

SKA-France

Monthly bulletin

October 2016

SKA-France

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The SKA-France coordination

SKA-France is a national coordination of industrial, technical and scientific activities preparatory to the SKA project in France

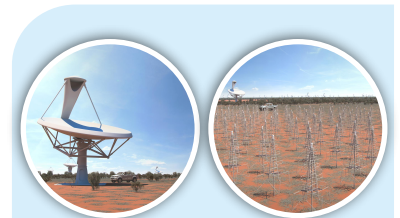
SKA-France objectives and structure

The SKA-France coordination has been set in place in summer 2016 jointly by the Institute for Earth Sciences and Astronomy (CNRS/INSU), Paris Observatory, Côte d'Azur Observatory, Bordeaux University and Orléans University.

The establishment of SKA-France as a national project is intended to complement the work done by the CNRS "*Action Spécifique* SKA-LOFAR", which has a mandate to encourage scientific involvement in current and future radio astronomical facilities. SKA-France has the specific responsibility to prepare and coordinate the French contributions to the international SKA Project in the period before the SKA construction phase. This includes the communication of technical, strategic, and political information amongst all the SKA participants in France.

The structure of SKA-France is based on:

- * a **Board of Directors**, made up of the directors of the institutes mentioned above, the Programme Officer responsible for SKA at CNRS/INSU and the Industrial Liaison Officer at CNRS/INSU. The Board is responsible for the strategic coordination of activities related to SKA between the various institutes involved in France;
- * a **National Coordinator**, who presides over the SKA-France Advisory Committee (see below) and coordinates the scientific, technical and industrial French contributions to SKA. The Board of Directors appointed C. Ferrari (astronomer at the Observatoire de la Côte d'Azur) to be the SKA-France Coordinator for a mandate of 3 years, beginning 1st July 2016. The SKA-France coordinator is assisted by a **Project Assistant** (S. Torchinsky, research engineer at the *Station de radioastronomie* of Nançay);



The SKA project

The Square Kilometre Array (SKA) is an ambitious international project to develop the world's largest radio telescope that, when complete, is planned to reach 1 million square metres of collecting area.

The array will be built on two sites in Australian and African deserts. The frequency range that the SKA is expected to cover is unprecedented, going from approximately 50 MHz to 15 GHz (and, possibly, more in its final phase - up to ~ 30 GHz), thus requiring a variety of antenna designs.

At present, the SKA is operated by a not-for-profit private company under UK law (SKA Office, SKAO), which is currently evolving towards an Intergovernmental Organisation (IGO).

- * an **Advisory Committee**, made up of the SKA-France coordinator, a representative of French laboratories already involved in SKA developments, the director of the A.S. SKA-LOFAR and the CNRS Industry Liaison Officer. The Committee's main aim is to facilitate the communication between the various scientific groups working in France on SKA.

SKA-France monthly bulletin

This is the first edition of the **SKA-France monthly bulletin**, which is intended to keep the community updated about the development of the SKA project, the advancements of the SKA-France coordination and upcoming events. The distribution of future bulletins will be via the **SKA-France mailing list**. You can subscribe through an easy link at the home page of the [SKA-France site](http://ska-france.oca.eu). Please feel free to share the bulletins with interested colleagues.

SKA-France web page

Detailed information about the objectives and organisation of SKA-France, as well as events and news can be found at the [SKA-France web page](http://ska-france.oca.eu):

<http://ska-france.oca.eu>

Three sub-menus giving: a general overview of the SKA project, of the SKA-France organisation and aims, of the current French participation in the SKA

Two sub-menus giving all information about scientific and technological workshops organised by SKA-France

News about the SKA project, French activities, talks, meetings, ...

Five last entries in the "News" and "Events" menus

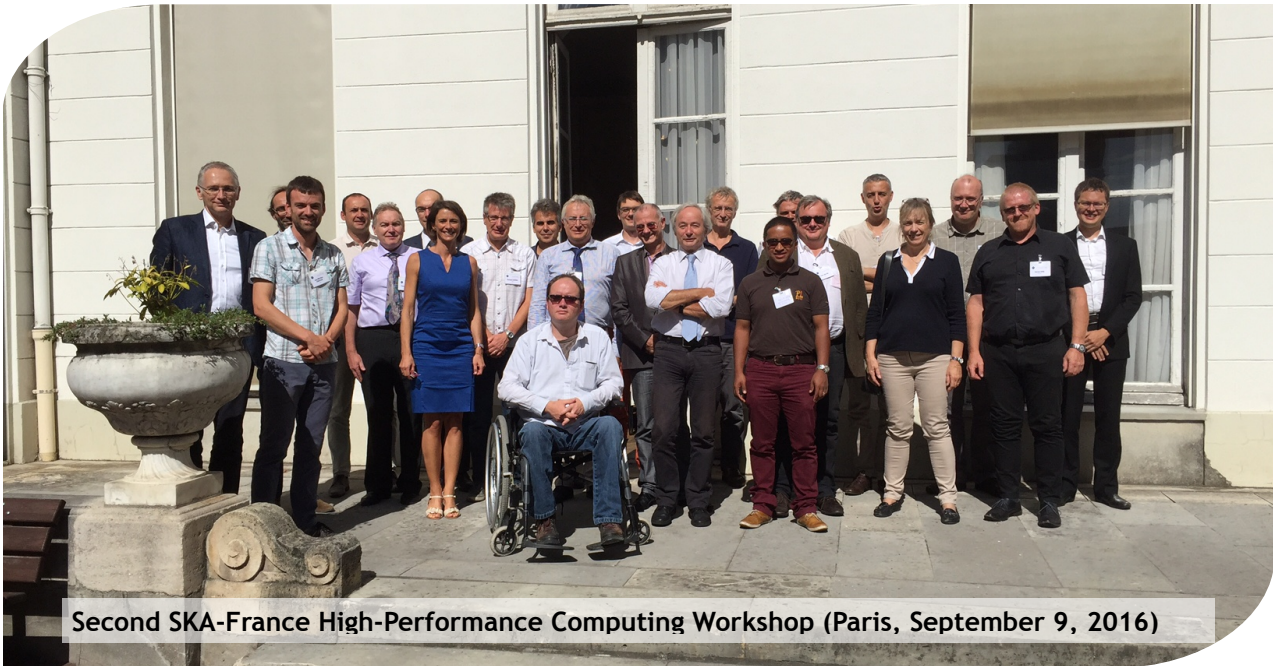
Button to subscribe to the SKA-France mailing list

