

The SCM “Smart&Human Factory” comes to life

A new interaction between man and robot completed with the excellence of SCM's technologies. The Italian group has partnered with the leading manufacturers of the robotics sector such as Universal Robots, KUKA and MiR.

Visitors to the SCM Open House (31 January-2 February 2019) will see a concrete demonstration of the new production model designed for the furniture industry

Following the excellent results achieved in 2018, with a record-breaking increase in turnover, that allowed the entire group to exceed 700 million Euro, SCM begins 2019 under the sign of innovation with the Open House “**Smart&Human Factory**”, which will be held in the Technology Centre at the Rimini headquarters from 31 January to 2 February.

The event will provide an exclusive window on the future of *smart manufacturing*, with new, flexible, modular and easily reconfigurable digital and automation systems. These will be integrated with collaborative robots, designed to respond more effectively and quickly to the challenges of *mass customization* and Industry 4.0. The topic of the Open House “**You will never work alone**”, effectively summarises the aim of SCM's new offer: to promote an automation that is “user friendly”, as much as possible, and that, as well as considerably simplifying the factory, rendering it more efficient, also creates a new model of interaction between man, robot and machine, in open and safe cells. A further improvement is also achieved on the work front, with operators relieved from risky and repetitive activities, so that they can focus on tasks with greater added value.

“The SCM Open House”, **explains the SCM Division Director Luigi De Vito** “allows visitors to experience first hand a new model of interaction between machines, industrial and collaborative robotics, logistical ground handling and software and digital technologies. A state of the art project designed to resolve all the critical aspects of mass customization, as well as to provide a considerable level of progress in the work of the operator. SCM will showcase the new frontiers of automation, without ever forgetting the human factor, as indicated with the title 'Smart&Human Factory'. Our strength lies in not being solely a supplier but a partner ready to support our customers in their business”.

During the three days visitors will see a concrete application of the SCM “Smart&Human Factory”: **an automated system for furniture production** in all the stages of the process: from designing the furniture to generating the machine programs with the software, from machining the panels to assembling the cabinet. In such a system the operator is relieved of the repetitive tasks, thanks to the use of **KUKA** industrial anthropomorphic robots and assisted by **Universal Robots** collaborative robots, in the final stages of the process (assembly, inserting the hardware, dispensing the glue and surface finishing) where man and robot share the work space in complete safety and without enclosures. Moreover the flexibility of the process logistics is improved through the use of **MiR** intelligent autonomous mobile shuttles. The whole system is managed and optimised by the **Maestro Watch** supervisor software, to monitor the state of each product being machined, from the start to the end of the process. This is integrated with the IoT **Maestro Connect** system that collects and analyses the data from the SCM machines and ensures, on the one hand, the full control of the production flow and, on the other, the implementation of intelligent and predictive maintenance models.

THE PROCESS

Visitors will be able to see the production of **four different types of cabinet**, through a process that aims to optimise as much as possible the cutting, edgbanding and drilling operations of the panels, as if it were a standard production, in order to reduce rejects, leftovers and changes to the machine setup when changing orders, and it recomposes the orders at the end of the process, moving the customisation to this phase.

The process begins from the software and the Digital Hub, control centre of the “Smart&Human Factory”, that reproduces, like a veritable design office, all the details of the cabinet being produced. It also manages the sale and acquisition of the order as well as generating the data and machine programs for the production.

The machining process starts in the cutting area where the **nesting** of the panels to size is carried out in the new **morbidelli x200 and x400** CNC machining centres, presented in preview for this occasion, and designed to apply the outstanding performance of the "All-in-one" technology of the 5-axis panel machining centres to this type of machining operation.

The panels are unloaded on a MiR AMR shuttle and taken to the **subsequent edgebanding area**. In this technology, special importance is given to the **stefanicell**, the new generation of cells processing "batch 1", with high technological content solutions, even with low investment, and to the new bridge system "pickback", consisting in the automatic return of the panels, thus allowing simple management and "just in time" production.

After the edgebanding the MiR shuttle transfers the panels to the **drilling/insertion area**, where the panels are not only machined in the new **morbidelli ux200d** CNC centre, but also processed with the exclusive new system with double dowelling unit with variable axis, which can be adjusted based on the distance between the holes.

Once the machining process has been completed the panels are conveyed on a roller conveyor towards the KUKA anthropomorphic robot, that recomposes the kits ready for the assembly of each single order, thanks to the instructions of the supervision, control and data acquisition software Maestro Watch.

The MiR then transfers the kit towards the **assembly area** where the operators are assisted by three Universal Robots collaborative robots in assembling the bases and applying glue on the panels.

The process ends with the passage of the pre-assembled cabinet in the **action p** clamp, to achieve a precise assembly and an efficient squaring of the furniture. The finished product is then transferred by a MiR shuttle towards the storage area.

Visitors will be able to see the "Smart&Human Factory" model also in the **surface technologies area** where, along with the production of the different types of furniture in the other islands of the Technology Center, the cupboard doors are finished with a **dmc system**, designed to meet the requirements of mid to large-sized companies that demand maximum quality in the sanding and finishing operations. At the sander outfeed, another Universal Robots collaborative robot carries out further improvements to the door finish.

In this island, that also includes the **corner Superfici**, with all the latest developments for the finishing and painting processes, visitors to the Open House will discover the exclusive **integrated project for surface technologies** developed by SCM. The aim was to become the first and sole partner in Italy able to supply the full range of products and services, as well as exclusive and refined finishing solutions, to meet all the requirements of the process and types of final product.

This project includes the **new Surface Tech Lab for sanding and pressing** in Villa Mare (Villa Verucchio), that integrates and completes the **Superfici** Technology Center for finishing solutions in Villasanta (Monza). One of the major new products being unveiled at the SCM Open House in the new Villa Mare Technology Centre is the new **sergiani 3d form membrane press**, able to create unique three-dimensional effects.

With a turnover of over 700 million Euro and 4,000 employees, **Scm Group** is the global leader in technologies for machining a wide range of materials: wood, plastic, glass, stone, metal, composite materials and industrial components. The companies in the group are, throughout the world, highly reliable partners for the leading industries in a wide range of product sectors, from furniture to construction, automotive to aerospace, and yachting to plastic processing.

Scm Group coordinates, supports and develops a system of industrial excellence in 3 large highly specialized production centres in Italy and it operates in all 5 continents.

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