Release Notes 2020

MIKE URBAN+

Contents:

Introduction

Welcome to MIKE URBAN+ 2020 Update 1

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

MIKE URBAN+ is our new, flexible system for modelling and designing water distribution networks and collection systems for wastewater and storm water, as well as for modelling 2D surface flooding.

MIKE URBAN+ is offered in two versions:

- **MIKE URBAN+**
- **MIKE URBAN+ ArcGIS**

With MIKE URBAN+ you get:

- GIS-based model building and data management
- Powerful hydraulic simulation engine that supports parallel processing
- Integrated water quality, fire flow, real time control, flushing, multi-source tracing and hydraulic simulation (water distribution)
- Integrated water quality, real-time control, LID and Soakway, rain dependent inflow and infiltration and long-term statistics (collection system)
- River hydraulic modelling
- Integrated 2D hydraulic and water quality, dynamic interactions with collection system network, surface flows visualisation (2D overland)
- Full undo and redo capability in all editors
- Thematic mapping and integrated result visualisation
- Open data models - easy integration with other applications
- Instant data checking and validation

With MIKE URBAN+ ArcGIS you get:

- Sophisticated GIS capabilities and smooth integration with ArcGIS Pro. MIKE URBAN+ embeds ArcGIS/ArcGIS Pro software for GIS-based model building, data management and result presentation.

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.

** MIKE URBAN+ utilizing GPU for 2D overland simulations 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

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 URBAN+:
Please choose MIKE URBAN+ in the 'Product Overview' dialogue box that appears when inserting the MIKE software 2020 USB and clicking the Setup.exe or by 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 MIKE URBAN+. When the installation is completed, please follow the instructions here to adjust the installation settings.

To install MIKE URBAN+ ArcGIS:
To install MIKE URBAN+, please go to the MIKE URBAN+ 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 URBAN+. When the installation is completed, please follow the instructions here to adjust the installation settings.

Please choose ArcGIS Pro's "ArcGISPro.msi" to install ArcGIS Pro separately. This version of MIKE URBAN+ comes with ArcGIS Pro 2.5, but you can also use your own version of ArcGIS Pro 2.2 or higher. You find the installation of ArcGIS Pro in the folder "Prerequisites\ArcGIS Pro 2.5".

Optional installation of PostgreSQL/PostGIS:
Both MIKE URBAN+ and MIKE URBAN+ ArcGIS are installed with SQLite/SpatiaLite. If you wish to use the alternative database option, PostgreSQL/PostGIS then please install the two products found in the "Prerequisites\PostgreSQL 11.1" and "Prerequisites\PostGIS 2.5.1" folders. Before you install the two products, we recommend that you read the note describing how to install PostgreSQL/PostGIS - this is available here.

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 URBAN+ 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

Release 2020 Update 1

Every new release of MIKE URBAN+ 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
General	Units can now be customised. From the 'Modules' page, the unit system can be edited, in order to change units either for an entire category (i.e. changing unit for all parameters using a selected unit type) or for a specific parameter.
General	Comprehensive map projections are now available with MIKE URBAN+, when creating a new project.
General	The 'Import and export' tool offers a new 'AgrregateGeometry' action. It is used to import the feature's map geometry from separate fields holding the X and Y coordinates in the source file.
General	The 'Import and export' tool can now read a configuration file created with MIKE URBAN classic.
General	The connection to a PostGIS database has been made more flexible: it is now possible to apply custom connection settings (port number, user name and password).
General	2D overland and CS network models can now be coupled to a MIKE HYDRO River model setup from within MIKE URBAN+. This is enabled through a new option in the 'Modules' page. Results from MIKE HYDRO River may also be viewed on the map in MIKE URBAN+ at the end of the simulation.
General	A new special selection 'Items on tracing and profile path' has been added. It selects all items from the CS/WD network, located on the path used for a Profile Plot or obtained with the 'Tracing forward/backward' tool.
Water Distribution	A new tool 'Create valves from points' has been added. This tool uses valves locations and properties defined in a shape file, and insert the valves on the WD network by splitting and reconnecting the pipes as necessary. The tool is available in the 'Network editing tools' in the ribbon.
Rivers	A new module for river modelling is now available. This module allows hydrodynamic modelling of river networks including definition of cross sections, weirs and culverts structures, bed roughness and boundary conditions. River networks can be connected to the CS network and catchments. Lateral spilling to the 2D overland model is also possible using the 'River bank' 1D-2D coupling. Extra global parameters relevant for river modelling have been added to the 'CS engine configuration' dialog.
Collection System	A new 'Initial conditions' page has been added for hydrodynamic initial conditions for the CS and River networks. It supports a combination of hotstart files, local values defined on specific nodes / pipes / rivers and also global values.
Collection System	Topography profiles obtained from a DEM can be added to Profile Plots. From an existing Profile Plot, add a new item and select a raster file.
Collection System	Discharge in pumps can now be controlled through RTC settings, using the new action 'Set flow value'.
Collection System	Catchment connections can now be selected from the map.
2D overland	The 2D domain may now also be specified from an existing .dfsu file.
2D overland	2D results may be exported to a polygon shape file containing the instantaneous results in each element from the 2D domain. This option is available through a right-click on the result layer.

