

## Revolution in Intralogistics

### Conquer Chaos with Software from SYNAOS

Hanover. Just like an orchestra needs a conductor, the factory and logistics center of the future needs a central controller to set the pace. Today's IT systems don't offer a solution for that. Start-up SYNAOS is therefore developing a comprehensive ecosystem – making use of the latest cloud-computing methods and artificial intelligence.

The Hanover start-up, founded in September 2018, develops software based on artificial intelligence and the latest cloud technology to facilitate orchestration of the factories and logistics centers of the future. The starting point is the optimization of intralogistics processes, where SYNAOS software solutions control autonomous tigger trains and forklifts responsible for distributing goods within operational facilities. The result is that individual logistics units work together as a perfectly tuned orchestra. The name SYNAOS stands for "synchronizing chaos" and, by applying state-of-the-art technologies, the company's mission is nothing less than the revolution of intralogistics. The rapidly growing team is now opening its first office in Hanover. Among the approx. 150 guests attending the opening ceremony was Minister President of Lower Saxony, Stephan Weil.



Stephan Weil, Minister President of Lower Saxony.

# SYNAOS

## Holistic, adaptive planning for maximum efficiency

The SYNAOS software solutions solve two fundamental problems of intralogistics. Firstly, when it comes to controlling transport vehicles in factories and storage facilities, companies almost always have to purchase software solutions developed specifically for that hardware. Unlike the norm, familiar in everyday life from smartphones or laptops, there is no flexibility. The outcome is different components working alongside one another rather than with one another. SYNAOS solutions, on the other hand, are compatible with a diverse range of vehicles, regardless of manufacturer.

Secondly, precision planning is virtually impossible in the field of intralogistics. Especially with regards to unforeseen events, such as mechanical breakdowns or operating errors, production companies are slow and inefficient to react. In order to remain operational, companies plan in enormous buffers and develop expensive emergency plans. Skilled employees often have to fill the resulting gaps at short notice, which leads to overload and pressurized situations.

However, new technologies such as artificial intelligence and cloud computing now offer opportunities not only for standardized communication, but also for holistic, adaptive planning of the overall system. SYNAOS solutions are based on precisely on this. Every single driverless transport vehicle and forklift in a factory or logistics center is connected with one central authority – and the vehicles thus networked with one another. The adaptive algorithms of the SYNAOS software solutions facilitate continuous adaptation of overall system planning. The software does not merely ensure that individual machines or individual areas work perfectly, but rather maintains an overview of the entire situation, continually replanning processes to achieve an optimized overall status at all times.

Data flow is structured, enabling its efficient use. There are fewer error sources, which raises quality and reduces costs. Financial savings of up to 30 percent are possible. And should the unforeseen happen, the system immediately adjusts plans and reorganizes accordingly.

## Cooperation with VW

The first cooperation deal secured by this young company demonstrates that the new software is already being met with substantial interest. Volkswagen AG has contracted the team to supply software solutions for intralogistics at its production facilities worldwide.

Uwe Schwartz, Head of Planning at Volkswagen: “We have found a strong partner in SYNAOS. This young, highly motivated team possesses enormous innovative strength and combines speed with a broad-based knowledge and understanding of today’s production processes.”

# SYNAOS

## One of the best-financed start-ups in Lower Saxony

At the end of 2018, SYNAOS secured its first financing agreement worth six million euros with Volksbank eG Braunschweig-Wolfsburg. "SYNAOS is one of the best-financed start-ups in Lower Saxony," says Dr. Wolfgang Hackenberg, CEO of SYNAOS GmbH. "We are delighted that, with Volkswagen AG and Volksbank BraWo, we have two such strong partners at our side in this critical start-up phase," explains Hackenberg. "Both are open and receptive to innovative approaches and want to commit for the long term. For us, this is the best possible basis for consistently maintaining absolute focus on user benefits and for revolutionizing the production and logistics of the future," he continues. Jürgen Brinkmann, Chairman of the Management Board of Volksbank Braunschweig-Wolfsburg, adds: "Volksbank specifically promotes young companies in this region seeking to open up new markets with high-tech. The professionalism with which SYNAOS is addressing the challenges of digitalization in production was exceptional from day one, which made the investment decision extremely easy for us."

## High-caliber adviser in Prof. Dr. Wolfgang Wahlster

The start-up's advisory board is also of an exceptionally high caliber, with one of its members being Prof. Dr. Wolfgang Wahlster, an IT professor and pioneer in the field of artificial intelligence. In the last 30 years, he has developed the German Research Center for Artificial Intelligence (DFKI), where he remains Chief Executive Advisor. "Germany is at the global forefront of AI technology for Industry 4.0 and has a lead of at least two years in this field over the USA and China. It is nevertheless important that the outstanding research results make it to our factory floors. This is exactly where SYNAOS comes in - thus making a crucial contribution to ensuring Germany is fit for the future as a production location," says Wahlster.

## Minister President Weil: "SYNAOS is creating highly skilled jobs"

The ambitious company from the state capital also wants to play an important role for industry in Lower Saxony. "SYNAOS is creating highly skilled jobs, and is showing that first-class start-ups exist in Hanover, too," explains Minister President of Lower Saxony, Stephan Weil. "I find process-optimization software for driverless transport vehicles a truly fascinating topic."

# SYNAOS



SYNAOS founding team with Minister President Weil. Left to right: Dr. Wolfgang Hackenberg, Stephan Weil, Tobias Gagern, Dr. Lennart Bochmann.

The three founders, CEO Dr. Wolfgang Hackenberg, CPO Dr. Lennart Bochmann and CTO Tobias Gagern, graduated from top European and international universities and have completed PhDs in the fields of intralogistics, flexible production and dynamic production control. The young workforce is currently undergoing a gradual expansion process with further top-quality experts from the field of software development. The SYNAOS team is particularly notable for its many years of management experience in IT at major corporations, paired with the development within agile teams of innovative IT applications for production and logistics (Industry 4.0).

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