

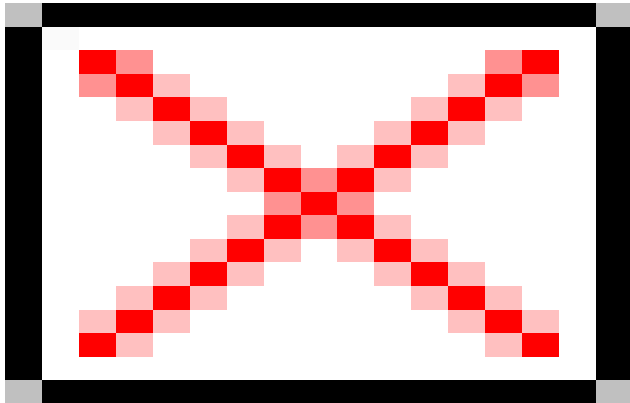
IMDC
Flood forecasting

Location:

Belgium

Client:

Ministry of the Flemish Community



Project Contact Information

For more information about this project, contact:

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Flood warning and decision support system in Flanders and on the Dender river

The Ministry of the Flemish Community engaged IMDC to establish an overall Flow Forecasting System for the 11 major basins in Flanders. (OBM Central) and a more detailed Flood forecasting of the river Dender (OBM Dender). The project is part of a larger program to set up a real time managing and warning tool for Flanders.

The main purpose of OBM Central is to set up a decision support system to manage and forecast high flow events for the whole Flemish region. Flow will be forecasted for 150 (71 existing and 79 planned) gauged catchments stations and 1344 unmonitored sub-catchments. The OBM central is not based on 1D hydraulic models. Hydrological models forecast flow that is transformed to water levels using rating curves.

The OBM Dender is, after OBM Demer, the second operational detailed Flood Forecasting System to be set up in Flanders. These detailed Flood Forecasting Systems are based on results of 1D hydraulic models.

The Dender is a 1158 km² river basin suffering from major flooding events. The main purpose of OBM Dender is to provide real time tools to prevent (harmful) flooding by controlling the water infrastructure and alert the responsible authorities when flooding is to be expected.

The project consists in:

- Enhancing the existing monitoring network and link it to a telemetry system. The forecasting models can activate this telemetry system;
- Building and calibrating hydrological models based on real time rain gauges and actual weather predictions;
- Setting up and calibrating 1D hydraulic models, which are able to simulate inundation contours accurately;
- Organizing automatic warning system via text messages and e-mail. Constructing web-publishing tools;
- Setting up a system to allow the system manager off line simulations of different measures during critical flood conditions.

Rainfall must be predicted accurately. Therefore the system needs to integrate radar based and numerical

rainfall forecasts. It collects high-resolution radar rainfall images which are recalibrated with measured point rainfall. The forecasted rainfall is the result of combining the advection forecast of high-resolution radar images and numerical models such as NIMROD, NAE, EPS?

The project is conducted by IMDC ? Soresma together with various subcontractors for telemetry, hardware, software and radar information.

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