

## Work in the Industry of the Future-Investigations of Human-Machine Interactions

**Authors :** S. Schröder, P. Ennen, T. Langer, S. Müller, M. Shehadeh, M. Haberstroh, F. Hees

**Abstract :** Since a bit over a year ago, Festo AG and Co. KG, Festo Didactic SE, robomotion GmbH, the researchers of the Cybernetics-Lab IMA/ZLW and IfU, as well as the Human-Computer Interaction Center at the RWTH Aachen University, have been working together in the focal point of assembly competences to realize different scenarios in the field of human-machine interaction (HMI). In the framework of project ARIZ, questions concerning the future of production within the fourth industrial revolution are dealt with. There are many perspectives of human-robot collaboration that consist Industry 4.0 on an individual, organization and enterprise level, and these will be addressed in ARIZ. The aim of the ARIZ projects is to link AI-Approaches to assembly problems and to implement them as prototypes in demonstrators. To do so, island and flow based production scenarios will be simulated and realized as prototypes. These prototypes will serve as applications of flexible robotics as well as AI-based planning and control of production process. Using the demonstrators, human interaction strategies will be examined with an information system on one hand, and a robotic system on the other. During the tests, prototypes of workspaces that illustrate prospective production work forms will be represented. The human being will remain a central element in future productions and will increasingly be in charge of managerial tasks. Questions thus arise within the overall perspective, primarily concerning the role of humans within these technological revolutions, as well as their ability to act and design respectively to the acceptance of such systems. Roles, such as the 'Trainer' of intelligent systems may become a possibility in such assembly scenarios.

**Keywords :** human-machine interaction, information technology, island based production, assembly competences

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