

SKA Organisation Internal Newsletter

1st issue, January – April 2014

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Introduction

Welcome to the first SKA Organisation Monthly Newsletter. This Newsletter will be one of the tools used by SKAO to enhance internal communication within the project. It is intended to provide general news on happenings within SKAO and across the design and science teams. Our aim is to enhance overall knowledge and visibility of the progress of design, policy and science activities. We hope you find it useful; feedback will, of course, always be useful and welcome.

Philip Diamond
SKAO Director General



SKA Board Matters and Administration

by Colin Greenwood, SKA Head of Administration and Legal

Staff Update

The following staff have joined the SKA Office since the beginning of 2014:

- Simon Berry, Director of Policy Development
- Marco Caiazzo, System Engineer for CSP
- Philip Gibbs, Engineering Project Manager for SADT
- Mathieu Isidro, Deputy Communications and Outreach Manager
- Alistair McPherson, Head of Project and Deputy Director General
- Susan Nel, Configuration Manager.
- Rodrigo Olguin, System Engineer for SADT
- Donna Parkinson, Administrative Assistant
- Sarah-Jane Pritchard, Executive Officer
- Juan Santander Vela, System Engineer for SDP
- Adriaan Schutte, Power Engineer
- Corrie Taljaard, System Engineer for RAM & ILS
- Gie Han Tan, Domain Specialist (RF/Dish)
- WANG Qiming, Head of Policy Development
- Mark Waterson, Domain Specialist for LFAA/PAF

A Project Officer, Project Controller, and a Domain Specialist (Operations) are currently being recruited. The closing date for applications has passed and an update will be provided in the next newsletter.

Information and contact details for all SKA Office staff is available on our website:

<https://www.skatelescope.org/skao-staff/>

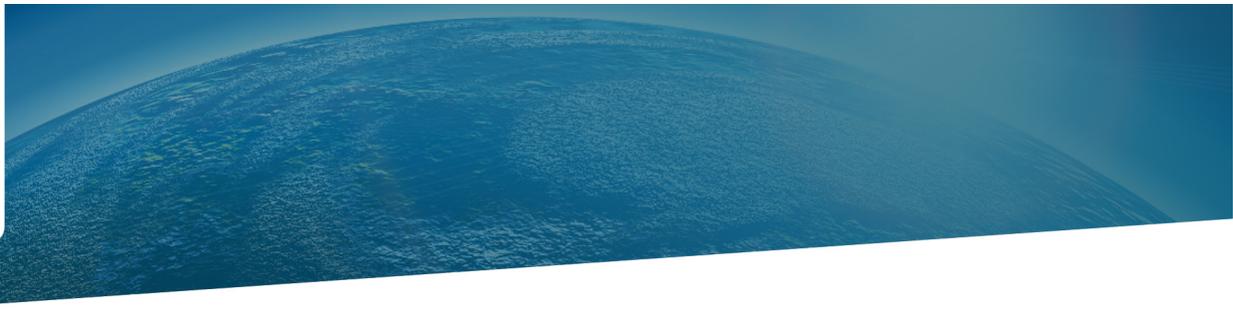
IT

From the end of May onwards there will be a new way to hold meetings with the SKA Office staff. The IT team is rolling out Vidyo videoconference software in the office and partners and consortia members will be encouraged to use the software. Further details will be available in the next newsletter. Skype will also continue to be supported by the SKA Office.

Board of Directors

There have been two permanent changes to the SKA Board of Directors since the beginning of 2014:

- Professor Lars Börjesson, Vice-President of Chalmers University was appointed as Voting Representative Director and Nominated Representative Member for Sweden on 21 February. Prof John Conway, Director



Onsala Space Observatory has been appointed the Science Representative Director and Second Representative Member for Sweden.

- Ms Patricia Kelly stepped down as Voting Representative Director and Nominated Representative Member for Australia and Dr Subho Banerjee, Deputy Secretary of Australia's Department of Industry was appointed as the new Voting Representative Director and Nominated Representative Member for Australia on 22 April 2014.
- Information about the SKA Board of Directors can be found on our website:
<https://www.skatelescope.org/people-contacts/board-directors/>

The Board Secretariat team has expanded. In addition to Colin Greenwood, Sarah-Jane Pritchard, who joined SKA Organisation in March 2014 as Executive Officer, will provide secretariat support to the SKA Board. She will also provide secretariat support to the Strategy and Business Development Committee (StratCom) and Science and Engineering Advisory Committee (SEAC).

