

# SKA-France

Monthly bulletin

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## SKA-France

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## News from Maison SKA-France

### 34<sup>th</sup> SKA Board Meeting

The 34<sup>th</sup> meeting of the SKA Board of Directors was held on September 17-18, 2020. Due to the COVID-19 related situation, the SKA Board members and invited guests convened for the third time by videoconference.

It is a great pleasure to announce that, after the SKA Organisation having successfully passed all its final reviews ahead of submitting its Construction Proposal and Observatory Establishment and Delivery Plan and as reported in the Notes from the Chair of the Board (C. Cesarsky), the "meeting marked a major milestone in the history of the SKA project as the Board endorsed the SKA-1 Construction Proposal and the Observatory Establishment and Delivery Plan. These documents represent the culmination of many years of hard work by the SKA Office and collaborating partners around the world and provide a firm basis for making the SKA telescopes a reality".

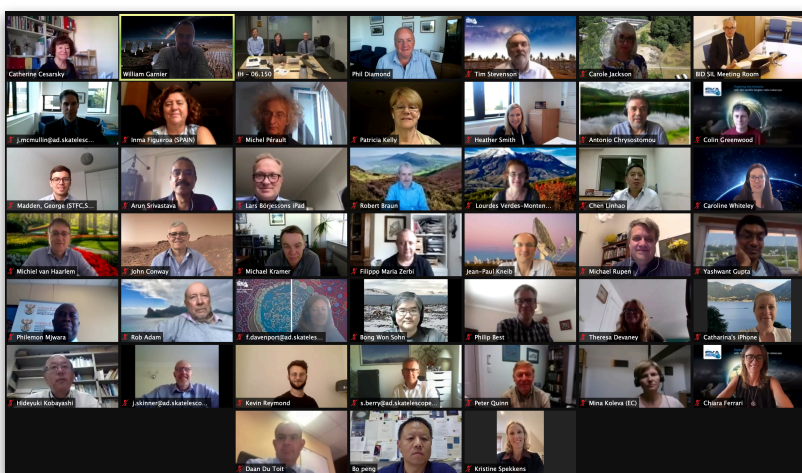


### Australia ratifies SKA Observatory Convention

On September 29, 2020, by declaring that the SKA is a "great example of how science and technology can drive industry forward, to grow our economy and create the jobs of tomorrow", Australian Minister for Industry, Science and Technology announced that Australia is the fourth country to have completed the ratification process of the SKA Observatory Convention, after the Netherlands, Italy and South Africa.

The Convention will enter into force once five countries will have ratified its text, including the three hosts (Australia, South Africa and the UK). With UK government expected to complete the ratification process in the coming weeks, the SKA Observatory should come into being before the end of 2020.

SKA-France congratulates Australian colleagues for this major achievement. More information at the [SKA Organisation web-page](#).



Members of the SKA Board of Directors at the 34<sup>th</sup> Board meeting  
Image courtesy: SKAO

The meeting was sadly opened with a speech of the Chair of the Board noting the news of the untimely passing of N. D'Amico, President of INAF (National Institute for Astrophysics) sitting at the SKA Board as Voting Directors for Italy, followed by a few words from the Italian Scientific Director, P. Zerbi, and one minute of silence.

The Board members could then appreciate the presentation of the core SKA document set, including the SKA1 Construction Proposal, the Observatory Establishment and Delivery Plan and the SKA Prospectus 2020. These documents were highlighted in a very lively way, with P. Diamond (SKA DG) picturing a history of the SKA project from the late-1980s to today; J. McMullin (Programme Director and Deputy DG) and A. Chrysostomou (Head of Science Operations) recounting the reviews and development of the SKA1 Construction Proposal and of the Observatory Establishment & Delivery Plan, respectively; W. Garnier (Director of Communications, Outreach and Education) speaking about the very broad societal, economical and cultural impact of the SKA project; T. Stevenson (Head of Mission Assurance) concluding on the Observatory Development Programme. **The Board formally endorsed the core document set**, with all delegations warmly congratulating the Office and all international partners for this historical achievement.

Based on the current schedule for ratification by signatories of the SKA Observatory Convention reported by P. Kelly (Chair of the Council Preparatory Task Force; see also the text box at the previous page) it is expected that a sufficient number of Members will have ratified the SKA Observatory convention by October 2020. **The inaugural SKA Observatory Council meeting could thus be held in mid-December 2020 or early-January 2021**, with the date for the transition from the SKA Organisation to the SKA Observatory expected to be in Spring 2021.

