

Author:
Michael Lippert
Business Development Manager
Sales Industry Sector Electronics &
Manufacturing Technologies
DC-IA/SDF52
Bosch Rexroth

Bosch Rexroth AG
Bgm. Dr. Nebel Str. 2
97816 Lohr am Main
GERMANY
Tel. +49 (0)9352 18-5371
www.boschrexroth.com

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Abstract: Next Generation of Automation

The consumer markets have become quite volatile. The challenge for business lies in the assumption that the complexity of production and supply networks will grow significantly. Customer requirements have become more individual and the whole customer behavior has changed: social platforms like Facebook, Youtube and Twitter are influencing the decision and buying behavior of customers, which can change really fast and is hard to predict. As a consequence, product personalization increases while delivery times as well as product life cycles shorten. All this needs to be realized within the continuous tendency to decrease cost.

Hence, increasing flexibility and productivity in manufacturing processes are prerequisites for ensuring future competitiveness. Technical implementation requires continuous communication between person, machine and product. Bosch Rexroth, a leading supplier of Industry 4.0 solutions, has gathered its own application experience for putting these solutions into practice. The trend towards worldwide networking and exchanging data affects the way we handle information in the field of industrial automation – and it shapes the production processes of tomorrow.

To fulfill the requirements with which equipment manufacturers are confronted, the development towards Industry 4.0 is in a fast pace. Increasingly connected concepts with decentralized intelligence, autonomous behavior and context connection in real time are making their way into practice based on open interfaces.

To facilitate the required solutions within machine controls, there is a necessity for coupling the IT world on one side and the -often closed- manufacturing and automation world on the other side. To provide this connection, the machine control has to deal with different interfaces. This will be done by providing software development kits for maximum freedom on programming.

Solutions like the Bosch Rexroth open core interface offers direct access to functions and data of machine controls, allowing a smart connection of devices and enabling users to implement new customized services and by this achieve competitive advantages. In addition, the interface is not limited to the machine control but integrated into all intelligent components like for example the servo drives and mechanical systems.