

SKA-France

Monthly bulletin

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News from Maison SKA-France

French study of innovative options for SKA1-MID energy system: final results and presentation in South Africa

From March 2nd to 10th, 2020, a French delegation composed of two engineers of Bertin Technologies (a subsidiary of the CNIM company, member of SKA-France) met teams of the South African Radio Astronomy Observatory (SARAO) and of the SKA Organisation in South Africa to present the final results of the study "Sustainable Energy Supply for SKA Telescope". The project, lead by Bertin Energie Environnement, was supported by the French Private Sector Research and Assistance Fund (FASEP-Etudes; see [May 2019 issue of SKA-France bulletin](#)).

The results of the study allowed to achieve important step forwards in identifying optimised energy solutions for the SKA1-MID telescope, a field whose relevance is acquiring more and more importance during the final design phase of the SKA Observatory. The study provides indications that Eskom grid hybridisation with solar power plant is a profitable solution, with batteries dispatching grid power consumption from peak to low tariff hours possibly improving the economics. It also emerged that innovative technologies, such as organic "redox-flow batteries", can find a place.

The meeting also offered an opportunity to discuss further the use of hydrogen for antennas power and cooling, a possible solution brought by Air Liquide, one of the Maison SKA France industrial members. Additionally, the Bertin Energy & Environment team hosted a [workshop at the Energy Indaba](#) event in Cape Town to find partnerships and opportunities for French involvement in South Africa beyond the SKA project.

The study lead by Bertin raised the interest of the South African press, with an interesting article published on March 31, 2020, in the review "[Engineering News](#)".



SKAO & COVID-19

A statement was published on March 17, 2020, by the SKA Organisation, which activated a new set of measures on that date due to the COVID-19 emergency and in accordance with the advice from the UK government, where the SKA Headquarters are located.

As in most other research institutes and facilities all over the world, those measures include request of staff working from home unless involved in business-critical activity; no visitors allowed on site until the end of restrictions, with all meetings done via videoconference connection; neither national nor international business travel undertaken by SKAO Staff.

P. Diamond (SKA DG) concluded the statement by reassuring "*our colleagues and partners around the world that the SKA's global community spirit remains as strong as ever and that we are determined to adapt to these challenging circumstances*".

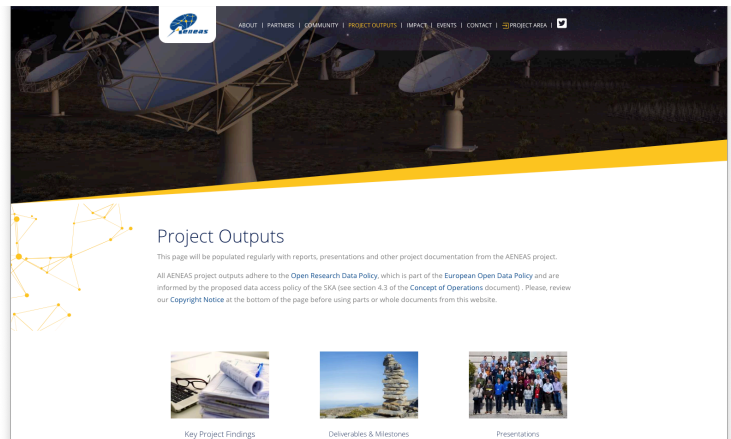
Activities

AENEAS final review and deliverables

The final review of the H2020 project AENEAS ([Advanced European Network of E-infrastructures for Astronomy with the SKA](#)) took place on **March 4, 2020** in **Luxembourg**, with the participation of the AENEAS Management Team (M. Van Haarlem, R. Van de Meer and M. Tibbe, ASTRON; A. Scaife, University of Manchester; M. Ashdown, University of Cambridge; R. Hughes-Jones, GÉANT; M. Massardi, INAF; M. Vijoën, EGI; C. Ferrari, OCA).

All AENEAS outputs are now on-line at the project web page. They include:

- * [Project Deliverables and Milestones](#)
- * [Key Project Findings](#)
- * [Presentations of kick-off and All-Hands AENEAS meetings](#)



Courtesy: AENEAS project

This documentation constitutes today a solid basis for the next steps of the SKA Regional Center organisation, both at European and at world-wide level.

AERAP webinar about COVID-19

On **March 31, 2020**, the French representatives in the European SKA Forum (M. Pérault and C. Ferrari) attended an AERAP ([African-European Radio Astronomy Platform](#)) webinar convened by D. Kirrane (AERAP initiator and Managing Director of ISC, [Intelligence in Science](#)).

The purpose of this meeting was to **explore synergies between radio astronomy scientists and digital medicine researchers to study how computational data science can aid the fight against COVID-19, in particular with Africa**, AERAP being a stakeholder forum intended to define priorities for radio astronomy cooperation between this continent and Europe.