2D overland	Velocity vectors from 2D results may be exported to a line shape file containing the vector in each element from the 2D domain. This option is available through a right-click on the result layer.
General / Results visualization	Clicking on a point from a Time Series plot will change the active time step shown for all windows showing dynamic results, either on a map or on a profile plot.

Fixed issues

Module/type	Error/Inconvenience
General	Many improvements and corrections have been made to the automatic import from MIKE URBAN classic, including: • Miscellaneous corrections of data wrongly imported (wrong values being set in MIKE URBAN+) • A memory limitation was sometimes reached while importing big model files • More data from the scenarios are now imported • An unexpected error was returned when an older version of MIKE URBAN classic was installed. This is now possible, although not all the scenarios definitions can be imported when MIKE URBAN classic 2019 is installed
	Many improvements and corrections have been made to the 'Import and export' tool, including: • The 'Delete' action now applies to all 'Transfer modes' • An unexpected error was obtained when applying a special formula during the import • An unexpected error was obtained when applying a source condition • The 'Source preview' button failed showing the data from the source file.
General	The 'Topology repair' tool did not split pipes at T-junctions and at nodes locations.
General	When loading a feature layer on the map, the option to apply a user-defined map projection did not work.
General	The special selection 'Parallel pipes' sometimes selected pipes which were not parallel.
Collection System	The validation of the external file used as input for time varying boundary condition was missing.
Collection System	An unexpected error could be returned when adding a water level result on a profile plot with natural channels.
Collection System	An unexpected error was returned when adding a local head loss coefficient to nodes.
Collection System	Some result items (e.g. energy level, energy level slope, water level slope) were missing in the result file, when they were requested in the 'Result files' page.
Collection System	Discharge and water level in links were not shown for some pipes in profile plots.
Collection System	In the 'Curves and relations' page, the calculated Volume values for 'Basin geometry' tables were wrong.
Collection System	'Catchment slope and length' tool did not detect ASCII rasters for DEM input.
Collection System	The 'Catchment processing' tool returned wrong imperviousness values in catchments where there were overlapping polygons, as they were wrongly all included in the calculation.

Collection System	Simulations could not start when the Simulation ID contained spaces.
Collection System	The description of the Base scenario was not saved after closing and reopening the project file.
Collection System	An unexpected error was returned while starting a simulation, when the node connected to a weir is not a Sewer node.
2D overland	The flexible mesh resolution was sometimes incorrect when using the 'Use polygons in feature layers' option.
2D overland	The option 'Use polygons in feature layers' did not allow selecting proper attributes from the feature layer, in order to apply mesh settings in the layer's polygons.
2D overland	When defining 2D surface roughness from MIKE URBAN+ roughness layer, the corresponding 2D input file was not created when starting the simulation, preventing from running the simulation.
2D overland	When defining 2D surface roughness from MIKE URBAN+ roughness layer, the corresponding 2D input file sometimes contained wrong values at places with overlapping roughness polygons.
2D overland	2D simulations could sometimes not start with some specific settings.
2D overland	The tool 'Exclude natural channels' did not work properly when using US units.
2D overland	The button to suspend a simulation did not actually pause the simulation.
Water Distribution	Statistics for Water Demand provided wrong values, in the 'Statistics and redistribution' table.
Water Distribution	Absolute pipe flow result was sometimes negative.
Water Distribution	Some parameters were wrongly exported to / imported from the .inp file for the simulation.
Water Distribution	The processes of geocoding and aggregating demand allocations sometimes never ended.
Water Distribution	Geocoding demand allocations with method 'To node by nearest pipe' failed finding some points laying within the specified search distance.
Water Distribution	Demand connections were sometimes not displayed on the map.

Release 2020

Every new release of MIKE URBAN+ 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
Collection System / 2D overland	A new module for 2D overland simulations is now available. This new module simulates the hydrodynamics and water quality in the two horizontal dimensions on the surface. It can simulate the dynamic interaction with the Collection System network, including flooding from a saturated network and drainage to the network.

