Bossard – a step closer to the "smart factory"

The Zug company Bossard, which specialises in logistics for fastenings (screws, nuts etc.), has created the basis for a fully automated purchasing system with its ARIMS technology, which it developed itself. In 2013, Ergon was tasked with revising this in-house solution – the new software had to be expandable and web-based while still being capable of operation offline.

The Bossard company supplies its customers worldwide with logistics concepts that are designed to optimise their production chains and assembly lines. One of its tried-and-trusted logistics systems is SmartBin, which combines conventional storage containers with weight sensors. The system is based on ARIMS technology, developed by Bossard, which automatically processes data recorded by their scales; as soon as a certain weight is exceeded, an order is generated and new parts are dispatched to the client.

Fully automated logistics solution
In 2013, Bossard decided to remodel ARIMS. "The system was still working fine, but maintaining the Delphi software was expensive and time-consuming, so we wanted to change to a modern platform before problems started cropping up," explains Urs Güttinger, Bossard's Head of Customer Logistics. To ensure no details were lost from the highly complex earlier system, the Ergon team analysed the Delphi code relating to automatic order processing line by line, reconstructing exceptional cases and creating appropriate specifications. Although this "system archaeology" took more time than anticipated, the project was nonetheless delivered on time and in budget.

Web-based and yet capable of offline operation
One of Bossard's core requirements was that the new software had to be web-based and yet capable of offline operation, as their logistics specialists worked with clients in places with no internet connection. Ergon's software engineers managed to solve this apparent paradox with a couple of tricks: if a client is due to visit, the data required is copied to the computer locally in advance. The member of staff at the client's starts ARIMS locally, the browser opens and it seems like the user is online, although the browser is actually linking to the locally launched system, whose behaviour is extremely similar to an online instance. This approach makes it possible to re-use 100 percent of the existing application logic in an offline scenario. Once users get back online, they can upload the locally altered data into the main system.

In spring 2015, the new application was launched in parallel with the existing one at Bossard to ensure that the remodelled system would generate the same results as the old one. After a period of tandem operation, the old system was decommissioned.

Software-controlled optimisation
The new solution developed by Ergon has since proved its mettle in day-to-day operation and is already undergoing another round of development. For Bossard, ARIMS is an important enabler for the introduction of the "smart factory", a vision of a largely self-organising logistics system whereby Bossard customers can individually and efficiently adapt the configuration of their logistics according to their current and projected consumption figures, even at short notice. The actual fixings ordered will not merely be handed over to clients but will be delivered to precisely the location where their staff require them.

In future, Bossard will optimise this fine-tuned distribution to the "point of use" via software, irrespective of whether the goods are to be delivered by people or robots. This pioneering concept is already in use with one well-known customer: Bossard supplies the largest manufacturer of electric cars in the USA with fixings, which it delivers to just the right point on its assembly lines.