

What's new in Sumo21[©]



This document summarizes the new features and improvements found in Sumo21 compared to Sumo19.

New process model features

Sumo21 contains major additions and improvements:

- Energy (pumps, blowers, CHP, biogas tank, fixed consumers...)
- Cost (electricity, chemicals, product sales, disposal fees)
- Faster, more realistic and stable bio-P model (PAOs and GAOs as carbon storing organisms)
- Greenhouse gas model
- Dynamically predicted alpha factor depending on loading
- Prediction of sludge dewaterability
- AOR calculation

New process units

- UASB
- BAF
- HPO
- Pond – lagoon
- P recovery units
- Sludge input units
- Advanced oxidation unit
- A number of new **examples** are also provided

New Tools

Digital Twin Toolkit (for additional fee) connecting to plant hardware, realtime run, cloud-based run, distributed computing, custom interface option, etc.

New Sumo tools

- Aeration (SOTE) Tool
- Industrial COD fraction converter
- PD Blower Tool
- Turbo Blower Tool
- CF Pump Tool
- Power Tariff Tool
- Noise generator
- Totalizer

Documentation

Extended Sumo FAQ, User Manual, Quick Tutorial, The Book of SumoSlang and new Technical Reference

New interface features

Numerical solvers were much improved (all corners: pH, loops, steady-state, dynamics)

Controllers can be used in PFR units connecting to individual zones

Sumo21 is **compatible** with Sumo19 configurations in most cases (depending on the level of customization)

Sumo continues to be open process source based, but can be delivered **with encrypted process library** (i.e. in case a user provides a proprietary model to clients)

Sumo21 will be available in the Korean, Chinese, Japanese, Spanish, German and Turkish languages.

There are several usability improvements and fixes.

Add-ons available for this release

(please write to support@dynamita.com):

- 1) Realistic simulation of carrier movement in an MBBR plug-flow zone (mobile carrier) and the Wanner-Reichert biofilm model
- 2) Sewer trunk and odor model (iron and nitrate addition for odor control)