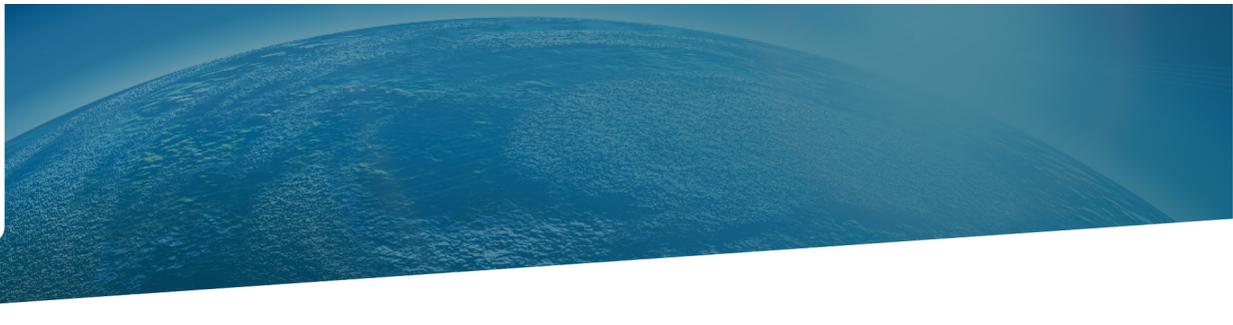
The early part of 2014 saw the Board Secretariat preparing for the SKA Board meeting held on 11-12 March 2014 at SKA Headquarters at Jodrell Bank. A summary of the meeting is available on our website:
<https://www.skatelescope.org/news/notes-chair-ska-board-directors-meeting-11-12-march-2014/>

Following his visit and announcement on the 11th (see the Activities at SKAO HQ section), the UK Science Minister accompanied by Professor Dame Nancy Rothwell, (President and Vice-Chancellor at The University of Manchester), and Professor Colin Bailey (Vice-President of The University of Manchester), was invited for discussions with the Board. During the positive discussion with the Board, the Minister gave his personal support to the SKA project and expressed his intention to discuss the project with fellow Science Ministers in the coming months.

The SKA Executive Committee held its latest meeting via telecon on 22 April to discuss preparations for the next SKA Board meeting via telecon on 6 May. A summary of the Board meeting outcomes will be available in the next newsletter.

Legal

The Memoranda of Understanding between SKA Organisation and each Design Consortia have been signed by the Director General and by representatives of all institutes participating in the design work. This is a positive step in the pre-construction phase, which has allowed design work to begin. Work on variations to the Memoranda of Understanding to clarify some implementation issues is on-going. The Executive Committee approved 5 variations to Design Consortia Memoranda of Understanding at its meeting on 22 April 2014.



Project

By Alistair McPherson, Head of Project

Activities across the System Engineering and Architecture teams are covered below by Tim Stevenson and Tim Cornwell, respectively. In addition to the work in those areas there has been considerable activity elsewhere.

We have seen several of our consortia at their Face-to-Face meetings over the past 2 months, and the CSP are holding their Face-to-Face this week in Canada. The attendance of SKAO members at these meetings, along with the relevant board meetings has been important to gain an understanding of progress and risk. What is clear is that some consortia are progressing well, whilst in others there are clear areas of concern that they can achieve everything required for October deliveries. The office is looking at mitigation plans for the key milestones.

The Engineering Change Proposal (ECP) process is now in operation and we are beginning to see the arrival of a series of very sensible ECPs. Some are part of tidying up agreements that were concluded during negotiation and kick off meetings. Others are quite substantial and will require significant work to help decide if they should be implemented. In all, we must maintain the pace and not allow ECPs to become an excuse for delay.

In recent meetings both Phil and I have stressed the need to focus on the job ahead and to avoid becoming diverted by the desire to constantly look at alternatives. We all know we need to focus on producing and not talking. This attitude will get us to PDR and will gain us the confidence of the Board and the Member States to seek the construction funding we need.

