

Smart Factory based on intelligent technical systems

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Abstract: Customers increasingly want to have individual products with costs comparable to mass-produced goods. For manufacturers this leads to small batches and many variants associated and a high productivity at the same time. Therefore future production systems must be adaptive, resource-efficient and user friendly. Such a smart factory is an intelligent socio-technical production system based on informed people, informed machines and informed products. For the smart factory the usage of Information and Communication technologies (ICT) and intelligent automation is of high importance. Especially a seamless connectivity, the efficient computer modeling of knowledge, knowledge-based algorithms for self-x capabilities and user-friendly and intuitive interaction technologies are ingredients to realize the smart factory paradigm. This talk shows how the needed intelligence comes into the technical systems at the shop floor level. Some examples of the leading edge technology cluster "intelligent technical systems OstWestfalen-Lippe it's OWL" are introduced. In this cluster, which is an integral part of germans high-tech strategy Industrie 4.0, 178 partners from research and industry are working on solutions for the smart factory and smart products. Based on real-world industrial applications methods and technologies for the self-configuration and self-optimization of machines and systems as well as the usage of advanced human-computer interaction technologies are presented.

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