



At the final assembly line of the Peugeot 206 at the Poissy plant RFID systems play a central role

PSA Peugeot Citroën Poissy is assembling the new Peugeot 207 with Moby I, U and E

Logistics for the Lions

With Simatic automation technology, including Moby I, U and E, in the final assembly, PSA Peugeot Citroën Poissy has a high-performance solution for the production of its new Peugeot 207 to ensure optimum material flow, higher product quality and more ergonomic assembly conditions. The icing on the cake: the extremely fast commissioning.

The PSA Peugeot Citroën Company is the parent company for both automobile makes, Peugeot and Citroën. The wide range of models, from small cars such as the Citroën C1 or Peugeot 1007 to the luxury limousines Peugeot 607 and Citroën C6 as well as a series of vans and small transporters, is produced at worldwide locations in France, Spain, Portugal, Italy, Slovakia, Czech Republic, Brasil, Argentina and China.

Poissy, near Paris, is the company group home of the Peugeot 1007, a small MPV with electric sliding doors. The compact model 206 and its new brand successor, the 207 which has been in showrooms in Germany since May, are also built here.

8,000 people work in the former Chrysler factory, where Talbot automobiles ran off the production lines until 1984.

Two lines are available for the final assembly of the 1007, 206 and 207. The models Peugeot 1007 and 206 are built on line 1 and the models 206 and 207 are currently being built side by side on line 2.

On launching the 207 model, the decision was made to modernize the assembly lines and the conveyor technology in the final assembly. The complete product range of the Simatic Totally Integrated Automation concept was used, including Simatic S7-300 and S7-400 controllers, ET 200X and failsafe ET 200S distributed peripheral devices as well as HMI systems based on the Simatic Multi Panel. The planners at PSA

Peugeot Citroën also placed great emphasis on the Moby identification systems, which were implemented in various places in different versions. Line 2 was equipped with the new technology first and has been operating successfully since January 2005.

Waiting in the buffer storage

The dominating element on the factory floor in Poissy is the conveyor bridge which connects the new paintshop with the final assembly, and which stretches over a distance of more than 600 meters.

Here, the painted bodies are transported to a buffer storage at a height of 14 meters to compensate for the different operating times between the paintshop and the final assembly belts. The area can accommodate up to 200 bodies. A conveyor cart which distributes the bodies to the different roller tracks and picks them up again plays a central role. This roller cart receives its commands from the central control with Simatic Multi Panel, which communicates by way of a Simatic Power Rail Booster via the Profibus DP protocol.

Available for assembly

From there, the future "voitures" with the lion emblem travel seven meters lower to another fully automatic storage area, where they wait for a place on the assembly lines. The purpose of this dynamic intermediate storage area, referred to internally at PSA Peugeot Citroën as the MDA (Magasin

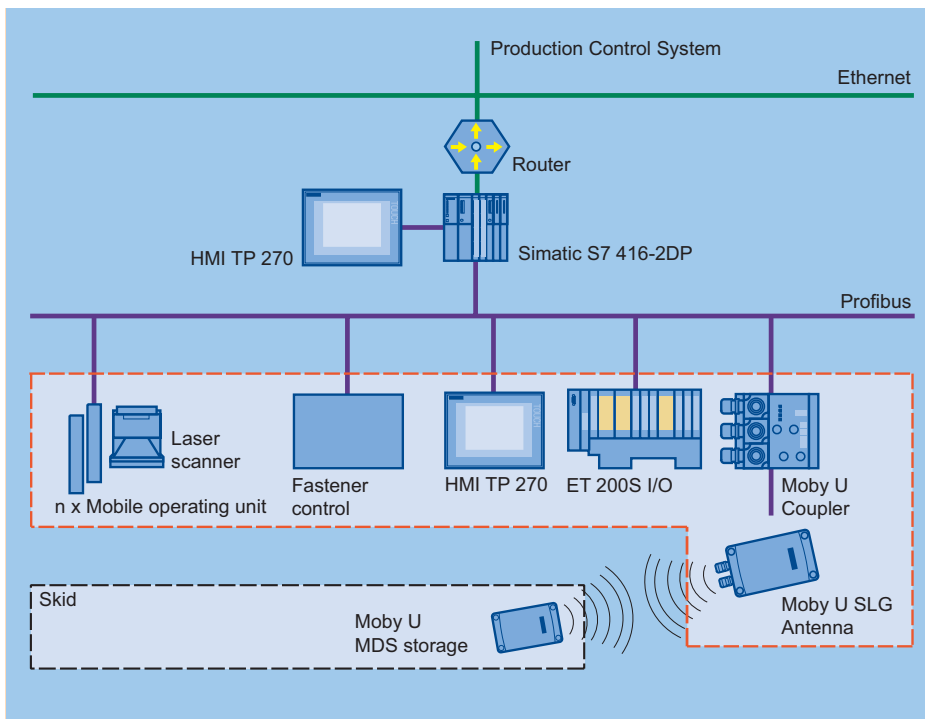
Dynamique Alvéolaire), is explained by Jean Louis Quintin of Production Planning at PSA Peugeot Citroën in Poissy: "The paintshop handles the orders according to different criteria than the assembly. Whereas the bodies are processed in the paintshop according to identical color groups, the production control system sorts them into a different order which is based on installation options for the final assembly." Depending on the model and selected equipment or design, the master production control system "Magellan" determines the order of the bodies, divides them between assembly lines 1 and 2 and assigns the storage bays.