The principal speaker of the webinar was the Professor of Pathology K. Zatloukal, from the Medical University of Graz (Austria), who summarised the vital role that data plays in addressing the current COVID-19 crisis. The discussion then focused on how radio-astronomers, and more generally all researchers in astrophysics, might help facing the data challenges related to COVID-19. Key factors such as the access to computing power, the methodology to put in place for the best analysis and simulations of data, the expertise in best practices for open access data handling, have been matter of debate during the meeting. The radio astronomy community representatives agreed to explore how data-enabled science astronomers are advancing and how computer resource reallocation can contribute to improved health outcomes. A key point has of course been how to foster the collaboration between European and African researchers in this field.

As declared by D. Kirrane in the statement that followed the meeting, *“while the COVID-19 situation is tragic, it does crystallise the need for genuinely international collaboration, supported by an enabling policy and regulatory environment. AERAP is committed to furthering networks and demonstrating how data sciences can support policy objectives in Europe and Africa”*.

Announcements

SKA Science Director message to the community: the SKA Design Baseline moves forward

On **March 9, 2020**, the following message was sent by R. Braun (SKA Science Directors) to the whole scientific community working on the SKA preparation with [SKA Science Working Groups](#):

Dear SWG Members,

As you will have seen in the meeting notes of recent months, there has been intensive activity around “closing out” the recommendations made in the very successful SKA System Critical Design Review, held in December.

The next months will see a similar intensity of activity in writing the SKA1 Construction Proposal and the Observatory Plan which will be submitted to the SKA Council for their consideration in July of this year. Two vital meetings have taken place over the past weeks, the first by the SKA Council Preparatory Task Force on 5 and 6 February, and the second by the SKA Board on 28 February. A key item on the agenda for both meetings was confirmation of the project scope that will underlie the Construction Proposal and Observatory Plan.

As you can see in the record of the 28 February SKA Board Meeting outcomes:

<https://www.skatelescope.org/notes-from-the-chair/>

the recommended scope for these two plans is the complete SKA1 Design Baseline, as summarised in the Table below.

	SKA1-Low	SKA1-Mid
Location	Australia	South Africa
Frequency range	50 MHz – 350 MHz	350 MHz – 15.3 GHz
Antenna type	Log Periodic Dipole Antenna	15m Offset Gregorian Dish
Quantity	131,072 organised into 512 stations, each with 256 antennas	133 SKA dishes, equipped with Band 1, Band 2, and Band 5 Feeds (plus 64 MeerKAT dishes with L- and UHF-Bands)
Maximum baseline (km)	65	150
Pulsar Search	167 nodes	500 nodes
Compute Power (Common to both)	260 PFlops	

This is an excellent outcome. During the preceding years there has been intermittent discussion of a possible reduced initial project scope, termed the “Deployment Baseline”. This term can now be retired. Both the CPTF and SKA Board have now confirmed that they wish to receive proposals for the fully specified project scope. This decision has been supported by the excellent advice provided by the SKA Science Working Groups. My sincere thanks to all of you for helping to make this happen. We can all look forward to a cutting edge Observatory that supports our full range of science objectives.

Sincerely,

Robert

To be noted that three **Information Sessions** to provide an up-to-date view of the entire project and its delivery schedule were expected to be held in Perth (April 30, 2020), Cape Town (May 4, 2020) and at the SKA Headquarters (May 7, 2020). At the light of current situation with COVID-19, the SKA Organisation has decided to hold off on planning those sessions until greater clarity around the timing of the IGO entry-into-force is available.

SKAO Current Vacancies

The following SKAO positions are currently open:

- * [RFI & EMC Engineer](#) - **Contract Type:** Permanent (closing date: May 15, 2020)
- * [IT Network & Security Engineer](#) - **Contract Type:** Permanent (closing date: May 13, 2020)
- * [SKA Operations Scientist/SAFE® Product Manager](#) - **Contract Type:** Permanent (closing date: April 30, 2020)

Interested readers can [register](#) to automatically receive an e-mail as soon as a relevant job is published. More information can be found at the [SKAO webpage](#).

COVID-19

In this emergency period, which is severely affecting all our lives, the SKA-France team wishes to express its heartfelt solidarity with all colleagues and with their families.

Keeping everybody safe and solving the most urgent difficulties resulting from the sanitary, economic and social situation is of course the priority of our governments and citizens. But in parallel, with regard to the advancement of the global SKA project we feel confident that all actors and partners will make the best possible use of the likely resulting delays for improving the preparation of the IGO establishment and start of construction.

Chiara Ferrari
for the **Maison SKA-France**