the square kilometer array

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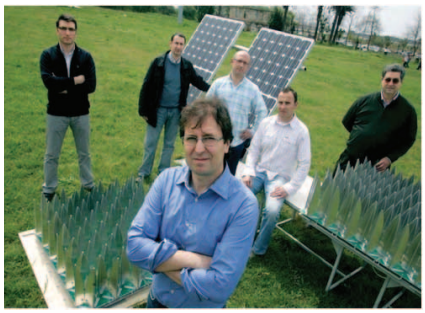

The SKA project is a global project with the participation of 17 countries and 55 institutions around the world (Europe, USA, China, Australia, South Africa, Russia, India, South Korea, Japan, Brasil) whose Phase 1 of construction will start by 2015. As a top project from the European Strategy Forum on Research Infrastructures (ESFRI) roadmap, it aims to construct and install in the South Hemisphere (either in Australia or South Africa) a giant radiotelescope that will represent the future of radio astronomy, probing an ample radio wavelength bandwidth from decametric waves up to microwaves. Spaning a 3000 km sized area, SKA will be a Data Factory, a dense sensor networked machine with several thousand 12-meter parabolic antennas and sparse and dense Phased Arrays shedding light on new cosmic phenomena with applications in space sciences. The sensors will be distributed along an ultra-fast fiber optics network with a debit of several Terabits/sec (hundred of Petabyte/year) connecting the antennas to a correlator capable of processing an Exabyte of information. Roughly, by 2017 it will produce a data traffic 200 times the world Internet traffic today, constituting an archetype of Future Internet. The European Site Emulator will be located in Moura in the South of Portugal, after careful European spectral testing led locally by IT and where prototypes will be tested, opening a new European R&D window in Portugal, as it was demonstrated for the Portuguese Authorities in March 2010.

IT is a member of the PrepSKA Consortium, funded by FP7, aiming to produce the SKA Concept Design by 2012. In particular, we lead the task, in partnership with Nokia Siemens Networks, of the configuration of the SKA data System Transport and Network using unique top transmission technologies and also component testing using the GEM radiotelescope in Pampilhosa da Serra. We also triggered the green energy usage to feed this sensor machine, using national know-how from Martifer Solar and Logica EM. The local testing will be developed jointly with the SKA European Consortium and a vast national academic involvement.