A part of BMT in Energy and Environment

BMT ARGOSS

Smoke plume and gas cloud simulations with WRF and CalPuff

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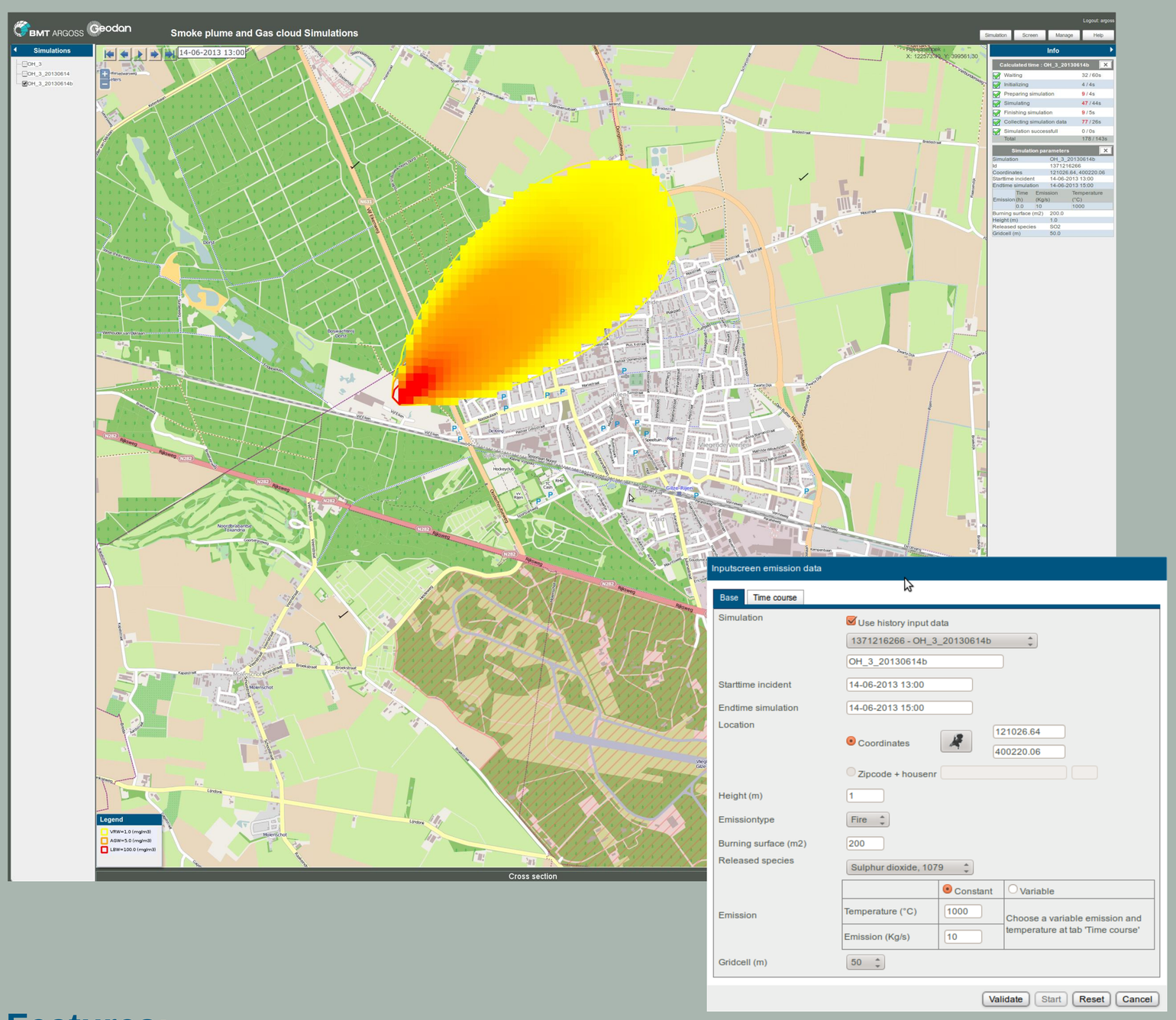
BMT ARGOSS has developed a smoke plume and gas cloud simulation service for emergency services. In this service we have coupled WRF with the CalPuff model. The goal is to provide real-time information and forecasts to emergency services during incidents with potentially dangerous chemicals.



Client

6 Regional fire departments in the Netherlands

Project

2011-2013

Services & Expertise Provided

- Operational smoke plume forecasting over the Netherlands
- Operational support
- User interface development (Web and GIS)
- Crisis management system
- Validation

Features:

- 3 km resolution (WRF), 50 m resolution (Calpuff)
- Forecasts up to 24 hours
- Vertical transport and heat sources included
- 9 most common chemical species
- Fires, gas leaks and liquid evaporation
- Weather forecasts and observations shown on map

Two user interfaces were developed: a web service and integration with a full crisis management system (GIS-based). Data exchange is facilitated by the use of open web mapping standards WMS, WFS and WCS.

The service has received excellent feedback and is currently ready for market introduction. Target markets are national and international fire brigades, the chemical industry and the oil and gas market.