

Freedom from Interference by Virtualization

OpenSynergy continues to be a partner of ARAMiS

Berlin, 08. August 2017. OpenSynergy is a partner in the second joint project ARAMiS II (Automotive Railway Avionics Multicore Systems). Together with 32 consortium members, it will develop development processes, methods, tools and platforms for safety-critical multicore systems. OpenSynergy will integrate its virtualization technology into the project. It allows the resources of the processor to be partitioned between applications with different criticality.

The project focuses on safety-critical applications. The number of processors in the car grows with the increasing automation of driving. At the same time, efforts are being made to combine several software systems in a smaller space (convergence). The integration and interaction of these systems is facilitated by the use of multicore processors.

The architecture creates dependencies and the risk that the integrated software systems can interfere with each other and thus affect the safety of the car. To avoid this kind of interference, OpenSynergy introduces its virtualization technology into the project. The COQOS hypervisor from OpenSynergy encapsulates software systems in virtual machines (VMs). The software systems isolated in VMs are securely separated from each other, so that software systems with very different criticality can safely be run on a multicore processor.

In the first ARAMiS I project, the challenges of multicore technology were comprehensively analyzed. This analysis was primarily of the use of multicore architectures for safety-critical applications. The aspects of safety, security, migration, segregation, deployment, legacy code and virtualization were examined and the applicability of the solutions proven.

The goal of ARAMiS II is to provide a structured process for the development of multicore software and multicore platforms. For example, a development process can be developed that is able to master complexity, enable safety-by-design features, and allow a multicore to take specific aspects into account earlier, and consistently, at higher abstraction levels. Methods and tools that support this process should be developed. A further goal is to take into account the specific requirements of multicore processors when developing platforms or expanding existing platforms.

The results of the collaborative project will contribute to the efficient use of multicore processors in everyday industrial applications. The developed solutions will thus also benefit the global automotive industry. OpenSynergy's hypervisor will strengthen its quality as a product with the best and latest standards by participating in the project.

PRESS RELEASE

"The results from ARAMIS-II will be incorporated into our product development so that we can offer our customers innovative solutions that enable multicore processes to be safely used in automotive applications," said Stefaan Sonck Thiebaut, on the importance of ARAMIS II.

The consortium ARAMIS II consists of 33 partners. These include manufacturers and suppliers from the automotive sector, aviation technology and the industrial sector, as well as software companies and tool manufacturers. The most prestigious companies are e.g. Continental, Audi, Bosch, Airbus or Siemens.

The Federal Government supports the project with EUR 15 million. A total of 26 million euros is available to the project.

About OpenSynergy

OpenSynergy is a high-tech company specializing in embedded automotive software for in-car cockpit solutions. The core products are the modular software development kit COQOS SDK and the leading Bluetooth™ stack Blue SDK. Our products enable the convergence of instrument cluster, head unit, driver assistance and connectivity systems. Essential technologies are virtualization and Open Source software. Our solutions comply with requirements of standards, such as, AUTOSAR and Bluetooth™ and, by doing so, we pave the way for autonomous driving.

OpenSynergy is an independently managed company headquartered in Berlin with further locations in Munich and the U.S. We continue to grow through the strong demand for our products. Our company's team consists primarily of highly qualified engineers. Our corporate culture is inspired by the international character that defines our employees, partners and customers. Read more on www.opensynergy.com

About ARAMIS II (Automotive, Railway and Avionics Multicore Systems)

Safety-critical applications in the domains automotive and avionics as well as the future topic Industry 4.0 show a clear and still increasing demand for digital processing power. This can be provided by multicore technologies. The cooperation project ARAMIS, successfully completed in March 2015, demonstrated that multicore processors can also be used in safety-critical applications.

Based on these findings, ARAMIS II aims at development processes, tools and platforms for the efficient use of multicore architectures available in industry. The ARAMIS II consortium started its work on October 1st, 2016. It consists of 33 partners and is scheduled for three years. The project budget is 24 Mio. Euros in total. ARAMIS II is funded by the German Federal Ministry for Education and Research with ca. 15 Mio. Euro. It is coordinated by the Karlsruhe Institute of Technology (KIT) in Germany. Read more on www.aramis2.com

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