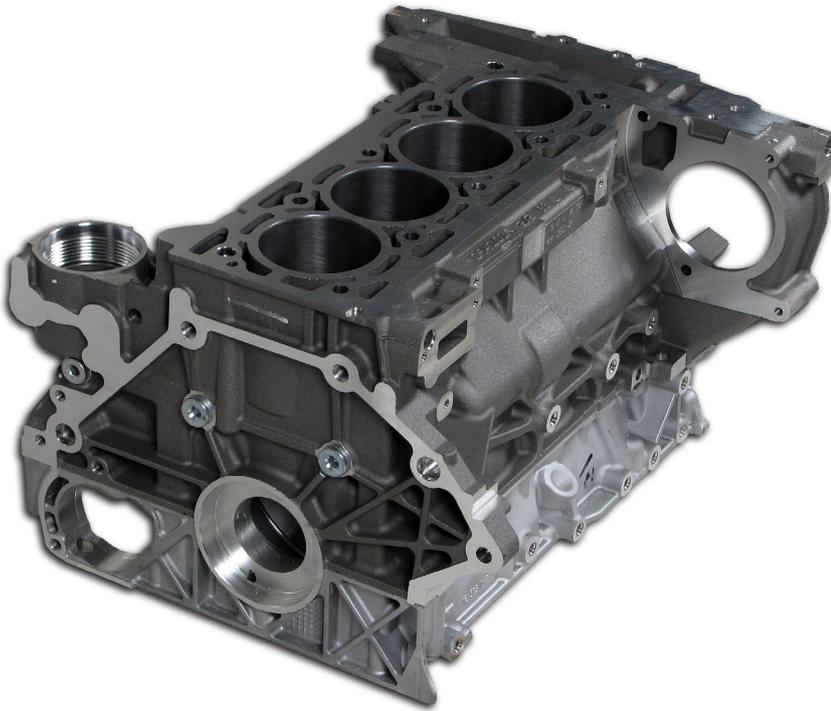


Figure 1: Nematik produces high-quality aluminum components for the automotive industry



Central collection and analysis of production data increase productivity and quality

Optimized Die-Cast Aluminum Products

In order to continuously monitor and improve the production process, the production data of aluminum components is centrally collected and analyzed. A key component of this solution is the echocollect data collection tool with its wide range of interfaces.

Founded in 1979, Nematik is today the world leading manufacturer of high-quality aluminum components for the automotive industry. The product range comprises cylinder heads, engine blocks and transmission parts made of die-cast aluminum alloys. The die-casting methods employed vary depending on the product and the manufacturing facility. Nematik produces more than 50 million die-cast aluminum products per year, e.g. for Audi, BMW, Daimler, Ford, Mitsubishi, Porsche or Volkswagen. Over 20,000 people are employed worldwide at 35 manufacturing facilities located in 14 different countries in Europe, Asia, North and South America. The Nematik corporation is part of the Alfa Group and is headquartered in Mexico.

The objective: Continuous monitoring and improvement

To achieve the technology, cost and quality objectives, the continuous monitoring and improvement of the production process and product quality play a key role at Nematik. The NORIS (Nematik Operation Realtime Information System) proj-

ect was thus launched to monitor, in particular, the quality and productivity of the smelting and die-casting processes. This is achieved by reading the relevant data from the machines and facilities during production, and storing the data directly in a central SQL database system to allow subsequent analysis. The continuous monitoring of the production process and the early detection of faults enable Nematik to assess the potential for increasing productivity and quality. The reduction of manual posting processes and the associated cost savings are another important aim of this project.

As a prerequisite to the project, the production facilities needed to be interfaced to Nematik's database system. This was to be done using a device which – installed inside the control cabinet – collects the data from the controllers, and writes it to the database without requiring changes to the PLC program. A special challenge was the legacy machinery at the different manufacturing facilities, which uses different PLCs and different interfaces.



Figure 2: echocollect offers numerous possibilities for data collection via serial and Ethernet interfaces

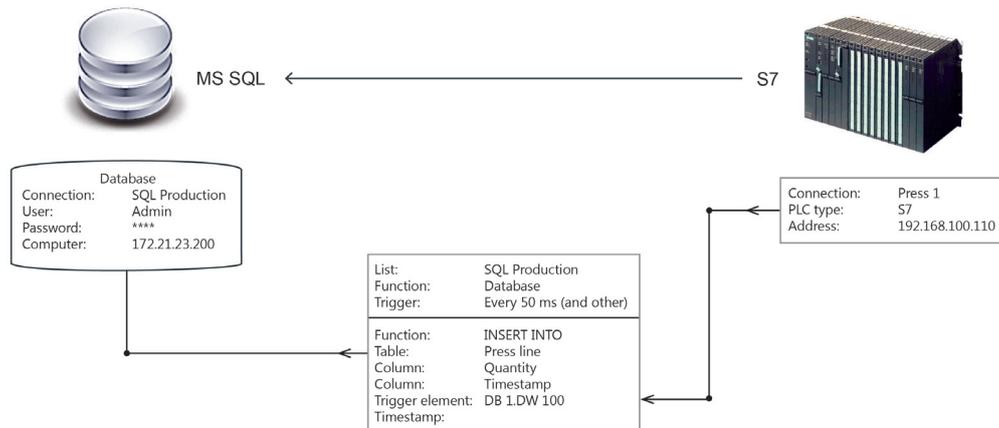


Figure 3: A graphical configurator allows the assignment of PLC data to database entries

echocollect meets the data collection requirements

After evaluating the available technologies for this key component, Nemak opted for the echocollect product from Softing Industrial Automation. In addition to PLCs from Siemens and Allen Bradley, this data collection tool supports serial and Ethernet interfaces to more than 50 other PLCs or systems, such as the SINUMERIK 840D NC system. The data can be logged in MySQL, MS SQL, Oracle, Sybase and DB/2 databases. A graphical configurator allows the assignment of PLC data to database tables and columns. If the network fails, echocollect buffers the read data with a timestamp on an SD card.

The potential of the NORIS project is clear from the fact that the number of 50 million aluminum products manufactured per year can be increased by 1%, or the production costs can be reduced while maintaining the same production volume. Dr. Martin Schickmair, Head of Production Engineering and Lean Management, summarizes the advantages of Softing's echocollect product for the Nemak manufacturing facility in Linz (Austria): "With its numerous interfaces and its functionality, the echocollect data collector is a key component of our NORIS project and directly contributes to the increases we have achieved in productivity and quality."

<http://industrial.softing.com>

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