Finally, the SKA Annual Engineering Meeting has been confirmed for the last week of September/early October in Fremantle, Western Australia. The draft agenda will be available soon and I am aware that several consortia are arranging meetings at either end. It is worthwhile checking to see what is happening when. There is also an ASKAP/MWA site visit available on the Friday. More information has been added on the meeting webpage since the first announcement and people can now find practical details to help them preparing their trip to Fremantle at <http://indico.skatelescope.org/event/engineeringmeeting2014>

Systems Engineering

by Tim Stevenson, SKA Chief System Engineer

The establishment of the baseline design for the telescopes in March 2013 was a major milestone in the project. The baseline design, now encapsulated as the Level 1 Requirements, developed primarily by the SKA Architecture Team, is an important achievement in describing the project. The Level 1 Requirements provide a solid framework for development work within the Design Consortia and the SKA Office.

After a major consultation with the SKA community, the Level 1 Requirements were published on 20 February 2014 after three review cycles. Over 100 institutions were involved in the review, which was exceptional in the development of an observatory. The document can be found at: http://astronomers.skatelescope.org/wp-content/uploads/2014/03/SKA-OFF.SE_ARC-SKO-SRS-001_3_Level_1_Requirements-3-signed.pdf.

Further changes to the requirements have been submitted through the Engineering Change Procedure and a further revision of the Level 1 Requirements is expected to take place in July 2014.

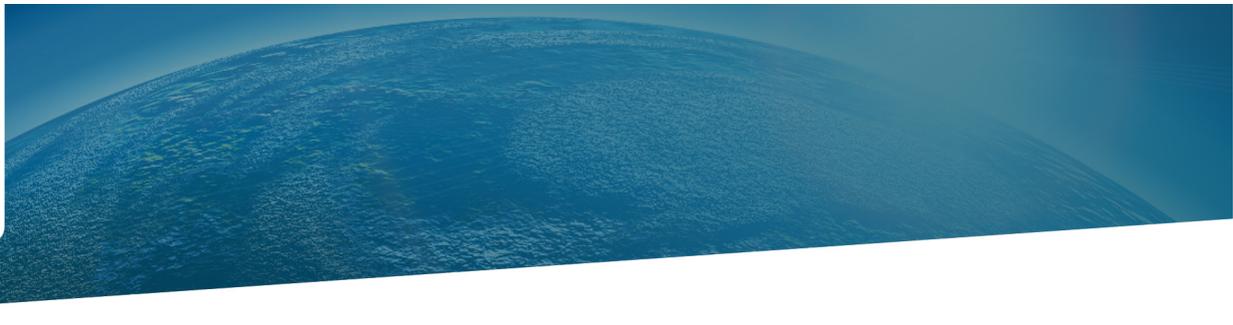
The SKA Board, following advice from the Director General, set a cost-cap for construction of SKA1 of €650M. Preliminary estimates of the cost of delivering an SKA Observatory based on the baseline design are that the costs will exceed this limit; therefore the project will undergo a rebaselining later this year. Such processes are a normal part of delivering major projects such as the SKA, for example the ALMA project undertook a rebaselining in 2006-7.

As a critical part of the rebaselining process the Design Consortia will provide cost information on the baseline design to the SKA office in September 2014. This will be followed by an internal review process to bring costs within the €650M, and develop a portfolio of rebaselining options. The rebaselining options, including a recommended option, will be presented to the SKA Board by the Director General for approval in March 2015.

One of the upcoming major milestones is the submission of the interface control documentation, which will give an engineering description of the interfaces between major elements of the SKA Observatory. This work has encouraged communication and cooperation between the design consortia. The interfaces will be unchanged by the rebaselining process but will be verified by the SKA Engineering team.

In June 2014, the three prototype dish designs will be reviewed by the Dish Design Consortium and the preferred dish design will be presented to the SKA Office for approval. A report on this will be included in the June 2014 Newsletter.

The definitions of the configurations of each of the three arrays are being refined following the preliminary configurations outlined in the baseline design. The configuration document will be published shortly and will be used as input to an Engineering Change Proposal. Each of the arrays will be configured with three spiral arms, although there are natural constraints arising from topography, roads, farmsteads, sources of RFI/EMI etc., which means that the spiral patterns are not perfect. It is essential that the configurations are finalised as soon as possible to enable the appropriate environment, heritage and geotechnical surveys to begin in the next few months.



