

Finding the needle – managing information for the forecaster

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In a modern Met Service, the issuing of weather alerts and warnings is core business. The number of warnings has risen significantly as a result of the availability of more detailed models and improved skill in forecasts. At KNMI, forecasters have to monitor more than 25 warnings and alerts, each for a different weather parameter, region and forecast lead-time. Since some of these warnings are only issued on a few days per year, it is difficult for a forecaster to stay alert and ahead of (severe) weather developments.

In 2005 a pilot project started at KNMI in which the main goal was to explore whether automatic determination of (severe) weather events could help the forecaster in putting him on the right track at the right moment. Relevant information (a “trigger”) is sent to the forecaster by a number of trigger-generating modules. These modules determine severe weather events by combining warning threshold and area definitions with real time observations.

For example, in the post processing of the RADAR observations, the amount of precipitation in a predefined area (50 km²) is calculated and, if the amount exceeds the threshold for a severe warning, a trigger is generated. Other modules determine upcoming severe weather events by combining warning threshold and area definition with model forecast (HIRLAM, ECMWF). Trigger generation for deviations in actual products and observations will also be implemented. The trigger concept is also useable for monitoring automatic production. Here, a trigger is generated depending on the content of the product resulting in appropriate action (e.g. quality control) by the forecaster.

Trigger information is sent to a central dashboard in an XML trigger file. The information in the trigger is displayed on the dashboard and the forecaster gets a quick overview of relevant events. For further support, intranet pages are provided on which the forecaster can find more detailed information as well as production support.

The challenge of the project is to present a variety of triggers in such a way that forecasters find the system supportive, i.e. to make a system that effectively filters the amount of information, instead of increasing it. If this challenge is met, the way forecasters work will change. They will most certainly more easily find the needle in the haystack of meteorological information.