Innovyze®

Innovating for Sustainable Infrastructure

Software and Services Catalog 2016

www.innovyze.com

Drainage and Flooding

Hydraulic modeling is at the core of drainage and flood risk assessments, and Innovyze's comprehensive portfolio of modeling packages represents the leading solutions for this work.

The **InfoWorks** product suite is founded on strong modeling expertise developed in Wallingford, UK, and its products excel as both stand-alone and workgroup solutions. **InfoWorks ICM SE** (Sewer Edition) builds on the long heritage of the recently retired **InfoWorks CS** (Collection Systems), offering fast and robust full hydrodynamic simulation in the urban environment.

The cutting-edge **InfoWorks ICM** (Integrated Catchment Modeling) builds upon **InfoWorks ICM SE**, providing truly integrated all-source catchment modeling in one solution, while adding a whole new level of capabilities to redefine the process of hydraulic model build and simulation. Within **InfoWorks ICM** the advanced **InfoWorks 2D** engine is included as standard. **InfoWorks ICM Suite** provides even more modeling power with the historical and real-time data management capabilities of **ICM TSDB**, the economic evaluation of flood risks with **ICM RiskMaster**, and real-time forecasting of flows with **PDM**.

In addition, **InfoWorks RS** (River Systems) has established itself as one of the foremost river modeling solutions in the world, with the option of adding the **InfoWorks 2D** engine to provide very fast, accurate and detailed surface flood modeling of flows through complex

geometries.

InfoSWMM & **H_2OMAP SWMM** suites equip engineering professionals with fully dynamic urban drainage network modeling based on an improved version of the US EPA Storm Water Management Model (SWMM). **InfoSWMM** provides these capabilities as an Esri ArcGIS extension and has the option of an additional **2D** module (**InfoSWMM 2D**) plus **InfoSWMM SFEM** for automated sewer flow estimation and **InfoSWMM Sustain** for optimal stormwater management. **H_2OMAP SWMM** operates as a stand-alone geospatial application.

InfoSewer & **H_2OMAP Sewer** suites provide very powerful steady-state and quasi-dynamic design and analysis of sanitary, storm and combined sewers. **InfoSewer** provides these capabilities as an Esri ArcGIS extension, while **H_2OMAP Sewer** operates as a stand-alone geospatial application.

Real-time flood forecasting has become an increasingly important requirement around the world, with improvements in computing power now able to support the running of very large, sophisticated hydraulic network models in an expeditious manner. Critical real-time operational forecasting, early warning, and emergency management for unparalleled decision-making capability is now possible using **ICMLive** in combination with **InfoWorks ICM**, or **SWMMLive** in combination with **InfoSWMM** (and **H_2OMAP SWMM**).

Innovyze's **FloodWorks** combines **InfoWorks RS** unprecedented simulation capabilities with up-to-the-minute telemetry to provide flood forecasting and essential warnings for river systems to both system operators and the public.

InfoWorks® ICM

INTEGRATED ALL-SOURCE CATCHMENT MODELING

InfoWorks ICM (Integrated Catchment Modeling) builds on the capabilities of InfoWorks ICM SE by enabling the dynamic integration of one-dimensional (1D) hydrodynamic simulation of flows and two-dimensional (2D) hydrodynamic simulation of surface flooding in the urban environment and river floodplain. It provides a powerful solution for simultaneously modeling below-ground and above-ground elements of catchments to accurately represent all flow paths and improve understanding of the processes occurring in the holistic environment.

APPLICATIONS

- **Flooding and pollution prediction under complex urban and river interaction**
- **Assessment of future catchment needs as a result of growth or climatic changes**
- **Irrigation and drought management**
- **Hydraulic analysis of wastewater treatment**
- **Sediment transport and water quality modeling and pollution control assessment**

UNPRECEDENTED MODEL CREATION

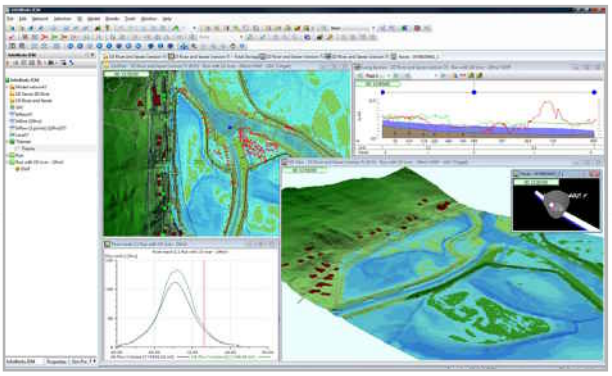
InfoWorks ICM gives engineers the ability to create a single model that contains the salient features existing in an environment with a single, unified hydrology. Manholes, pipes, and inlets can be combined with natural and man-made channels to create a model in which the catchment and the floodplain are one, as they are in real life. The additional ability to model objects such as bridges, sluices, weirs and pumps allows the creation of models that are more complete and more accurate than ever before.

CUTTING EDGE SIMULATION TECHNIQUES

- Full two-dimensional (2D) surface flood modeling can be employed across both the wastewater and river components of the model, providing more precise modeling of flows through complex geometries.
- Water quality and sedimentation studies can be carried out across both 1D and 2D areas, allowing users to assess the fate of pollutants entering the catchment from both wash off and point sources. Users can model dissolved oxygen, nitrite, nitrate, pH, salt, water temperature, coliforms and more.
- The linking of 1D river channels and 2D floodplain is carried out by means of lateral banks. The flow can pass between these two components at any location along the river, allowing real life conditions to be more accurately modeled.

GREATER EFFICIENCIES WITH REMOTE SIMULATION

InfoWorks ICM Remote Simulation allows remote agent machines to simulate models, allowing engineers to return to the task of modeling without affecting their computer's performance. This is increasingly valuable as engineers need to evaluate a large number of scenarios within complex environments, with the benefit of the latest 2D simulation techniques.



INFOWORKS ICMEXCHANGE

A full-featured programmer's toolkit, ICMExchange enables users to directly import and export InfoWorks ICM data in a variety of formats (e.g., Oracle, SQL, Geodatabases) as well as interface with the powerful InfoWorks ICM simulation engine to create their own custom solutions. It also streamlines the creation of custom applications and interfaces that enable users to view or modify data for evaluation and comparison of various modeling scenarios.

ADDITIONAL INFORMATION

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