Every body carrier is equipped with a Moby E mobile data memory for clear identification. It is marked with the specific storage bay number assigned by the Magellan control system during entry into the MDA. The MDA can hold up to 330 bodies.

The conveyor cart which moves the automobiles to or collects them from the storage bays is equipped with a Simatic S7-400, and communicates with the control system by Profibus over an infrared line. The dynamic intermediate storage area is controlled and visualized by a Simatic Multi Panel, the user interface of which has been configured with ProTool/Pro.

Ground floor: final assembly

The final assembly of the Peugeot takes place another seven meters lower at ground ▶



Automation architecture of the final assembly line



Simatic Multi Panels are the central operating stations at the line

► level. For this, a push-skid system with individual, unconnected working platforms for the final assembly is used.

PSA Peugeot Citroën insisted that the body could be adjusted in height at any position around the course during operation to ensure an ergonomically optimum position for the assembly. There is therefore a lifting station on every skid with which the body can be raised a maximum of 80 centimeters.

The platforms are equipped with Moby I and Moby U. The optimum working height for every assembly station is stored on the Moby I data carrier, while the Moby U data carrier contains all of the assembly options for the body. The process data, as much as 32 kilobytes in total, can be read out at a distance of up to three meters. Among other things, data such as equipment options and screw fastening torques are stored. Regulatory compliance and documentation have special significance, as they now do throughout the entire automotive industry.

Mobys safely positioned

In order to ensure reliable operation and maximum flexibility in all situations, Siemens specialists have taken new and

unusual steps with respect to the positioning and design of the Moby U mobile data carriers (MDS): A Moby U MDS has been placed into the corner of the wooden surface of every skid and covered with a flush plexiglass disc. "This enables the various models to be produced without realigning the read-write antenna, which would have been necessary if we had mounted the MDS on the body carrier. Moreover, we also have a reliable transmission of the data, despite the high EMC stress and attenuation which are an inevitable part of practical production," Samuel Lassaie, head of production planning at PSA Peugeot Citroën in Poissy, explains.

The solution, which was developed through intensive cooperation between the French Siemens support staff and sensor specialists from Nuremberg, has proven to be an excellent one at PSA Peugeot Citroën.

The French experts also demonstrated their skill for sophisticated solutions at the mobile fastening stations. The mobile fastening units are movably mounted on rails and can be pushed manually along the working platform. A small reflector mounted at the designated position of the control unit on the skid triggers a small

piston by way of a light sensor, thereby ensuring that the assembly station moves in synchronization with the skid for the duration of the working cycle.

Every control unit is equipped with a Moby U read-write device (SLG) which reads out the Moby U memory for the correct fastening torques.

Pleased with the ramp-up

The factory managers in Poissy are very pleased with the ramp-up of their converted production line 2. "We worked to avoid disrupting production during changeover. The bottom line was that it was reduced to the minimum," Mr. Lassaie praises.

Following this positive experience, it is no wonder that conversion of line 1 at Poissy using the same system is already planned. ■

More information:

www.siemens.com/automotive

E-mail: edouard.schweda@siemens.com