

## SUCCESS STORY

**CLAAS**

## Optimized production logistics at CLAAS

The agricultural machinery manufacturer CLAAS Group has upgraded the intelligent transport control system SYNCROTESS from INFORM to the latest version to meet the growing complexity in the internal material flow for combine harvesters, forage harvesters, etc. in the future.

## CLAAS Group

Around 2,300 employees work in the original CLAAS factory in Harsewinkel, which has an operational area of 400,000 m<sup>2</sup>. The plant produces the LEXION large combine harvester series, which consists of more than 50,000 components as well as the TUCANO, AVERO and DOMINATOR combine harvester ranges, the JAGUAR forage harvester series and the XERION large tractors, which have engine outputs of up to 530 hp. CLAAS employs over 11,400 employees around the world and achieved a turnover of approximately €4.0 billion in 2020.

It is the dream of many children growing up in the countryside to one day harvest the ripe grain from the field in long lanes with a combine harvester and gain first-hand experience of the power of these large agricultural machines. "The enthusiasm for our technology has also, of course, brought many employees to CLAAS. It's fun to see your own products in action in the field," says Andreas Lonnemann, project engineer for production logistics at CLAAS. Responsible for in-house transport logistics, Lonnemann accompanied the upgrade project of the SYNCROTESS transport control system from the Aachen-based optimization specialist INFORM in autumn 2020.

CLAAS produces combine harvesters, self-propelled forage harvesters, and system tractors at its main factory in Harsewinkel. To date, the medium-sized company has sold more than 400,000 combine harvesters. For the assembly of the agricultural machines, an average of 8,200 internal transports takes place daily, which bring the necessary material, prefabricated components, or auxiliary materials to the right place in the assembly hall. This internal material flow, which is carried out by forklifts, tractors, or tugger trains, has been controlled and optimized by the add-on system since 2006. "Placing transport orders with slips of paper, as was once the case, is no longer conceivable with this volume of orders. We are already two steps ahead and for efficient production logistics we need, above all, optimization by intelligent algorithms such as those provided by SYNCROTESS," says Lonnemann. The transport control system supports the central control and optimization of all logistical processes in factory traffic with the help of mathematical optimization models. From a bird's eye view, the system looks at all transport orders placed by the ERP system or manually and, considering numerous framework conditions and parameters, calculates path and time-optimized routes to avoid empty runs, deliver to the assembly on time, and optimize the use of available resources.



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## Higher demand in less time

In autumn 2020, CLAAS upgraded the system to the latest version as part of the site-specific modernization project "SynPro 2020". The expanded functions favor the handling of increasing complexity: the merging of two production lines into one central, optimized, and digitalized line will also increase the volume of internal transports, explains Lonnemann. "We now need more precise delivery, often with smaller material amounts." In addition, agricultural machinery is becoming larger, more complex, and more customized, which further increases the range of parts. However, certain transports must not take longer than 20 minutes here, especially for assemblies or commissioned goods that are needed per machine in a correct sequence within the cycle time of the assembly line.

» **Efficient in-plant transport primarily requires optimization by an intelligent algorithm, which is what SYNCROTESS provides.**

## Tugger trains improve material flow

CLAAS also wants to achieve more flexibility with the increasing switch from forklifts to tugger trains. "When the material is stored on rollers, we operate faster and at the same time, reduce the risk of accidents in the plant," explains Lonnemann. However, the planning of the tugger trains has some special features, as the loading doors can be flexibly set on the left or right side of the vehicle. "In terms of efficiency, incorrect loading is fatal, as turning around tugger trains is time-consuming or even impossible if there are one-way systems on the factory premises," says Matthias Wurst, head of business development industrial logistics at INFORM. "For these challenges, we have developed a special logic in SYNCROTESS that optimizes the transports of the tugger trains by taking such factors into account."

This also enables CLAAS to achieve sustainability goals within production logistics, such as reducing traffic and avoiding trips by diesel-powered forklifts in the production areas. For better air quality at the workplace and less noise pollution, most of the vehicle fleet has already been converted to an electric drive. The transport control system only guides the remaining diesel-powered transports outside the plants.

## ...and what if there is a delay?

Illness and delivery shortages are part of everyday business and cannot be prevented by any artificial intelligence. But with SYNCROTESS, CLAAS can now react much better to delays in internal transport, says Lonnemann. "Dispatching can manually assign individual transports a higher priority in the event of shortages. The system's optimization algorithms then automatically schedule the order on the nearest resource so that delivery is made as quickly as possible." Using the software in the cloud also offers many advantages in the case of substitutions and holidays, as well as in the pandemic-related home office situation. Users can log in from anywhere via the internet and immediately get a real-time overview of the current order situation in a modern interface. This makes transfers effortless and reduces the potential for errors.



**Andreas Lonnemann,**  
project engineer for production logistics at  
CLAAS

"The cooperation with INFORM has always been very good," Lonnemann sums up. "During the go-live, our contact person was always at our side and also actively supported us on site during the critical phase." This meant that not only was the timetable maintained, but technical irregularities were also quickly solved. After a few days of initial training on the new software, as well as the new hardware, for the 45 in-house transport department employees, the processes were running smoothly.



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## Results

- Smooth internal material flow
- Reduction of traffic through optimized use of tigger trains
- More flexibility and reduction of empty runs
- Strengthened sustainability in production logistics

**If you would like to know more, we look forward to hearing from you:**

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