

CERBERO H2020 Project Tools and Technologies



Cyber Physical Systems (CPS) are devices tightly integrating physical features, for sensing and actuating, with cyber-features, for carrying out computation and for taking decisions. These complex systems can connect several different interconnected sub-systems. These devices are pervading several aspects of our lives and are the fundamental building blocks of Smart Production Systems and Industry 4.0 and Industrial IoT, Smart Agriculture, and Smart Everything Everywhere. Reactive and dynamic systems as CPS requires to face several challenges. Novel functionalities, such as self-adaptivity, are needed to deal with a changing environment and with evolving user needs. Strict safety and security requirements must be guaranteed.

As a result, design and operation of CPS are extremely challenging, and new tools and technologies are entering the market.

The Cross-layer model-based framework for multi-objective design of Reconfigurable systems in uncertain hybrid environments (CERBERO) project aims at developing a design environment for CPS based of two pillars: a cross-layer model based approach to describe, optimize, and analyze the system and all its different views concurrently; an advanced adaptivity support based on a multi-layer autonomous engine. CERBERO provides a plethora of different open-source tools to handle different phases from design to operation of CPS. The potential of the toolchain for boosting the productivity of CPS and IoT design, development, and deployment is demonstrated by means of three cases of study dealing with driving simulators (CFR and TNO), robots for space exploration (Thales Alenia Space) and submarine drones (Ambisense).



Join us in a "happy ICT hour" to present the results and the potential of the CERBERO toolchains. Participants will have the opportunity to meet CERBERO participants, browse CERBERO technologies demos, play with the tool chains and its components, and discuss the potential benefit of the CERBERO toolchain in other applications of their interests. The CERBERO Advisory Board Members will also participate to the event. Prof Alberto Sangiovanni-Vincentelli is the Edgar L. and Harold H. Buttner Chair of Electrical Engineering and Computer Sciences at the University of California (Berkeley) and co-founders of Cadence and Synopsys, listed in NASDAQ with market cap of over 34 Billion USD. Dr. Amela Karahasanovic is Software and Service Innovation expert of SINTEF Digital. Finally, Nuria De Lama is Vice-Secretary General and European Programs Manager at Atos.

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HOTEL OASIS - ALGHERO (ITALY)