Decision support for global control of sewage pump stations (EVA)

Context

Since the middle of the 1970s real-time control has been applied to manage systematically existing drainage assets and thus to utilise the maximum of the systems capacities. The development of the integrated control of sewer network and wastewater treatment plant has been furthered in the last decade. However, the operational application of the researched control methods especially on large and complex systems is still rare. Due to that reason, the research project EVA is carried out in Berlin aiming at the implementation of a decision support system for the global control of sewage pump stations.
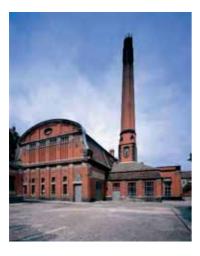
Partners

– Berliner Wasserbetriebe (Enduser)
– Zuse Institute Berlin
– Technische Universitaet Berlin – Department for Urban Water Management
– Freie Universitaet Berlin - Institute for Meteorology
– Anjou Recherche (Veolia Water)

Objectives

Besides the introduction of the decision support system for the global control of sewage pump stations and storage reservoirs, the following objectives are addressed:

– Evaluation of the potential of online rainfall information and radar forecast for the support of the pump station operation.

– Derivation of strategies for the control and dynamic distribution of wastewater to different wwtps during rain. The definition of the control strategies is carried out by mathematical optimisation based upon an algebraic modelling system.

– Identification of indicators for the description of the variable and condition-based performance of wwtps. Examination of a possible integration of the indicators as a boundary condition into the pump station control.

Picture 1 Sewage pump station
Picture 2 Interior view of pump station Berlin XI
Picture 3 Pump well

Duration: 04/2006 - 03/2008   Project volume: 620.000 Euro

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