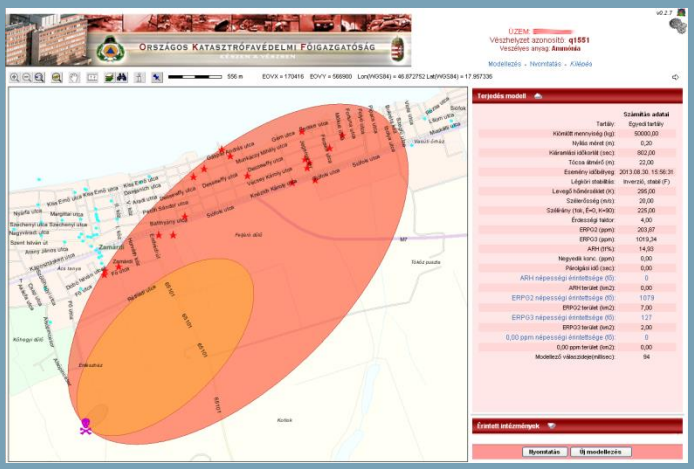
# MoLaRi

## Dispersion Modeling

It is inevitable to analyze the possible effects of an accidental gas emission both during the handling of the emergency and for preparation to such events. The Dispersion Modeling module of the Control Room Application provides a simple, fast and effective way to estimate the extent of a gas emission and to calculate the affected area and population.




### Emission Source

The first step of a dispersion modeling process is to define the emission source. The most effective way is to pre-define the possible emission sources exist in the monitored sites. Built emission sources like containers are easy to document in the system freeing the dispatcher personnel from work of entering source data during the handling of an emergency by simply selecting the given source from the list for the specified site.

During an emergency the available information about the emission usually become more and more precise as the time passes. The system allows overriding all the modeling information like quantity, time of the emission, etc. at any time.

In case of mobile or not pre-defined source the first step is to enter all the necessary information of the source like the type of gas, the quantities, the location, meteorology etc.

### Meteorology

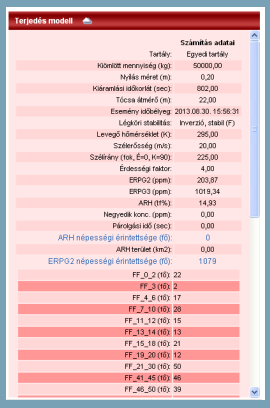
Meteorological information is necessary to be able to estimate which direction the gas would disperse. The meteorological information may come from one of the following sources:

- The system automatically read the actual meteorological information from the nearest monitoring device equipped with meteorological sensors – this is the best choice for handling an actual situation
- The user can overwrite the data given by the system – helping the work preparation work for future possible situations.

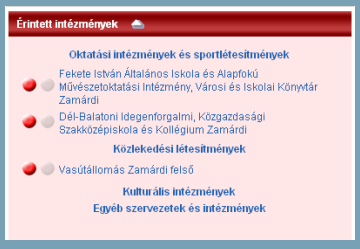
### Modeling

After setting up the necessary information for the modeling it is a matter of seconds to get the results of the modeling:

- A geographical representation of the largest affected dispersion area for given concentrations that can form based on the entered information.
- The numeric representation of the affected area for each concentration
- The number of people affected braked down to sex and age groups for each concentration to help estimating the amount of work to for example evacuate the affected people




- The list of all institutions grouped by type in the affected area. Those institutions can be marked as processed to help follow for example the notification of them.




### Re-modeling

The system supports creating a series of modeling in a single work flow. This is necessary for longer events as the available information about the emission gets refined or as the time passes the meteorological environment changes.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