SMART-Plant

Scale-up of low-carbon footprint material recovery techniques in existing sewage treatment plants

SMART-DSS

Decision Support System for Upgrading Existing Plants

Technology selection and benchmarking for plant retrofitting have become more challenging than ever because of the large number of possible plant-designs for a given wastewater treatment problem. This challenge is faced in the SMART-Plant project by a decision support system (DSS) to find the optimal configuration of a WWTP considering SMART-Plant resource recovery processes. To get the DSS started input data like WWTP location, population equivalents, legal limits and wastewater characteristics, needs to be defined by the user. Missing input information can be also scraped from web-databases by a Python script. The tool operates with a multiple parameter analysis, such as net present value, effluent quality index, frequency of effluent violation and greenhouse gas emissions, are considered. All the possible configurations of a plant are built by automatic model replacement, simulated for a given inflow condition and sorted with a multi-criteria analysis to support decision making. During the optimization step, design parameters are refined by minimizing the NPV and constraining all other above mentioned parameters.

WWW.SMART–PLANT.EU
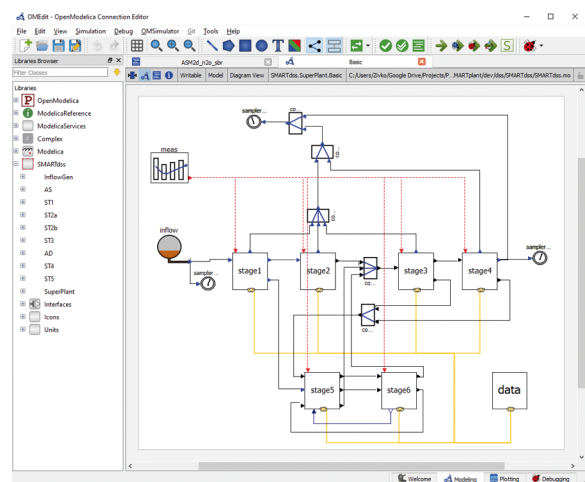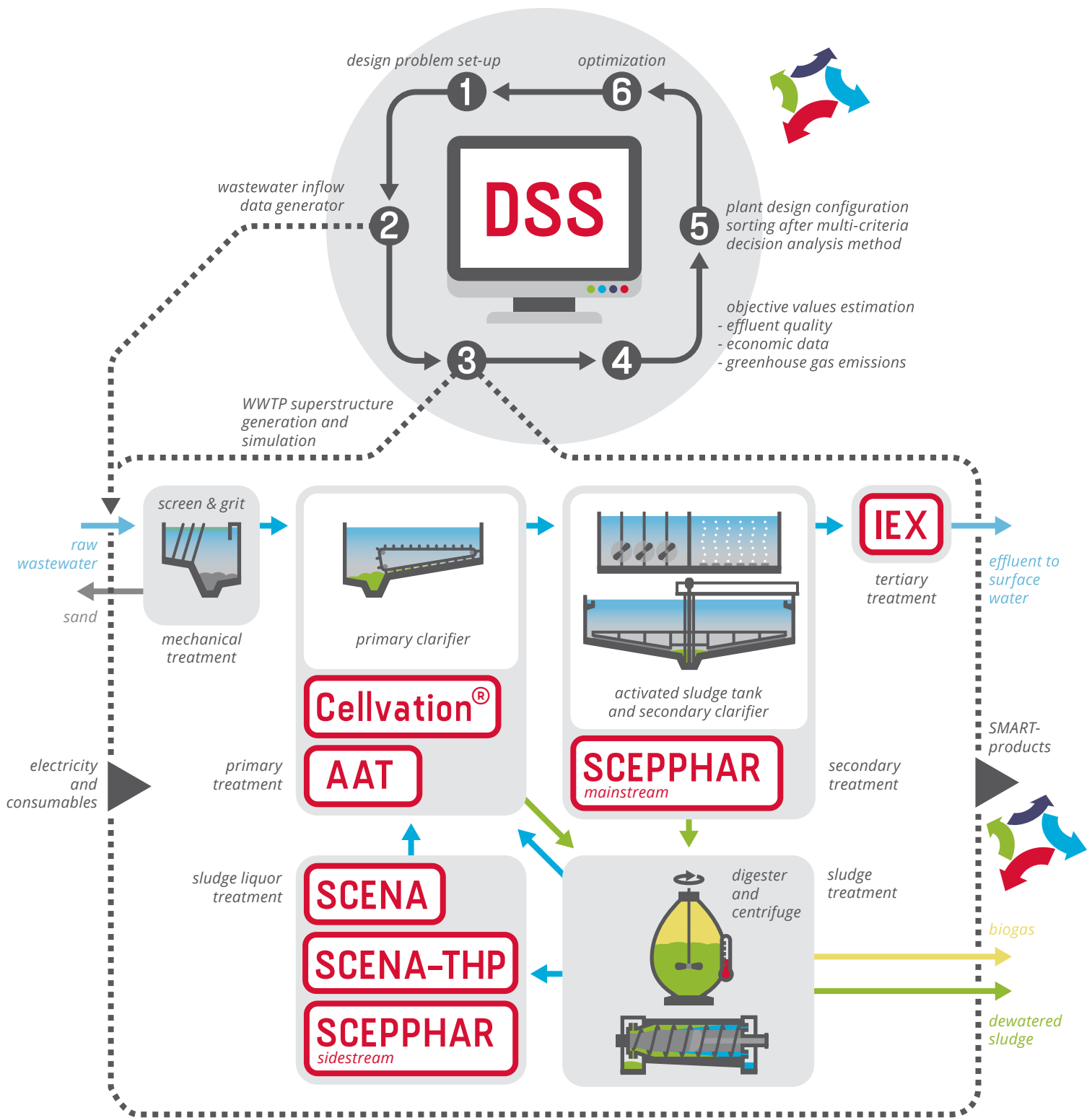
Unique Selling Points

A Ad-hoc consulting for new or upgrading existing WWTPs

B Stand-alone model simulation on Windows and Linux

C Simulation can be performed under static and dynamic inflow conditions

D Enables WWTP design within discrete and continuous control process systems

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