

The Production-integrated Enterprise in 2020

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Globalisation, increasing customer sophistication and resource scarcity are all challenges facing the process industries, and by 2020 these will be even more acute. Meeting these challenges will depend on structures that will enable wholly automated planning, dynamic scheduling and fully optimised production processes to control unit production cost.

Achieving this will require emerging technologies such as advanced process control, real-time optimisers and pervasive soft sensors, but it will also require a rethinking of the integration between the plant floor and the higher level systems. The picture of the process industry that emerges will be one where the business systems are directly and intelligently coupled with the production assets.

A key trend along this journey will be the move towards 'green manufacturing', which includes the active identification and control of energy consumption at every step of the production process and along the whole value chain. Energy consumption will need to be mapped and optimised in real time, with operators able to manage energy consumption in monetary value terms rather than dealing with abstract energy units. This will lead us towards the 'new normal' where energy management is tightly integrated with process control

Today quality goes hand in hand with safety, but by 2020 'Compliance' will have rolled these two issues into one, covering everything from safety and quality, but also all required statutory reportable data (specific energy and emission, , etc.). In practical terms, this will drive a requirement to constantly measure, record, report, disseminate and act upon all process data, with all of that data available in an auditable manner.

Cyber security is a further trend, and by 2020 it will be institutional. Meeting security

requirements will mean removing vulnerable commercial operating system platforms and providing secure communications within higher level business systems and plant floor controllers. The aim will be to reduce the 'cyber attack surface area' of the business.

Photo Captions:



Picture 1: Globalisation, increasing customer sophistication and resource scarcity are all challenges facing the process industries. Achieving this will require emerging technologies and a rethink of the integration between the plant floor and the higher level systems.



Picture 2: Energy consumption will need to be mapped and optimised in real time, with operators able to manage energy consumption in monetary value terms rather than dealing with abstract energy units.

About Mitsubishi Electric:

With 90 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, Mitsubishi Electric Corporation is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, as well as in products for the energy sector, water and waste water, transportation and building equipment.

With around 117.000 employees the company recorded consolidated group sales of 36,3 billion Euro* in the fiscal year ended March 31, 2012.

Our sales offices, research & development centres and manufacturing plants are located in over 30 countries.

Mitsubishi Electric Europe B.V., Factory Automation European Business Group (FA-EBG) has its European headquarters in Ratingen near Dusseldorf, Germany. It is a part of Mitsubishi Electric Europe B.V., a wholly owned subsidiary of Mitsubishi Electric Corporation, Japan.

The role of FA-EBG is to manage sales, service and support across its network of local branches and distributors throughout the EMEA region.

**Exchange rate 109,56 Yen = 1 Euro, Stand 31.3.2012 (Source: Deutsche Bundesbank)*

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