

CONTROL ENGINEERING EUROPE

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CODESYS
CODESYS V3



**FDI: Standardising and
simplifying device to
host integration**

**Assessing cyber security
risk in real-time**

**Delta robotic controls:
no cabinet required!**

100 years of innovation

Herman van den Berg, president of Yokogawa Europe, discusses Yokogawa's first 100 years, and looks at some of its most current areas of development.

This year marks Yokogawa's 100th anniversary. Yokogawa's founder, Dr. Tamisuke Yokogawa, was a visionary architect. Knowing that electrical technologies would play an important role in Japan's industries, he founded a company to manufacture and sell electric meters and instruments. Dr. Yokogawa urged his employees to put quality first, to have a pioneering spirit, and to contribute to society.

Yokogawa expanded its business into a new field – industrial instruments – which eventually led to the release in 1975 of CENTUM, the world's first distributed process control system (DCS).

More recently, with the rapid progress in wireless communications and information processing, we frequently hear expressions such as the Internet of Things (IoT), Industry 4.0 and Industrial Internet. Yokogawa also uses the term Industrial Internet of Things (IIoT). Based on this, we now see the measurement and control value chain progressing one step further with the addition of a stage where the integration of knowledge generates intelligence that can be used to facilitate decision making. The integration of information and knowledge is exchanged among plants and between plants and business management. The intelligence generated can facilitate decisions that lead to further optimisation of plant and operations.

Traditionally, the focus in industrial automation has been on the establishment and strengthening of the measurement and control value chain at the single plant level. Yokogawa has been developing data analysis and model prediction technologies focusing on management and optimisation at multiple plants.

Key areas of current developments include:

Field wireless communications: The flexibility of wireless solutions enables lower investment in infrastructure while providing greater process insight into plant operations, where measurements were previously too difficult or uneconomical to implement. The ISA100.11a technology adopted by Yokogawa provides a robust security mechanism which ensures continuous safety in various system operations.

Cyber security: Yokogawa's security experts have been actively participating in the development of international industrial standards from ISO, IEC and ISA such as IEC/ISA62443 (ISA99). Yokogawa was a founding member of the ISA Security Compliance Institute, and has been developing techniques and solutions for the purpose of security risk management to general networks. With its long experience of integrating control systems, Yokogawa has developed security techniques and solutions optimised to different industries, applications and system configurations, helping customers secure their control systems against ever evolving security risks.

Augmented reality: As its name implies, augmented reality is a computer technology that augments the real world with relevant information and data. One possible use for this is the elimination of human error on the plant floor by developing systems that carry out double checks on human operators. More specifically, this research is geared toward developing mobile terminals capable of walking workers of various skill levels through a task at hand, and procedures they are to perform, in a timely manner. Such terminals will also be capable of providing feedback on

whether tasks are completed properly, and will issue instructions on recovery procedures should problems arise. Through such research, Yokogawa aims to collaborate with customers on developing work environments that are both safe and secure.

In the near future, we believe that analysis and prediction technologies, along with technology that integrates knowledge, generally referred to as 'artificial intelligence,' will become increasingly important in the industrial automation field. At the same time, as the value chain that connects measurement and control will play a very important role, it will be necessary to consider the total chain, from measurement to integration.

Transformation 2017

'Transformation 2017' is Yokogawa's new mid-term business plan for growth. It is the foundation of a long-term business framework that states Yokogawa's goals for the next ten years. It will address the three long-term society and market trends of the growing consumption of energy resources, the industrial changes that are resulting from the increasing integration of devices ('things') and information, and the increasing use of 'smart' digital technologies in communities. Yokogawa has drawn up a long-term business framework and formulated a vision statement that reads:

'Through process co-innovation, Yokogawa creates new value with its clients for a brighter future.'

Herman van den Berg is president of Yokogawa Europe.





100th

ANNIVERSARY 1915-2015

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We proudly celebrate a century of service, innovation and solutions. We are grateful to our loyal customers, who have made us who we are today. We would like to express our sincere gratitude for your continued support. With knowledge and experience cultivated across a century, we foresee a bright and sustainable future. Tomorrow's in sight..

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