CO Product information

CONTROL

CONTROL is a powerful rule-based software application for setting up realtime control/RTC (also known as sewer system management) on Windows platforms.

Rule-based software application for setting up realtime control/RTC

Functionalities of the software

The main purpose of real-time control is to use the capacity of an existing sewer system to its maximum by modifying the flow conditions within a system dynamically during rainfall events. This modification is achieved by the well-defined control of regulating devices like pumping stations or slide gates. CONTROL supports both,

- local control of regulating devices
- complex global system control.

Usually, CONTROL projects consist of two steps:

- the development and analysis of control strategies based on appropriate simulations
- the operation within a real system.

In the planning phase, CONTROL interacts with the hydrodynamic rainfall-runoff simulation model HYSTEM-EXTRAN in order to define sensible control rules. CONTROL uses simulated values from HYSTEM-EXTRAN (like water levels and flow rates) as well as external data (e. g. rainfall data) and determines, together with the rule base, new target values (e. g. for slide gate positions).
The derived strategy can be refined by several simulation runs until it meets the objective. Potential problems can thus be identified before final implementation. When operating in real-time, CONTROL gets its input data directly from the SCADA system.
CONTROL's most essential qualities are:

- The rule interpreter is based on fuzzy logic, which is a multi-valued logic.
- The rules are designed to be plain and simple.
- The rule interpreter can recognize and handle device failures.
- The number of necessary rules can be reduced by defining default values. The default values are used if no rule applies.

itwh GmbH | Engelbosteler Damm 22 | 30167 Hannover | Tel. +49 511 971 93-0 | itwh@itwh.de | www.itwh.de

- The rules can be combined into rule sets which can be used for special situations.
- The rule interpreter can use different algorithms for the decision making.
- The rule interpreter processes different kinds of measured data (for example water level, flow, pollution load and rainfall measurements).
- Any system status and controlling decision is recorded.

itwh GmbH | Engelbosteler Damm 22 | 30167 Hannover | Tel. +49 511 971 93-0 | itwh@itwh.de | www.itwh.de