

Press release

Infineon Austria: "Digital twin" for the new research building in Villach

Villach, 11 November 2019 – The new research building at the Infineon Austria site in Villach is not only growing in real terms but also virtually. The building will have a digital twin at its side in ongoing operations to optimize building services in real time with the aim of increasing energy efficiency, ensuring an ideal indoor climate automatically and reducing operating costs.

Infineon Austria is currently busy with the construction of a new research building for 600 workplaces and measurement engineering at its premises in Villach due for occupation in mid-2020. The focus in planning the research building was on a modern office concept, optimum indoor climate and high energy efficiency. In addition to the high technical standard of the new building and energy consumption of a low-energy house standard, the energy will be provided mainly through heat recovery from cooling energy in the factory. This means the supply of sustainable energy to the building is virtually autonomous.

Infineon as a hands-on application in an EU research project

A digital twin of the building is being developed simultaneously. It is simulated in real time in what is currently the largest European research project "Arrowhead Tools" that is dedicated to digitization and industry 4.0.

The digital twin is a building simulation used for mapping all the important control parameters of building technology, including air condition, heating, temperature, humidity or power consumption. Local weather data is also included. The collected data is particularly valuable for parameters that are normally never measured because of the complexity of the task, such as the operative room temperature for example. This is a far better indicator of the actual temperature felt by the users of the room than mere air temperature. One of the contributing factors to the operative room temperature is, for example, the surface temperatures of the walls. This means the digital twin is not only providing more and more meaningful data, it is also making it possible to calculate these values ahead of time and thus respond more quickly to changes of weather or usage.

The virtual twin is currently being developed in the framework of the research project and will in future be coupled in real time with the measured data from the Infineon building. By this means, reality and simulation are to be constantly aligned with each other. To make this possible, parts of the offices, measurement areas and meeting rooms of the 20,000 sqm building will be equipped with smart sensors. Michael Eder, Infineon project manager for the construction of the research building: "As user and supplier of products and solutions that make digitization happen, this project is for us a

living example of real digitization. The aim of it all is to have more information about the building available to be able to control building technology in an energy-efficient manner, cut back on operating expenses and improve the indoor climate. If the coupling with the digital twin works out as planned, the energy consumption and the comfort the users experience can be automatically optimized. We will then also be able to plan the use of sensors for building management in a more customized and targeted manner." The first useable data will be available and analyzed as from early summer 2020. Depending on the findings of the research project that will run until July 2022 the digital twin may be rolled out to the entire building.

The Arrowhead Tools project was kicked off in May 2019 with 81 partners and a project volume of 91 million euros. AEE – Institut für Nachhaltige Technologien (AEE INTEC) with locations in Gleisdorf and Villach is the project manager in charge of the digital twin. EQUA Solutions, the building software developers from Switzerland/Sweden, is the third central partner in the development of the digital twin in addition to AEE INTEC and Infineon. For more information on the European research project Arrowhead Tools please refer to www.arrowhead.eu.

About Infineon Austria

Infineon Technologies Austria AG is a group subsidiary of Infineon Technologies AG, a world-leading provider of semiconductor solutions that make life easier, safer and greener. Microelectronics from Infineon reduce the energy consumption of consumer electronics, domestic appliances and industrial facilities. They make a major contribution to the convenience, security and sustainability of vehicles, and enable secure transactions in the Internet of Things.

Besides Germany, Infineon Austria is the only subsidiary within the group that pools competencies for research and development, production as well as global business responsibility. The head office is in Villach, with further branches in Graz, Klagenfurt, Linz and Vienna. With 4,201 employees from around 60 countries (including 1,813 in research and development), in the financial year 2018 (ending in September) the company achieved a turnover of € 2.9 billion. An R&D expense rate of €498 million makes Infineon Austria the strongest industrial research company in Austria.

Further information at www.infineon.com/austria

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