

Reference report

Contact person



Viktor Wagner

+49 371 2371-117 | +49 371 2371-150

Email: viktor.wagner@sigma-chemnitz.de

Internet: www.sigma-chemnitz.de/en

About SIGMA

As a reputable system house in Saxony SIGMA Chemnitz GmbH operates as system integrator and partner of well-known Providers in the IT sector. Our over 70 employees form a competent team at the location Chemnitz. With expertise, competence and almost 30 years of experience we offer our customers reliable and powerful solutions.

About our AutoID and RFID solutions

AutoID and RFID solutions for production, logistics and supply chain. Our customers appreciate us as competent, innovative partner, to accompany them from the initial problem analysis until the goal with commitment. Many years of project experience of our employees form the foundation for effective AutoID and RFID solutions for production, logistics and supply chain.

About GRAIDWARE®

The AutoID middleware GRAIDWARE® is an intelligent abstraction layer for different hardware components and business applications. Work tools, production steps and AutoID data can be identified, monitored, controlled and configured.

UHF RFID solution for controlling conveyor lines



About the SOEX Group

The SOEX GROUP, with its German headquarters in Bad Oldesloe near Hamburg, is the world's leading company in the marketing and recycling of used textiles. 2,000 employees in ten countries cover the entire value chain of used textile collection, marketing, recycling and utilization. Thanks to its decentralized structure, it offers its customers comprehensive services. At the Bitterfeld-Wolfen site in Saxony-Anhalt, the company operates the world's most modern production facility for textile recycling with SOEX Textil-Sortierbetriebs GmbH, where more than 400 tons of used textiles are processed every day.

The challenge

An existing LF (low frequency) RFID solution was to be replaced in the sorting plant, as the RFID reader hardware used there was outdated and spare parts were no longer available. A safe operation of the existing solution was therefore no longer possible. After the decision for a replacement was made, the decision was made to use the widespread UHF (Ultra High Frequency) RFID technology for the new solution, as this allows for longer read-write ranges and thus a significantly better future for the current project and an option for later extensions and project approaches.

Decision for the system integrator

SIGMA Chemnitz GmbH was chosen as process partner and system integrator because of its comprehensive competence and references in the AutoID / RFID area as well as in project consulting.

The project

The RFID solution is used by the customer to identify and control the transport of trolleys, which are used to transport the used textiles to be processed on appropriate conveyor lines. Each trolley is equipped with two special RFID transponders (tags) with unique ID at the suspension, which makes it identifiable and traceable from each side at defined reading points depending on the direction of travel. When new trolleys are implemented in production, the corresponding RFID transponders are written to for the first time in a maintenance process and the trolley is thus assigned the unique ID.

If the trolleys are then filled in the production process, the filling information is linked to the trolley ID. The trolleys are guided along the conveyor lines by a transport control software, in which the routes of the trolleys are defined and controlled. The ID of the trolley is recorded with RFID readers at corresponding switches or waypoints of the conveyor lines. The intelligent Auto ID Middleware GRAIDWARE® developed by SIGMA Chemnitz GmbH is the heart of the control system and takes over the identification and plausibility check of the signals and delivers the result to the trolley control system.

The outdated RFID reader hardware has been replaced by new devices that are both communicationally up-to-date and offer improved ease of maintenance through plug and play. For example, reader configurations can be stored and, in case of replacement, simply transferred to the new device.

The implementation

The framework conditions of the implementation were checked and defined in a pre-qualification before the project started. Intensive tests of hardware and software components were carried out on site and suitable RFID transponders were selected. In this step, the intelligent Auto ID middleware GRAIDWARE® was already used to eliminate possible interference signals. Thus, misinterpretations of the signals could be excluded and optimal reading results could be achieved. This was especially necessary when many trolleys were handled closely together at the reading and control points, thus ensuring a clear identification. The results obtained were the starting point for the definition in order to ensure a coordinated approach and an optimal result. A clear time schedule was also defined to ensure a coordinated transition from the old to the new solution and to avoid downtime. This schedule was successfully adhered to during the project implementation, so that the real start of the new RFID solution could take place on schedule.

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The Conclusion

Project manager Henry Wessel summarizes the project as follows: „SIGMA Chemnitz GmbH provided us with competent advice from the very beginning and implemented the project within the defined time frame and budget. This means that we can safely go into further projects with SIGMA“. With the UHF RFID solution now introduced, SOEX Textil-Sortierbetriebs GmbH at the Bitterfeld-Wolfen site will be able to map the current logistics processes in the company in a future-proof manner.

Our customer says so...

„We are very satisfied with the work of SIGMA. The introduction of our new solution went smoothly.“

Henry Wessel, Project Manager, SOEX Textil-Sortierbetriebs GmbH