MIKE Powered by DHI

Release Notes 2021

MIKE HYDRO

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Introduction

Welcome to MIKE HYDRO 2021 Update 1

In this Release Note, you will find information about new features of MIKE HYDRO, and what you need to know in order to install and get started with Release 2021.

MIKE HYDRO is our latest generation Graphical User Interface framework for some of the MIKE Water resources software products. Featuring a map based and easy-to-use Graphical User Interface, MIKE HYDRO is a MIKE Zero component which includes:

- MIKE HYDRO Basin: a modelling package for water resources planning and management in river basins
- MIKE HYDRO River: a one-dimensional modelling package for comprehensive river network modelling.

System requirements

The recommended minimum system requirements are:

Fully supported Windows operating systems *	Windows 10 Pro, version 20H2/2009 (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

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 MIKE HYDRO, please go to the MIKE Zero product folder and execute the setup.exe file either on the MIKE 2021 USB or from the downloaded, un-zipped 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 MIKE Zero.

License file and dongle

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

Product invocation

Launch 'MIKE Zero' from the Windows Start menu. Then you can select MIKE HYDRO from within the MIKE Zero Shell.

Starting any MIKE Zero application without a DHI configured hardware key and valid license files will cause the program to run in demo mode. If this happens, a message box will inform you during program initialization. When running in demo mode, the MIKE Zero installation supplies full access to all editors, computational engines and editing facilities. However, restrictions apply to the setups that can be executed as a model simulation.

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

Release 2021

Every new release of MIKE HYDRO consists of new modules, new features and/or corrections to problems or significant inconsistencies discovered in previous releases. Please find short descriptions of the most significant news in Release 2021 below.

New features

Module/type	New feature
MIKE HYDRO Common	Access to the various tools has been redesigned. Tools and functionalities which were previously accessed from the File, View or Tools menu in the top bar, are now opened from the ribbon on the map.
MIKE HYDRO Common	A new tool is available to generate a final DEM file combined from multiple source tiles. The tool is accessed from the Tools tab in the ribbon.
MIKE HYDRO Common	Background layers loaded on the map can now be refreshed, from the '…' button next to the file name. This functionality will refresh the layer on the map, in case the file has been updated while it was opened in MIKE HYDRO.
MIKE HYDRO Common	The list of supported map projections has been significantly increased, offering new and updated map projections.
MIKE HYDRO River	A new tool is available to assign distributed resistance factors in cross sections. The input data used by the tool is either a raster file mapping the resistance values or a land use polygon shape file. The tool is accessed from the Cross sections tab in the ribbon.
MIKE HYDRO River	Maps results have been enhanced, so that it is now possible to use DEM files to compute the water depths in the 2D map result files. The input DEM files are selected in the Maps result menu.
MIKE HYDRO River	Maps results have been enhanced, so that the spatial interpolation of cross sections leads to smoother mapping of results, even in case of abrupt changes in the river alignment.
MIKE HYDRO River	The control rule of type 'Natural flow' has been extended to also apply to culverts, weirs, dambreaks and bridges. This option enables switching from the regular energy loss calculation at structures to the shallow water equations, which results in ignoring the structures for given conditions.
MIKE HYDRO River	Variables can now be re-ordered using new buttons available above the table. The order of the variables is important when some variables are defined as a function of other variables.
MIKE HYDRO River	Rainfall-Runoff results can now be saved to a .dfs0 time series file. The default result file format remains .res1d, but the file format can be changed by editing the file extension.
MIKE HYDRO River	A new option has been added to the dialog used for interpolating cross sections: it offers a choice between including or excluding cross sections created from a previous interpolation, in the new interpolation.
MIKE HYDRO River	A new option has been added to the dialog used for moving or copying cross sections: it offers a choice between keeping the cross sections coordinates unchanged or recomputing them based on the new chainage of the cross section.
MIKE HYDRO River	A new option has been added to the 'Edit multiple cross sections' tool, to move markers 1, 3, 4 and 5 to the highest points on each side of the cross section.
MIKE HYDRO River	In the Data Assimilation module, a new check box has been added in the measurements definitions page, to optionally disable the model updating for each measurement.

| MIKE HYDRO Basin | The Hydropower page has been improved in order to allow controlling which optional items in the power demand time series should be used in the simulation, even after selecting the time series file. |
| MIKE 1D engine | Added separate extrapolation pfs parameter setting so that different settings can be used for local parameters and hotstart values when defining initial conditions. |

