

# Release Notes 2020

# MIKE 3

## Contents:

- [Introduction](#)
- [System Requirements](#)
- [Installation](#)
- [License File and dongle](#)
- [Product Invocation](#)
- [Support](#)
- [New features](#)
- [Fixed issues](#)
- [Known defects and workarounds](#)

## Introduction

Welcome to MIKE 3 2020 Update 1

In this Release Note, you will find information about new features of MIKE 3, and what you need to know in order to install and get started with Release 2020.

MIKE 3 is a complete 3D modelling package for estuaries, coastal areas, and seas. It covers a wide range of hydrodynamic, environmental and sediment transport processes.

## 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

## MIKE Powered by DHI

- \* 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.
- \*\* MIKE 21 Flow Model FM utilizing GPU requires a Nvidia graphics card with compute capability 3.0 or higher. Please note that some of these graphics' cards have varying performance in single compared to double precision calculations. The GPU functionality is based on version 10.2 of the Nvidia® CUDA® Toolkit.

## 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 MIKE 3, please go to the MIKE Zero product folder and execute the setup.exe file either on the MIKE 2020 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.

**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 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 3 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](mailto: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](#)

### Release 2020 Update 1

Every new release of MIKE 3 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 2020 Update 1 below.

#### New features

Module/type	New feature
MIKE 3 FMHD	Input of 3D Boundary conditions from a vertical plane series .dfsu file extended to handle the case of sigma/z-level vertical discretization.
MIKE 3 FMHD	Output of vertical plane information in the FM engine. Both structured output (dfs2 file) and unstructured output (.dfsu) can be specified.
MIKE 3 FMHD & MIKE 3 FMTR	Improved performance when using GPU acceleration for hydrodynamic and advection-dispersion modules.
MIKE 3 ST	A new pure current model for mixed-fraction, multi-layered sediments is now available in the Sand Transport Module for the FM hydrodynamic engines.
MIKE 3 FMTR	It is now possible to run FM simulations with the Transport Module (Advection-Dispersion) using GPU acceleration.
MIKE 3 FMHD	Special treatment of important infrastructure, with the possibility to define buildings and roads via shapefile inputs.
MIKE 3 FMHD	New ways to handle rain on and flows around and over Buildings: <ol style="list-style-type: none"> <li>1. Rain falling on buildings of a given height can now weir onto surrounding ground.</li> <li>2. A new building run-off factor can delay rainfall runoff from buildings – for example, dealing very simplistically with complex roof construction or green roofs.</li> <li>3. Rain falling on buildings can be retained in the buildings and included in the calculations (mass balance). It is possible to position a MIKE URBAN+ link in the building zone to convey all rainfall to a subsurface drainage network.</li> </ol>
MIKE 3 FMHD	New ways to handle effect of raised / lowered roads (and embankments) though the specification of a ground level offset.
MIKE 3 FMHD	Improved performance of mass budget and discharge calculations in the GPU version.
MIKE 3 FMHD & MIKE 3 FMTR	Improved GPU timings information in the log file when running the hydrodynamic or transport module.
MIKE 3 FMHD	Line series in output from FM engines can now be specified as a polyline.
MIKE 3 FMHD	Discharge series in output from FM engines can now be specified as a polyline.
MIKE 3 FMHD	Now possible to output the bed resistance coefficient from the FM engines.
MIKE Zero	All MIKE Zero front-end applications (excl. MIKE HYDRO) are now optimised for 4K monitors.
Data Extraction FM	The Data Extraction FM tool has been extended to include the new type of outputs: <ul style="list-style-type: none"> <li>• Vertical plane series.</li> </ul>

	<ul style="list-style-type: none"> <li>Line series specified as a polyline.</li> <li>Discharge series specified as a polyline.</li> <li>Structured output from 2D and 3D unstructured data inputs.</li> </ul>
Data Viewer	Now possible to visualise the new vertical plane series .dfsu file type in the MZ Data Viewer.
Plot Composer	Now possible to visualise the new vertical plane series .dfsu file type in MZ Plot Composer.
Oil Spill Particle Track Tools	The binary particle track file format for oil spill, particle tracking and agent-based modelling (.track) is now supported as an input file format for all tools in the Oil Spill Particle Track Tools Toolbox that require a particle track file format as input.

## Fixed issues

[top](#)

Module/type	Error/Inconvenience
Various	Numerous corrections, stability and performance fixes.

## Release 2020

Every new release of MIKE 3 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 2020 below.

## New features

Module/type	New feature
MIKE 3 Flow Model FM Hydrodynamics	GPU acceleration for Temperature and Salinity calculations and second order k-ε Turbulence calculations has been added.
MIKE 3 ECO Lab FM	Google Earth (KML) output format for particle tracks in Particle Tracking, ABM Lab and Oil Spill modules added.
MIKE 3 ECO Lab FM	Preview release of MIKE ECO Lab 0D engine.
MIKE 3 ECO Lab FM	New Flexible Mesh user examples for Oil Spill & Particle Tracking added.
MIKE 3 Classic	MIKE 3 Classic, including the MIKE 3 Toolbox (Digitising tool) has been fully decommissioned and is no longer available. Support will be provided until November 2020.

## Fixed issues

Module/type	Error/Inconvenience
MIKE 3 Flow Model FM Hydrodynamics	An option for a variant of the HLLC Riemann solver in z-level calculations has been added.

## MIKE Powered by DHI

MIKE 3 Flow Model Mud Transport	Calculation of bed shear stress has been improved.
MIKE 3 Flow Model FM Hydrodynamics	Various improvements have been made to the GPU version (for example, improved calculation fluxes over a structure, consideration of multiple sources or source distribution points in the same water column, improvements in flooding and drying areas when using k-epsilon, improved calculation of concentrations when using k-epsilon, and improved calculation for AD fluxes in line structures under k-epsilon).
MIKE 3 Flow Model FM Hydrodynamics	The calculation of computed evaporation has been improved.
MIKE 3 Flow Model FM Hydrodynamics	An illegal storage error has been fixed when using Density as a function of Salinity in combination with heat exchange.
MIKE 3 Flow Model FM Hydrodynamics	An issue has been fixed where calculations of concentrations may be impacted by the ordering of elements.