

Posters

Spanish SKA day

SENER Ingeniería y Sistemas

Joan Manel Casalta (SENER)

SENER is an engineering and construction company backed by more than 50 years' experience.

Founded in Spain, today we are an international leader in: Aerospace Engineering, Aeronautics and Vehicles, Actuator and Control Systems, Infrastructures and Transport, Power and Process and Marine Engineering.

More than 2,500 professionals and a dozen offices along the world are proof of our potential as a company; our aim is to offer our customers and society solutions and products that are technologically efficient and innovative.

In the astronomy field, the engineering company supplies custom-made solutions for precision positioning and pointing systems for optical and electro-optical instruments and equipments. The company's activities range from conceptual studies to the production of high performance systems and instrumentation for terrestrial astronomical facilities and space missions. The main services and products are focused on positioning systems for telescope and mechatronics for optical instruments, electronics and software development and implementation.

Spanish participation in the SKA Telescope Manager

Eduard Díez (GTD), Josep Colome (IEEC-CSIC).

The Telescope Manager Work Package tasks concern the management of all Telescope Hardware and Software, all Astronomical Observations, and Communication across Stakeholders and Other elements. The presentation is focused in the Telescope Manager (TM) Status, primary responsibilities, key challenges of the TM and the background of IEEC/GTD.

INEUSTAR. The Spanish Science Industry thinking and working together

Francisco Javier Cáceres (INEUSTAR)

INEUSTAR, the Spanish Science Industry Association, is a nationwide, professional, private, non-profit association of industrial companies which devote a relevant part of their activities to work for science facilities. Science industry is the necessary collaborator of the Large-Scale Research Facilities -such as SKA- that make possible the international basic research.

Among other activities, INEUSTAR promotes collaboration and relationships between industries and scientific and academic organizations, actively supports the Spanish bids to new international GICs, represents the common interests of its associated companies at different levels and promotes specific programs and projects with a positive impact on the Spanish science industry.

The activities of INEUSTAR and its associated companies are not only limited to the projects and scientific installations to which Spain is officially contributing, but actively pursue all other international scientific projects and facilities.

INEUSTAR is also the founder and technical secretariat of INDUCIENCIA, the Spanish Technology Platform of Science Industry, where every agent interested on the industry of science (universities, research centers, public administration and industrial companies) can participate in the joint effort to build a better structured and powerful Spanish Science Industry sector.

High performance fibre-optic RF transceivers for synchronisation/reference signals distribution and generation

Pablo Villalba, Javier Marti (DAS)

High performance reference signal distribution and generation based on RF fibre-optic transceivers fulfil the stringent requirements imposed in large RF radiotelescopes. We present a list of in-field proven solutions for reference/synchronisation signal distribution and high performance microwave signal generation using photonics-based equipments developed by DAS Photonics.

Spanish Participation in the SKA Synchronization and Data Transport (SKA.SaDT) Consortium

José Luis Gutiérrez, Miguel Jiménez, Javier Díaz.

This poster presents the work that is currently under development by the Synchronization and Data Transport (SaDT) SKA group. The point of departure of this work starts with the strict requirements that SKA must meet for both large volume of data distribution and time and frequency dissemination imposing the study, evaluation and development of new technologies to fulfil SKA specifications.

UGR, in conjunction with other Spanish partners, is working on the Synchronization and Timing (SKA.SaDT.SAT) group to provide a suitable technology meeting SKA requirements for time and frequency distribution, focusing our work mainly on the White Rabbit technology. Target architectures, network topologies and development plans are presented in this poster.

Spanish participation in the CSP consortium

Juan A. López (UPM), Carlos Carreras

This poster presents the work under development at the Central Signal Processor (CSP) group of SKA. The CSP receives the data from the SaDT, and performs the required high performance computations using specialized platforms to convert the digitised signals detected by the SKA receivers into the information needed by the SDP to make images of the astronomical targets.

Our main activities in this group are: (1) High level optimization of the DSP modules and the global architecture for its implementation in ROACH III or Power-MX boards. (2) Development of an advanced quantization tool for optimal wordlength selection of DSP specifications in FPGA-oriented designs, and (3) development of CAD tools for high-level analysis and fast design of modules associated to the CASPER toolflow (Collaboration for Astronomy Signal Processing and Electronics Research).

This work is performed by the UPM with the support of ISDEFE, in collaboration with SKA-SA, UC Berkeley, Univ. Oxford, Univ. Curtin, and others.

Seven Solutions: Your Reliable Open Company

Benoit Rat (Seven Solutions)

Seven Solution is a technology-based company specialized in the design of hardware circuit and embedded system that contributes to major scientific project as a reliable industrial partner. Our company is greatly involved in the White Rabbit technology that provides synchronization to thousands of nodes over fiber and copper with a *sub-ns accuracy*. We are proposing the WR technology in SKA to fulfill the time transfer requirements for SADT-SAT.