

White Paper

Industry 4.0 in Hannover Messe 2016 Leads Manufacturers to Cross-Industry Innovations



NEXCOM's complete Industry 4.0 solution blueprint seamlessly integrates "connected manufacturing and big data cloud computing".

Back in Hannover Messe 2011, Germany announced the Industry 4.0 concept and initiated the world's fourth industrial revolution. Since then, Hannover Messe has become a focal point for Industry 4.0 innovations. As Hannover Messe 2016 closes in, the exhibition will once again be surrounded by various Industry 4.0-related hot topics such as integrated industry, smart manufacturing and more.

Coming soon on April 25 to 29, Hannover Messe 2016 will be based on the theme "Integrated Industry – Discover Solutions", which aims to provide an interpretation of the smart manufacturing model of Industry 4.0. As a Taiwanese company with deep expertise in IoT automation, NEXCOM has planned four themed demonstrations that map out a complete solution blueprint for industry 4.0 in the upcoming event.

Joe Lin, General Manager of NEXCOM's IoT Automation Solutions Business Group, states, "Early Industry 4.0 solutions focused on the lower layers of factory communication where IoT gateways were used to integrate different industrial protocols, bridging the Industry 4.0 last mile connection to fulfill the 'connected' concept. Now in 2016, NEXCOM will extend the pathway to the cloud through NEXCOM IoT Studio configuration tool and IoT gateways, which consolidate the management and connection of factory field devices onto a unified control interface, accelerating data aggregation. This will enable a two-way field-to-cloud connection for big data analytics, promoting development for more Industry 4.0 applications."

NEXCOM's Four Themed Zones for Industry 4.0 Applications

NEXCOM's four main highlights for Hannover Messe 2016 will be "IoT

Automation Solution", "NexMotion Solution", "Industrial 4.0 Wireless Factory and Industrial Cloud & Security", and "NexROBO Solution". Although different in context, all four themes will use NEXCOM IoT Studio and IoT gateways to integrate field data to a cloud service powered by Microsoft Azure. Furthermore, the demonstrations will show how integrating cloud-enabled services such as business intelligence (BI), big data analytics, machine learning and remote management can provide benefits such as remote monitoring to enable exception management and advanced process control.

For IoT Automation Solution, NEXCOM will present how live data from different-branded PLC controllers can be collected and processed to a cloud service platform through NEXCOM IoT Studio and IoT gateways. For NexMotion Solution, an EtherCAT Master controller will be on stage to demonstrate its control performance and cross-vendor support by controlling up to 64 motors and drives to dance along to the music. Lin adds, "NEXCOM's EtherCAT Master solution has been certified to support over ten types of servo motors. In addition, the solution is cyber-physical system (CPS) ready to carry out the CPS convergence envisioned by Industry 4.0."

In the demonstration area for Industrial 4.0 Wireless Factory and Industrial Cloud & Security, NEXCOM will simulate a factory operation and demonstrate how the use of IoT gateways, firewalls and NEXCOM nCare remote management software can give wireless networks within and across factory plants and enterprise offices a secure data path to the cloud. As for the NexROBO Solution, to showcase the visual processing capability of robots, an articulated robot will be on display to

imitate the arm movements of visitors, showing how robots can replace workers in high-risk environments.

Big Data Cloud Analytics: Enabler for Exception Management, Advanced Process Control

All the application scenarios mentioned above can integrate with the Microsoft Azure cloud platform. Operators can benefit from the remote management and data visualization offered through cloud, assisting them to get an accurate measure of machine status and factory operations in real-time, as well as providing integration with ERP and MES systems to optimize supply chain management.

Based on live field data, big data analytics and machine learning using statistics and artificial intelligence can establish predictive models that assist operators in managing factory operations. Causes for abnormal conditions such as production disruptions and poor production quality can be accurately identified to ensure corrective actions are taken. For instance, preventive maintenance can be executed prior an equipment failure to ensure

production efficiency and yield rate.

Furthermore, Microsoft Azure provides high computing performance capable of processing even very large amounts of data accumulated throughout the years of an enterprise, sifting through the data quickly to accurately calculate production efficiency and quality factors to help businesses to fine-tune production parameters and achieve "advanced process control". At the exhibition, NEXCOM will share its NexROBO robot simulation software and NEXCOM IoT Studio configuration tool, and make them freely available to download (www.alliotcloud.com) to help accelerate the ecosystem of the industry.

The Hannover Messe exhibition continues to introduce new technological breakthroughs, showcasing innovative convergence of data communication technology and traditional industrial production. At Hall 9, which has been recognized as the cornerstone of Industry 4.0 demonstrations, NEXCOM will unveil its Industry 4.0 solution blueprint and provide a refreshing visual feast of the seamless integration of "connected manufacturing and big data cloud computing".



The Intelligent Systems

Founded in 1992, NEXCOM integrates its capabilities and operates six global businesses, which are IoT Automation Solutions, Intelligent Digital Security, Internet of Things, Interactive Signage Platform, Mobile Computing Solutions, and Network and Communication Solutions. NEXCOM serves its customers worldwide through its subsidiaries in five major industrial countries. Under the IoT megatrend, NEXCOM expands its offerings with solutions in emerging applications including IoT, robot, connected cars, Industry 4.0, and industrial security.

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