Fixed issues

Module/type	Error/Inconvenience
MIKE HYDRO River	An unexpected error was sometimes obtained after importing a MIKE 11 model setup containing weirs.
MIKE HYDRO River	When importing structures from MIKE 11 with the geometry type 'Cross section DB', the cross section location was not correctly imported.
MIKE HYDRO River	The computational parameter AltConvSup was not used in the simulation.
MIKE HYDRO River	The Datum value used for link channels was not always correctly taken into account while computing Q/h relations.
MIKE HYDRO River	An unexpected error was returned when using the Identify tool on a link channel on the map.
MIKE HYDRO Basin	The irrigation methods' names were not saved.
MIKE HYDRO River	Cross sections' map span lines were not updated on the map right after changing markers locations in the cross sections table.
MIKE HYDRO River	An unexpected error was sometimes returned when importing circular or rectangular cross sections from a text file.
MIKE HYDRO River	The ID specified for distributed wind velocity and wind direction was not saved.
MIKE HYDRO River	The erosion coefficient for cohesive components used in Sediment Transport simulations used a wrong unit in the simulation.
MIKE HYDRO River	The storage type was not correctly shown in labels on the map, for storage points.
MIKE 1D engine	Fixed error in production of AD maps when using MIKE 1D engine (TT53255).
MIKE 1D engine	Added check that gate level is not below sill level for structure operations (TT51546).
MIKE 1D engine	Fixed crash error occurring when a cross section has an undefined lower marker (TT56543).
MIKE 1D engine	Fixed error preventing steady-state initial conditions estimate from running with a negative branch and regulated culvert (TT23886).

MIKE 1D engine	Fixed conflict between local and steady state initial conditions for smaller setups (TT21665).
MIKE 1D engine	Fixed maps generation error occurring when markers are located at the same points (TT23691).
MIKE 1D engine	Fixed crash error occurring when DA timeseries not available (TT55419)
MIKE 1D engine	Fixed error due to inconsistent time stepping when coupling MIKE SHE to MIKE HYDRO River (TT56499).
MIKE 1D engine	Fixed error occurring in decoupled AD setup when simulation period is different from HD result file (TT56157).
MIKE 1D engine	Fixed unhandled error occurring when running simulation with 2D map output (TT57158)
MIKE BASIN engine	Fixed two errors in application of reduction fractions to deliveries from reservoirs to water users (TT55664, TT54850).
MIKE BASIN engine	Fixed error occurring when using controlled reservoir outlet without maximum flow control (TT55368).

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Release 2021 Update 1

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New features

Module/type	New feature
MIKE HYDRO Common	When performing Rainfall-Runoff simulations with the NAM model, it is now possible to use weighted time series for radiation.
MIKE HYDRO River	The definition of left and right sides of the river has been clarified and applied consistently across the different tools. The sides are now always defined looking in the flow direction and are therefore a function of the 'Flow direction' specified for the branches. Mapping of cross sections without coordinates has been corrected accordingly for negative-direction branches, and a new warning has been introduced in case cross sections are digitised in the wrong direction. The tool 'Edit multiple cross sections' now recomputes coordinates accordingly for negative-direction branches.

Fixed issues   **top**

Module/type	Error/Inconvenience
MIKE HYDRO Common	Empty cells for rasters shown on the map were shown as white, and are now shown as transparent.

MIKE HYDRO River	Importing MIKE 11 model sometimes gave undefined geometry for weirs with geometry type 'Cross section DB', therefore returning unexpected errors during the simulation.
MIKE HYDRO River	When importing MIKE 11 models with control rules defined with 'Discharge' as logical operand led to sensors wrongly defined with 'Water level' type.
MIKE HYDRO River	Time series ouputs definitions were incorrectly imported from MIKE 11 models.
MIKE HYDRO River	When editing expressions for control rules, the list of variables was empty even when some variables existed.
MIKE HYDRO River	In the Data Assimilation module, there was an incorrect validation of the time span covered by observed time series, which was wrongly expecting that time series covered the entire simulation period.
MIKE HYDRO River	The structure plot was wrong for some weir shapes defined using 'Cross section DB'.
MIKE HYDRO River	After applying an angle correction to cross sections, the angle value was modified after closing and re-opening the file.
MIKE 1D engine	The description of the error message returned when a river was connecting to the middle of a link channel has been clarified.
MIKE 1D engine	An unexpected error was sometimes obtained when running simulations including 2D map outputs.
MIKE 1D engine	An unexpected error was obtained when running a decoupled Advection-Dispersion simulation, in case the simulation periods were different in the input HD file and in the AD simulation.
MIKE 1D engine	An unexpected error was sometimes returned during MIKE ECO Lab simulations, about incompatible item and unit.
MIKE 1D engine	Enabled pumps on link channels (TT55875).
MIKE 1D engine	Added diagnostic message helping users avoid making connections to midpoints of structures or link channels (TT54829).
MIKE 1D engine	Improved handling of ECO Lab units (58071).
MIKE 1D engine	Fixed folder destination for RR results when running a rainfall-runoff model as part of a Basin simulation (TT58325).
MIKE BASIN engine	Enabled recycling of irrigation parameters if planting date defined before the simulation start (TT57537).