

Suzhou Project Information for Foreign Experts (2018)

Name of the Organization	KIT China Branch	Nature of the organization	
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Brief Introduction of the Organization	<p>Karlsruhe Institute of Technology (KIT) has more than 1000 cooperative projects in 65 countries in the world. There are 4 universities in China as strategic Partnership. Intensive International Cooperative Relations Network provides strong support for KIT's Research, Innovation and Education.</p> <p>In 2014, KIT China Branch was established as the official representative office of KIT in China. The main task is to introduce engineering technologies such as the world's best machinery manufacturing, production systems, production management, nanotechnology, robotics and resource efficiency to assist in the transfer of KIT's technology and services to Suzhou and to support the incubator of scientific and technological achievements. At the same time, it provides professional training for the local people in Suzhou. It carries out a series of industry-related projects and services, providing many advanced solutions for Chinese and foreign enterprises in the fields of machinery manufacturing, production and processing, resource efficiency, organization and commercial operation.</p> <p>In addition, KIT China Branch has established a good network of relationships with prestigious universities and international colleges and universities, and will gradually strengthen its partnership with it.</p>		
Name of the Project	A KPI oriented Implementation Strategy of Cyber-Physical Production System within Assembly System by considering Location Factors		
Industry	Advanced Manufacturing		
Introduction of the Project	<p>While realizing the potential of the CPPS concepts today's manufacturers facing the challenges to identify implementation strategy of CPPS enabling technologies for enhancing Lean Production by considering location factors and fields and maturity level of CPPS application in research area and industrial practice</p> <p>Therefore, the objective of the proposed project is to develop a methodology for developing and evaluating a KPI oriented implementation strategy of Cyber Physical Production Systems within assembly system considering location factors.</p> <p>The leading questions that underlie the objective are: What are the important CPPS</p>		

	<p>enabling technologies and their maturity level, and location factors in China and Germany? How can interdependencies among CPPS enabling technologies, location factors and KPIs be analyzed and modeled? How can the implementation strategy for a specific assembly system be derived and evaluated?</p> <p>This approach considers the different perspectives of a highly industrialized country like Germany and a highly dynamic emerging country like China. It is composed of nine work packages. In the first work package application fields, in which potential CPPS activities can be addressed, also including adequate maturity levels, are defined. Additionally, in the following work package specific location factors, which influence the performance of a production system, are identified for each of the two countries and merged together. Seizing this information, in work package 3 a qualitative model is defined establishing the relations between the application fields of CPPS and different key performance indicators of the assembly system. Then, in work package 4 a qualitative model is developed which establishes the relations between location factors and the application fields of CPPS at their maturity levels to identify key impact areas. Based on this, a quantitative model is developed in work package 5 to combine all results of the prior work packages in a simulation model of a assembly system. Utilizing the simulation model, the result of work package 6 is a procedure to identify an optimal implementation strategy for CPPS application fields depending on the relevant location factors. In working package 7 a procedure is developed, which allows an analysis of the robustness of the identified solutions of the implementation strategies. Finally, the methodology of the developed approach is implemented in an industrial context and the results of all work packages are documented.</p> <p>This proposed project will contribute to the fundamental understanding and developing implementation strategy for assembly system improvement in the context of CPPS field of application and location factors.</p>
<p>Cooperation Conditions</p>	<p>Sino-German cooperation, the hardware need to be installed and the software will be further developed by both sides.</p>
<p>Note</p>	