Pan-European research initiative PowerizeD for intelligent power electronics launched – Infineon to coordinate 62 research partners

Munich, Germany – 7 February 2023 – Over 100 representatives from 39 companies and 24 research institutions are meeting today in Munich at the Campeon, headquarters of Infineon Technologies AG, for the kick-off of the European research initiative PowerizeD. They are focusing on intelligence in power electronics and thus want to contribute to the decarbonization of European society and the protection of our climate. PowerizeD is to take the sustainability and resilience of the European energy chain, from generation to application, to a new level and strengthen Europe's technological sovereignty. 62 research partners from 13 European countries are involved in the major European project with an overall volume of 72 million euros. PowerizeD addresses a new level of technology and relies increasingly on the digitalization of power applications. Infineon Technologies AG initiated the project, is an active participant with several corporate divisions and is also the overall project coordinator.

"We have to make highly efficient use of energy if we are to achieve net-zero climate protection goals. Digitalization can help here as a highly decisive lever for more energy efficiency," says Constanze Hufenbecher, Infineon Chief Digital Transformation Officer. "We are pleased to be able to combine our strengths with the strengths of so many excellent partners from research and business to jointly make the ambitious European research initiative PowerizeD a success."

"Power electronics is key to the energy transformation and is used anywhere and everywhere that electricity is generated, transferred and used efficiently," says Dr. Rutger Wijburg, Chief Operations Officer at Infineon. "The broad spectrum of power electronics applications makes it very important that we collaborate with partners across the boundaries of corporate entities and organizations to jointly advance Europe as innovation engine."

The project partners are focusing on applications from the fields Energy and Mobility. 17 demonstrator paths are concerned among other things with improvement of drives for the rail industry, charging systems for the automotive industry, liquid batteries for the energy industry as well as drives for the manufacturing industries. The research partners will take an interdisciplinary approach with topics including modeling and Digital Twin, Federated Learning as well as reliability and sustainability.

The newly developed key technologies are to be realized and demonstrated in concrete form, and are to be evaluated in terms of a large number of universally applicable results. The immediate project objectives include

- Reduction of power loss in power conversion by 25 percent
- Extension of the service lives of devices and systems by 30 percent
- Reduction of chip size by at least 10 percent
- Shortening development times by a challenging 50 percent

Technologically speaking, PowerizeD is to increase the degree of mechanical and electrical integration of control, driver and switching functionalities in components and to advance the integrated optimization of all power switch functionalities, independent of the semiconductor material used. New switching topologies and advanced control strategies involving the application of Artificial Intelligence are to improve efficient, robust and reliable operations even further.

The European Union is funding PowerizeD with approximately 18 million euros as part of the joint program for digital key technologies (Key Digital Technologies Joint Undertaking, KDT JU) in its Digital Agenda. The amount will be matched by funding from the national governments of the respective countries involved. The subsidies from Germany are being provided by the German Federal Ministry of Education and Research. A summary of all the project partners and supporting organizations is available on the project web site. The project will have a three-year duration and is expected to end in December 2025.

Further information on the project and the project partners can be found at the following web site: www.powerized.eu.

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