Architecture

by Tim Cornwell, SKA Architect

The main focus of the SKA Architecture team has been the development and review of the Level 1 Engineering requirements, described above. The requirements were developed from the baseline design and other documents including the Concept of operations. The Level 1 document includes 580 testable requirements.

The Architecture team has been coordinating the science and technical use case documents. The use case documents provide background operational information not included in the Level 1 requirements. The 20 science use cases have been circulated to the Design Consortia and the technical use cases are in preparation.

The SKA1 power budget is being prepared to establish the amount of power available for each element of the telescope at the sites in Australia and South Africa and possible solutions to increase power to the sites are being investigated. In particular, SKAO expressed its interest in investigating renewable energy solutions. A working group, led by Adriaan Schutte, the SKA Power Engineer, has been established at the SKA Organisation to consider renewable energy options for the telescope sites. In light of potential power restrictions at the South African site, a study is underway to consider the best location for the science data processor centre.

Science

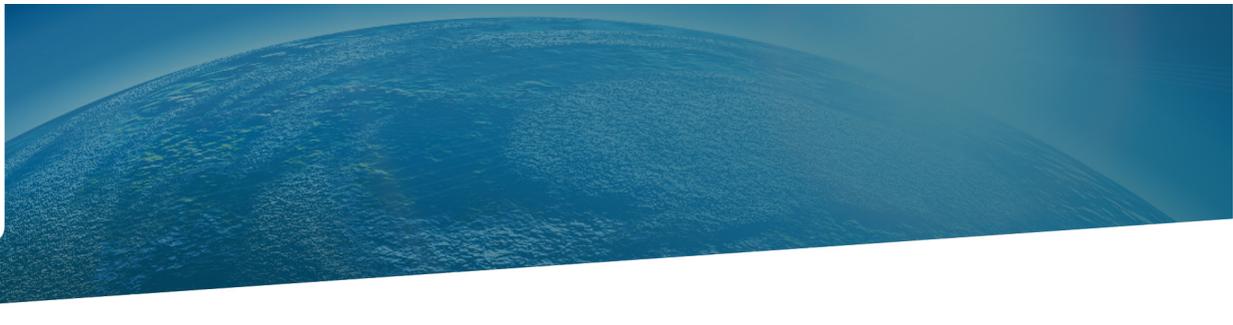
by Robert Braun, SKA Science Director

The SKA Science website is now online. It is intended for the use of professional astronomers and includes technical details, definitions and quick links to relevant pages. <http://astronomers.skatelescope.org>

The 8 science assessment workshops have been held. The workshops addressed how the baseline design satisfies the scientific needs of each community; identified potential changes which could be introduced into the design to enhance the scientific performance of the telescope and highlighted the key scientific outcome in each of the 8 science areas. Outcomes of the 8 Science Assessment Workshops can be found on the SKA Science website: <http://astronomers.skatelescope.org/documents/>

As a result of the science assessment workshops a number of change proposals to the baseline design have been submitted and are under consideration by the Change Control Board. The Change Control Board will consider the scientific and engineering merit of each change proposal, while remaining within the constraints of the cost ceiling established by the SKA Board of Directors.

Preparations are well underway for the *Advancing Astrophysics with the Square Kilometre Array* science meeting in Giardini Naxos, Italy, 8-13 June. About 200 people have registered for the meeting so far with about 250 attendees expected throughout the week. The main goal of the meeting is to refresh the SKA science case, which was published in 2004. The call for proposals led to over 150 chapter proposals from a wide range of



countries, which shows a great interest in SKA science across the international radio astronomy community. The SKA Science team and Science Working Group Chairs have reviewed the proposals and selected chapter authors who have been asked to provide draft chapters by 9 May 2014. The science programme for the meeting will concentrate on selected chapters and related presentations to develop the science case for SKA-1 and SKA-2 for publication in early in 2015.

The new science book will be the SKA science reference document for the next decade and will provide the scientific basis for engagement with member countries in funding negotiations.

