



SCHILDKNECHT
SMART DATA COMMUNICATION



OPTIMIZED AXLE ASSEMBLY BY AUTOMATED GUIDED VEHICLES AND PROFIBUS RADIO LINKS

AGVs and the Data Transmission System DATAEAGLE 3000

DATA TRANSMISSION ON AUTOMATED GUIDED VEHICLES

John Deere automates axle assembly with Driverless Transportation Systems. From the vehicles, the data transmission system **DATAEAGLE®** reliably exchanges information with to the central control system.



①

The **DATAEAGLE Slave** in the is inside the external cabinet at the the vehicle (AGV) with he antennas being mounted on top of it.

②

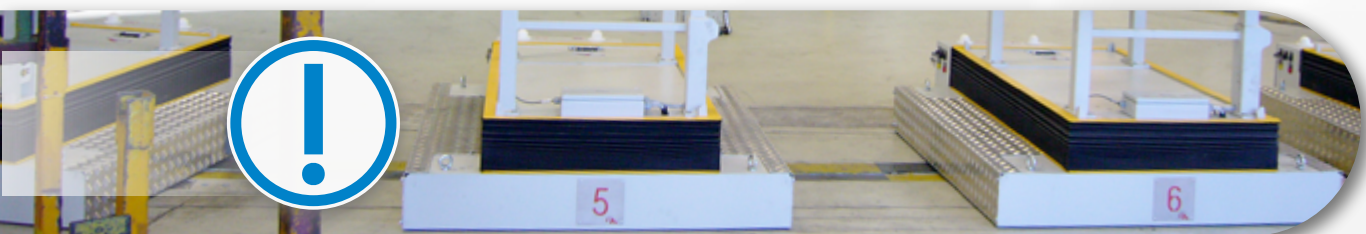
One of three installed control cabinets in which the **DATAEAGLE Master** is located. A master communicates simultaneously with six slaves.





APPLICATION

Especially in engineering companies, requirements for shorter throughput times and low volumes of stock have made internal material flow indispensable. In this process, automated guided vehicles and electric monorail conveyors play an important part: here, workpieces within an assembly line are transported from one assembly station to the next one by vehicles of most different types of construction. In the corresponding control unit, wireless technologies such as WLAN or Bluetooth have replaced formerly applied trailing cables as well as fieldbus technology the classic 4–20 mA standard. So in 2006, the agricultural machine manufacturer John Deere in Mannheim accordingly processed changeover of its gear manufacturing and in 2007 tire fitting, both undertakings by applying DATAEAGLE data radio systems of [Schildknecht AG](#). This modernization process was continued by wireless control of axle assembly as described in the following. All processes were implemented by [Steuerungstechnik Ungethüm GmbH](#).



CHALLENGE

The AGV transports the axle components to one of the 24 installation sites. The 18 AGVs are controlled wirelessly. High security and availability despite spatial boundaries are the most important criteria for operation here, making requirements on control and drive technology of the automated guided vehicle. This includes also radio links applied for wireless operation of the plant to which [Schildknecht AG](#) in Murr has been successfully devoted for 35 years. A particular feature of this company is its business model in which development of innovative equipment technology and intensive application consulting of the operator oriented on the respective project feature same valences.



SOLUTION

Nowadays, many automation projects with moving components are implemented using fieldbus technologies such as e.g. PROFIBUS. In the present case of axle assembly by automated guided vehicles, respectively 6 assembly dollies (as slaves) are linked to a S7 (as master). For communication, trailing cables usual in the past have been replaced in certain network areas by wireless **PROFIBUS transmission** paths built up between two radio modules. The versatile DATAEAGLE radio modules of Schildknecht AG have been particularly designed for such applications and (for PROFIBUS 3000 series) made extremely interference-free by means of a **patented filter technology**. These DATAEAGLE modules "speak" PROFIBUS and PROFIsafe and take up communication via the respectively wireless distances of networks. As a radio technology, Schildknecht preferably counts on Bluetooth (instead of WLAN), not least because of their real-time capability and particularly high availability thanks to frequency hopping. **DATAEAGLE Roaming**, a further new development, even enables changing automatically between different radio zones and thereby opens further technical and economic opportunities.



RESULT

Schildknecht AG have intensively contributed to applying automated guided vehicles in mechanical engineering and other areas! This will continue and in view of new innovative products and intensive application support will even intensify in the future.

In this regard, an additional comment of the project-leading system house:

„We have already implemented a variety of DATAEAGLE solutions for John Deere and other operators; in the course of this, operational safety of the equipment technology and the very easily recognizable user benefit are convincing again and again“. Rainer Ungethüm, Steuerungstechnik Ungethüm GmbH.

[SEND INQUIRY NOW](#)

