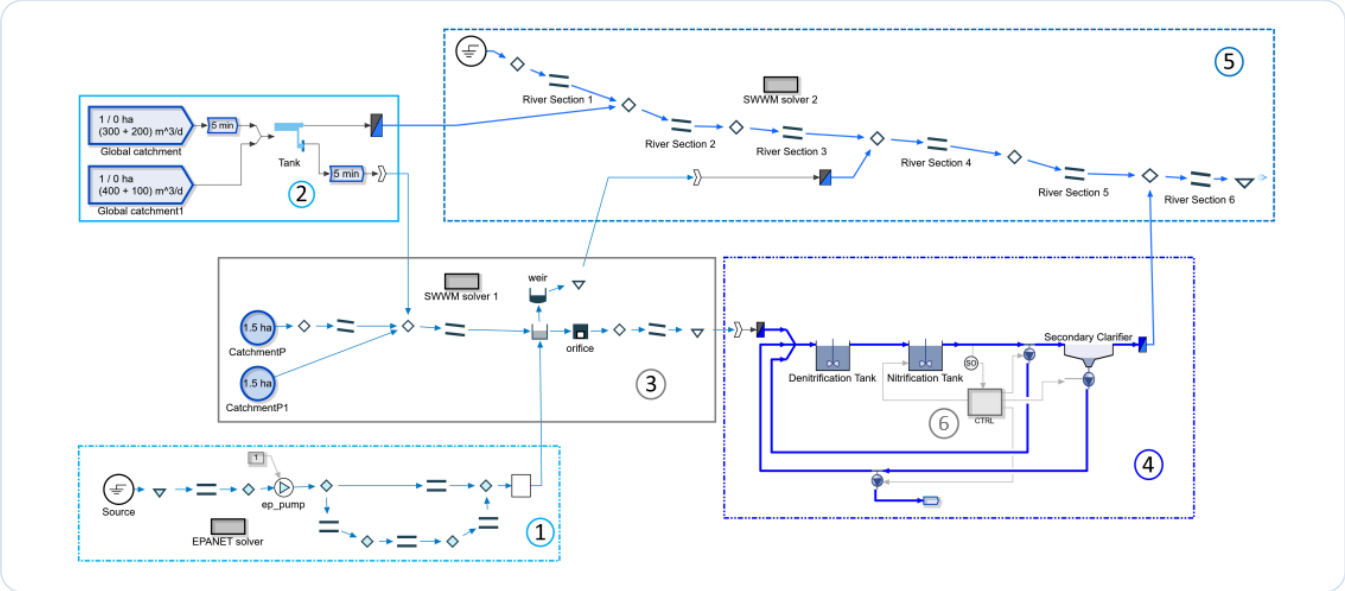
From balance to digital twin

SIMBA# is an integrated modelling and simulation platform for the water sector. Treatment plants, sewers, water networks, rivers, biogas and industry in one model – from the first balance to real-time control.



Integrated model in SIMBA#: water network (1), catchment (2), sewer (3), WWTP (4), river (5) and control (6).

One platform for the whole life cycle

1

Balance and concept

Quick water, energy and mass balances and comparison of options – Supply, Nexus and Dynampere libraries.

2

Design and sizing

Static design according to DWA-A 131 linked with activated sludge models.

3

Dynamic simulation

Validating the design over time: load cases, storm events, future loads.

4

Operational optimisation

Calibration on operating data, diagnostics, aeration and energy savings.

5

Control and virtual commissioning

Designing and testing control on the model – IEC 61131-3, Petri nets, MBPC.

6

Digital twin

Deploying strategies in operation via ifakFAST: virtual sensors and predictive control.

DWA guidelines built into the software

DWA-A 131
Activated sludge plant design – ASM3h and ASM3bioP models compatible with DWA-A 131.

DWA-A 102 / A 128
Stormwater, CSOs and storage – long-term pollutant load simulations.

DWA-A 100
Integrated urban drainage – sewer, WWTP and receiving water as one system.

DWA-A 216
WWTP energy analysis – benchmarking and finding savings.

ifak, the developer of SIMBA#, contributes to the development of DWA guidelines. SEWACO works with the Czech Standardization Agency on Czech translations of DWA guidelines.

Product family

SIMBA#
Dynamic simulation of WWTPs, sewers, water networks, rivers and biogas including control.

SIMBA#supply
Water, energy and mass balances – water audits in industry and water supply.

ifakFAST
Models and control in live operation – virtual sensors, forecasting, predictive control.

Who it is for

WWTP operators and owners · Infrastructure operators and owners · River basin authorities · Consulting engineers · Biogas and energy · Industry · Universities and research

Licences and trial

- Annual licences: single-user (Standalone or Mobile USB key) and network licences for 2, 5 or more instances
- Perpetual licence for digital twins and RTC (price on request)
- Discounted academic licences and the SIMBA#classroom course licence
- **Free trial licence** – no time limit, sample projects, only saving is disabled
- Training participants receive a full licence for 1 month

Technology: C# / .NET 10 · Windows 7–11 · min. 8 GB RAM

Contact

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