Release Notes 2020

WEST

Contents:

Introduction

Welcome to WEST 2020 Update 1

In this Release Note you will find information about new features of WEST, and what you need to know in order to install and get started with WEST 2020 Update 1.

WEST 2020 is the 5th release of the re-designed and re-engineered version of WEST, the powerful and user-friendly tool for dynamic modelling and simulation of municipal Water Resource Recovery Facility (WRRF) and Integrated Urban Water System (IUWS). The extensive state-of-the art model library of WEST enables one to model and evaluate almost any kind of modern WRRF and a variety of IUWS systems.

WEST 2020 comes in five different flavors:

- **WEST Basic**: [NEW] Entry-level product: allows for the construction of a plant layout (limited in size) and for the execution simulations, using a reduced block library
- **WEST**: Construction of plant models using standard blocks, simulation, output visualization, and computation of user-specified objective functions (formerly: WESTforDESIGN)
- **WEST +**: Construction of plant models using standard and custom blocks, simulation, output visualization, computation of user-specified objective functions, and execution of advanced experiments (formerly: WESTforOPTIMIZATION)
- **WEST Player**: Simulation, output visualization, and computation of user-specified objective functions on the basis of a fixed executable plant model, previously prepared by WEST or WEST + (formerly: WESTforOPERATORS)
- **WEST SDK**: Software Development Kit for the integration of the WEST engine (i.e. Tornado) in custom applications (formerly: WESTforAUTOMATION)

WEST 2020 comes with 2 separate model libraries: the conventional **MSL** library (that uses MSL as modelling language) and a new **Modelica** library (that uses Modelica as modelling language).

Important: issues that should surface in the MSL library will be solved, but the library will no longer be actively developed and will eventually be discontinued. As of Release 2020, all new (model) development will take place in Modelica.

System requirements

The recommended minimum system requirements are:

Fully supported Windows operating systems *	Windows 10 Pro, version 1909 (64 bit) Windows Server 2016 Standard (64 bit) Windows Server 2019 Standard (64 bit)
Processor	x64, 2.2 GHz (or higher)
Memory (RAM)	2 GB (or higher)
Hard disk	40 GB (or higher)
Monitor	SVGA, resolution 1024x768 in 16-bit color
Graphics adapter	64 MB RAM (256 MB RAM or higher recommended), 32-bit true color
File system	NTFS
Software requirements	Microsoft .NET Framework 4.7.2 or later

* Fully supported operating systems are systems that have been tested in accordance with MIKE's Quality Assurance procedures and where warranty and software maintenance agreement conditions apply.

Installation

top

DHI License Management - If you are installing on a computer or server where you will also install the license file, please also install the DHI License Manager. It must be downloaded separately.

To install WEST, please choose WEST in the 'Product Overview' dialogue box that appears when inserting the MIKE software 2020 USB and clicking the Setup.exe or executing the Setup.exe file from the downloaded installation files. Press the 'Install' button to begin installation.

The setup program will automatically install all necessary files and folders on your computer. Additionally, an entry is created in the Start Menu for WEST.

Important information: Please be aware that all MIKE software on the same computer must be installed with the same service pack. This is due to the dependencies between MIKE software products and the ability for the software to use the latest feature and systems updates.

License file and dongle

To use WEST software in licensed mode, please refer to the DHI License Manager Release Notes. (License Manager Release Notes)

Product invocation

Launch WEST from the Windows Start menu.

Support

For general support, please refer to our FAQ.

If you experience any difficulties, or if you have questions, please contact our Customer Success team by e-mail or phone:

Customer Success
DHI A/S
Agern Allé 5
DK-2970 Hørsholm
Denmark

mike@dhigroup.com
Tel: +45 4516 9333

You can also contact your local Customer Success team for support in your local language. You can find the list here.

New features and fixed issues

top

New features Update 1

Module/type	New feature
Modelica Library	Conversion models supported: • IUWS2: for integrated modelling (based on ASM2dMod), including WATS model New models: • WATS model for sewer pipes • Diffused aeration model with empirical relationship alpha-MLSS

New features

Module/type	New feature
WEST Basic	Entry-level license with basic functionalities, i.e. limited model library, 'small' (limited in size) process layouts, steady-state and dynamic simulation
Modelica Library	New model library written using the Modelica modelling language. Conversion models supported: • ASM1: standard IWA's ASM1 for C and N removal • ASM2dMod: modified IWA's ASM2d for C, N and P removal

	• ASM2dISS: based on ASM2dMod, with accurate tracking of inorganics (ISS) • IUWS1: for integrated modelling (based on ASM2dMod) New models (wrt MSL 2017 library): • Biofilm: Rauch model • Blowers: centrifugal VFD and IGV; positive displacement VFD; control logic for multiple blowers on same pipe • Pumps: centrifugal VFD and throttle; control logic for multiple pumps on same and on separate pipes • Sand filter: down-flow with automatic backwashing • Disinfection: chlorine, UV, PAA • Sampler: grab and time-proportional sampler • Heat exchanger • NRM dosing units: CaOH2, MgCl2, MgOH2, NaOH
MSL Library	New models: • Biofilm: Rauch model • Pumps: centrifugal VFD and throttle (fewer options than in Modelica library); control logic for multiple pumps on separate pipes • Sand filter: down-flow with automatic backwashing • Disinfection: chlorine, UV, PAA • Sampler: grab and time-proportional sampler

Fixed issues/inconveniences Update 1

top

Module/type	Error/Inconvenience
MSL Library	Thickener model: initial value for DS results in runtime error at time t=0
MSL Library	Energy calculation: error in formula (with impact on cost calculation)
MSL Library	Inconsistent calculation of T(K)N in ASM1 between sensor, (de)fractionation and conversion models
MSL Library	Incorrect secondary settling model in WEST Basic license. Enabled Takacs with SVI calculation
Modelica Library	Inconsistent calculation of T(K)N in ASM1 between sensor, (de)fractionation and conversion models
Tutorials	Incorrect use of block between the sewer outlet and the fractionation model

Fixed issues/inconveniences

Module/type	Error/Inconvenience
MSL Library	ADM1: missing interface for ASM2Mod
MSL Library	ASM1_AN: projects cannot be created, due to duplicate names

MSL Library	ASM1_AB: errors parameter values and expression in Gujer Matrix
MSL Library	Oxygen saturation: new expression to replace the original polynomial
WEST GUI	Current value not shown in top-level items dialog
WEST GUI	Workbook-to-experiment links not automatically refreshed when project is started up
Sample Projects	Incorrect behaviour of the generators sample projects

Known defects and workarounds

Module/type	Error/Inconvenience	Work-around
WEST GUI	Copying end state values (of steady-state simulation) to initial values (of dynamic simulations) results in resetting initial values of steady-state simulation too	Manually reset initial values of derived state variables, if needed
WEST GUI	Unit conversion does not work in Influent Tool	Use standard (SI) units rather than US or Imperial