Regarding the **SKA Regional Center (SRC) Network**, the Board agreed on the importance of establishing SRC Working Groups as quickly as possible and on the immediate recruitment of an SRC Architect. The Board endorsed the proposed governance model as a starting point for the evolution of a broad and rich set of partnerships between the SKA Observatory and the community to deliver the SKA end-to-end system.

## Activities

### SKA-France in meetings of international SKA committees

With the SKA project moving forward efficiently, September 2020 has seen the participation of SKA-France representatives in several meetings of international SKA-related committees:

- \* the **SKA Regional Centre Steering Committee (SRCSC)** met on **September 3, September 9 and September 24 2020**, to drive forward its view of the long-term operational partnership between the SKA Observatory and an ensemble of independently-resourced SKA Regional Centres;
- \* the **European SKA Forum (ESKAF)** discussed about the SRC organisation at European level during its meeting of **September 10, 2020**;
- \* the **SKA Board of Directors** meeting took place, as detailed above, on **September 17-18, 2020**;
- \* the **Council Preparatory Task Force (CPTF)**, tasked with bridging the SKA Observatory towards the first meeting of the SKA Council, met on-line on **September 22-23, 2020**.

### French participation to the Program Increment Meeting #8

The **8<sup>th</sup> Program Increment (PI8)** planning for SKA software development, the trimonthly event organised by SKAO to plan and follow-up the work of all agile development teams, took place from **September 1 to September 7, 2020**.

France participated in PI8 planning with the presence of V. Lanore (Inria Research Engineer), member of the "PLANET team", who focused his activity on the "Agile Release Train" Data Processing (ART DP) and developed a tool to measure the I/O performance of a scaling-up processing chain. During PI8 the work was organised around the planning of benchmark activities to estimate the scalability challenges with SDP software, with the ultimate goal to contribute to SDP hardware optimisation and sizing.

### SKA-related project funded by the French National Research Agency (ANR)

A team of partners and collaborators of Maison SKA-France (MSF) has recently got one of the competitive grants funded by the French National Research Agency (ANR) to work on the computing and data challenges of the SKA.

The project, entitled "**DARK-ERA: Dataflow Algorithm aRchitecture co-design of SKA pipeline for Exascale Radio Astronomy**", is lead by N. Gac from L2S (Laboratoire des Signaux et Systèmes). Very interestingly, DARK-ERA sees the participation of researchers of four laboratories (L2S, IETR, Lagrange and USN) from three different CNRS institutes (INS2I, INSIS and INSU) and of one joint-venture (IRISA) resulting from the collaboration between eight institutions including, among others, two MSF partners (namely, CNRS and Inria).

Associate members include national (ATOS, Paris Observatory, other Inria teams) and international (Rhodes University and AUT University) experts, who will be invited to the annual project meetings. DARK-ERA is the result of a yearly interdisciplinary collaboration, started thanks to the “SKALLAS” (SKA paraLLel Architecture & Software) project lead by Dr. Nicolas Gac (L2S) and funded within the [2018 call for projects in Astro-Informatics launched by the Mission for Interdisciplinary and Transverse Initiatives of CNRS](#), and it is a beautiful example of the very wide research perspectives, largely beyond astrophysics and cosmology, that the SKA is opening.

## Radio astronomy special session at the AERAP virtual conference

On **September 9-10, 2020**, the [Africa - EU AERAP science platform](#) organised a **virtual conference entitled “A New Era for Africa-EU Science and Innovation Partnerships”**. The meeting was intended to bring together scientists, innovators and networks policymakers to discuss on a wide range of fields: after the role that this platform has had since 2012 in shaping the collaboration between European and African countries in the domain of radio astronomy, AERAP has now widened its scope to serve as an engagement platform for Africa-EU wider science collaboration.