Details for the *Advancing Astrophysics with the Square Kilometre Array* science meeting can be found on the conference website: <https://indico.skatelescope.org/confRegistrationFormDisplay.py?confId=270>

The SKA Science Team has been involved in several astronomy events including *Science with the SKA* in Stockholm in January and the *LOFAR-SKA Radio Days* <http://journees-radio.sciencesconf.org/?lang=en> in Paris and the *SKA Germany Meeting* in Bielefeld <http://www2.physik.uni-bielefeld.de/geska140.html> in February.

Upcoming science events include *Galactic Science with the SKA and its Pathfinders* in Leiden, 19-23 May 2014. <http://www.lorentzcenter.nl/lc/web/2014/631/info.php3?wsid=631&venue=Oort>

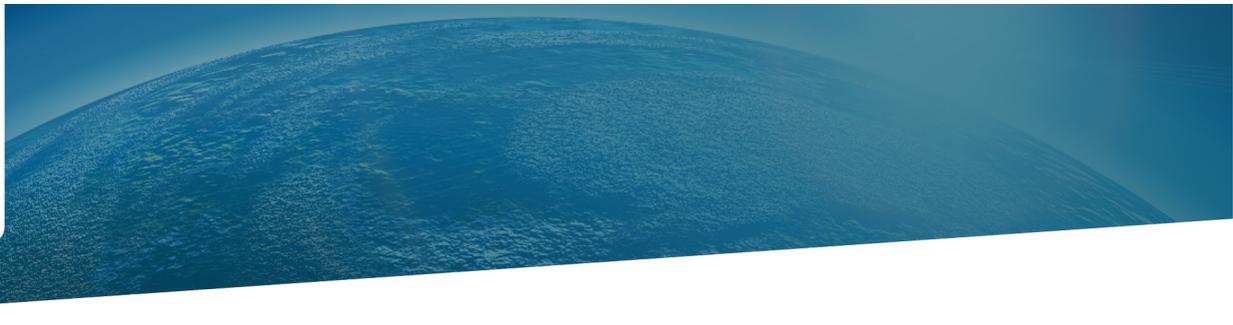
A full list of SKA-relevant events can be found on our website: <https://www.skatelescope.org/newsandmedia/events/>

Policy Development

by Simon Berry, SKA Director of Policy Development

Since the beginning of the year, the Policy team which consists of Simon Berry, Qiming Wang (Head of Policy Development) and Phil Crosby (part-time) has been set up and Policy Development activities have concentrated on development of the governance structure and model for the next stage of the SKA project. The SKA Office, SKA Strategy and Business Development Committee (StratCom) and GO-SKA (a European Commission-funded policy network) are working together to develop a governance model based on a treaty or intergovernmental agreement as agreed at the SKA Board governance workshop held in Doha in October 2013.

The policy team is advised and assisted by the StratCom, whose membership consists of a subset of SKA Board Directors along with invited experts, and acts as a think tank for all policy and strategy issues within the organisation. The StratCom will hold their next meeting in Beijing on 22-23 May. During the meeting, which will be the first major SKA Board-related meeting to be held in China, StratCom will continue to develop the draft text of the treaty/inter-governmental agreement and the wide-ranging implications of the agreement including funding streams, procurement and a plan for transition to the new governance model.



Policy development is reaching an interesting stage, as active engagement and informal discussions with member country governments are about to begin regarding future funding, contributions and return on investment with a view to agreeing funding for the new governance structure of the SKA Organisation.

Key to ensuring that the member governments are able to consider financial commitments is the availability of a clearly-written case for supporting the project. The SKA Prospectus, a suite of policy documents which will provide background information to member country governments during discussions is being developed by the Policy team and StratCom. The prospectus will provide a basis for negotiations to move the organisation towards the new governance structure for the construction phase of the project. In addition to the prospectus, work is ongoing on developing the Business Plan to maintain support for the operation of the SKA Organisation itself as the pre-construction phase concludes and evolves to the construction era.

Negotiations on the Hosting Agreements between the SKA Organisation, Australia and South Africa continues and good process is being made. The final draft text of both hosting agreements will be presented to the SKA Board for approval before agreement is sought from the Australian and South African governments.

