EuroHPC Summit Week 2021 including PRACEdays21

Tuesday 23 March 2021, 10:45 – 11:30, Industrial Keynote Talk

Mauro Gameiro, Critical Software

Abstract:
Big Science projects and their advances for the industry

Big science projects are seen many times by the common citizen as a consumption of tax payer money without much return to the society. The news often presents them as big leaps in scientific advance but without immediate application in the improvement of life of the ordinary citizen. Industry, however, sees those big science projects in a different way. The scientific advance can be used by the industry to create new solutions and new products that will improve citizens life. With the advent of Big Data and Artificial Intelligence, HPC capabilities that are now being used more regularly in day-to-day applications, across different markets. The advances in technology coming from Big Science projects are expected with a lot of enthusiasm by the industry.

Bio

Mr. Mauro Gameiro joined Critical Software early 2003. His professional path started, as a software engineer, with the development of Critical Software's Fault injection tool Xception and then with the development of a network mediation, multi-interface and integration system for the Portuguese Navy MEKO 200 "Vasco da Gama" class frigates. He provided technical support to other projects such as the XPY tool development (project to develop a non-intrusive application of monitoring and profiling using JTAG) and WMPI tool development (Critical Software's high-performance computing system). From 2006 onwards, he has been mainly involved in the Aerospace and Space industries.

In terms of Aerospace projects, he was involved in projects such as the Integrated Display Units Software (for the Lynx helicopter), Merlin Capability Sustainment Plus (MCSP) programme, Bus Power Control Unit Software (for the Gulfstream 650 aircraft). The aim of these projects was to develop, verify and/or validate the system against the DO-178B level A.

In terms of Space projects, he was involved on the following ESA missions: 1) as a software engineer with development and validation activities on missions such as the Galileo IOV (Security Units Application Software), GAIA (Video Processing Unit Application Software), Sentinel-3 (Central Software), Sentinel-6 (Central Software); 2) as a software architect on the Solar Orbiter (Central Software); 3) as a study manager on the Future Launcher Preparatory Programme (Phase 2); 4) as a software engineer executing Independent Software Verification & Validation (ISVV) activities on SWARM and EarthCare missions; 5) as technical writer on Critical Software's proposal activities to several ESA missions e.g. Galileo (e.g. MGF, SPF, OSPF, …), Sentinel-2, Sentinel-3, MTG, Euclid, JUICE, Solar Orbiter, ExoMars, ClearSpace; just to name a few.

His current role at Critical Software is Principal Engineer for Space and Big Science, providing technical support to business development; involvement in definition of business strategy and leading the elaboration of proposals. He also performs project support, team management, presentations, interviews

and training activities. He is currently leading two projects: ClearSpace-1 project part of ESA's ADRIOS "Active Debris Removal/In-Orbit Servicing" programme, the first space debris removal service project in the World, and ESA's VMMO "Volatile and Mineralogy Mapping Orbiter" lunar CubeSat project.

He is used to lead technical teams and to work in multi-cultural international teams, having lived in France and in the UK. Besides working at Critical Software's headquarters, he worked on several occasions at customer's premises e.g. Airbus DS (UK site in Stevenage), Thales Alenia Space (French site in Cannes), AgustaWestland (UK site in Yeovil), CSW-T (UK site in Southampton), Portuguese Naval Base in Lisbon, Portuguese Banking Authority (SIBS) in Lisbon. He also did on-site training and integration testing at Japan Aerospace Exploration Agency (JAXA) in Tsukuba, Japan.