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Mitsubishi Electric introduces e-F@ctory concept at Elex

## **FUTURE FACTORIES TO PUSH THE LIMITS OF OUR IMAGINATION**

**Mitsubishi Electric Turkey Factory Automation Systems Business Development Manager Tolga Bizel uttered a speech at Elex Conference, a platform for electric industry which was held for the first time this year. As the conference focused on Industry 4.0, smart grids and energy efficiency, Bizel introduced e-F@ctory concept, Mitsubishi Electric's response to Industry 4.0, and provided information about the factory automation of the future that gets ready to push the limits of our imagination.**

Elex Conference was held for the first time this year simultaneously with 4th International ELEX Exhibition (Electrical Materials and Equipment, Electricity Transmission and Distribution Exhibition) organized in Istanbul Exhibition Centre on 1-4 October. The focus of the conference was the practices, challenges and innovations regarding "Smart Grids", "Industry 4.0" and "Energy Efficiency". In that regard, Mitsubishi Electric Turkey Factory Automation Systems Business Development Manager Tolga Bizel lectured about Mitsubishi Electric's e-F@ctory concept, a.k.a. the digital factory technology of the future.

### **e-F@ctory provides high cost efficiency in manufacturing operations**

Describing the new industrial phase as a significant project to computerize the existing industry through high technology equipment, Tolga Bizel explained that the process shall come to a point when machines are able to understand what goes on around them and communicate with one another via internet protocols.

Bizel underlined that e-F@ctory concept, developed by Mitsubishi Electric as one of the prominent actors in the new industrial phase, is a revolutionary phase that could bring serious cost efficiency to industries. Bizel told that e-F@ctory shall provide the companies with significant advantages in global competition as it makes use of high technology to optimize all factory layers from manufacturing to management levels including manufacturing and maintenance processes.

### **Everything is under control at factories!**

Indicating that e-F@ctory is meant to provide optimum control of the resourced of factories, Bizel explained the advantages of the concept: “The ability to control the increasing product range and options better, more flexible output units and order volume, shortened manufacturing period to respond to the increasing demands of the global market, faster adaptation to changes to product ranges, fast response to increasing pressures on cost, faster adaptation to legal regulations, technological and environmental developments.”

### **Factory automation in the future...**

Referring to the future of factory automation, Tolga Bizel provided the following explanation: “According to the projections for the future, each product that is produced shall have a distinct serial number and keep not only some basic information but also its own history in its memory different from the modern systems. In addition, those products shall come with uninterrupted internet connection just as the machines used for manufacturing them. Therefore, it shall be possible to locate any given product and its condition at any time. Besides, the products shall be able to review their environs and give physical reactions to the extent of their capabilities in addition to making real-time information exchange with other products connected to the internet.”

### **Age of customized production**

Bizel noted that the age of customized production is quite at hand: “People are now in search of products that will meet their personal requirements. The expectation from automation products is quite similar. The new industrial phase which Mitsubishi Electric calls e-F@ctory has come to the fore out of the intention to meet human needs with automation systems that incorporate cyber systems”.

Bizel continued by saying: “You have to optimize your manufacturing processes to meet the demand for customized products in our modern world marked with increasing competition. You can satisfy your customers only through optimized products. While doing that, you need to be able to view your requirements, products, manufacturing processes, services and efficiency through a PC without setting the automation system. You need to set up and operate the system necessary for those demands in your PC and make investments to that end. After that, each automation component in the factory must communicate with one another to make decisions based on their experience and know-how in order to manufacture customized products according to the requirements. All of them will turn into reality with e-F@ctory”.

Referring to the role of e-F@ctory in the future, Bizel said: “e-F@ctory concept will create a system structure which will make it possible to meet human demands with self-controlling automation systems, modify a product during the manufacturing process according to customized requirements and keep the manufacturing process under control in the upcoming years”.

### **Future factories with robots...**

Referring to the anticipation that the new generation robot systems of the future will be multi-robot mechanisms with parallel structure, multi-fingered hands and walking mechanisms, Bizel continued to tell that there may even be semi-humanoid robots or robotic forms of human organs. Bizel told that Mitsubishi Electric Robot System makes an appropriate move by controlling larger and more complex programmes as Robot CPU. “Mitsubishi Electric robots make it possible to monitor the errors, variable values, programme data, condition of the robot (speed, position etc.), maintenance details (remaining battery life, lubrication life etc.), servo data (load factor, current values etc.). It is possible to control multiple robots collectively. A PC connected to the main CPU is able to have access to the robots in the controller network. This feature facilitates the control of the robots in a given line. Direct communication between CPU’s ensure that the memory of robot CPU’s is duly shared to make it possible to read and write data. As the data transfer between the robots becomes accelerated, robots are able to exert self-control processes in a more detailed and coordinated manner. They are even quite ready to share the data between themselves and with the main system controlling the factory independent from human control so as to increase efficiency.”

### **About Mitsubishi Electric Factory Automation Business Group**

Offering a vast range of automation and processing technologies, including controllers, drive products, power distribution and control products, electrical discharge machines, electron beam machines, laser processing machines, computerized numerical controllers, and industrial robots, Mitsubishi Electric helps bring higher productivity – and quality – to the factory floor. In addition, our extensive service networks around the globe provide direct communication and comprehensive support to customers.

### **About e-F@ctory**

e-F@ctory is Mitsubishi Electric’s integrated concept to build reliable and flexible manufacturing systems that enable users to achieve many of their high speed, information driven manufacturing aspirations. Through its partner solution activity, the e-F@ctory Alliance, and its work with open network associations such as The CC-Link Partners Association (CLPA), users can build comprehensive solutions based on a wide ranging “best in class” principle. In summary, e-F@ctory and the e-F@ctory Alliance enable customers to achieve integrated manufacturing but still retain the ability to choose the most optimal suppliers and solutions.