Dates of next meetings and workshops

Database of published bulletins

Support letters of industrial partners

Quick link to all important documents published on the web page



Second SKA-France High-Performance Computing Workshop (Paris, September 9, 2016)

Scientific and technological workshops

The SKA will be one of the world's largest scientific facilities and will require major industrial involvement for construction. The level of interest from French astronomers in the SKA Observatory continues to grow, with great benefits expected not only to the advancement of fundamental knowledge in astrophysics, but also to many other areas. In particular, technology related to high performance computing and energy production are key areas which will be stimulated by the SKA design, construction, and operation.

The objective of SKA-France is to coordinate the scientific, technical and industrial contributions of France to the SKA project. To this aim, we have organised already four workshops, whose main results are presented in detail on the SKA-France web page and very shortly summarised in the following:

- * [First SKA-France High Performance Computing Workshop](#) (July 1st, 2016; CNRS Headquarters)
- * [First SKA-France Image Processing Workshop](#) (September 8, 2015; ENS Cachan)
- * [Second SKA-France High Performance Computing Workshop](#) (September 9, 2016; CNRS Headquarters)
- * [First SKA-France Energy Workshop](#) (September 15, 2016; CNRS Headquarters)

Imaging Processing & HPC

The French astronomical community has an expertise developed over many years in signal processing domain, widely exploited by observational projects in different parts of the electromagnetic spectrum. In recent years, unique algorithms have been conceived for radioastronomical interferometric data (calibration, imaging, deconvolution). Through our workshops, we have set up three working groups (Co-design; Parallelisation; Proof of concept) that will allow the collaboration of French researchers working on algorithm conception with main HPC companies, interested to exploit the largest global big-data challenge offered by the SKA.

Energy

French companies play a leading role worldwide in the domain of green energy production, with important collaborations, in particular, with South Africa. The first workshop on this theme has allowed us to set the stage with the main French companies of the field. We have presented the SKA project, as well as its needs and possible issues related to energy production and, above all, storage in the South African and Australian deserts.



Companies that have participated at the [First SKA French Industry Day](#) (December 12, 2015; Nice) and at the SKA-France meetings. [First letters of support](#) available at the [SKA-France web page](#)

Announcements

Forthcoming meetings

The **second SKA-France Energy meeting** will be held on October 17, 2016 at CNRS headquarters (Paris). We will work on the detailed analysis of what French industries could provide in terms of energy production and storage at SKA sites. As for all other events, a report of the main discussions and conclusions will be available at the SKA-France web-page shortly after the workshop.

In parallel, we have identified several astronomical key-topics on which the French astronomical community could strongly benefit from having access to SKA data. These include in particular: a) synergies with future major space missions; b) exploitation of the high-frequency coverage of SKA both for cosmological, extra-galactic and galactic studies; c) star and planet formation and evolution; d) the transient sky and its connections to gravitational wave detection and electromagnetic follow-up. **In collaboration with the AS SKA-LOFAR and several INSU National Programs, we are therefore discussing the possibility to organise several scientific workshops.** Information will circulate. Stay tuned!

Innovatives Big Data



A poster about the SKA project and the SKA-France coordination will be presented at the **“Innovatives Big Data”** event organised by CNRS, in partnership with EDF, Thales and Cap digital, on October 13, 2016.

The aim of the meeting is to expose and inform about leading research activities of CNRS laboratories on the “Big Data” field, and to emphasise the dynamic partnerships with the socio-economic world. The SKA, which will collect more information each day than today entire world internet traffic and require major advances in computing to handle this data, is

often referred to as one of “the biggest Big Data project”. The poster will be available after the event at the SKA-France web-page.

SKA Science International Conference

The SKAO has organised an international conference (**“SKA 2016: Science for the SKA generation”**) aiming to bring together early career and senior researchers from the radio astronomy community in order to present their current work, develop new collaborations, and preview the science that SKA1 will do in 2023 and beyond. The conference will be held in Goa (India), from November 7 to November 11, 2016.

Please let us know your SKA-related activities !

Our web page is not only intended to show events organised by the SKA-France coordination, but also all kind of contributions of the French community to the preparation of the SKA project.

We therefore invite you all to let us know about your SKA-related publications, talks, conferences, etc. The most efficient way to communicate with us is to fill in our enquiry form at the SKA-France web page (top-left “Contact” button) :

SKA-France

Connexion

Contact

Please do not hesitate to contact us for any further communication or request.

Chiara Ferrari
for the SKA-France coordination