



**SCHILDKNECHT**  
SMART DATA COMMUNICATION



**DATAEAGLE Radio Module as an efficient Problem Solver in modern Wastewater Treatment Plants**

## APPLICATION EXAMPLE SEWAGE TREATMENT PLANT

The most extensive systems with different basins often require cabled data transmission in order to save time and money.



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The data radio system DATAEAGLE can be optimally used for this purpose. The **Master** is usually installed centrally directly on the control unit.

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The DATAEAGLE **Slaves** are located decentrally on the basin or directly on the agitator, As installed here in a sewage treatment plant and receive the fieldbus protocols via Bluetooth or 869MHz.





## APPLICATION

The growing public focus on the subject “water resource “ and the also increasing consumer requirements for ideal drinking water quality lead to intensive efforts for modernizing existing wastewater treatment plants or for equipping new wastewater treatment plants with state-of-the-art technology right from the start. In the course of this, installing additional sensors for identifying process variables such as sludge level in the clarifier or SAC (spectral absorption coefficient: provides statements on the water pollution with organic substances) up to now not detected or just at a few points of the treatment plant is as important as plant-internal communication technology for safe and low-cost transmission of measuring data. Radio technology combined with **PROFIBUS DP** (Wireless DP) as developed by **Schildknecht AG** with the radio modules of the **DATAEAGLE device series** provides an ideal solution for this. Wireless **PROFIBUS** communication using the **DATAEAGLE 3000** data radio is suitable for any wastewater treatment automation, whether in modernizations or new projects.



## CHALLENGES

For providing smooth operation of a wastewater treatment plant, as many sensor measuring values of several different locations within the plant as possible must be retrieved and transmitted to the control unit. However, in view of the usually very ample wastewater treatment plants establishing a wired transmission system for this is extremely cost-intensive. Another aggravating aspect is that due to moving system parts applying wired connections at the swing bridges of aeration tanks is hardly possible. Other challenges in modernization projects of older systems also arise from a frequently limited capacity of 0/4..20mA inputs at the control unit when avoiding costs for additional modules.



## SOLUTION

The solution consists in the combined utilization of the [DATAEAGLE 3713](#) Schildknecht radio module with [PROFIBUS DP](#) fieldbus technology. The [DATAEAGLE 3713](#) radio module was specifically developed for being used in [PROFIBUS DP](#) networks, for enabling robust and safe radio links (wireless) where cables are hardly applicable or not at all. Thanks to the 2.4 GHz Bluetooth technology with frequency hopping measuring data used via DATAEAGLE measuring data always find a free transmission channel.

The high availability of the radio link and the [patented filter technology](#) which reliably deactivates potentially occurring disturbing pulses provide for fast and safe data transmission. For installations without [PROFIBUS DP](#) as communication technology, [Schildknecht AG](#) also offers other radio modules of the [DATAEAGLE device series](#), e.g. [DATAEAGLE 4000](#) for PROFINET.



## RESULT

Better process quality at reduced installation and operating costs – this is the result of applying the [DATAEAGLE 3000](#) data radio system, acting as an efficient “problem solver” in modernized or new wastewater treatment plants. Integrating further sensor measuring points by radio into the respective network is easy and uncomplicated and so provides additional information for process control. All these advantages for operating the wastewater treatment plant have induced many leading companies in automation technology to firmly integrate the [DATAEAGLE 3713](#) radio module in their treatment plant automation projects as an efficient “problem solver”.

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