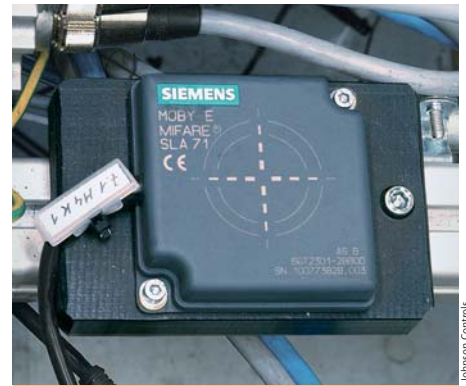
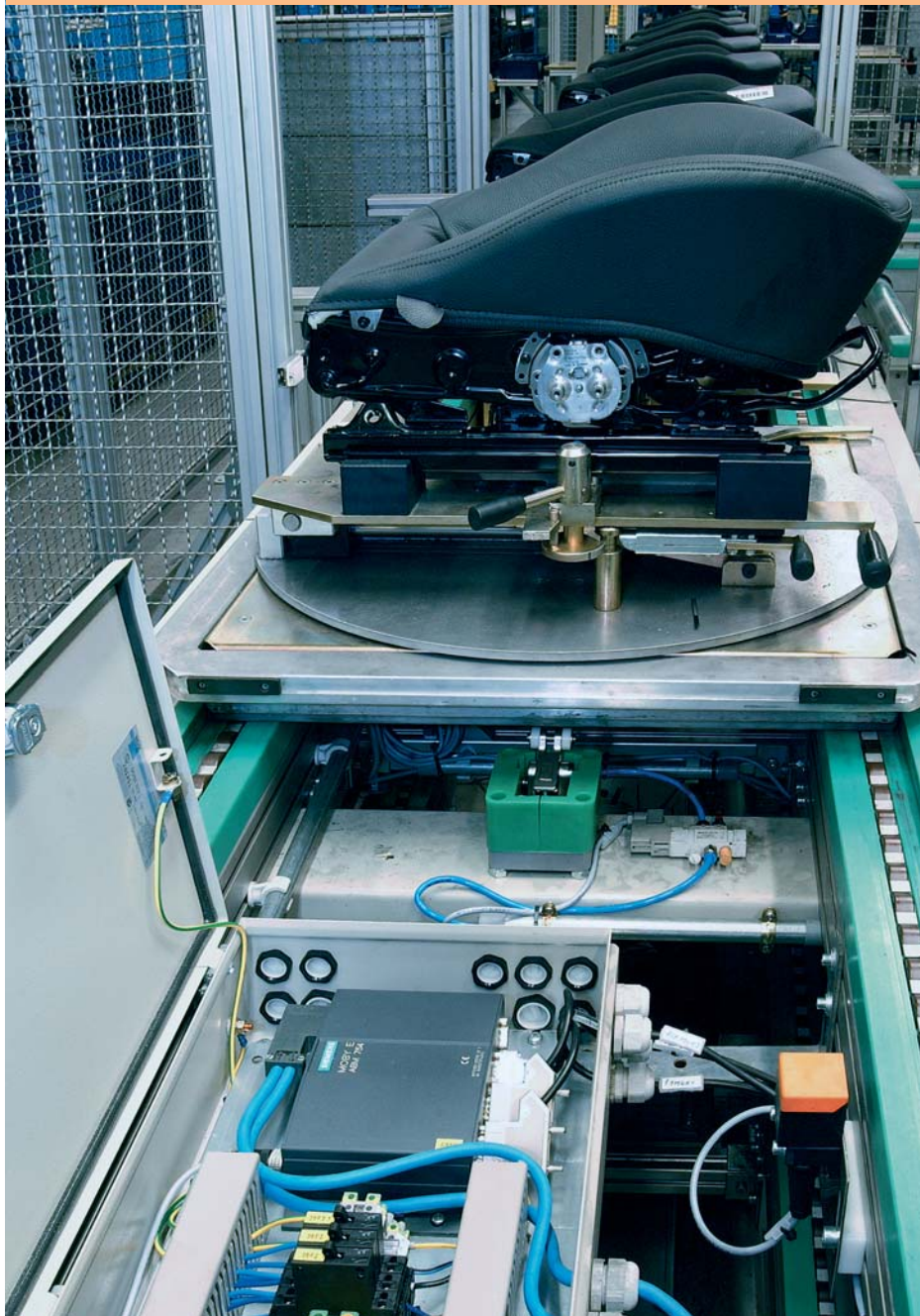


