# Mitsubishi Electric previews new Smart Carriage for linear transfer systems at SPS IPC Drives

**Ratingen, Germany, 07 December 2016**

**Visitors to SPS IPC Drives 2016 had the first chance to see a brand new Smart Carriage technology from Mitsubishi Electric and APT Automation*. Developed to operate with a dedicated linear transfer system, the Smart Carriage delivers on-board intelligence plus integrated power for on-carriage equipment. It also supports the ability to switch between parallel tracks on production lines allowing multiple operations on different products.**

Due for official launch in 2017, Mitsubishi Electric sees the Smart Carriage as a key technology to help address industry challenges such as improved productivity, increased overall equipment effectiveness and greater production line flexibility. A live demonstration on the Mitsubishi Electric stand at the SPS IPC Drives Expo showed the innovative linear transfer system integrated within a wider automation platform, using a robot to move items to and from the carriages.

As manufacturers look to increase their ability to meet customer demands for smaller batch sizes and greater levels of customisation, there has been a growing interest in the new breeds of linear transfer systems. The important differentiator for Mitsubishi Electric's new system is the Smart Carriage, which offers increased intelligence to users who are looking to upgrade factories to Industry 4.0 benchmark standards.

Uniquely, 240V AC and 24V DC power is available on the carriages,

making it possible for users to connect components which will provide additional functions or deliver additional information, such as on-board sensors or grippers. It also means data collected by sensors can be stored on the Smart Carriages.

On-board intelligence and data storage means the Smart Carriage can carry around product information from station to station. This enhanced intelligence enables the carriage to identify the product and its destination, allowing production flexibility to be significantly increased. With the ability to switch between parallel tracks, the Smart Carriage allows individual products to be routed to different stations on parallel production lines. Different processes can be realised in parallel, and then consolidated at a subsequent position on the rails.

These capabilities deliver on one of the key requirements for Industry 4.0 production, where production lines will be able to reconfigure themselves on the fly - based on the requirements of the individual product and the available capacity at different stations.

Further advantages of the linear transfer system include a reduced permissible distance between the carriages on a given track. A minimum distance reduced to less than 1mm means a greater number of carriages can be accommodated on a rail, leading to gains in productivity. A maximum carriage speed of 3m/s and acceleration/deceleration of 3G means the Smart Carriage can offer fast positioning for shorter moves. Collision avoidance technology prevents collisions even when there are numerous carriages on the rails moving at high speed. Positioning accuracy and repeatability are quoted as ±0.01mm.

In addition, because Mitsubishi Electric's automation platform underpins the Smart Carriage, it is easy to integrate into a wider automation

system, including simple synchronisation with Mitsubishi Electric's MELFA robot range. Combined with APT Automation's extensive experience in the mechatronics associated with linear transfer systems, the result is a highly efficient and flexible intelligent transfer system that meets all the requirements of an Industry 4.0 production environment.

Malte Stahnke, Managing Director of APT Automation, remarks: "We have worked closely with Mitsubishi Electric to develop a solution that delivers many benefits in terms of productivity and quality. The integration of an advanced control infrastructure has enabled the advancement of innovative linear transfer systems and their integration with the wider manufacturing environment."

Hartmut Pütz, President Factory Automation EMEA at Mitsubishi Electric Europe, commented: "Bringing new technology to the market that delivers customers with reduced costs in every phase of the automation process is part of Mitsubishi Electric's e-F@ctory concept. The Smart Carriage technology, developed with the dedicated linear transfer system from APT Automation is a great example of that philosophy in practice. We are proud to be creating solutions that enable the automation and digitalization of key industrial processes, applying innovation to the benefit of our customers."

Mitsubishi Electric Europe, Product Manager Servo/Motion and Robots, Oliver Giertz comments: "The linear transfer system with the Smart Carriage Solution is an important collaboration between Mitsubishi Electric and APT Automation, and addresses a number of today's industry challenges, including the move to an Industry 4.0 manufacturing environment. It can deliver higher production throughput to enhance overall yield, while increasing machine and production flexibility. Easy operation, including integration of robot and control technology, enables users to boost overall performance. Combined with

reduced downtime and reduced maintenance costs through the elimination of the belts, pulleys and gears associated with traditional conveyor systems, the result is an increased overall equipment effectiveness (OEE)."