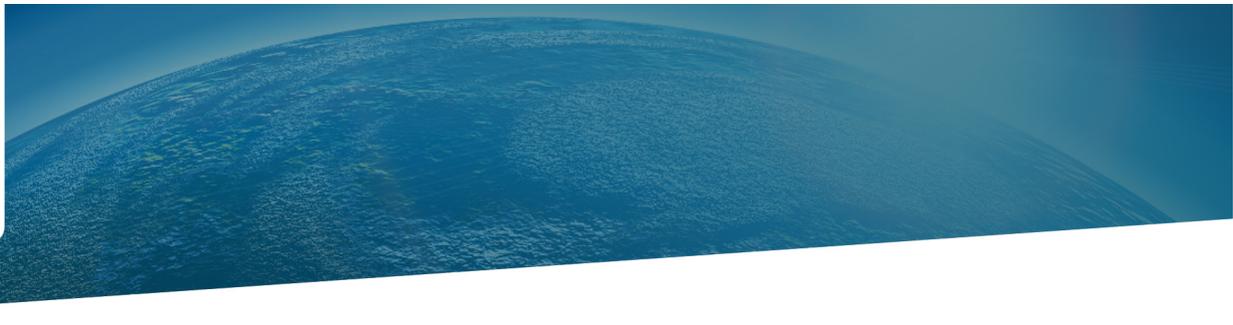
Communications & outreach

by William Garnier, SKA Communications and Outreach Manager

Mathieu Isidro, Deputy Communications and Outreach Manager, joined the SKA Organisation Communications team early January 2014, now composed of two people.

At the March 2014 meeting, the SKA Board approved the SKA Communications Strategic Plan 2014-2017, which serves as the master document detailing the key objectives for the SKA Communications and guiding Communications and Outreach activities throughout the pre-construction phase. The document is available at https://www.skatelescope.org/wp-content/uploads/2014/04/SKA-BD-12-21_Communications_Strategy_2014_2017.pdf

This strategy is a global collaborative effort to be led by the SKA Organisation Communications office and undertaken by the SKA Communications teams across the partnership. In order to allow the proper coordination, management, planning, control and implementation of this strategy, two committees comprising communications experts from SKA countries (and others) have been set up: the SKA Communications and Outreach Working Group (SKACOWG) and the SKA Communications and Outreach Network (SKACON). Parameters and guidelines for the successful delivery of the global communications strategy are detailed in a “gentlemen’s agreement” document available on demand (“SKA Communications joint guidelines document”, approved by SKACOWG at the May 2013 face-to-face meeting and subsequently approved by SKACON at the March 2014



face-to-face meeting). Information on roles, responsibilities, and memberships of these two groups is available at <https://www.skatelescope.org/people-contacts/skacomms/>

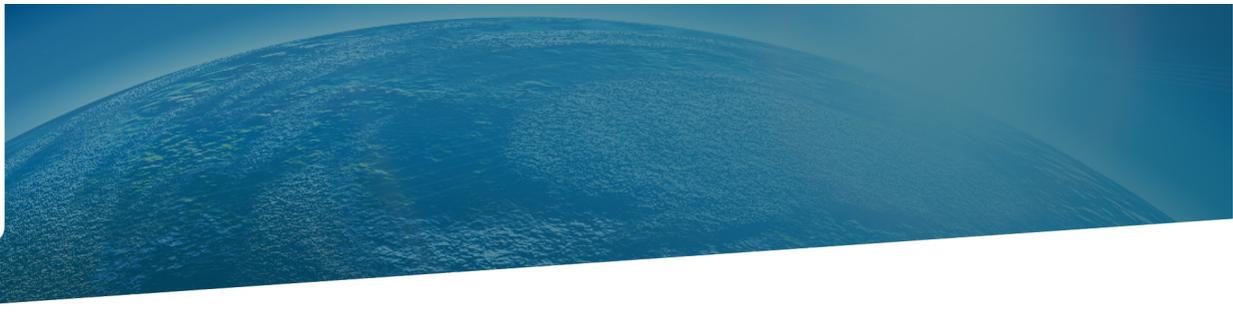
Whenever communicating on the SKA, we strongly encourage the SKA Community at large to coordinate with their local SKACON representative, who acts as liaison for all SKA-related communication activities nationally.

