

Project description

ARA Bielefeld

Modern-day waste water treatment plants are large-scale facilities – even on the outside – and exhibit a high degree of automation. The cleaning process is made up of several stages: raking, micro-raking, sand trapping, pre-clarification, a biological stage with aerated and non-aerated zones as well as clarification basins, and sludge treatment. The technical processes are optimized by means of a continuous control. The PLC control is programmed in a "formal" language from the process control. This makes the programming understandable for the operator and plant engineer.

Project parameters

- Start of project implementation: 1994
- 36 PLC and substations were networked with the process control system "Iltis" from IST using Profibus FMS and redundant Ethernet.

Requirements

- Fiber optic cables 50/125 µm with ST plug-in connectors
- Railhubs and switches with RJ-45 plugs for connecting PLC, IPC, laptop and field bus modules
- Redundant optical rings
- Large-area plants, harsh operating condition and stringent requirements
- Universal networking with Ethernet from the field bus level to the circuit level "Iltis" all the way to the office/management level
- PLC programming from process control with the Iltis tool "Falke"

Solution

- Profibus FMS network for existing plants
- Ethernet network for new plants
Ethernet TCP/IP office network with interface to process control

Further Hirschmann Application Notes:

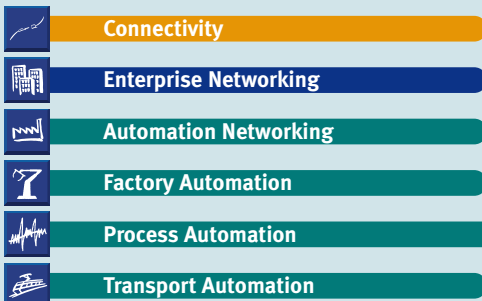


Photo: Digestion tower



- Transmission of video data via Ethernet to the plant surveillance system
- Elimination of factors that interfere with voltage lines etc. by implementing fiber optics
- Network extension
 - Three rings each for ARA Heepen and ARA Brake with a max. line length of 940 m (3,084 ft)
 - Connecting both ARAs over a single-mode fiber-optic link 4.5 km (14,764 ft) long
- Network components
Hirschmann OZD Profi G4 modules, rail hubs RH1-TP/FL and rail switches RS2-FX-SM/FX-SM
- Process control engineering
Universal automation technology from programming the PLC to visualization with a manufacturer's proprietary system

Deciding factors

Why Hirschmann?

- Ability to setup ring structures
- Reliable Profibus and Ethernet network
- Flexibility
- High availability

The plant configuration runs trouble-free before startup operation.

Your Hirschmann sales partner

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This Application Note was created in cooperation with Mr. Jürgen Schlüter, IST Automation GmbH Bürocenter Leuna (www.ist-automation.de)

A view of the overall project can be downloaded from:
[www.hirschmann.com/...](http://www.hirschmann.com/)