The conference saw a **Special Session** focusing on radio astronomy (“**Radio Astronomy makes big data for big science**”), which was co-chaired by C. Ferrari (SKA-France Director) and F. Camillo (Chief scientist at the South African Radio Astronomy Observatory). The program of the Special Session, with six invited talks, allowed to highlight the important role that the SKA is expected to play in the Digital Revolution era:

- \* MeerKAT: South African telescope and catalyst for African-European partnerships - F. Camillo
- \* The SKA: an exa-scale telescope - P. Diamond (SKAO DG)
- \* Radio astronomy challenges and HPC developments - J.-M. Denis (ATOS, Chair of the Board of the European Processor Initiative)
- \* Interconnecting Europe and Africa for radio astronomy - R. Hughes-Jones (Senior Network Advisor, GÉANT)
- \* Innovation through necessity: Computing and Storage at MeerKAT and beyond - S. Ratcliffe (SARAO Technical Lead Scientific Computing)
- \* Challenges and opportunities offered by radio astronomy - C. Ferrari

Due to the relevance that the project is going to have in the scientific and technological collaboration between Europe and South Africa over the next years, the two-day AERAP conference was closed by C. Ferrari’s concluding remarks about the SKA.

## SKA Session at the virtual conference Science Digital @ UNGA 75

From September 28, 2020, to October 9, 2020, ISC ([Intelligence in Science](#)) is organising the second edition of the “Global Science Collaboration Conference” around the 75th United Nations General Assembly (UNGA75) in New York in September 2020.

The central theme of this online conference is the role and contribution of digital science and technology to the achievement of the United Nations Sustainable Development Goals.

A session of the conference entirely dedicated to the SKA project (“[The Square Kilometre Array: A global Research Infrastructure for the 21st Century and beyond](#)”) was held on **September 29, 2020**. Among the different talks (all available [on-line](#)), C. Ferrari was invited to present the SKA from a European perspective as Chair of the European SKA-Forum.



## PRACE-CERN-GÉANT-SKAO Collaboration Agreement kick-off workshop

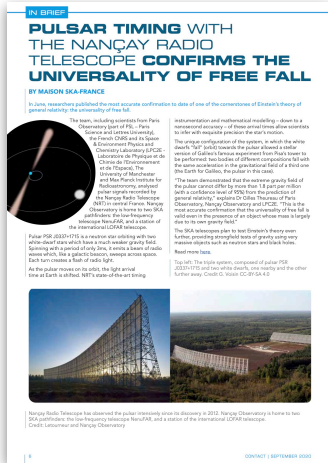
The [kick-off meeting](#) of the [Collaboration Agreement \(CA\) between SKAO, CERN, PRACE and GÉANT](#) was held on-line on **September 29, 2020**.

The workshop was organised by the technical coordinators of the CA (M. Girone for CERN, M. Deegan and C. Ferrari for SKAO, V. Capone for GÉANT and F. Berberich for PRACE) to launch the technical activities of the High Performance Computing collaboration between the four organisations.

The workshop aimed at identifying the challenges in facing HPC integration. After a general introduction on overall goals, the meeting saw detailed discussions on the areas of work and related technical demonstrators to start forming teams around training and center of expertise, authorisation and authentication, benchmarking and data access. Presentations are available [on-line at the meeting web-page](#).



## Maison SKA-France in the last issue of the SKA magazine



The fifth issue of “Contact”, the SKA magazine, has been published in September 2020 by the SKAO Communication team.

The magazine provides a beautiful overview of some exciting scientific results from existing radio telescopes, recent news about SKA technical developments, reports about meetings and outreach initiatives, as well as highlights of SKA related activities within different countries involved in the project preparation. In this framework, the Issue#5 of Contact includes an article about the role played by the Nançay Radio Telescope (NRT) in confirming the universality of free fall through pulsar timing (see [SKA-France monthly bulletin of June 2020](#)), as well a short news with the statements of P. Diamond (SKA DG) and C. Ferrari (SKA-France Director) about the recently signed Collaboration Agreement between SKAO, CERN, PRACE and GÉANT.

Courtesy: SKA Organisation

## Announcements

### Françoise Combes awarded the CNRS 2020 Gold Medal

The Maison SKA-France presents its sincere and warm congratulations to **Françoise Combes**, Astronomer at the Laboratoire d’Etudes du Rayonnement et de la Matière en Astrophysique et Atmosphères (LERMA: Observatoire de Paris - PSL/CNRS/Sorbonne Université/ Université de Cergy-Pontoise) and professor at the Collège de France, who has been [awarded the CNRS 2020 Gold Medal](#) for her countless contributions in a wide variety of astrophysical and cosmological fields.



