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**Mitsubishi Electric responds to Industry 4.0 with its digital factory platform,
e-F@ctory**

CREATING THE DIGITAL FACTORIES OF THE FUTURE TODAY

As Industry 4.0 continues to make progress, it is indispensable for industries to create production lines that are capable of meeting rapidly evolving and customized human needs in the fastest and most efficient manner. Robots, on the other hand, assume an increasingly important role in this new production approach. The process which could be summarized as the digitization of industry requires Turkey to build digital factories equipped with high robot technology in order to promote its production capability. It is indeed possible to create the digital factories of the future today in Turkey. Responding to Industry 4.0 with its digital factory platform, e-F@ctory, Mitsubishi Electric makes it possible to design factories properly to meet all kinds of requirements of the new industrial phase and test the production by means of the virtual factory prior to actual installation.

The new industrial phase which has come to be known as Industry 4.0 or the Fourth Industrial Revolution has been created out of the need to meet the evolving human needs by means of automation systems embodying cyber systems. This process which could be summarized as the industrial digitization gives an increasingly more important role to robots thanks to their high speed and other advantages. As a leading global company on electrical and electronic equipment and automation industry, Mitsubishi

Electric responds to this new industrial phase with its digital factory platform which is named as e-F@ctory and distinguished for high robot technologies.

As part of its on-going initiatives to raise awareness in Turkish industrialists as to digital factories and robots, Mitsubishi Electric met the industrial actors by taking part in three important events recently. **Mitsubishi Electric Turkey Factory Automation Systems OEM Business Development Senior Manager Tolga Bizel** recapitulated the Industry 4.0 vision, factory automation of the future and robot technologies during the Industry 4.0 Seminars organized by Istanbul Chamber of Commerce and Machine Tools Industrialists and Businessmen Association respectively as well as ST Robot Investments Summit and Exhibition.



Countries capable of manufacturing customized products to gain advantage

Tolga Bizel pointed out that the top 15 global economies are expected to be in fierce competition with each other during the next 40 years and said: “It is anticipated that the main denominator for determining the top 5 countries which shall most probably include Japan shall be the development level with regard to manufacturing customized products. It is essential to develop fully automated manufacturing systems supported with cyber physics systems in order to manufacture such products.”

Referring to the beginning of a new industrial revolution in the world, Bizel said: “Industries are now required to create production lines that are capable of meeting rapidly evolving and customized human needs in the fastest and most efficient manner. Your ability to make a production line investment that can adapt to emerging needs with the help of a system comprised of self-adjusting machines and robots with ideal ergonomics forms the basis of the new industrial phase. It is predicted that countries which can adapt to this new phase with self-adjusting production lines shall be able to

create a manufacturing industry that is capable of meeting fast evolving customized needs.”

Virtual factory measures efficiency before production

Bizel underlined that e-F@ctory, Mitsubishi Electric’s response to Industry 4.0, makes it possible to create the digital factories of the future today. “In this increasingly competitive environment, you are supposed to optimize your manufacturing operations to meet the demand for customized products,” he said. “Mitsubishi Electric’s e-F@ctory platform gives the chance to design a factory that shall meet all the requirements accompanying the new industrial phase in addition to creating a virtual factory prior to actual installation process. Therefore, you can operate the virtual factory to have an idea about your requirements and efficiency so that you can channel your investments accordingly. Mitsubishi Electric’s e-F@ctory platform will take you one step further in global competition by using high technologies to optimize all factory layers from management to production line and creating significant cost efficiency in terms of manufacturing operations.”



Indicating that e-F@ctory, a.k.a. digital factory, enables manufacturers to accelerate manufacturing operations effectively thanks to the fast connection and short renewal periods, Bizel went to explain that the system can be tracked online so as to check the production virtually at any time and place. “Providing all kinds of details required during manufacturing processes, the system enables operators to detect faults with products and review the production line retrospectively to see if there were any problems with the relevant line. After that, a decision could be made to eliminate the problem automatically.”

Fast robots with precision close to human hands...

Bizel told that robots which are highly important for manufacturing process are becoming increasingly popular among various industries thanks to their high speed and other advantages and Mitsubishi Electric endeavours to create robots that shall provide more flexible production opportunities, reduce the costs and increase employee comfort. Bizel told that robots have recently become quite a regular workforce according to which Mitsubishi Electric, recognized for its high robot technology, produces high-speed robots operating with a precision close to human arms or hands in various industries such as food, medicine, packaging, automotive, and domestic appliances. As a company with vast know-how and expertise on manufacturing industry, Mitsubishi Electric manufactures all the components of the robots internally. Bizel also explained information about the industries employing Mitsubishi Electric robots in their operations:

“Mitsubishi Electric’s robots are frequently preferred for assembly and quality assurance processes including assembling door handles of cars and testing the keys of sound systems. Mitsubishi Electric also provides various solutions involving robots for a number of operations such as packaging wet tissues, encasing pharmaceuticals, polishing and gluing shoes, packaging sugar cubes and other food and packaging industries requiring mass production, dosaging and packaging.”

Semi-humanoid robots likely to work in factories

Bizel also provided foresights about the impact of robots on the future of the world: “It is anticipated that the new generation robot systems of the future will be multi-robot mechanisms with parallel structure, multi-fingered hands and walking mechanisms. Indeed, there may even be semi-humanoid robots or robotic forms of human organs. The most popular technology trend is mobility in our contemporary world and it will probably be robots in the future. Regardless of the future of artificial intelligence, smart cities or mobile devices, robots are expected to be a complementary part of all.”

It is imperative to reduce costs to remain competitive

Bizel underlined that Turkey has a significant production capability before he concluded his speech: “Creating a sustainable production capability requires competition which in turn requires increasing production quality and reducing costs. Robotic systems provide an ideal solution to all those requirements.

“e-F@ctory, the digital factory technology engineered by Mitsubishi Electric Factory Automation Systems, enables robots to communicate with other products available in the production line as e-F@ctory platform is based on an integrated and open architecture combining all the products in the factory automation process. Thus, it is easier than ever to keep up with the competition environment in the market by optimizing the production lines according to personal requirements.”

About Mitsubishi Electric Corporation

With over 90 years of experience in providing reliable, high-quality products, 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, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavours to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 4,394.3 billion yen (US\$ 38.8 billion) in the fiscal year ended March 31, 2016. For more information visit: www.MitsubishiElectric.com*

** At an exchange rate of 113 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2016.*

About Mitsubishi Electric Turkey Operations

Mitsubishi Electric concentrates on sales and after-sales services for HVAC systems, factory automation systems, CNC-Mechatronics systems and advanced robot technologies in Turkey. In addition, the company provides support for satellite, elevator, visual data systems, power sources and transportation-based infrastructure projects. Mitsubishi Electric, the acknowledged manufacturer of Turksat 4A and 4B satellites contributing to communication and broadcasting infrastructure of Turkey and neighbouring countries, is also recognized for the automation technology used for Marmaray project. Having incorporated a company for development and manufacturing of room air-conditioners in Turkey in April 2016, Mitsubishi Electric intends to start manufacturing operations in Manisa plant by January 2018. For more information visit: www.mitsubishielectric.com.tr

About Mitsubishi Electric Turkey Factory Automation Systems

Mitsubishi Electric Turkey Factory Automation Systems division provides added value to leading industrial corporations in Turkey in a range of fields including automotive, foodstuff, packaging, metal and PVC processing machinery in terms of fast integration, efficiency, flexibility and productivity. It has adapted to “Industry 4.0”, the new industrial phase, with its digital factory platform known as e-F@ctory.