Open-source and High-perfomance Computing Platforms for Safety-Critical Applications

Location: **online event**

Scheduled time: **11:30 – 12:20**

Speaker: Carles Hernández Luz

Carles Hernández is a senior Researcher at the Universitat Politècnica de València.

Previously from 2012 to 2018 he was senior researcher at the CAOS group from Barcelona Supercomputing Center.

His area of expertise includes on-chip interconnects, processor design, real-time aware hardware design, and reliability. He is currently co-advising 5 PhD students.

Dr. Hernández is the project coordinator of the H2020 SELENE project on high-performance computing for safety-related applications.

Abstract

Existing HW/SW platforms for safety-critical systems suffer from limited performance and/or from lack of flexibility due to building on specific proprietary components. This jeopardizes their wide deployment across domains.

While some research has been done to overcome these limitations, they have had limited success owing to missing flexibility and extensibility. Flexibility and extensibility are the cornerstones of industry adoption: industries dealing in capital goods need technologies on which they can rely on during decades (e.g. avionics, space, automotive).

This talks describes the approach taken in the SELENE project to cover this gap. SELENE proposes a new family of safety-critical computing platforms, which builds upon open source components such as the RISC-V instruction set architecture, GNU/Linux, and the Jailhouse hypervisor.

PARMA 2021: 12th Workshop on Parallel Programming and Run-Time Management Techniques for Many-core Architectures

DITAM 2021: 10th Workshop on Design Tools and Architectures for Multi-Core Embedded Computing Platforms

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