**Note:**

* APT Automation was officially welcomed to the e-F@ctory Alliance at the 2016 SPS IPC Drives show in Nuremberg. A separate press release revealing more details will be released shortly.

See how Mitsubishi Electric is able to respond to today's automation demands:
eu3a.mitsubishielectric.com/fa/en/solutions

Learn more about the new Smart Carriage technology:
eu3a.mitsubishielectric.com/fa/en/solutions/capabilities/scs

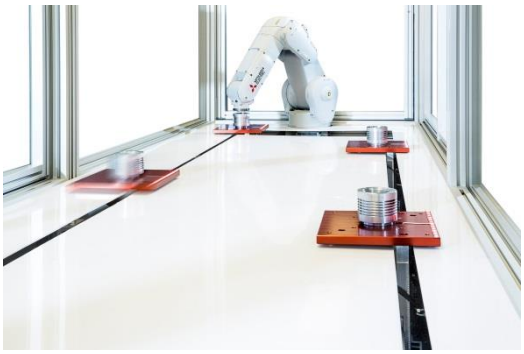
**Image captions:**

**Picture 1:** Hartmut Pütz, President Factory Automation EMEA at Mitsubishi Electric, pictured (left) with Malte Stahnke, Managing Director of APT Automation (right) alongside the Smart Carriage and Linear transfer system demonstration unit, which delivers on-board intelligence plus integrated power for on-carriage equipment improving productivity and overall equipment effectiveness.

[Source: Mitsubishi Electric Europe B.V.]

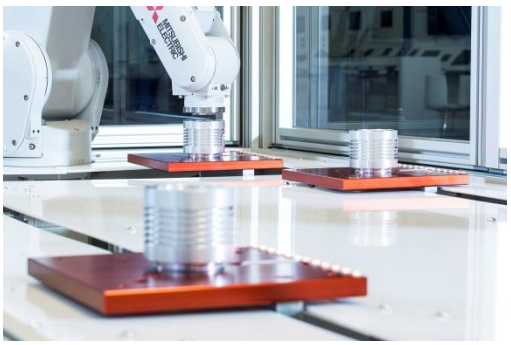
**Picture 2:** Oliver Giertz, European product manager for Servo/Motion and Robots at Mitsubishi Electric Europe, Factory Automation, “The linear transfer system in combination with the Smart Carriage Solution can deliver higher production throughput to enhance overall yield, while increasing machine and production flexibility.”

[Source: Mitsubishi Electric Europe B.V.]



**Picture 3:** The Smart Carriage is easy to integrate into a wider automation system including simple synchronisation with Mitsubishi Electric's MELFA robot range.

[Source: Mitsubishi Electric Europe B.V.]



**Picture 4:** The Smart Carriage also supports the ability to switch between parallel tracks on production lines allowing multiple operations on different products.

[Source: Mitsubishi Electric Europe B.V.]



**Note to Editor:** if you would like the text in another language please contact Philip Howe at DMA Europa – philip@dmaeuropa.com.

**About APT GmbH Automation & Produktionstechnik**

APT Automation specialises in complex system solutions in the field of automation and production technology.

Our core competencies include custom-engineered solutions for the semiconductor industry, robot system solutions and mechatronic precision modules. We also offer a range of products for industrial control and building automation systems.

Progress results from the exchange of ideas and knowledge. This is the philosophy behind our business and that we share and live up to in all projects with our customers.

Our team of experienced specialists in robot and process technology, hardware and software development assist you in all aspects of your undertaking.

**Further information:** http://www.apt.de/en/

**About Mitsubishi Electric**

With over 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 recognised 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 135,000 employees the company recorded consolidated group sales of 38.8 billion US Dollars* in the fiscal year ended March 31, 2016.

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 113 Yen = 1 US Dollars, last updated 31.3.2016 (Source: Tokyo Foreign Exchange Market)*

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