BSC takes part in cross-sector Cyber-Physical Systems project for the development of large scientific astronomical instruments

27 Jul 2020 Barcelona - Barcelona Supercomputing Center (BSC) participates in the EU-funded Rising STARS: RISE International Network for Solutions Technologies and Applications of Real-Time Systems, an exciting project that combines high-end research with global collaborations and networking. The project is funded under the Marie Skłodowska-Curie RISE programme and is coordinated by the Observatoire de Paris.

Rising STARS is addressing the need of parallel programming frameworks for the development and execution of advanced and large-scale Cyber-Physical Systems (CPS) with High-Performance Computing (HPC) and Real-Time requirements and guaranteed functional operation. To meet this need, the project aims to investigate a new generation of parallel programming models supporting parallel and heterogeneous computing to leverage the most advanced accelerator devices, with software productivity as the main goal.

A fundamental aspect of Rising STARS is the cross-sector and multi-disciplinary consortium composed of top-level HPC research centres: Barcelona Supercomputing Center (BSC), Australian National University (ANU) and the Observatoire de Paris (OdP); multinational companies and SME leaders in the development of advanced CPS: NVIDIA, Thales, Microgate, Kalray and the Ariane Group; and end-users and experts at major astronomical observatories: the National Astronomical Observatory of Japan (NAOJ) responsible of operating the 8.2-meter optical-infrared Subaru Telescope at Hawaii and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) responsible of the Australian Square Kilometre Array Pathfinder (SKA); from seven countries and four continents.

Secondments that will foster knowledge exchange between institutions will be a vital part of the partners’ efforts.

Eduardo Quiñones, senior researcher at BSC and collaborator in the project, mentioned: “We are proud to be part of Rising STARS, an aspiring multi-disciplinary project that will bring researchers from different scientific and cultural backgrounds together into a single network in order to achieve competitive results.” He continued: “BSC will bring its