11th International Conference on Through-life Engineering services (TESConf 2022)

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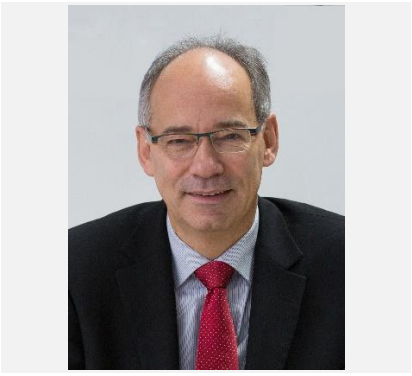

Jan C. Aurich

Professor at the Institute for Manufacturing Technology and Production Systems, TU Kaiserslautern

Prof. Dr.-Ing. Jan C. Aurich studied mechanical engineering at Leibniz University Hannover and Colorado State University, Ft. Collins, USA, achieving his PhD in 1995. He has a background in product design and manufacturing due to several years in industry at Daimler AG in different management potions. After his career in industry, he took over the Institute for Manufacturing Technology and Production Systems (FBK) at TU Kaiserslautern in 2002. His research activities in environmental sustainability focus on the development of methods for planning, evaluating, and improving the ecological sustainability of factories, machines, and processes. Particular interests include technical product-service systems, circular economy, remanufacturing, business model innovation, and life cycle assessment.

Jan C. Aurich is member of the International Academy for Production Engineering (CIRP), the German Academic Association for Production Technology (WGP) and the German Academy of Science and Engineering (acatech). He is active as a reviewer for several research foundations (e.g. German Research Foundation DFG and United States National Science Foundation NSF) and as a member of editorial boards of several renowned scientific journals. Furthermore, Jan C. Aurich also has a strategic role building new communities that tackle challenges and opportunities in the scientific community of manufacturing in the role of member of the advisory board of the application centre Industry 4.0 Potsdam as well as academic director of the research facility “Laboratory for Ultra-Precision and Micro-Engineering” in Kaiserslautern.

FBK is active in the fields of sustainability in manufacturing, digital technologies for manufacturing systems, additive manufacturing, micro and ultra-precision machining, and machining technology. Besides research activities, the institute collaborates with partners from industry to transfer scientific knowledge into practice. The cooperation in interdisciplinary teams leads to an active exchange of experiences and connects researchers and practitioners.

I his keynote, Prof. Aurich will talk about design guidelines towards absolute sustainability for technical product-service systems (PSS).
PSS comprise of physical products, non-physical products (services), and a network of companies together with supporting infrastructure to deliver customer benefits. They show the potential to deliver customer benefits with lower environmental impacts compared to the sale of products alone.
The recent shift towards an absolute perspective of sustainability changes the understanding of sustainable life cycle engineering and design. This new understanding challenges designers to create PSS that not only offer incremental environmental advantages but actively contribute to a sustainable development.
Supporting designers to create absolute sustainable PSS, the keynote offers design guidelines, which address procedures along the entire lifecycle of PSS. The guidelines formulate basic requirements which include requirements for sustainability and the products environmental impacts as well as requirements for market orientation and customer satisfaction. Also, the guidelines enable lifelong improvements to through services and the use of data. Considering the end-of-life of PSS, the guidelines enhance circularity and contemplate rebound effects.