The SKA Communications Strategic Plan 2014-2017 also includes a set of key official messages approved by the SKAO to promote the SKA (see appendix). We strongly encourage the SKA Community at large to intensively use these messages whenever possible when communicating on the SKA. In recent months we have continued to witness some unfortunate and unhelpful messages appearing in the press. We ask the Community to pay particular attention to avoid using inaccurate or inadequate messages, in particular regarding cost figures and shares of the telescope between Australia and Africa.

The SKAO Comms office and SKACON are currently developing messages with a regional/national focus, with a view of highlighting the local specificities while at the same time not negatively affecting other partners. Other “official” messages can be suggested and must be approved by the SKACOWG before being used.



The first SKACON face-to-face meeting was held at the SKA SA Cape Town office at the end of March. After the meeting, some members attended the MeerKAT inauguration event at the SKA SA site. They are shown in front of the MeerKAT antenna on this photo. From left to right: Pete Wheeler (ICRAR), William Garnier (SKA



Organisation), Julia Maddock (STFC), Mathieu Isidro (SKA Organisation), Eric Chisholm (NRC), Gao Qiyang (NRSCC), Marina Joubert (SKA SA) and Robert Cumming (Onsala Observatory) in front.

Media enquiries are becoming more and more frequent and can be expected to keep increasing as the project moves forward. SKACON members act as media liaisons in their respective countries and coordinate media opportunities with the SKA Organisation Communications office, in particular for media interested in interviewing key people involved in SKA activities and in getting high-level material (footage, photos, etc.) on SKA-related activities. Communications teams are currently engaging with the design consortia leads to identify upcoming milestones and filming opportunities at partner institutions, with a view of properly documenting progress in the design phase and getting top quality material to be distributed more widely and to be used in the future. We encourage the consortia leads to proactively interact with their SKACON representative to inform of such upcoming opportunities.

The SKA Organisation Communications team supports public, science and engineering communications by developing and providing SKA-related material on demand (teaser video, artist impressions, leaflets, science brochure, posters, conference panels, etc.) and by ensuring an SKA presence (talks, stands, provision of material) at relevant conferences worldwide.

In 2014, we've already exhibited at

- the American Astronomical Society (AAS) meeting in Washington DC, USA in January;
- the International Conference on Research Infrastructures (ICRI) in Athens, Greece in April.

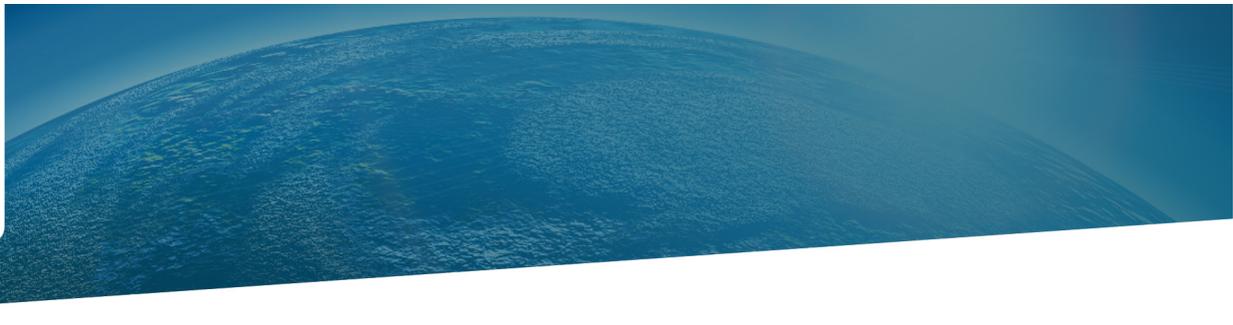
Upcoming exhibitions & events with SKA participation include:

- the upcoming SPIE meeting in Montreal, Canada in June. Consortia have been invited to display technical devices they are currently developing as part of the SKA stand at SPIE, with a view of promoting their activities to the engineering community;
- the European Week of Astronomy and Space Science (EWASS) conference in Geneva, Switzerland in July;
- the International Radio Scientists Union (URSI) General Assembly in Beijing, China in August.

Recipients of this newsletter are encouraged to request material from the SKAO Communications team to promote the SKA telescope to their business partners and to suggest relevant conferences so we can assess SKA participation in these conferences.

Support from Science Working Group members, design consortia members and, more generally, any SKA enthusiast may be requested on occasion for media and outreach activities and colleagues particularly keen in being involved in such initiatives are encouraged to contact the team.

