talks. On July 27 SDP and TM project manager Miles Deegan gave a talk in Chester in front of some 30 people while project scientist Evan Keane gave a talk in Knutsford on September 7.

### **Connect with us**

For any enquiries, requests or feedback please write to [ska-outreach@skatelescope.org](mailto:ska-outreach@skatelescope.org)

You can also find the SKA Organisation on [Facebook](#), [Twitter](#), [Google+](#) and [YouTube](#).