



**Bluetooth™**



**SCHILDKNECHT**  
SMART DATA COMMUNICATION



# DATA RADIO TRANSMISSION AS A KEY PILLAR IN INTRALOGISTICS

## WIRELESS DATA TRANSMISSION IN ELECTRIC MONORAILS

John Deere automates a lot of production processes, one is for example the tire mounting using an electric monorail conveyor.



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In applications like electric monorail conveyors, automated guided vehicles (AGV) or storage system **the Slaves** are located decentrally in cabinets.

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**The Master** is located in a central control cabinet. One Master can be connected with up to 8 Slaves. The range within Bluetooth is up to 300m.





## APPLICATION

In industry and trade, in-house material flow has gained such a high importance that in 2004 the VDMA (Verband Deutscher Maschinen- und Anlagenbau = Mechanical Engineering Industry Association) introduced the term "Intralogistics" as a clear differentiation to logistics in the exterior such as e.g. rail and road. Intralogistics is characterized by a particularly high degree of automation of processes with usually wireless communication of transport equipment ("intelligent warehouse and storage") associated with high demands on safety and availability in view of frequently confined and indistinct space conditions. For this reason, data radio transmission has become a key pillar of intralogistics; its ability to replace wires has decisively supported growth in intralogistics. Relevant applications are amongst others known under the terms automated guided vehicle or electric monorail conveyor.



## CHALLENGES

The provision of component parts or comprehensive assembly groups (for production sequences) or objects of any kind (for shipping or warehouse processes) must be guaranteed reliably even in case of indistinct, narrow and also varying space conditions. In this process, safety and availability are the most important criteria, making high demands on control and drive technology of all intralogistics components. This includes also radio data transmission applied for wireless operation which **Schildknecht AG** in Murr has addressed for 35 years with high intensity. The core competence is the highest reliability of the radio link to avoid downtimes. That is achieved with the **patented-registered data pre-processing technology**. A very particular characteristic of this company is its business model in which the development of innovative devices and project-specific application consultancy feature the same value.



## SOLUTION

Nowadays, fieldbus systems such as PROFIBUS, PROFINET or CAN are the basis of many automation projects. The spatially distributed, mobile system components are linked and connected with a central plc. In plants of intralogistics this connection is predominantly established by building up a wireless radio path installed between respectively two radio modules. Radio modules of the **DATAEAGLE 3000, 4000 and 6000** series of **Schildknecht AG** have been specifically developed for such applications: These modules speak **PROFIBUS, PROFINET or CAN** and assume communication in wireless lines of the respective networks. With regard to radio technology, Schildknecht relies on Bluetooth, last but not least because of its real-time capability and particularly high availability thanks to the frequency hopping procedure. The new development **DATAEAGLE Roaming** now even enables changing automatically between different radio zones and thereby enables further technical and economic opportunities in intralogistics.



## RESULT

Data radio systems of **DATAEAGLE®** and the company **Schildknecht AG** have contributed intensively to the growth of intralogistics! This will continue and in view of new, innovative products even enhance. Thereby, radio technology remains a solid pillar in intralogistics.

*„Above all the patent for stabilizing a transmission path applied for many years enables a safe and reliable transmission of information even in the event of several parallel transmission paths.“*  
Didier Kärst, Technical Sales Manager of Schildknecht AG.

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