Johnson Controls in Geel (Belgium)

Two New Lines Just-in-time

What does an automotive supplier do when faced with the task of supplying twice as many car seats as before within a few months? He makes room, modernizes his production and installs a totally new production line. Johnson Controls in Geel in Belgium took the opportunity to introduce Totally Integrated Automation at the same time and bring its control up to the latest state-of-the-art.

Just-in-time to VW and Opel: Production of vehicle seats at Johnson Control, Geel



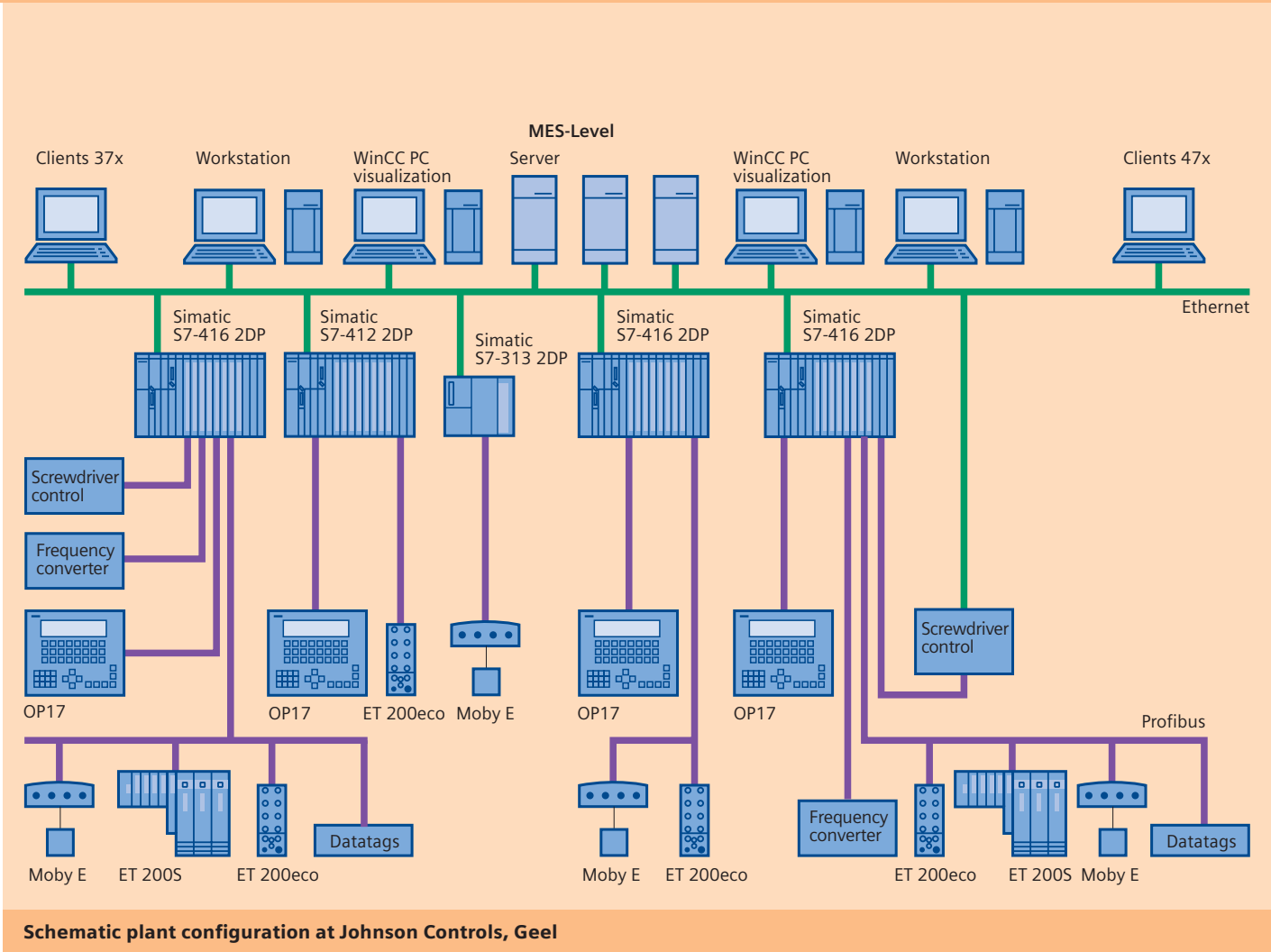
The production data acquisition by RFID systems such as Moby E is now also a must for suppliers