Collection System / Sediment Transport	A new module for Sediment Transport simulations is now available, which can be applied for dynamic morphological analysis. This new module is able to simulate transport of bed load and suspended load, for cohesive and non-cohesive sediments, and for multiple sediment fractions.
Collection System / Long Term Statistics	Long Term Statistics (LTS) functionality has been completed and improved. Major improvements have been made to LTS setup, LTS simulations and LTS results.
General / Import from MIKE URBAN	Scenarios and alternatives from MIKE URBAN classic model setups can be imported in MIKE URBAN+ using the automatic import functionality, except for Catchment connections, WD patterns and WD demand allocation and connections which can only be partly imported, and except for RTC and 2D overland.
General / Results visualization	It is now possible to create new time series plots by selecting their location on the map. This option is activated from the 'TS from map' button in the ribbon.
General / Results visualization	The management of result layers on the main map has been simplified: • Results layers can be automatically added to the main map at end of simulation (this option can be disabled from the 'Global settings' • Displayed result item can simply be changed by selecting the new item to be shown on the map, in the 'Layers and symbols' menu • Visualization type (Animation, Minimum, Maximum or Average) can be changed from a right-click on the layer, in the 'Layers and symbols' menu.
Collection System	Culverts is a new type of structures which can be added to natural channels. It can simulate flow and head loss under bridges or other closed structures, for various flow conditions.
Collection System	A new 'Parallelisation configuration' dialog, available in the 'Simulation' ribbon menu, can be used to control the parallelisation options for the collection system and 2D overland simulation engines.

Fixed issues   top

Module/type	Error/Inconvenience
General	While creating a new project, if the coordinate system was read from an existing MIKE URBAN classic model file, then the selected system was not shown and MIKE URBAN+ continued showing 'Local coordinates'. The actual system read in the MIKE URBAN classic database is now shown.
General	Model data imported from MIKE URBAN classic were sometimes misplaced when using US units.
General	Importing model data from MIKE URBAN classic was not possible, after updating MIKE URBAN classic to version 2019 Update 1, and therefore updating ArcGIS from version 10.6.1 to 10.7.
General	Open Street Map background map was often not displayed properly, with some tiles being misplaced.
General	Some parameters were still using SI units when the project was set to use US units.
General	Tooltips information was not available on buttons from the map toolbars. The same information as from buttons in the ribbon is now available.
General	'ArcGIS Prof integration' dialog did not work when using some languages other than English.

General	Results on profile plots were sometimes not correctly drawn for some specific path selections.
General	An unexpected error occurred when trying to add result layers to the map, if the result data didn't match the model data.
General	Extra X-axis with additional data could not be added to profile plots.
General	Labels containing Link ID could not be shown on Result Maps.
General	Arrows on result map for 'Absolute flow' had a wrong direction
General	Values shown in the table from the 'Time series plot' window were sometimes incorrect when plotting multiple time series and after removing one of them.
Collection System	Demand allocation connection line was not always shown on the map.
Collection System	The validation of geometry parameters for 'Nodes' has been improved, to correctly reflect when each parameter is mandatory, depending on the node type.
Collection System	Some parameters for the Water Quality components definition were not validated instantly after creation.
Collection System	A wrong license limitation prevented a simulation from running with pipe regulation.
Collection System	When importing from MIKE URBAN classic, the percentage of valve opening was wrongly divided by 100 during the import.
Collection System	An unexpected error sometimes occurred while inserting a new 'Load point'.
Collection System	An unexpected error occurred when attempting to interpolate cross sections, for natural channels topography.
Collection System	A wrong validation message for the output file path was returned in the 'Spatial processing' tool.
Collection System	The 'Connection tool' failed connecting load points when using option 'Connect only within containing catchment'.
Collection System	The 'Connect catchment' tool didn't highlight the selected catchment being connected.
Collection System	An unexpected error sometimes occurred when using the 'Cost analysis' tool and when using some languages other than English.
Collection System	When using the option 'Stretch of pipes - select path with flags' in the 'Network simplification' tool, the flags disappeared on the map view after pressing 'Preview'.
Collection System	The method 'Use IDW interpolation between features' in the 'Interpolation and assignment' tool didn't provide the expected interpolated values.
Collection System	An unexpected error sometimes occurred while attempting to draw results on a profile plot from a network with natural channels.
Collection System	MIKE ECO Lab forcings did not work properly in the simulation when the MIKE ECO Lab template was not connected to the global network.
Water Distribution	An unexpected error occurred when adding new pattern data, if 'Use date and time' was not selected.

Water Distribution	The simulation was unable to start after importing an *.inp file if the language was set to another language than English.
Water Distribution	When importing from MIKE URBAN classic, values for TCV and FCV valves were sometimes imported incorrectly.
Water Distribution	Shutdown planning editor could not pick up related valves successfully, when used with US units.
Water Distribution	Button 'Change element type' in the ribbon was wrongly disabled for the Water Distribution mode.
Water Distribution	Pipes initial status was not reflected on the map.
Water Distribution	The effect of the various 'Fixed status' options for valves has been clarified with more descriptive names in the 'Fixed status' list.
Water Distribution	'Pressure Dependent Demands' method resulted in wrong Demand Percentage values, with percentages sometimes higher than 100%.
Water Distribution	The simulation couldn't start when the model contained a specific pump configuration, with a 3-point curve type.
Water Distribution	RTC controls were not correctly used in the simulation when the controlled link variable was 'Flow'.
Water Distribution	After computing the demand with the 'Distributed demand' tool with some languages other than English, the tool didn't close properly and could not be applied again without restarting MIKE URBAN+.
Water Distribution	When displaying Link Flow results on a result map, flow direction arrows were shown in the wrong direction.