

Next level automation and power transmission – from ABB

The solutions ABB will showcase at this year's Hanover Fair represent technological milestones and will be of special interest to customers in its core business segments: utilities, industry and transportation and infrastructure. ABB is setting the pace for the Internet of Things, Services and People, and will feature numerous innovations that boost productivity. One of these is YuMi, the world's first industrial robot that can work hand-in-hand with people on an assembly line. For the power transmission sector, ABB will present its latest-generation underground and submarine cable system that requires less space and reduces the cost of high-voltage transmission.

Hanover, April 12, 2015 – ABB, the global power and automation technology group, will present new products and solutions for tomorrow's industries that can be networked via the Internet at this year's Hanover Fair, all aimed at the "Internet of Things, Services and People." The company will also present innovative solutions that support Germany's shift to renewable energy.

"A productivity increase of up to 30 percent is realistic via the integrated deployment of ABB technologies in the context of the "Internet of Things, Services and People," said Ulrich Spiesshofer, chief executive officer of ABB. "Our combined power and automation portfolio offers our customers more added value and is a clear sign that we have successfully initiated our Next Level strategy."

Automation solutions

Mobile communications technologies, cloud computing and "Big Data" analysis provide a means of increasingly transforming industrial InTRAnets, which have served as the basis for industrial automation in many factories for years, into an industrial InTERnet. This will boost plant throughput and up-time, enable more flexible production for improved capacity utilization and open the door to combining economies of scale of standard products with custom equipment and devices.

Only by taking into account the triad of things, services and people can we provide meaningful integration and generate productivity and efficiency advantages.

A prime example will be YuMi, the world's first collaborative dual-arm robot, a market-ready product that ABB will launch at Hanover Fair. The robot represents a paradigm shift in our perception of how humans work with machines. For the first time, humans and machines will be able to work hand-in-hand in the same workspace, freed from the constraints posed by safety barriers. ABB is a leader in robotics: In 1974, the company unveiled the world's first microprocessor-controlled electric industrial robot. Today, ABB has an installed base of more than 250,000 industrial robots, many of which already are equipped with intelligent technology that enables remote maintenance.

ABB will also demonstrate the benefits of manufacturer-independent process platforms in Hanover with the unveiling of its "Field Information Manager" (FIM). ABB will present a solution for integrating field devices into process automation based on the new industrial FDI (field device integration) standard. The Field Information Manager gives users the ability to start up devices in mere minutes and provides access to all necessary device information.

ABB's Decathlon software is a high-performance, secure solution that enables users to capture and analyze vast amounts of data to prepare reports, link data sources with process control systems and archive historical data. It ensures timely availability of the right information. Decathlon services can be easily expanded by adding diverse industrial applications, giving users the ability to respond flexibly to trends, specifications and evolving standards.

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Other ABB smart automation solutions presented at Hanover Fair include smartphone apps that wirelessly connect to ABB drives. Service engineers and installers can use the company's "Drivebase" app to manage installed equipment and plan required maintenance. The app can be used to register drives, access installed drives and associated documentation, as well as retrieve service recommendations. It uses dynamic QR tag technology to transfer information between the drives and smartphone. Another app, called "Drivetune," can be used for drive startup, troubleshooting and setting drive parameters. Not only does this app provide better information than typical industrial control panels, it can access the drive and cloud-based Internet services in real time via a Bluetooth connection, regardless of where the drive is located in a plant. The Drivebase app is already available today for the most popular smartphone operating systems. Drivetune will be released in 2015.

Power industry solutions

The technical possibilities and business advantages that accompany the Internet of Things, Services and People are increasingly tied to power-related solutions for industrial operations. Industry and power systems are closely intertwined. Because power generation will become increasingly unpredictable due to the penetration of increasing amounts of renewable energy, industry also must adapt to become more nimble and flexible. This can open the door to innovative new business models.

Industry consumes by far the most power in Germany. In 2013, its share was about 46 percent. Clearly it relies on a safe, reliable supply of electricity. But future power generation will become more diverse, increasingly fragmented, more unpredictable and largely decentralized. The technical and economic reality is that industry will have to adapt to a more or less fluctuating power supply.

"For decades, ABB has been a world leader in power transmission and distribution. The company developed the world's first high-voltage DC transmission system over sixty years ago, and has steadily enhanced it since then," Spiesshofer said. "The company has already developed many innovative products and systems for the 'Energiewende,' the transition to new, renewable energy sources, and has tested them at numerous pilot sites, in Germany and internationally."

These building blocks, combined with expert consultation and services, can be used to gradually transform conventional power supply systems into modern, future-ready systems that reliably support networked industrial processes based on the digital network of the future.

At the Hanover Fair, ABB is presenting one of the innovative elements of an expanded transmission grid: A new polyethylene (XPLE) cabling system and terminations rated for 525 kV DC. This high-performance cable system is an essential building block for low-loss power transmission over long distances. For the first time, this cable system clears the way for high-capacity "electricity autobahns" to be installed underground, at least along some sections of a transmission corridor. The transmission capacity of the new cables is the same as that of conventional overhead lines. A single pair of these cables can transmit 2.6 gigawatts of power, enough to supply major cities such as Munich or Stuttgart.

ABB has also improved the energy and environmental efficiency of gas-insulated switchgear (GIS) that is essential for the safety and availability of modern electricity networks. For 170 kV GIS systems, ABB has developed a solution which replaces traditional sulfur hexafluoride gas (SF6) with an innovative insulating gas mixture. The insulating properties of the new ABB gas mixture are similar to those of SF6, but much more environmentally sound. Emissions over the service life of the equipment are reduced by 50 percent. The new technology will be deployed for the first time in a pilot installation at a substation of the provider "ewz" in Zurich later this year.

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Internet of Things, Services and People

ABB has been working for over 10 years to develop and enhance process control systems, communications solutions, sensors and software for the Internet of Things, Services and People. These technologies enable customers in industry, power generation and infrastructure to more intelligently analyze data, optimize their operations, boost productivity and enhance their flexibility.

ABB (www.abb.com) is a leader in power and automation technologies that enable utility, industry, transport and infrastructure customers to improve their performance while lowering environmental impact. The ABB Group of companies operates in roughly 100 countries and employs about 140,000 people.

For help with any technical terms in this release, please go to: www.abb.com/glossary

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