

# Reference report

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## 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.

## European-wide tracking of seed bags

### About the company

KWS SAAT SE & Co. KGaA is one of the world's leading plant breeding companies with more than 160 years of company history. The headquarters are located in Einbeck, Lower Saxony. Main business of the parent companies of the KWS Group are plant breeding as well as production and sale of corn, sugar beet, cereal, rape, sunflower and vegetable seeds.



### Decision for RFID and UHF technology

For some time now, seed producer KWS has intended to design its supply chain as transparent as possible. Fully automated identification at bag level is decisive. Due to their Advantages UHF RFID technology has clearly prevailed over bar, data matrix and QR codes. The data collection itself is done centrally in Einbeck, by middleware GRAIDWARE preparing and transmitting the data encrypted to central database from the individual sites.



## 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.

Each seed sack is equipped with a UHF RFID transponder. This enables the sacks to be clearly identified at the "production site". After filling, the bags are automatically palletised by the filling line. Thereby the GRAIDWARE middleware takes data from the machine and creates a "virtual palette" with the sacks counted. At the end of the filling line, the created container receives a container label. At this moment, the GRAIDWARE marries all product and package information to the individual bags on the pallet. From this point on, the seed bag is no longer anonymous.

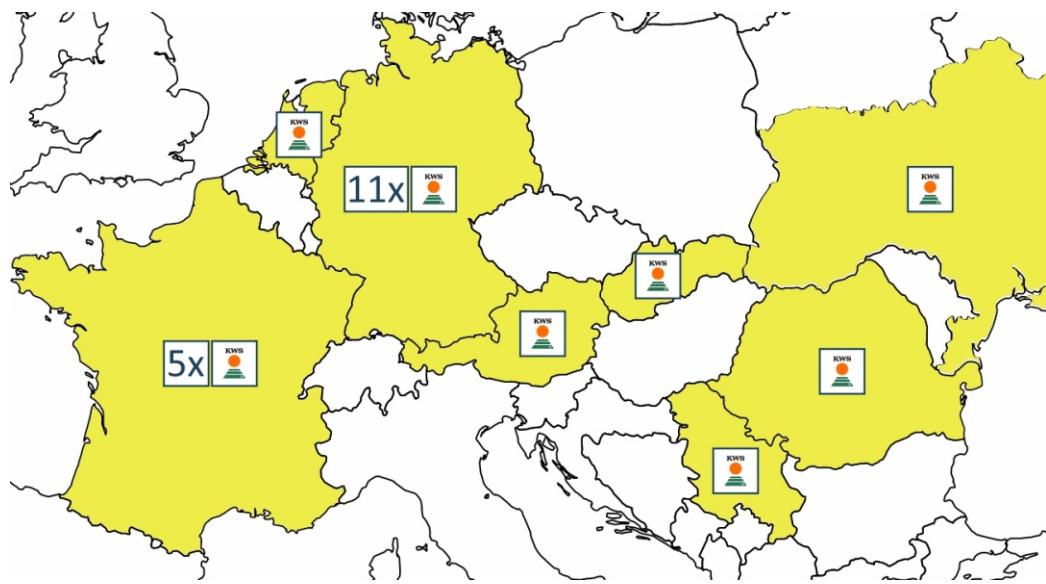
Logistics companies are used to ship the containers to the end customers. In some cases, they also have to "tear open" the containers and reassemble them. To ensure both the new packaging and the composition with the individual uniquely identifiable bags, all bags on a pallet must be identified. When wrapping the newly assembled pallet, this is ensured by the specially developed "logistics solution" with several RFID readers and a display. This is also, where the bags are married to the order data and assigned to delivery note information.

The GRAIDWARE instances at the individual locations transmit all RFID and container data via encrypted connections to the central database at the headquarters in Einbeck.

## 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.

## Sites in Europe



SIGMA's solution is currently successfully in use at a total of 18 locations in France, Germany, the Netherlands, Austria, Serbia, Romania, Ukraine and Slovakia. These include ten production and seven logistics locations and the headquarters in Einbeck.

### Advantages of the solution

- standardized hardware solution (readers, racks, cabling, software applications)
- standardized interface for communication with packaging machines (OPC UA server)
- standardized data transfer to central database while meeting the highest data protection standards (certificates, https etc.)
- standardized interface for SAP communication
- use of BI software (MS Power BI) for reporting and evaluation

During the entire integration process, particular attention was paid to ensuring that the production and logistics locations would not incur any additional expense due to the system.

### Project progress

Initially, different pre-qualifications were carried out in different scenarios in order to be able to perform bulk readings of the dozens of RFID labels on the seed bags on a pallet. This was followed by a pilot project at a logistics company.

In the next and very important step, production sites were equipped with our RFID technology so that every sack and every pallet could already be recorded during the filling process. A logistics solution was also set up to be able to record both full and picked pallets during shipping.

## That's what our client says...

*Thanks to the RFID solution from SIGMA, KWS is now able to uniquely identify each seed sack and follow its path from filling, storage and delivery to the customer. For us, centralised data management forms the basis for comprehensive reporting.*

Tobias Scharffetter, Head of Marketing Corn & Sunflower Europe/Asia, KWS SAAT SE & Co. KGaA