*Françoise Combes, pictured here at Paris Observatory  
Image courtesy: Frédérique Plas/LERMA/CNRS Photothèque*

Through her expertise in the study of atomic and molecular lines, of the evolution of galaxies starting from their formation epoch (so called Cosmic Dawn), of dark matter and dark energy, Françoise Combes is deeply involved in the scientific preparation of the SKA. She is, among others, co-chair of one of the international Science Working Groups of the project (“[Extragalactic Spectral Line](#)”) and she has contributed to several chapters of the [SKA-France White Paper](#). In 2018, invited to give the [final presentation](#) (“[Discovery Space for SKA](#)”) of the [Second SKA-France Day](#), Françoise highlighted the huge perspectives that the SKA will open to astrophysicists and cosmologists over the next decades.

Interviewed about the SKA for this issue of the SKA-France Bulletin, she declared:

*“The SKA interferometer is the unique instrument that will allow immense progress not possible with other telescopes, such as for the epoch of re-ionisation, the content of cold atomic gas in distant galaxies, and the monitoring of thousands of pulsars, as gravitational wave detector. The French scientific community is particularly active in these fields, and its participation in the SKA is fundamental. The quantity of data that will be obtained with SKA is phenomenal, and its exploitation is a formidable opportunity for the development of this science in France.*

Félicitations Françoise!

### Second Science Data Challenge

On September 14, 2020, the SKA Office has opened an expression of interest for the second Science Data Challenge (SDC2). The Challenge will be for participants to find and characterise radio sources of neutral hydrogen (HI) by analysing a simulated SKA 3D dataset. The 1TB data and its suitable analysis pipelines will be

made available through a network of partner computing processing facilities all over the world, among which IDRIS, the French national computing centre which hosts and operates GENCI supercomputer called "Jean Zay".

More information about the challenge is available on the [dedicated website](#). At this stage, in order to gauge the amount of computing resources that are necessary, **interested teams are invited to register their interest through the [dedicated form](#) on the website.**

## SKA Science 2021 Virtual meeting: save the date

On **September 7, 2020**, the SKA Organisation announced that the **2021 SKA science meeting**, entitled "A precursor view of the SKA sky", will be held as a **fully virtual event from March 15 to March 19, 2021**.

In the year that will mark the establishment of the SKA Observatory, as well as the start of SKA construction activities, SKAO wants to bring the focus to science, with the new and exciting results that are being produced by the SKA precursors and pathfinders and their implication for SKA. The format of the meeting will include plenary talks as well as splinter meetings organised by the science working groups. Details on registration and abstract submission will follow shortly.

## Workshop on Hydrogen

An [online Workshop on Hydrogen](#) will be jointly organised on **October 16, 2020**, by the **South African Department of Science and Innovation** and the **French Embassy in South Africa**. The workshop will focus on sharing information on the current status and research on green hydrogen both in France and South Africa. The participants from both countries will include relevant research teams and institutions as well as industrial actors to explore pathways for future collaboration. Interested participants can register [on-line](#) and inquiries can be addressed to [L. Jammes](#), Director of Industrial Relations at CNRS/INSU and French SKA Industry Liaison Officer.



## SKA-related open position at Inria

[Inria](#), the French national research institute for the digital science, member of Maison SKA-France (MSF), is looking for a **scientific engineer to work on High-Performance Computing (HPC) challenges of the SKA in collaboration with MSF and its international partners**. The position will start as a temporary contract. All information, including required skills, benefits package and remuneration, are available [online](#).

The recruited person will be at the interface between SKA, SKA France, and some Inria teams to contribute to answering issues raised during the SKA "bridging phase", in particular with respect to questions related to HPC programming models, HPC I/O, application performances, resource management, or energy efficiency. The recruited person will participate to the PLANET team, a SKA software team dedicated to platform and network issues (benchmarking, monitoring, profiling). This participation involves direct engineering work, regular meetings, planning work and reporting SKA activity to SKA France partners.

**Contact persons:** [Christian Perez](#)

**Deadline for applications:** October 30, 2020

## SKAO Current Vacancies

The following SKAO positions are currently open:

- \* [Group Financial Accountant](#) - **Contract Type:** Permanent (closing date: October 16, 2020)
- \* [Technical Writer](#) - **Contract Type:** Permanent (closing date: October 26, 2020)
- \* [Electrical Engineer](#) - **Contract Type:** Permanent (closing date: November 2, 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](#).

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