

# Rover group

Business



Company: Softlab Customer: Rover Group Submitted by: Portfolio

Communications When BMW acquired Rover Group, Britain's largest motor manufacturer and third largest exporter, one of the first and top priorities was to design a replacement for the older Rover 600 and 800 series. The result was the Rover 75, launched in early summer 1999 in the UK and the first all-new Rover model to be produced by the company in the last twenty years. The car combines state-of-the-art automotive technology with the classic British design typical of Rover and was judged What Car? Car of the Year 1999. Production of the Rover 75 presented its own challenges, requiring an investment of £290 million in equipment and facilities alone at the Rover plant in Oxford. Alongside this, Rover needed a new set of key manufacturing IT systems to implement new manufacturing processes and programs, to ensure the highest level of product quality and a faster order-to-delivery cycle to dealers. Currently three weeks, Rover aims to reduce its supply time for the Rover 75 to the dealer to ten days.

For all these needs, Rover turned to its long-standing integration and manufacturing systems provider, Softlab Ltd. Softlab has been closely involved in the Rover 75 project from the earliest stages of the development at Rover Oxford. In a contract involving multi-million pound investment over 30 months, Softlab dedicated five teams from its Manufacturing Business Group to ensure the project came in on time for the launch of the Rover 75. This was and is a mission-critical system for Rover: if the production stops, then millions of pounds of business are at stake.

## **The New Production Strategy**

The original Rover vehicle building strategy had been to produce large batches of cars at one time with little or no variation between those in each batch. BMW takes a different approach to production, constructing each car individually with different features such as air bags, colour and left or right-hand drive.

The Softlab batching control systems ensure that groups of cars with identical or similar features are built at the same time. This minimises the number of changes which have to be made to the automated production program each day. The system also checks that the different components required for each car are ordered and arrive at the lineside as required, just in time.

## **COBS – sorting out the bodies!**

One of the critical systems put in place by Softlab was COBS – Control of Body Stores System – which provided support for the Rover 75 in the new manufacturing facilities at Rover Oxford. COBS is a distributed Windows NT solution based on an Intel platform and controls the route of each vehicle under construction through the plant, acquires data on its progress through production and monitors general system health.

The system was the brain-child of Softlab's experienced team who took COBS from its preliminary stages, providing a detailed specification and proceeding on to design, development, testing and implementation. Phil Dawson, Softlab's portfolio manager for industry, sees COBS as a significant success for the company: " The Rover 75 COBS system has advanced the

Windows NT expertise of the Automation Systems team still further and several new techniques and technologies developed here have become standard on other Softlab projects. This is another example of the way Softlab can use its technical skills to meet its customers' business needs." COBS consists of four Intel-based machines and utilises the Windows NT-based Cimplicity SCADA package (Supervisory Control and Data Acquisition) to provide the key monitoring and facility control functions. Cimplicity allows operators to read the data responsible for control of the machines on the line, look at diagrams of the plant and to 'speak' with the equipment to route vehicles in the most efficient batches through the Rover production process. Softlab also wrote bespoke object-orientated C++ code for functions not provided in the standard SCADA package.

Rob Salter, technical team leader for Softlab on the project, explains the reasons behind this: "The bespoke code handles very complex control rules, for instance to instruct the production line that all blue right-hand drive 1.8 litre Rover 75 cars with airbags should be made in one batch!" These rules are crucial for Rover 75 manufacturing because of the time they save. Without them, the resulting loss in efficiency would mean that the cars could not be made in the required volume, which would clearly impact on the Rover business." COBS covers several of the new production units at Rover Oxford, which are the paint shop, a new body in white assembly unit (unpainted cars) and additional trim and final assembly lines, each of which has an NT system as the base for its control application. For the paint shop, the main principle for control was simple.

If all Rover 75 cars to be painted red are painted in one batch, then the finished quality is immediately improved as it prevents hoses being constantly flushed to change the paint colour. Therefore, the efficiency of the painting line has been increased as the number of system re-sequences required for each painting process has gone down. The Softlab team has also installed OpenView monitoring software to monitor overall system status on COBS. Softlab's Rob Salter explains: " In essence, OpenView helps us to check for problems and to ensure that the right processes are actually in the system, so production can continue unhindered. In the event of problems, it makes automatic contact with the helpdesk. COBS is a mission-critical system which Rover can't afford to go down, so that's why we have these support tools and also two NT boxes for each of the manufacturing units.

One of each pair is a ' hot stand-by' which automatically assumes control in the event of problems with the other, so we have a very reliable, accessible system." The COBS system went live at Rover Oxford to support the Rover 75 production in July 1998 and Softlab has been making enhancements to it since that date, for new Rover 75 models. Today, the Softlab team continues to provide Rover with on-going maintenance and standby support for the Rover 75 systems, twenty four hours a day, seven days a week.