For any enquiries or requests please write to ska-outreach@skatelescope.org



Activities at SKA Organisation Headquarters

On the first day of the SKA Board Meeting in March, the Rt. Honourable David Willetts, UK Minister for Universities and Science, visited Jodrell Bank Observatory to announce that the UK Government intends to provide additional funding of £100 M to the SKA project, the funds to be used as the UK's share of the capital construction and some early operations costs of SKA Phase1. Further details of the announcement are available on our website: <https://www.skatelescope.org/news/uk-minister-announcement-funding/>.

Breaking news!

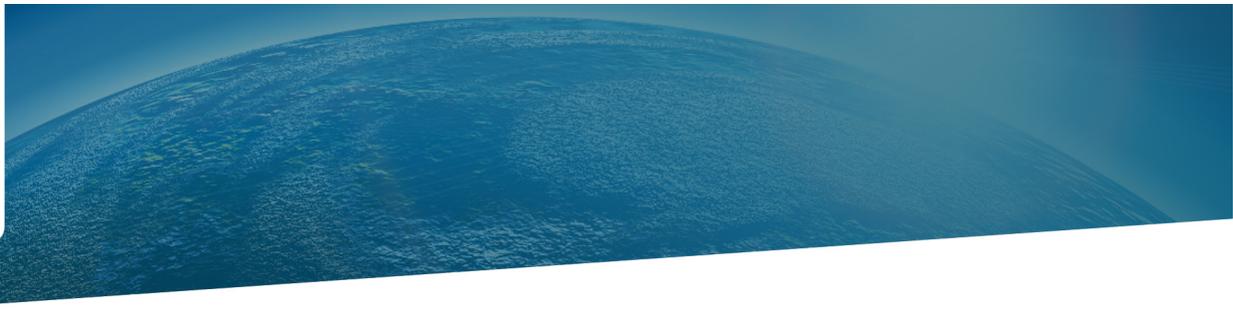
SKAO is very pleased to hear that Prof Richard Hills, Chairman of the SKA Science and Engineering Advisory Committee (SEAC), has been elected as a Fellow of the Royal Society. We congratulate Richard on this well-deserved honour.

Connect with us

You can also find the SKA Organisation on Facebook (Square Kilometre Array), Twitter (@ska_telescope) and Google+ and YouTube (The Square Kilometre Array).

Feedback

We hope you found this first edition of the internal newsletter informative. The newsletter is a work in progress and its format will evolve over time. We welcome input from the Community, and if you would like to provide feedback, please write to the SKAO Communications Team at ska-outreach@skatelescope.org



Appendix 1: Key messages when communicating on the SKA

One overarching theme which underscores all SKA communication is the fact that “*the SKA is a single global project bridging cultures, borders and languages*”.

Language used to describe the SKA should be in plain words, avoiding scientific jargon and easy to translate. The present tense should be used where possible (i.e. the SKA **is** taking shape; the SKA **is** being designed to...).

The following key messages are ranked here in order of importance and divided into two categories. Primary messages should be used whenever possible in SKA communications (though not necessarily in this form of words). Secondary messages should be used accordingly depending on the context. This list is not exhaustive and will be completed over time.

Older figures for SKA construction cost must not be used. The official €650M figure for the construction of SKA1 is the one to be used.

Primary messages:

- The SKA is the largest radio telescope in the world.
- The SKA will be built in radio-quiet locations in Africa and Australia (the term “co-hosted by” should be used by Australia and South Africa).
- The SKA will revolutionise our understanding of the Universe and the laws of physics
- The SKA is a global catalyst for the development of new technologies in many different fields
- The SKA brings together 11* countries from across the planet, corresponding to 40% of the world’s population

Secondary messages:

- The SKA welcomes new member countries
- The SKA is ONE telescope with elements located in several places around the world
- The SKA will be a benchmark in global R&D and technology development
- The SKA project is exploring sustainable energy development
- The SKA fosters science and technology education
- The SKA will generate many technological spin-offs
- The SKA has a life span of at least 50 years
- The SKA will be continuously upgradable as computing power increases
- The SKA is supporting educational and capacity building initiatives

* Number to be updated accordingly as more countries join the project