Johnson Controls is above all a specialist for vehicle seats. One of the more than 500 just-in-time production sites of the company is Johnson Controls Automotive in Geel in Belgium. Here the company produces about 1,100 seats for the Opel Astra every day which are delivered to Antwerp, about 30 miles away, within three and a half hours of receiving the order. Added to this are another 900 seats for the VW Golf and Polo models which arrive at the VW factory in Brussels, 55 miles away, within a time window of six and a half hours.

In order to cope with the order volumes of Opel and VW, Johnson Controls was faced with the task of doubling its production capacity and increasing its work staff by 50 percent. They therefore decided to modernize a 12 year old production line and to install a totally new line parallel to it. Of course the ongoing production in Geel could not be allowed to suffer as a result.

Johnson Controls put their trust in two familiar partners: Ariadne Industrial Automation took over the project management whilst Siemens Automation and Drives was responsible for the automation system. A tight schedule had to be kept: the project start for the totally new production line for the VW seats was the beginning of 2003. It went into production in August 2003. Conversion of the Opel production line began in May 2003. Production here started on time on January 2, 2004.

Ivan Vos, Project Manager at Ariadne, describes the procedure. "The critical phase was between Christmas and New Year. Production for the old Astra ended on December 23 and the line was completely dismantled. The new Opel line had to be



turning out 800 units a day by January 2 already – and that’s exactly what it did!”

Complete data in focus

The changeover from several independent applications to an integrated complete system was the major aim of both projects. Koen Vanharen of Johnson Controls explains: “Our customers get more demanding by the day and complete tracking is becoming more and more important. The problem was to pick up the different data such as those on the barcodes.” Ivan Vos adds: “Everything starts at the database level. Here the orders of both customers are registered and the information for every single seat such as the upholstery type is saved. That is the first decisive step.”

A special feature was that the automation system also had to include the six suppliers working under the roof of Johnson Controls. Siemens suggested installing Simatic ET200 Eco modules at the suppliers thus providing the basis for Totally Integrated Automation which covers all the processes in Geel.

A Simatic S7-416 2DP was installed for controlling both the Opel and the VW line, supplemented by an S7-412 2DP for graphic visualization of the Andon signal system of the VW production line and an S7-414 2DP in the test area of the Opel line. The latter controls the automatic test process and stores the recorded data in a local SQL database the contents of which are transferred to the central process database of Johnson Controls at regular intervals.

One example of the importance of an extensive data acquisition is the complete entry of the data which result from packing of the airbags which are recorded as safety-relevant information. These can be consulted for example when an airbag fails to work properly because these data are kept for up to ten years after the model is discontinued.

Flexible solution with a future

Siemens implemented the communication with the different HMI Systems in the proven way with Ethernet. Readers for scanning the Moby tags on the seat are

positioned at different points along the production line. They are linked by Profibus as are the frequency converters and the servo controllers. Electronic tags are used in many places.

There is a growing trend in the automotive branch to rely on the tags and process their information locally instead of communicating the whole data flow through the increasingly overloaded network.

Koen Verharen stresses the flexibility of the whole system: “The system can be transferred easily to new customers. Every automotive customer demands a just-in-time or just-in-sequence delivery but since every seat has the same components, extensions are not a real problem.” For Siemens the double project at Johnson Controls in Geel was further proof that a highly flexible control system which combined existing technologies with Totally Integrated Automation can be implemented with Simatic. ■

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